1. Introduction

- There are approximately 8600 hospitals in Japan of which 82% contain less than 300 beds.
- A Certified Nurse in Infection Control (CNIC) takes a full-time role in infection control in each hospital.
- The number of infection control nurses or doctors required according to the scale of the facility in Japan has not yet been evaluated.
- The number varies depending on the background of each facility.

2. Purpose

- To evaluate the optimal number of the beds for an infection control nurse (ICN) or an infection control doctor (ICD).

Table 1. The Actual / Required number of CNICs per facility and number of beds in facility per CNICs (n=527)

<table>
<thead>
<tr>
<th>Number of beds in facility</th>
<th>Mean value</th>
<th>95% CI</th>
<th>Median</th>
<th>Minimum value</th>
<th>Maximum value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual number of CNICs per facility</td>
<td>2.4</td>
<td>2.1</td>
<td>2.0</td>
<td>1.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Required number of CNICs per facility</td>
<td>1.44</td>
<td>1.33</td>
<td>1.31</td>
<td>1.15</td>
<td>2.15</td>
</tr>
<tr>
<td>Required number of beds in facility per CNIC</td>
<td>335.3</td>
<td>300.0</td>
<td>300.0</td>
<td>300.0</td>
<td>335.3</td>
</tr>
<tr>
<td>Required number of beds in facility per CNIC</td>
<td>194.5</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>194.5</td>
</tr>
</tbody>
</table>

Table 2. Working hours in infection control-related activities per month and the number of holidays taken on a yearly basis as per the work record of the past year.

<table>
<thead>
<tr>
<th>Working hours in infection control-related activities per month</th>
<th>Mean value</th>
<th>95% CI</th>
<th>Median</th>
<th>Minimum value</th>
<th>Maximum value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required working hours</td>
<td>230.2</td>
<td>180.0</td>
<td>180.0</td>
<td>180.0</td>
<td>230.2</td>
</tr>
<tr>
<td>Required additional working hours in infection control-related activities per month</td>
<td>101.7</td>
<td>50.0</td>
<td>50.0</td>
<td>50.0</td>
<td>101.7</td>
</tr>
<tr>
<td>The number of holidays taken per year</td>
<td>6.2</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>6.2</td>
</tr>
</tbody>
</table>

4. Results

- The number of responses from ICNs was 527 (41.0%) in the primary research, 266 (17.6%) in the second and 192 (15.0%).
- The number of beds per an ICN was 335.3 (Table 1).
- The average actual working time of ICNs was 230.2 hours per month. Also the fact that 101.7 hours extra per month on average.
- The results of the Delphi method to find the optimal number of ICNs per full-time ICNs in infection control is 438.0.

5. Discussion

- The results revealed that the total average actual working time of ICNs was inadequately long: 230 hours per month. Also the fact that the number of healthcare workers required for an infection control facility vary depending on each facility and/or organization.
- Further surveys are necessary in order to discover the optimal numbers of ICNs and ICDB.
- The structure of the facility, staff education, working environment and workplace relations and human qualities of ICNs/ICDBs, such as their position, authority, problem-solving and interpersonal skills need to be considered as well.
- These results could be a useful index to consider the optimal number of healthcare workers required for an infection control facility.

6. Conclusion

- This study demonstrated an ICN is required for 191.7 beds and an ICD is required for 438.0 beds.

References