Military Occupational/Environmental Health & Medical Surveillance Subcommittee Update:
Review of
US Army Center for Health Promotion and Preventive Medicine
Assessment of
Sodium Dichromate Exposure at Qarmat Ali Water Treatment

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Defense Health Board
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Arlington, Va
Charge:


• Was the standard of practice adequate?
• Are the report’s conclusions valid?
• Initial conference call 10/17
• Briefing 11/12-13 (security clearance required)
• Report nearing completion.
History of Field Epi dates to Snow: Broad St Pump
Site:

- Basra, Iraq
- Industrial water for oil production
- Ransacked
- Visible yellow contamination (sodium dichromate) used as a corrosion inhibitor
- Continuous contractor presence
- Successive military cohorts: British, Oregon, S Carolina, Indiana Nat Guards
SE Iraq
Qarmat Ali
Chronology

• Spring 2003: Provide security for QA
• Summer 2003: Contractor identifies hazard, remediates site: asphalt and gravel
• Sept, 2003: Soldiers observe contractors in PPE
• Sept 19: Access to site restricted by DOD
• Sept 21: DOD “town meeting;”.
• Sept 29 Start CHPPM Field Investigation
• Oct 17: PPE required
• Oct 30: CHPPM Field Investigation completed
Cascade of Prevention

Primary

Secondary

Tertiary
Cascade of Prevention: Hierarchy of Controls

Design
→ Pre-Market Testing
→ Substitution Elimination
→ Engineering Controls
→ Environmental Monitoring
→ Personal Protective Devices
→ Biological Monitoring
→ Medical Monitoring
→ Clinical Care
→ Rehabilitation
→ Accommodation
CASCADE OF PREVENTION OCCUPATIONAL

Design
→ Pre-Market Testing
→ Substitution Elimination
→ Engineering Controls
→ Environmental Monitoring
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→ Medical Monitoring
→ Clinical Care
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Exposure Assessment

- KBR identifies hazard and elevated concentrations.
- KBR encapsulates with asphalt and gravel
- KBR samples: minimal exposure to Chrome VI
- Britfor: minimal exposure to Chrome VI
- CHPPM finds elevated Chrome VI in soil particularly offsite. Area samples and breathing zone find no CrVI
Biological Monitoring

• Test for the presence of toxin in biologic medium: urine, blood, breath, etc

• Choice of test: appropriate.
Chrome UI Kinetics
POST EXPOSURE

high

Serum
URINE

DAYS
LOD

RBC

MNTU
Medical Assessment

• Screening for early signs and symptoms of disease
• History and physical for disease
• Examples:
• No chrome ulcers or perforations
• Respiratory irritation high and consistent with non exposed in theatre
Epidemiologic assessment

• Mean of blood CrVI consistent with background, not with occupationally exposed.
• No association with length of exposure, etc
Prevention Interventions

• Control of Exposure
• Site remediation
• Site access
• Medical care
Health Risk Communication

• 7 in toto
• Current and former units
• Results of laboratory and medical evaluations incorporated in medical charts.
Issues being considered by Committee:
Limitation of assessment to one state’s guard contingent

• Reasonable assumption that other contingents similarly exposed would similarly have unremarkable results
Activism

• Investigation started locally and timely
• CHPPM responds with expert team and completes work expeditiously
Other issues-in progress

- Access to industry specific experts
- Silos vs bridges
- Classification

- Dissemination of results to similar sites
- Hazard recognition by field units
- Numbers of available experts from CHPPM (tox, epi, ih, etc)(career ladders)
Response to charge: in progress

- SOP
- Meet or exceed?

- Conclusions
- Appropriate?
THE END