

# Retained Metal Fragments Including Depleted Uranium

Presented by

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# Agenda

- Background
- Intent of Appendix 7 to MEDCOM OPLAN
- Methods to Determine Exposure Level
- Processing of Removed Fragments
- Urine Specimens for Bioassay
- Points-of-Contact

# Background

- Policy on the Treatment of Personnel Wounded by DU Munitions issued to April 1999.
  - Under OSAGWI wounded personnel are a subcategory of Level I exposure
  - Follow-on policy for care of exposed but not wounded was to follow

# Background (continued)

- Studies by Armed Forces Radiobiology Research Institute (AFRRI)
  - Evaluated embedded DU fragments and some embedded tungsten alloys
  - Results indicated aggressive form of cancer though not positively linked to human exposure or even other animals
  - Generated a need to establish a database of personnel with retained metal fragments of all types

# Appendix 7 to the MEDCOM OPLAN

- Title: Retained Fragments, including depleted uranium (DU)
- Intent
  - Establish methods to identify, monitor and track personnel with embedded metal fragments
  - Have any removed fragments analyzed by USACHPPM to determine composition (DU vs. tungsten vs. tungsten alloy)

# Appendix 7 to the MEDCOM OPLAN (continued)

- Intent (continued)
  - Provide DU bioassay (urinalysis) for Level I and Level II personnel
    - Assign radiation doses as appropriate
    - Record assigned doses at the Ionizing Radiation Dosimetry Branch
  - Provide guidance to Soldiers in Level III and perform bioassay if needed

# Methods to Determine Exposure Level

- Definitions of Exposure Level
  - Level I: Personnel Who Were In, On, or Near (less than 50 Meters) an Armored Vehicle at the Time (or Shortly After) it Was Struck with a DU Munition.

# Methods to Determine Exposure Level (continued)

- Level II: Personnel Who Routinely Enter Damaged Vehicles as a Part of Their Military Occupation or Who Fight Fires Involving DU munitions.
- Level III: Personnel Involved in all other Exposures (Incidental in Nature).

# Methods to Determine Exposure Level (continued)

- Level III: Personnel Involved in all other Exposures (Incidental in Nature). Bioassays are not indicated for personnel in this Level; however, they may be ordered if it will benefit the patient or clinical care. The VA/DOD Post-Deployment Clinical Practice Guidelines will be used for this assessment.

# Methods to Determine Exposure Level (continued)

- Methods include
  - Patient's Field Medical Card ( a little late at this stage, however!)
  - Automated patient records
  - Post Deployment Health Assessment
    - Health Care Provider Awareness
    - Use of ancillary questions (examples are in the plan)
  - Self-referrals post processing

# Processing of Removed Fragments

- If fragments are removed as part of redeployment medical care, then determine DU or not DU.
  - If DU process IAW with 1999 treatment policy (this part is not changed in the new draft policy) and collect urine specimen for DU bioassay and **local** determination of creatinine
  - If not DU
    - Send fragment to CHPPM for analysis
    - No urinalysis needed
    - Code automated records

# Urine Specimens for DU Bioassay

- Follow USACHPPM Technical Guide 211
- “Gold-standard” is 24-hour collection
  - Whenever practical, should be used for casualties and Category I individuals.
  - The 120 mL spot collection protocol is acceptable for Category II and Category III personnel, although the attending physician may prefer the sensitivity and accuracy achieved by the 24-hour urine collection protocol.

# Urine Specimens for DU Bioassay (continued)

- Contact information is listed in section 1-7 of TG-211.
- Follow the guidance on urine collection containers provided in TG-211. Collection of urine for uranium bioassays can be done using standard laboratory collection containers, such as round polyethylene bottles (1.0 liter size) or environmental sample bottles (32 oz high density polyethylene with assemble closure materials).
- For any Category I patient, who provides urine for uranium bioassay, any embedded DU fragments or other metal shrapnel extracted from the patient should also be sent to USACHPPM for validation by laboratory identification.

# References

- Memorandum, MEDCOM, MCHO-CL-W, 9 April 1999, subject: Policy for the Treatment of Personnel Wounded by Depleted Uranium Munitions.
- Meeting/PHON CON, Armed Forces Radiobiology Research Institute (AFRRI), subject: “Research Results for Embedded Tungsten Alloy,” 28 March 2003
- Technical Guide 211, “Radiobioassay, Collection Labeling and Shipping Requirements,” U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), July 1998. (<http://chppm-www.apgea.army.mil/documents/TG/TECHGUID/TG211.pdf>)
- Clinical Practice Guideline for Post-Deployment Health Evaluation and Management, December 2001.

# Backup Slides

# Sample Questions

## Determination of DU Exposure or Retained Fragments

1. Were you in, on, or near (within 50 meters) an armored vehicle at the time the vehicle was struck by depleted uranium munitions? YES NO
2. Were you in a vehicle struck by kinetic energy munitions or friendly fire? YES NO
3. If you were in a vehicle struck by kinetic energy munitions, were the munitions DU or did you observe burning fragments (like a Fourth of July sparkler) when the vehicle was hit? YES NO
4. Were you in, on, or near (within 50 meters) a vehicle with depleted uranium armor (Abrams tank) at the time the armor was breached by DU or non-DU munitions? YES NO
5. Were you in, on, or near (within 50 meters) a fire involving depleted uranium munitions (i.e. burning Abrams or Bradley)? YES NO
6. Did you routinely enter vehicles with DU dust to perform maintenance, recovery operations, battle damage assessment and intelligence gathering operations? YES NO
7. Did you have any other reason to believe you were exposed to DU? YES NO
8. Do you currently retain fragments in you body from enemy or friendly fire? YES NO