In terms of the number of years of life lost (YLLs) due to premature death in Bhutan, lower respiratory infections, preterm birth complications, and poisonous injuries were the highest ranking causes in 2010.

Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), diarrheal diseases showed the largest decrease, falling by 85% from 1990 to 2010.

The leading risk factor in Bhutan is dietary risks.

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

**GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010**

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

**PROFILE OVERVIEW**

- In terms of the number of years of life lost (YLLs) due to premature death, the leading risk factor in Bhutan is dietary risks.

**ALL-CAUSE MORTALITY RATE**

- This chart shows the decline in mortality rate at every age range. The higher points on the chart indicate that declines in mortality rates were faster in those age groups between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by females aged 1-4 years (77%). Males aged 80+ years saw the smallest decrease in mortality rate (13%).

**CAUSES OF PREMATURE DEATH**

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.
YEARS LIVED WITH DISABILITY (YLDs)
Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Bhutan are low back pain, major depressive disorder, iron-deficiency anemia, chronic obstructive pulmonary disease, and migraine.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

DISABILITY-ADJUSTED LIFE YEARS (DALYs)
Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Bhutan, the top three causes of DALYs in 2010 were lower respiratory infections, preterm birth complications, and chronic obstructive pulmonary disease. The causes that were in the 10 leading causes of DALYs in 2010 and not 1990 were low back pain, ischemic heart disease, and road injury.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

http://www.healthmetricsandevaluation.org
RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Bhutan are dietary risks, high blood pressure, and household air pollution from solid fuels. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and occupational risks, respectively, in 2010.

The graph shows the top 15 risk factors for Bhutan. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Bhutan against other comparator countries provides key insight into public health successes and areas where Bhutan might be falling behind. The table identifies Bhutan's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Bhutan ranked 8th for age-standardized YLD rate and 10th for life expectancy.
### COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Bhutan relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Bhutan for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

#### Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990

<table>
<thead>
<tr>
<th>Country</th>
<th>Lower respiratory infections</th>
<th>Diarrheal diseases</th>
<th>Preterm birth complications</th>
<th>Neonatal encephalopathy</th>
<th>Protein-energy malnutrition</th>
<th>COPD</th>
<th>Diabetic retinopathy</th>
<th>Tuberculosis</th>
<th>Fire</th>
<th>Trench fever</th>
<th>Lower back pain</th>
<th>Malaria</th>
<th>Maternal disorders</th>
<th>Road injury</th>
<th>Low back pain</th>
<th>Iron-deficiency anemia</th>
<th>Mechanical forces</th>
<th>Migraine</th>
<th>Major depressive disorder</th>
<th>Influenza</th>
<th>Asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanuatu</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>13</td>
<td>13</td>
<td>3</td>
<td>14</td>
<td>10</td>
<td>8</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Maldives</td>
<td>9</td>
<td>5</td>
<td>6</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>8</td>
<td>3</td>
<td>12</td>
<td>3</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>15</td>
<td>8</td>
<td>13</td>
<td>9</td>
<td>14</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Angola</td>
<td>15</td>
<td>10</td>
<td>7</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>4</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>9</td>
<td>15</td>
<td>13</td>
<td>7</td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Swaziland</td>
<td>11</td>
<td>12</td>
<td>7</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>11</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>13</td>
<td>11</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Fiji</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>12</td>
<td>7</td>
<td>7</td>
<td>12</td>
<td>7</td>
<td>51</td>
<td>11</td>
<td>13</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>13</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Georgia</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>14</td>
<td>12</td>
<td>3</td>
<td>14</td>
<td>3</td>
<td>4</td>
<td>14</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Syria</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>13</td>
<td>3</td>
<td>5</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

#### Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Lower respiratory infections</th>
<th>Diarrheal diseases</th>
<th>Preterm birth complications</th>
<th>Neonatal encephalopathy</th>
<th>Protein-energy malnutrition</th>
<th>COPD</th>
<th>Diabetic retinopathy</th>
<th>Tuberculosis</th>
<th>Fire</th>
<th>Trench fever</th>
<th>Lower back pain</th>
<th>Malaria</th>
<th>Maternal disorders</th>
<th>Road injury</th>
<th>Low back pain</th>
<th>Iron-deficiency anemia</th>
<th>Mechanical forces</th>
<th>Migraine</th>
<th>Major depressive disorder</th>
<th>Influenza</th>
<th>Asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanuatu</td>
<td>12</td>
<td>6</td>
<td>12</td>
<td>4</td>
<td>15</td>
<td>5</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td>3</td>
<td>12</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>13</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Maldives</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>12</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>12</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Angola</td>
<td>14</td>
<td>10</td>
<td>13</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>8</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>13</td>
<td>9</td>
<td>11</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Swaziland</td>
<td>15</td>
<td>9</td>
<td>14</td>
<td>11</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>15</td>
<td>11</td>
<td>10</td>
<td>7</td>
<td>15</td>
<td>14</td>
<td>11</td>
<td>12</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>15</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Fiji</td>
<td>10</td>
<td>11</td>
<td>7</td>
<td>13</td>
<td>4</td>
<td>11</td>
<td>12</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>11</td>
<td>12</td>
<td>10</td>
<td>9</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>14</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>Georgia</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td>15</td>
<td>14</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Syria</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>13</td>
<td>11</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>14</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Bhutan</td>
<td>11</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>15</td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>11</td>
<td>15</td>
<td>6</td>
<td>2</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>15</td>
<td>9</td>
</tr>
</tbody>
</table>

#### Ranking Legend

- 1 - 3
- 4 - 7
- 8 - 11
- 12 - 15

---

Institute for Health Metrics and Evaluation
2301 Fifth Ave., Suite 600
Seattle, WA 98121 USA

Telephone: +1-206-897-2800
E-mail: comms@healthmetricsandevaluation.org
www.healthmetricsandevaluation.org