Community Assessment for Public Health Emergency Response (CASPER) one year following the Gulf Coast Oil Spill:

Alabama, 2011

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EXECUTIVE SUMMARY

On April 20, 2010, the Deepwater Horizon Offshore Drilling Unit exploded in the Gulf of Mexico. The explosion resulted in 11 deaths, 17 injuries, and the largest marine petroleum release in history. A few months after the explosion, CDC conducted a Community Assessment for Public Health Emergency Response (CASPER) to assess the general and mental health needs of affected coastal communities in two counties in Alabama. Because mental health needs continue to evolve following man-made disasters and anecdotal reports of mental health needs continued in the communities, the Alabama Departments of Public and Mental Health requested CDC assistance in conducting a Community Assessment for Public Health Emergency Response or (CASPER) in two specific Gulf coast counties exactly one year after the first CASPERs.

Data suggest that a higher proportion of households with an annual income greater than $75,000 live in the community in 2011 compared to 2010. Overall, physical symptoms did not differ between 2010 and 2011. In general, there was a decrease in reports of poor mental health symptoms in adults as compared to the 2010 CASPER. However, reports of mental health symptoms in those reporting decreased income following the oil spill were similar to levels reported in 2010, and more referrals for immediate mental health services were made in 2011 than 2010.

The decrease in reports of mental health concerns may possibly be attributed to the aggressive outreach by local mental health services over the past year, but also to the change in population demographics of the community or the community itself. Together, the high proportion of

mental health symptoms in those reporting decreased income and the increased number referrals for mental health services encountered during the surveys suggest that mental health needs still exist and mental health services should continue outreach efforts. Information on emergency preparedness was shared with local and state officials to inform emergency preparedness planning efforts.

BACKGROUND

On April 20, 2010, the Mobile Offshore Drilling Unit (MODU) Deepwater Horizon exploded 40 miles south of the coast of Louisiana. This event resulted in 11 deaths, 17 injuries, and the largest marine petroleum release in history (1). Over the following 3 months, more than 4.9 million barrels of oil were released into the Gulf of Mexico. Although the oil well was capped on July 15, 2010, thus stopping the flow of oil into the ocean, the released crude oil has had prolonged negative effects on marine biota. The proximity of the well to the fishing industry of the Gulf States, coastal tourist attractions, and estuarine, marsh, and protected ecosystems placed these resources in jeopardy of contamination and destruction. The released oil has had and continues to have consequences for the industries along the Gulf Coast, and posed potential health hazards for those exposed to or affected by the oil spill. Research from previous oil spill and man-made disaster suggests that mental health and community effects of the disaster persist long after the actual event. Anecdotal reports from local services have noted increased and continued requests for assistance and behavioral problems, including substance abuse and domestic violence. Public health surveillance for adverse exposure-related outcomes was

ongoing in coastal area emergency departments, urgent care facilities, and community health centers in Alabama, Florida, Louisiana, and Mississippi immediately following the oil spill and lasted a few months. A Community Assessment for Public Health Emergency Response (CASPER) was conducted August 27 and 28, 2010 in Mobile and Baldwin counties, because public health officials were concerned that some health effects, particularly mental health outcomes, were not adequately captured by the surveillance systems. Results from these CASPERs were shared with the Alabama Department of Public Health and actions were taken based on the findings. To better understand health effects a year after the event, the Alabama Department of Public Health (ADPH) requested the assistance of the Centers for Disease Control and Prevention (CDC) in conducting an assessment of needs in Mobile and Baldwin counties on August 26 and 27, 2011. We also used this opportunity to assess disaster preparedness and needs in the communities surveyed because 1) The study areas are commonly affected by other natural disasters that require large-scale public health response, such as hurricanes; 2) CASPER is an effective method to assess public health needs in a non-disaster setting; and 3) Findings can be used to plan for public health response in the event of a disaster.

On August 25, 2011, CDC staff, including, EIS officers Danielle Buttke, DVM, PhD, MPH, EIS officers Cindy Chiu, PhD, MPH, Sara Vagi, PhD, Royal Law, MPH, and Amy Schnall, MPH, departed for Orange Beach, AL. They joined CEFO Melissa Morrison, MPH and staff of the Alabama Department of Public Health in conducting two CASPERs. The goals of the CASPERs were to determine the general and mental health needs of the community one year following the Deepwater Horizon oil spill, as well as information on the emergency preparedness of the community to aid health officials in preparedness planning.

METHODS AND MATERIALS

To accomplish these goals, CDC conducted CASPERs in Mobile and Baldwin counties. CASPER is an epidemiologic technique designed to provide household-based information about an affected community's needs following a disaster in a timely and relatively inexpensively manner. The information gained is then shared in a simple format with decision-makers. CDC developed a three-page data collection instrument in coordination with the ADPH and local interested parties. The survey instrument was similar to the one used in Alabama in 2010, and it included the following: 1) questions regarding respiratory, cardiovascular, dermatologic, and other physical symptoms and signs that had arisen or worsened in the 30 days prior to the interview; 2) standardized questions on quality of life, mental health, and social context; and 3) individual- and household-level oil spill-related exposure questions and 4) questions regarding emergency preparedness and planning (see Appendix A).

We used a two-stage sampling method to select a representative sample of 210 households to be interviewed in each sampling frame. The sampling frame was based on the 2010 CASPER sampling frame. In the first stage, we selected 30 clusters (census blocks) from a pre-defined sampling frame by use of the Geographic Information Systems CASPER tool. In Mobile County, 30 census blocks were selected from within the pre-defined sampling frame which included the coastal zip codes of 36523, 36509, 36528 representing the cities of Bayou La Batre, Coden, and Dauphin Island. The blocks were selected with a probability proportional to number of households within the census block. Similarly, 30 census blocks were selected from the predefined sampling frame of Baldwin County which included the area south of state highway 98

and the area of Point Clear. We selected the clusters with a probability proportional to the number of households within the census block according to the 2010 Census. In the second stage, interview teams randomly selected seven households from each of the 30 clusters. The interviewers were provided with detailed maps of each selected cluster, and the teams were instructed to select the housing units for the seven interviews by use of a standardized method for randomization.

We provided the two-person interview teams in each sampling frame with a four-hour training session on interview techniques, safety issues, household selection, and referrals. Teams consisted primarily of state public health and mental health staff, with assistance provided by CDC staff. Each team attempted to conduct seven interviews in each of the 30 census blocks selected for the sample, with a goal of 210 total interviews. Residents were considered eligible respondents if they were at least 18 years of age or older, were residents of the selected household, and had lived within the community sampled for at least 30 days. Additionally, the interviewers completed confidential referral forms whenever they encountered urgent physical or mental health needs, and they distributed information on mental and physical health resources.

We conducted weighted cluster analysis to report the estimated percent of households affected in the assessment area (Tables 1–3). We calculated two weighting variables—one to account for the probability that the responding household was selected and one to account for the probability of selecting the individual respondent within the household. We weighted results of each interview questionnaire appropriately on the basis of whether the question referred to the individual or to the household. All percentages presented in this report are calculated by use of one of the two sampling weights.

We used several of the questions regarding mental health from CDC's national Behavioral Risk Factor Surveillance System (BRFSS) and administered them to the responding individual in each household (questions 15 through 23, Appendix A). We compared data from our survey to both Alabama state-wide and national data from the most recent BRFSS in which these questions were asked. For questions 15 through 17 and 22 through 23, the most recent data available for comparison were from the 2009 BRFSS (Tables 9 and 10). For questions 18 and 19 (Table 9), the most recent data available for comparison were from the 2008 BRFSS. Questions 20 and 21 have no available comparison data. We compared responses to the quality-of-life questions (questions 15 through 17) to data collected by use of the identical questions in the 2009 BRFSS in Alabama and in the BRFSS in all 50 states (Table 11 and 12). We took the depressive symptom questions (questions 18 and 19) from the Patient Health Questionnaire-2 (PHQ-2) module in BRFSS and the anxiety questions (questions 20 and 21) from the Generalized Anxiety Disorder-2 (GAD-2) module in a hospital-based Patient Health Questionnaire study. Responses for both the PHQ-2 and GAD-2 are scored from zero (not at all) to 3 (nearly every day), and a combined score is calculated by use of the two questions within each module. PHQ-2 scores of ≥3 have a sensitivity of 83% and a specificity of 92% for major depression (2); GAD-2 scores of ≥3 have a sensitivity of 92% and a specificity of 76% for generalized anxiety disorder, and a sensitivity of 65% and a specificity of 88% for any anxiety disorder (3). We compared the depressive symptom questions to the PHQ-2 data from the 2008 BRFSS in Alabama and to the BRFSS data in 16 other states or territories nationwide (Table 11)—the PHQ-2 is part of an optional module in BRFSS and therefore is not included in the survey in all states. The GAD-2 is not currently available in BRFSS questionnaire; therefore, it has no population-based data

available for comparison. We compared responses to the social context questions (questions 22 and 23) to data from the 2009 BRFSS conducted in Alabama and eight other states nationwide (Table 12).

Results from BRFSS questions used in the CASPER are also stratified based on self-reported income change following the oil spill. We asked, "How did the oil spill affect your household income?" and answers were recorded as increased, decreased, no change, other, or don't know. Very few individuals reported increased, other, or don't know; thus, this variable was categorized as 'decreased' or 'increased/no change' for the stratified analysis.

RESULTS

Mobile County

The surveys were conducted on August 26 and 27, 2011. The 23 interview teams conducted 208 interviews, a completion rate of 99% (Table 1). Teams completed interviews in 41% of the houses approached. Of the households with an eligible participant answering the door, 75% completed an interview. Table 2 shows the frequency and weighted percentage of household demographics. The mean age of respondents was 55.7 years, and 55.5% of respondents were male. Of the persons answering the questionnaire, the majority (97.5%) were white, non-Hispanic. The majority of households (64.7%) have lived in the community for 11 years or more (Table 3).

The self-reported 2010 estimated annual income is shown in Table 4. A larger percentage of households made greater than or equal to $75,000 per year in 2011 than in 2010. The majority of households were either employed (43.4%) or unemployed by choice (41.2%).

Of the households interviewed, 56.4% reported having at least one person in the household experiencing one or more respiratory conditions in the 30 days prior to the survey (Table 5). Nasal congestion was the most common respiratory symptom, with 37.6% of households reporting at least one person with nasal congestion, followed by 28.6% of households reporting at least one person with cough.

Of the households interviewed, 25.7% reported at least one person in the household experiencing a cardiovascular symptom in the previous 30 days (Table 6). The most frequently reported cardiovascular symptom was chest pain (12.8%).

In addition to these respiratory and cardiovascular symptoms, 24.8% of households reported at least one person with a headache in the past 30 days (Table 7). Additionally, mental and behavioral health symptoms are shown in Table 8. Over 26.7% of households reported at least one person with trouble sleeping or having nightmares in the past 30 days. In general, 51.3% of households sought medical care for any mental or physical health reason (Table 8). Types of medical centers where households sought medical help for any of the reported conditions are shown in Table 9.

Of the 208 households, 56 reported having children in the household, or 26.7% of households. Based on these households, it is projected that 15.8% of household with children have an increase in at least one child having problems sleeping or having nightmares, 10.5% have an

increase in sadness or depression, 7.0% have an increase in problems in their children getting along with other children, and 7.0% have an increase in being nervous or afraid in the past 30 days (Table 10).

We compared responses to questions regarding mental health to BRFSS results from surveys administered to the survey respondent only (Tables 11–13). In general, the percentage of respondents reporting poor mental health outcomes was higher in this survey than in both the 2008 and 2009 BRFSS conducted in Alabama and nationally.

Other results include:

- 36.9% of households reported decreased household income since the oil spill.
- 13.4 % of respondents reported physically unhealthy days greater than or equal to 14 in the previous 30 days, as compared to 19.7% in the 2010 CASPER, 13.9% of respondents in the 2008 Alabama BRFSS and 10.8% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 physically unhealthy days in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11b).
- 14.7 % of respondents reported mentally unhealthy days greater than or equal to 14 in the previous 30 days, as compared to 22.8% in the 2010 CASPER, 13.1% of respondents in the 2009 Alabama BRFSS and 10.3% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 mentally

unhealthy days in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11b).

- 7.0% of respondents reported limited activity or self-care due to physical or mental health conditions greater than or equal to 14 days in the past 30 days, as compared to 12.9% in the 2010 CASPER, 8.7% of respondents in the 2009 Alabama BRFSS and 7.0% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 days limited activity in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11.b).
- 13.2% of respondents reported symptoms consistent with depression in the past two weeks, as compared to 24.2% in the 2010 CASPER, 13.9% of respondents in the 2006 Alabama BRFSS and 9.7% in the 2006 national BRFSS (Table 12a). A greater proportion of individuals reporting decreased household income following the oil spill reported symptoms consistent with depression compared to individuals reporting increased or no change in household income (Table 12b).
- 20.3% of respondents reported symptoms consistent with an anxiety disorder. This compares to 24.3% of individuals in the 2010 CASPER (Table 12a). No BRFSS comparison data are available in other surveys for symptoms of anxiety. A greater proportion of individuals reporting decreased household income following the oil spill reported symptoms consistent with an anxiety disorder compared to individuals reporting increased or no change in household income

(Table 12b).

- 14.3% of respondents reported always worrying about having enough money to pay the rent or mortgage within the previous 5 months, as compared to 16.4% in the 2010 CASPER, 9.7% in the 2009 Alabama BRFSS and 6.6% in the 2009 national BRFSS (Table 13a). A greater proportion of individuals reporting decreased household income following the oil spill reported always or usually being worried or stressed about money to pay the mortgage compared to individuals reporting increased or no change in household income (Table 13b).
- 6.0% of respondents reported always worrying about having enough money to buy nutritious meals, as compared to 12.2% in the 2010 CASPER, 6.3% of respondents in the 2009 Alabama BRFSS and 4.0% in the 2009 national BRFSS (Table 13a). A greater proportion of individuals reporting decreased household income following the oil spill reported always or usually being worried or stressed about money buy nutritious meals compared to individuals reporting increased or no change in household income (Table 13b).

Finally, we asked additional questions at the household level regarding changed behavior since the oil spill (Table 14). This question was identical to the question asked in 2010 and thus not directly comparable since the timeframe since the oil spill is different between the two surveys (i.e., 4 months versus 16 months). The greatest change since the oil spill was in local seafood consumption, with 47.1% of households reporting decreased consumption. Additionally, 39.8% of households reported having been exposed to oil (Table 15).

For the 2011 CASPER, we included a section addressing emergency preparedness. In this section, we asked what forms of communication each household had available to communicate with friends and family. The most common form of communication available to Mobile residents was cell phones (91.4%; Table 16). Only 48.8% of households had land lines. The primary sources of information for households during an emergency are the television (68.1%) and radios (25.9%; Table 17). Approximately 82.3% of households said they would evacuate if authorities recommended evacuation for a disaster (Table 18). Of those not evacuating, the most common option cited for not evacuating was concern about leaving property behind (23.8%). Of households evacuating, most households would plan to stay with friends/family/other homes (68.4%). One percent of households cited a medical needs shelter as their evacuation plan. Over 70% of households own pets, and 86.4% of these households would plan on taking their pets with them during an evacuation.

We asked an open-ended question concerning the respondents' greatest concerns at the time of the interview. We categorized responses into concerns for the economy, environment, new oil leaks or old oil coming back onto beaches, oil spill effect on health, household financial concerns, household health concerns, hurricanes, and no concerns. Of these categories, most residents reported none or no concerns (22.0%), followed by concerns of a new oil leak and/or re-emergence of old oil (16.2%); 13.8% of residents were concerned about household finances.

Baldwin County

The surveys were conducted on August 26 and 27, 2011. The sixteen interview teams conducted

173 interviews, a completion rate of 90% (Table 1). Teams completed interviews in 34% of the houses approached. Of the households with an eligible participant answering the door, 65% completed an interview. Table 2 shows the frequency and weighted percentage of household demographics. The mean age of respondents was 56.0 years, and 53.2% of respondents were male. Of the persons answering the questionnaire, the majority (91.8%) were white, non-Hispanic. The majority of households (40.7%) have lived in the community for 11 years or more (Table 3). Self-reported household income is shown in Table 4. The majority of households were either employed (48.2%) or unemployed by choice (43.0%).

Of the households interviewed, 48.9% reported having at least one person in the household experiencing one or more respiratory conditions in the 30 days prior to the survey (Table 5). This compares to 50.8% in the 2010 CASPER. Nasal congestion was the most common respiratory symptom, with 32.5% of households reporting at least one person with nasal congestion, followed by 23.3% of households reporting at least one person with cough.

Of the households interviewed, 14.9% reported at least one person in the household experiencing a cardiovascular symptom in the previous 30 days (Table 6). The most frequently reported cardiovascular symptom was worsening of high blood pressure (7.8%).

In addition to these respiratory and cardiovascular symptoms, 18.2% of households reported at least one person with a headache in the past 30 days (Table 7). This compares to 29.9% of individuals reporting headache in the 2010 CASPER. Additionally, mental and behavioral health symptoms are shown in Table 8. Over 22.6% of households reported at least one person with trouble sleeping or having nightmares. These households include 13.3% of households with

children reporting at least one child with trouble sleeping or having nightmares.

In general, 54.4% of households sought medical care for any mental or physical health reason (Table 9). Types of medical centers where households sought medical help for any of the reported conditions are shown in Table 9.

Of the 188 households, 43 households reported having children. Based on these households, it is projected that 13.3% of households with children have an increase in at least one child having problems sleeping or having nightmares, 5.8% have an increase in problems in their children getting along with other children, 13.1% have an increase in being nervous or afraid, and 17.2% have an increase in sadness or depression (Table 10).

We compared responses to questions regarding mental health to BRFSS results from surveys administered to the survey respondent only (Tables 11–13). In general, the percentage of respondents reporting poor mental health outcomes was higher in this survey than in both the 2008 and 2009 BRFSS conducted in Alabama and nationally. Other results include:

- 35.4% of households reported decreased household income since the oil.
- 13.2 % of respondents reported physically unhealthy days greater than or equal to 14 in the previous 30 days, as compared to 15.8% in the 2010 CASPER, 13.9% of respondents in the 2009 Alabama BRFSS and 10.8% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 physically unhealthy days in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11b).

- 13.2 % of respondents reported mentally unhealthy days greater than or equal to 14 in the previous 30 days, as compared to 16.3% in the 2010 CASPER, 13.1% of respondents in the 2009 Alabama BRFSS and 10.3% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 mentally unhealthy days in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11b).
- 9.0 % of respondents reported limited activity or self-care due to physical or mental health conditions greater than or equal to 14 days in the past 30 days, as compared to 9.8% in the 2010 CAPSER, 8.7% of respondents in the 2009 Alabama BRFSS and 7.0% in the 2009 national BRFSS (Table 11a). A greater proportion of individuals reporting decreased household income following the oil spill also reported greater than or equal to 14 days limited activity in the previous 30 days compared to individuals reporting increased or no change in household income following the oil spill (Table 11b).
- 8.8% of respondents reported one or more symptoms of depression in the past two weeks, as compared to 15.4% in the 2010 CASPER, 13.9% of respondents in the 2006 Alabama BRFSS and 9.7% in the 2006 national BRFSS (Table 12a). A greater proportion of individuals reporting decreased household income following the oil spill reported symptoms consistent with depression compared to individuals reporting increased or no change in household income (Table 12b).
- 13.2 % of respondents reported one or more symptoms of anxiety in the past two

weeks (Table 12a). This compares to 21.4% of individuals in the 2010 CASPER. No comparison data are available in other surveys for symptoms of anxiety. A greater proportion of individuals reporting decreased household income following the oil spill reported symptoms consistent with an anxiety disorder compared to individuals reporting increased or no change in household income (Table 12b).

- 9.7 % of respondents reported always worrying about having enough money to pay the rent or mortgage within the previous 5 months, as compared to 16.5% of individuals in the 2010 CASPER, 9.7% in the 2009 Alabama BRFSS and 6.6% in the 2009 national BRFSS (Table 13a).
- 2.1 % of respondents reported always worrying about having enough money to buy nutritious meals in the past 12 months, as compared to 7.0% of individuals in the 2010 CAPSER, 6.3% of respondents in the 2009 Alabama BRFSS and 4.0% in the 2009 national BRFSS (Table 13a). A greater proportion of individuals reporting decreased household income following the oil spill reported always or usually being worried or stressed about money to pay the mortgage or buy nutritious meals compared to individuals reporting increased or no change in household income (Table 13b).

Finally, we asked additional questions at the household level regarding changed behavior at the since the oil spill (Table 14). This question was identical to the question asked in 2010 and thus not directly comparable since the timeframe since the oil spill is different between the two surveys. The greatest change was since the oil spill was a reported decrease in swimming, with 38.2% of households reporting decreased consumption. Additionally, 43.2% of households

reported having been exposed to oil (Table 15).

For the 2011 CASPER, we included a section addressing emergency preparedness. The most common form of communication available to Baldwin residents was cell phones, with 95.8% (Table 16). Only 58.8% of households had land lines. The primary source of information for households during an emergency is the television (70.3%) and internet (14.0%; Table 17). Approximately 84.4% of households said they would evacuate if authorities recommended evacuation for a disaster (Table 18). Of those not evacuating, the most common option cited for not evacuating was concern of the inconvenience or expense associated with evacuating (17.4%). Of households evacuating, most households would plan to stay with friends/family/other homes (71.6%). Less than 1 percent of households cited a medical needs shelter as their evacuation plan. Over 63.5% of households own pets, and 91.1% of these households would plan on taking their pets with them during an evacuation.

We asked an open-ended question concerning the respondents' greatest concerns at the time of the survey. We categorized responses into concerns for the economy, environment, new oil leaks or old oil coming back onto beaches, oil spill effect on health, household financial concerns, household health concerns, hurricanes, and none or no concerns. Of these categories, most residents reported none or no concerns (17.4%), followed by concerns of the oil spill's effect on the environment (15.7%) and economy (12.5%), and concern over a new oil leak or re-emergence of old oil (15.7%). Baldwin County had fewer concerns about household finances compared to Mobile County.

CONCLUSIONS

The data presented here represent preliminary reports from the CASPER surveys conducted in Mobile and Baldwin Counties on August 26 and 27, 2011. These surveys were conducted in the same sampling frames as the CASPER surveys conducted on August 27 and 28, 2010. The 2010 CASPER surveys used 2000 census data, which proved challenging given changes to the area following natural disasters and economic changes in the area that caused houses to be destroyed or abandoned. For the 2011 CASPER surveys, we were able to use the newly available 2010 census data. For Mobile County, this resulted in a great improvement in sampling and household interview completion, suggesting that this data is more representative of the sampling frame than the 2010 data. The sampling and household interview completion was more difficult in Baldwin County due to the many vacation and rental homes and gated condos within the sampling frame. It is unclear why the 2010 census included vacation and rental properties as households, as census definitions of households requires the household unit to be the usual location of residence. Therefore, inclusion of temporary rental units where surveys could not be obtained may influence the representativeness of the data for this sampling frame by sampling areas based on potential rental population rather than actual resident populations.

Overall, physical health symptoms did not differ significantly between 2010 and 2011 CASPER surveys. This similarity in symptom prevalence between survey years suggests that we are likely capturing baseline symptoms in these communities. This also suggests that these symptoms are not likely to be associated with the oil spill, since symptoms did not vary by year.

However, reports of mental health symptoms in the 2011 CASPER were lower than in the 2010

CASPER. While these data suggest that mental health concerns may be decreased compared to 2010, the proportion of individuals with mental health symptoms is still higher than the 2009 Alabama and nation-wide BRFSS estimates. In addition, CASPER teams completed 6 confidential referral forms for residents to mental health services in Baldwin County, and one mental health referral in Mobile County. Together, this suggests that mental health services are still needed in the area. The increase in referrals may represent an increased awareness or acceptance of mental health issues compared to the 2010 surveys, where no mental health referrals were made. The active mental health outreach in these communities by services such as Project Rebound may have influenced this change in acceptance. Furthermore, when comparing individuals who self-reported decreased income following the oil spill to those whose income either increased or was not affected, large differences in mental health parameters exist. This suggests that mental health resources are especially needed in households who have experienced decreased income as a result of the oil spill.

Finally, although this report suggests that general and mental health symptoms have decreased compared to 2010, this survey cannot determine the cause of this decrease. Time since the oil spill, as well as differences in the demographics of the populations currently living on the coast compared to populations living on the coast immediately following the oil spill, differences in current events, and differences in the presence of common illnesses such as cold viruses or allergies might have influenced the differences seen between the 2010 and 2011 CASPER data. It is also possible that the differences between the mental health symptoms reported in 2010 versus 2011 reflects a decrease in the prevalence of mental health conditions in the community due to active public health response. Public health response efforts and community outreach

should continue to ensure remaining mental health needs are addressed.

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Table 1. Questionnaire response rates for the Alabama CASPERs, 2010 and 2011

	Mobile		Baldwin	
Questionnaire response	**2010 Percent (n=128)**	**2011 Percent (n=208)**	**2010 Percent (n=168)**	**2011 Percent (n=188)**
Completion*	61	99	80	90
Contact†	36	41	34	37
Cooperation‡	70	75	72	65

* Percent of surveys completed in relation to the goal of 210

†Percent of households randomly selected and completing an interview

‡Percent of contacted households that were eligible and willing to participate in the survey

Table 2. Demographics of respondents, August, 2010 and 2011, Alabama

	Mobile		Baldwin	
Age Characteristics	**2010 Years**	**2011 Years**	**2010 Years**	**2011 Years**
Mean Age	53.8	55.7 (52.6-57.4)	55.5	56.0 (52.9-59.0)
Age Range	20-89	19-89	19-95	20-87
Demographics	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**
Gender				
Male	45.6 (33.9-57.3)	44.2 (33.0-55.3)	54.6 (47.1-62.1)	51.1 (44.0-58.3)
Female	54.5 (42.7-66.2)	55.8 (44.7-67.0)	45.4 (37.9-52.9)	48.9 (41.7-56.0)
Race/ethnicity				
White, non-Hispanic	76.7 (64.9-88.5)	97.5 (94.8-100.0)	76.8 (62.9-90.7)	91.8 (86.1-97.5)
Black, non-Hispanic	3.3 (0.0-7.1)	0.5 (0.0-1.5)	15.6 (1.8-29.4)	2.4 (0.0-4.9)
Asian	17.3 (5.2-29.5)	---	---	1.0 (0.0-2.37)
Hispanic	---	1.0 (0.0-2.4)	1.8 (0.0-3.7)	0.5 (0.0-1.5)
Other	2.6 (0.0-6.2)	1.1(0.0-2.6)	---	2.9 (0.0-6.6)
Don't know/Refused	---	---	3.9 (0.5-6.2)	1.4 (0.0-3.7)

Table 3. Frequency and weighted percent by individual respondent of years lived in the community, August 2011

	Mobile		Baldwin	
	2010	2011	2010	2011
Years lived in community	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**
< 1 year	4.9 (0.0-11.0)	6.7 (2.8-10.5)	15.3 (9.8-20.8)	14.9 (7.8-22.0)
2–5 years	17.6 (10.8-24.4)	14.7 (8.6-20.7)	21.5 (14.1-29.0)	22.5 (16.1-28.9)
6–10 years	13.8 (8.8-18.8)	14.0 (8.6-19.4)	16.1 (10.1-22.2)	21.9 (13.7-30.0)
≥ 11 years	63.7 (53.2-74.3)	64.7 (57.4-71.9)	47.0 (36.2-57.9)	40.7 (30.4-51.1)

Table 4. Frequency and weighted percent of annual 2010 household income reported by respondents in US dollars, August 2011

	Mobile		Baldwin	
	2010	2011	2010	2011
Annual Household Income	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**	**Weighted % (95% CI)**
0–14,999	19.7 (6.1-33.2)	15.7 (7.9-23.5)	17.2 (11.7-22.6)	10.4 (3.0-17.9)
15,000–19,999	11.9 (5.0-18.7)	6.2 (1.3-11.1)	6.7 (2.9-10.4)	5.5 (1.5-9.5)
20,000–24,999	7.1 (0.9-13.3)	5.7 (1.9-1.8-9.6)	7.6 (2.6-12.6)	3.4483 (0.7-6.2)
25,000–34,999	11.2 (5.1-17.2)	8.6 (4.6-12.6)	5.7 (2.2-9.3)	6.9 (3.2-10.7)
35,000–49,999	13.5 (6.7-20.3)	7.8 (4.2-11.4)	9.3 (4.6-13.9)	11.0 (5.4-16.6)
50,000–74,999	10.3 (3.5-17.2)	13.3 (9.2-17.4)	17.2 (11.7-22.6)	16.7 (11.2-22.1)
>75,000	8.6 (1.3-16.0)	28.0 (19.3-36.7)	21.1 (11.6-30.6)	28.0 (19.3-36.7)
Don't Know/Refused	17.7 (6.8-28.6)	14.7 (7.8-21.5)	14.1 (7.7-20.4)	18.0 (6.9-29.2)
Employment status				
Employed		43.4 (36.7-50.2)		49.8 (41.7-57.8)
Under-employed		4.8 (1.5-8.0)		2.3 (0.0-5.3)
Unemployed by choice		41.2 (33.5-49.0)		38.6 (31.8-45.4)
Unemployed, seeking work		7.7 (2.9-12.3)		6.5 (3.1-9.9)
Disabled		2.9 (0.0-6.6)		2.3 (0.1-4.4)
DK/Refused		0.0 (-)		0.5 (0.0-1.5)

Table 5. House-hold level frequencies and weighted percents of self-reported household respiratory conditions by county, August 2011

County	Mobile		Baldwin	
Condition	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**
Total households with any respiratory condition	58.3 (45.3-71.2)	56.4 (46.7-66.1)	50.8 (41.5-60.2)	48.9 (39.8-58.1)
Sore throat	21.2(12.1-30.2)	20.4 (13.7-27.2)	13.9 (8.7-19.1)	16.9 (9.2-24.6)
Nasal congestion	33.5 (21.6-45.3)	37.6 (28.5-46.8)	25.28 (17.2-33.4)	32.5 (24.4-40.7)
Sinus Infection	26.9 (17.2-36.6)	32.1 (23.4-40.8)	15.6 (7.8-23.4)	20.1 (14.5-25.6)
Shortness of breath	---	23.3 (14.1-32.6)	---	14.7 (9.3-20.1)
Cough	30.7 (19.2-42.2)	28.6 (19.0-38.1)	24.4 (16.9-31.8)	23.3 (3.6-15.7)
Worsening of existing asthma	3.5 (0.3-6.7)	7.1 (1.1-13.2)	7.3 (2.3-12.3)	5.5 (2.4-8.6)
Worsening of COPD	2.8 (0.0-7.0)	4.2 (0.8-7.7)	2.6 (0.2-5.1)	2.9 (0.7-5.2)
Wheezing	12.6 (4.7-20.4)	20.5 (11.1-29.8)	10.5 (5.9-15.0)	11.2 (4.3-18.0)
Difficulty breathing	21.8 (11.6-31.9)	19.5 (11.4-27.7)	10.63 (6.4-14.9)	12.2 (7.9-16.4)

Table 6. Household level frequencies and weighted percents of self-reported cardiovascular conditions by county, August 2011

County	Mobile		Baldwin	
Condition	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**
Total % reporting cardiovascular symptoms	26.6 (13.6-39.7)	25.7 (16.0-35.4)	19.4 (11.5-27.3)	14.9 (8.7-21.1)
Chest pain	12.6 (5.0-20.1)	12.8 (6.3-19.4)	7.2 (3.5-10.9)	4.6 (1.6-7.6)
Irregular heartbeat	8.8 (3.1-14.5)	7.1 (3.1-11.1)	6.8 (2.6-11.0)	5.9 (1.4-10.4)
Worsening of high blood pressure	12.4 (5.3-19.5)	11.9 (4.3-19.5)	5.7 (0.8-10.6)	7.8 (4.0-11.4)
Worsening of existing condition	4.3 (1.0-7.7)	2.8 (0.3-5.5)	4.0 (1.2-6.8)	3.0 (0.3-5.8)

Table 7. Household level frequencies and weighted percents of Household-reported other physical symptoms by county, August 2011

County	Mobile		Baldwin	
Conditions	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**
Skin conditions	16.6 (7.8-25.4)	17.6 (11.2-24.0)	15.7 (10.3-21.1)	13.9 (9.4-18.4)
Eye conditions	17.2 (9.1-25.2)	13.3 (8.1-18.6)	17.4 (10.9-24.0)	15.5 (7.4-23.6)
Nausea or vomiting	14.6 (6.2-23.0)	12.8 (6.6-19.1)	10.9 (5.8-16.1)	7.4 (2.7-12.1)
Diarrhea	11.3 (4.7-17.9)	12.4 (6.1-18.7)	10.9 (5.8-16.0)	11.6 (5.4-17.8)
Headache	28.3 (19.0-37.6)	24.8 (15.0-34.5)	29.9 (20.4-39.3)	18.2 (10.4-26.0)
Heat-related illness	9.9 (3.8-16.0)	8.6 (2.9-14.3)	1.1 (0.0-2.7)	5.0 (1.6-8.4)

Table 8. Household level frequencies and weighted percents of self-reported mental health conditions by county, August 2011

County	Mobile		Baldwin	
Conditions	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**
Difficulty concentrating	14.5 (6.3-22.7)	12.9 (5.2-20.6)	13.3 (7.2-19.3)	11.8 (6.5-17.0)
Trouble sleeping	26.4 (15.3-37.4)	26.7 (16.0-37.3)	23.4 (17.0-29.8)	22.6 (4.4-30.8)
Loss of appetite	17.6 (8.4-26.7)	8.1 (2.9-13.3)	11.0 (6.3-15.7)	6.2 (2.8-9.6)
Racing heartbeat	10.6 (1.9-19.3)	10.0 (4.4-15.6)	8.3 (3.7-12.9)	4.4 (0.0-9.9)
Agitated behavior	22.2 (15.7-28.6)	11.4 (5.6-17.2)	12.0 (5.3-18.7)	10.2 (4.8-15.6)
Witnessed violence	4.8 (0.5-9.2)	3.3 (0.6-6.1)	3.6 (1.0-6.1)	1.4 (0.0-2.9)
Increased alcohol consumption	4.9 (1.4-8.5)	2.4 (0.0-5.2)	2.7 (0.0-6.1)	2.6 (0.4-4.8)
Increased drug use	1.8 (0.0-4.8)	0.0	0.4 (0.0-1.1)	3.3 (0.3-6.3)
Thoughts/attempts to harm self	10.6 (1.9-19.3)	10.0 (4.4-15.6)	8.3 (3.7-12.9)	0.5 (0.0-1.5)

Table 9. Household level frequencies and weighted percents of facilities where medical help was sought for any condition in the previous 30 days by individuals reporting any medical condition by county, August 2011

	Mobile	Baldwin (n=128)
Facility	**Weighted % (95% CI)**	**Weighted % (95% CI)**
Family Doctor	42.5 (29.8-55.2)	44.8 (33.6-56.1)
Emergency Room	8.8 (1.6-15.9)	5.9 (1.2-10.6)
Urgent Care	2.7 (0.1-5.3)	5.7 (1.4-10.0)
Free Clinic	1.3 (0.0-3.3)	---
Mental Health Clinic	1.3 (0.0-3.2)	0.7 (0.0-2.2)
Community Health Clinic	2.0 (0.0-4.4)	---
No Help	48.7 (36.9-60.5)	45.6 (32.4-58.8)
Reason help not sought		
Symptoms not bad enough	80.4 (65.8-95.0)	98.1 (94.1-100.0)
Have no insurance	3.9 (0.0-9.8)	---
Other*	15.7 (3.2-28.2)	1.9 (0.0-5.9)

*Other reasons given included dislike or distrust of doctors (4), lack of time (2), no need (2), and chronic condition already being managed (3)

Table 10. Household level frequencies and weighted percents of increase in children's behavioral symptoms among households with children by county, August 2011

County	Mobile		Baldwin	
Condition	**2010 Weighted % (95% CI)**	**2011 (N=57) Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 (N=46) Weighted % (95% CI)**
Been sad or depressed	6.9 (0.0-15.7)	10.5 (0.0-22.0)	6.1 (0.0-14.1)	17.2 (4.8-29.6)
Problems getting along with other children	4.6 (0.0-11.7)	7.0 (0.2-13.8)	8.5 (0.0-19.7)	5.8 (0.0-12.2)
Problems sleeping	10.1 (0.0-21.0)	15.8 (4.5-27.1)	13 (1.2-24.8)	13.3 (1.4-25.2)
Felt nervous or afraid	0 (0.0)	7.0 (0.0-15.0)	2.8 (0.0-6.9)	13.1 (4.6-21.5)

Table 11a. Individual-level weighted percents of respondents reporting general quality of life by county, August 2010 and 2011

	Mobile		Baldwin		Alabama	National
Measure	**2010 Weighted % (95%CI)**	**2011 Weighted % (95%CI)**	**2010 Weighted% (95% CI)**	**2011 Weighted % (95%CI)**	**2009 BRFSS[1] Weighted % (95%CI)**	**2009 BRFSS[1] Weighted % (95%CI)**
≥14 physically unhealthy days	19.7 (7.9-30.8)	13.4 (8.4-18.5)	15.8 (9.8-21.9)	13.2 (8.4-17.9)	13.9 (12.7-15.1)	10.8 (10.6-11.1)
≥14 mentally unhealthy days	22.8 (10.9-34.6)	14.7 (8.2-21.3)	16.3 (9.1-23.4)	13.2 (8.6-17.8)	13.1 (11.8-14.5)	10.3 (10.0-10.5)
≥14 activity limitation days	12.9 (5.2-20.6)	7.0 (3.1-11.0)	9.8 (3.0-15.9)	9.0 (4.2-13.8)	8.7 (7.7-9.7)	7.0 (6.8-7.2)

[1] Behavioral Risk Factor Surveillance System (BRFSS)

Table 11b. Individual-level weighted percents of respondents reporting general quality of life by county and self-reported income change following the Gulf Coast oil spill, August 2010 and 2011

	Mobile		Baldwin	
Income Change Measure	**Decreased Weighted % (95%CI)**	**Increased/No Change Weighted % (95%CI)**	**Decreased Weighted % (95% CI)**	**Increased/No Change Weighted % (95%CI)**
≥14 physically unhealthy days				
2010	29.9 (7.0-52.8)	13.5 (2.8-24.2)	24.4 (11.0-37.7)	10.8 (4.5-16.8)
2011	21.6 (11.5-31.6)	9.0 (2.9-14.3)	17.1 (5.8-28.3)	11.0 (5.4-16.6)
≥14 mentally unhealthy days				
2010	34.2 (9.5-58.9)	15.0 (4.0-25.9)	34.7 (19.3-50.2)	6.2 (0.2-12.2)
2011	32.6 (21.6-43.7)	3.6 (0.0-7.6)	22.6 (12.7-32.6)	7.9 (2.9-13.0)
≥14 activity limitation days				
2010	15.3 (5.0-25.6)	11.0 (1.8-20.3)	17.6 (5.3-29.9)	4.9 (0.0-11.0)
2011	14.3 (6.6-22.2)	2.5 (0.1-4.9)	11.5 (1.2-21.9)	7.8 (3.5-11.8)

Table 12a. Individual-level weighted percents of respondents reporting depressive or anxious symptoms by county August, 2010 and 2011

	Mobile		Baldwin		Alabama	National
Measure	**2010 % (95% CI)**	**2011 % (95% CI)**	**2010 % (95% CI)**	**2011 % (95% CI)**	**(2006 BRFSS)[1] % (95% CI)**	**(2006 BRFSS)[1] % (95% CI)**
Depressive symptoms	24.2 (13.0-35.3)	13.2 (7.8-18.7)	15.4 (9.6-21.3)	8.8 (4.5-13.1)	13.9 (11.7-16.4)	9.7 (9.3-10.0)
Symptoms of anxiety	24.3 (13.2-35.5)	20.3 (12.1-28.4)	21.4 (13.3-29.5)	13.2 (6.9-19.5)	N/A	N/A

[1] Behavioral Risk Factor Surveillance System (BRFSS) from 41 states or territories

Table 12b. Individual-level weighted percents of respondents reporting depressive or anxious symptoms by county and self-reported income change, August, 2010 and 2011

	Mobile		Baldwin	
Income Change	**Decreased**	**Increased/ NoChange**	**Decreased**	**Increased/ NoChange**
Measure	**% (95% CI)**	**% (95% CI)**	**% (95% CI)**	**% (95% CI)**
Depressive symptoms				
2010	37.3 (20.2-54.4)	17.2 (3.9-30.4)	29.4 (17.7-41.1)	7.1 (2.1-12.2)
2011	26.0 (15.1-36.9)	5.4 (1.7-9.0)	11.0 (3.0-18.9)	7.6 (2.6-12.7)
Symptoms of anxiety				
2010	41.4 (22.8-60.0)	17.6 (4.4-30.7)	38.5 (22.9-54.0)	11.1 (4.1-18.1)
2011	31.0 (18.3-43.6)	3.6 (0.0-7.5)	18.8 (8.7-28.8)	4.0 (0.4-7.6)

Table 13a. Individual-level weighted percents of respondents reporting frequency of worry or stress by county, August 2010 and 2011, according to BRFSS social context categories

	Mobile		Baldwin		Alabama	National[3]
Measure	**2010**	**2011**	**2010**	**2011**	**2009 BRFSS[1,2]**	**2009 BRFSS[1,2]**
	% (95% CI)	**% (95% CI)**	**% (95% CI)**	**% (95% CI)**	**% (95%CI)**	**% (95%CI)**
Worried/stressed about money for mortgage/rent						
Always	16.4 (9.2-23.5)	14.3 (7.6-21.1)	16.5 (10.1-22.8)	9.7 (5.3-14.1)	9.7 (8.6-11.0)	6.6 (6.2-7.1)
Usually	11.8 (4.6-18.9)	5.6 (1.8-9.3)	8.0 (3.5-12.5)	7.3 (2.3-12.3)	4.5 (3.7-5.4)	4.8 (4.4-5.2)
Sometimes	14.8 (8.5-21.1)	15.8 (11.1-20.6)	19.6 (11.8-27.3)	13.4 (6.8-20.0)	15.2 (13.7-16.8)	17.3 (16.6-18.0)
Rarely	8.4 (2.8-14.0)	5.3 (2.2-8.4)	9.2 (4.0-14.5)	7.0 (2.4-11.7)	2.8 (11.5-14.3)	14.9 (14.2-15.6)
Never	48.7 (39.5-57.8)	58.9 (47.4-70.5)	46.7 (39.2-54.3)	61.2 (51.0- 71.5)	57.8 (55.7-59.8)	56.4 (55.5-57.3)
Worried/stressed about money to buy nutritious meals						
Always	12.2 (4.2-20.2)	6.0 (1.4-10.6)	7.0 (2.1-12.0)	2.1 (0.1-4.0)	6.3 (5.5-7.2)	4.0 (3.6-4.3)
Usually	5.9 (0.6-11.2)	4.9 (0.9-9.0)	5.5 (1.4-9.7)	4.2 (0.8-.5)	3.8 (3.1-4.7)	3.3 (3.0-3.64)
Sometimes	16.6 (8.3-25.0)	9.4 (4.2-14.7)	10.7 (4.5-16.9)	8.0 (3.6-12.5)	15.1 (13.7-16.5)	14.4 (13.8-15.0)
Rarely	11.3 (4.2-18.3)	11.1 (5.0-17.3)	9.5 (5.3-13.7)	6.5 (0.9-12.1)	13.2 (11.7-14.7)	13.9 (13.2-14.6)
Never	54.0 (41.9-66.1)	68.4 (56.8-80.1)	67.3 (58.3-76.3)	77.9 (68.2-87.7)	61.7 (59.8-63.6)	64.1 (63.5-65.3)

[1] Behavioral Risk Factor Surveillance System (BRFSS)
[2]BRFSS asked question "in the past *12* months" CASPER asked question "in the past *4* months"
[3]8 states

Table 13b. Individual-level weighted percents of respondents reporting frequency of worry or stress by county and self-reported income change following the oil spill, August 2010 and 2011, according to BRFSS social context categories

	Mobile		Baldwin,	
Income change	**Decreased**	**Increased/No Change**	**Decreased**	**Increased/No Change**
Measure	**% (95% CI)**	**% (95% CI)**	**% (95% CI)**	**% (95% CI)**
Worried/stressed for money to pay mortgage/rent				
2010				
Always/Usually	52.8 (33.9-71.6)	17.0 (3.2-30.7)	47.4 (35.5-59.3)	12.4 (4.9-19.9)
Sometimes	15.6 (6.8-24.4)	14.7 (6.5-22.9)	28.4 (13.6-43.3)	16.9 (9.3-24.6)
Rarely/Never	31.7 (15.6-47.7)	68.3 (53.7-83.0)	24.1 (11.7-36.6)	70.7 (60.8-80.6)
2011				
Always/Usually	39.8 (28.3-51.3)	8.0 (2.2-13.8)	36.4 (24.2-48.6)	6.1 (2.2-10.0)
Sometimes	19.4 (11.5-27.2)	13.5 (7.2-19.9)	24.4 (10.6-38.3)	7.3 (1.8-12.8)
Rarely/Never	40.8 (26.1-55.6)	78.5 (70.3-86.7)	39.2 (25.4-52.9)	86.6 (79.9-93.3)
Worried/stressed about money to buy nutritious meals				
2010				
Always/Usually	34.1 (13.6-54.6)	12.6 (1.3-23.8)	22.4 (11.4-33.4)	6.3 (0.-12.3)
Sometimes	26.4 (10.0-42.7)	10.1 (1.7-18.4)	19.5 (3.7-35.4)	7.1 (1.8-12.5)
Rarely/Never	39.5 (21.7-57.4)	77.4 (60.7-94.0)	58.0 (44.3-71.8)	86.6 (77.9-95.3)
2011				
Always/Usually	24.2 (13.1-35.2)	3.4 (0.4-6.5)	13.0 (4.4-21.7)	2.4 (0.0-5.3)
Sometimes	18.0 (5.8-30.1)	4.1 (0.-8.5)	16.5 (6.2-26.7)	3.3 (0.0-6.9)
Rarely/Never	57.8 (40.9-74.7)	92.4 (87.0-97.8)	70.5 (55.2-85.8)	92.3 (89.1-99.4)

Table 14. Household level frequencies and weighted percents of change in activity since the oil spill by county, August 2010 and 2011

County	Mobile		Baldwin	
	2010 Weighted % (95% CI)	**2011 Weighted % (95% CI)**	**2010 Weighted % (95% CI)**	**2011 Weighted % (95% CI)**
Decreased swimming	57.6 (46.6-68.7)	41.2 (32.1-50.2)	55.7 (45.9-65.5)	38.2 (28.0-48.5)
Decreased time outdoors	49.0 (41.1-56.9)	32.0 (22.3-41.7)	47.2 (36.7-57.6)	27.9 (17.1-38.6)
Decreased boating	58.2 (50.1-66.4)	39.7 (29.8-49.7)	52.0 (42.3-61.7)	32.3 (21.0-43.6)
Decreased local seafood consumption	64.0 (53.7-74.3)	47.1 (36.6-57.7)	62.1 (53.0-71.3)	34.8 (26.6-43.1)

Table 15. Household level frequencies and weighted percents of reported effects of the oil spill by county, August 2010 and 2011

County	Mobile		Baldwin	
	2010 Weighted % (95% CI)	2011 Weighted % (95% CI)	2010 Weighted % (95% CI)	2011 Weighted % (95% CI)
Household income				
Increased	7.4 (1.3-13.5)	7.7 (4.3-11.2)	4.6 (1.6-7.6)	2.4 (0.0-5.1)
Decreased	32.1 (20.4-43.8)	36.9 (28.0-45.8)	33.5 (25.0-41.8)	35.4 (25.3-45.4)
Exposed to oil	38.2 (25.0-51.5)	39.8 (30.9-48.7)	36.9 (26.1-47.7)	43.2 (32.9-53.6)
Exposure type				
Skin	7.3 (1.7-12.8)	20.5 (14.0-26.9)	22.2 (12.4-32.0)	28.0 (18.9-37.0)
Inhalation	26.4 (16.0-36.7)	26.6 (17.9-35.2)	24.35 (14.8-33.9)	27.9 (19.2-36.6)
Ingestion	3.3 (0.2-6.5)	1.9 (0.0-4.3)	1.3 (0.0-3.1)	5.4 (0.0-12.5)
Worked on cleanup	23.1 (13.1-33.0)	24.8 (17.5-32.0)	11.3 (5.8-16.7)	8.8 (4.9-12.8)

Table 16. Forms of communication currently available to communicate with friends and family, Alabama 2011

	Mobile		Baldwin	
	Projected number of households	**Weighted % (95% CI)**	**Projected number of households**	**Weighted % (95% CI)**
Cell phones	4,080	91.4 (87.2-95.7)	30,939	95.8 (92.8-98.8)
Email	2,363	53.0 (38.9-67.0)	24,398	75.6 (66.4-84.7)
Land lines	2,176	48.8 (37.5-60.1)	18,976	58.8 (48.4-69.2)
Facebook/social media	1,539	34.5 (24.7-44.3)	15,476	47.9 (37.3-58.6)
Two-way radios	412	9.2 (4.1-14.4)	3,844	11.9 (6.5-17.3)
Other	106	2.4 (0.0-5.3)	954	3.0 (0.0-7.2)

Table 17. Main method of obtaining information during disaster setting, Alabama 2011

	Mobile		Baldwin	
	Projected number of households	**Weighted % (95% CI)**	**Projected number of households**	**Weighted % (95% CI)**
Television	3,039	68.1 (58.6-77.6)	22,707	70.3 (60.8-79.8)
Radio	1,152	25.9 (18.3-33.5)	4,321	13.4 (8.4-18.4)
Cell phones	761	17.1 (12.4-21.9)	4,136	12.8 (4.9-20.7)
Internet	404	9.1 (4.6-13.6)	4,699	14.6 (9.7-19.4)
Neighbors	200	4.5 (1.1-7.9)	159	0.5 (0.0-1.5)
Print media	170	3.8 (0.0-8.5)	477	1.5 (0.0-3.2)
Facebook/social media	106	2.4 (0.2-4.6)	298	0.9 (0.0-2.2)
Other	213	4.8 (1.9-7.7)	1,372	4.2 (1.5-7.0)

Table 18. Evacuation propensity and reasoning during disaster setting, Alabama 2011

	Mobile		Baldwin	
	Projected number of households	**Weighted % (95% CI)**	**Projected number of households**	**Weighted % (95% CI)**
Would evacuate if recommended	3,655	82.3 (74.5-90.1)	27,260	84.4 (78.8-90.1)
Would not because:	489	11.0 (4.3-17.7)	3,221	10.0 (5.2-14.7)
Lack of transportation	0	---	139	4.8 (0.0-15.5)
Lack of trust in public officials	43	9.5 (0.0-25.5)	477	16.4 (0.0-34.4)
Concern about leaving property behind	106	23.8 (4.1-43.4)	483	16.7 (0.0-35.8)
Concern about personal safety	21	4.7 (0.0-15.4)	159	5.4 (0.0-17.6)
Concern about leaving pets	21	4.8 (0.0-15.4)	318	11.0 (0.0-27.0)
Concern about traffic jams/inability to leave	21	4.8 (0.0-16.0)	0	---
Inconvenience/expense	64	14.2 (0.0-33.2)	504	17.4 (0.3-34.3)
Other	170	38.1 (17.6-58.7)	822	28.3 (7.1-49.5)

Table 19. Place where residents would seek shelter following evacuation for a disaster, Alabama 2011

County	Mobile		Baldwin	
	Projected # of Households	Weighted % (95% CI)	Projected # of Households	Weighted % (95% CI)
Safer structure in area	276	6.3 (1.6-10.9)	2,691	8.7 (0.8-16.7)
Friends/family members homes	3,009	68.4 (56.2-80.6)	22,065	71.6 (62.0-81.3)
Public disaster shelter	85	2.0 (0.0-3.9)	643	2.1 (0.1-4.1)
Sleep in car or outdoors	106	2.4 (0.0-5.0)	159	0.5 (0.0-1.6)
Motel/hotel	540	12.3 (6.9-17.6)	4149	13.5 (8.5-18.5)
Would not leave	191	4.3 (1.2-7.5)	756	2.5 (0.0-5.0)
Medical needs shelter	43	1.0 (0.0-2.9)	159	0.5 (0.0-1.6)
Don't know/refused	149	3.4 (0.8-6.0)	186	0.6 (0.0-1.8)

Table 20. Responses to what residents would do with pets if they were asked to evacuate during a disaster

County	Mobile		Baldwin	
	Projected # of Households	Weighted % (95% CI)	Projected # of Households	Weighted % (95% CI)
Own pets	3,128	70.1 (63.8-76.5)	20,514	63.5 (54.3-72.8)
Of those with pets				
Take pets with them	2703	86.4 (80.6-92.2)	18,538	91.1 (84.8-97.4)
Find safe place for pets	149	4.8 (0.6-8.9)	345	1.7 (0.0-4.1)
Leave behind	170	5.4 (1.8-9.0)	1,173	5.8 (1.0-10.6)
Would not evacuate	64	2.0 (0.0-4.5)	298	1.5 (0.0-3.5)
Would not evacuate because of pets	21	0.7 (0.0-2.1)	0	0.0
Don’t know/refused	21	0.7 (0.0-2.1)	0	0.0

Appendix A.

Gulf Coast CASPER 2011 Questionnaire

To be completed by team BEFORE interview	
Q1. Date (MM/DD/YY):	**Q2.** Survey Number:
Q3. Team Member Initials:	**Q4.**Team Number:
Q5. County Name:	**Q6.** Cluster Number:
Demographic Questions	
Q7. How many adults 18 or older live in your household?	**Q8.** How many people in your household are: ___ ≤ 2 ___3-5 __ 6-9 __10-17 __18-25 __26-40 __41-65 __66-75 __>75 □ DK □ Refused

Q9. In the past 30 days, have you or any household members experienced any of the following: (Please check all that apply.)

Category	You	Household member	Symptoms
A) Respiratory Conditions	□	□	Sore throat □ DK □ Refused
	□	□	Nasal congestion
	□	□	Sinus infection
	□	□	Shortness of breath
	□	□	Cough
	□	□	Wheezing
	□	□	Difficulty breathing
	□	□	Worsening of existing asthma symptoms
	□	□	Worsening of existing chronic obstructive pulmonary disease or emphysema
	□	□	None
B) Cardiovascular symptoms/conditions	□	□	Chest pain □ DK □ Refused
	□	□	Irregular heart beat □ None
	□	□	Worsening of existing high blood pressure
	□	□	Worsening of any existing chronic cardiovascular disease
	□	□	None
C) Other Presentations	□	□	Skin irritations including rash □ DK □ Refused
	□	□	Any eye conditions or irritations
	□	□	Nausea and/or vomiting
	□	□	Diarrhea
	□	□	Headache
	□	□	Heat-related illness such as hyperthermia
	□	□	Other (specify): _____
	□	□	None
Q10. Has anyone in your household experienced any of the following in the last 30 days?	□	□	Difficulty concentrating □ DK □ Refused
	□	□	Trouble sleeping/nightmares
	□	□	Loss of appetite
	□	□	Racing or pounding heartbeat
	□	□	Agitated behavior
	□	□	Witnessed first-hand violent behavior or threats of violence
	□	□	Thoughts or attempts to harm self
	□	□	Increased alcohol consumption

	□ □ □	□ □ □	Increased drug use Other (*specify*) _____ None

Q11. Did you or any member of your household seek help for any of the above physical or mental health conditions at any of the following? Please check all that apply: □ Community health center □ Mental health clinic
□ Family doctor □ ER □ Social Services □ Urgent care center □ Free clinic Other:_____
City:_____ □ No □ No conditions □ DK □ Refused

Q11a. If no, Why not? □ have no physician □ have no insurance □ have no transportation □ symptoms not bad enough
Other:_____

Now I am going to ask you questions about yourself only, not about other members in the household.

Q12. What is your age and sex?

Age:___ □Refused □ Male □ Female □ Refused

Q13. How long have you lived in this community?

Q14. What is your race/ethnicity?

□ White, Non-Hispanic □ Black, Non-Hispanic □ Hispanic □ Asian □ Other: _____ □ DK □ Refused

Q15. Now thinking about your physical health, which includes physical illness and injury, for how many days during the **past 30 days** was your physical health not good? Number: □ DK □ Refused

Q16. Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the **past 30 days** was your mental health not good? Number: □ DK □ Refused

Q17. During the **past 30 days**, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation? Number: □ DK □ Refused

Now, I am going to ask you some questions about your mood. When answering these questions, please think about how many days each of the following has occurred in the past 2 weeks.

Q18. Over the last **2 weeks**, how often have you had little interest or pleasure in doing things?
□ Not at all □ Several days □ More than half the days □ Nearly every day □DK □ Refused

Q19. Over the last **2 weeks**, how often have you felt down, depressed or hopeless?
□ Not at all □ Several days □ More than half the days □ Nearly every day □DK □ Refused

Q20. Over the last **2 weeks**, how often have you felt nervous, anxious, or on edge?
□ Not at all □ Several days □ More than half the days □ Nearly every day □DK □ Refused

Q21. Over the last **2 weeks**, how often have you been unable to stop or control worrying?
□ Not at all □ Several days □ More than half the days □ Nearly every day □DK □ Refused

Q22. How often in the **past 12 months** would you say you were worried or stressed about having enough money to pay your rent/mortgage? Would you say you were worried or stressed---

□ Always □ Usually □ Sometimes □ Rarely □ Never □ DK □ Refused

Q23. How often in the **past 12 months** would you say you were worried or stressed about having enough money to buy nutritious meals? Would you say you were worried or stressed---

□ Always □ Usually □ Sometimes □ Rarely □ Never □ DK □ Refused

Q24. What is your estimated annual household income in 2010?

□ 0-<$15,000 □ $15,000-<$20,000 □ $20,000-<$25,000 □ $25,000-<$35,000
□ $35,000-<$50,000 □ $50,000-<$75,000 □ >$75,000 □ Unknown/refused

Q25. How did the oil spill affect your household income?

□ Decreased □ Increased □ No Change □ DK □ Refused □ Other (please specify):_____

Q25a. What is your current employment status?

□ Employed □ Under-employed □ Unemployed by choice □ Unemployed, seeking work □ DK □ Refused

Q26. In the past 30 days, have any of the children in your household experienced an increase in any of the following difficulties?

Please check all that apply: □ Been very sad or depressed
□ Felt nervous or afraid □ Problems sleeping
□ Problems getting along with other children
Other (specify) :_____
□ No □ No children □ DK □ Refused

Q27. Have other household members changed any of the following activities at the coast since the oil spill?

□ Refused
Swimming: □ Increased □ Decreased □ DK
Time outdoors: □ Increased □ Decreased □ DK
Boating: □ Increased □ Decreased □ DK
Local seafood consumption: □ Increased □ Decreased □ DK

Q28. Have you been exposed to oil in any of the following ways:

□ Yes □ No □ DK □ Refused
if yes: □ Skin □ Inhalation □ Ingestion □ Other_____

Q29. Have other household members been exposed to oil in any of the following ways:

□ Yes □ No □ DK □ Refused
if yes: □ Skin □ Inhalation □ Ingestion □ Other_____

Q30. Did you work on any of the cleanup activities of the oil spill?

□ Yes □ No □ DK □ Refused

Q31. Did other household members work on any of the cleanup activities of the oil spill? □ Yes ***How many?***_____
□ No □ DK □ Refused

Q32. What is/are your main concern(s) at this time?

□ None □ DK □Refused

RED – BRFSS QUESTION (Core, Healthy Days, Depression, Anxiety, Social Context)

33. What forms of communication do you currently have available to communicate with family/friends?

□ Regular home telephones (land lines) □ Cell phones □ Email □ Facebook/social media □ Two-way radios

□ Other: _____ □ DK □ Refused

34. What would be your main method or way of getting information from authorities in a hurricane?

□ Television □ Radio □ Dial-up Internet □ Print media □ Neighbors □ High-speed internet □ Cell phones

□ Facebook/social media □ Other: _____ □ DK □ Refused

35. If public authorities announced a mandatory evacuation from your community due to a large-scale disaster or emergency, would you evacuate?

□ Yes **(SKIP TO 37)** □ No **(GO TO 36)** □ DK **(GO TO 36)** □ Refused **(GO TO 36)**

36. What would be the main reason you might not evacuate if asked to do so?

Read only if necessary:

□ Lack of transportation □ Lack of trust in public officials □ Concern about leaving property behind

□ Concern about personal safety □ Concern about family safety □ Concern about leaving pets

□ Concern about traffic jams and inability to get out □ Health problems (could not be moved)

□ Inconvenience/expense □ Other □ Don't know □ Refused

37. If you had to evacuate for a hurricane where would you go to stay until you could return home?

□ Would leave home for a safer structure in your area □ Stay with friends or family members outside of your area

□ Go to a public disaster shelter □ Sleep in a car or outdoors

□ Stay in a hotel or motel □ Would not leave home

□ Medical needs shelter □ Don't know □ Refused

38. Do you have pets? □ Yes □ No □ D/K □ Refused

39. If you were asked to evacuate, what would you do with your pets?

□ Take it/them with you □ Find a safe place for it/them □ leave behind with food and water

□ Would not evacuate because of pets □ Would not evacuate □ DK □ Refused