Tick-borne Diseases at Navy and Marine Corps Bases

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Tick-borne Disease Surveillance

- Currently reviewing several disease databases to get a more accurate view of morbidity
  - Lab data
  - Ambulatory data
  - Navy Disease Reporting System
- Passive disease surveillance difficult
  - under reporting
  - mis-diagnoses/over reporting
Data from Navy Disease Reporting System

- Most cases in Groton among non-active duty
- Most cases in Camp LeJeune among Active Duty

**Figure 1.** Lyme Disease Case Reports for AD Personnel by Reporting UIC, 1996-June 2007

**Figure 2.** Lyme Disease Case Reports for non-AD beneficiaries by Reporting UIC, 1996-June 2007
Reports of Lyme Disease in Active Duty Navy and MC members, 2004-2008

First year of NDSRI
Seasonality

Counts of Positive Lyme Disease Labs among Active Duty Navy and MC at selected locations, 2004-2008

Reports of Lyme Disease in Active Duty Navy and MC service members, 2004-2008, by location
What is the disease agent?

*Borrelia burgdorferi* or *B. lonestari*

OR

*Ixodes scapularis*

OR

*Amblyomma americanum*
Tick Collection and Analyses
Tick Collection and Analyses

- **Camp LeJeune**
  - 1841 ticks collected
  - 17 *Ixodes scapularis*
    - 5 (35%) positive for *Borrelia burgdorferi* (Lyme disease)
  - **8 Dermacentor variabilis**
    - Zero positive for *Rickettsia rickettsii* (Rocky mountain spotted fever)
  - **1816 Amblyomma americanum**
    - MIR 0.66 % *Borrelia lonestari*
    - CDC has new evidence that *Borrelia lonestari* is NOT a human pathogen
    - >40 % pos *Rickettsia amblyommii*

- **Parris Island**
  - 10 total collected on June 08 and Aug 08

- **MCRD Beaufort**
  - 1806 total Aug 08
Conclusion:

- Vector for Lyme disease at CL is relatively rare, the infection rates are high. Classic Lyme disease cannot be ruled out as a source of morbidity at CL in summer months.

- The highest morbidity at CL is in the summer months. Morbidity is lower when the Lyme disease vector is more common.
Personal Protection

permethrin on uniform + DEET on exposed skin + properly worn uniform = Maximum Protection
Tick Control
Questions