Background
The potential association between healthcare workers (HCWs) and the risk of clinically active tuberculosis (TB) in countries with intermediate TB burdens remains unclear.

Methods
A nationwide, population-based cohort study was performed by using Taiwan National Health Insurance Database during 2000–2010. We included HCWs and non-HCWs without history of tuberculosis matched at a 1:1 ratio according to age, sex, monthly income, underlying co-morbidities, and concomitant medications. All subjects were followed from the date of enrollment until TB occurrence, death, or 31 December 2010.

Results
The study population comprised 11,811 healthcare workers and 11,811 matched subjects. 62 HCWs and 38 control subjects developed TB during a median follow-up period of 9.4 years. The incidence of TB was higher among HCWs than among matched subjects (61.08 vs. 37.81 per 100,000 person-years). The risk of TB was also greater among HCWs (adjusted hazard ratio [aHR], 1.62; 95% confidence interval [CI], 1.08–2.43), particularly for pulmonary TB in comparison with extrapulmonary TB (aHR, 1.56; 95% CI, 1.02–2.39). Among different job categories of HCWs, we found that only nurses had a significantly increased risk of developing TB (aHR, 2.55; 95% CI, 1.37–4.72) compared to the matched cohort.

HCWs are associated independently with a higher risk of developing TB in this intermediate-burden country. Therefore, the importance of TB surveillance among HCWs should be emphasized.

Table 1. Incidence and Risk of Tuberculosis Among Healthcare Workers and Matched Cohort

<table>
<thead>
<tr>
<th>No. of events</th>
<th>Person-years</th>
<th>Incidence rate*</th>
<th>Hazard ratio (95% CI)</th>
<th>p</th>
<th>Hazard ratio (95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched cohort</td>
<td>38</td>
<td>100,493</td>
<td>37.81</td>
<td>Reference</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Healthcare workers</td>
<td>62</td>
<td>101,505</td>
<td>61.08</td>
<td>1.62 (1.08–2.42)</td>
<td>0.020</td>
<td>1.62 (1.08–2.43)</td>
</tr>
</tbody>
</table>

*Per 10⁵ person-years.

Abbreviations: CI, confidence interval.

Conclusion
HCWs are associated independently with a higher risk of developing TB in this intermediate-burden country. Therefore, the importance of TB surveillance among HCWs should be emphasized.