

Error in Anatomical Pathology

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Disclosure

- No conflicts of interest

Objectives

- Impact
- Approaches
- Rates
- Definitions
- Identification
- Contributory factors
- Reduction
- Response

Impact of Medical Error

- 100,000 deaths, \$9 billion, per annum in US
- Underreporting of 50 - 96%
- Exceeds combined motor, air crashes, suicides, falls, poisonings, drownings

Approaches

- James Reason – Human Error: Models and Management BMJ 2000;320:768-70

Person Approach

- Individuals, forgetfulness, inattention, moral weakness
- “Blaming individuals is emotionally more satisfying than targeting institutions.”



System Approach

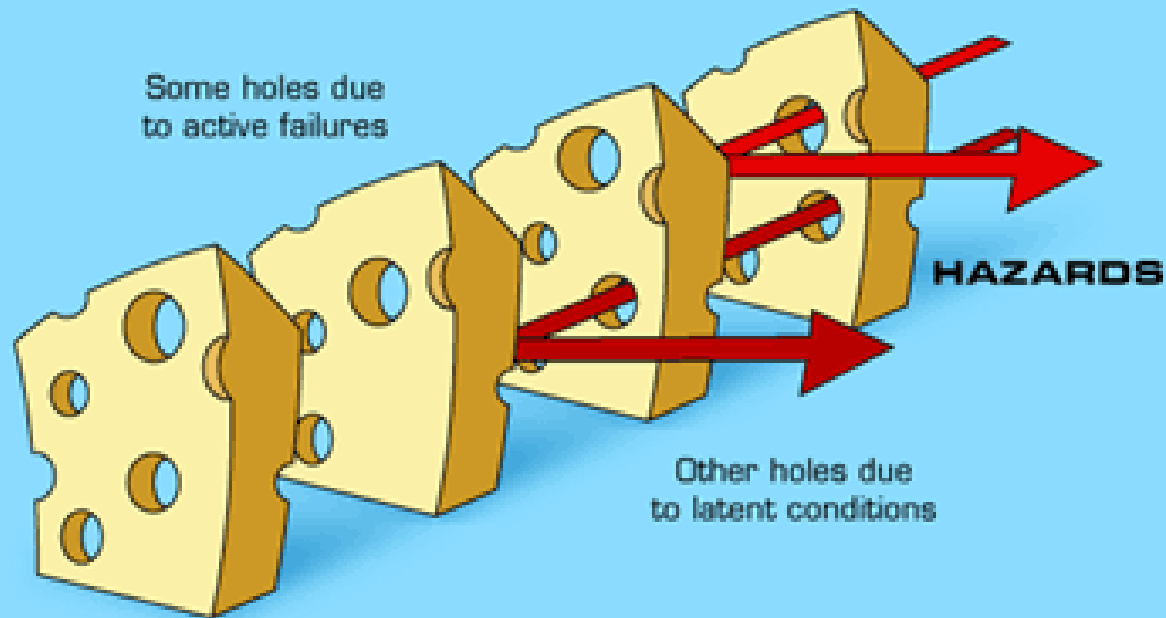
- Conditions, defences to avert errors or mitigate
- “We cannot change the human condition, but we can change the conditions under which humans work.”



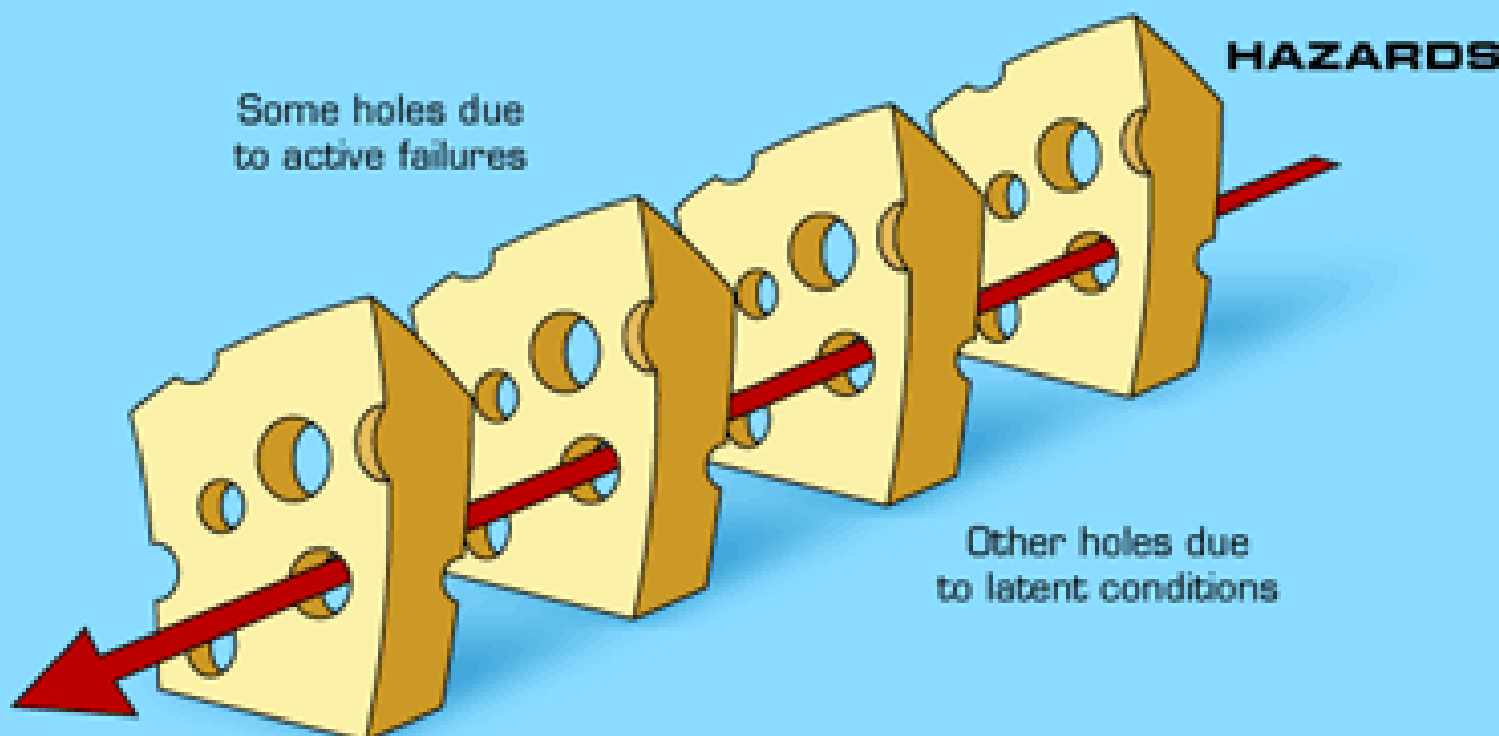
High Reliability Organizations

- Low error rates, preoccupied with the possibility of failure

Swiss Cheese Model



SUCCESSIVE LAYERS OF DEFENSES



Some holes due to active failures

HAZARDS

Other holes due to latent conditions

Accident

SUCCESSIVE LAYERS OF DEFENSES

BMJ 2000

- “Doctors overestimate their ability to function flawlessly under adverse conditions.”
- Medication errors, radiology
- Aviation, nuclear industry, anaesthesiology
- Lower errors – lower cost
- Reporting of near-misses

Error Rates

- Frable WJ.
- Surgical pathology – second reviews, institutional reviews, audits, and correlations: what's out there? Error or diagnostic variation?
- Arch Pathol Lab Med. 2006 May;130(5):620-5

Medical Literature

- Institutional consults = 1.5% - 5.7%
- In-house prospective review = 0.26% - 1.2%
- In-house and retrospective blinded review = 4.0%
- Skin, institutional consult = 1.4%
- Prostate, institutional consult = 0.5%
- Thyroid, institutional consult = 7.0%

Wall Street Journal

- Prostate, Gleason score changed by 1 point = 44%, and resultant change in treatment for prostate cancer = 10%
- Breast, altered lumpectomy or mastectomy plan = 8%
- Diagnosis changed for thyroid lesions = 18%

Reference

- Quality Management in Anatomical Pathology
- Raouf E. Nakhleh, MD, FCAP, and Patrick L. Fitzgibbons, MD, FCAP, editors
- College of American Pathologists



Defining Errors

Renshaw:

1. False-negative – consecutive case series
2. False-positive – consultations
3. Threshold – consultations
4. Type and grade – consultations
5. Missed margin
6. Other

Definition of Diagnostic Discrepancies

- Major
- Minor

Major

- Change in diagnosis
- Benign vs. Malignant
- Failure to identify treatable inflammatory condition

Minor

- Small change in diagnosis
- Minimal or no clinical relevance

Timing

- Nearly immediate – FS
- Intermediate – physician or patient requested second review
- Extended time – missed malignancy

Contributing factors

- Variable input
- Complexity
- Inconsistency
- Tight coupling
- Human intervention
- Time constraints
- Inflexible hierarchical culture

Complexity

- 1% chance of error per step
- 25 steps = 22% chance of error
- 50 steps = 39% chance of error

Human Intervention

- Humans vs. machines
- Routine vs. unanticipated conditions

Time Constraints

- Tight = tight coupling
- Loose = boredom and distraction

Hierarchical Conventions

- Team
- Constrained by rank or job

Error Reduction

- System
- Personnel

System

- Reduce reliance on memory
- Improve information access
- Error-proof processes
- Decrease reliance on vigilance
- Standardize tasks and language
- Simplify
- Design for errors

Reduce Reliance on Memory

- Protocols
- Computerized synoptic checklists
- Automation

Improve Information Access

- Clinical
- Radiographic
- Previous pathologic
- Correlation

Decrease Reliance on Vigilance

- Remote order entry
- Bar codes

Error-Proof Hand-Offs

- Remote order entry
- Two patient IDs
- Access to medical records
- Bar codes
- Removing distractions

Design for Errors

- Specimen logs
- Double-check error prone areas – mandatory second opinion

Personnel

- Adjust work schedules
- Adjust environment
- Train
- Right staff

Adjust Work Schedules

- Do the job correctly rather than quickly

Adjust Environment

- Physical – space, lighting
- Psychological – nurturing

Train

- Safety and quality improvement

Discovery of Error

- Intra-operative consultation review
- Intradepartmental QA conferences
- Review of prior pathologic material
- Random case review
- Topic directed periodic reviews
- Intradepartmental review prior to release to outside institution
- Interdepartmental conferences

Response

- Inform Department or Division Head
- Hospital risk management
- QA Committee

Response

- Impact on management – correct report, inform clinician, patient
- No impact on management – QA

Detecting and Reporting

- Pietro, DA et al.
- Detecting and reporting medical errors: why the dilemma?
- BMJ 2000;320:74-6

Detecting and Reporting

- “..expecting perfection is foolish; we must move away from this false and unattainable standard. If we don’t accept the inevitability of our own errors and those of everyone on the healthcare team we cannot put patients first. We also risk becoming the villains in the growing “patient safety movement” instead of leaders in it.”

