

## Bay and Gulf Counties CASPER

Weighted Results

June 8, 2020

### Methods

The Florida Department of Health conducted a Community Assessment for Public Health Emergency Response (CASPER) in Bay County from October 22 to 24, 2019 and Gulf County from November 5 to 7, 2019, as part of the response to the 2018 hurricane season that included direct impacts in Florida by Hurricane Michael and Tropical Storms Alberto and Gordon.

We used the standard Centers for Disease Control and Prevention (CDC) CASPER methodology (CASPER Toolkit: 3<sup>rd</sup> edition). This included two-stage cluster sampling from the selected areas in order to obtain a representative sample of households. We selected 30 clusters, where a cluster was defined as a US Census block, across both counties in the first stage. Selection probability of each cluster was proportional to the estimated number of households in that block. Then, teams used a systematic random sampling approach to select seven households from each cluster (formula below). The team would visit the *n*th home (selected home) until the interview was completed, the resident declined to participate, or three contact attempts were made. If unable to complete an interview, a replacement household was randomly selected using the same systematic approach.

*Home Selection:*  $\frac{\text{Estimated number of households in sampling frame}}{7} = n\text{th home}$

This CASPER focused on the recovery efforts from the impacts of Hurricane Michael that made landfall near Mexico Beach in the Florida Panhandle on October 10, 2018. The questionnaire included 48 questions that focused on the impacts that the household experienced as a result of the hurricane, including structural and economic losses, injury and illness, and healthcare access. An additional four questions were included from the Suicide Behaviors Questionnaire – Revised (SBQ-R), and scored according to the instructions (<https://www.integration.samhsa.gov/images/res/SBQ.pdf>). Individuals who resided in the selected households and were 18 years of age and older were eligible for selection.

We conducted weighted descriptive analyses including frequencies and percentages for categorical variables, and means and standard errors for continuous variables. Weighted results are representative of the entire sampling frame, which includes all households and individuals in Bay and Gulf Counties. Hurricane-related questions were weighted based on the household probability of selection (Formula 1) to allow us to estimate the number and percentage of households within the sampling frame (Bay and Gulf Counties) with similar characteristics. The SBQ-R questions were weighted based on the individual probability of selection (Formula 2) to allow us to estimate the number and percentage of individuals within the counties with similar characteristics.

*Formula 1:*  $\frac{\text{Number of households in sampling frame}}{(\text{Number of households interviewed in cluster})(\text{Number of clusters selected})}$

$$\text{Formula 2: } \frac{(\text{Number of households in sampling frame})(\text{Number of adults in household})}{(\text{Number of households interviewed in cluster})(\text{Number of clusters selected})}$$

## Results

The CASPER assessment that occurred in Bay and Gulf Counties in 2019 included 24 clusters from Bay County (152 interviews) and four clusters from Gulf County (26 interviews), for a total of 178 completed interviews. Combined, Bay and Gulf Counties had a 40.8% contact rate (number of completed interviews out of all households where contact was attempted), a 69.8% cooperation rate (number of completed interviews out of all households where contact was made), and an 84.8% completion rate (number of completed interviews out of the total number of interviews targeted) on the CDC-sampled clusters. The results presented below represent all 178 completed interviews from both counties.

Of all those surveyed, 74.2% were single family homes, 14.5% were mobile homes, 9.8% were multiple unit structures, and 1.0% were modular homes or travel trailers. The average household size was 2.7 individuals (range: 1-8), including an average of 2.2 individuals 18 years and older (range: 1-6) and 0.6 individuals under the age of 18 (range: 0-6) per household. The majority of households were owned (79.2%) by their occupants, followed by 18.8% renters. Most reported no change in combined household income in the past 12 months (56.6%), while just over one-fourth (26.4%) reported a decrease.

### *Hurricane Michael*

In total, 85.1% of respondents indicated that the current structure was where their household lived at the time of Hurricane Michael; 14.9% reported that this was not the same structure. Over half of participants reported evacuating either before (43.4%) or after (13.7%) landfall, and 41.5% did not evacuate (Table 1). Among those who evacuated (n=101; Table 2), 39.0% evacuated to friends/family residences nearby, 27.2% evacuated to friends/family residences elsewhere, and 5.3% evacuated to a shelter. Others reported evacuating to a hotel/motel (or evacuating in vehicles/RVs) outside of the path of the storm. Among those who did not evacuate (n=75; Table 3), reported reasons/barriers included feeling there was no need to go, no time, stayed with pets/animals, caring for a person who could not evacuate, and other reasons (e.g., needing to remain for work).

**Table 1. Did your household evacuate your home at any time before or after the hurricane?**

	Frequency	Weighted Frequency	Percent	95% CI
Before	78	26,185	43.36	(33.23, 53.49)
After	23	8,289	13.72	(7.65, 19.79)
No	75	25,071	41.51	(32.36, 50.67)
Before & After	1	308	0.51	(0.00, 1.56)
Missing	1	539	0.89	(0.00, 2.72)

**Table 2. If you evacuated where did you and your household go? (n = 101)**

	Frequency	Weighted Frequency	Percent	95% CI
Friends/family (nearby)	40	13,439	38.98	(29.02, 48.95)

**Table 2. If you evacuated where did you and your household go? (n = 101)**

	Frequency	Weighted Frequency	Percent	95% CI
Friends/family (elsewhere)	29	9,388	27.23	(16.96, 37.50)
Shelter	5	1,823	5.29	(0.01, 10.56)

**Table 3. If you did not evacuate, were there any barriers to evacuating? (n = 75)**

	Frequency	Weighted Frequency	Percent	95% CI
No need to go	18	6,080	24.25	(11.96, 36.54)
No time	13	4,509	17.98	(8.63, 27.34)
Stayed with pets/animals	7	2,619	10.45	(0.00, 20.93)
Fear of theft	4	1,643	6.55	(0.00, 13.58)
No transportation	2	616	2.46	(0.00, 6.04)
Caring for person who could not evacuate	2	616	2.46	(0.00, 6.08)
Didn't know where the shelters were	1	308	1.23	(0.00, 3.79)

### *Emergency Supplies*

Among respondents, 74.3% reported having an emergency supply kit for their household prior to the hurricane (Table 4). Among those who had a kit (n = 131), most (79.3%) reported using supplies from this kit following the hurricane, and almost half (44.1%) reported that their household needed supplies that were not available in their kits (Table 4). Among all respondents, many reported that their household needed additional supplies after the hurricane impact, with the most common items including water (22.8%), food (20.4%), batteries (15.3%), and medical supplies (7.3%). Other common items included gas/fuel/electricity, generators, clean-up supplies/tools, among others.

**Table 4. Emergency Supply Kits**

	Frequency	Weighted Frequency	Percent	95% CI
<b>Did your household have an emergency supply kit prior to the hurricane?</b>				
Yes	131	44,899	74.35	(66.95, 81.74)
No	46	15,185	25.14	(18.02, 32.27)
Don't know	1	308	0.51	(0.00, 1.56)
<b>Did your household use supplies from your emergency supply kit following the hurricane? (n = 131)</b>				
Yes	105	35,614	79.32	(69.25, 89.39)
No	23	8,360	18.62	(8.08, 29.16)
N/A	2	616	1.37	(0.00, 3.28)
Missing	1	308	0.69	(0.00, 2.10)
<b>Did your household need emergency supplies that were not included in your emergency supply kit? (n = 131)</b>				
Yes	60	19,828	44.16	(33.82, 54.50)
No	64	22,791	50.76	(39.82, 61.71)

**Table 4. Emergency Supply Kits**

	Frequency	Weighted Frequency	Percent	95% CI
N/A	7	2,280	5.08	(1.60, 8.56)

Most respondents reported that their households had enough non-perishable food (77.6%) and water (81.7%) to last for three days and enough medication to last for 7 days (74.8%). Only 15.6% reported that a member of their household ran out of medications after the storm.

#### *Damage and Repairs from Hurricane Michael*

Of respondents, 68.2% reported that their homes were damaged during Hurricane Michael but repairable, while 20.9% reported minimal to no damage, and 9.9% reported their homes were destroyed. Among those who provided damage estimates, the unweighted average damage was reported at \$79,653 (median: \$50,000; range: \$240-565,000). In total, 88.4% reported that their home felt safe to live in, with 11.1% reporting that it did not feel safe. The majority reported that their home was somewhat repaired (54.7%) or completely repaired (27.0%, Table 5), with the most common barrier to repair being slow money receipt from insurance or FEMA for repairs (30.2%). Other common reasons cited outside of given options included builder or contractor issues such as being slow to respond, not having any available, price gouging, etc.

**Table 5. Home Repairs and Barriers to Repairs**

	Frequency	Weighted Frequency	Percent	95% CI
<b>How close is your home to being how it was prior to the hurricane?</b>				
Completely repaired	50	16,310	27.01	(20.43, 33.58)
Somewhat repaired	97	33,031	54.69	(45.16, 64.23)
Not repaired at all	10	3,184	1.87	(1.44, 9.10)
N/A, home destroyed	16	6,080	10.07	(4.68, 15.46)
Don't know	4	1,356	2.24	(0.04, 4.45)
Missing	1	431	0.71	(0.00, 2.18)
<b>What, if any, are barriers to your home repair?</b>				
None, no barriers	28	9,131	15.12	(9.84, 20.40)
Time	18	5,546	9.18	(4.61, 13.76)
Materials/supplies	24	8,366	13.85	(6.86, 20.84)
No money	21	6,727	11.14	(5.38, 16.90)
Slow money	51	18,246	30.21	(20.45, 39.98)

Most reported having running water (98.6%), having access to a functioning toilet (98.5%), and city electricity (98.0%). More than half reported having access to a working generator (61.9%) at the time of the survey. Just over half (52.0%) reported having used a generator since the storm. However, only 40.0% reporting having a working carbon monoxide (CO) detector in their home, with 49.7% reporting that they did not have one, and 10.3% not knowing if they had one.

#### *Employment Post-Hurricane*

Post-hurricane employment issues are minimal. In total, 8.1% reported having someone in their household struggling to complete duties at work because of emotional issues, and 4.3% reported losing their job after Hurricane Michael and still not having work. Another 13.6% lost their job initially but later found jobs, 7.9% reported gaining jobs after Hurricane Michael, and 73.7% reported neither losing nor gaining jobs since the hurricane. Among the eight individuals who lost their jobs and still have not found work since Hurricane Michael, reported reasons included there being no jobs available (48.0%), emotional concerns (12.0%), and physical health/disability (14.0%).

### *Post-Hurricane Concerns*

Residents reported noticing an increase in the following animals/insects since the hurricane: rats/mice (25.1%), raccoons (9.4%), foxes (5.1%), and other problems such as insects (including ants, roaches, mosquitos, etc.), bears, snakes, squirrels, and wild pigs.

Residents reported not being generally concerned about mosquito-borne diseases (54.2%) and they supported spraying for mosquitos (92.7%, Table 6). Among those who would not support spraying (n = 8), reasons included concerns about chemicals in the environment, about harming pets, and that spraying does not help.

**Table 6. Mosquito Concerns**

	Frequency	Weighted Frequency	Percent	95% CI
<b>Currently, how concerned are you and members of your household about getting diseases mosquitoes may carry?</b>				
Very concerned	22	7,035	11.65	(6.66, 16.64)
Somewhat concerned	57	18,837	31.19	(23.69, 38.69)
Not concerned at all	94	32,748	54.23	(45.79, 62.66)
N/A	2	616	1.02	(0.00, 2.47)
Don't know	3	1,155	1.91	(0.00, 4.19)
<b>Would your household support any spraying for mosquitos?</b>				
Yes	164	55,976	92.69	(88.79, 96.59)
No	8	2,516	4.17	(1.56, 6.77)
Don't know	4	1,232	2.04	(0.07, 4.01)
Refused	1	359	0.60	(0.00, 1.82)
<b>If yes, which type(s) of mosquito spraying would you support? (n = 164)</b>				
By hand	3	924	1.65	(0.00, 3.55)
By truck	88	30,119	53.81	(41.48, 66.14)
Any/all means	68	23,392	41.79	(30.36, 53.22)
N/A	1	308	0.55	(0.00, 1.68)
Don't know/depends	2	616	1.10	(0.00, 2.67)
Missing	2	616	1.10	(0.00, 2.68)

### *Post-Hurricane Injuries and Illnesses*

The majority of respondents (80.5%) reported not having anyone in their household being injured as a result of Hurricane Michael (Table 7). Among those who did report injuries (n = 34), the most

common included slips, trips, and falls (47.0%); unsafe/improper use of equipment (11.8%); insect stings (3.1%); CO poisoning or bad air (3.1%); and bacterial infection (2.7%).

**Table 7. Was anyone in your household injured as a result of Hurricane Michael or during cleanup activities?**

	Frequency	Weighted Frequency	Percent	95% CI
Yes-storm	3	976	1.62	(0.00, 3.46)
Yes-cleanup	30	10,158	16.82	(11.66, 21.98)
Yes-both	1	308	0.51	(0.00, 1.56)
No	143	48,642	80.54	(75.36, 85.72)
Don't know	1	308	0.51	(0.00, 1.56)

A variety of illnesses were reported by respondents as being experienced since the storm. These are reported in Table 8. The most common new illnesses reported included anxiety, allergies, depression, cough, and asthma/COPD/respiratory difficulties. Others reporting a worsening of pre-existing conditions (Table 8), with the most common being anxiety, allergies, fatigue, and depression. Behavioral issues reported since Hurricane Michael (Table 8) in respondents' households included trouble sleeping/nightmares, agitated behaviors, and difficulty concentrating. Relatively few respondents noted that they or someone in their household needed prescription medications to treat pain (18.9%) or sleep disturbances (18.5%).

**Table 8. New or Worsening Illnesses Since Hurricane Michael**

	Frequency	Weighted Frequency	Percent	95% CI
<b>Since the storm, has anybody in your household experienced:</b>				
Rash	18	5,957	9.86	(3.90, 15.83)
Nausea	25	8,545	14.15	(7.70, 20.60)
Diarrhea	26	8,956	14.83	(9.21, 20.45)
Cough	62	20,875	34.57	(25.42, 43.71)
Fever	23	8,160	13.51	(6.82, 20.20)
Red eyes	28	9,346	15.48	(8.62, 22.33)
Allergies	82	27,192	45.03	(35.53, 54.52)
Asthma/COPD/respiratory difficulties	49	16,618	27.52	(17.51, 37.52)
Anxiety	87	29,426	48.72	(37.53, 59.92)
Depression	65	22,529	37.30	(28.62, 45.98)
<b>Since Hurricane Michael, have you or any members of your household experienced worsening of:</b>				
Asthma/COPD/respiratory complications	30	10,168	16.84	(9.52, 24.16)
Allergies	69	23,171	38.37	(30.52, 46.22)
Diabetes	9	2,824	4.68	(1.59, 7.76)
Hypertension	31	10,286	17.03	(10.78, 23.29)
Anxiety	78	26,072	43.17	(34.09, 52.26)
Insomnia	51	17,630	29.19	(20.98, 37.41)
Poor appetite	25	8,314	13.77	(9.09, 18.45)
Fatigue	60	20,624	34.15	(24.91, 43.39)
Depression	59	20,398	33.78	(26.35, 41.20)
<b>Since the storm, have you or members of your household had:</b>				

**Table 8. New or Worsening Illnesses Since Hurricane Michael**

	Frequency	Weighted Frequency	Percent	95% CI
Difficulty concentrating	47	15,401	25.50	(17.75, 33.25)
Trouble sleeping/nightmares	61	20,937	34.67	(26.69, 42.65)
Loss of appetite	27	9,054	14.99	(9.41, 20.57)
Agitated behaviors	53	17,964	29.74	(22.64, 36.84)
Personally, witness violent behaviors/threats	17	6,029	9.98	(4.34, 15.63)
Increased alcohol consumption	8	2,799	4.63	(1.65, 7.62)
Increased drug use	0			

### *Access to Healthcare Post-Hurricane*

The majority of respondents reported being able to access necessary healthcare services and medications post-Hurricane Michael (Table 9). Most (53.9%) reported being able to get their medications from their usual source. Among the individuals who had trouble accessing medications (n = 41, 23.1%), reasons cited included usual clinic/physician closed (30.7%), usual pharmacy closed (15.3%), or multiple reasons (48.9%). Most (73.5%) reported needing primary or pediatric care during the past year; of those (n = 133), 94.3% were able to receive the care they needed (Table 9). Among those who could not receive the care needed (n = 7), common reasons included cost/uninsured (29.5%) and proximity of providers (19.7%).

Approximately 21% of respondents reported that a member of their household needed care for mental health concerns (Table 9), with the majority of those reporting that they were able to receive the care they needed (80.7%). Reasons reported for not receiving the care they needed (out of n = 7) included cost/uninsured (20.2%), cost/insured (25.9%), long waits (11.8%), and proximity of providers (11.8%). Generally, respondents were supportive of mental health care. When asked whether the statement (“People should generally sort out their own mental health problems.”) was true or false, most (80.2%) responded false.

**Table 9. Healthcare and Medication Access**

	Frequency	Weighted Frequency	Percent	95% CI
<b>Since the storm, has it been more difficult to get needed prescription medications for anyone in your household?</b>				
Yes	41	13,968	23.13	(14.65, 31.60)
No-got meds from Red Cross, hospital, etc.	3	924	1.53	(0.00, 3.28)
No-got meds from usual source	94	32,538	53.88	(45.29, 62.47)
No-no meds needed	32	9,963	16.50	(9.64, 23.35)
N/A	7	2,691	4.46	(0.81, 8.10)
Don't know	1	308	0.51	(0.00, 1.56)
<b>During the past year, has anyone in your household needed primary care or pediatrician?</b>				
Yes	133	44,401	73.52	(64.72, 82.32)
No care needed	45	15,992	26.48	(17.68, 35.28)
<b>Was the household able to receive the required care? (n = 133)</b>				

**Table 9. Healthcare and Medication Access**

	Frequency	Weighted Frequency	Percent	95% CI
Yes	125	41,884	94.33	(90.24, 98.42)
No	7	2,208	4.97	(1.09, 8.86)
N/A	1	308	0.69	(0.00, 2.15)
<b>During the past year, did anyone in your household need a therapist, psychologist, psychiatrist, social worker, or counselor for mental health care?</b>				
Yes	35	12,618	20.89	(15.97, 25.82)
No	142	47,466	78.60	(73.44, 83.75)
Missing	1	308	0.51	(0.00, 1.56)
<b>Was anyone in your household able to receive the services they needed? (n = 35)</b>				
Yes	28	10,183	80.71	(66.10, 95.32)
No	7	2,434	19.29	(4.68, 33.90)

*Suicide Ideation and Risk*

Using questions from the Suicide Behaviors Questionnaire-Revised (SBQ-R), respondents were asked about different dimensions of suicidality. Each item addresses a different dimension and is summarized in Table 10. Most respondents had low to no risk of suicidality (94.3%) using the standard scoring guidelines for this scale.

**Table 10. Suicide Ideation and Risk**

	Frequency	Weighted Frequency	Percent	95% CI
<b>Item 1: Have you ever thought about or attempted to kill yourself?</b>				
Never	156	114,555	87.37	(81.37, 93.36)
It was just a brief passing thought	11	9,064	6.91	(2.21, 11.62)
I have had a plan at least once to kill myself but did not try to do it	3	3,389	2.59	(0.00, 6.18)
I have had a plan at least once to kill myself and really wanted to die	2	616	0.47	(0.00, 1.15)
I have attempted to kill myself, but did not want to die	1	616	0.47	(0.00, 1.44)
I have attempted to kill myself, and really hoped to die	0			
Don't know	1	719	0.55	(0.00, 1.66)
Refused	4	2,157	1.65	(0.00, 3.79)
<b>Item 2: How often have you thought about killing yourself in the past year?</b>				
Never	151	111,474	85.02	(76.22, 93.82)
Rarely (1 time)	6	5,572	4.25	(0.00, 8.74)
Sometimes (2 times)	3	3,800	2.90	(0.00, 6.60)
Often (3-4 times)	2	924	0.71	(0.00, 1.76)
Very often (5+ times)	1	308	0.24	(0.00, 0.71)
Don't know	1	719	0.55	(0.00, 1.66)
Refused	14	8,319	6.35	(0.00, 14.28)
<b>Item 3: Have you ever told someone that you were going to attempt suicide, or that you might do it?</b>				



**Table 10. Suicide Ideation and Risk**

	<b>Frequency</b>	<b>Weighted Frequency</b>	<b>Percent</b>	<b>95% CI</b>
No	156	112,912	86.12	(77.95, 94.28)
Yes, at one time, but did not really want to die	6	7,626	5.82	(0.23, 11.41)
Yes, at one time, and really wanted to die	2	2,465	1.88	(0.00, 5.25)
Yes, more than once, but did not want to do it	0			
Yes, more than once, and really wanted to die	0			
Don't know	1	719	0.55	(0.00, 1.66)
Refused	13	7,395	5.64	(0.00, 11.96)
<b>Item 4: How likely is that you will attempt suicide someday?</b>				
Never	124	94,425	72.02	(60.19, 83.84)
No chance at all	28	19,181	14.63	(5.00, 24.25)
Rather unlikely	8	6,984	5.33	(0.00, 11.09)
Unlikely	9	5,289	4.03	(0.25, 7.82)
Refused	9	5,238	4.00	(0.00, 8.69)
<b>Combined SBQ-R Risk Category</b>				
Low to no risk	152	114,273	94.32	(89.92, 98.72)
Moderate to high risk	9	6,881	5.68	(1.28, 10.08)