MOH NON-SPECIALIST HOSPITALS: ADVERSE EVENTS & NEAR MISSES

Issue
Adverse events and near misses do occur in all aspects of the healthcare setting, and the effects can be particularly distressing to all involved (1).

A study on 20 Canadian community hospitals reported an adverse event rate of 7.5%, and a preventability and death rate of 37% and 21% respectively (2).

Hence, it is essential to develop ways to recognize, classify, determine the extent of and prevent these errors as they affect the overall performance of our healthcare delivery system.

These results provide baseline data on the error rate of adverse events and near misses from a retrospective study done on 4 randomly selected MOH non-specialist hospitals. It attempts to classify probable event characteristics and contributing factors to aid the development of preventive plans.

Key Messages
- 6.3% of admissions into MOH non-specialist hospitals had an adverse event and 69.7% had a near miss
- 83% of adverse events were due to errors
- Half of all deaths were due to adverse events with errors
- The majority of errors were related to clinical management
- Commonest contributing factors were human & performance factors (especially cognitive related & behavior of personnel)
- Urgent attention is required to rectify these errors
Key Considerations for Policy Makers

- Strong need to reduce adverse events and near misses in MOH hospitals
- To encourage regular auditing of inpatient medical records in all hospitals
- Can be used as key performance factor for comparison within and between hospitals
- To identify outliers to enable in-depth analysis to be conducted
- To identify and address event characteristics and contributing factors known to lead to these errors

Key Considerations for Health Care Providers

- Encourage regular auditing of medical records within each department
- Need to identify event characteristics and contributing factors within individual settings
- To involve specialist(s) in all cases afflicted with adverse events
- To be aware that these errors can be used to indicate individual hospital performance

Definitions

Adverse Events: Unintended injuries caused by clinical care which result in temporary or permanent disabilities, even death.

Near Miss: Incidents caused by health care management but did not lead harm. Also known as a potential adverse event, hence it is a crucial component to be studied for future preventive purposes.

Error: Failure of a planned action to be completed as intended; use of a wrong plan to achieve an aim, omission of an appropriate step.

Background

Healthcare personnel in all hospitals carry complete responsibility towards the care of in-patients as round the clock observation and intervention must be promptly instituted to ensure that the recovery process of a patient is optimized (4). Non-specialist hospitals in particular often face a significant imbalance in the doctor-to-patient ratio plus a lack in medical resources and appropriate expertise which may hinder optimal care from being provided, and the incidence of healthcare management errors to rise.

This study aims to provide baseline figures representing the rates of adverse events and near misses. It describes the event characteristics, contributing factors and outcomes. Extrapolations and inferences/comparisons can be made to facilitate appropriate steps to be taken to minimize such errors in the future.

Findings

6.3% (95% CI* 0.6 - 41.3) of admissions had an adverse event (AE). 83.3% (95% CI 65.5-92.9) of the adverse events had errors. Near misses (NM) were found in 69.7% (95% CI 35.6 - 90.6) of admissions. Only 27.1% (95% CI 9.5-56.7) of adverse events and 1.7% (95% CI 0.4-7.4) of near misses were recognized by healthcare personnel.

Adverse Event (AE)

- Overall Rate: 6.3%
- Errors: 83.3%
- Recognition Rate: 27.1%

Outcome

Of the total deaths: (Fig.1)

- 48.4% were due to adverse events with errors

Near Miss (NM)

- Overall Rate: 69.7%
- Likely to cause serious morbidity/mortality: 50%
- Recognition Rate: 1.7%

*ALL near misses were taken as errors that did not lead to harm*

![Fig.1: Deaths caused by Adverse Events](image-url)

The numbers in brackets in figure 1 indicate an extrapolation to total discharges from MOH hospitals in 2008.

This research highlight series is based on ongoing research done by the institute and its collaborators on health system policy issues in Malaysia.
Event Characteristics and Contributing Factors

ADVERSE EVENTS

Aspects of clinical management were the main event characteristics leading to adverse events (fig.2) as well as near misses (fig.3) in all disciplines. They consist of assessment, treatment, procedures plus ongoing management and care of patients.

Most adverse events and near misses were due to human and performance factors, namely cognitively-related factors as well as behaviour of the healthcare personnel involved. (Fig 4 & 5)

Unnecessary Prescriptions and Plans

11.1% (95% CI 1.7-47) of adverse events and 21.0% (95% CI 5.7-58.3) of near misses were due to unnecessary prescriptions and plans. They specifically represent the giving of medications as well as performing major investigations and clinical procedures which should not have been done but were done.

Personnel Involved

The most common highest attending officer for adverse events and near misses were medical officers or a more senior officer, at 99.3% (95% CI 47.8-100.0) and 88.9% (95% CI 79.3-94.4) respectively.

In 0.7% (95% CI 0.0-52.2) of adverse events and 0.5 95% CI 0.0-10.6) of near misses, the panel could not identify the personnel involved.

Consultation with Specialists or higher

63.6% (95% CI 30.8-87.3) of adverse events were not consulted with a specialist and only 3.9% (95% CI 1.2-11.7) of cases were.

In the remaining 32.5% (95% CI 9.2-69.8) of cases, the panel could not discern whether there were consultations with a specialist for the AE.
METHODOLOGY:
A retrospective study was conducted in four randomly selected Ministry of Health (MOH) non-specialist hospitals where inpatient records from December 2006 were sampled to represent the total number of admissions into MOH non-specialist hospitals in 2006. A total of 21 expert panels represented by specialists from the disciplines of Medicine, O&G, Paediatrics, Surgery, Orthopaedics, Ophthalmology and ENT were formed to assess the medical records.

Data collection was performed using a five-section questionnaire covering these areas:
1. Section A: Sociodemography
2. Section B: Primary Evaluation by Independent Medical Officers
3. Section C: Patient Safety Incidents
4. Section D: Near Miss Details
5. Section E: Adverse Event Details

Throughout the research, references were made to the WHO Conceptual Framework (5), the World Alliance for Patient Safety International Classification for Patient Safety (6) and the WHO Draft Classification (7). The classification of event characteristics and contributing factors used in this research were according to the above-stated documents.

Preservation of patient anonymity was strictly adhered to at all times.

REFERENCES:
2. Baker GR et al. CMAJ 2004; 170:1678-86

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