Assessing the ESSENCE Biosurveillance System as Used by the Navy and Marine Corps: User Training, System Employment, and Perceived Value

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Agenda

• DoD Directives
• Background
• Sponsors
  – Motivation for the survey
• Survey Description
  – Survey Objective
  – Instrument Design
  – Fielding Procedures
• Future Steps
  – Timeline
• Respondent’s Comments
• Anticipated Survey Impacts
• DoD directive 6490.2 (21 Oct 2004) states that health surveillance shall be conducted to:
  – Enable early intervention and control strategies;
  – Prevent adverse affects on mission accomplishment;
  – Provide information for shaping commanders’ decision making.

• Per Health Affairs Policy 07-001 (17 JAN 2007) and BUMEDINST 6220.12B (12 FEB 2009), each medical treatment facility (MTF) is to maintain an effective command medical surveillance program.
INTRODUCTION
What is ESSENCE?

• ESSENCE: Electronic Surveillance System for the Early Notification of Community-based Epidemics:
  – A syndromic surveillance system
    • Captures, organizes, analyzes clinical data
    • Intended for early detection of disease outbreaks
  – Data is from Military Health System (MHS)
    • Outpatient clinical visits
    • Pharmacy transactions
    • Laboratory orders
• Summarizes data into disease syndrome groupings

• Goal is to:
  – Enhance Services' ability to detect and monitor outbreaks
  – Identify emerging or re-emerging infectious diseases that pose a substantial risk of a significant number of human fatalities or severe disabilities
Where Does the Data Come From?
• Outbreak detection and location situational awareness
  – A monitor can choose to view all the alerts for a given date and location
  – Or, a monitor can choose to view a specific syndrome for a specified date range and location
Navy ESSENCE Monitors

• Who?
  – Preventive Medicine Professionals
  – Doctors
  – Nurses
  – Public Health Professionals
  – Epidemiologists

• Where?
  – Preventive Medicine and Public Health Departments
    • Clinics
    • Naval Hospitals
    • Navy Medical Centers
  – Navy Environment Preventative Medicine Unit (NEPMU)
  – The Navy and Marine Corps Public Health Center (NMCPHC)
• Navy and Marine Corps Public Health Center (NMCPHC)
  – Jacksonville, FL
  – CAPT Clagett, M.D.
    • Director of the Preventative Medicine Department
  – Dr. Asha Riegodedios
    • Staff Epidemiologist, NMCPHC c/o Navy Entomology Center

• Defense Threat Reduction Agency (DTRA)
SURVEY DESIGN
Research Questions

• How do monitors use ESSENCE?
• Do monitors find ESSENCE useful and valuable for:
  – Early outbreak alerting?
  – Identifying potential outbreaks?
  – Health-related situational awareness?
• Do ESSENCE users feel adequately trained?
Survey Objective

To assess the Navy and Marine Corps ESSENCE monitors’ usage of, perceived value of, and training for the ESSENCE biosurveillance system.
• How often do users log into ESSENCE?
• Do monitors use the following modules to view disease activity:
  – The Alert List?
  – The Reportable Diseases Query?
  – The Syndromic Query?
• Who investigates ESSENCE alerts?
  – Do they use ESSENCE to provide their command with outbreak information and situational awareness?
Assessing Perceived Value

• Do users detect outbreaks using the ESSENCE system?
• What are the user’s opinions of the system?
• How do users handle miscodings?
  – Why is this important?
• What training have the users had on the ESSENCE system?
• What would the users like to in the future?
• How long did it take for an account holder to obtain their account?
Demographics

- Type of user:
  - Single/Multiple Military Treatment Facility
  - Navy Environment Preventative Medicine Unit
  - Clinic/Naval Hospital/Navy Medical Center
- Which military service(s) does the user support?
- What is the user’s professional background?
- What is the user’s pay grade?
Survey Details

• Web-based survey
  – SurveyMonkey software
  – E-mail contract and follow-up with URL link

• Respondents
  – 235 Navy and Marine Corps users with active or disabled ESSENCE accounts
Survey Timeline

Design Phase

- Literature, directives review
- Background research, user interviews
  - Travel to Portsmouth, San Diego, Jacksonville
- Pre-tests of survey instrument
  - Cognitive interviews
  - Software tests
- Approval process
  - NPS Institutional Review Board (IRB)
  - NPRST & BUMED survey approvals

Fielding Phase

- Obtain respondent contact information
- Distribute survey
  - Non-respondent follow-up

Analysis Phase

- Non-respondent follow-up
- Survey closes
- Analyze data, including nonresponse patterns
- Write thesis
- Brief results
• **The Goods:**
  - “It has been a great additional tool to capture reportable diseases and track for outbreak trending. Hope it is a program that Navy Medicine and the Tri-Services keep as our Preventive Medicine Departments keep getting smaller with continued deployment support missions.”
  - “Overall, I am glad that ESSENCE exists. The ability to perform active surveillance is wonderful, as providers, historically, do a horrible job reporting infectious diseases to the PMA.”
  - “Great system.”

• **The Others:**
  - “Direct access patient information to AHLTA/CHCS and NDRSi. Too much time is spent switching between programs to find patient information in order to ensure treatment and that reporting was completed.”
  - “Get rid of it. Have a program that is used by most of the medical community (CHCS or AHLTA) do disease reporting. When we do reports here the information we need we have to get from AHLTA/CHCS so why not just get rid of the middle man and have those programs report the same things as ESSENCE.”
Anticipated Survey Impacts

• With better training, an ESSENCE users will be able to understand the system and discover outbreaks with better accuracy
• Improve the Navy’s situational awareness of the communicable diseases locally and regionally
• Submit possible changes to the program to enhance efficiency and user ability to TRICARE Management Activity (TMA), which is under the Defense Health Services Systems (DHSS)
• Continue to enforce account holder’s to monitor the system because it is a useful and informative tool
  – Time vs. Value
I love to cook with wine.

Sometimes I even put it in the food.