

Unseen risks in cemeteries, crematoria and funeral homes

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1

Session Outline

- General discussion about the known hazards as listed in the Work Health and Safety Queensland document *Guide for the funeral industry*
- *Most shouldn't come as a surprise...do you know of, or have experience with, these occupational health risks?*
- Observations from conducting respirable and inhalable dust monitoring at cemeteries and crematoria in the Brisbane city area
- *Some of the findings were unremarkable, others were surprising...*
- Questions



2

Common hazards in the funeral industry

- **Manual tasks** (lifting, pushing, pulling, carrying, raising, lowering)
- **Infectious diseases** (hepatitis B and C, HIV, COVID-19*)
- ***Hazardous chemicals** (embalming fluids [formaldehyde, glutaraldehyde, glycols], cytotoxic drugs, cleaning agents, wood dusts, poisons, dusts [memorials, graves, cremation etc]#)
- **Work-related violence and aggression** (physical and psychological injuries, psychosocial stressors [fatigue, trauma etc])
- **Physical hazards** (noise, vibration, heat stress, UV, radiation [radioactive treatments], unstable memorials)
- *Non-exhaustive list.*

*WES standards apply



3

Select workplace exposure standards (occupational health and hygiene)

| Standard Name | TWA ppm | TWA mgm ³ | STEL ppm | STEL mgm ³ | Notes | Sources |
|---|---------|----------------------|----------|-----------------------|---|--|
| Quartz (respirable dust) (aka RCS) | - | 0.05 | - | - | ---(see Silica - Crystalline); Carc. 1A | Scraping the cremator refractory bricks (cremations), backfilling of graves with decomposed granite. |
| Glutaraldehyde; 1,5-Pentanedial; | 0.10 | 0.41 | - | - | Peak Limitation | Embalsming fluids (alternative to formalin). |
| Formaldehyde (h) | 1 | 1.2 | 2 | 2.5 | Carc. 1B | Embalsming fluids (mixed with methanol as formalin) |
| Sodium hydroxide | - | 2 | - | - | Peak Limitation | green cremation' (heated caustic body decomposition). |
| Phenol | 1 | 4 | - | - | | embalsming fluids |
| Ethylene glycol (particulate); Ethane-1,2-diol; | - | 10 | - | - | | embalsming fluids |
| Rouge dust (a) | | 10 | | | | Dusts from cremator and cremulator. Service of cremator tuyere's. Dusts from soils (burials). |
| 2-Methoxyethanol; Ethylene glycol monomethyl ether; Glycol monomethyl ether; Methyl cello solve; Methyl glycol; | 5 | 16 | - | - | | embalsming fluids |
| Ethylene glycol (vapour) ;Ethane-1,2-diol; | 20 | 52 | 40 | 104 | | embalsming fluids |
| Methyl alcohol; Methanol; | 200 | 262 | 250 | 328 | | embalsming fluids (mixed with formaldehyde as formalin) |

| IARC Classification Ratings | | |
|-----------------------------|--|------------|
| Group 1 | Carcinogenic to humans | 121 agents |
| Group 2A | Probably carcinogenic to humans | 89 agents |
| Group 2B | Possibly carcinogenic to humans | 319 agents |
| Group 3 | Not classifiable as to its carcinogenicity to humans | 500 agents |



4

A question of dusts... which is more hazardous?



5

Dust readings (limited data)

| Activity | Inhalable Dust (ID) mg/m ³ | Respirable Dust (RD) mg/m ³ | Respirable Crystalline Silica (RCS) mg/m ³ | Quartz Concentration % |
|--|---------------------------------------|--|---|------------------------|
| (A) Drilling concrete benches | --- | 0.03 | <0.03 | <1 |
| (B) Drilling marble rests | --- | 0.03 | <0.03 | <1 |
| (C) Cleaning the ashes from the cremator | 1.33 | 0.05 | <0.04 | <1 |
| <i>Processing the ashes</i> | 0.28 | 0.05 | <0.01 | <1 |
| (D) Digging the grave | --- | 0.03 | <0.03 | <1 |
| (E) Filling the grave | --- | 0.06 | <0.04 | <1 |
| (F) Mowing the lawns | --- | 1.69 | 0.11 | 6 |
| Workplace Exposure Standard | 10.0 | 3.0 | 0.05 | --- |

■ Red shading denotes level exceeds the Workplace Exposure Standard.
■ Orange shading denotes level is 50% to 100% of the Workplace Exposure Standard.
■ Green shading denotes level is below 50% of the Workplace Exposure Standard

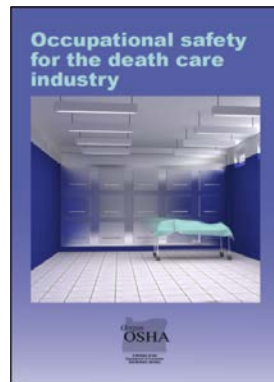
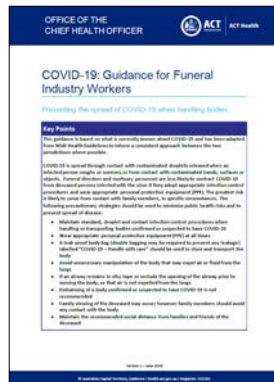
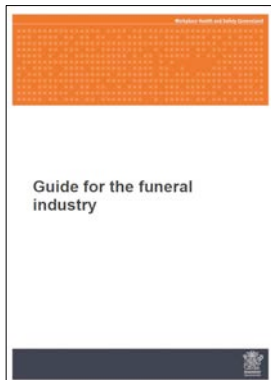
6

*COVID-19 advice (June 2020) is this still the case..?

- From the office of the ACT CHO June 2020
 - Maintain standard, droplet and contact infection control procedures when handling or transporting bodies confirmed or suspected to have COVID-19
 - Wear appropriate personal protective equipment (PPE) at all times
 - A leak-proof body bag (double bagging may be required to prevent any leakage) labelled "COVID-19 – Handle with care" should be used to store and transport the body
 - Avoid unnecessary manipulation of the body that may expel air or fluid from the lungs
 - If an airway remains in situ, tape or occlude the opening of the airway prior to moving the body, so that air is not expelled from the lungs
 - Embalming of a body confirmed or suspected to have COVID-19 is not recommended
 - Family viewing of the deceased may occur; however family members should avoid any contact with the body
 - Maintain the recommended social distance from families and friends of the deceased



Sources. (Just a couple...)



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Simtars' flame meters are used to determine exposure to flammable and combustible dusts. They must be accurate and consistent...

Safesys and CAMGAS issues occup seminar
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