

Health & Safety for a Sustainable Life

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**President Qld Resources Council
Chairman ACARP**



'Improving health and safety in challenging times'

Objectives

- Share some of my observations about disease, injury and fatalities in the mining industry.
- Raise a few issues, not by telling you what you should do, but pose a few questions about “How do you wish to live your lives?”
- Hopefully have each of you reflect on what is really important to you.



Objectives cont.

- Review some health statistics and injury statistics, make some observations and briefly discuss an evolving safety process developed by ACARP.
- Have some discussion around the Conference theme *Improving health and safety in challenging times*.
- Conclude with a brief video of a blast wall extinguisher trial in South Africa sponsored by ACARP.



Health & Safety for a Sustainable Life

Health & safety are about the “How” we and our families live our lives; at home, in the community, at work, travelling to a from work etc.

We need to be knowledgeable, proactive and decisive

We must not stifle individual responsibility

In the workplace leadership sets the standard of the culture



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Leadership

Leadership is the key to any successful enterprise – including Safety, particularly in a business environment of volatile change.

Leadership is the courage to implement decisions to meet strategic intentions AND the mental tenacity to ensure desired outcomes are delivered.

You can't NOT communicate. A daily and highly visible standard against which you will be judged as a leader by everyone, is what you are willing to walk past without commenting. That, by default, represents your standards.

Generally, safe operations are more productive operations.



Introductory comments

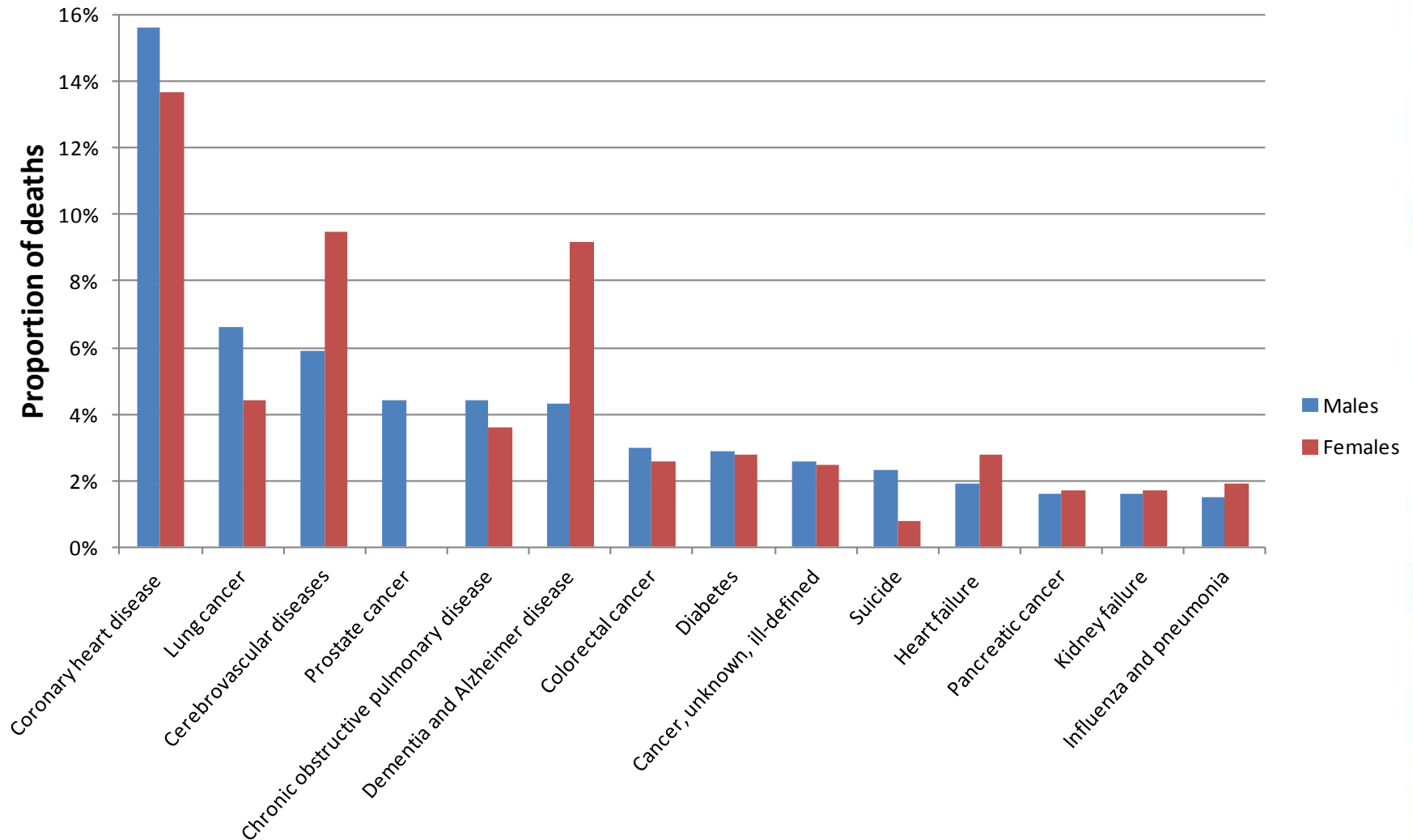
A long sustainable and productive life generally requires one to both defer death as long as practical and avoid disabilities either by injury or disease.

Disabilities can cause significant trauma for families and friends, and generally impact many people and services. This can be mentally and financially debilitating.

Interestingly, the leading cause of death in Australia is disease as shown on the next slide.

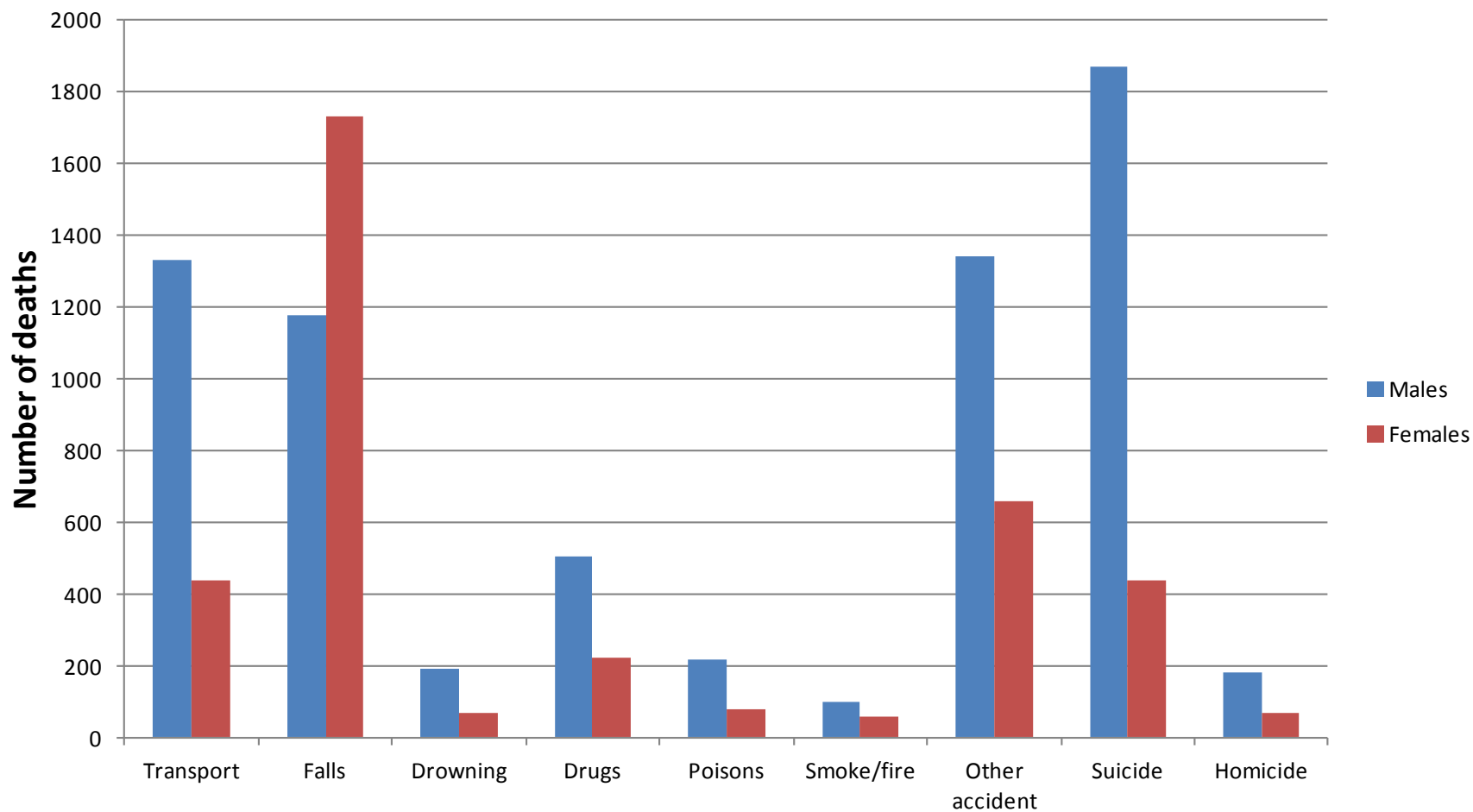


Leading underlying causes of death in Australia (2011)



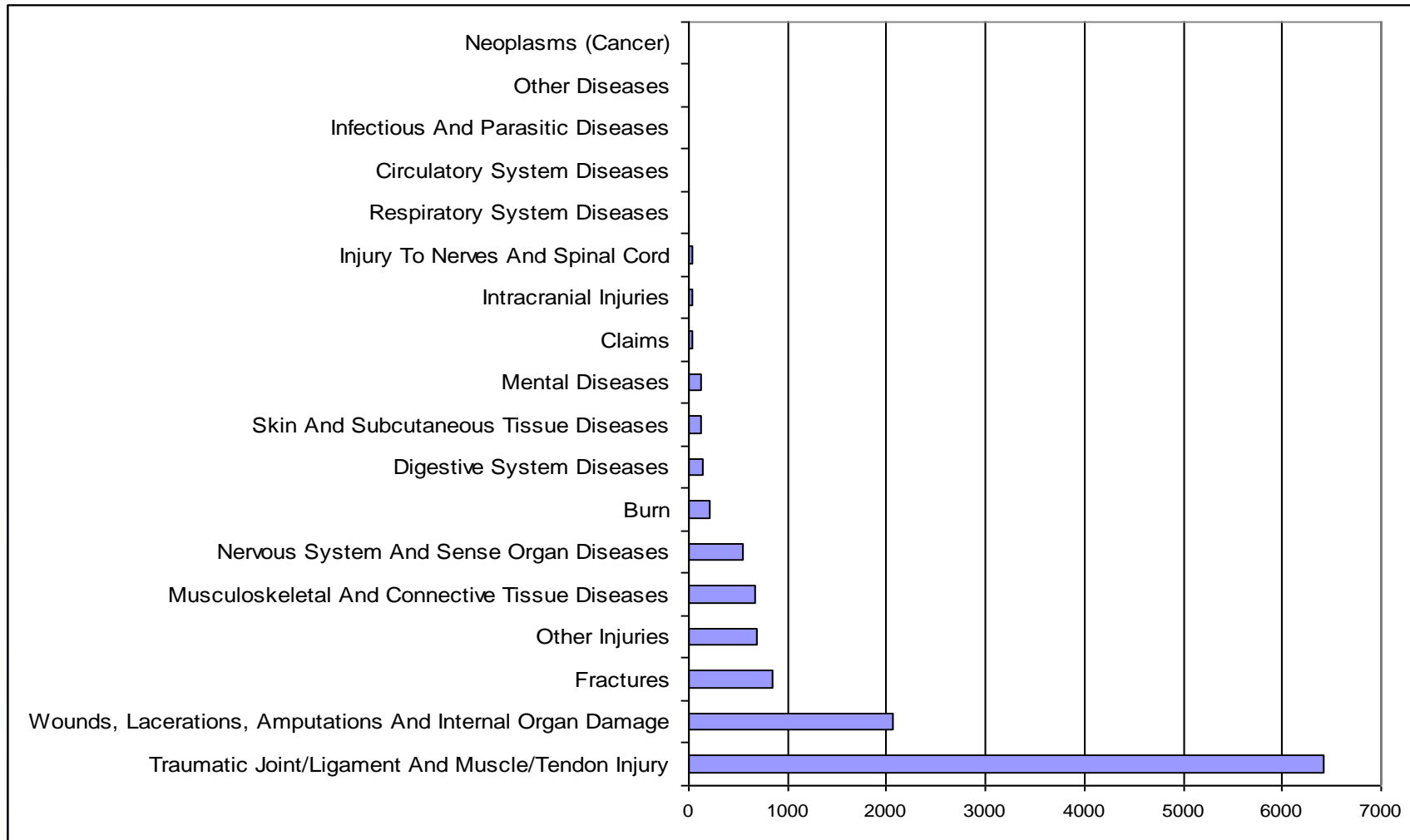
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Major external causes of injury death in Australia (2004-05)



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Queensland mining – number of claims by injury type

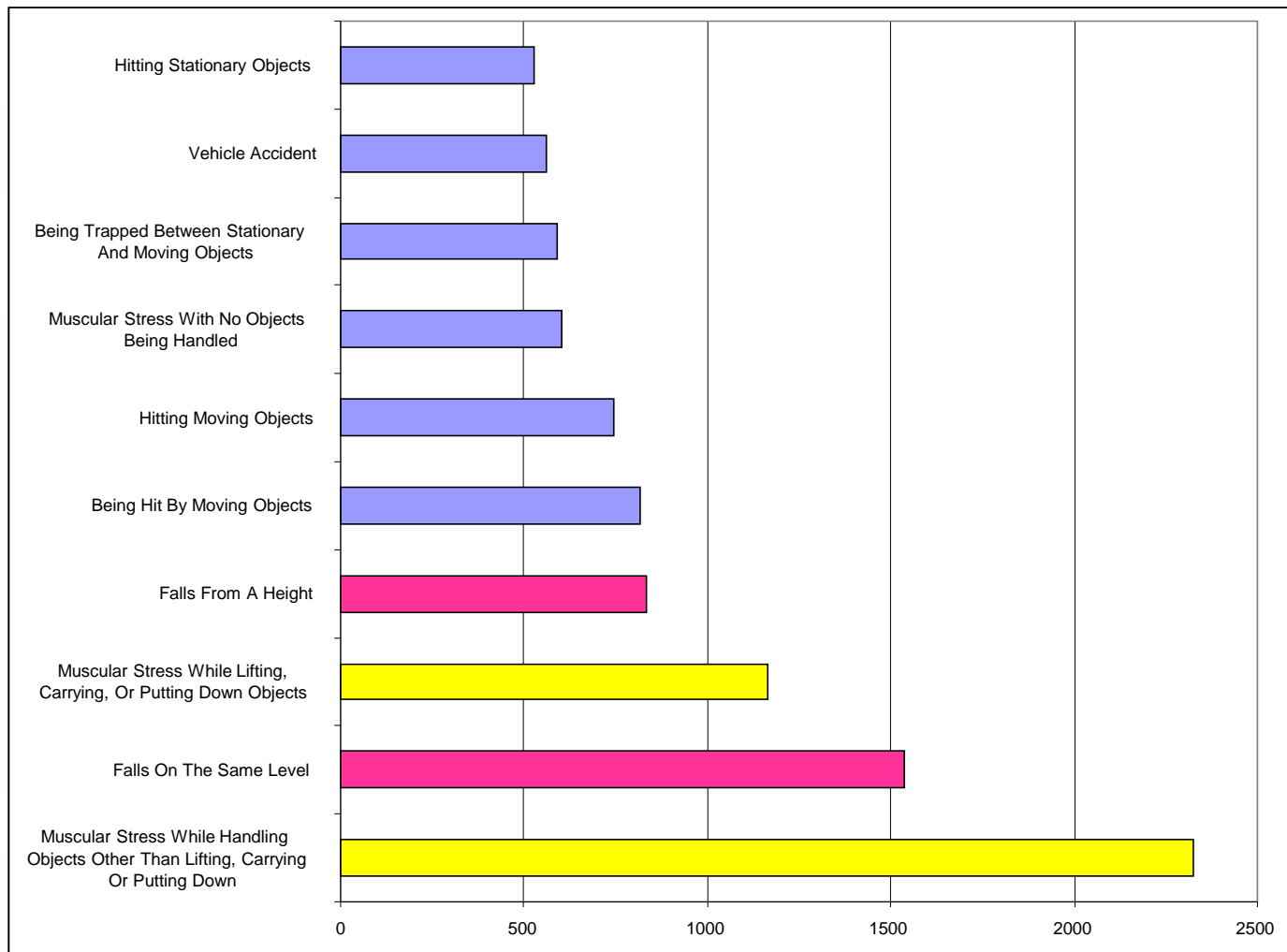


Number of claims 2007/08 to 2011/12



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Queensland mining – top ten injury mechanisms

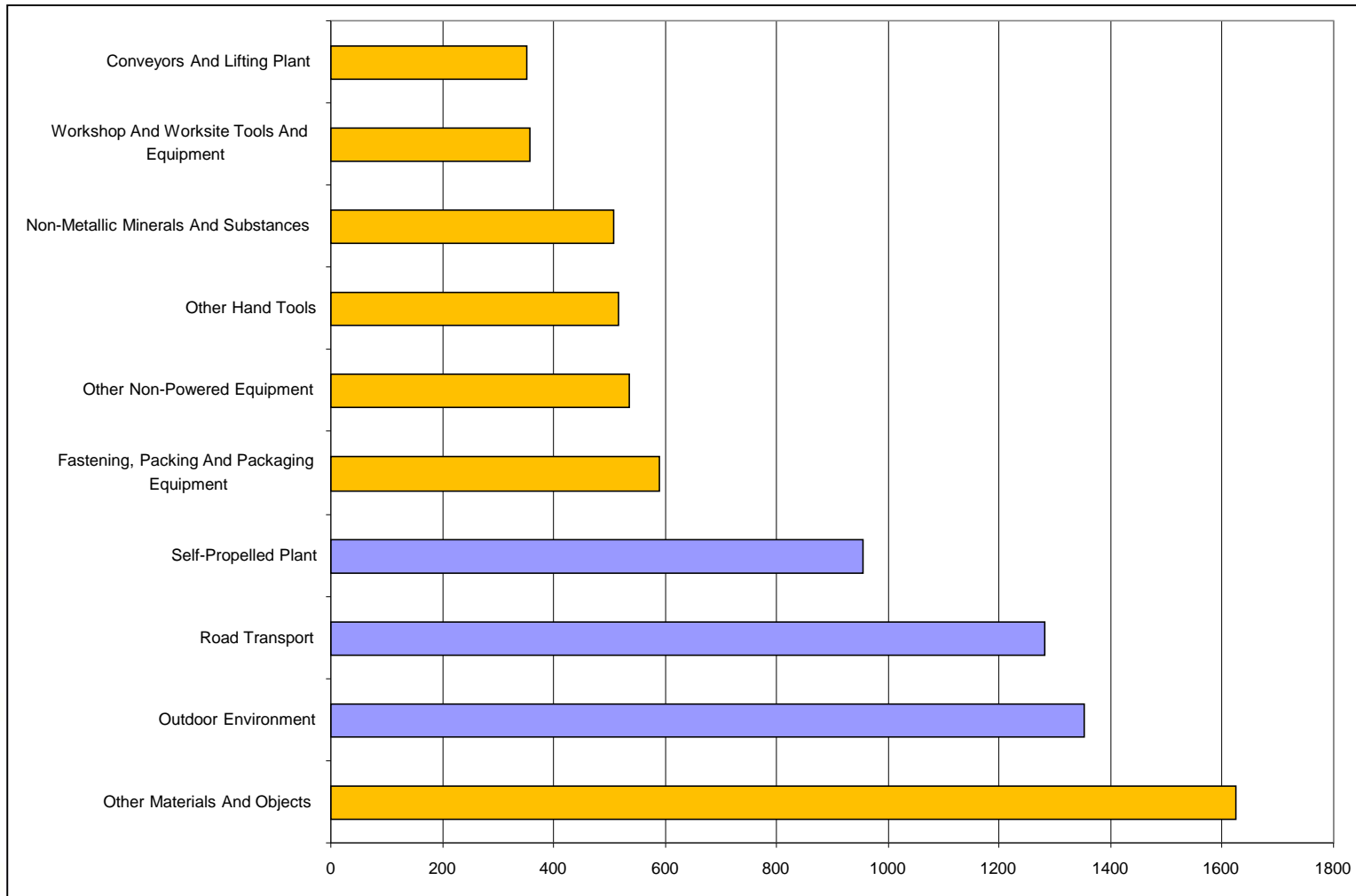


Number of claims 2007/08 to 2011/12



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Queensland mining – top ten injury agencies



Number of claims 2007/08 to 2011/12



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Accepted workers' compensation claims by severity

Severity	2007-08	2008-09	2009-10	2010-11	2011-12	Total	Proportion - Mining	Proportion - QLD
Fatal	3	1	5	4	4	17	0.1%	0.1%
Non-fatal	2,476	2,548	2,169	2,164	2,614	11,971	99.9%	99.9%
Permanent impairment	263	298	244	216	150	1,171	9.8%	5.6%

Approximately 10% of accepted workers compensation claims involve some level of permanent impairment

This topic will be addressed elsewhere in this Conference
(Wednesday session)



How safe is your home?



- Falls
- Poisoning
- Fires & Burns
- Choking & Suffocation
- Drowning

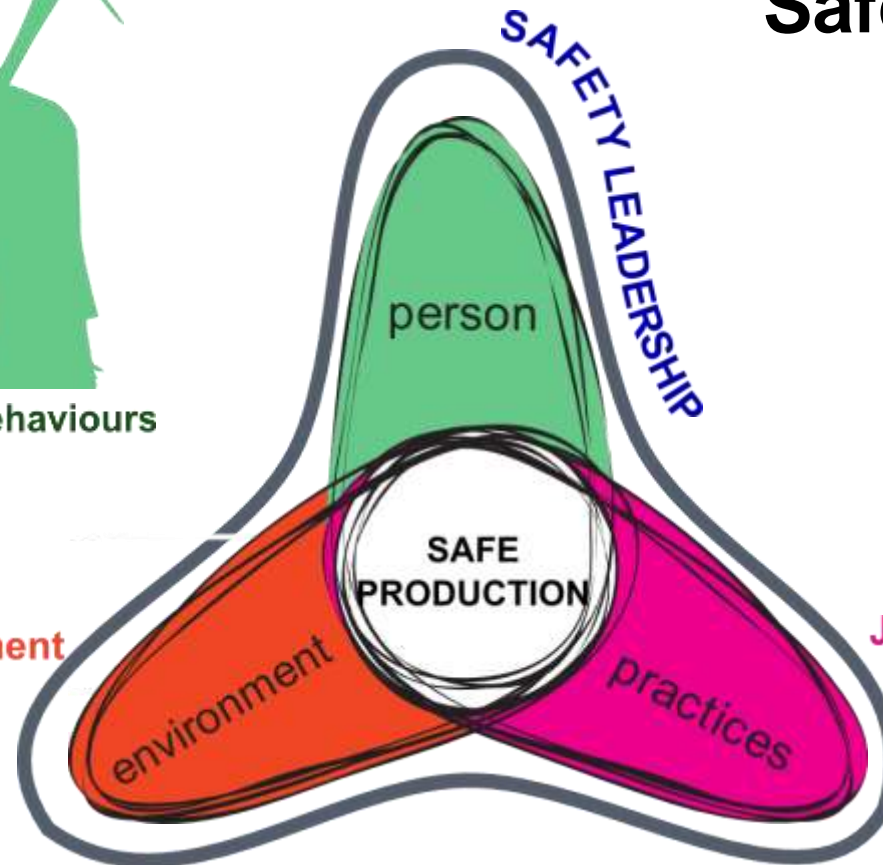


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Safety Culture



Safety Behaviours



Tools & Equipment

Housekeeping

Engineering controls



Process Safety

JHAs

SLAMs

Acts & Regs

Management
Review

Measurement &
Evaluation

Policy

Planning

Implementation

OHS Management System model



The Safety Culture model depicted here is a Trademark of Sentis

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Safety culture

We might all aspire to a zero harm workplace, but there is no such thing as zero risk.

Regulations cannot eliminate human fallibility.

Well integrated elements of successful safety cultures are likely to provide safer outcomes through people, processes and work environment, with positive leadership at all levels.



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Person

The Person component of a Safety Culture is made up of the people within a business. It includes people's skills, abilities, knowledge, motivations and attitudes. Improvement in this component is achieved by addressing unsafe behaviours and training.

Safe and professional people are those

- Who take ownership of their results;
- Who can identify and manage risks;
- Who manage stress effectively;
- Who operate machinery and vehicles with careful attention; and
- Who display an attitude of professionalism in all their work efforts.



Practices and Process

These are the day to day activities that are performed within the organisation in a systematic manner.

This includes

- Complying with statutory requirements;
- Having standard operating procedures that are accessible and easy to understand;
- Having effective and ongoing training, toolbox talks and start of shift meetings; and
- Conducting risk assessment and inspections.

These are the components of the culture that guide the behaviours. The goal is to have standards and practices that assist with safe production rather than get in its way.



Environment

This is the physical environment we work in and the tools and equipment we use.

We need to ensure we have:

- Fit for purpose equipment;
- Engineering controls to manage risks, such as safety devices; and
- Process safety such as safety interlocks.



Regulation and risk assessment

The legislative framework has extensive and specific prescription AND allows for the assessment and management of risks.

All individuals need to be actively engaged in developing and using procedures.

If we write procedures and implement processes just for legal compliance then we risk losing our true safety focus.

It is a grave error to believe one is safe just because there are prescribed standards.



Regulation and risk assessment cont.

We need people to recognise when something has changed, i.e. potential new and unexpected risks.

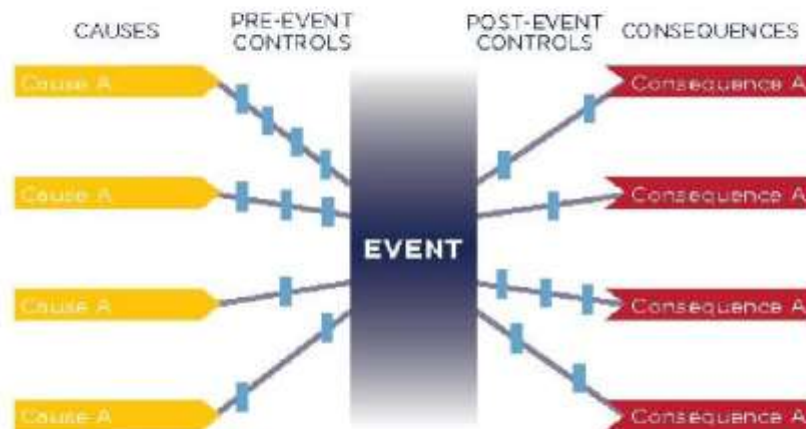
“One size fits all” is seldom a sustainable approach.

Decisions must be evidence based and supported by transparent and objective reasoning and not manipulated for pre-conceived outcomes.



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RISKGATE



Bowtie analysis tool

RISKGATE uses and displays bowtie analysis to generate checklists to control risks. Bowties are an excellent tool to designate pre-event and mitigation controls around priority unwanted events.

RISKGATE topics

Delivery of control information for twelve topics:

1. **Strata** - Unwanted release of strata/ ground/ wall energy.
2. **Fires** - Fire on mobile, fixed, storage, fuelling, electric plant, due to: electrical, friction, fuel/ fluid, coal.
3. **Collisions** - Collision between large vehicles and other large vehicle, small vehicle, structure, person.
4. **Tyres** - Unwanted event during tyre handling.
5. **Isolation** - Unwanted release of energy assumed to be isolated (electric, hydraulic, mechanical, air pressure).
6. **Explosions** - Unwanted explosion from gas, dust or explosives.
7. **Workplace** - Excessive risk work environment (confined space, noise, dust, vibration, machine movement).
8. **Manual Tasks** - Excessive risk manual handling or posture re a load or a task.
9. **Trips and Falls** - Fall of person or materials from equipment.
10. **Chemicals** - Unwanted release of hazardous materials (chemicals).
11. **Inrush** - Unwanted release of materials that inrush.
12. **Interface** - Equipment operation error caused by design of equipment (displays or controls).

RISKGATE

RISKGATE is a systematic methodology that identifies and manages hazards.

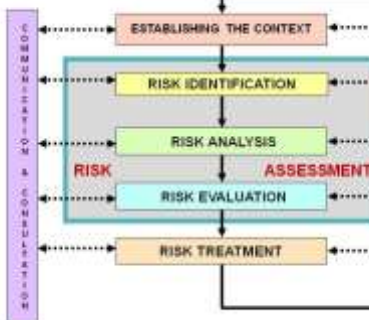
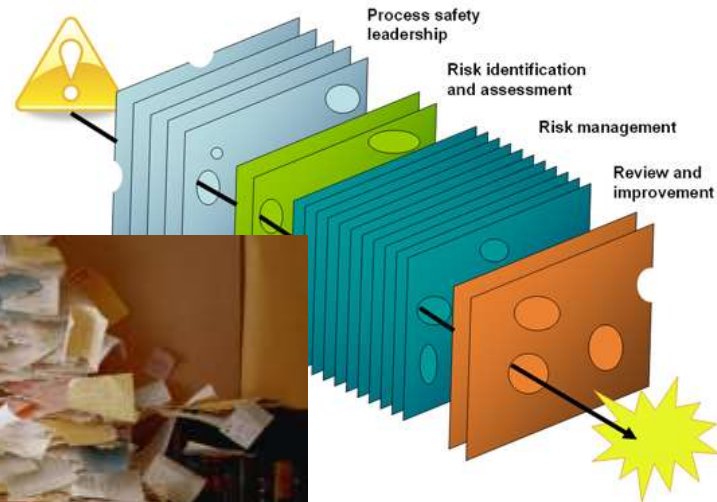
It collates the individual and collective wisdom of employees and specialists from site, corporate and industry experience to allow it to be shared by all. It can be tailored for individual sites.

It is a living system that is updated with new experience to build upon the collated past experience.

The “bow-tie” representation allows for proactive safety improvements.

Like any tool it has to be used appropriately to be effective.

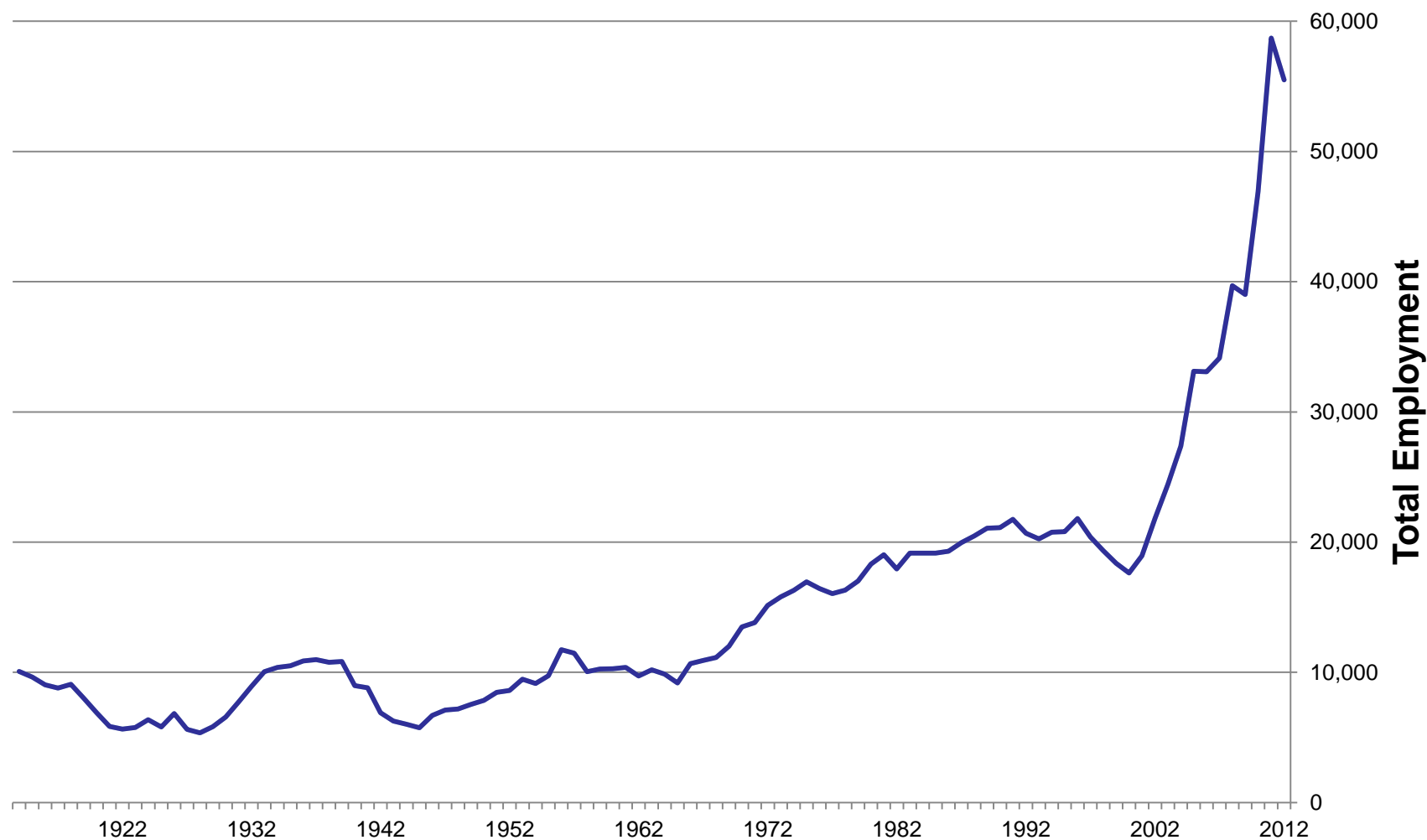




The paper swamp...

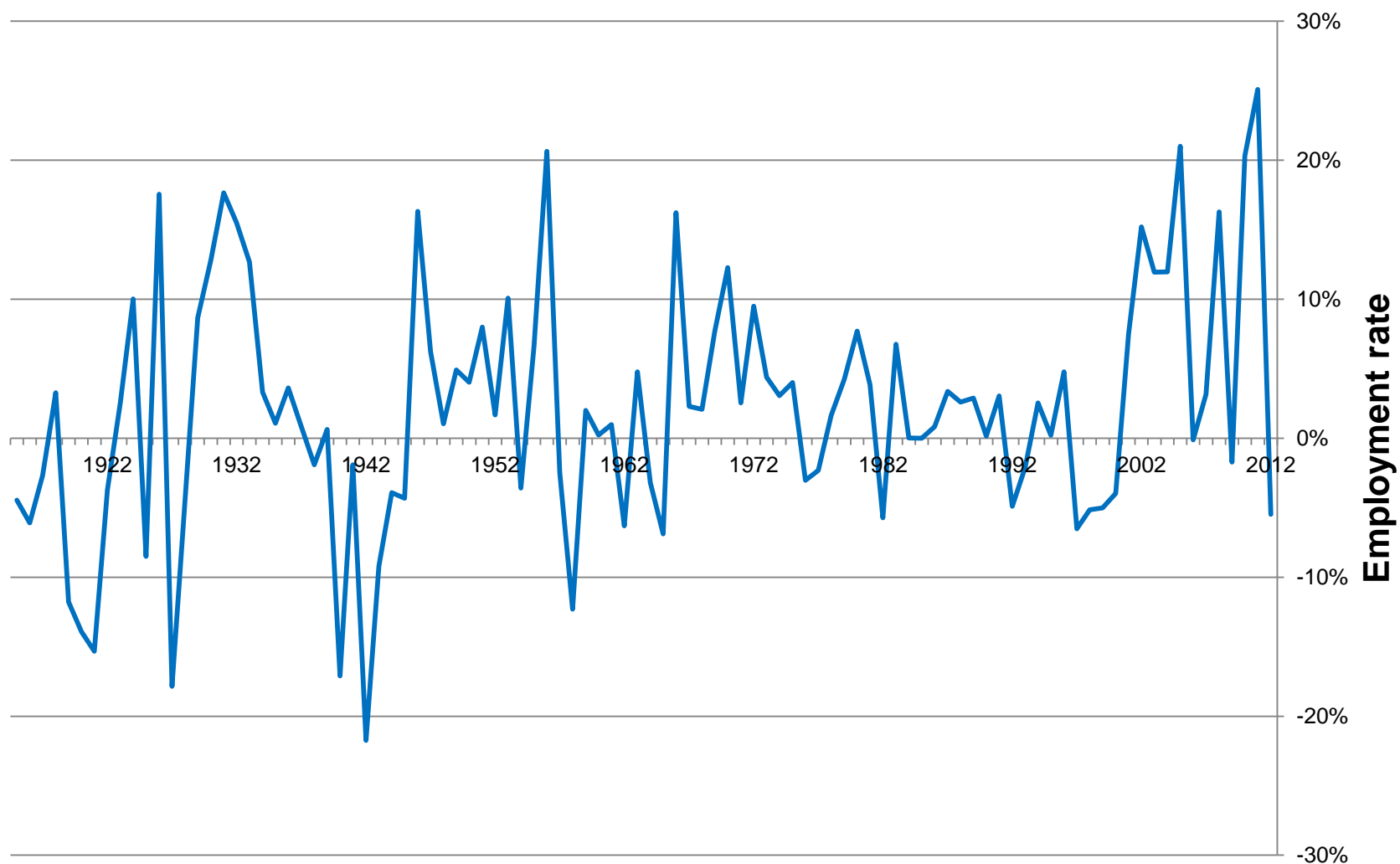
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Annual employment in Queensland mining



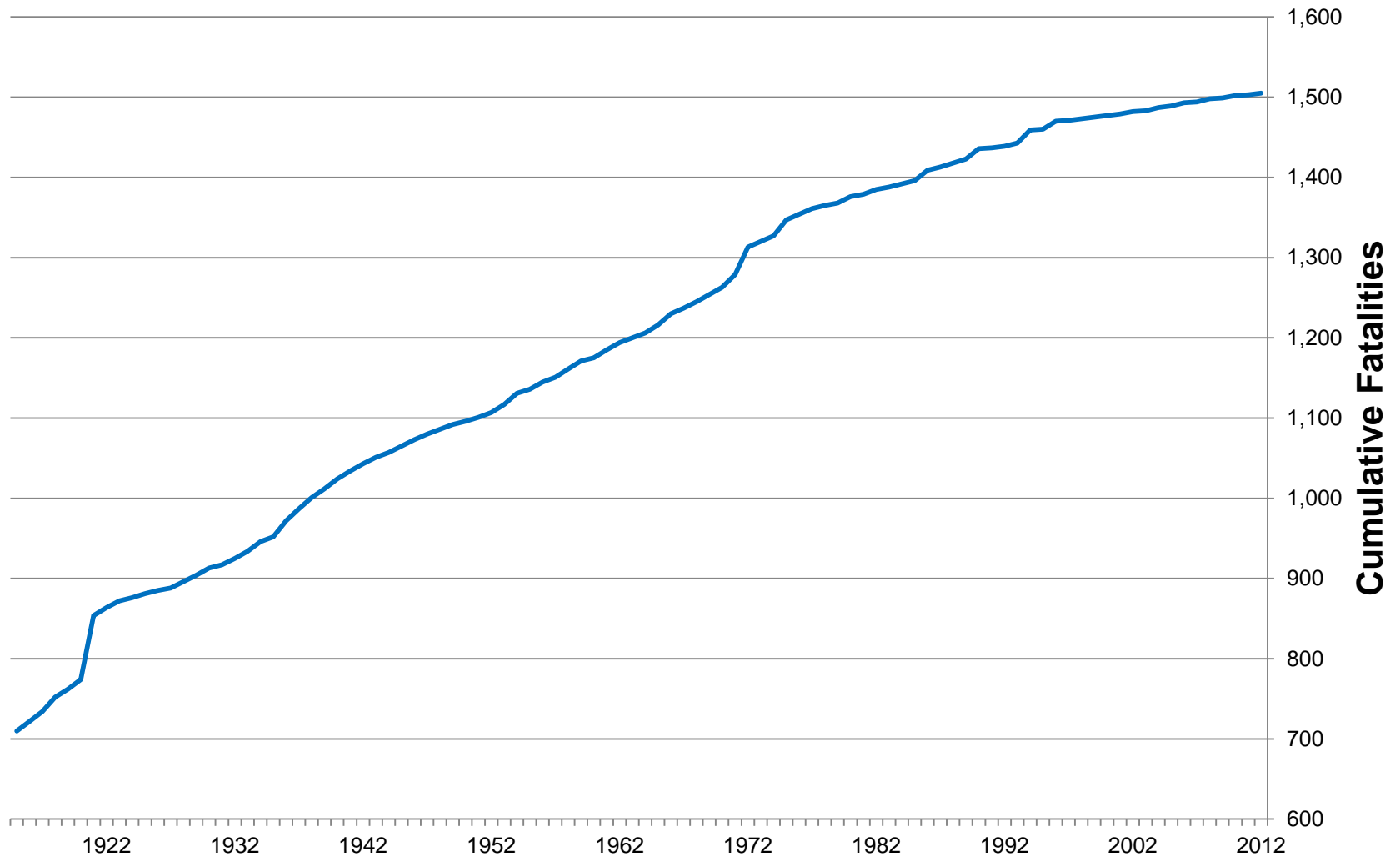
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Annual employment rate in Queensland mining



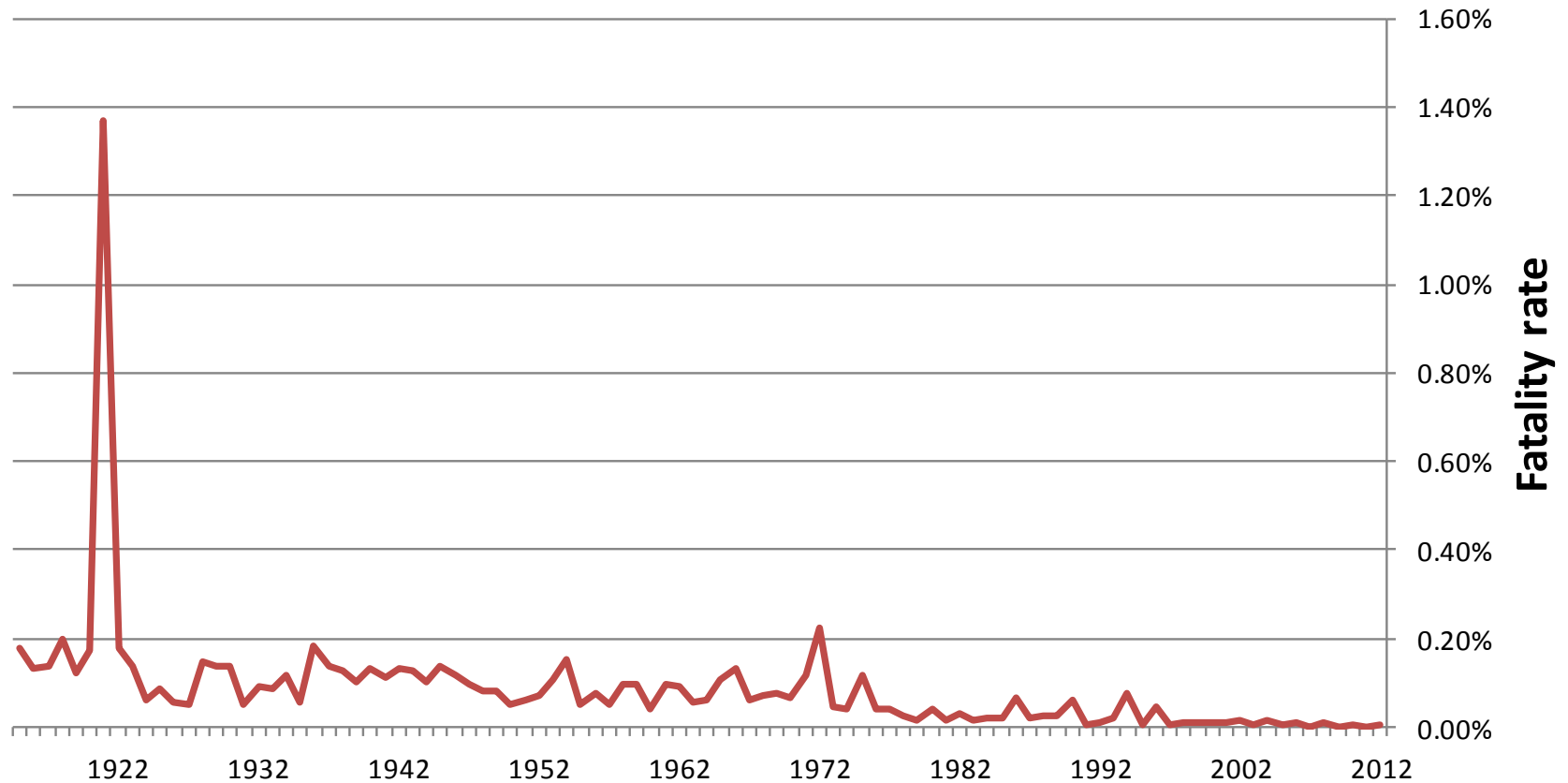
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Cumulative fatalities in Queensland mining



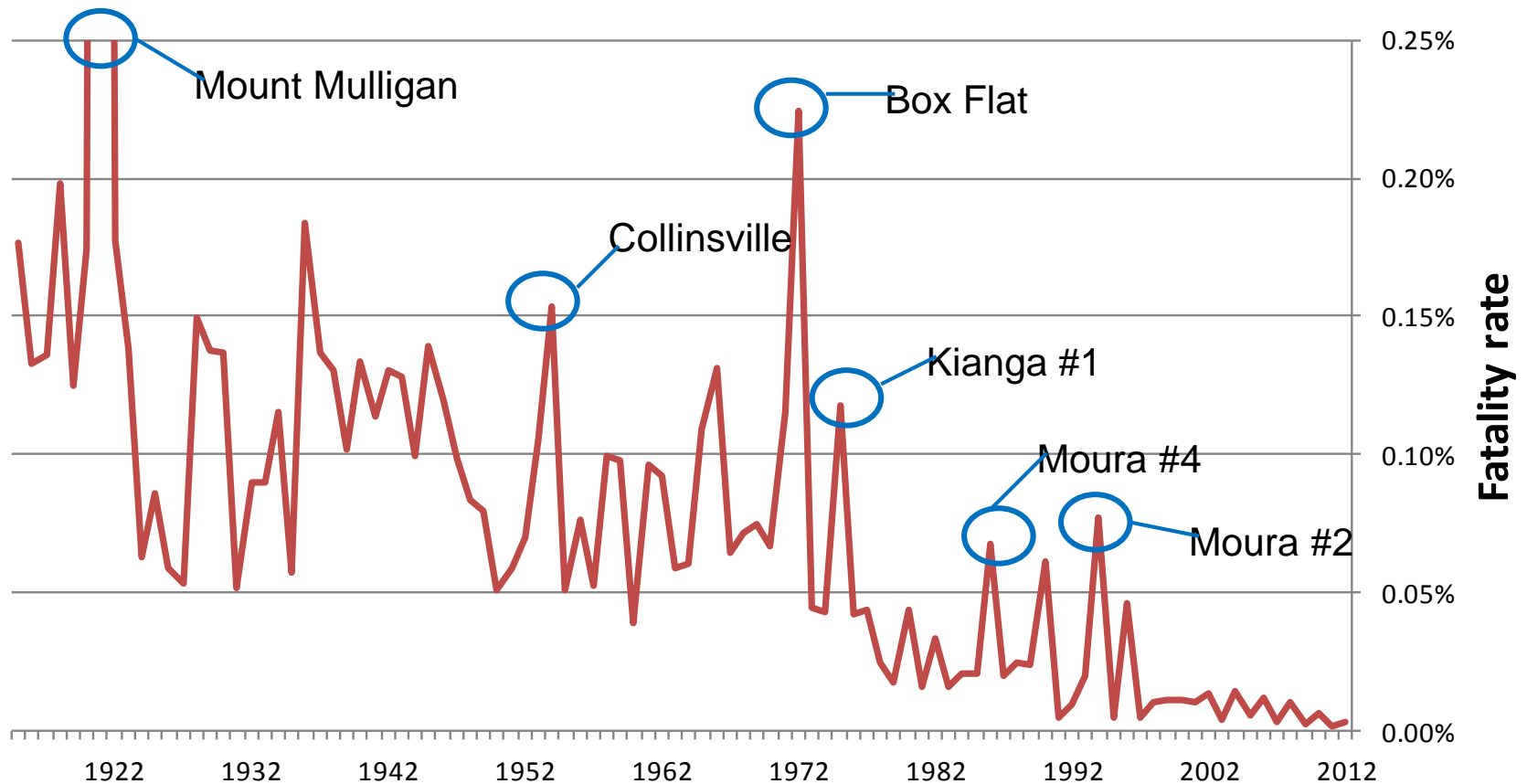
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Fatality rate 1915-2013



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Fatality rate 1915-2013

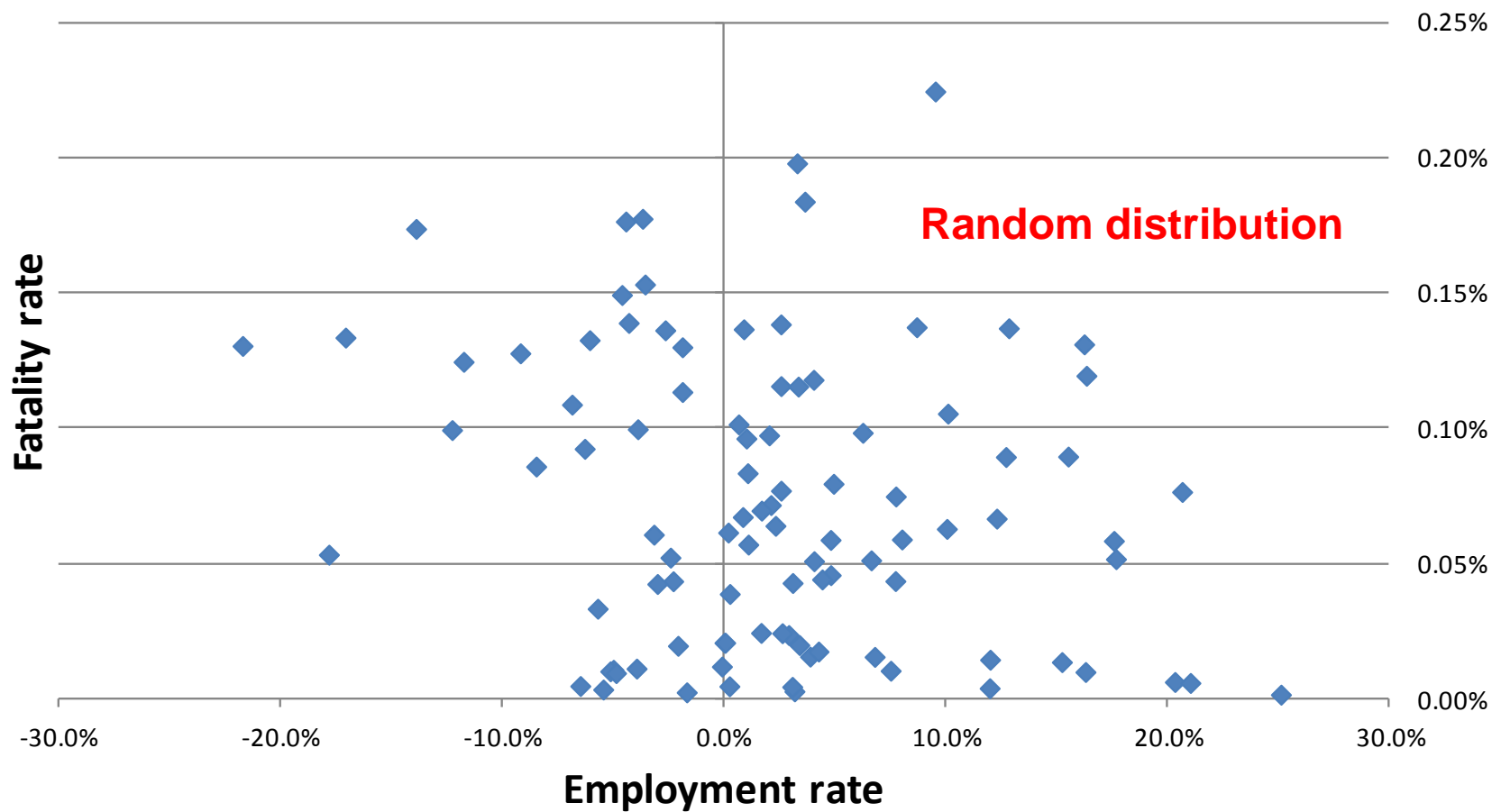


○ Coal dust explosion tragedy



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Fatality rate V Employment rate 1915-2013



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Base Case Unsuppressed Explosion



Barrier Trial No.4 60lt/250ms



Australian mining fatalities 2013/14

Date	Name	Mine	Incident
18/8/13	Kurt Williams	Christmas Creek	Crush injury during maintenance
3/12/13	Ingrid Forshaw	Ravensworth	LV HV interaction
4/12/13	Stephen Hampton	Telfer	Heavy pipe moved into excavation
9/12/13	Craig Gleeson Alistair Lucas	Mt Lyell	Fall from heights
29/12/13	Allen Zuvella	Christmas Creek	Crush injury in workshop
17/1/14	Michael Welsh	Mt Lyell	Mud rush
15/2/14	Wayne Fowlie	Harlequin	Rockfall collapse
25/2/14	Darryl Manderson	Gove Refinery	Crush injury during maintenance
15/4/14	Philip Grant Jamie Mitchell	Austar	Collapsed wall
6/5/14	Paul McGuire	Grasstree	Exposed to irrespirable atmosphere
21/5/14	Mark Galton	Boggabri	Crush injury using EWP
26/5/14	Lance Farber	Brightstar	Injured using forklift
11/6/14	James Hern	CSA Copper	Drowned
18/6/14	Brett Kelly	Mt Isa Copper	Fell into ore pass



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