Long Latency Health Risks in Foundries

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Why foundries?

Large numbers of workers (20,000 at 400 sites) exposed to multiplicity of substances with potential to cause long latency disease.

Complex process with significant exposure control challenges.

Epidemiology studies have identified excess cancer risk.
Visits to date

Extensive occupational hygiene surveys conducted in 7 foundries identified with CMF assistance

Exposure assessed at all stages of founding process

~ 30 substances measured using air sampling and biological monitoring, plus assessment of control strategy

Detailed feedback provided to all sites
Several hundred data points from each visit:

• 93 ‘significant’ inhalation exposures (inhalable FFP, RCS, formaldehyde, benzene, respirable FFP)
• 81 ‘significant’ BM results (isocyanate, toluene)

Definition of ‘significant’:

• inhalation exposure > 0.5 WEL except formaldehyde and furfuryl alcohol
• BM results above guidance values
CTI data

~50,000 data points provided to HSE

Statistical analysis conducted by HSL’s MSU (RR 677)

Lacks detailed contextual data (working practices, controls etc), no BM data

Provides a basis for further work

Matching on a ‘like for like’ with more detailed data from current LLHR visits
Job exposure matrix

Drawn up in consultation with CMF

Identifies 20 foundry types and 8 binder systems – 160 permutations

Visits (completed and proposed) target areas of highest risk – 15 foundry types
Exposure controls

Deficiencies in LEV systems and RPE use at all sites

Dutyholders responsive to recommendations – improvements already made and more in progress

Opportunity for substitution to remove exposures of highest risk – involvement with the industry chemical supply chain
Medical aspects

Investigate link between exposure and symptoms/early markers of disease

Longitudinal study of several hundred foundry workers

Use to predict future disease and effectiveness of interventions
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