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Safer Work with Infectious Agents

Optimizing Occupational Health in Research ad Public Health Response

Chesapeake Area Biological Safety Association

June, 2008

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Occupational Health and Worker Protection

- General principles of medical surveillance
  - Data collection at regular intervals
  - Informed decision making
  - Timely interventions
- Who is responsible?
- Role of risk assessment in medical surveillance
- Pre-placement and periodic medical intervention recommendations
- First aid and post-exposure management issues

Who is Responsible for Protecting Workers?

- Organizational leadership
- Safety specialists/officers
- Principal investigators
- Occupational health providers
- Day-to-day supervisors
- All workers themselves

Why Do Risk Assessments?

- Basis for sound, comprehensive safety decisions
- Define potential exposure based upon job duties
- Should be universal for all potentially affected personnel
- Tailored to each setting
- Customized for each process

Medical Surveillance Providers

- Knowledgeable of activity risks and all elements of risk assessment
- Readily available for consultation; barrier-free access
- Access to specialists and diagnostics
- Familiar with reporting and compliance requirements
- Interested in work being performed
- Willing to actively communicate with organizational leaders and scientists

When Does Surveillance Begin?

Before placement of workers on the job or before deployment

- **Pre-placement medical history**
- **Medical assessments and interventions**
- **Work-specific training and agent/method-specific education**

Pre-placement Medical History

- **Evaluation of past medical history**
  - ***Medical, surgical, social and family history***
  - ***Allergies and sensitivities***
  - ***Previous occupational history and activity***
  - ***Medications and other treatments***
  - ***Active conditions and review of major body systems***
  - ***Review of past immunization history***

Specific Hazards of International Responses

- Transportation
- Personal Security
- Fatigue/Jet Lag
- Water- and Food-borne Risks
- Endemic Infectious Disease Risks
- Deployment-specific Risks

Standard Medical Travel Kit

Don't assume that you can readily buy safe medicines while traveling

- Acetaminophen
- Aspirin
- Antacid (Gelusil)
- Bismuth Subsalcylate (Pepto-Bismol)
- Ciprofloxacin
- Clotrimazole (anti-fungal cream)
- Dimenhydrinate (Dramamine)
- Diphenhydramine (Benadryl)
- Docusate (Colace)
- Gentamycin Ophthalmic Drops
- Loperamide (Immodium)
- Metronidazole (Flagyl)
- Anti-malarials (patient and destination specific)
- Acetazolamide (for altitude sickness if necessary)
- Oral Rehydration Salts
- Adhesive Bandages
- Gauze Bandages (4x4)
- Betadine Antiseptic
- DEET Insect Repellent
- Tweezers
- Digital Thermometer
- Iodine or means of other Water Purification
- Alcohol-based hand sanitizer

Educate and Train Well

- Review general and patient-specific health risks of work being done
- Review first aid interventions
- Practice and drill for exposures and incidents

First Aid Interventions

- Pre-defined and pre-arranged
- Easy to follow guidance
- Widely known about and reviewed often
- Training on acute wound management
- Barrier-free access, available 24/7, lab or field
- Linked to further assessment
- Never the only intervention

Warning Signs and Red Flags

- Maintain a high index of suspicion for exposure and a low threshold for action
- Fever and other atypical body symptoms should always prompt medical attention
- Be aware of the incubation periods, modes of transmission and clinical symptoms of pathogens
- Symptoms of lab-acquired infection may differ from natural infection

Periodic Medical Surveillance and Evaluation

- Assess need for interval surveillance or re-exam on case-by-case basis
- May need to assess titers and offer immunization boosters
- Annual respirator exam, fit testing, and training required

Post-Exposure Management

- Repeat or extend first aid measures if needed
- Evaluate patient, event and agent-specific risks
- Obtain supervisory, safety, expert or other specialty input
- Offer post-exposure prophylaxis, other treatments and interventions
- Arrange for referral, monitoring or follow-up

Summary

- Risk identification and management coupled with effective medical surveillance provide comprehensive worker protection
- Risk assessments continue to be the cornerstone for planning appropriate medical surveillance
- Pre-placement, periodic and post-incident interventions should be planned, pre-arranged and practiced

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