Emerging Liability Risks

Sept 2012

Agenda

To discuss:

1. Context
2. Recent examples
   a) Phosphate
   b) MWCNT
   c) DEEEs
   d) Breast cancer
3. Questions on
   a) Harmless exposure to amosite
   b) Vibration white foot
   c) Etc etc etc.
To judge.

- changes in exposure which cannot now be predicted precisely enough by actuarial projection.
  - Tolerance and risk appetite
  - Reserving, pricing, wordings, targeting...

- the probability of exceeding a defined action threshold is increasing
  - Magnitude and or uncertainty

Process - after ID

- What would need to change…
  - To exceed threshold, tolerance, appetite?
  - To change your opinion?
- Regular updates.
Examples

• The case?
• What do you think?
• What would need to change to change that judgment?
  – Size?
  – Easy options?

Phosphates (P)

• Kidney disease patients must avoid excess dietary intake.
• Observed: CVD (indivisible endpoints), fractures, bone and joint problems.
• CVD, plausible (38% - 9 point causation scale based on BH criteria and UK law)
• Dose-response mortality effect observed in general population.
Judgment factors

- Exposure↑, subclinical KD↑, biological plausibility↑, low grade evidence↑.
- Few studies of initially healthy people.
- And:
  - Diet plus 100 g processed cheese plus 400 ml cola enough to exceed RDI.
  - 250 mg in supplements.
  - Powerful interest groups to defend P use.
  - Ingredient labels are quite variable!

Evaluation

Roughly:

- Are you providing cover?
- Causation theories.
- Attributable fraction, ‘innocence’ rates, health check data…
- Assess openness of the insured.
- Defences. Class actions.

Judgement
Game changers?

• If you don’t believe it, what would trigger increasing the alert level?

• If you do believe it what would raise the level further, what would reduce the level?

Some ideas

• Any “at fault” cause which increases KD. (silica, fructose, med neg, diabetes).
• Specific traces of added P in diseased tissues.
• Molecular epidemiology.
• Aggressive behaviour from the P lobby.
CNT – length effect


• Length dependent inflammation from silver, asbestos, MWCNT, nickel fibres.

• Pleural injection in mice.

• What sort of disease could be caused?
Length Effect
Length Effect

• Relevance to mesothelioma = uncertain.
• Inflammation – is it a duty-of-care metric?
• Risk could be modified: filtering, break points, LEV.
• 100, 50, 7 or 2.5 µg/m³?
• Reverse flow trigger? Flu, irritant dust…
Length Effect - insurers

- CNT and MWCNT risk rating factor. To go alongside the APA scale already discussed.
- Easily fragmented fibres - an intermediate rate.

Judgment

- Can length be used as a risk rating factor?
- What if it really is harmless?
- Size control and QA.
- LEV and masks.
- Only when it's really cheap.
- Stomata cell DNA damage.
Diesel Engine Exhaust


- Lung cancer. (IARC Group 1)
- Dose-response, confirmed?
- LC in rats for whole exhaust, particles and extracts.
- Genotoxicity observed in humans.
  - Railway workers, dockers, bus garage workers and truck drivers, miners, ferries, FLT drivers…

DEEEs Cont…

- In excess of NIOSH advisory levels. In UK (2000), 450k would be able to show excess. USA - 1.4 million.
- NIOSH 1988 “potential carcinogen”. Mines safe level = 160 µg/m³.
- Est. 83 per 1000 mine workers would develop diesel exposure related lung cancer if exposed as now for a working lifetime.
DEEEs Cont…

- UK attributable risk = 600 to 1000 cases a year.
- Specific carcinogens are within WEL.
- Non-smokers, no silicosis or other fibrosis. – innocence rates can be estimated.
- Liability analyses should have been possible between 2005 and 2010.
- Date of knowledge?

DEEEs Cont…


- Respirable elemental carbon (REC).
- Threshold effect is a possibility. >3,500 µg/m³ years.
- OR = NS at below 500 µg/m³ years. And very imprecise at 1800 µg/m³ years???
- Typical urban REC cumulative exposures over a lifetime would be ~ up to 360 µg/m³ years.
**DEEEEs Cont…**

![Graph showing odds ratio vs. cumulative REC (μg/m³·yr)]

**DEEEEs**

- RR > 2.0. at very high exposures.
- Duty in USA has been explicit since 2006. Hinted at since 1988. Should the UK employer have known?
- Probability of breach? COSHH.
- Export of engines to USA. Clean Air Act.
Game changers

- WEL. Best practice which should have been in place.
- Specific genetic damage.
- Innocent claims with watery eyes.
- Claims with heart disease.
- An accurate *de minimis* test is developed.
- Threshold effect is decided.

Breast cancer - nights

- 5% (AF) = 2,400 per year now and 2,850 in 2030 UK.
- Innocence rate
  - 7% for all factors – 169 good claims a year
  - 24% for main factors – 587 good claims a year
- Breach of duty - unknown.
- Strict liability
So…

- Authoritative proclamation.
- Foreign compensation activity.
- Basic science.
  - **Drift of knowledge, evaluation and uncertainty.**
- The key is to work out and decide what would ‘throw your switch’. Write it down. Act upon it.

---

_Radar_

- Employers’ liability
- Product liability
- Public liability
- Motor-related injury
- Science-based property insurance and PI issues.
- Pure economic loss in respect of biodiversity and climate/weather events.
- EIL issues.

See:  [www.reliabilityoxford.co.uk](http://www.reliabilityoxford.co.uk)