A brief look at the New Look in complex system failure, error, safety, and resilience

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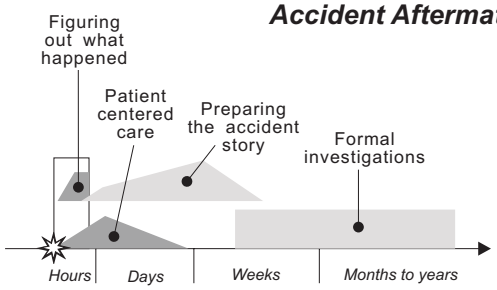
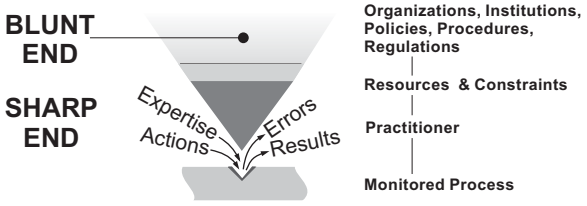
① Accident Aftermath



Accident / incident investigation normally stops with human error by practitioners as the 'cause' of the event.

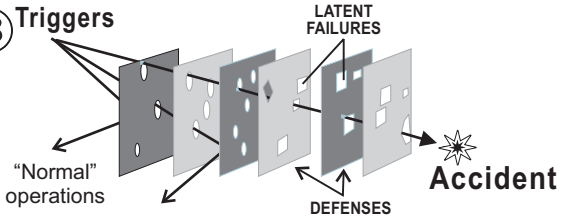
②



Practitioners work at the *sharp end* of the system. The *blunt end* of the system generates resources, constraints and conflicts that shape the world of technical work and produce latent failures.

Modified from Woods, 1991

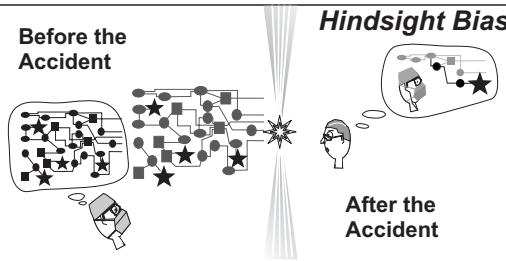
③



Complex systems fail because of the combination of multiple small failures, each individually insufficient to cause an accident. These failures are *latent* in the system and their pattern changes over time.

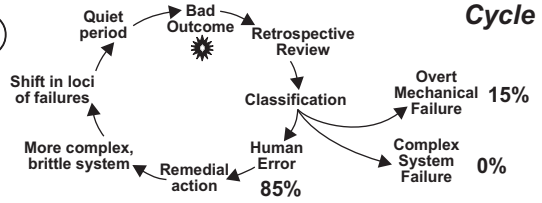
Modified from Reason, 1990

④ Hindsight Bias



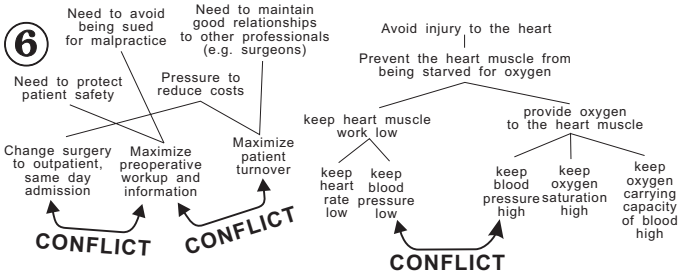
Post-accident reviews identify *human error* as the 'cause' of failure because of *hindsight bias*. Outcome knowledge makes the path to failure seem to have been foreseeable - although it was not foreseen.

⑤ Cycle of Error



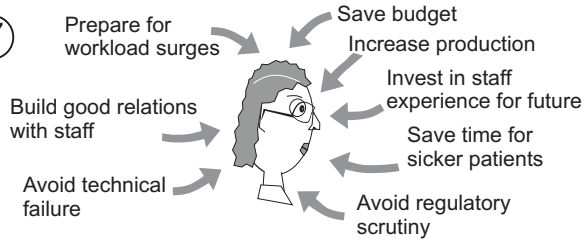
Organizational *reactions to failure* focus on human error. The reactions to failure are: blame & train, sanctions, new regulations, rules, and technology. These interventions increase complexity and introduce new forms of failure.

⑥



Competing demands, dilemmas, conflicts, and uncertainty are the central features of operations at the sharp end. Technical and organizational conflicts overlap and interact.

⑦



Work at the sharp end inevitably encounters competing demands for production and failure-free performance. Action resolves all dilemmas. Successful operations are the rule. Failure is rare.

⑧ The Search for Sources of Resilience

People make safety. Workers at the sharp end usually bridge gaps and prevent failures. The resilience of the system is the result of this activity, which forms much of *technical work*. Productive approaches support this activity. ⇒

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Readings - A Perspective for Healthcare People – 2005
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