



CEIEP UAB CENTER FOR EMERGING INFECTIONS AND EMERGENCY PREPAREDNESS

VOLUME 3, ISSUE 1

SPRING / SUMMER 2009

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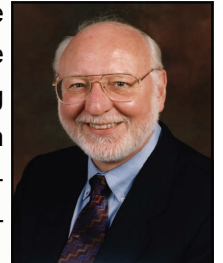
Comments from the CEIEP Co-directors

Dr. Rich Whitley



Although the CEIEP primarily focuses on issues related to biodefense and emergency preparedness, the center's mission also includes activities related to enhancing emergency medical care and clinical research. To that end, we are collaborating with UAB researchers that are

leading the NIH-funded Reasons for Geographic And Racial Differences in Stroke (REGARDS) study, which aims to determine why the "stroke belt" has a stroke death rate one-and-a-half times the national average. Our partnership with REGARDS investigators will involve an ancillary study to determine the risk factors for sepsis onset and death in the REGARDS cohort. Sepsis is a systemic inflammatory response to microbial infection and poses a major public health problem, afflicting over 750,000 hospitalized US patients and over 570,000 Emergency Department patients annually. Among REGARDS participants, we will identify sepsis occurrence or sepsis-related 30-day death in order to study the clinical and sociodemographic factors associated with sepsis onset or death. If we could identify the individuals at greatest risk for developing sepsis, we could reduce the severity of illness and risk of death. We're currently gathering pilot data and preparing for an RO1 submission this fall. We're very excited about this promising area of study and look forward to reporting future achievements.



Last month's WHO decision to raise the pandemic level from Phase 5 to 6 is the latest chapter in the rapidly evolving 2009 H1N1 influenza story. It began in the middle of April 2009, when the Mexican Ministry of Health received notification of clusters of rapidly progressive, severe pneumonia occurring in metropolitan Mexico City and an outlying province. Subsequently, during the week of April 22nd, two children in the United States were confirmed to have novel influenza A H1N1 that was followed by several other confirmed cases across the United States. This influenza strain represents a resort virus that originated in swine and was initially called swine influenza. With the assistance of investigators from the Centers for Disease Control and the Canadian Health Ministries, a novel real-time reverse transcription polymerase chain reaction assay was developed for confirmation of cases globally. By June 5, 2009, 13,217 cases of confirmed illness were identified in the United States, accounting for 27 deaths. In Alabama alone, there were 94 cases, but, fortunately, no deaths. In Mexico, there have been 5,337 confirmed cases with 97 deaths. To date, 42% of patients were aged less than 15 years, 32% were 15-29 years, 24% were 30-59 years, and 2% were greater than 60 years. Importantly, 56% of the deaths occurred in the age range between 30 and 59 years and 27% occurred in individuals 15-29 years of age. Of those succumbing to infection, deaths were divided equally between men and women. While the WHO has declared a pandemic, it is important to keep in mind that illness severity with novel H1N1 is relatively mild.

Several observations have been forthcoming from the data currently available. These observations are discussed on the next page (see: Observations from H1N1 Data).

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Observations from H1N1 Data	H1N1 FAQs from WHO
<p>As previously mentioned, several observations have been forthcoming from the data currently available. First, the epidemiology of the infection remains poorly defined. Disease occurrence in the Southern Hemisphere, as presently is the case, particularly Australia, will further identify the natural history and progression of infection in different patient populations as well as risk factors for severe and even life-threatening disease. Such information will be exceedingly important for assessing the potential impact of novel H1N1 this coming fall in the Northern Hemisphere.</p> <p>Second, because significant disease has not occurred in older individuals, there is an implication that prior exposure to a similar novel H1N1 (swine influenza 1976) may provide a degree of protection.</p> <p>Third, the current circulating strains of novel H1N1 remain susceptible to the neuraminidase inhibitors (oseltamivir and zanamivir); thus, providing a therapeutic intervention that, at the current time, is efficacious. However, concern exists for the potential development of resistance to the most commonly used neuraminidase inhibitor, oseltamivir (Tamiflu) as has occurred with seasonal influenza A H1N1 that circulated through the US this past winter.</p> <p>Fourth now that the World Health Organization has declared this novel H1N1 strain as the cause of a pandemic, it intensifies the actions of the Centers for Disease Control and Prevention, local health authorities and UAB to monitor and test preparedness plans. The current Administration, including the new Director of the CDC (Tom Frieden), considers pandemic preparedness to be of the highest priority.</p> <p>While many lay-press columnists have considered the public health efforts devoted to novel H1N1 in the United States during the past 2 months to be excessive, it has provided a template for true pandemic testing both nationwide and at UAB. In fact, UAB had a real-time test of its existing plan designed last year by the Campus Pandemic Influenza Planning Committee (CPIPC) which has coordinated efforts with the CEIEP sponsored task force over the past 3 years. The efforts that were invested by the local, state and national public health officials in pandemic preparedness have been, unequivocally, excellent. Such efforts are mandatory if we are to prepare ourselves for the potentially heightened pandemic situation that many people anticipate for this fall.</p>	<p>The following FAQs were released very recently by the World Health Organization following the declaration of pandemic phase 6 for novel H1N1 influenza:</p> <ul style="list-style-type: none"> • <i>What do the WHO phases mean?</i> The WHO phases are based on the geographical spread of a novel influenza virus. As “pandemic” means worldwide epidemic, a WHO Phase 6 means that the virus is spreading across the globe. What the WHO phases do NOT do is predict the severity of the virus. • <i>Does WHO's change to Phase 6 mean the virus is more severe?</i> No. It is important to understand that this change is based on the geographic spread of the virus to other parts of the world and does not necessarily reflect any change in the severity of the virus or associated illness.
	<h3>Preparedness Exercises by CEIEP Partners</h3>
	<p>UAB's South Central Center for Public Health Preparedness (SCCPHP) recently conducted a full-scale exercise to practice the opening and operations of a point of dispensing (POD) site at Bartow Arena. The exercise simulated an intentional Anthrax release to test our university's capacity to request and receive supplies from the Strategic National Stockpile and distribute prophylaxis via the UAB-based POD. The exercise also tested the abilities of POD staff to appropriately administer prophylaxis and identify procedural difficulties. The CEIEP congratulates the SCCPHP on conducting a successful exercise which improved UAB's emergency preparedness and response capacity. The SCCPHP's upcoming newsletter will present additional details about the exercise, including recommendations for enhancing POD-functionality. The next issue of the SCCPHP newsletter will be posted to the URL below in the weeks ahead.</p> <p style="text-align: center;">www.southcentralpartnership.org</p> <p>In addition to local exercises, the Southeast Center for Emerging Biologic Threats (SECEBT) will be conducting an Inaugural Southeast Region Tabletop Exercise to be held on June 24-25, 2009 at the Emory Conference Center in Atlanta. Goals of the conference include identifying and alleviating gaps in existing plans as well as issues arising from multi-state outbreaks in the Southeast. The meeting will also examine the unique contributions that academic institutions can make to outbreak investigation and control. Exercise participants (by invitation only) will include members of the academic community, state health officials, laboratory directors, state and public health veterinarians, and members of various federal organizations.</p>

Recent Findings from PACER Research

PACER



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During the past three years, the UAB CEIEP and Survey Research Unit (SRU) have participated in the Dept. of Homeland Security's National Center for the Study of Preparedness And Catastrophic Events Preparedness (PACER). The mission of PACER is to improve the nation's preparedness and the ability to respond in the event of a high consequence disaster to alleviate the event's effects by developing and disseminating best scientific practices (www.pacercenter.org). The CEIEP and SRU were funded by PACER to assess the roles and capabilities of non-governmental and voluntary organizations (NVOs) that routinely prepare for and respond to disasters. NVOs have recently received increased recognition for the critical emergency management services they provide, and the government has recommended that efforts be made to better integrate these organizations into the formal emergency response structure. Despite the increased recognition and calls for improved integration, many NVOs still face obstacles that impede service delivery and effective multi-agency partnering. We aimed to address these shortcomings by assessing the organizational characteristics, emergency management capabilities, and limitations of NVOs. Quantifying the preparedness and response capabilities of NVOs will help us improve the emergency management community's understanding of the immense potential surge capacity available within NVO-networks. We also identified recommendations for improving multi-agency disaster planning and recovery in an effort to stimulate strategy development for overcoming NVO limitations. Prior to this research, there was little to no scientific information available that quantified the limitations and qualifications of NVOs.

Our three-year study period is almost complete. During years one and two, we conducted a literature review and 13 focus groups with 33 NVO-leaders to better understand routine and model performance capabilities. Literature review and focus group findings were then used to create a Web-based questionnaire capable of measuring NVO performance capacity. We recruited 477 potential study participants in our final project year and achieved a 26% response rate, which consisted of 80 (65%) community-based organizations and 45 (36%) faith-based organizations. Data collection ended very recently and we are currently analyzing results. With that in mind, we are pleased to share the findings below which reflect the extent to which NVOs maintain certain capabilities that reliably improve service delivery and response partnering.

- 78% have written emergency operations plans and 59% have written continuity of operations plans.
- 79% aid in joint planning efforts by participating on local emergency planning committees.
- 76% recruit dependable volunteers with general and unique skill sets.
- 15% fund completion of certificate-based training by staff and volunteers.
- 57% provide on-the-spot or just-in-time training to spontaneous volunteers following disasters.
- 93% utilize land-line communications for emergency management purposes, 90% utilize cellular equipment, 49% use text messaging, 94% use e-mail, 22% use two-way radios, and 26% rely on "ham (amateur) radios.
- 18% employ a public information officer with training in crisis and risk communication.
- 50% provide learning opportunities to the public to raise awareness about disasters and how to plan for them.
- 51% maintain mutual aid agreements with government partners to ensure optimal response coordination.
- 32% measure client satisfaction regarding the quality of relief services provided to disaster survivors and 75% work with partners to evaluate joint response operations.

In the weeks ahead we will calculate composite scores of overall performance for individual areas of performance (e.g., disaster planning, community advocacy and education, response and recovery services) to identify system-wide strengths and limitations. We will also explore participants' comments regarding barriers to effective multi-agency planning and response, and recommendations for overcoming these barriers (examples are presented on the following page). Ideally, the US Department of Homeland Security will use these findings to develop strategies that address NVO performance limitations and integration barriers.

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SERCEB Updates	CEIEP Student Researcher Accepted to UAB Emergency Medicine Residency
<p>The annual meeting for the Southeast Regional Center of Excellence in Emerging Infections and Biodefense (SERCEB) was held in Chapel Hill, NC on May 19-21, 2009. The meeting focused on a review of both new and ongoing projects funded by the recent NIAID award which followed last year's recompetition. Projects currently funded at UAB include a monoclonal antibody core directed by Mary Ann Accavitt-Loper, PhD and research on influenza led by Ming Luo, PhD. In addition, SERCEB plans to announce funding opportunities periodically for both career development and other pilot awards throughout the 5 year grant period. For more information, see the website at www.serceb.org.</p>	<p>Last year the CEIEP hired Raymond Maguire as a student researcher to explore differences in the rates of influenza vaccination by UAB students and employees, including the individual and environmental factors (e.g., age, prior vaccine experience, knowledge, risk perceptions, convenient access and health care provider recommendation) that affected uptake. At the time, Raymond had nearly completed his fourth year of medical school at UNC-Chapel Hill. The CEIEP would like to congratulate Dr. Maguire for being selected to the Dept. of Emergency Medicine's residency program which began this week. We are also pleased to report that Dr. Maguire will submit his vaccine study manuscript later this month for publication in a peer-reviewed journal.</p>

Recent Findings from PACER Research (continued)

Disaster response begins with preparedness across a spectrum of groups, from individuals and businesses, to government and NVOs. Timely recovery from disasters requires joint efforts by multiple response organizations that work together to help affected individuals and communities. Government response agencies (GRAs) and NVOs both play important roles in this process and may work side-by-side, but many factors frequently impede effective collaboration. As a result of our PACER research, we identified various barriers to effective partnering and recommendations for overcoming these obstacles. Examples of barriers and solutions are listed below.

Barriers

(a) Limited government understanding of NVO roles, capabilities and resources; (b) Limited multi-agency communication and coordination; (c) NVOs aren't offered "a seat at the table" during disaster planning efforts, (d) NVOs perceive some EMAs are not interested in expanding partnerships to NVOs; and (e) NVOs experience difficulty finding adequate resources to maintain long-term case managers

Recommendations

(a) Routine multi-agency disaster exercises; (b) Improved recognition and integration of NVO roles into the National Response Plan; (c) Training across EM systems addressing response partners' roles; (d) Better coordination between GRAs during response and recovery phases; and (e) FEMA's Voluntary Agency Liaisons should be placed at every level of government; and (f) FEMA should fund case mgt. services under Stafford Act similar to Crisis Counseling Program funding so NVOs have adequate resources to maintain long-term case managers.

We will argue in future publications that these problems/ solutions must be further explored to enhance the ability of NVOs to deliver effective services, and to facilitate a better culture for disaster planning and recovery between NVOs and GRAs.

CEIEP MISSION

The CEIEP will enhance the core areas of basic / fundamental research, translational research, clinical research, population and behavioral research, computer modeling and simulation, as well as training and education surrounding bio-defense, emerging infections, emergency medical care, and public health disaster preparedness in Alabama and across the world.

CEIEP VISION

The CEIEP envisions partnership among UAB faculty who are interested in pursuing education and research opportunities in the realm of emerging infections and emergency preparedness. In addition, the CEIEP plans to initiate discussions regarding collaboration with external partners such as local, state, and federal agencies, universities, community-based organizations, and the private sector to develop research and training programs.

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