Comparison of Hand Hygiene Compliance between Health-Care Professionals in Medical Department Sarawak General Hospital

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Rita S Binti Muhamad Rizal¹, Monica Then Yung Li¹

¹ Clinical Research Centre, Sarawak General Hospital, Kuching Sarawak, Malaysia
Background

• **Hand hygiene practices** among health care professionals is an effective measure to prevent Hospital Acquired Infections (HAI).\(^1\)

• **Five moments** of hand hygiene by World Health Organization (WHO)
  - Before patient contact
  - Before performing aseptic task
  - After body fluid exposure risk
  - After patient contact
  - After contact with patient surroundings

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Significance of Study

- HAI increase from 2016 to 2017 by number of cases (Total Admission 62125)
- Based on High Alert Organism Report (Alert Organism Form Ministry of Health Malaysia MDRO/KKM/2012/1)

<table>
<thead>
<tr>
<th>Type of Microorganism</th>
<th>2016</th>
<th>2017</th>
<th>Number of Cases Increase by</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA-HA</td>
<td>95</td>
<td>124</td>
<td>29</td>
</tr>
<tr>
<td>ESBL-Klebsiella Pneumonia</td>
<td>371</td>
<td>397</td>
<td>26</td>
</tr>
<tr>
<td>ESBL-E.Coli</td>
<td>122</td>
<td>137</td>
<td>15</td>
</tr>
</tbody>
</table>
Study Objective

• To determine **hand hygiene compliance** between health care professionals in Medical Department, Sarawak General Hospital (SGH)
  
  • To compare hand hygiene compliance **among healthcare professionals** in Medical Department Sarawak General Hospital.
  
  • To compare hand hygiene compliance **between different wards** under Medical Department Sarawak General Hospital.
  
  • To identify the **implication** of hand hygiene non-compliance among health care professionals toward patient safety in the ward.
Study Methods

• An observational study
  • Secondary Data from Infection Control Unit, SGH
  • Results from Hand Hygiene Audit throughout year 2017

• Medical Department
  • Medical 4, Medical 3, Female Medical, Male Medical, Haematology, Infectious Diseases Ward

• Study population
  • Doctors, Nurses and other Allied Health Professionals
Hand Hygiene Audit

- **Direct observation** of hand hygiene compliance
- **Convenient sampling** during office hour
- Carried out by Infection Control Link Nurses (ICLN) (every month)

- Name of audit forms;
  - Annex 34 Observation Form (WHO)
  - Basic Calculation Form (WHO)
  - Optional Calculation Form (WHO)
  - Laporan Pencapaian Kepatuhan Hand Hygiene Hospital-Hospital Kementerian Kesihatan Malaysia
Method Analysis

• Study data was analysed by SPSS® version 21

• Comparison of hand hygiene compliance was done using One-way ANOVA

• Post-hoc analysis was carried out to determine the compliance between the three professions and between the six wards
### Results

Comparison of mean hand hygiene compliance rate among doctors, nurses and allied health professionals

<table>
<thead>
<tr>
<th>Profession</th>
<th>Hand hygiene compliance rate Mean (SD)</th>
<th>F Statistic&lt;sup&gt;a&lt;/sup&gt; (df)</th>
<th>p-value&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>63.73 (18.77)</td>
<td>13.95 (2, 181)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Nurse</td>
<td>80.17 (15.94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allied Health Professionals</td>
<td>73.65 (22.66)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean compliance rate of nurses was significantly higher compared to doctors ($p<0.001$).
# Results

Comparison of mean hand hygiene compliance rate different ward under Medical Department Sarawak General Hospital

<table>
<thead>
<tr>
<th>Ward</th>
<th>Hand hygiene compliance rate</th>
<th>F Statistic&lt;sup&gt;a&lt;/sup&gt; (df)</th>
<th>p-value&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical 4</strong></td>
<td>68.66 (19.88)</td>
<td>6.04 (5, 178)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td><strong>Medical 3</strong></td>
<td>69.61 (21.87)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Female Medical</strong></td>
<td>64.23 (15.32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male Medical</strong></td>
<td>67.32 (19.45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Haematology</strong></td>
<td>76.82 (18.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ID ward</strong></td>
<td>87.17 (15.91)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean compliance rate of **ID ward** was significantly higher than Medical 4 (p= 0.003), Medical 3 (p= 0.005), Female medical (p<0.001) and Male medical (p= 0.001).
Discussion

• Hand hygiene highest among nurses related to;

✓ Opportunities of hand hygiene performed
✓ Differences in attitudes toward hand hygiene
✓ Regularly attending the training and courses


Discussion

• How to improve compliance of hand hygiene?

✓ Continue monitoring and education program related to hand hygiene

✓ Ensure all professionals are knowledgeable, maintain positive attitude

✓ Practicing five moments of hand hygiene
• Hand hygiene compliances rate **highest** in ID Ward;

✓ Mostly infectious cases in ID ward

✓ Staff will **plan** well all the procedure in order to limit their contact with patients

✓ Staffs are **trained better** and **more knowledgeable** in handling infectious cases


Conclusion

• Hand hygiene compliances are **correlated** with HAI in Medical Department of SGH

• Compliance rate of hand hygiene is the **highest** among nurses and in ID Ward
Acknowledgements

• Infection Control Unit, Sarawak General Hospital
• Matron Mary William (U42), Infection Control Unit Sarawak General Hospital
• Nursing Sister Pauline Angelyna Peter (U32), Infection Control Unit Sarawak General Hospital
• Nursing Sister Rosnah Binti Mohidin (U32), CRC Sarawak General Hospital
• Ms Lim Chien Joo, Biostatisticians, CRC Sarawak General Hospital
• Staff Nurses from Infection Control Unit Sarawak General Hospital
• Dr Alan Yean Yip Fong, Consultant Cardiologist & CRC Head of Department
• Staffs from Medical Department Sarawak General Hospital
References


THANK YOU
Basic Compliance Calculation

Compliance with hand hygiene is the ratio of the number of performed actions to the number of opportunities as expressed by the following formula:

\[
\text{Compliance (\%)} = \frac{\text{Performed actions}}{\text{Opportunities}} \times 100
\]

On the Observation Form, the indications observed are classified as opportunities for hand hygiene (the denominator), against which the positive hand hygiene action is set (the action serving as the numerator).

Results for compliance may be calculated globally but also broken down by professional category and setting. Thus when health-care use by health-care facilities that do not have information technology tools for collecting and analysing electronic data. The tool is designed to produce global compliance results broken down by professional category and indication. However, it may also be used to subdivide the results by setting.
### Annex 34

#### Observation Form

<table>
<thead>
<tr>
<th>Observation Item</th>
<th>Action</th>
<th>Observation Item</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand hygiene</td>
<td></td>
<td>Hand hygiene</td>
<td></td>
</tr>
<tr>
<td>Mask use</td>
<td></td>
<td>Mask use</td>
<td></td>
</tr>
<tr>
<td>Personal hygiene</td>
<td></td>
<td>Personal hygiene</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td>Environment</td>
<td></td>
</tr>
<tr>
<td>Patient Care</td>
<td></td>
<td>Patient Care</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td>Equipment</td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td>Medication</td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td></td>
<td>Feedback</td>
<td></td>
</tr>
</tbody>
</table>

#### World Health Organization

This document is part of the World Health Organization's World Alliance for Patient Safety initiative. The Annex 34 Observation Form is designed to track and improve various aspects of patient care, hygiene, and safety in healthcare settings.
World Alliance for Patient Safety

Basic Calculation Form

- World Health Organization
World Alliance for Patient Safety

Optional Calculation Form

World Health Organization
Laporan Pencapaian Kepatuhan Hand Hygiene Hospital Hospital Kementerian Kesihatan Malaysia

<table>
<thead>
<tr>
<th>No.</th>
<th>Department / Hospital</th>
<th>No. of Actions (Week or Hub)</th>
<th>No. of Opportunities</th>
<th>Compliance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Medical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Surgical</td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td>Orthopaedic</td>
<td></td>
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<tr>
<td>4.</td>
<td>Paediatric</td>
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</tr>
<tr>
<td>5.</td>
<td>O&amp;G</td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Anaesthesiology</td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>Nursing (all opportunities from nursing category)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Overall Hospital Performance (including other departments)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Laporan disediakan oleh: ____________________________
Tanda Tangan: ____________________________
Nama: ____________________________
Cp Jawatan: ____________________________
Tarikh: ____________________________

Disahkan Oleh: ____________________________
Tanda Tangan: ____________________________
Nama: ____________________________
Cp Jawatan: ____________________________
Tarikh: ____________________________