FY19 Epi-Tech Surveillance Training

Friday, October 05, 2018 - Monday, September 30, 2019
DCS, APG, MD

Provided By
U.S. Army Medical Command

Activity ID  Course Director  CME Planner
2018-1656    John Ambrose    Mimi C. Eng

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.

This is a required handout. It must be disseminated to each learner prior to the start of the activity.
Statement of Need/Gap Analysis
The purpose of this CME activity is to address the identified gap(s):
1. 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.

2. 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.

3. 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.

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**
- Gilmore, Jessica - No information to disclose.
- Graham-Glover, Bria - No information to disclose.
- Kebisek, Julianna - No information to disclose.
- Russell, Jamaal - No information to disclose.
- White, Duvel - No information to disclose.

**Committee Members**
- Ambrose, John - No information to disclose.
- Brown, Jodi - No information to disclose.
- Eng, Mimi - No information to disclose.
- Gibson, Kelly - No information to disclose.
- Graham-Glover, Bria - No information to disclose.
- Holbrook, Victoria - No information to disclose.
- Kebisek, Julianna - No information to disclose.
- Riegodelios, Asha - No information to disclose.
- Rudiger, Courtney - 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:
  – Contact your service surveillance HUB to receive monthly updates and reminders
  – Log-on or request log-on ID/password: https://tiny.army.mil/r/zB8A/CME
  – Register at: https://tiny.army.mil/r/EQk1/EpiTechFY19

• 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

• Reminder:
  – Mute your phones by pressing the mute button or pressing *6
  – DO NOT press the “hold” button as the rest of the conference will hear the hold music
Introduction to ESSENCE v5

Jamaal A. Russell, DrPH, MPH
Objectives

• Describe the new features in ESSENCE v5
• Understand the main functions that will be used at the local level on a routine basis
• Create an individual user view and understand how to use dashboards for routine surveillance
Mandate for Syndromic Surveillance

- ESSENCE is designated as the DoD interagency solution to improve real-time surveillance in the National Action Plan to Strengthen Implementation of the International Health Regulations as part of the Global Health Security Agenda (GHSA).

- ESSENCE is part of the Comprehensive Health Surveillance (CHS) enterprise which is a collection of DoD surveillance system when used together improves surveillance across the Services.

- DoDD 6490.02E (Comprehensive Health Surveillance)

- DoDI 6200.03 (Public Health Emergency Management within the DoD)
ESSENCE v5: Major Features

Interactive Time Series & Anomaly Detection
Pie/Bar Charts & Detailed Line Listings
Interactive Mapping & Spatial Cluster Detection
Table Builder: Crosstab & Pivots
Free-text & Advanced Querying

Event Communication
Overview Graphs
User customized myAlerts
Temporal Detection
Statistical Report Builder

User customized myESSENCE Dashboards (e.g., plots, tables, maps)
Multi-Datasource & Denominator Queries
Data Quality Reports
External Report Publishing

“Medically Ready Force...Ready Medical Force”
User Customized Workflows - “myESSENCE”

• User defined, multi-tabbed visualization dashboard
  – Time series
  – Maps
  – Data details “line-level” view
  – myAlerts – Detection and Records of Interest
  – Text boxes
  – Users can share their dashboards with other users
Example: myESSENCE Dashboard

“Medically Ready Force...Ready Medical Force”
myESSENCE

- Check on “myESSENCE” tab to view preset and user customized dashboard
myESSENCE

- If alerts or unusual patterns are observed then investigate further by going into the data details.
Data Details

**Medically Ready Force...Ready Medical Force**

*Simulated data*
User Customized Workflows - myAlerts

• Any query and data source can be saved by the user as a myAlert

• Detection
  – Statistically defined by user, and can include stratifications by additional categorical variables

• Records of Interest
  – Not statistically defined; presents a “line-level” record view whenever query definition is met

• Users can share their definitions with other users
Creating myAlerts

Create myAlert

Name of myAlert: test
Query: test
Enabled: ✓
myAlert being created for: ✓ Records of Interest ✓ Detection

Stratifications: Use Original
- Region
- Facility
- Site
- MedicalSubGrouping

Detector: Regression/EWMA 1.2
Threshold: 0.05

Minimum Count:
- alerts in the past ___ days
- consecutive alerts

Save For:
<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>demo01</td>
<td>demo01</td>
<td>demo01</td>
</tr>
<tr>
<td>✓ Essence</td>
<td>Training</td>
<td>JHUAPL</td>
</tr>
<tr>
<td>Test</td>
<td>User</td>
<td>JHUAPL</td>
</tr>
</tbody>
</table>

“Medically Ready Force…Ready Medical Force”
myAlerts Example

- Example: Rash myAlert using a minimum count of 3, notification of 3 alerts in 5 days, and 2 consecutive alerts.
myAlerts

- New alerts are displayed in the “Alerts” tab under myAlerts
Records of Interest- Example

• Example- A query to create a line listing of dog bites
## Records of Interest - Example

<table>
<thead>
<tr>
<th>Date</th>
<th>Disposition Code</th>
<th>Patient EDI PN ID</th>
<th>Age</th>
<th>ICD Codes Flat</th>
<th>Category Flat</th>
<th>ChiefComplaintOrig</th>
<th>ChiefComplaintParsed</th>
<th>Treatment DMIS ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>15Feb16</td>
<td>none</td>
<td>0287021606</td>
<td>24</td>
<td>;F41.9;L73.1;</td>
<td>;Injury;</td>
<td>DOG BITES ON BOTH HANDS</td>
<td>DOG BITES ON BOTH HANDS</td>
<td>*MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP ( 0066 - 0066 )</td>
</tr>
<tr>
<td>15Feb16</td>
<td>Released without limitations</td>
<td>0666230248</td>
<td>46</td>
<td>;223;</td>
<td>;Injury;</td>
<td>DOG BITES ON LEFT LEG</td>
<td>DOG BITES ON LEFT LEG</td>
<td>*MD - FT. MEADE - KIMBROUGH AMBULATORY CARE CENTER ( 0069 - 0069 )</td>
</tr>
</tbody>
</table>

• *Simulated data

“Medically Ready Force...Ready Medical Force”
myAlerts

- Records of interest are displayed in the “Records of Interest” tab under myAlerts
Query Portal

“Medically Ready Force...Ready Medical Force”
Query Portal

“Medically Ready Force...Ready Medical Force”
Maps

“Medically Ready Force...Ready Medical Force”
Automated Data Quality Checks

• File level metrics
  – Did I get the number of expected files or facilities on a given day?

• Variable level metrics
  – How complete was each variable within the file per day over time?
  – Were all values mapped correctly to the set values?

• Data quality alerts
  – Visualize changes in data quality per data source and quality factor over time
Data Quality

```
<table>
<thead>
<tr>
<th>Geography</th>
<th>Variable</th>
<th>01Feb16</th>
<th>02Feb16</th>
<th>03Feb16</th>
<th>04Feb16</th>
<th>05Feb16</th>
<th>06Feb16</th>
<th>07Feb16</th>
<th>08Feb16</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Sex</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>ICD Code 1st Listed Diagnosis</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Age</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Reason for Appointment</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Zipcode</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Discharge Diagnosis</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Family Member Prefix (FMP)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Disposition Code</td>
<td>84</td>
<td>83</td>
<td>85</td>
<td>85</td>
<td>86</td>
<td>86</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Patient Category</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Chief Complaint</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>MD - JOINT (NF) ANDREWS NAVAL AIR FAC - 779th MEDICAL GROUP (0666 - 0066)</td>
<td>Chief Complaint Present</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
```

“Medically Ready Force...Ready Medical Force”
Report Manager

• Template-based document for user created surveillance reports

• All graphics are linked to underlying system data and updated automatically when report it run

• Text boxes for describing the methods and data in your report
**ESSENCE Newsletter**

**Saving Queries**

The ESSENCE report functionality allows users to save all time series and map queries to be used when building reports.

**Saving a time series query:**

1. When looking at a time series graph, fill in a “Query name” under the “Query Options” section in the upper left-hand side of the screen.
2. Click the “Save Report Query” button; this will pop up a window that allows you to share your report query while saving.
3. Click the “Save” button; your query will now show up in the Available Queries tab in the Report Manager section, and will be available for use when building reports.

**Saving a map query:**

1. When viewing a map, click the “Download Rendered Map Image” button.
2. Click the “Save Map Report” button and follow the same steps that you did when saving a time series query.

**Fever Time Series Graph Example**

**Conclusion**

Create custom report using your own word templates and maps and charts pulled from ESSENCE.
Questions

“Medically Ready Force...Ready Medical Force”
Contact Information

• **Army:** APHC – Disease Epidemiology Division
  Aberdeen Proving Ground – MD
  COMM: (410) 436-7605  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.navmcpubhlthcnpors.list.nmcphc-threatassess@mail.mil
  Contact your cognizant NEPMU
    NEPMU2: COMM: (757) 950-6600; DSN: (312) 377-6600
    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
  USAFSAM / PHR / Epidemiology Consult Service
  Wright-Patterson AFB, Ohio
  COMM: (937) 938-3207  DSN: 798-3207
  Email: usafsam.phrepiservic@us.af.mil