

# **WOUNDS IN BERYLLIUM AREAS**

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# **BERYLLIUM HEALTH SURVEILLANCE AT AWE**

- Started early 1950s
- Annual physical, blood count, bi-annual chest x-ray
- Spirometry early 1960s, annual at Aldermaston, monthly with hand inspection at Cardiff
- 1990s: 1100 under surveillance, 75 workers
- CXRs abolished 1991 saving 4 man Sv
- Blood count abolished approx. 1991
- Graphing 1991

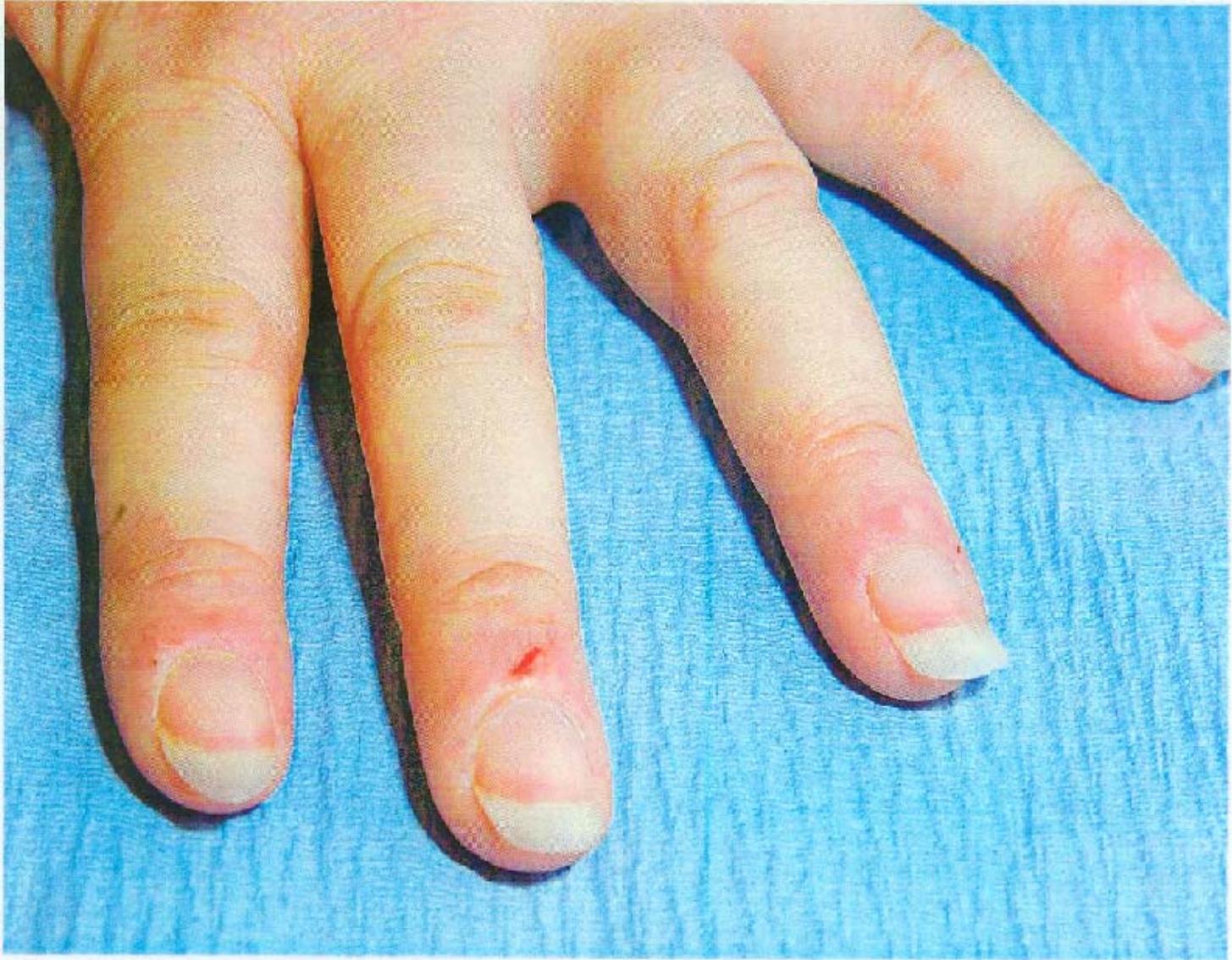
# WOUND POLICY

- Same attitude as with radiation contamination
- Same if a wound in the area or incidental cut
- If a wound due to Be, characterise the type of Be with manager: metal/alloy/particulate. Smear if possible.
- Thorough wound toilet with swab or saline.
- Not with a waterpick – goes everywhere
- Make sure wound clear

Analytical swabs in wound and from surrounding skin  
Limit of detection: 0.02ug Be

# WOUND POLICY

- If Positive, re-try
- Cover with waterproof plaster till healed
- Swab all wounds, no matter how trivial – 1000s!







PROCEDURE TMS 20

Date: September 09

**WORK INSTRUCTION No: WI 20/16**

Authorised

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### **Management of Wounds Sustained In Beryllium Areas**

#### **Treat as an abnormal event**

Phone call received from health physics control room

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Ensure duty MO aware

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Confirm wound occurred in a BE area. Characterise the type of Be with manager and whether the environment is dusty.

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Put on gloves as PPE

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Assess wound

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Vigorously clean wound with sterile water and gauze swabs

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Dry wound

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Take a sterile dry wound swab & label clearly (inside wound)

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Take a sterile dry wound swab & label clearly (around wound)

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Dress wound as appropriate (all clinical waste to be disposed of with normal clinical waste)

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Decide on review date if necessary

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Decide on fitness to return to work. If appropriate client can return to work with a waterproof plaster.

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Complete restriction form as necessary

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Direct client to fill in abnormal event form

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Complete Be Analysis Form xxxx and phone health physics control room to collect form and swabs from the Medical Centre.

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Health physics will inform TMS of result or the Practice Nurse will contact them if delay longer than two hours

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Positive results should be referred to doctor i.e. more than 0.02 mcg

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Inform individual /manager/ supervisor of result

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Record swab results on individual's treatment card

# AWE & US CBD EXPERIENCE

- CASE DEFINITION
- Granuloma on biopsy or suggestive CXR & positive BeLPT or similar
- AWE 1950s-1995
- 2 CASES IN 40 YEARS: Cardiff 1963 & Aldermaston 1979 Machinist (high exposure)

## Rocky Flats 1950s-1994

- 50 cases in same period
- 1991-94: 27 CASES in 4268 tested Rate 0.6%
- 1950s-1991 23 cases CBD
- Two similar establishments: 2 & 50 cases

- \*Stange W, Furman JF, Hilmas DE 1996. Rocky Flats Beryllium Health Surveillance Environ Health Perspec 104 981-986

# WHY THE DIFFERENCE?

- Stupidity?
- Lymphocyte Proliferation Testing?
- Latent Period?

# UK/US DIFFERENCES

- EXPOSURE
- Be treated as Pu
  
- WOUNDS
- Toilet & Debriding
- Swabbing

# SKIN: CARDIFF CASE

- Age 48, 1963 - Cut on Grinding Wheel with BeO
- Jan 1965 - Non-healing ulcer – Amputation: granulomas & Be in finger
- (Beryllium Patch Test positive also ?inhalation)
- June 1965 - Forearm nodules removed with granulomas and Be (inc in lymphatic)
- 1967 - Increasing shortness of breath
- 1970 – Numerous nodules in arm. Skin and lung biopsies: Granulomas with Be. CXR basal opacities consistent with CBD, decreased lung transfer factor, Be Macrophage Inhibition Factor test positive.
- 1972 – Controlled by steroids
- Died approx. 1992, age approx. 77yrs
- 1 - Jones Williams W et al 1967 Skin Granulomata due to Beryllium Oxide British Journal of Surgery 54, 4, 292-296
- 2 - Jones Williams W & Kilpatrick GS Cutaneous & Pulmonary Manifestations of Chronic Beryllium Disease. Granulomatous Diseases 141-145



# SKIN OTHER EVIDENCE

- Sensitisation
- Be LPT
- EAR THICKNESS  
TCELL Activation

# CONCLUSION

- Wound toilet and swabbing are cheap and easy
- They may just prevent CBD!