INPATIENT FALL RATE IN A PUBLIC REHABILITATION HOSPITAL
(NMRR-16-2594-30899 S1)

Rafidah Abd Ghani 1, Low Lee Mei 1, Noraidahayu Binti Mohd Sham1, Gowry Narayanan 2, Fathullah Iqbal Ab Rahim 3

1Hospital Rehabilitasi Cheras (HRC), Ministry of Health Malaysia
2Nursing Division, Ministry of Health Malaysia
3Institute for Health Systems Research (IHSR), Ministry of Health Malaysia

Presented at the 23rd Joint Malaysia-Singapore Nursing Conference at the Equatorial Hotel, Melaka on 5-7 September 2018.
Background - What is “Fall”? 

• Definitions

“Unintentionally coming to rest on the ground, floor or other lower level.”

(WHO, 2007)

“Near fall as the person seems to fall but can prevent the fall by catching or leaning on a person or a thing.”

(Lee et al., 2010)
Patients on rehabilitation are one of the “most at risk population” for falls during hospitalisation. Inpatient falls is a major healthcare issue for rehabilitation setting.

However, patient mobilisation is a key activity for rehabilitation. Patients on rehabilitation are encouraged for early mobilisation → higher risk of fall, as compared to general setting.

Presented at the 23rd Joint Malaysia-Singapore Nursing Conference at the Equatorial Hotel, Melaka on 5-7 September 2018.
Background - Chronicle

- Hospital Rehabilitasi Cheras (HRC), Kuala Lumpur
  - commenced operation on 2 July 2012
  - first for its kind in South East Asia.
  - Center of Excellence and National Referral Centre for comprehensive Rehabilitation Medicine services.
  - 6 wards (Neurology/Stroke, Acquired Brain Injury, Pediatric, Geriatric, Spinal Cord Injury, Amputee) with 132 beds.

Note: This study was a collaborative consultancy effort between the Nursing Division and the Institute for Health Systems Research (IHSR); agencies under the Ministry of Health Malaysia.
Background - Objectives

• Objectives:

1. To compare fall rate **locally** and **internationally** on a public rehabilitation setting.

2. To **identify** the **characteristics** associated with inpatient falls.
Methodology

- Retrospective study
- Inpatient medical record & incident reporting forms
- Universal sampling (n=120)
- Descriptive analysis
- Exclusions: outpatients
- Literature search for comparison data
Methodology

Fall Incidence Rate

Unit = Count (No. of falls per 1000 inpatient days in a particular year)

\[
\frac{\text{TOTAL NUMBER OF FALLS}}{\text{TOTAL LENGTH OF STAY (LOS)}} \times 1000
\]
Results

- 1\textsuperscript{st} objective: To compare fall rate locally and internationally on a public rehabilitation setting.

<table>
<thead>
<tr>
<th>Hospital/Source</th>
<th>Fall Rate per 1000 Inpatient Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Rehabilitasi Cheras (HRC)</td>
<td>1.3 - 3.0</td>
</tr>
<tr>
<td>MOH Hospitals</td>
<td>0.24</td>
</tr>
<tr>
<td>International rehabilitation hospitals (Rosario et al, 2013)</td>
<td>4-6</td>
</tr>
</tbody>
</table>
Results

• 2\textsuperscript{nd} objective: To identify the characteristics associated with inpatient falls.

Human Factors

• Neurology patients 56.7%
• Length of Stay 8-30 days 58.3%
• in Caretaker’s Presence 45.0%
• under >1 medications 87.5%
• sustained no injuries 70.8%

Environment Factors

• Fall in toilet 46.7%
• Fall during night shift 38.3%
Results – Human Characteristics

- **Person Proximity**
  - Presence of Caretaker: 7.5%
  - Patient Alone: 23.3%
  - Multiple involvement: 24.2%
  - Other: 45%

- **Length of Stay**
  - 31-40 inpt days: 18.3%
  - 8-30 inpt days: 17.6%
  - <7 inpt days: 5.8%
  - >40 inpt days: 58.3%

- **Patient type by ward**
  - Neurology: 11.6%
  - Spinal: 10.8%
  - Amputee: 11.7%
  - Geriatric: 9.2%
  - Other: 56.7%

- **Fall outcome**
  - Uninjured: 18.4%
  - Dressing: 7.5%
  - X-ray: 20.5%
  - Transferred out: 58%

- **Patient Under medication**
  - under >1 medication: 12.5%
  - ≤1 medication: 87.5%

Presented at the 23rd Joint Malaysia-Singapore Nursing Conference at the Equatorial Hotel, Melaka on 5-7 September 2018.
Results – Environment Characteristics

Fall location
- Toilet: 46.7%
- Bedside: 36.7%
- Dining Hall: 9.1%
- Others: 7.5%

Occurrence
- AM shift: 38.3%
- PM shift: 33.3%
- Night shift: 28.4%
Discussion & Conclusion

• Falls could happen at any time and anywhere, despite the caretaker’s presence.

• Risk factors identified from this study highlighted the areas for improvement in HRC, to facilitate patients in achieving maximal functional independence.

• Patient safety is an utmost concern.

• Limitation: Only on reported fall or near fall.
Recommendation

• Our results warranted further investigation on the reported falls.

• Findings can be used as a baseline evidence to develop a more appropriate and comprehensive fall risk protocol, especially for HRC.

• Fall risk assessment upon admission for inpatients with the identified characteristics to prevent fall.

• All fall or near fall incidents must be reported to prevent under-reporting – prioritise patient safety.
Acknowledgements

• The authors wish to thank the Director-General of Health Malaysia for his permission to present this oral presentation.

• The project was registered under National Medical Research Registry (NMRR-16-2594-30899 S1) and received no specific research grant from any funding agency in the public, commercial or not-for-profit sectors. Ethics approval was granted by Medical Research Ethics Committee.

• The authors wish to thank the Director of Hospital Rehabilitasi Cheras for the permission to execute this study.

• The authors also wish to thank the Nursing Division and the Institute for Health Systems Research (IHSR); for their guidance.
References

12. Reducing Falls and Injuries From Falls : June 2013 (Measures Revised April 2015) www.saferhealthcarenow.ca

Presented at the 23rd Joint Malaysia-Singapore Nursing Conference at the Equatorial Hotel, Melaka on 5-7 September 2018.
THANK YOU