

December 2008

Table of Contents

Page 1. Earthquake Risk
 Page 2. Earthquake Before/During/After
 Page 3. Earthquake Impact Potential
 Page 4. Earthquake Impact Map
 Page 5. Fatality Management
 Page 6. Hazard Vulnerability Analysis
 District 5 update
 IN Learning Management System

New Madrid and Wabash Valley Seismic Zone

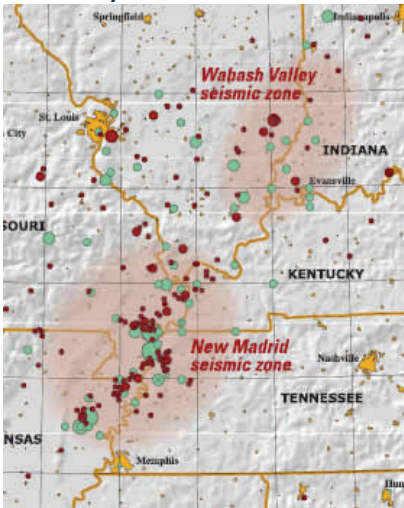


Image from Geology.com
 accessible at: geology.com/news/labels/Earthquakes.html

IPHCA Emergency Management Communicator

Earthquake Preparedness: Understanding the Risk

The New Madrid Fault was the site of the most devastating earthquake to occur in the United States since European settlers arrived. The effects of the series of earthquakes that took place from 1811-1812 were felt as far away as New Hampshire, even causing church bells to ring in Washington, D. C. The series of earthquakes caused islands to disappear and the Mississippi River to change its course. The only thing that kept this from causing greater numbers of fatalities was the lack of significant population in the region at the time of the earthquakes.

The New Madrid Seismic Zone, located in the northeast corner of Tennessee, the northwest corner of Alabama and the southeast corner of Missouri is not the only seismic zone that could affect Indiana. The Wabash Valley Seismic Zone is located in the southeast corner of Illinois bordering Indiana.

A recent study by the Mid-America Earthquake Center shows the possibilities of earthquakes occurring in Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee. Each of the scenarios are detailed including two separate ones for Indiana; one occurring in the New Madrid Seismic Zone and the other in the Wabash Valley Seismic Zone. Both of the studies involve eleven Indiana counties, which are:

- Daviess
- Dubois
- Gibson
- Greene
- Knox
- Pike
- Posey
- Spencer
- Sullivan
- Vanderburgh
- Warrick

Each scenario differs in its impact to Indiana. The New Madrid scenario would result in less damage and loss of life and would be mainly felt by the eleven counties listed above. The Wabash Valley scenario would incur greater damage to facilities and would affect surrounding counties, such as: Perry, Crawford, Orange, Lawrence, Martin, Monroe, Owen, Clay, Vigo and others. For more information, please follow the link to the study below.

During Earthquakes: Drop, Cover, and Hold On!



Images from:

<http://www.earthquakecountry.info/dropcoverholdon/>

Earthquake : Before

There are steps that can be taken beforehand to help reduce the harmful impacts of earthquakes. A detailed list can be found in the IPHCA Earthquake Standard Operating Procedure. Here are a few suggestions:

- Secure all shelves, furniture, file cabinets, tool racks and the like firmly to wall studs.
- Secure water heaters by strapping to wall studs or on stands bolted to floor.
- Hang heavy items such as artwork, displays, bulletin boards and calendar boards away from where people may sit, such as in waiting rooms.
- Ensure fire suppression systems are maintained in good condition.
- Store breakable items such as glassware in closed cabinets with latches and secure items in display cases with “earthquake putty”.
- Place large or heavy objects on lower shelves whenever possible.
- Install earthquake shutoff valves for water, gas and steam distribution systems.

Earthquake : During

The majority of injuries are caused from falling debris. In order to safeguard oneself the “Drop, Cover and Hold On” method should be used during the quake. Some other considerations include:

- If at home, avoid windows and objects that could fall. If possible, get under a sturdy table, desk, or bed.
- If in a public building, avoid stairways and elevators and don’t run for exits. Get under a desk or table and avoid outside walls, especially glass walls.
- If outside, move away from anything that might fall on you, especially debris from buildings such as glass or bricks.
- If driving in a car, avoid bridges and overpasses. Turn on the radio for emergency broadcasts.

Earthquake : After

Be aware of your environment since hazards may exist that were not there prior to the quake. Other considerations include:

- Evacuate the immediate surroundings and move away from any immediate hazards.
- Check for injuries to others and provide assistance as needed.
- Check for and extinguish fires, and check for and correct conditions, such as spilled gasoline, that could lead to a fire.
- Check appliances and gas, electric, and water lines for damage, and shut off utilities that are damaged.
- If outside, watch out for downed power lines.
- Use the telephone only for emergencies.
- Be prepared for aftershocks.

Earthquake: Possible impact to the CHC

Using the information gathered from the study conducted by the Mid-America Earthquake Center the following graphs indicate the number of casualties and fatalities that could be expected in both the New Madrid and Wabash Valley scenarios. Those affected will need care and many will need the assistance of shelters. Conditions will determine the location of the shelters.

New Madrid Seismic Zone Event Shelter Requirements for the State of Indiana

Displaced and Shelter Seeking Population			
	Total Population	Displaced Population	Shelter Seeking Population
11 Critical Counties	480,752	52	13
Remaining Counties	5,599,733	6	1
Total State	6,080,485	58	14

New Madrid Seismic Zone Event Casualties for the State of Indiana

Worst Case Casualties (5:00 PM)					
Severity Level	Level 1 (Green)	Level 2 (Yellow)	Level 3 (Red)	Level 4 (Black)	Total
11 Critical Counties	57	12	12	2	83
Other Remaining Counties	53	4	4	1	62
Total State	110	16	16	3	145

Wabash Valley Seismic Zone Event Shelter Requirements for the State of Indiana

Displaced and Shelter Seeking Population			
	Total Population	Displaced Population	Shelter Seeking Population
11 Critical Counties	480,752	26,721	6,815
Remaining Counties	5,599,733	899	212
Total State	6,080,485	27,620	7,027

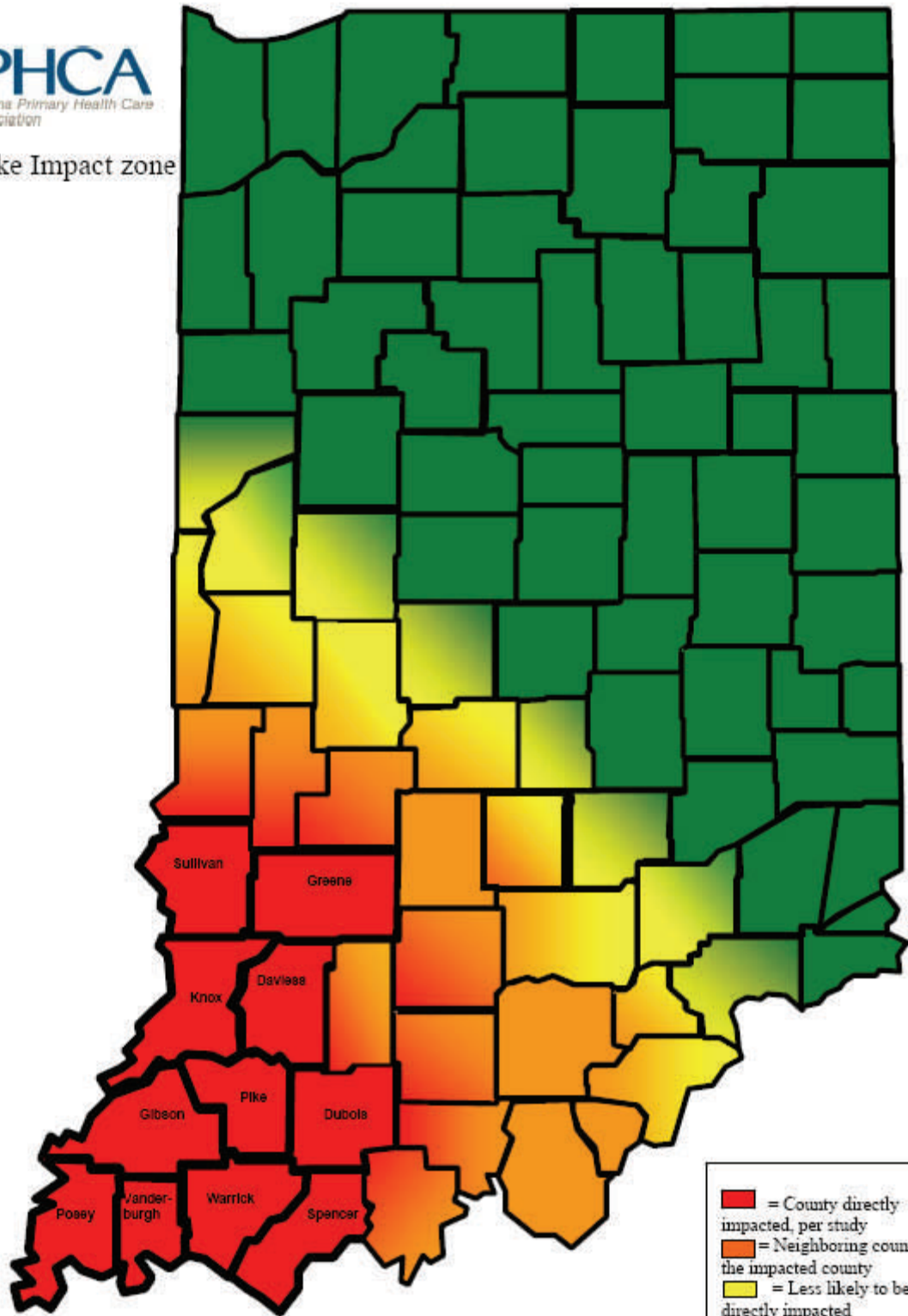
Wabash Valley Seismic Zone Event Casualties for the State of Indiana

Worst Case Casualties (2:00 AM)					
Severity Level	Level 1 (Green)	Level 2 (Yellow)	Level 3 (Red)	Level 4 (Black)	Total
11 Critical Counties	2,012	572	64	118	2,766
Other Remaining Counties	193	24	1	3	221
Total State	2,205	596	65	121	2,987

References/Suggested Resources:

- US Geological Survey. *Historic Earthquakes*. Available at: <http://earthquake.usgs.gov/regional/states/events/1811-1812.php> Accessed: December 30, 2008.
- Indiana Geological Survey. *Earthquakes in Indiana*. Available at: <http://igs.indiana.edu/earthquakes/EarthquakeBrochure.pdf> Accessed: December 19, 2008
- Mid-America Earthquake Center at the University of Illinois. *Impact of Earthquakes on the Central USA*. Available at: <http://mae.ce.uiuc.edu/>. Accessed 11/20/08.
- QuakeSmart. *Your Business, your investment, your choice*. Available at: <http://www.quakesmart.org/>. Accessed 12/18/2008.
- Earthquake Country. *Protect Yourself During an Earthquake*. Available at: <http://www.earthquakecountry.info/dropcoverholdon/>. Accessed 12/19/08.
- Institute for Business and Home Safety. *Is Your Home Protected from Earthquake Disaster?* Available at: http://www.disastersafety.org/resource/resmgr/pdfs/eq_guide.pdf
- Central United States Earthquake Consortium. <http://www.cusec.org/>

Earthquake Impact zone



- = County directly impacted, per study
- = Neighboring county to the impacted county
- = Less likely to be directly impacted
- = Minimal direct impact

Fatality Management

Work continues on fatality management plans throughout Indiana. Any hospitals who receive funding through the Hospital Preparedness Program are to have completed fatality management plans prior to 08/08/09. As such, this is a topic that will continue to progress throughout the year.

The existing plan that was published in June 2008 referencing county mass fatalities, specifically pertaining to pandemic influenza, can be found at http://www.in.gov/dhs/files/Pan_Flu_Mass_Fatality_Mtg_Schedule_Guide.pdf.

Work with the county coroner’s offices to develop adequate plans continues. Information regarding the status of the plans will be coming as the plans develop further.

Some suggestions for CHCs to participate in this topic include; developing internal plans, meeting with local emergency management or public health officials to participate in plan development and participating in training or exercises that involve mass fatality events.

Various Roles in Fatality Management

Disaster Mortuary Operational Response Team (DMORT)

- temporary morgue facilities
- victim identification
- forensic dental pathology
- forensic anthropology methods
- processing
- preparation
- disposition of remains

Coroner

- Process and prioritize requests for additional resources regarding disposition of remains
- Request the activation of the Indiana Funeral Directors and Coroners Disaster Team through the EOC, as needed
- Implement county Mass Fatality Plan
- Provide coordination between morgue and funeral directors to assist in the timely processing of remains
- Determine the location of a temporary morgue and activate
- Coordinate information regarding fatalities with the Red Cross through the EOC
- Coordinate with search and rescue teams
- Determine causes of death
- Identify mass burial sites
- Protect the property and personal effects of the deceased
- Provide emergency information through the PIO to the news media on the number of deaths, morgue operations, etc., as appropriate
- Coordinate services of funeral directors, ambulances, EMS, and other pathologists; the Red Cross for location and notification of relatives; dentist and X-ray technicians for purpose of identification; and law enforcement for security, property collections, and evidence collection.

Potential Roles of CHCs

- Support/provision of on-site healthcare to survivors, responders, etc.
- Use of CHC facility or resources for support of mass fatality management team
- Mental health services to responders, survivors, local community post – mass fatality incident
- Translation services for non-English speaking survivors, families, others
- Social work service support to survivors, families, others
- Liaison/supportive services on behalf of those representing diverse cultures, religions, etc.
- Administrative support to mass fatality management team
- Dental, laboratory, X-ray support for initial local mass fatality management team

References & Resources

Mass Fatality Incidents: A Guide for Human Forensic Identification <http://www.ojp.usdoj.gov/nij/pubs-sum/199758.htm>
 Lessons Learned From 9/11: DNA Identification in Mass Fatality Incidents. <http://www.ncjrs.gov/pdffiles1/nij/214781.pdf>
 County Mass Fatality Planning Services. http://www.in.gov/dhs/files/Pan_Flu_Mass_Fatality_Mtg_Schedule_Guide.pdf
 Mass Fatality Management for CHCs. http://www.indianapca.org/programs/emerg_links.html
 HMTRI Online Resource Center. http://www.hmtri.org/library/mass_fatalities.htm



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For questions or comments, or to schedule a site visit for help in implementing emergency preparedness activities, please contact Jenifer Nelson.

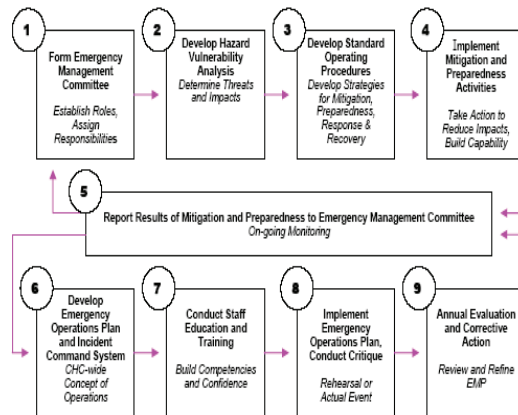
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Hazard Vulnerability Analysis (HVA)

The HVA is the second step in the 9-step emergency management plan development process, which can be found on the IPHCA website at the site listed below.

Preparing an HVA is best done with the Emergency Management Committee so that more than one perspective is available when considering the probability and impact of the various hazards that could possibly impact business operations. It is best to have someone on the committee who is familiar with the history of the location to take into account hazards that have already occurred and would be likely to happen again.

There is an instruction sheet on the preparation of the HVA as well as a step-by-step guide to assist with the preparation of the form.



HVA template and instructions are available on the IPHCA website at: http://www.indianapca.org/programs/plans_templates.html

District 5 Update

IPHCA participated in the District 5 surge preparedness grant funded through the Assistant Secretary for Preparedness and Response (ASPR) that was managed through the Health & Hospital Corporation's Managed Emergency Surge for Healthcare (MESH).

Please review the new section on the website devoted to news and updates at the various districts for more information.

Indiana Learning Management System Update

The Indiana Learning Management System (LMS) has been unavailable since August. The Indiana State Department of Health has formed a committee to determine requirements and procure a replacement LMS mechanism. IPHCA is participating on the committee for this acquisition.

Thus far the requirements have been gathered, reviewed and prioritized. Some initial work has been done to locate other systems that might be viable, but thorough review of the systems has not taken place. As this project continues IPHCA will provide updates.