

Rabies Response

Briefing for the Defense Health Board



UNITED STATES ARMY PUBLIC HEALTH COMMAND

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Briefing Outline

PURPOSE: To provide information on the coordinated response to potential rabies exposures during deployments.

1. Synopsis of index case
2. Rabies refresher
3. Rabies response Concept of Operations (CONOPS)
4. Major actions by Phase
5. Progress to date
6. Preliminary data analysis
7. Policy responses
8. Way ahead

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Synopsis of Index Case

- 24-year-old Soldier died of rabies on 31 Aug 11. Infection likely contracted from exposure to a rabid dog during his May 2010–May 2011 deployment to Afghanistan.
 - Patient developed symptoms on 14 Aug 11 while en route from Germany to Ft Drum on a commercial carrier
 - Presumptive diagnosis of rabies on 19 Aug 11; transferred to ICU at a civilian New York medical center
 - Diagnosis confirmed on 21 Aug 11; aggressively treated using the “Milwaukee Protocol”
- Case Contact Investigation: Close contacts in Germany, on the commercial flights, and in New York with possible salivary/body fluid contact from Aug 1 (period of possible communicability) identified; 24 individuals placed on post-exposure prophylaxis

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Rabies Refresher

- Single-stranded Lyssavirus (RNA) – only infects mammals
 - Not viable outside of host; inactivated by sunlight, heat, and desiccation
 - Primary vector worldwide is dogs; bats & wildlife in developed world
- Transmitted via bite or salivary contact with open wound/scratch or mucous membranes; dogs/cats/ferrets infectious a maximum of 10 days prior to clinical signs/symptoms
- In humans:
 - Incubation period typically 1-3 months, rare cases over a year
 - Communicability: up to 10-14 days prior to clinical signs; no documented cases of person-to-person transmission except with tissue transplantation
 - Virus typically present in saliva and brain tissue and other internal organs, periodically in blood
 - Diagnosis: nuchal biopsy, viral antibody serology (7-10 days after onset of symptoms); isolation in CSF later
 - Death due to cardiac/circulatory insufficiency and multi-organ failure
- Rabies is a preventable disease if properly treated with wound care, Rabies Immunoglobulin (RIG) and a 4- or 5-dose vaccine series (post-exposure prophylaxis)

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Rabies Response CONOPS

- Initial public health response to index case revealed Soldiers with unreported or improperly treated/documented animal exposures
 - 10 members of index case's unit evaluated and placed on post-exposure prophylaxis
- Theater initiated formal (AR 15-6) investigation (ongoing); US Forces Command (FORSCOM) and Northern Regional Medical Command (NRMC) to conduct investigations at Fort Drum
- US Army Medical Command (MEDCOM) directed a broader public health response to identify, notify, evaluate and treat all personnel who received potential rabies exposures after 1 Mar 2010
- Phased execution with active and passive case finding, rapid notification of individuals at potential risk, delivery of effective treatment, and proper documentation of care
 - Phase I: Case contact investigation (completed)
 - Phase II: Known exposures while deployed (ongoing)
 - Phase III: Unreported/undocumented exposures (ongoing)

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Major Actions by Phase (1 of 2)

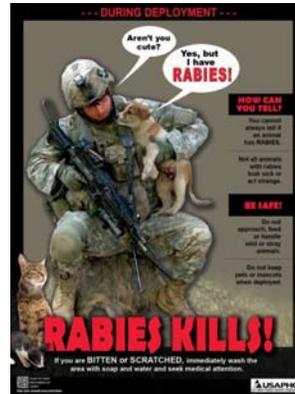
- Phase I
 - Case contact investigation (Afghanistan, Germany, Netherlands, New York)
 - Led by Public Health Command Region-Europe (PHCR-E), Fort Drum, and New York State Department of Health, with support from the Army Institute of Public Health (AIPH) and the Centers for Disease Control and Prevention (CDC)
- Phase II (Active case finding)
 - Post-Deployment Health Assessments (PDHAs) and Post-Deployment Health Re-Assessments (PDHRAs) for all deployments completed 1 Mar 10 or later with boxes marked for animal bite exposures or text fields reporting animal bites
 - Queries of multiple medical and administrative databases
 - Developed provider training packets
 - Created provider templates in the electronic medical record system
 - Central purchase of RIG and vaccine
 - Coordinated access to care/Military Health System eligibility/necessary Veterans Administration support

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Major Actions by Phase (2 of 2)

- Phase III (Passive case finding)
 - Global outreach via internal and external communication channels
 - Media engagement (print, radio, TV)
 - Wounded Soldier and Family Hotline
 - 100% accountability (FORSCOM units)
 - Enhanced reverse Soldier Readiness Processing
 - Fact sheets
 - Updated medical threat briefings
 - Health education (e.g., posters)



Progress to Date*

| | Cleared (PEP completed or not indicated) | Undergoing Evaluation & Treatment | Admin Closed* | Total (%) |
|--------------------|--|-----------------------------------|---------------|-----------|
| Phase I N=24 | 24 | 0 | 0 | 24 (100) |
| Phase II N=8587 | 5055 | 84 | 253 | 5392 (63) |
| Phase III N=216 | 207 | 8 | 0 | 215 (99) |

* As of 7 Nov 11



Progress to Date*: Phase II Known Exposures

| | USA (N = 6134) | | | | USAF | USN/ USMC | USCG | CIV/ CON | NATO | LN | DET | OTHER | UNK | TOTAL (N=8587) | |
|------------------------------|----------------|----------|---------|------------------------|------|--------------|------|----------|------|-----|-----|-------|-----|----------------|----------|
| | Active Duty | Guard | Reserve | Non-Classified/ IRR | | | | | | | | | | # | % |
| | N = 3805 | N = 1518 | N = 746 | N = 65 | | | | | | | | | | N = 691 | N = 1624 |
| Cleared/ PEP completed | 2772 | 444 | 258 | 36 | 595 | 738 | 13 | 27 | 5 | 4 | 14 | 4 | 40 | 5055 | 59 |
| Evaluation & Treatment | 46 | 12 | 1 | 0 | 2 | 19 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 84 | 1 |
| Admin Closed | 179 | 55 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 5 | 1 | 1 | 7 | 253 | 3 |
| % Complete | 79 | 40 | 35 | 57 | 86 | 46 | 100 | 86 | 100 | 100 | 100 | 63 | 94 | | |

* As of 7 Nov 11

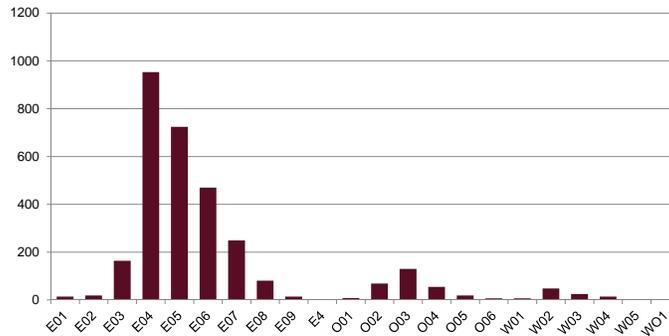
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Preliminary Data: PDHA/PDHRA Records by Grade

- The majority of Soldiers reporting a bite or animal contact are in Pay Grades E-4 to E-6
- Among officers, 1LT and CPT are most common



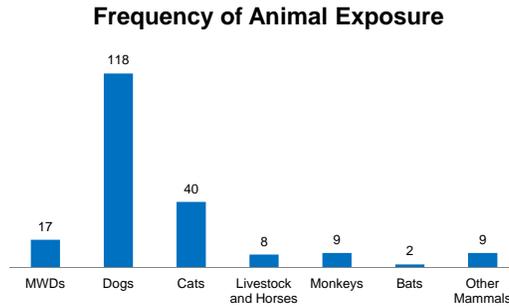
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Preliminary Data: Exposure* by Species

- Of the 3402 Soldiers cleared thus far:
 - 3199 had no rabies exposure
 - No animal contact
 - Insect bites
 - Rodent bites
 - 203 had information on exposure to a variety of mammals



* Rabies exposures include bites and scratches that break the skin and saliva contact with mucous membranes. Animal exposure means contact with an animal while on deployment and includes petting and playing with an animal or a bite or scratch that left no mark or did not break the skin.

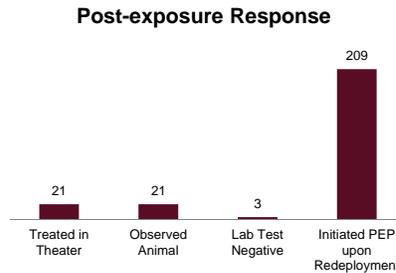
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Preliminary Data: Post-exposure Management

- Approximately 5% of Phase II SMs had exposures warranting PEP
- Of 254 SMs with available data, 209 individuals had PEP initiated upon redeployment
- Other post-exposure management included:
 - Animal observation
 - Veterinary laboratory testing
 - Treatment in theater



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Policy Responses

- OASD Health Affairs tasking of Army as the lead Service for the response
- DoD-wide guidance on how to evaluate/treat animal bites in redeployed personnel to include appropriate PDHA/PDHRA review for animal bites
- Pre-exposure rabies prophylaxis policy for deployment
- Rabies Advisory Committees (QA) to be implemented in sustained theater operations (in progress in Afghanistan)
- Provided comments and reservations for STANAG 2559, Rabies Post-exposure Prophylaxis
- Additional screening question(s) regarding animal exposures on the PDHA/PDHRA

Way Ahead

- Continue execution of Phases II and III
- Develop and execute a comprehensive review of animal bite management (Phase IV)
- Pursue automation of animal bite reporting and management
- Develop COAs for rabies management in deployed settings
- Collaborate with CDC on research protocols