Best Practices in Laboratory Management:
Health & Safety, Equipment Management, Sample Storage and Traceability

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Best Practices in Laboratory Management:
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When I said, “Get me the Head of Health & Safety” …

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Edinburgh bioQuarter
(The Hundred Acre Estate)

HEALTH and SAFETY

UofE CM&VM @ EbQ

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Scale of Operations:
UofE Staff & Student Numbers

- CB: 350 + 800 *MB BCh* undergraduates
- QMRI: 650
- SCRM: 200 (UofE)
- CDP: 30 (UofE)
- NINE: 100 (UofE)
- RIE: 250 (UofE)
- RHCYP: 30 (UofE CL&H)
- TOTAL: ~1600 staff and post-graduate students and ~800 medical undergraduates

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Scale of Operations: Organisation

- Four CM&VM Deaneries + Two UofE Colleges: Single H&S platform
- Honorary contracts
- Partner organisations
- UofE and PFI premises, *etc*.
- Substantial turn-around
- **Effective communications**

Special Safety Precautions

- Ionising radiation
- Non-ionising radiation
- Pathogens
- Genetically modified organisms
- Other substances of high consequence
- Animals

Organisation and Structure:
Committees, *etc*

- One strategic-level H&S committee
- Seven (shortly to be eight) Centre-level H&S Committees
- Three GMBSCs
- One radiation committee
- A Campus Management Group
- CM&VM H&S Coordination Committee

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Enforcement and Regulation:
Statutory Powers

- **Health and Safety Executive**
  - Routine and specialist inspections
  - Accident investigation
- Verbal advice/Verbal instructions
- Compliance Letters
- Improvement Notices
- Prohibition Notices
- Criminal Prosecutions
- Fee for Intervention

HSE
Health & Safety Executive

The Law

- The Health and Safety at Work Act,1974
- Health and Safety Regulations
- Approved Codes of Practice (ACOPs)
- Guidance Notes (GNs) *etc*

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The "B" Word

Best advice regarding the future of H&S legislation in the UK is that there is unlikely to be any dramatic changes (if any at all), not least if we remain within EFTA and the EEA.

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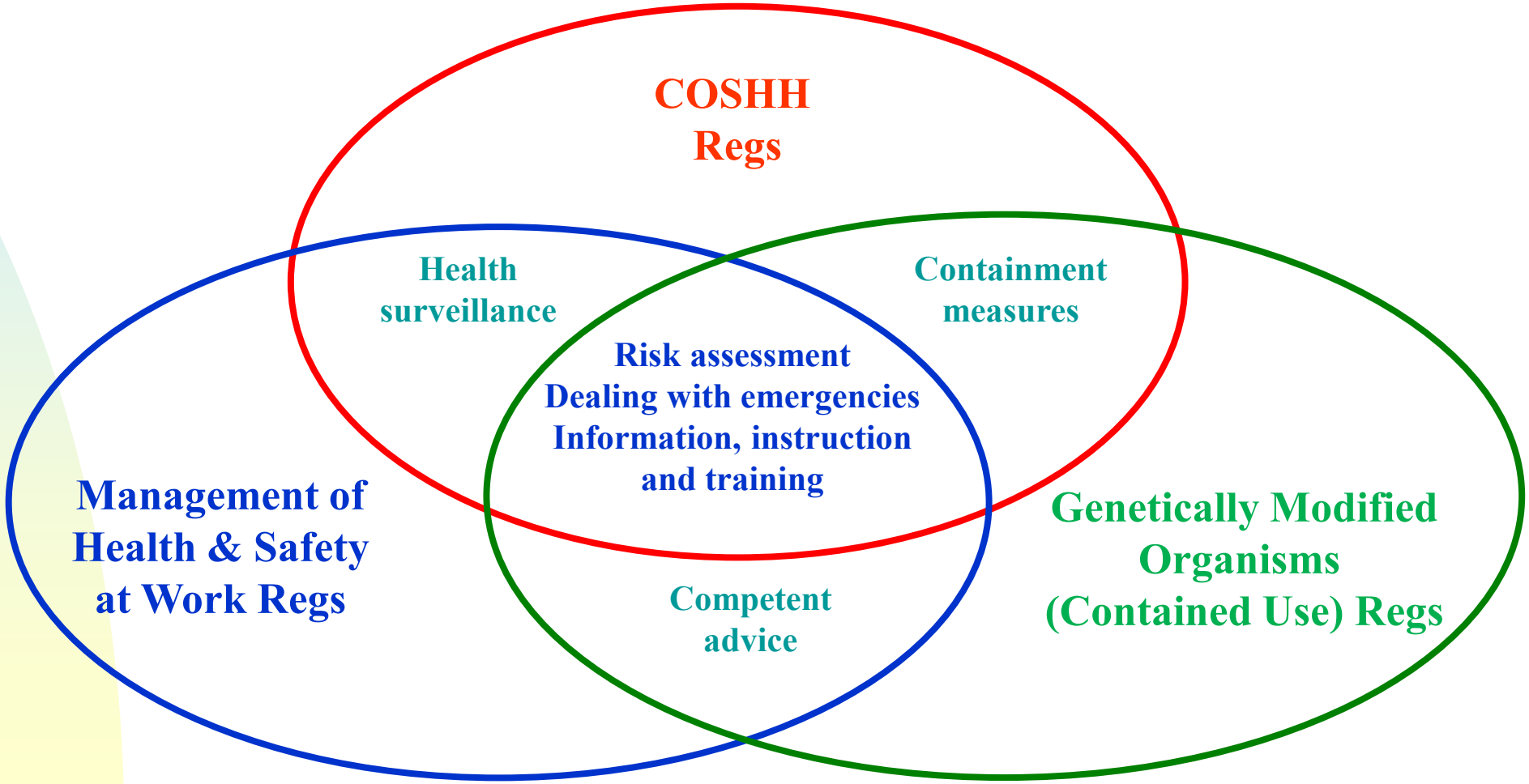
COSHH:
It's not only Chemicals



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COSHH:
It's not only Chemicals

- Suitable and sufficient **Risk Assessments** and clear SSsofW/SOPs).
- Clear attention to **Hierarchy of Controls** (narrative of justification, *etc*).
- **Record-Keeping** is critical.
- **Occupational Health** aspects are equally critical.

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COSHH:
It's not only Chemicals

- **Spill Management** is not just a good idea (Regulation 13).
- Even benign chemical spills have the potential to cause serious slip injuries.
- Some substances have massive clean-up requirements.
- PPE/RPE requirements may be greater than usual.
- Waste management!

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COSHH:
It's not only Chemicals

- **RETAIN** (biological and radiation hazards, A-TCSA Sch 5 and drug precursors).
- **CHPS**
- Personal **COSHH RAs**
- **RPE** face-fit testing.
- **OHU assessments** (LAAs, respiratory and skin sensitisers, *etc*).

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Hierarchy of Controls:
It's not only COSHH

- **E**limination
- **R**educe/Replace
- **I**solate/Innovate
- **C**ontrol
- **P**olicy and procedures
- **D**iscipline

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Late & Lone Working:
An unrecognised hazard in science?

"The brain is a wonderful organ. It starts working the moment you get up in the morning and does not stop until you get into the office."

Robert Frost (1874 - 1963)

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Late & Lone Working:
An unrecognised hazard in science?

- Working late, and for prolonged periods of time, can leave us unfit and more susceptible to illness.
- Working late can create stress and tension (perhaps well downstream of the work being done).

Training:
Policies and Practices

- A clear and agreed policy is needed (set out *What* is mandatory, and *When/How Often* it should be attended).
- Safety awareness training for *Everyone* (ASAP).
- Focused training based on risk assessments, *etc*.
- Three yearly refresher/continuation training for *Everyone*.
- Higher level training for *Managers and Team Leaders*.
- Record-keeping is essential.
- This, too, should be audited.
- Training for *Training Managers*.
- *Technician/Lab Manager* career development.

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Audits and Safety Inspections:
Proactive Monitoring

- **Audits**
- **Surveys**
- **Inspections**
- **Tours**
- **Samples**

= ASITS

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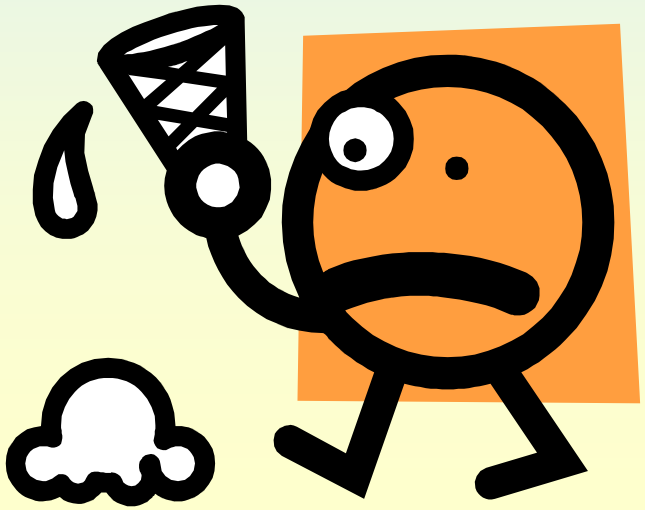
Accident Investigation:
Reactive Monitoring



- **P**roperty damage
- **A**ccidents and injuries
- **I**ll-health
- **N**ear-misses

= ***PAIN***

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Sample Storage & Traceability: How?

- Three LN_2 plant rooms.
- Many hundreds of -150°C, -80°C, -20°C and 4°C freezers and refrigerators.
- Freeze drying capabilities.
- non-critical temperature storage.

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Sample Storage & Traceability:
What and Why?

- Space is expensive.
- Can the stuff be found when we're looking for it?
- Do we really need to be keeping it anyway?
- Is our record-keeping robust and reliable (GCP: It's not an option)?
- **Audit and Review**

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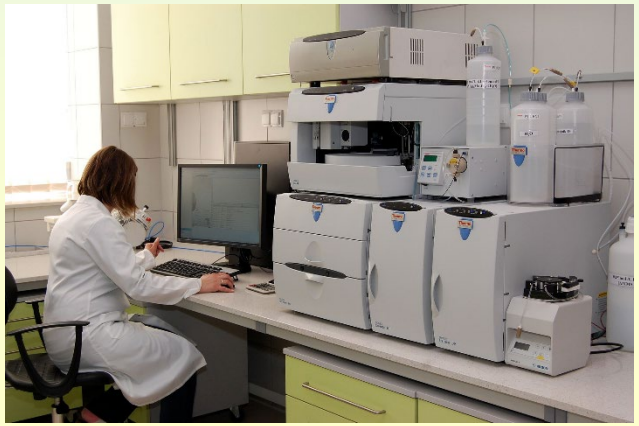
Equipment Management



- Specialist H&S professionals can make surprisingly valuable contributions to procurement processes.
- Evidence of planned programmes of preventative maintenance may feature in safety audits, *etc*.

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Waste Matters

- Many different waste streams
- Complex regulations
- Deactivation of pathogens and GMOs before uplift
- Chemicals
- WEEE
- **Sustainability**

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Business Continuity Planning

- Substitute **Threat Assessment** for Risk Assessment.
- There are plenty of plausible credible threats (such as severe weather, supply chain interruptions, utility failures, criminal damage, cyber attack, *etc*.

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Business Continuity Planning

- It's good to have a plan!
- Failing to plan is planning to fail.
- No need for specialists – No-one knows your business nor your capabilities better than you do.
- But it's critically important to train your team and exercise your plan.