Proactive Risk Assessment: Using FMEA in Healthcare

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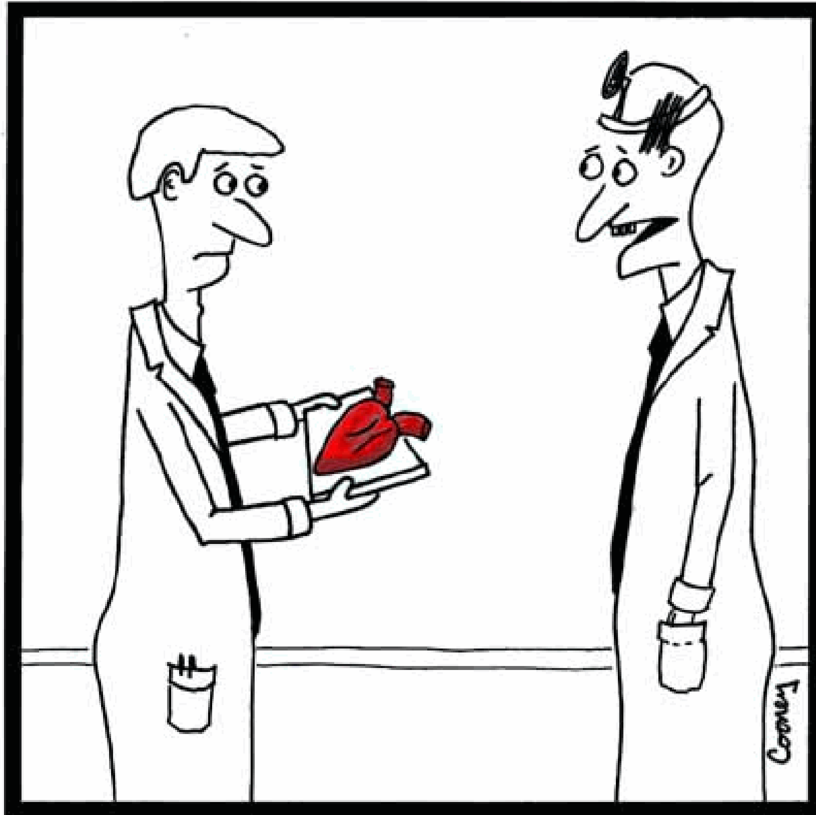
Opening Thoughts…



"Just so you know for next time, when we do a biopsy we only take a tiny piece."

- Focus on retrospective analysis of error
- But what about near misses…
- Adapting tools from other industries can help "better" manage risk in healthcare

Outline

- What is FMEA?
- Looking FMEA alongside RCA
- How has it been adapted to healthcare, i.e. H/FMEA?
- Health care example
  - Dispensing of medication
- Overview of lessons learnt
- The limitations of this method
- How to get the best results for you and your organisation

Lessons from High Reliability

- Errors will occur
- Impact of those errors will be devastating
- Efforts should be made to discover system weaknesses BEFORE harm occurs…

What is FMEA?

- Failure Mode & Effects Analysis (FMEA) is a:

  “risk assessment tool for systematically identifying potential failures in a system or process”

  - *Failure modes* means the ways, or modes, in which something might fail

  - *Effects analysis* then refers to studying the consequences of those failures

Key steps in an FMEA

1. Assemble team
2. Describe the process
3. Describe the sub-processes
4. List the failure modes for each sub-process
5. Identify the effects and causes for each failure mode
6. Score severity, likelihood and detectability
7. Design risk reduction interventions
8. Obtain management agreement
9. Implement and monitor

What is RCA?

- Root Cause Analysis (RCA) is a:

  "focused inquiry that is aimed at characterising and preventing specific errors from re-occurring"

  - Purpose is NOT to identify all potential vulnerabilities
  - Aggregate RCAs can help though??

- Hence, "Where RCA can be thought of as an expanding circle of inquiry that is focused on a sentinel event, FMEA is a linear process that examines a selected process from start to finish" (Duwe, 2005)

Creating H/FMEA…

- FMEA has been used in healthcare since the 1990s
- JCAHO requires all hospitals to perform HMEA regularly
- What's different about HFMEA?
  1. Hazard scoring matrix
  2. HFMEA worksheet
  3. 1 to 5 instead of 1 to 10 scoring
  4. Testing to ensure not introducing new risk
- Does it work?
  - Prevent defects; enhances safety; increases positive outcomes and increases patient satisfaction

Case study: Medication

- **The Almus Pharmaceutical (UK) experience**

BAD

GOOD

Our HFMEA…

Dispense medication	• Wrong keyboard shortcut used • Wrong drug selected from drop-down list	18 18
Splitting packs	• Loss of info. • Replace in wrong pack • Dispense partial pack	27 18 12
Locate medication		12
Loss of PIL		12
Dispense wrong amt.		12
Determine expiry		12
Read prescription		12
Read drug name/dose		12
Sorting deliveries		18-27
Shelving stock		12-18

Lessons learnt…
and Limitations

1. Defining a reasonable scope is very important as it can easily get completely out of hand
2. Very time consuming process
3. “Should-be versus” vs. “as-is” versions of the world
4. Little (or no?) benefit if the long process is not completed
5. FMEA is not RCA!
6. Don’t rush them…

Closing Thoughts…

- Make sure you have domain and method experts together
- Clearly identify a team leader and recorder
- Keep in regular contact with the team: people forget!
- Do as much work up-front as possible to limit meeting time and increase attendance
- Always go to them and have good lunch and airy, bright spaces
- Constantly acknowledge their commitment and the benefits
- Use of before and after HFMEAs to act as business case
- Stress that this is a complex process but that it was developed by healthcare professionals for healthcare professionals, not imposed on them from other cleverer industries
- Remind them that together with RCAs this can provide a stronger framework for continuous quality improvement in their org.

THE END: Thank You ☺

Suggested reading:

DeRosier, J et al. (2002) Using H/FMEA:
The VA National Center for Patient Safety's Prospective Risk System.
Journal on Quality Improvement, 28 (5), 248-267.

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