Categorising Key Root Causes for Adverse Events

Tan May Yan
Nayzar Minn
Zhang Weixuan
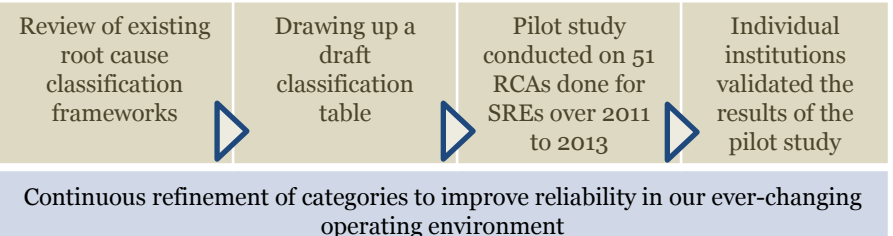Office of Risk Services

Background

Key root causes identified through Root Cause Analysis (RCA) for adverse events are often wide ranging due to multiple failure points along the chain of care delivery. From cleaners to surgeon, task instructions to strategic policies, root causes can be overwhelming for risk managers.

As the saying goes, "if it can't be measured, it can't be improved. A systematic categorisation of root causes will facilitate trending and analysis to identify the keys of focus for further study. Root cause categories commonly reported will surface and risk managers could then focus their attention and efforts on addressing these gaps along the care delivery process.

IT failure

Manpower Shortage

Violation of protocol

Improper Hand-over

Abusive Patient
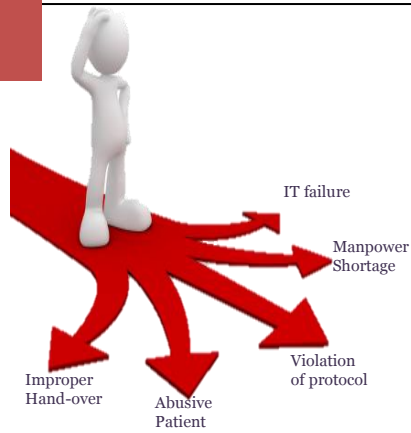
Methodology

1. Existing classification frameworks used for classifying the key root causes of adverse events were studied as reference. They were:

   a) Human Factors Taxonomy for Healthcare: Mayo Clinic Quality management Services, 4/30/08

   b) Classification for Root Causes for Serious Reportable Events: Ministry of Health, Singapore

   c) Service Quality Feedback Categorisation System: Singapore General Hospital

2. Based on the guiding principles and taxonomy of the frameworks studied, a working classification table was drawn up.

3. Classification table was tested on individual adverse events with RCAs completed over the period from CY2011 to CY2013.

4. Individual institutions were invited to validate the results of the preliminary categorisation based on the proposed framework.

Review of existing root cause classification frameworks	Drawing up a draft classification table	Pilot study conducted on 51 RCAs done for SREs over 2011 to 2013	Individual institutions validated the results of the pilot study

Continuous refinement of categories to improve reliability in our ever-changing operating environment

Results

A framework comprising 10 key root cause categories taking into account "Human-factors-related", "Technology-related" and "Systems-related" failure modes was drawn up.

Human Factors

- Compliance
- Communication
- Condition of Healthcare Worker
- Knowledge, Skills or Competency
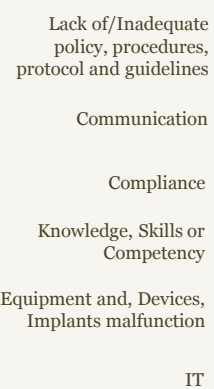- Physical Environment
- Information Technology

System Factors

- Lack of/Inadequate policy, procedures, protocol and guidelines
- Information retrieval issues
- Equipment/Devices/Implants malfunction
- Other

Results from the pilot study done on 51 RCAs for adverse events reported from CY2011 to CY2013 showed a majority of root causes falling into the categories of

- Lack of/inadequate policy, procedure and guidelines
- Communication
- Compliance

The findings were presented at Board level meetings for management's information. Plans are afoot to narrow down the specific area of weakness within the category "lack of/inadequate policy, procedures and guidelines" so that targeted mitigation plans can be developed.

Lack of/Inadequate policy, procedures, protocol and guidelines — 26

Communication — 9

Compliance — 7

Knowledge, Skills or Competency — 5

Equipment and, Devices, Implants malfunction — 2

IT — 1

50% 20% 10% The rest 20%

Conclusion

Categorising key root causes for adverse events is an process enhancement towards measuring performance and initiating improvement in an organisation.

The RCA classification has demonstrated an ability to surface areas of concern that would have been previously lost in the myriad of root causes reported from different adverse events. Our institutions will be undertaking the categorisation of RCAs using the classification table to help them focus on key root cause categories going forward.

Some fine-tuning of the approach to categorising the key root causes would be undertaken to better reflect that often more than one key root cause might be involved in an adverse event. This would allow for a holistic, multi-prong approach to develop targeted risk mitigation action plans.

The RCA classification table would also be adapted into the new National Quality Assurance System, currently being developed by MOH Standards & Quality Improvement Division for the reporting of Serious Reportable Events.

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References:
1. Human Factors Taxonomy for Healthcare: Mayo Clinic Quality Management Services, 04/03/08
2. Classification for Root Causes for Serious Reportable Events: Ministry of Health, Singapore.
3. Service Quality Feedback Categorisation System: Singapore General Hospital
4. A Human error approach to aviation accident analysis: The Human Factors Analysis and classification system. Wiegmann, DA & Shappell (2003)