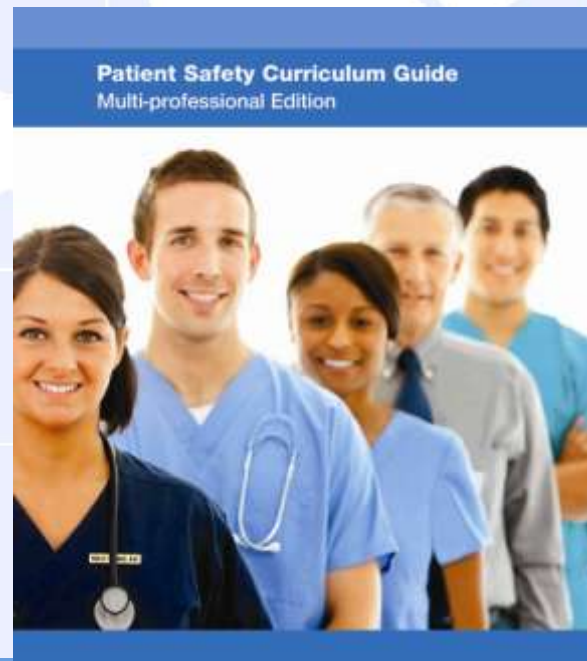


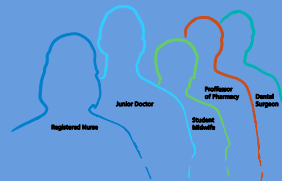
Topic 3

Understanding systems and the effect of complexity on patient care



Learning objective

Understand how systems thinking can improve health care and minimize patient adverse events



Knowledge requirements

- Explain the terms *system* and *complex system* as they relate to health care
- Explain why a systems approach to patient safety is superior to the traditional approach

Performance requirement

Describe the elements of a safe health-care delivery system

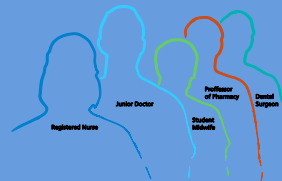
A “system”

- Any collection of two or more interacting parts, or
- “An interdependent group of items forming a unified whole”

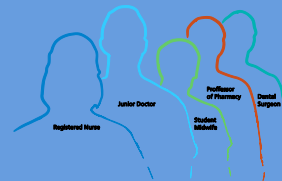
National Patient Safety Education Framework. Canberra, Commonwealth of Australia, 2005.(p.202)

A “complex system”

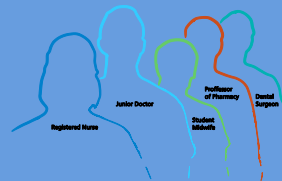
- Many interacting parts
- Difficult if not impossible to predict the behaviour of the system based on a knowledge of its component parts



Health care is a complex system



Complexity = increased chance of something going wrong!



Two schools of thought regarding iatrogenic injury

- Traditional or person approach:
 - * The “old” culture
 - * “Just try harder”
- Systems approach:
 - * The “new look”

You may encounter a bit of both in your “journey”

Person approach

- See errors as the product of carelessness
- Remedial measures directed primarily at the error-maker
 - Naming
 - Blaming
 - Shaming
 - Retraining

An individual failing?

Doesn't work!

- People don't intend to commit errors ...
... only a very small minority of cases are deliberate violations
- Won't solve the problem - it will make it worse
- Countermeasures create a false sense of security
... "we've 'fixed' the problem"
- Health professionals will hide errors
- May destroy many health professionals inadvertently - the "second victim"

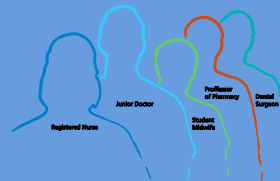
Why investigate?

- The more we understand how and why these things occur, the more we can put checks in place to reduce recurrence
- Strategies might include:
 - Education
 - New protocols
 - New systems
- Accountability

The new approach

Multiple factors :

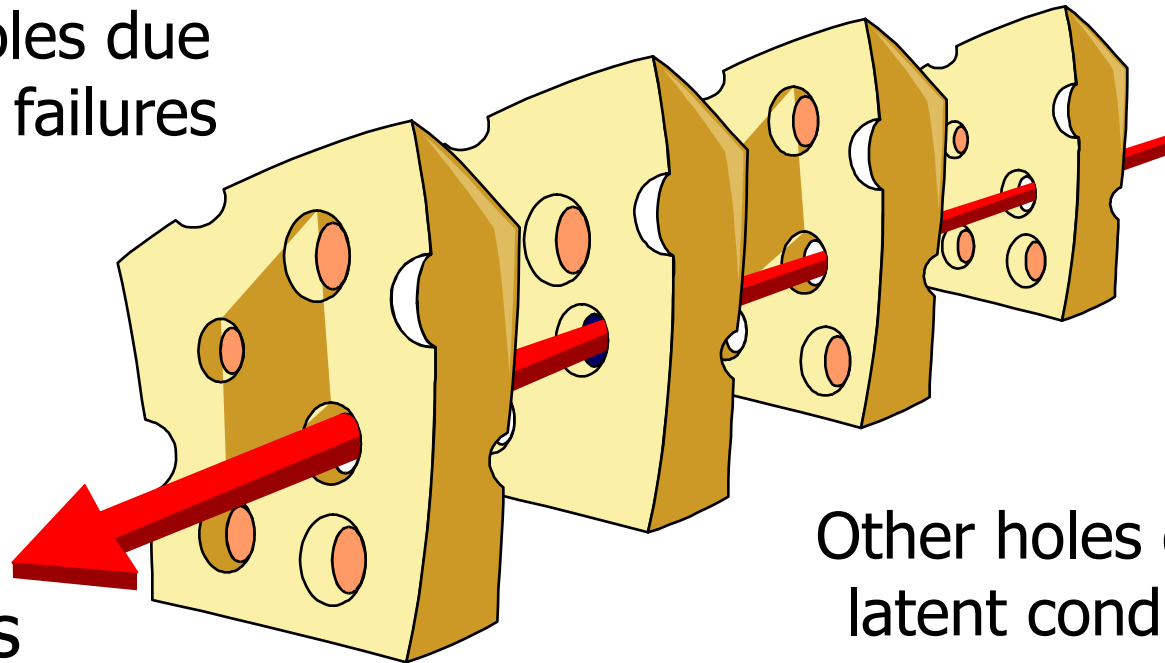
- Patient factors
- Provider factors
- Task factors
- Technology and tool factors
- Team factors
- Environmental factors
- Organizational factors



Reason's "Swiss cheese" model of accident causation

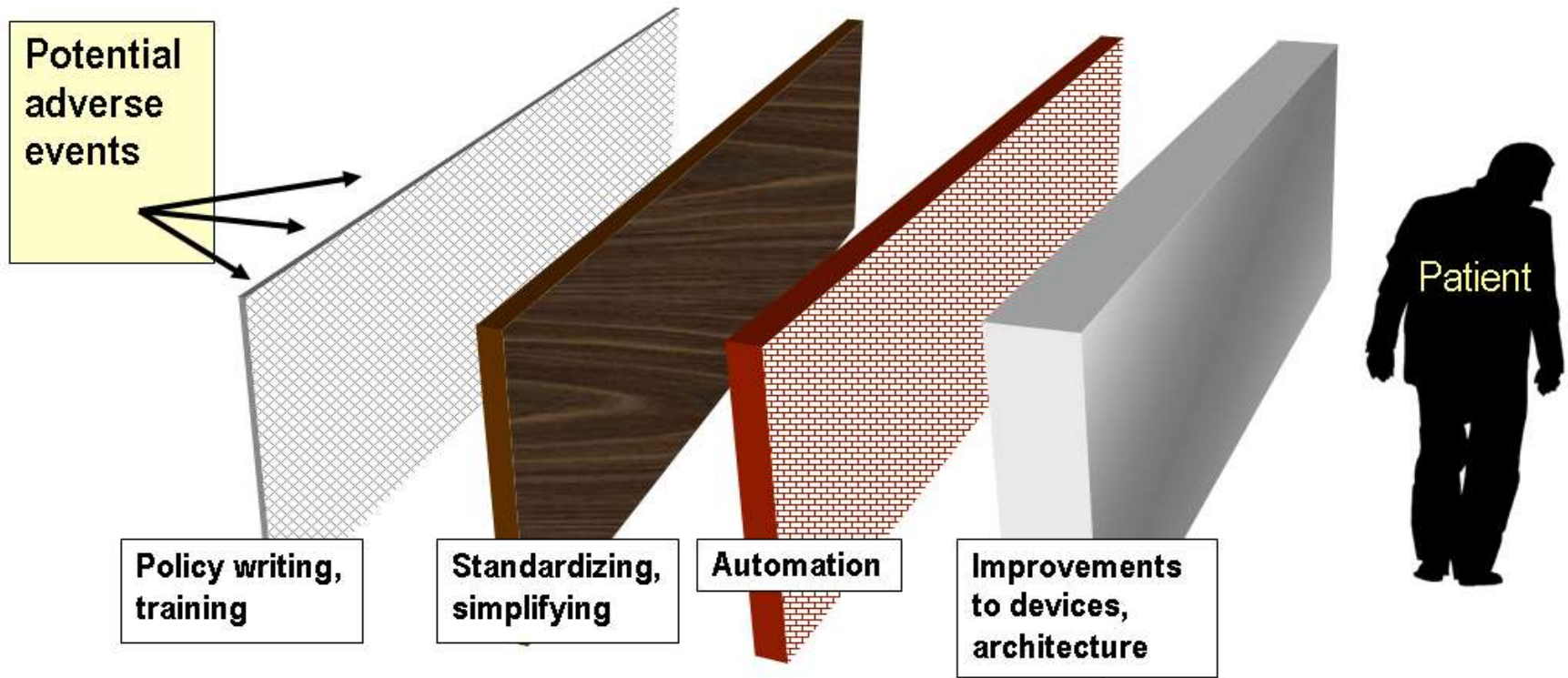
Some holes due to active failures

Hazards



Successive layers of defences, barriers and safeguards *System defences*

Reason's - Defences



Source: Veteran Affairs (US) National Center for Patient Safety

Characteristics of high reliability organizations (HROs)

- Preoccupation with failure
- Commitment to resilience
- Sensitivity to operations
- A culture of safety

Key principles from HRO theory

- Maintain a powerful and uniform culture of safety
- Use optimal structures and procedures
- Provide intensive and continuing training of individuals and teams
- Conduct thorough organizational learning and safety management

The aircraft carrier: the prototypical HRO



Carriers achieve *nearly* failure-free record despite multiple hazards

Source: Gaba

Health care can learn from HROs

Although health care is different from other industries (e.g. people are not airplanes) we can learn:

- From their successes:
 - What factors make them work so well?
- From their failures:
 - How do disasters occur even in typically high reliability settings?

Summary

- Health care is complex
- When things go wrong, adopting a systems approach is far more productive for patient safety than a person approach

