

## 2010 Regional Stroke Surveillance

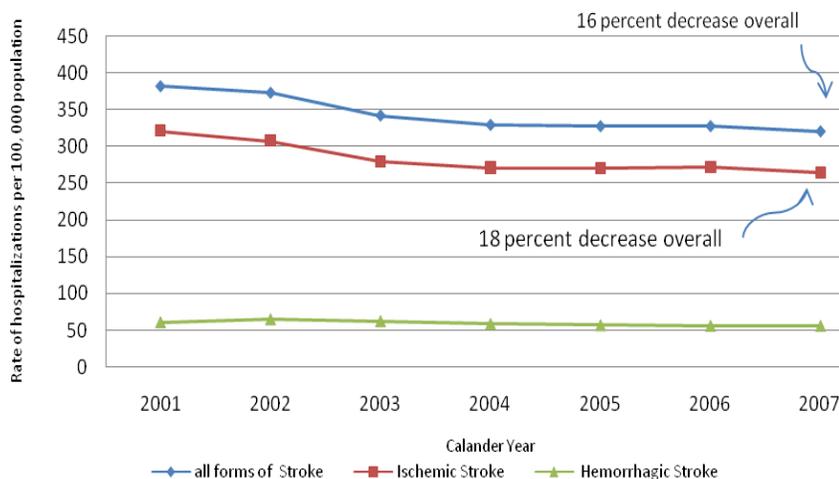
The purpose of this factsheet is to provide updated stroke data and information from the Pacific Northwest region, to complement the other regional resources created by the Northwest Regional Stroke Network (NWRSN). The factsheet is a five-state collaborative effort, and the primary audiences are clinical champions and stroke professionals.

### Stroke in the United States

[Stroke](#) is the third leading cause of death in the United States. Heart disease is the leading cause of death and cancer is second. About 795,000 Americans suffer from strokes each year, and more than 143,579 die from stroke.<sup>1</sup> Stroke survivors are likely to suffer permanent disability. Many ethnic and racial minorities have higher rates of stroke than

whites. In 2009, stroke accounted for an estimated \$68.9 billion in direct and indirect costs.<sup>2</sup>

Figure 1. Rate of hospitalization for Stroke among patients 45 years and older, 2001-2007



### Stroke Hospitalizations in the Northwest Region<sup>3, 4</sup>

- From 2001 to 2007, there were 4,107,166 hospitalizations in the five-state region. All forms of stroke accounted for 2.5 percent (100,574) of hospitalizations. Of those, 82.7 percent (83,172) were ischemic stroke, and 17.3 percent (17,402) were hemorrhagic stroke.

- The crude rate of hospitalization for all forms of stroke during this timeframe was 342.0 per 100,000 (ages 45 years and over). The hospitalization rate for stroke decreased by 16 percent (Figure 1). The age-adjusted rate was 372.2 per

100,000.

- Alaska and Montana had significantly lower hospitalization rates compared to Oregon and Washington.<sup>5</sup>
- Hospitalization rates increase with increasing age, as expected.
- There was a statistically significant difference in age-adjusted hospitalization rates between females, 354.6 per 100,000, and males, 391.5 per 100,000.
- Tissue plasminogen activator (t-PA) use ranged from 1.3 percent in 2001 to 3.7 percent in 2007. The increase began in 2003 (Figure 3).<sup>6</sup>
- Stroke hospitalizations did not vary much between urban and rural settings. The respective urban and rural percentages by state were Oregon (2.7 and 2.4), Washington (2.5 and 2.4), and Alaska (2.1 and 2.0).<sup>7</sup>

<sup>1</sup> <http://www.strokecenter.org/patients/stats.htm>, Accessed on January 21, 2010

<sup>2</sup> <http://www.cdc.gov/Stroke/facts.htm>, Accessed January 21, 2010

<sup>3</sup> Hospitalization count data from the NWRSN member States

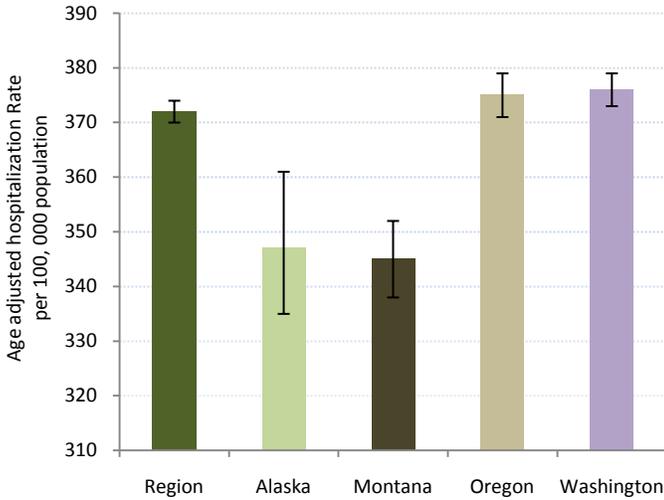
<sup>4</sup> No hospitalization data is available from Idaho.

<sup>5</sup> Comparing state age-adjusted hospitalization rates with the respective region minus each state's rates. No hospitalization data is available from Idaho.

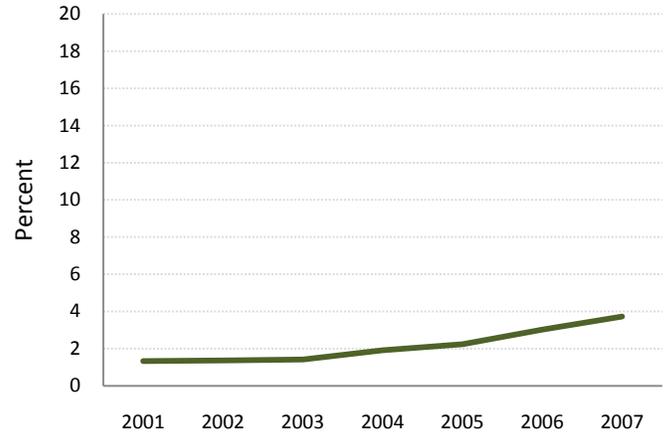
<sup>6</sup> Variations in coding, specifically seen 2005-2006, and differences in DRG coding which results in a high rate of reimbursement makes it difficult to determine whether there is increased usage or just differences in coding.

<sup>7</sup> Urbanization data is unavailable for Idaho and Montana at this time.

**Figure 2. Stroke hospitalization rates per 100,000 population aged >= 45 years, Northwest region, 2001-2007**



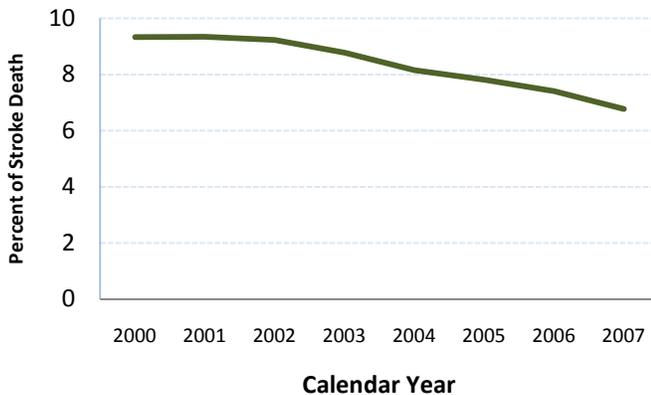
**Figure 3. Percent of t-PA use among ischemic stroke cases, Northwest region, hospital discharge data 2001 - 2007**



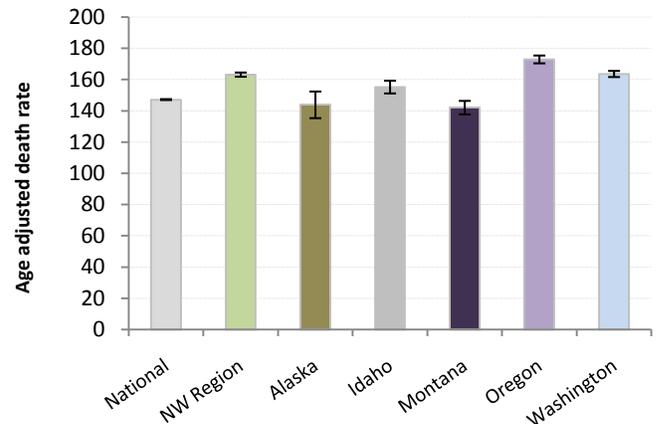
### Stroke Deaths in the Northwest Region<sup>8,9</sup>

- Stroke was listed as the primary cause for 8.3 percent of all deaths on average from 2000 through 2007. Overall, the percent of all deaths with stroke as the primary cause declined from 9.3 percent in 2000 to 6.8 percent in 2007 (Figure 4). Beginning in 2002, the decline is statistically significant with an annual percent change of -6.4 percent.
- The age-adjusted death rate for stroke in the Northwest region was 163.2 per 100,000 for ages 45 and older for the years 2000 to 2007 combined (Figure 5). The age-adjusted rates for each state were: Alaska (144.1), Idaho (155.3), Montana (142.1), Oregon (172.9), and Washington (163.6). The stroke death rate in the Northwest region is significantly higher than the national\*\* estimate: 163.2 versus 147.0.

**Figure 4. Percent of all death with a stroke primary cause, Northwest region 2000-2007**



**Figure 5. Stroke death rates per 100,000 population aged >=45 years, 2000-2007**



- The age-adjusted death rate for stroke was 163.4 for males and 161.3 per 100,000 for females. The difference was not statistically significant.
- The age-adjusted death rate for stroke in Oregon was significantly higher than the Northwest region overall. Alaska, Idaho, and Montana had significantly lower age-adjusted rates compared to other states in the Northwest region combined.<sup>10</sup>

<sup>8</sup> Death counts data from the NWRSN member states.

<sup>9</sup> Oregon and Alaska death data are still preliminary as of February 2010.

\*\* The data for the national estimate is for the years 2000-2006, age adjusted for 100,000 US standard population based on the 2000 census

- The average stroke death rate for years 2000-2007 in the Northwest region, 163.2 per 100,000, is significantly higher than the national estimate for 2000-2006 of 147.0 per 100,000.

## Regional Methods to Improve Stroke Care

### Quality Improvement

- There are 54 hospitals participating in Get with the Guidelines-STROKE, a quality improvement program, in the five-state region.
- There are 31 Primary Stroke Centers certified by the Joint Commission in the Northwest region.<sup>11</sup>

### Telemedicine and Telestroke

- Telemedicine is a way to provide real-time healthcare from a distance, using phone, video conferencing, and other technology. Telestroke is telemedicine that focuses on acute stroke care.
- The regional hospital survey showed that among hospitals that were not Primary Stroke Centers, only 37 percent of hospitals with emergency departments were using telemedicine<sup>12</sup> for stroke care.<sup>13</sup>
- Continued efforts around regional telestroke collaborations include conducting a regional survey in spring 2010 to assess capacity and need for telestroke in the region.

### Emergency Medical Services & Distance Learning

- About 2,000 online stroke training modules were offered to prehospital providers in the Pacific Northwest region in 2009-2010.
- Four telehealth trainings and six webinars were also shared throughout the region and the country during that timeframe. Webinars were shared with more than 350 registered stroke professionals. Stroke professionals in seven states attended rural telehealth trainings.

## Summary Points

- The Northwest regional stroke death rate continues to be significantly higher than the national estimate.
- Rural hospitals with limited capacity and resources often face unique challenges to provide high quality stroke care.
- There is a need for expanded access to telestroke and development of stroke registries especially among rural hospitals.
- Stroke prevention and access to quality stroke care remain key public health issues in the Northwest region.



This document was produced by the Heart Disease and Stroke Prevention Program at the Washington State Department of Health on behalf of the Northwest Regional Stroke Network. More information can be found at: [http://www.doh.wa.gov/cfh/heart\\_stroke/default.htm](http://www.doh.wa.gov/cfh/heart_stroke/default.htm)

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY 1-800-833-6388).

For more information, contact: Chara Chamie at [chara.chamie@doh.wa.gov](mailto:chara.chamie@doh.wa.gov)

<sup>10</sup> Comparing state age-adjusted death rates with the respective region minus each state's rates.

<sup>11</sup> The Joint Commission, 2010. <http://www.qualitycheck.org/consumer/searchQCR.aspx>

<sup>12</sup> Telemedicine defined as consulting by telephone, video or any other technical means with other hospitals.

<sup>13</sup> Northwest Regional Stroke Network's Regional Hospital Needs Assessment and Capacity Survey, 2008.