FY18 Epi-Tech Surveillance Training

Sunday, October 01, 2017 - Sunday, September 30, 2018
DCS, APG, MD

Provided By
U.S. Army Medical Command

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Course Director</th>
<th>CME Planner</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-1636</td>
<td>John Ambrose</td>
<td>Mimi C. Eng</td>
</tr>
</tbody>
</table>

Accreditation Statement
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of U.S. Army Medical Command and ARMY PUBLIC HEALTH CENTER. The U.S. Army Medical Command is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation
The U.S. Army Medical Command designates this Live Activity for a maximum of 5 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
Statement of Need/Gap Analysis
The purpose of this CME activity is to address the identified gap(s):
1. Surveillance techniques - Surveillance of common communicable diseases continues to be a problem among local MTFs. In fact, cases of campylobacter were not investigated in 2015 for PACOM MTFS, while 2016 cases of salmonella were not investigated. Civilian public health agencies are required to conduct investigations into all reportable medical events. However, DoD facilities often do not take initiative to conduct this investigation.
2. Disease identification - verification of disease by established case definitions have been utilized by the local health departments, Centers for Disease Control and Prevention, World Health Organization, and the Department of Defense. With the every changing list of reportable medical events and new emerging infections, case definitions change rapidly. Army epidemiologist conduct verification studies that monitor the efficiency of reporting by local public health experts and have concluded that completeness percentages for reportable medical events range as low as 35% for select diseases.
3. Outbreak reporting - Recent evidence have demonstrated that outbreak reporting and communication between public health agencies is poor. In fact, the Army failed to report six outbreaks in the DRSi between June 2016 and September 2016.

Learning Objectives
1. Based on case presentation, enhance your ability to improve case finding and surveillance practices within your local MTF.

Target Audience / Scope of Practice
Target Audience: The intended audience for this educational activity includes preventive medicine physicians, community health nurses, public health nurses, and epidemiology technicians.
Scope of Practice: This activity will improve the performance of preventive medicine personnel who conduct surveillance activities in inpatient and outpatient settings.
Disclosure of Faculty/Committee Member Relationships
It is the policy of the U.S. Army Medical Command that all CME planning committee/faculty/authors disclose relationships with commercial entities upon invitation of participation. Disclosure documents are reviewed for potential conflicts of interest and, if identified, they are resolved prior to confirmation of participation.

Faculty Members
- Brown, Alfonza - No information to disclose.
- Gibson, Kelly - No information to disclose.
- Holbrook, Victoria - No information to disclose.
- Kebisek, Julianna - No information to disclose.
- Reynolds, Mark - No information to disclose.
- Reynolds, Mark - No information to disclose.
- Riegodedios, Asha - No information to disclose.
- Russell, Jamaal Employment/Salary: Abbvie (spouse)
- Walters, Cedric - No information to disclose.

Committee Members
- Ambrose, John - No information to disclose.
- Eng, Mimi - No information to disclose.
- Gibson, Kelly - No information to disclose.
- Riegodedios, Asha - No information to disclose.

Acknowledgement of Commercial Support
There is no commercial support associated with this educational activity.
ANNOUNCEMENTS

• To Register for the Monthly Disease Surveillance Trainings:
  1. Contact your Service Surveillance HUB to receive monthly updates and reminders
  2. Log-on or Request log-on ID/password: https://tiny.army.mil/r/zB8A/CME
  3. Register at: https://tiny.army.mil/r/MEHsS/EpiTechFY18

• Confirm attendance:
  – Please enter your full name/email into the DCS chat box to the right or email your Service hub
  – You will receive a confirmation email within 48 hours with your attendance record; if you do not receive this email, please contact your Service hub
Case Finding for Reportable Medical Events

Alfonza Brown, MPH
Epidemiologist APHC
Objectives

- Identify methods and resources to find potential reportable events in DRSi to improve reporting accuracy
- Recognize when and how to implement these practices/methods to increase reporting efficiency
- Describe strengths and limitations to case finding methods, to increase awareness of functional capability
What is Case Finding?

- Case finding – The strategy of surveying a population to find the sick persons that are the foci of infection; an essential early step in the eradication of any disease

- Case finding is doing active surveillance; however, it can also be used in the context of improving passive surveillance systems

- When performing case finding, it is important to cast a wide net because there are more cases that have yet to be identified

- The goal is to determine the true size and geographic extent of the problem
• Usually more cases than are being reported; the limitation to passive surveillance systems (e.g. DRSi) are that diseases are often underreported

• Identifies exposure risk—assists investigator in acquiring information from an appropriate representative sample

• Refines the case definition as more information is gathered

• Fully defines the exposed population for purposes of developing control measures

• Reported cases may not be representative of all cases (Example)
Importance of Case Finding - Example

Number of cases you think you have

Number of cases you ACTUALLY have
Limitations of reporting
- Many providers, high turnover, constant need for education
- Providers may not be aware that condition is reportable
  - Army MTFs can request a copy of RME posters by contacting APHC
  - Navy MTFs can request posters/brochures from their NEPMUs
  - AF MTFs can download a list of RMEs from USAFSAM/PHR webpage at https://gumbo2.area52.afnoapps.usaf.mil/epi-consult/reportableevents/ under General Information

A significant amount of cases can be missed if additional activities are NOT employed
  - No awareness = no follow-up, no contact tracing, no control measures put into place
How you become aware of RMEs

(AF)DRSi Case Finding Module

CHCS reports

Local county PH

ESSENCE RME query

You
Base level PH

Physician

Lab

UNCLASSIFIED
• Active surveillance
  – Regularly contacting health care providers to seek information about health conditions, reviewing encounter records for ICD-10 codes, reviewing sick call logs for chief complaints, using CHCS ad hoc reports of lab results, asking cases if they know of anyone else who is sick, etc.

• Passive surveillance
  – A system by which a health jurisdiction receives reports submitted from hospitals, clinics, public health units or other sources
- A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions.

- Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.
Specificity of case definition and accuracy of diagnosis increases

<table>
<thead>
<tr>
<th>Suspected classification</th>
<th>Probable Classification</th>
<th>Confirmed Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Early identification of the disease is critical for disease control</td>
<td>- Case definition is usually more detailed than suspected classification</td>
<td>- Case definition is the most specific</td>
</tr>
<tr>
<td>- Case definition usually limited to clinical symptoms without laboratory results (but not always)</td>
<td>- Does not have all of the required elements for a confirmed case</td>
<td>- Usually requires laboratory support</td>
</tr>
</tbody>
</table>

**Specificity** measures the proportion of actual negatives that are correctly identified as such (e.g. the % of healthy people who are correctly identified as not having the condition)

**Sensitivity** measures the proportion of actual positives that are correctly identified as such
• How is a case definition developed?
  – An RME case definition represents the specific clinical, laboratory, and other criteria that must be met for a disease or condition to be reportable.
  – This is the surveillance case definition which is different from the development of an outbreak case definition.

**Brucellosis (Brucella species)**

**Background**
- **Causative Agent**: Brucella species
- **Travel Risks**: Present worldwide
- **Clinical Description**: An acute systemic disease characterized by fever plus any of the following: night sweats, arthralgia, headache, fatigue, anorexia, myalgia, weight loss, arthritis, spondylitis, meningitis, or focal organ involvement (endocarditis, orchitis, epididymitis, hepatomegaly, splenomegaly).

**Case Classification**

- **Probable**: A case that meets the clinical description as described above with any of the following:
  - Epidemiologically linked to a confirmed human or animal case or
  - *Brucella* total antibody titer $\geq 1:160$ by SAT or MAT from serum or
  - *Brucella* nucleic acid (DNA) detected by PCR from any clinical specimen

- **Confirmed**: A case that meets the clinical description as described above with any of the following:
  - *Brucella* identified by culture from any clinical specimen or
  - At least a four-fold increase of *Brucella* antibody titer between acute and convalescent sera separated by at least 2 weeks

**Critical Reporting Elements**
- Document relevant travel and deployment history occurring within the incubation period.
- Document the source of infection if known.
- Document the circumstances under which the case patient was exposed, including duty exposure, occupational activities, environmental exposures, or other high risk activities.

**Comments**
- A positive *Brucella* slide agglutination test is the same thing as MAT; it therefore meets the probable case definition and should be reported.
How to Perform Case Finding?

• When identifying cases, you should use as many sources as you can:
  – Health care facilities
    • Physicians’ offices, clinics, hospitals, and laboratories
    • Reports of disease to Public Health Services or PM Departments
    • Call or visit locations
  – Local public health resources such as the health department
  – Tech tools
    • (AHLTA/CHCS/ESSENCE/DRSi/DigitalReports)
  – Public Health officials
    • CDC Current Outbreak List (https://www.cdc.gov/outbreaks/index.html)
Case Finding in DRSi for Reportable Medical Events

- Laboratory reports are entered in the system and appear in this module
- On the first tab, select ‘Review Case-Findings by Reporting Unit’
Using the CFM

• Select the Time Period, Case Status and Reporting Unit
• Click ‘Get Case-Findings’
The CF classification is based on a behind-the-scenes algorithm. Cases are classified depending on the likelihood of meeting the case definitions in the Reportable Medical Event (RME) Guidelines.

Regardless of the classification status “positive” or “suspect” ALL cases that appear in the case finding module should be investigated to determine if they meet the case definition and need to be entered into the system.

THESE ARE NOT RME CLASSIFICATIONS
A “suspect” lab record does not mean it is a suspect RME case.
- For sponsors, you can use the Sponsor SSN to find more information on the case. For non-sponsors, click “Create MER” to get demographic information on the case.

### Instructions:
Below is a list of potential Medical Events that may be reportable in your AOR over the past 14 days. This list can be used as a guide to assist in local case finding and response efforts, but is not meant to replace these activities.

Please only show me records from the past 14 days (30 days maximum).

**Show me:** View All

**Show me records for the following Reporting Unit(s):**

---

**List of Potentially Reportable Medical Event(s):**

<table>
<thead>
<tr>
<th>Sponsor SSN</th>
<th>FMP</th>
<th>Potential Diagnosis</th>
<th>Date of Event</th>
<th>MTF</th>
<th>Classification</th>
<th>Classification Criteria</th>
<th>Create MER?</th>
<th>Delete Case?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Chlamydia</td>
<td></td>
<td></td>
<td>Positive</td>
<td>disease specific laboratory positive culture, rapid antigen, or nucleic acid test in a genital specimen</td>
<td>![Create MER]</td>
<td>![Delete Case]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salmonellosis</td>
<td></td>
<td></td>
<td>Positive</td>
<td>positive culture excluding Salmonella typhi and Salmonella paratyphi results</td>
<td>![Create MER]</td>
<td>![Delete Case]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lyme Disease</td>
<td></td>
<td></td>
<td>Suspect</td>
<td>disease specific positive lab test</td>
<td>![Create MER]</td>
<td>![Delete Case]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Syphilis</td>
<td></td>
<td></td>
<td>Suspect</td>
<td>a positive confirmatory treponemal test</td>
<td>![Create MER]</td>
<td>![Delete Case]</td>
</tr>
</tbody>
</table>
Once you have information on the case, click “Create MER” and enter all information as usual. Classify the case according to the 2017 Armed Forces Reportable Medical Events Guidelines and Case Definitions.

If you find that a case found in the case finding module does not meet the case definition, click “Create MER” and classify the case as “not a case”. You can specify why this did not meet the case definition in the comments section.

- If you delete a case from the case finding module, it will affect your MTFs performance metric. Entering the case as “not a case” as opposed to deleting it ensures that you are meeting the performance metric and responding to 100% of all cases found in the case finding module.
• If prompted, you may need to register the sponsor prior to entering the case if an existing profile does not exist in DRSi.

• Complete the Sponsor Profile Page, and click ‘Submit’
How to Find Cases

- Once all information is entered, click ‘Submit’
- The message “Medical Event successfully saved” will appear.

![ADRISI :: Medical Event Record](image)

**Sponsor's Demographic**

<table>
<thead>
<tr>
<th>Case ID</th>
<th>Sponsor SSN</th>
<th>FMP</th>
<th>First Name</th>
<th>Last Name</th>
<th>MI</th>
<th>Sex</th>
<th>Date of Birth (mm/dd/yyyy)</th>
</tr>
</thead>
</table>

**Medical Event**

- Diagnosis (ICD-9 code)
- Date of Diagnosis
- Reporting Unit

**Method of Confirmation**

<table>
<thead>
<tr>
<th>Case Status</th>
<th>MER Status</th>
<th>Date of Report</th>
</tr>
</thead>
</table>

*Case Status should be classified as suspect, probable or confirmed according to the current Tri-service Guidelines.*

**Comments**

(2,000 characters maximum)

![Medical Event successfully saved](image)
<table>
<thead>
<tr>
<th>Laboratory Tests</th>
<th>Positive</th>
<th>Pending</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zika virus IgM antibody</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zika virus identified by culture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zika virus antigen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zika virus nucleic acid (RNA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zika virus PRNT titer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other labs not listed

<table>
<thead>
<tr>
<th>Event Related Questions</th>
<th>Zika Virus Infection, Non-Congenital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was this exposure duty related?</td>
<td>Yes, non-deployment related ○ Yes, Deployment related ○ No</td>
</tr>
</tbody>
</table>

Did this case travel to or reside in an area with known Zika virus transmission?

If pertinent, please select the countries of travel or residence. (Select all that apply)

Did this case have sexual contact with a confirmed or probable Zika virus case?

Did this case have sexual contact with a person with recent travel to an area with known Zika virus transmission?

Did this case receive blood or blood products within 30 days of symptom onset?

Did this case receive an organ or tissue transplant within 30 days of symptom onset?

Was this case associated in time and place with a confirmed or probable Zika virus case?

Did this case have likely vector exposure in an area with potential local transmission?

Comments

Comments (2,000 characters maximum)

In Brazil from April 2017 - June 2017. Symptoms include fever and conjunctivitis for one week.
• Additionally you can see the status of all Case Finding records from your facility.
• To do this, click on ‘Summary Reports’ of the Summary Reports tab.
• Select the Case Finding Status report, and select the Reporting Unit you wish to view data for.
  
  – Next, select the year and month you wish to view, and click ‘Submit.’
The number of records, how many have been turned in to a MER, number deleted, number already in DRSi, number expired and total number ready for review will generate.

- For an excel output of this screen, click the green x.
What if information is pending?

<table>
<thead>
<tr>
<th>FMP's Demographic</th>
<th>Sponsor’s SSN: 11111111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case ID</td>
<td>FMP SSN</td>
</tr>
<tr>
<td></td>
<td>525252525</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>FMP</td>
</tr>
<tr>
<td>Asian/Pacific Island</td>
<td>03</td>
</tr>
<tr>
<td>Beneficiary Category</td>
<td>First Name</td>
</tr>
<tr>
<td>Child of an Active Duty Service Member</td>
<td>Cow</td>
</tr>
<tr>
<td></td>
<td>Last Name</td>
</tr>
<tr>
<td></td>
<td>Brown</td>
</tr>
<tr>
<td></td>
<td>(mm/dd/yyyy)</td>
</tr>
<tr>
<td></td>
<td>MI</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Date of Birth</td>
<td>Date of Onset</td>
</tr>
<tr>
<td></td>
<td>Pick Date</td>
</tr>
<tr>
<td>Medical Event</td>
<td>Date of Diagnosis</td>
</tr>
<tr>
<td></td>
<td>Pick Date</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Date of Clinic Visit</td>
</tr>
<tr>
<td>Chikungunya Fever</td>
<td>Pick Date</td>
</tr>
<tr>
<td></td>
<td>Date of Report</td>
</tr>
<tr>
<td></td>
<td>5/23/2017</td>
</tr>
</tbody>
</table>

Case Classification Status should be classified as suspect, probable or confirmed according to the current Armed Forces Reportable Medical Events Guidelines.
RMEs should be reported at the earliest case classification required and updated regularly as more clinical and/or information becomes available.
Other tools available for case finding

CHCS Ad Hoc/Spool reports
- “Case Finding in DRSi”
  - January 2017 epi-tech training

Using ESSENCE
- “ESSENCE version 5 Demo”
  - May 2018 epi-tech training
- “Making the most of ESSENCE”
  - Oct 2016 epi-tech training

Link to training videos and slides:
https://phc.amedd.army.mil/topics/healthsurv/de/Pages/Epi-TechTraining.aspx
Case Finding with MHS Genesis
Differences with MHS Genesis:

- Labs will not feed into DRSi
- No data feed into ESSENCE
- No quick reporting tools or public health surveillance system currently built into the system
- Historic medical records are not available on MHS Genesis; will need to still use AHLTA and other sources to complete reports

Ultimately, all tools currently used for case finding will be interrupted and may be unavailable.
Preparing for MHS Genesis:

- Establish good communication with lab officers, preventive medicine, and nursing departments
  - Navy: Contact NEPMU5 to get guidance and mentorship. NEPMU5 can help prepare Navy PM departments with their surveillance activities when MHS Genesis gets adopted at that MTF
- Review Service requirements to report medical events
  - Can be found in 2017 Armed Forces Reportable Medical Events Guidelines and Case Definitions, page 6
- Current tools used for case finding may be interrupted or unavailable
- Additional time and resources may be needed to fulfill reporting requirements
• Case finding should be conducted with all communicable diseases to ensure the complete and accurate capture of all cases
• Case finding can be done as part of active surveillance or it can be done to improve completeness of passive surveillance systems
• Using the case finding module within DRSi can help MTFs improve both completeness of reportable medical event reporting and timeliness of reporting
• Improved case finding allows preventive medicine/public health personnel to determine the true size and geographic extent of a disease
Questions/Service POCs

- **Army:** APHC – Disease Epidemiology Division
  Aberdeen Proving Ground, MD
  COMM: (410) 417-2377 DSN: 584-7605
  Email: usarmy.apg.medcom-aphc.mbx.disease-epidemiologyprogram13@mail.mil

- **Navy:** NMCPHC Preventive Medicine Programs and Policy Support Department
  COMM: (757) 953-0700; DSN: (312) 377-0700
  Email: usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-threatassess@mail.mil
  Contact your cognizant NEPMU:
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  Email: usn.hampton-roads.navhospporsva.list.nepmu2norfolk-threatassess@mail.mil
  NEPMU5: COMM: (619) 556-7070; DSN (312) 526-7070
  Email: usn.san-diego.navenpvntmedufive.list.nepmu5-health-surveillance@mail.mil
  NEPMU6: COMM: (808) 471-0237; DSN: (315) 471-0237
  Email: usn.jbphh.navenpvntmedusixhi.list.nepmu6@mail.mil
  Email: NEPMU7@eu.navy.mil

- **Air Force:** Contact your MAJCOM PH or USAFSAM/PHR
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