Occupational/Environmental Health & Medical Surveillance Subcommittee:
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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Service is provided in real time; evaluation is retrospective.
Goals: 30 minutes

- Brief orientation for DHB
- Discussion- all
- Modifications- if any
- Approval- Core DHB
Charge:


• Was the standard of practice adequate?
• Are the report’s conclusions valid?
Background-1-Yorkshire

  2-fold mortality lung cancer
Jersey City, NJ CrVI levels (GR: NONE; YEL LOW-MED; ORANGE: HIGH) 1979-2003
Qarmat Ali
Site:

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

- Spring 2003: Military provides security for KBR at 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
- Charge to DHB 10/6/2008
- Conference call 10/17/2008
- Review report 11/12-13 (security clearance required)
- Brief Sec Army 12/11/2008 on draft
- Final report 12/15
- Expect Senate Briefs
Exposure Assessment and Remediation

• 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 and breathing zone samples: no CrVI
Medical Assessment

• History and physical for disease
• No chrome ulcers or nasal perforations
• Respiratory irritation high and consistent with non exposed in theatre
• Biological monitoring for Cr VI : non excessive
Epidemiologic assessment

- Mean of blood CrVI consistent with background, not with occupationally exposed.
- No association with length of exposure, etc.
Health Risk Communication

- 7 in toto
- Current and former units
- Results of laboratory and medical evaluations “incorporated” in medical charts: confirmed
Major limitations:

- **Assessment of only one state’s guard contingent**: Reasonable assumption that other contingents similarly exposed would similarly have unremarkable results.

- **Assessment post remediation**: Timely remediation was prudent; may underestimate exposure

- **Silos**: Impedes timely notification and intervention for all sub-cohorts (military, civilian)
Conclusions:

- Standards of Practice for Field Investigations: met; very timely; silos
- Conclusions by CHPPM: reasonable
Recommendations (specific):

1. Insure communication of results to soldiers, their health care providers, and medical record. Assess reception.

2. *Final report: Declassify and disseminate.*

3. Develop case study for training.

4. *Debrief all “silos” including National Guard units, the contractor, and local public health.*

5. Establish a registry including info on exposure, medical, etc.
Recommendations Gen’l.

• 1. Train solders to recognize and avoid industrial hazards.
• 2. Train to weigh industrial vs traditional combat hazards.
• 3. Insure in-theater capacity for initial investigations.
• 3. Insure backup industrial hygiene, toxicology and epidemiology. Identify Impediments ..
• 4. Provide timely access to civilian expertise.
• 5. Establish an external advisory board for real time and post facto evaluation.
• 6. Learn to bridge silos
• 7. Review system for classification of documents.
• Comments by other Subcommittee members.
• Questions for subcommittee?
• Modifications?
• Approval by Core DHB?
The End
Figure 5. Standardized incidence Ratios for Lung Cancer in Jersey City Males by Cr\textsuperscript{6+} Exposure Category
SE Iraq