

Attachment 10

CDC Keeps America Healthy, Safe, and Secure. Case Study: Fort Leonard Wood, Missouri

In February 2009, CDC epidemiologists investigated an outbreak that led to 2 fatalities at Fort Leonard Wood, Missouri training center – home to the 554th Army Battalion. CDC identified the cause of the outbreak and took steps to prevent further cases of the infection.

[Call out box: *Disease Detectives*] CDC's epidemiologists do life-saving work to investigate, prevent, and stop dangerous disease outbreaks like the one at Fort Leonard Wood.

What happened at Fort Leonard Wood (FLW)?

Two previously healthy trainees belonging to Alpha Company were diagnosed with pneumococcal (PRONUNCIATION) meningitis and died. Pneumococcal meningitis is an infection that causes swelling and inflammation of the membranes covering the brain and spinal cord.

CDC identified that the number of cases of pneumonia also increased during the time of the outbreak.

Epidemiologists considered important information about the outbreak to inform their efforts, including:

- The number of people at FLW
- Routine vaccinations that trainees and staff received at and before arrival at FLW
- Housing arrangements and trainings by troop companies within the 554th Battalion at FLW

What information did CDC gather about the outbreak?

Epidemiologists collected important data and surveyed all trainees and staff of the 554th Battalion — and the surrounding community.

CDC collected trainee and staff:

- Demographic information
- Symptoms
- Past medical history and use of health care services (including lab tests and exam results and findings)
- Influenza vaccine (flu shot) status
- Recent treatments and treatment with antibiotics during the investigation period

CDC also collected nasal and throat swabs from certain trainees and staff.

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The data came from surveys and medical records from the training camp and civilian hospitals. The CDC team also had access to a list of trainees who were too ill to participate in routine training.

What did CDC do with the data?

After the data were collected, epidemiologists created a database with the information. They analyzed the data to determine trainee and training staff characteristics thought to be associated with the infection.

What did CDC do to prevent more cases of meningitis?

Epidemiologists were able to stop the outbreak by giving trainees and staff vaccinations and antibiotics and teaching better hand hygiene and cough etiquette.

What were the results and conclusions of the investigation?

Epidemiologists determined that the 2 fatal cases of meningitis were the only meningitis cases identified during the investigation period (February 1 to 21, 2009). They also identified 72 cases of pneumonia among all the trainees (303 total) during the investigation.

They ruled out the following risk factors, determining that they were not associated with getting sick:

- Taking antibiotics
- Living in a bay (A room with more than 4 trainees)
- Smoking
- Having one or more illness symptoms
- Living on a particular floor of the barracks

CDC used what they learned at FLW to prevent future outbreaks from occurring. The information gained from this investigation helped CDC improve outbreak detection and timely response at military training installations. CDC also determined that new vaccines may provide opportunities to reduce pneumonia among military trainees in the future.

Safeguard America's Health: Support the CDC

CDC is on the cutting-edge of health security. For more information on epidemiology and the life-saving work of the CDC, visit www.cdc.gov or call 1-800-CDC-INFO.

Reference: Dawood et al.: Outbreak of Pneumonia in the Setting of Fatal Pneumococcal Meningitis among US Army Trainees: Potential Role of Chlamydia pneumonia Infection. BMC Infectious Diseases 2011 11:157