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Title of Proposal: Public Health Impact of Gulf Oil Spill: Phase II- Health Need Assessment Using CASPER Tools and Health Education

Period of Performance of Research:

Start: January 2011

End: December 31, 2011

Funding Request Level: $64,795 (including indirect cost of 46.5%)

Proposal Abstract:

In the first phase of the study on public health impact of Gulf oil spill, we had identified certain group of population among the residents of the three counties of Gulf Coast and Biloxi, MS (Harrison, Jackson, and Hancock) who reported having physical and mental health problems. They are mostly poor and don’t have health insurances (unpublished). It is important to assess it further if these health problems are a direct impact of the BP oil spills (incidence) or the residents continue having these problems for a long time (prevalence), and if the health risks are more so on a longer term. Secondly, we need to assess general health needs of the community, using a CDC-developed assessment guideline tool, called Community Assessment for Public Health Emergency Response (CASPER). Thirdly, based on the health needs, the community people will be given health education to prevent further health risk and referral and information for the management of any existing health problems.

Background:

Investigators have started knowing the health impact of oil spills in Gulf of Mexico, although they are mostly unknown, because the impact of the disaster could be chronic and long lasting. In the first phase, a team consisting of investigators from the Department of Community Health Sciences and Department of Social Works of the University of Southern Mississippi conducted a survey among 363 residents in the three counties of Harrison, Jackson, and Hancock in Gulf Coast and Biloxi, MS in October-November, 2010. In addition, the PI (AM) conducted a CDC-led two-day survey in August 2010 among the same population using a health assessment tool, called Community Assessment for Public Health Emergency Response (CASPER), developed by CDC. The residents expressed having some physical and, more importantly, some mental health problems. Most of the symptoms included headache, respiratory congestion, appetite loss and scratchy eyes (unpublished). Based on the information of the first phase, we intent to investigate it further if these self-identified health problems are linked with the recent BP oil spills (incidence) or they are chronic in nature that are existing before the Gulf oil spill (prevalence). Secondly, it is important to continue assessing the health risk and health needs over a longer period because of the nature of the health risk. Thirdly, depending on the health need assessments, community outreach activities will be undertaken to disseminate information on health impact of oil spills and provide health education for the prevention of the health risks. Therefore, in the second phase, the study aims to: (1) Rapidly assess the present and potential health effects and basic needs for the population in GulfCoast and Biloxi, MS region, who are likely to be affected by Gulf oil spill. The proposed **epidemiological study and surveillance** will be conducted using a CDC-developed health assessment tool, known as CASPER; and (2) Encourage health promotion by conducting community-based **outreach** and providing **health education**.

Methodology:

This study will be conducted among the residents of three counties in Gulf Coast and Biloxi, MS who are most likely to be affected by the Gulf oil spill, namely Harrison, Jackson and Hancock counties. CDC has developed a Community Assessment for Public Health Emergency Response Toolkit (CASPER) (CDC, 2009), which is used for the assessment of health needs of the affected people following any type of disaster. In the early 1970s, field personnel pioneered the adaptation of traditional epidemiological techniques to simplified sampling techniques and disease surveillance methods (Henderson and Sundaresan 1982). In the 1980s, the National Academy of Sciences’ Advisory Committee on Health, Biomedical Research, and Development (ACHBRD) adopted the sampling techniques and surveillance methods used in the Expanded Program on Immunization (EPI) to provide reliable health information more quickly and at a lower cost (Bradt and Drummond, 2002). Based on these sampling techniques and surveillance methods, CDC developed the CASPER toolkit to design and implement epidemiologic investigation to assess the health status and basic needs of a population affected by natural or manmade disasters (CDC, 2009).

*The Sample Population*: Sampling will be done from residents of the three counties, namely Harrison, Jackson and Hancock of Gulf Coast and Biloxi, MS, in the south of I-10. The detailed information of the area will be obtained by using U.S. Census Bureau data which contains Census 2000 information at the block level. The cluster sampling methodology for the CASPER involves a two-stage sampling procedure. The first stage includes a sample of 30 clusters (census blocks) selected, with probability proportional to the estimated number of housing units. In the second stage, seven occupied housing units will be randomly selected in each of the 30 clusters for conducting interviews, with a total of 210 samples. To select the eligible housing units from sampled clusters, the following method will be used. First, the team members (two in each team) will make a complete list of housing units within the cluster. Then the team will select seven houses from the list by using a random number chart. One eligible household member (≥ 18 years of age) from the family will respond to questions. If more than one adult is present in the house, either can serve as the respondent. If the eligible household member(s) decline to participate, the team will move to the next house. However, a tracking form will be filled out for all eligible households (including those who refused to participate) which includes information on the access, type of dwelling, if door was answered or not, and interview completed, not finished and refusal (with reasons for not participation or incomplete information).

*The Questionnaire*: The team will use the same questionnaire used in CASPER (CDC, 2009). The questionnaire was already tested in a two-day survey in August 2010. It includes 34 questions which should take no more than 15 minutes to complete. The questionnaire includes information on the number and age of household members, race/ethnicity, annual income, and any changes in income after the disaster, any recent (30 days) or past (two week and six months) physical symptoms, any emotional or psychological symptoms before or after the oil spill, and any involvement of any members in the cleanup activities of the oil spill. A team of two members who has knowledge in health problems (students in Community Health Sciences, Nursing and Social Works) will conduct the interview. The interview team members will be trained prior to the survey. In order to include people with any language barriers (such as Spanish and Vietnamese), the study team will consist of at least two interviewers with adequate knowledge in speaking and understanding Spanish and Vietnamese, because a large Spanish-speaking (Mexican) and Vietnamese population live in the community. These interviewers also assisted in the phase I of the study.

*Referral*: If symptoms of any physical, mental, or emotional illnesses are suspected during the screening, the team will provide the household with a confidential referral form with a list of contact addresses. For physical health needs, the contact list includes Singing River Hospital, Memorial Hospital at Gulfport, health departments (Harrison, Jackson and Hancock county), several clinics (Biloxi Clinic, Pass Christian Mobile Unit, Saucier Clinic and Gulfport Clinic), and Department of Health contact number (Ann Carlock 228-863-1036). For behavioral health needs, the contact list includes Singing River Services, Gulf Coast Mental Health Center, and Department of Mental Health Helpline (1-877-210-8513).

*Community Outreach and Health Education*: The residents will be given a number of health education materials including (1) handouts on effects of human health from oil spills (http://www.time.com/time/health/article/0,8599,1999479,00.html?xid=rss-topstories), and management of traumatic stress (http://www.cdc.gov/niosh/topics/oilspillresponse/traumatic.html); (2) flyers on symptoms of exposure and preventive measures (http://www.cdc.gov/niosh/topics/OilSpillResponse/); (3) video clips on psychological impact of oil disaster on children and adults (http://www.childrenshealthfund.org/video/impact-oil-spill-children-gulf); and (4) Online self guides for psychological tests and assessments of mental health problems (http://www.healthyplace.com/psychological-tests/).

Health education materials will be distributed by several means: (1) disseminate during household visits by the survey teams of Department of Community Health Sciences and Department of Social Works; (2) display materials at public places, such as gas stations, grocery stores, schools, daycare centers, churches etc.; and (3) conduct 10 health fairs and distribute materials at health fairs.

*Planning Committee Meeting*: Investigators from the Department of Community Health Sciences and Department of Social Works will work closely to plan, organize surveys, provide training, manage any issues, and collect and analyze data. The team may also include any members from the community who work for the special racial/ethnic groups (e.g., Ms Kaitlin Troung for the Vietnamese community, 228-806-1384), and members from the Department of Mental Health and local health clinics and hospitals. The team will meet initially on a biweekly basis for the first four months. Once the study is in full gear, the team will meet as and when necessary to resolve any issues.

Milestones: Schedule and Timeline of Phase II: 12 months

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| **Activities** | **Timeline in Months** | | | | | | | | | | | |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Planning Committee Meeting |  |  |  |  |  |  |  |  |  |  |  |  |
| Select study area and households |  |  |  |  |  |  |  |  |  |  |  |  |
| Collect health information and assess health needs |  |  |  |  |  |  |  |  |  |  |  |  |
| Distribute health education materials |  |  |  |  |  |  |  |  |  |  |  |  |
| Health fairs |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze and report data |  |  |  |  |  |  |  |  |  |  |  |  |

References:

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Budget:

