



Biological Monitoring: evidence for reductions in exposure and risk

IOHA 2015

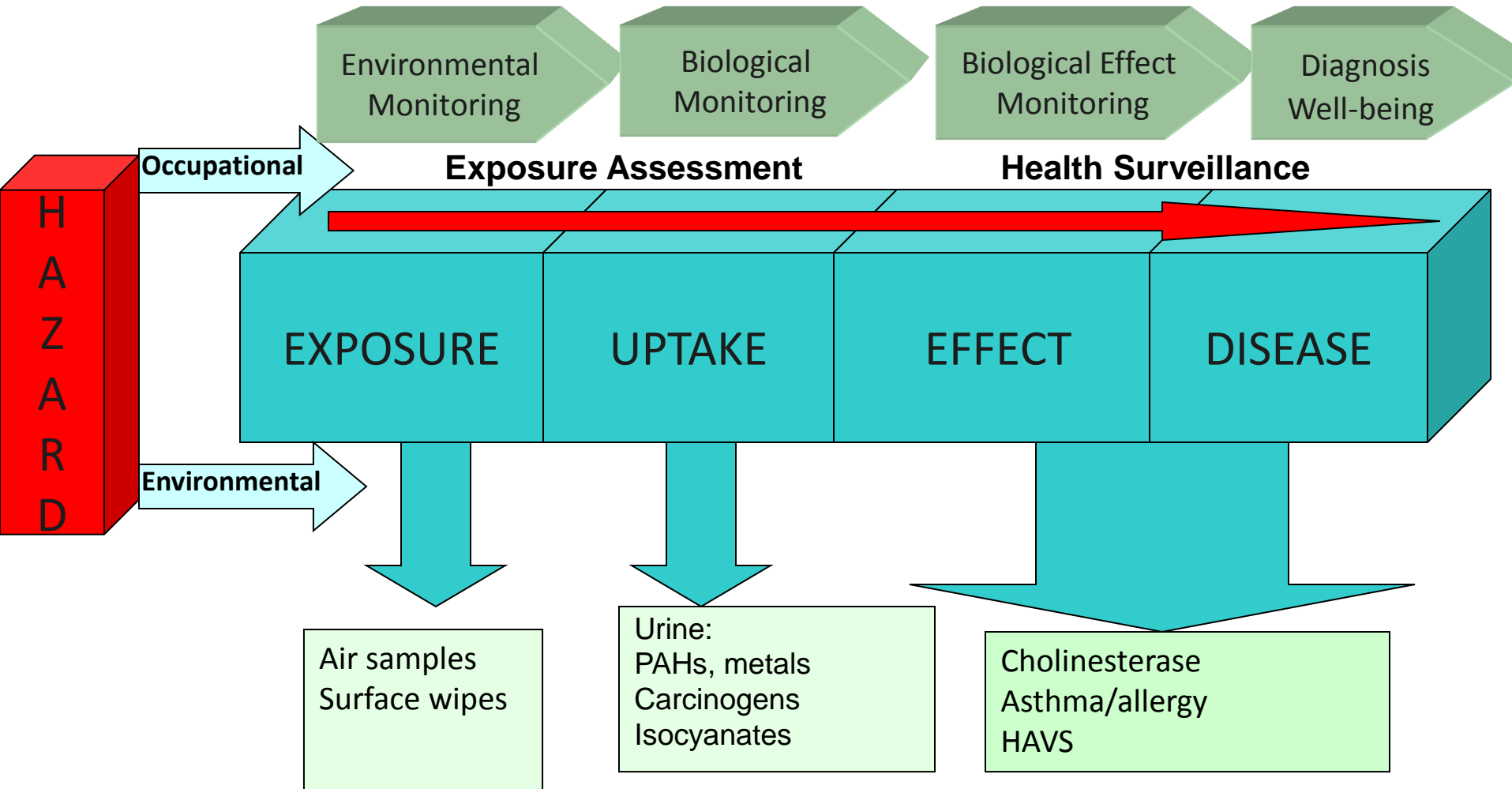
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The UK's Health & Safety Laboratory

- Is part of the UK Government's Health & Safety Executive
- Has a wide range of commercial customers
- Is the leading laboratory in the UK for biological monitoring



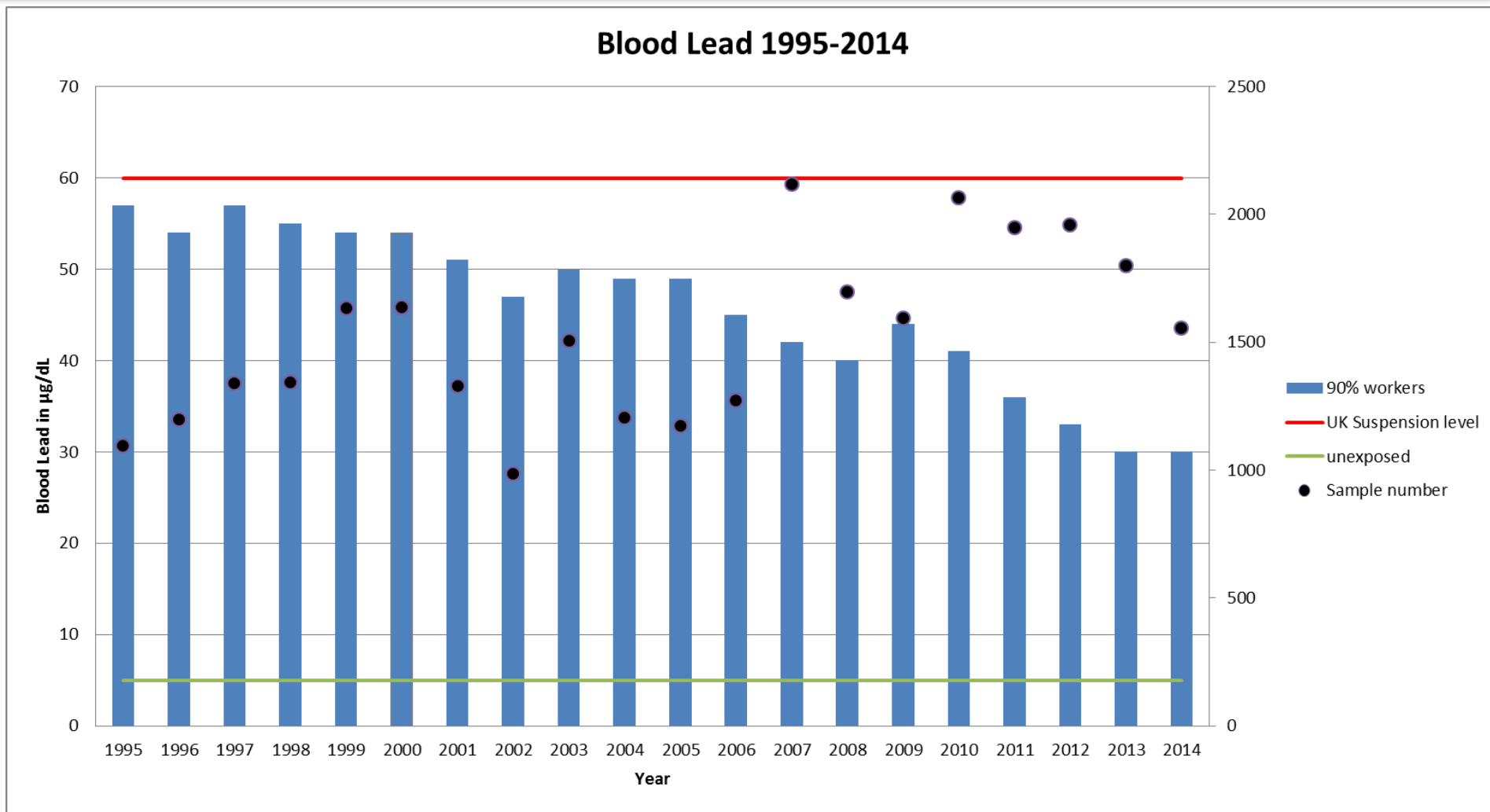
From Hazard to Disease



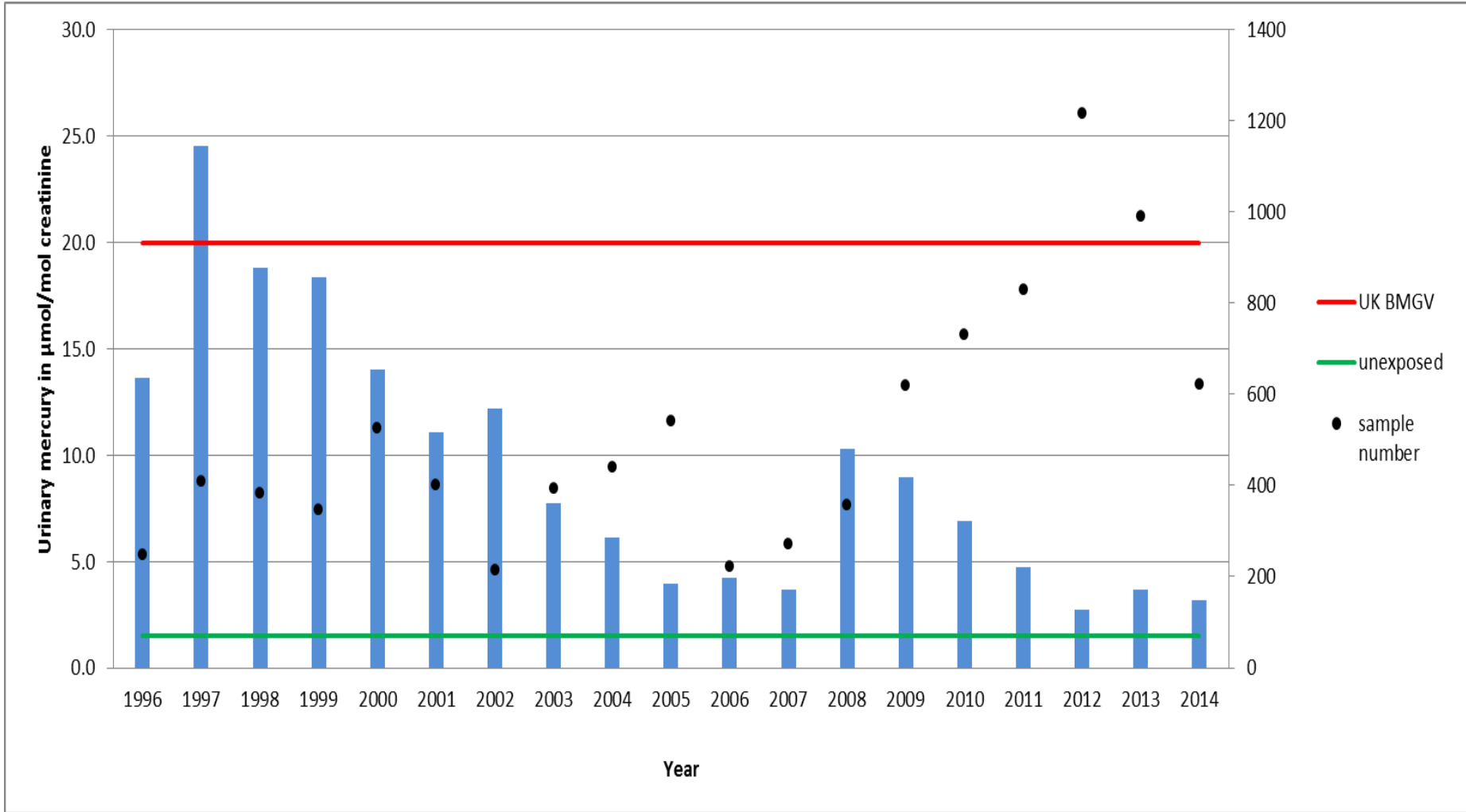
Biological monitoring database

- Samples come from HSE inspectors, hygienists & external occupational health professionals for:
 - Investigations, research, routine monitoring
 - Exposure assessment
 - Inconsistent contextual data
- Storing HSL's BM data since 1996
 - 750,000 results
 - >100,000 workers
 - 6,500 companies
- Searched for substances with >100 results per year
 - Lead, hexamethylene diisocyanate, mercury, benzene, methylenedianiline, chromium & cadmium
- Search results expressed as 90% values

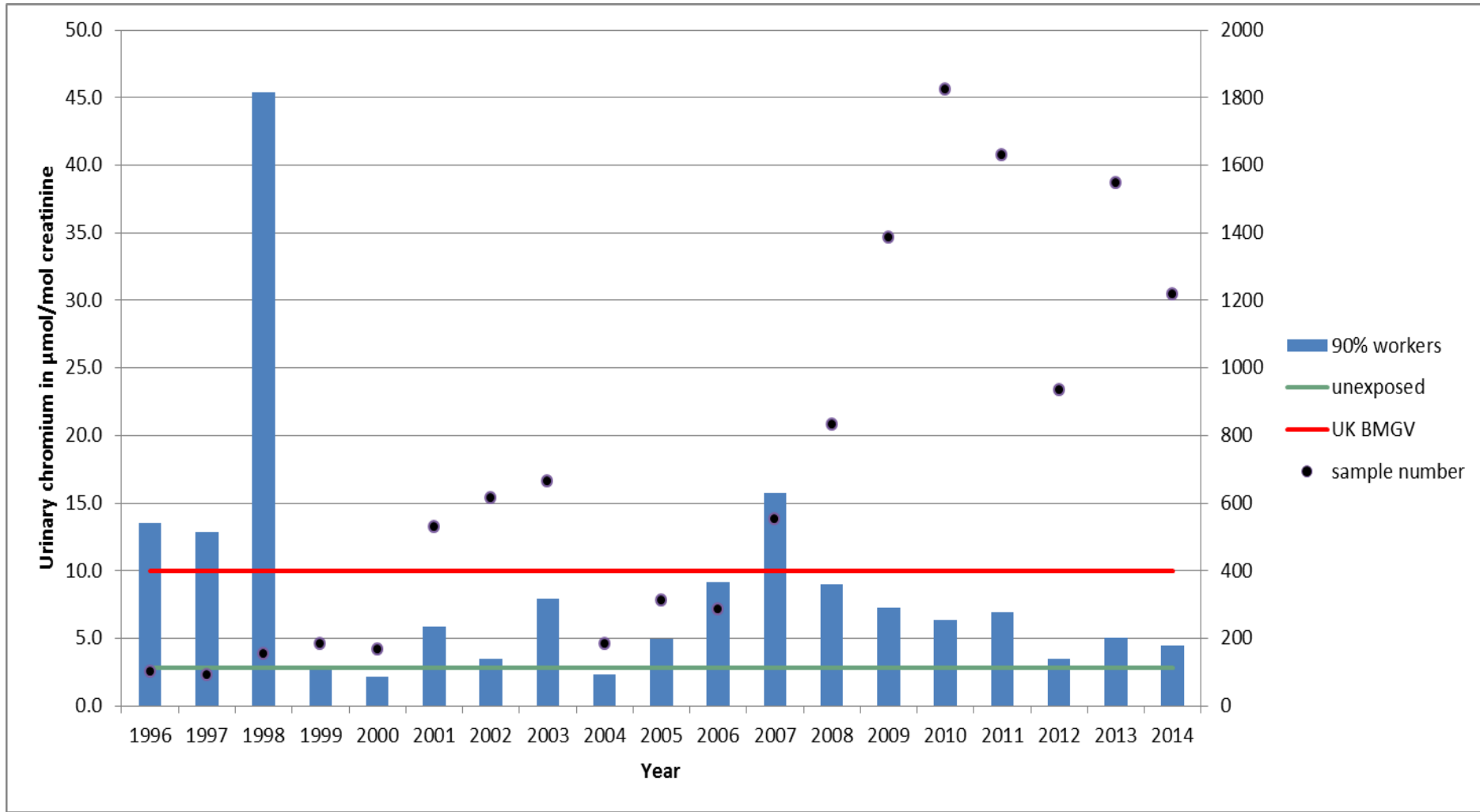
Lead in blood : ($\Sigma 28,720$)



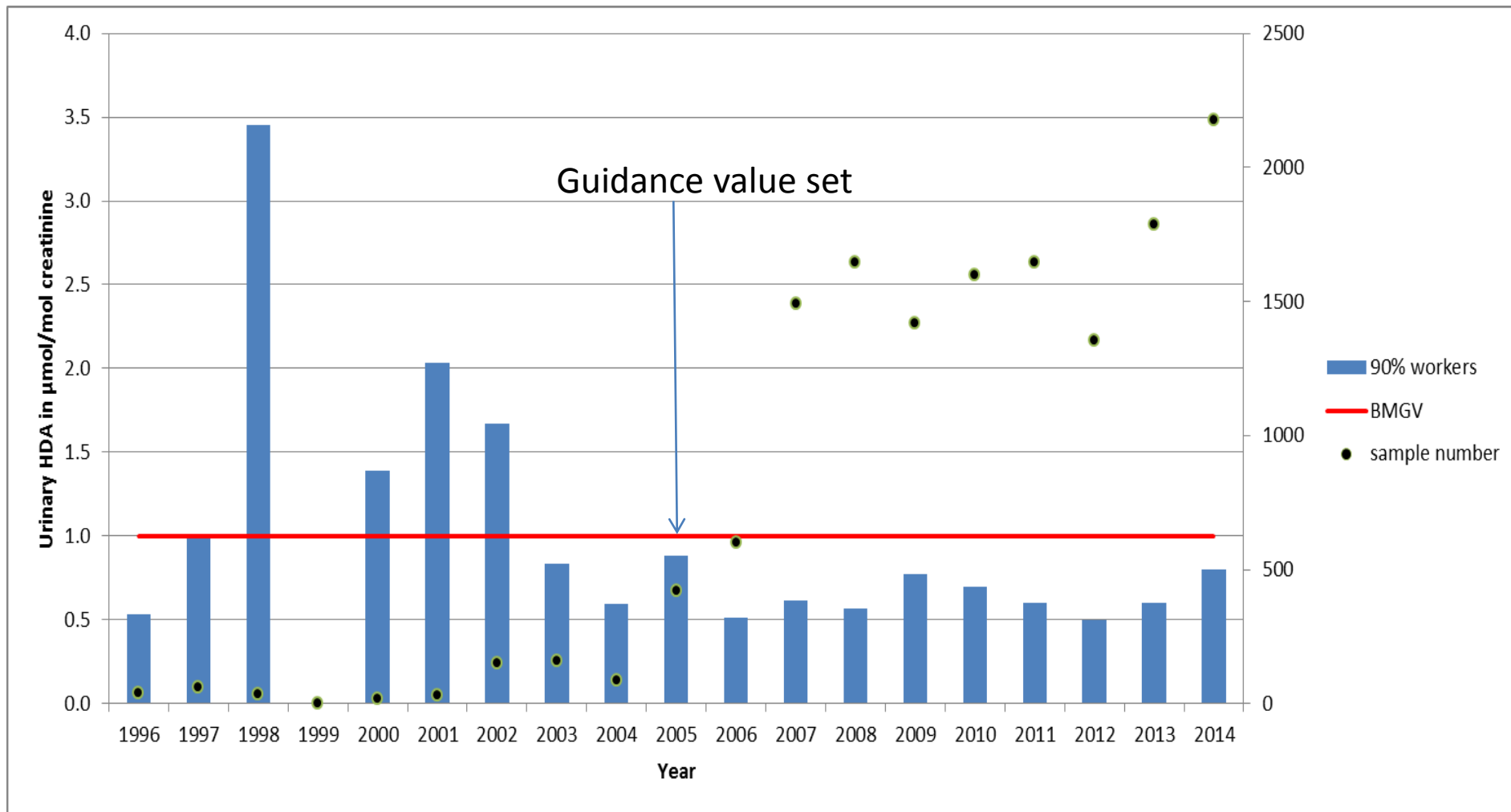
Mercury in urine ($\Sigma 9,340$)



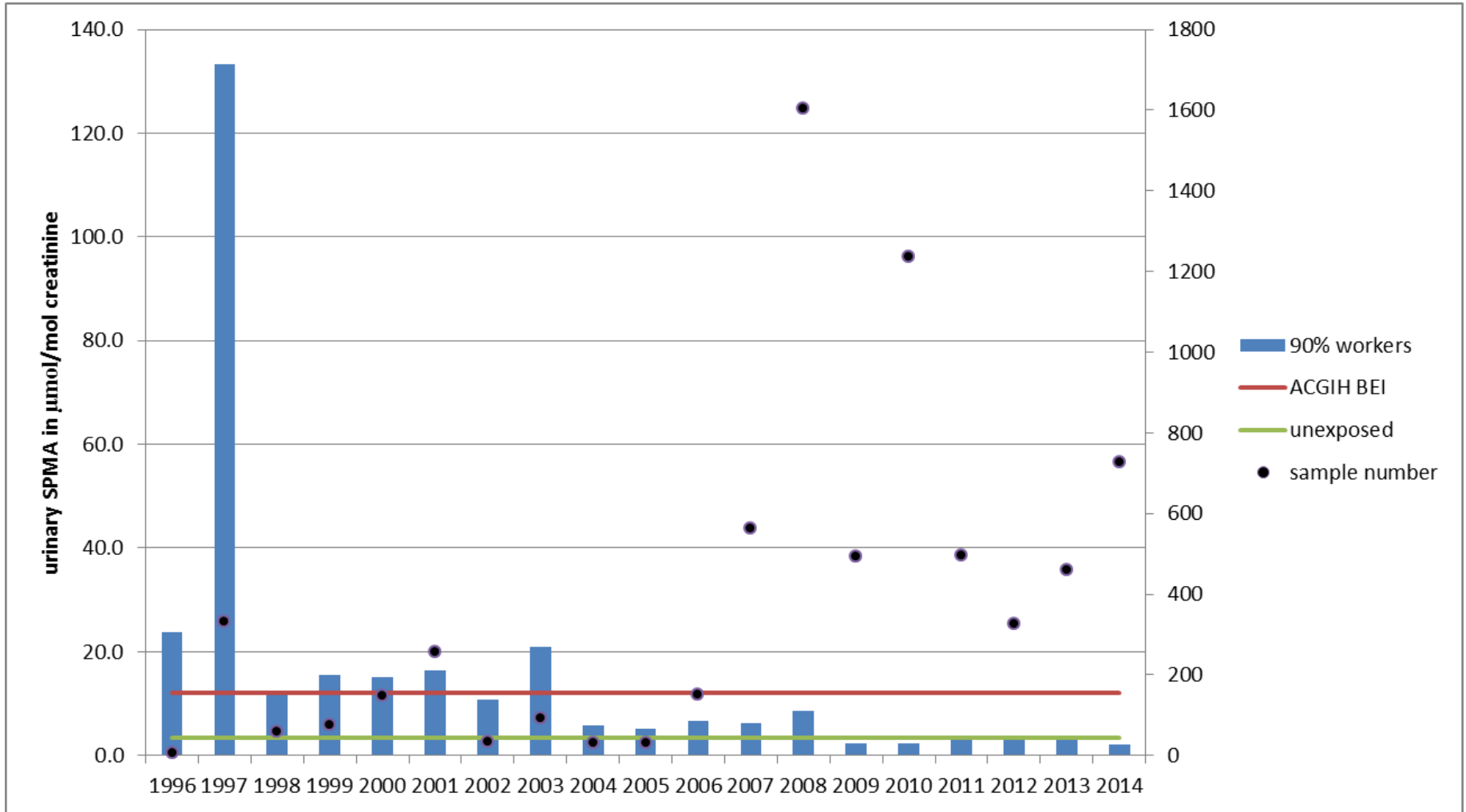
Chromium in urine (Σ 12,623)



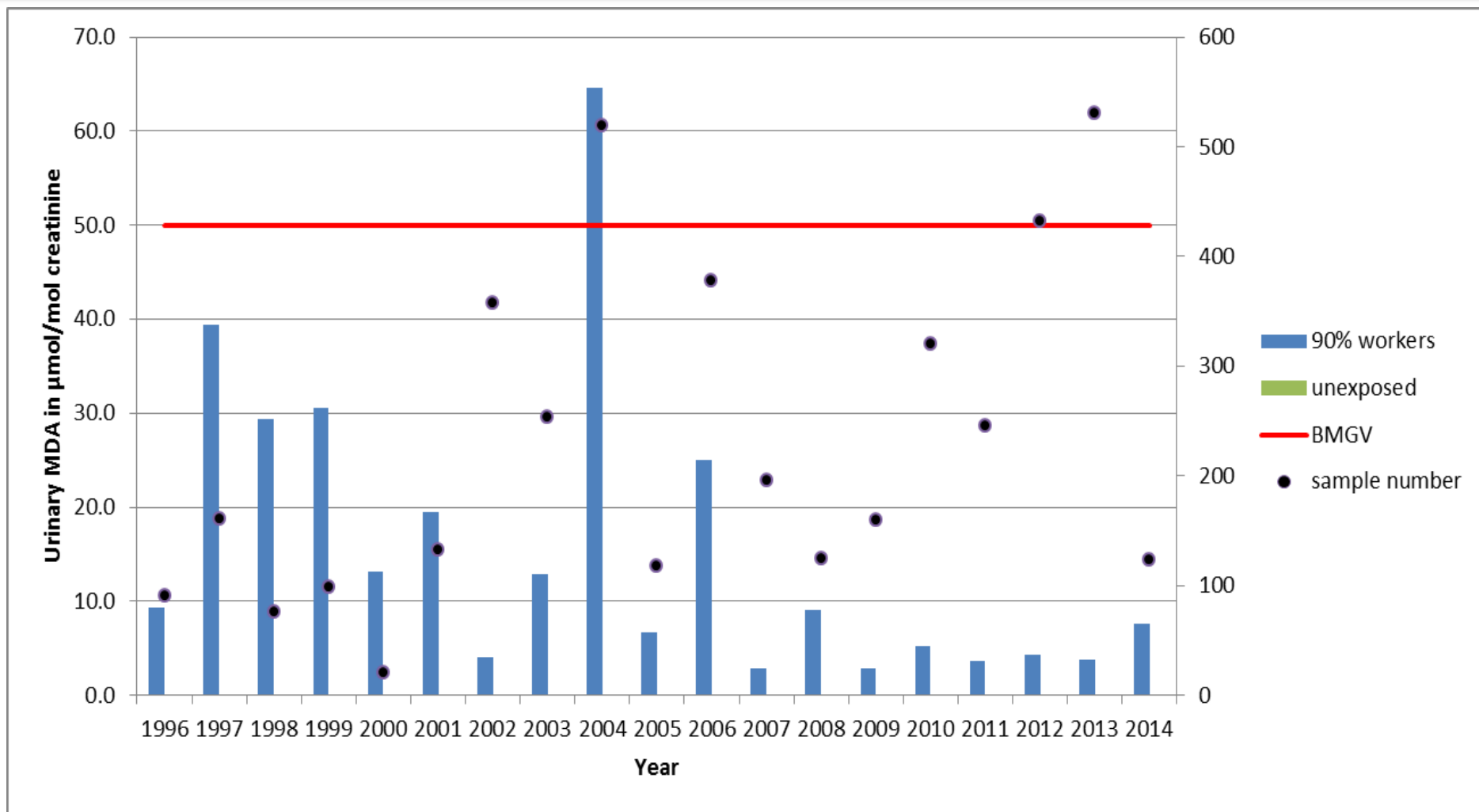
Hexamethylene diisocyanate ($\Sigma 13,450$)



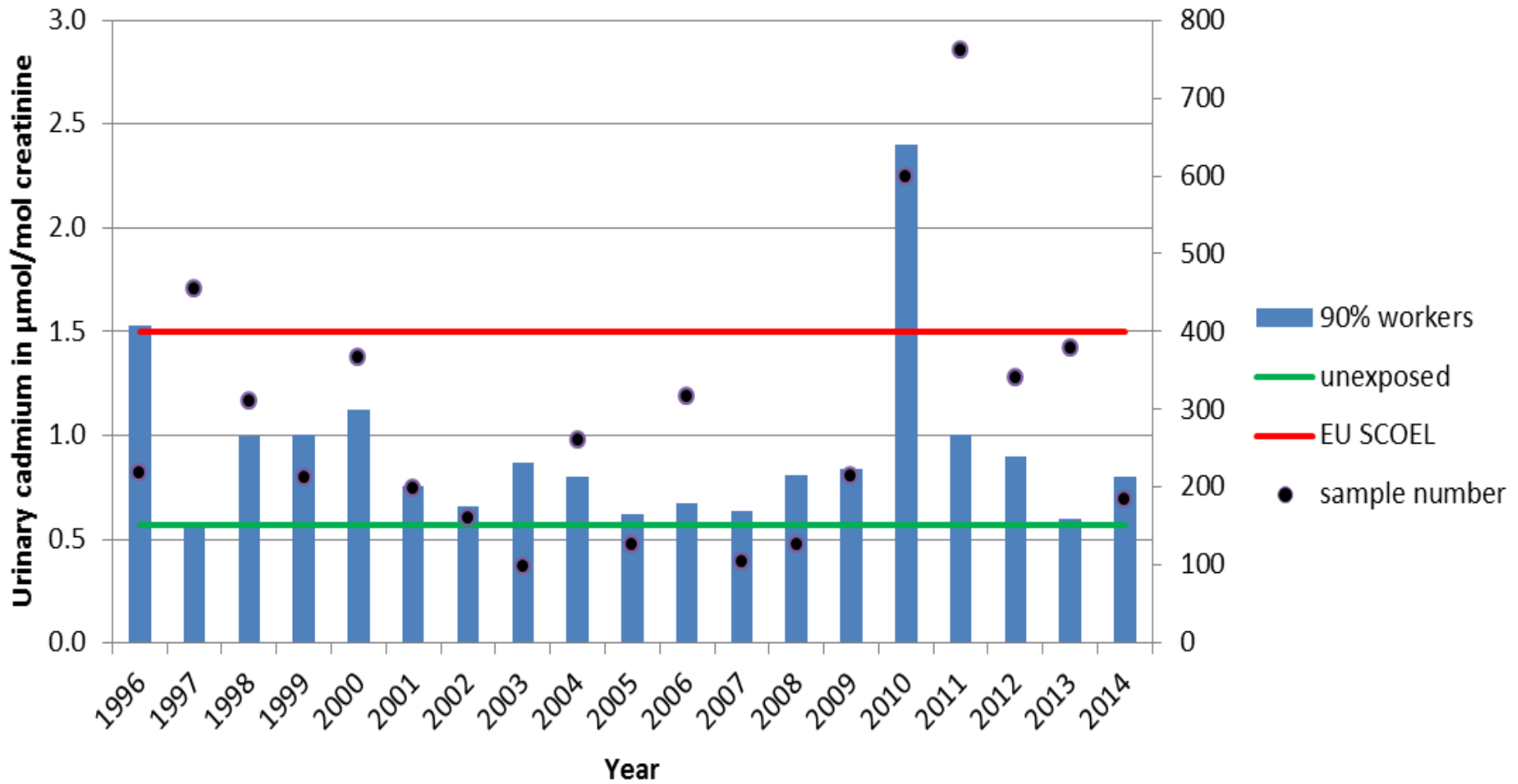
Benzene (SPMA in urine $\Sigma 6581$)



Methylenedianiline in urine ($\Sigma 4320$)



Cadmium in urine ($\Sigma 5,338$)



Comments

- Most samples have no contextual information
- Data may be biased down if samples from ‘good ‘ workplaces
- Data may be biased up if samples from workplaces with problems
- Gradually reducing levels encouraging
- Current 90% values below guidance values