

UTS – Safety and Wellbeing



- Two campuses
- 32, 000 enrolled students
- 2,555 FTE staff



EHS (Environment, Health and Safety) – the function

Safety and Wellbeing – the team: 6 ½ of us

Our philosophy

- We aim to integrate EHS risk management into normal business practices rather than have it sit off to the side
- Often means setting up the processes ourselves
- Curriculum is one example of this approach

The Problem

- How do we get the academics to understand their responsibility to manage EHS risks arising from their classes
- AND then to act out their responsibilities
- The problem is academic:
 - Historically, academics have not had a good understanding of their EHS responsibilities
 - Risk management is done by others – “that’s what support staff are for” – “lab managers look after the EHS”

The Solution

- Give standard format UTS EHS risk assessment form to the Faculties, tell them their legal duties and ask them to use it
- Check-box identification of hazards, risk and controls.
- Leads the subject coordinator through the risk assessment

The Problem remained ...



- Simple but not very practical
- Academics were not that enthusiastic about taking on this extra duty. Not that many Risk Assessments were completed
- So we had another try ...

The Solution ... take two

- Help the academics as much as possible
- We documented 250 individual risk assessments – for each subject in Science and Design, Architecture and Building
- Used the existing risk assessment format
- We wanted to make sure they actually get done
- Stored on UTSONline
- This was very resource intensive, however advantage of:
 - Testing the practicality of the existing process
 - Demonstrating goodwill
 - Providing one-on-one training of academics

The Problem remained ...



- Academics not actively involved – we needed to collaborate to successfully engage the academics
- Need integrated risk management – after all, this *is* our philosophy

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- Risk Assessment was usually just identifying generic controls already in place. Not specific to the hazardous tasks. Didn't add much value.
- Risk Assessment should be more than operational compliance – it should have a practical outcome

The Solution ...take three

- Faculty of Science agreed to develop and pilot new integrated risk assessment process
- Built into Subject Approval at University level
- AND Faculty level – Science Undergraduate Laboratory Practical Programs
- Agreed Subject Coordinators responsible for EHS risk management in subjects, Laboratory/workshop managers must be consulted and Sign-off by Head of Department
- Novel Approach – Low Risk Outcome and Safety Info built into Lab Notes

LOW RISK OUTCOME

- Only LOW level of residual risk
- Deemed practicable for undergraduate student activities
- Would not work in areas where there is a greater risk appetite
- Risk level is fixed – just need to work out controls measures

SAFETY PHRASES AND PICTOGRAMS

- Outcome of assessment includes safety phrases and pictograms inserted into student notes at point the hazard is introduced
- Practical outcome - same purpose as SWMS
- Student notes traditionally had safety info kept separate
- Bottom up risk assessment approach to developing these safety notes means controls are more specific to the task
- General info via orientation, targeted info via lab notes

! Infectious material - perform this step in the biological safety cabinet



! Wear laser safety glasses provided










"Causes severe burns.", "Risk of serious eye damage."




! Nitrile gloves must be worn






SODIUM HYDROXIDE	RISK PHRASE		SUGGESTED SAFETY INFORMATION	
0.125M-0.5M (0.5%-2%)	Xi R36/R38 "Irritating to eyes and skin."		Gloves must be worn	
0.5M-1.25M (2%-5%)	C R34 "Causes burns.", "Risk of serious eye damage."	 CORROSIVE	Gloves must be worn	
>1.25M (>5%)	C R35 "Causes severe burns.", "Risk of serious eye damage."	 CORROSIVE	Gloves must be worn	

4. During the incubation, the casting of an electrophoresis gel [0.7% (w/v) agarose] will be demonstrated. The ethidium bromide  DNA stain will be incorporated into the gel at the time of pouring [2.5 µL per 50 ml of gel solution].
5. On completion of the enzyme incubation, add 2.5 µl of stop buffer, containing the electrophoresis loading buffer and dye, to your tube. Use a pipettor set to 20 µl and pipette up and down once or twice to mix.
6. Load the contents of the tube into the allocated well of the gel [reaction tube number = well / lane number]. A DNA ladder of linear standards and a sample of uncut plasmid will also be loaded by a demonstrator in lanes 5 and 6 of each gel.

These samples enable you to estimate the size of your DNA by comparing the fragments produced by enzyme digests to the standards [see the Data Sheet]. The uncut plasmid is included as a control for your digests. The uncut plasmid bands are in different conformations [supercoiled and relaxed circles] and will indicate whether all of your original DNA sample has been digested.

7. Electrophorese the samples at 60V until the samples enter the gel (about 5 min), then at 100V for 1hour. See *Completion of Data sheet* below whilst waiting for your electrophoresis to run.
8. After electrophoresis, the gel will be examined under UV light . Put on safety glasses and view the DNA bands under the transilluminator. A facsimile of your gel will be given to you.

Caution: Wear gloves when handling gels as they contain ethidium bromide, a carcinogen. 

9. Discard the gel into the appropriate waste container. Wipe the UV transilluminator with 70% alcohol   to clean.

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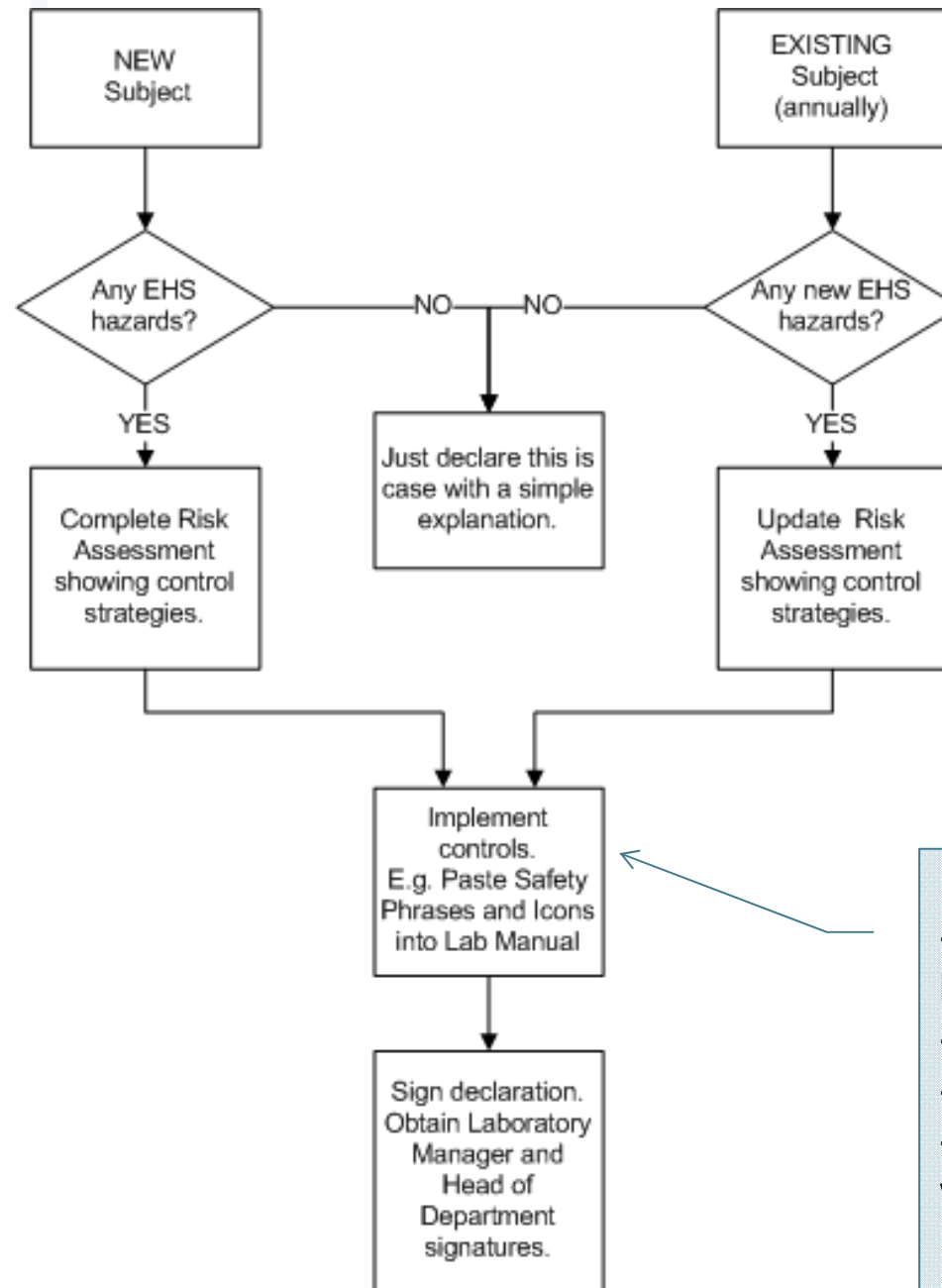
- By our third attempt we had developed a more rigorous solution that could stand up to the pressures of academic indifference
- We had buy-in from key stakeholders
- Solution was simple, practical and sustainable

Learnings

- Collaborate and engage - management, academics and technical support
- Specialised risk assessment templates work best - evolution from generic risk assessment templates to specialised formats

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For example:

- Provide instruction on how to use acid dispenser.
- Put sign over water bath.
- Hold sample with tongs.
- ! Gloves must be worn when handling dichromate.

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Questions and comments