

When things go wrong.... Common scenarios in legionella and risk communication

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Why things go wrong...

- Poor information
 - Makes for reactive responses
- Poor prevention
 - Forewarned is forearmed
- Poor communication
 - Clear chain of communication is missing



Reactive management

- Almost always a bad move
- Forces uninformed action
- Creates 'outrage'
- Is often expensive



We don't need Parking Meter Attendants!

- Numbers at the front end means panic at the back end!
- Closing the gate when the horse has bolted!
- Management based on **SMART** thinking
 - **S**ensitive
 - **M**easurable
 - **A**ccurate
 - **R**e producible
 - **T**imely



Morwell Coal fires

- ▶ Water drawn from dam for firefighting
- ▶ Questions about water quality
- ▶ A comprehensive sampling program
 - ▶ Legionella was the instigator
 - ▶ Cyanobacteria detected
 - ▶ Coliforms detected
 - ▶ Poor analysis of results
- ▶ No clear communication strategy in place.




Morwell Coal Fires

- ▶ Testing without interpretation
 - ▶ When you get the results what do they mean?
 - ▶ When you get the results what do you do?
- ▶ Testing breeds testing!
- ▶ Communicating results can be difficult if you don't have a plan

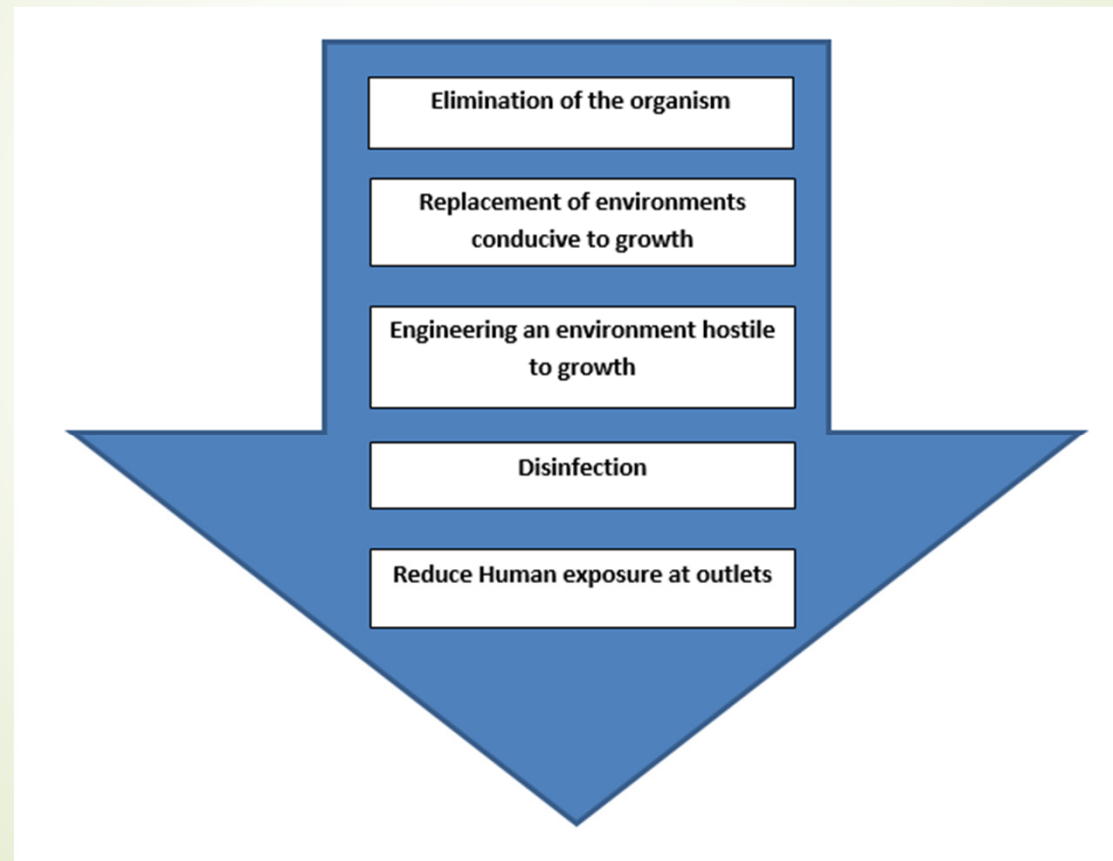



Morwell Coal Fires

- Risk management plan
 - Risk Assessment
 - Responsibilities / SOPs
 - Results interpretation
 - Communication strategy
 - PPE requirements



Hierarchy of control (water systems)






What would be Legionella **SMART**?

- Maintenance
- Temperature
- Flow rates
- Water Quality
- Disinfection



The Numbers Game!

- ▶ Legionella do not grow logarithmically
 - ▶ So what does 1 or 10 or 100 mean?
- ▶ Exposure from a different source results in a different dose
 - ▶ So what does 1 or 10 or 100 mean?
- ▶ Culture is wildly inaccurate
 - ▶ So what does 1 or 10 or 100 mean?
- ▶ So where does culture fit?



What would be Legionella **SMART**?

- Maintenance
 - Responsible person
 - Contingency plan
- Temperature
 - Try to avoid the 20-50°C window
- Flow rates
 - Stagnation and temperature go hand in hand
- Aerosols
- Water Quality
- Disinfection
 - The last defence



What is a barrier?

- An engineering point in the system that can be:
 - Monitored
 - SMART-ly
 - Maintained
 - Controlled
 - Set tolerances (control measures)



Identifiable barriers

- Point of entry
- Storages
- HWS / WWS / CWS
- Thermostatic Mixing / Tempering valves
- Outlets
 - Bathing
 - Process waters




Point of entry

- Water quality?
 - Decisions on suitable disinfectant
- Filtration?
- Disinfection
- Multiple points of entry



Storages

- Covered
 - Thermally optimal (the 20 - 50°C window)
 - Cleaned
 - Disinfected
- 





HWS / WWS / CWS

- Hydraulics
 - documented
 - Absence of dead legs
 - Balanced
- Insulated
- Thermally optimal
- Disinfected



TMV's / Tempering valves

- ▶ <5 years old
 - ▶ Routinely maintained and disinfected
 - ▶ Thermally optimal
- 



Outlets - Bathing

- Short lengths from TMVS
- Short lengths of flexible hose
- Routine flushing / disinfection
- Can be drained
- Aerosol minimisation (aerators)
- Disinfectant residual



Outlets – Process waters

- Thermally Optimal
- Routine flushing / disinfection
- Aerosol minimisation
- Disinfected
- PPE



Where do control measures fit?

- Identify SMART control parameters
- Establish optimal performance
- Inform of system deficiencies / aberrations
- Inform of routine maintenance requirements
- Permit system assessment and review



Where do microbial test results fit?

- ▶ Numbers mean colonisation
 - ▶ Durr! We already know it's there!
- ▶ Numbers are fickle
 - ▶ Planktonic sampling of a sessile population
- ▶ Numbers are not a control measure
 - ▶ Once you get the number it's too late!
- ▶ Numbers can verify / validate that we have control



The bigger picture

- ▶ Barrier systems
 - ▶ Provide multiple points of control
 - ▶ Failure of a single barrier \neq failure of system
 - ▶ Optimise system performance
 - ▶ Enable proactive management
 - ▶ Reduce operational costs
 - ▶ Reduce liability
 - ▶ Inform a comprehensive risk management plan



Communication



Set Goals

- Empower those affected?
- Report potential exposures?
- Provide appropriate information
- Reduce spread / impact
- Identify 'at risk' individuals
- Involve community



Identify Audience

- ▶ The exposed who know it
 - ▶ The exposed who don't
 - ▶ Those who are causing exposure
-
- ▶ Usually all three will not be in the same meeting!



What is the message?

- What do people want to know?
- What do you want them to know?
- What can be misunderstood?
- How will you avoid 'outrage'?
- How will you engage the audience?
 - Are there things they can do?
 - Are there ways they can help?



Communication Strategies

- Public meeting
 - Oral communication is poor
 - Personal presence is reassuring
- Media
 - TV / radio
 - Press release
 - Internet
- Leaflets
- Combination



Media

- Have a 'mission statement' and reiterate it.
 - 'Our first priority is to protect the health of blah blah blah.....'
 - "Our primary goal is to minimise the risk of....."
 - **NOT** – "we'll save who we can but...."
- Approach the media before they approach you
- 'openness' vs 'conspiracy theory'
 - Twitter / Facebook etc.
- Maintain availability
- Provide summarised information
- Monitor media 'response'



Establish trust

- Commitment
 - Committed to resolving the problem
- Competence
 - Have the resources to deliver
- Caring
 - Demonstrable concern
- Predictability
 - The story is consistent



Participation

- Encourage debate
- Encourage involvement
- Respond to questions and responses
- Utilise available media (eg electronic)
- Involve community leaders



Response

- Feedback on questions
- Set up 'hot-lines' etc
- Social media access
 - Responses in the context of the mission statement, not reactionary.
- Provide results
 - ie reduction in cases of disease
 - Improved air quality testing results



Outrage

- Outrage is to some extent genuine
 - 'there's sewage in my tap water!'
- Outrage is not rational
- Ignoring outrage is likely to magnify it
 - 'you're not even listening!'
 - this may be advantageous
- Acknowledge outrage and focus on outcomes
 - 'the source of the outbreak has been identified etc'
- Use 'mission statement'



Failure

- Risk communications may fail
- May not improve the situation
- May possibly make it worse
- 'Success' is often measured by raising the level of understanding