

**DEPARTMENT OF  
PUBLIC HEALTH AND HUMAN SERVICES**



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**Mortality Report for Persons in Montana  
Receiving Developmental Disability Services  
2007 through 2011**

**Introduction**

Throughout each year, the Mortality Review Work Group meets to review the deaths of persons in Development Disability Services. The Work Group reviews those deaths that involve persons living in group homes or other situations where staff are present either at the time of death or discover the death. We also review the circumstances leading to hospitalizations and subsequent deaths of anyone living in a group home or in a supported living situation.

The purpose of these reviews is to be able to analyze trends in mortality as a component of health and safety oversight for a publicly funded developmental disability services system. The reviews also provide information which can assist us in watching for indicators that could help us prevent certain types of death or illness in the future.

Since Montana is a state with relatively low numbers of people in services who die each year and even fewer cases that meet the requirements for being reviewed by the Work Group. This makes it difficult to detect trends and be confident in their statistical significance even when detected. For this reason, data over the past five calendar years, 2007 through 2011 has been compiled. This data reflects only the cases reviewed by the Work Group, not the total number of deaths in the state each year.

**The Numbers**

**Deaths Reviewed by Mortality Review Work Group 2007 through 2011**

2007	11
2008	19
2009	23
2010	16
2011	23

The table below shows the age at death of those cases that were reviewed from calendar years 2007 through 2011. For the ages 0-18 (gray background), those numbers were not included in the total numbers nor the calculations of the mean and median numbers that are seen on the bottom 3 rows of the table.

**Age at Death for Cases Reviewed 2007 through 2011**

Age	2007	2008	2009	2010	2011	5 yr totals
0-18	0	0	1	0	3	
19-29	3	1	1	3	2	
30-39	2	2	0	1	5	
40-49	3	2	2	4	2	
50-59	1	3	8	4	6	
60-69	2	4	7	4	5	
70-79	0	6	2	0	0	
80+	0	1	2	0	0	
<b>Total</b>	<b>11</b>	<b>19</b>	<b>22</b>	<b>16</b>	<b>20</b>	<b>88</b>
<b>Median</b>	<b>40</b>	<b>61</b>	<b>59.5</b>	<b>50</b>	<b>51.5</b>	<b>51.5</b>
<b>Mean(avg)</b>	<b>43</b>	<b>59</b>	<b>61.4</b>	<b>48</b>	<b>47.6</b>	<b>51.8</b>

For calculations and comparison purposes, the data from age 18 and below was not included in the totals nor average and median age ranges.

The average age of death for those 5 years ranged from 43 years to 61.4 years with a five year average of 51.8 years. The actual ages ranged from age 1 to age 86 but cases of individuals younger than 18 were not included in these calculations. However when those figures are added to the calculations, it is not statistically significant and the average age remained at 50.8 instead of 51.8.

The average age of death for all residents of the state of Montana (2010 data) is 78 years.

**Comparisons:**

The mortality reports from 4 states were reviewed for comparison. This data only encompassed individuals in services that were over the age of 18. The average age at death from those reports was 56.9 to 73.2. When comparing so few states, it is not possible to determine if the lower average age of death for Montana is statistically significant.

State	Data year(s)	Average age at death (years)
Connecticut	FY2009	57.1
Louisiana	2009 (1 <sup>st</sup> six months)	73.2
Massachusetts	2004 – 2008	61.6
Vermont	FY 2001 - 2005	56.9
<b><u>Montana</u></b>	<b><u>2007 - 2011</u></b>	<b><u>51.8</u></b>

**Causes of death**

The causes of death are detailed in the table below.

**Detailed Causes of Death for Cases Reviewed 2007 though 2011**

	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>5 year totals</b>
Pneumonia	1	6	11	1	7	<b>26</b>
Cancer*	1	2	3	4	2	<b>12</b>
Heart disease/ heart failure	1	2	1	4	0	<b>8</b>
Seizure	3	2	1	1	1	<b>8</b>
Genetic Disease or condition*	1	0	1	2	3	<b>7</b>
Sudden death (respiratory/cardiac)	0	2	3	1	0	<b>6</b>
Stroke	0	1	1	0	3	<b>5</b>
Accidental*	2	0	1	1	1	<b>5</b>
Bowel disease*	2	2	0	0	0	<b>4</b>
Natural	0	2	0	0	2	<b>4</b>
Pulmonary Embolism	0	0	0	1	1	<b>2</b>
Neurological*	0	0	1	0	1	<b>2</b>
COPD	0	0	0	0	1	<b>1</b>
Peritonitis	0	0	0	1	0	<b>1</b>
Multisystem organ failure	0	0	0	0	1	<b>1</b>
<b>TOTAL</b>	<b>11</b>	<b>19</b>	<b>23</b>	<b>16</b>	<b>23</b>	

**\*Explanations**

Cancer types include: gastric, lymphoma, lung, metastatic with unknown primary,

Genetic condition or disease includes: Ventriculoseptal defect, myotonic dystrophy, muscular dystrophy

Accidental includes: drug overdose, hypothermia, subdural hematoma, and anaphylaxis

Bowel disease includes: pancreatitis, bowel perforation, gastric necrosis

Neurological includes: Parkinson's, hydrocephalus, dementia

Pneumonia, which includes aspiration pneumonia, is the leading cause of death for the five year period. Cancer, cardiac problems and seizures are the next three leading causes of death.

For the general population of the state of Montana for 2010, the leading causes of death were cancer, heart disease, respiratory diseases (COPD, etc), accidents, and strokes.

## Comparisons:

States report the causes of deaths in different categories, sometimes separating aspiration pneumonia from other pneumonia, etc. In the four other states that were used for comparison, heart disease was the number one cause of death. For the five years of data collection in Montana, heart disease was the leading cause of death only in 2010 and deaths due to cancer equaled that of heart disease for that year. Pneumonia remains our largest problem overall.

**Comparison of leading causes of deaths among five states**

	<b>Connecticut</b>	<b>Louisiana</b>	<b>Massachusetts</b>	<b>Vermont</b>	<b>Montana</b>
1	Heart disease	Heart disease	Heart disease	Heart disease	Pneumonia
2	Pneumonia & aspiration pneumonia	Cancer	Alzheimer's	Respiratory disease including pneumonia	Cancer
3	Other respiratory diseases	Stroke	Aspiration pneumonia	Cancer	Heart disease
4	Sepsis	Respiratory diseases	Cancer	Alzheimer's	Seizure disorder
5	Cancer	Diabetes	Sepsis	Seizure disorder	Genetic condition

## Summary:

Due to small numbers and differences in reporting among the states, this data is not statistically significant but it does provide important information to review and consider. With pneumonia being our number one cause of death, it remains imperative that we recognize and promote ways to prevent aspiration which is still a leading cause of pneumonia. We need to make sure that the persons with developmental disabilities in our care obtain evaluation and treatment in a timelier manner by recognizing when someone is ill. We need to promote lifestyles that will help to prevent underlying health issues that can lead to chronic lung issues and aspiration such as obesity.