INCIDENT INVESTIGATION · PFI RESEARCH

Are your near misses telling you the truth?

The research suggests 40% of investigated incidents under-state their fatal potential. Here is what that means for mining.

Drawing on:

J. Lezdkalne, Potentially Fatal Incidents: identification, classification and human factor analysis. Summary by Ben Hutchinson.

The investigation system is systematically understating fatal potential.

The study reanalysed 62 incident investigation reports using a bespoke tool combining energy-based thinking, barrier analysis, and HFACS human factors analysis.

40%

UNDER-CLASSIFIED · 25 INCIDENTS

Recorded as minor accidents or near misses, despite involving credible fatal potential.

23%

OVER-CLASSIFIED · 14 INCIDENTS

Labelled as fatal-potential events without the hazardous energy exposure or escalation pathway to support that.

THE PAPER'S OWN CONCLUSION

Misclassification is *“systematic rather than incidental”*.

Severity outcomes do not reflect escalation potential.

> *"Fatalities and serious injuries are driven by different combinations of exposure, system conditions, and barrier failures, rather than by an accumulation of minor unsafe acts alone."*

Translation. Counting low-severity incidents tells you very little about your fatal risk profile.

QUEENSLAND MINING AND QUARRIES, SINCE 2000

58 of 60

fatalities were single-fatality events. Their precursors almost certainly walked through the system as near misses first. If 40% were under-classified, the system was telling boards the operation was safer than it actually was.

The barriers were degraded, bypassed, or human-dependent.

The research is specific about what the under-classified incidents looked like.

- **Degraded preventive controls**
- **Bypassed controls**
- **Human-dependent controls**
- **Frequent procedure-to-practice gaps**

If that list sounds familiar, it should.

It is a description of how most mining fatalities actually happen. The barriers exist in the documentation. They do not survive contact with real work. Where unsafe acts, supervision issues, and organisational influences are present, fatal potential is high, regardless of what injury actually resulted.

The hardest finding

"Barriers are frequently human-dependent, relying on correct procedural execution, supervision, or decision-making."

1 **Most critical controls have a human-performance element.**

That element is the failure mode you cannot ignore.

2 **Reliability depends on supervision and decisions at the coalface.**

That is a competency question, not a paperwork question.

3 **"Procedure failure" as a root cause is a degraded human-dependent barrier.**

That is not a worker problem. That is a system problem.

How is your operation actually classifying fatal potential?

Four checks, drawn straight from the research.

- ✓ Are investigators trained to assess fatal potential separately from realised injury severity?
- ✓ Does the classification process explicitly consider energy exposure, barrier performance, and human and organisational context, not just what happened?
- ✓ When a control is found to have failed, does the report distinguish a human-dependent barrier failure from an engineered barrier failure?
- ✓ Are near misses and minor incidents reviewed at the same level of rigour as incidents that injured someone?

If the honest answer to any of these is "not really", your incident data is understating your fatal risk.

Put these on the agenda

Five questions worth asking right now.

1 What proportion of our incidents in the last 12 months were classified as “near miss” or “minor”, and what was the assessed fatal potential for each?

2 Who in our organisation is competent to perform an energy-based, barrier-focused classification, and how were they trained?

3 How many of our critical controls are entirely or partly human-dependent? Have we mapped them?

4 When we find a degraded or bypassed control during an investigation, do we treat it as a precursor finding, or just as a corrective action?

5 Are our investigation reports reaching officers in a form that shows fatal potential separately from realised severity?

If these questions are difficult to answer, that itself is the finding.

THE TAKEAWAY

The events that didn’t injure anyone are still telling you something.

Fatal risk is masked in events with minor or absent injury consequences. That is not new. But the scale of the under-classification, 40% across 62 reports, is.

If you'd like a pressure test on how your investigation and classification process actually handles fatal potential, give me a call.

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