Snake bites remain a devastating, life-threatening, environmental hazard not only in tropical developing nations but also in developed nations. Venomous snakes are widely distributed in almost all countries between latitudes 50°N and 50°S. Japan has an area of approximately 378,000 km² and a population of approximately 127 million. Human-inhabited areas are located between 24°N and 46°N, which ranges from a subtropical zone to a temperate zone. Mamushi (Gloydius blommhoffii) and habu (Protobothrops flavoviridis) are two of the major venomous snakes in Japan; both belong to the sub-family Crotalinae (pit vipers). Mamushi bites occur in areas between 30°N and 46°N. Habu bites occur on Okinawa Island and the surrounding isolated islands (24–29°N), a region inhabited by 1.5 million persons.

Presumably, snakes worldwide envenom hundreds of thousands of persons and kill or injure tens of thousands every year. However, few reliable data on the incidence of snake bites are available. Surveillance systems on snake bites are not well established even in developed nations. For instance, the American Association of Poison Control Centers reports annual statistics of snake bites in the United States, but many snake bites go unreported because reporting is not mandatory and some treating physicians do not consult with a poison-control center. The situation is worse in Japan; no national surveillance system is present, and the incidence of snake bites remains obscure.

We verified the incidence and geographic distribution of snake bites in Japan by using a currently available, nationally representative, hospital-based database. We identified 1,670 patients with snake bites from 404 hospitals during July 1–December 31 in 2007 and 2008. More than 60% were males, the average age was 60.1 years, and the in-hospital mortality rate was 0.2%. The incidence of mamushi bite, distributed between latitudes 30°N and 46°N, was estimated to be 1.67 bites/100,000 persons/6 months. It is important to continue collecting all available data to monitor the trends of this life-threatening disease.

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doi:10.4269/ajtmh.2011.10-0403

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are established. However, our results are incomplete because of several limitations that underlie in the DPC database. First, the DPC survey is conducted only during July–December each year. Second, the database includes only inpatient data, and some victims with mild symptoms may be treated in outpatient clinics or might not seek treatment. Third, limited data from the isolated islands off southern Japan prevented us from accurately estimating the incidence of habu bites.

Insufficient epidemiologic data have hindered the recognition of snake bite as an important public health issue, and its threat has been largely ignored in developing and developed nations. The only reliable way to assess the true incidence of snake bites in a country is with a well-designed, population-based, mandatory reporting system. However, given that such a system has not yet been established, epidemiologists should use any currently available database to evaluate the national burden of the disease. It is important to continue collecting all available data to monitor the trends of this distressing condition.

### Table 1

<table>
<thead>
<tr>
<th>Latitudes</th>
<th>No. observed cases with mamushi bite during July 1–December 31 in 2007 and 2008</th>
<th>Coverage rate of acute care beds, %</th>
<th>No. persons/6 months (95% confidence interval) (×100,000)</th>
<th>Estimated incidence of mamushi bites/200,000 persons/months (95% confidence interval) (×100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42°–46°N</td>
<td>9</td>
<td>36.2</td>
<td>52</td>
<td>0.24 (0.11–0.37)</td>
</tr>
<tr>
<td>38°–42°N</td>
<td>47</td>
<td>33.8</td>
<td>79</td>
<td>0.88 (0.67–1.08)</td>
</tr>
<tr>
<td>34°–38°N</td>
<td>947</td>
<td>38.5</td>
<td>969</td>
<td>1.27 (1.20–1.34)</td>
</tr>
<tr>
<td>30°–34°N</td>
<td>607</td>
<td>39.0</td>
<td>162</td>
<td>4.80 (4.46–5.13)</td>
</tr>
<tr>
<td>Total</td>
<td>1,610</td>
<td>38.1</td>
<td>1,263</td>
<td>1.67 (1.60–1.74)</td>
</tr>
</tbody>
</table>

*Incidence = n/ v/ P2.

Received July 15, 2010. Accepted for publication October 4, 2010.

Financial support: This study was supported by Grants-in-Aid for Research on Policy Planning and Evaluation from the Ministry of Health, Labor and Welfare, Japan.

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