

Public Health Views... and News

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A Crazy Little Thing Called “MEMS”

**(Modular Emergency Medical
System)**

**By Jim Cook, Emergency
Preparedness Coordinator for the
Community Health Agency**

Along about 1998 the Department of Defense Domestic Preparedness Program decided that they needed a new concept on how to treat mass casualties away from the standard medical treatment facilities (hospitals). Out of these studies MEMS was born. The Modular Emergency Medical System (MEMS) is based on the rapid organization of a community's medical assets into two types of expandable patient care modules, the ACC (Acute Care Center) and the (NEHC) Neighborhood Emergency Help Center. This strategy also establishes the framework from which outside disaster medical resources can effectively augment local medical response efforts. A network of “modules” integrated with an aggressive community outreach effort will better mitigate the effects of bioterrorism by easing the burden on a community's major medical facilities and enhancing the

community's capability to care for large numbers of casualties. Although the MEMS is designed specifically to manage the consequences of a bioterrorist incident, it has applications for other catastrophic medical events.

The ACC is designed to treat patients who need inpatient treatment but do not require mechanical ventilation and those who are likely to die from an illness resulting from an agent of biological terrorism. Patients who require advanced life support (ALS) such as provided by intensive or critical care units will receive priority for hospital admission rather than admission to the ACC. Restricting the type of patients treated at ACC's serves two purposes. First, it allows a streamlined approach to patient care, as most patients will require similar treatment following pre-established critical pathways or clinical practice guidelines. Second, in situations where isolation is desirable but impractical, this plan groups patients with similar infections/exposures. This limits exposure of non-infected persons, a practice recommended by the Association for

Professionals in Infection Control and Epidemiology Inc. (APIC) and the Centers for Disease Control and Prevention (CDC). The direction and control of ACC's is primarily the purview of the area hospitals and their Medical Control. The Branch-Hillsdale-St. Joseph Community Health Agency is currently working with area hospitals to assist them in their MEMS (ACC) planning.

The mission of the NEHC is to direct casualties, especially non-critical and asymptomatic, potentially exposed patients, away from the Emergency Departments, allowing hospitals to continue to remain open in some capacity. In addition, the NEHC will render basic medical evaluation and triage while also providing limited treatment including the stabilization and distribution of prophylaxis, medication, self-help information, and instruction. The direction and control of NEHC's is primarily the responsibility of the Local Health Department and its Health Officer.

In a mass casualty event such as a tornado, building collapse, or large vehicular incident. The NEHC can be used to treat minor injuries, or the walking wounded. This will free up the hospitals to treat those more critical. Traditionally Public Health Nurses, while trained in the basic arts, have not practiced the treatment skills outlined in the mission requirements in many years. It is envisioned that Public Health will solicit volunteer doctors and nurses to augment our staff in the event that we are required to activate an NEHC.



This type of NEHC was set up on May 26, 2005 at the Sindecuse Medical Clinic on the campus of Western Michigan University. The Region 5 Regional Medical Response Coalition MEMS Committee planned and executed this drill in conjunction with the University. Large medical clinics such as this are ideal locations for an NEHC as they possess the equipment and staff necessary for this type of operation. Unfortunately many of our rural counties lack these types of facilities, making the locating of an NEHC more difficult.

During a Bioterrorism, event an NEHC may take on the guise of a clinic to dispense vaccination or prophylaxis to a specific or general population. The Branch-Hillsdale-St. Joseph Community Health Agency has plans already in place to handle such events.

On April 30, 2005 Livingston County hosted a large disaster drill (explosion and the distribution of Plague) involving many of the medical resources from District 1 (Livingston, Ingham, Jackson, Hillsdale, Shiawassie, Clinton, Gratiot, and Lenawee counties). During the exercise both an ACC and an NEHC were assembled at Howell High School. Members of the Livingston County Health Department along with volunteers from health departments in District 1 opened an NEHC dispensing clinic which was quite successful.

For more information please contact your Public Health Emergency Preparedness Coordinator or on the web

www.hrsa.gov
or
www.hrsa.gov/bioterrorism/resources/nehc_green_book.htm

Jeff Phillips, M.D.
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Two new Vaccines

The FDA has recently approved a conjugated meningococcal vaccine produced by Sanofis Pasteur - Menactra™ (MCV4). This is approved for persons 11 to 55 years of age. The ACIP recommends routine vaccination of all children at a preadolescent well child exam before 6th grade (age 11 - 12). For children not previously vaccinated at ages 11-12, ACIP recommends vaccination before high school entry (age 15). College freshmen who will be living in dormitories should also be vaccinated. This conjugated vaccine is significantly more immunogenic and is expected to confer long-lasting immunity. The current meningococcal vaccine Menomune (MPSV4) should be given to persons at risk 2 -10 years of age and for those older than 55.

On June 10, 2005, the FDA approved another vaccine that may replace the adult Td booster. This new vaccine also contains acellular pertussis (ap) and is marketed by Sanofi Pasteur (Canada) as Adacel™ (Tdap). The vaccine may be given to persons aged 11 to 64 and is the first pertussis booster approved for use in adults. The addition of pertussis will help prevent spread of pertussis from adolescents and adults whose childhood immunity has waned, to vulnerable infants and children in the home who have not been completely vaccinated with DTap. The majority of severe pertussis cases and deaths occur in infants < 1 year of age. In clinical trials Adacel™ and Td

were compared for safety. In adolescents, injection site pain and low grade fever were more common among Adacel™ recipients. There was no difference in adverse reactions observed in adults studied. The AAP/ACIP and CDC official recommendation is pending as of June 2005.

West Nile Virus – Some Questions and Answers

Experts believe West Nile Virus (WNV) is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. The following Q & A contains important information that can help you recognize and prevent West Nile virus.



What Can I Do to Prevent WNV?

The easiest and best way to avoid WNV is to prevent mosquito bites.

- When you are outdoors, use insect repellents containing DEET (N, N-diethyl-meta-toluamide). Follow the directions on the package.
- Many mosquitoes are most active at dusk and dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors during these hours. Light-colored clothing can help you see mosquitoes that land on you.
- Make sure you have good screens on your windows and doors to keep mosquitoes out.

- Get rid of mosquito breeding sites by emptying standing water from flower pots, buckets and barrels. Change the water in pet dishes and replace the water in bird baths weekly. Keep children's wading pools empty and on their sides when they aren't being used.

What Are the Symptoms of WNV?

WNV affects the central nervous system. Symptoms vary.

- **Serious Symptoms in a Few People.** About one in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.
- **Milder Symptoms in Some People.** Up to 20 percent of the people who become infected will display symptoms which can include fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have been sick for several weeks.
- **No Symptoms in Most People.** Approximately 80 percent of people

(about 4 out of 5) who are infected with WNV will not show any symptoms at all.

How Does West Nile Virus Spread?

- **Infected Mosquitoes.** Most often, WNV is spread by the bite of an infected mosquito. Mosquitoes are WNV carriers that become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite.
- **Transfusions, Transplants, and Mother-to-Child.** In a very small number of cases, WNV also has been spread through blood transfusions, organ transplants, breastfeeding and even during pregnancy from mother to baby.

How Soon Do Infected People Get Sick?

People typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito.

How Is WNV Infection Treated?

There is no specific treatment for WNV infection. In cases with milder symptoms, people experience symptoms such as fever and aches that pass on their own. In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing and nursing care.

What Should I Do if I Think I Have WNV?

Milder WNV illness improves on

its own, and people do not necessarily need to seek medical attention for this infection though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately. Severe WNV illness usually requires hospitalization. Pregnant women and nursing mothers are encouraged to talk to their doctor if they develop symptoms that could be WNV.

What Is the Risk of Getting Sick from WNV?

People over 50 at higher risk to get sick. People over the age of 50 are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites.

Risk through medical procedures is very low. All donated blood is checked for WNV before being used. The risk of getting WNV through blood transfusions and organ transplants is very small, and should not prevent people who need surgery from having it. If you have concerns, talk to your doctor.

For more information about these and other environmental health concerns, visit our web site at www.bhsj.org

The Yellow Book – (Not the one you think)

The new edition of the "Yellow Book", the Centers for Disease Control and Prevention's (CDC) definitive guide on healthy travel, is now available for the first time to health



professionals and travelers through bookstores nationwide and online booksellers. The Yellow Book, which is named for its traditionally yellow cover and is officially titled "Health Information for International Travel," serves as guide for vital pre-travel healthcare recommendations and essential information about health risks abroad. It is a resource for travel medicine specialists as well as primary healthcare providers who need to provide travel advice. The book also offers vaccination and medication information for disease risks by destination as well as helpful health hints for cruise ship travel, international adoptions, and a wide range of common travel problems.

New health topics in this year's edition include:

- Changes in vaccine recommendations for travelers
- Updated country by country malaria prevention information
- Valuable advice on potential travel hazards such as natural disasters, animals, swimming, food and drink, altitude and motion sickness, sunburn and more
- Information on the special needs of travelers - from infants to nursing mothers to the elderly
- Recommendations for recent U.S. immigrants returning home to visit friends and family

A companion web site that lets travelers look up specific information by travel destination and view or print custom reports based on individual travel plans is also available at <http://www.cdc.gov/travel/yb/>.

It is available at bookstores, through Internet book sellers or by contacting Elsevier Book Order Fulfillment at 1-800-545-2522

Upcoming Web cast on Immunizations, July 28, 2005

This live satellite broadcast and web cast will provide up-to-date information on the rapidly changing field of immunization. Anticipated topics include new recommendations for influenza vaccine and an update of the influenza vaccine supply, meningococcal conjugate vaccine, acellular pertussis vaccine for adolescents, and revised varicella vaccine recommendations. The 2.5-hour broadcast will occur live from 9:00 to 11:30 am. And from noon-2:30 pm. Both broadcasts will feature a live question-and-answer session in which participants nationwide can interact with the course instructors via toll-free telephone lines. More information about this broadcast is available online at:



<http://www.phppo.cdc.gov/PHTN/immup2005/default.asp> or by calling the Branch-Hillsdale-St. Joseph Community Health Agency Health Promotion Division at 517-279-9561 x144

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