

# MORTALITY SPECIAL INCIDENTS

**Semi-Annual Report Submitted to the  
California Department of Developmental Services**

**JULY – DECEMBER 2010**



---

Mission Analytics Group, Inc.

---

601 Montgomery St., Suite 400

---

San Francisco, CA 94111

## INTRODUCTION AND BACKGROUND

This report summarizes mortality rates between July and December 2010 for DDS consumers living in the community. It compares mortality rates across recent years and identifies months in which mortality rates were unusually high.

**DDS can use this report to track mortality rates over time and monitor the effectiveness of risk management activities.**

As one element of risk management and quality assurance, the California Department of Developmental Services (DDS) and California's network of regional centers monitor the occurrence of adverse events, captured through Special Incident Reports (SIRs), to identify trends and develop strategies to prevent and mitigate risks. As required by Title 17, Section 54327 of the California Code of Regulations, vendors and long-term health care facilities report occurrences of suspected abuse, suspected neglect, injury requiring medical attention, unplanned hospitalization, and missing persons, if they occur when a consumer is receiving services funded by a regional center (under vendored care). In addition, *any occurrence* of consumer mortality or a consumer being the victim of a crime must be reported whether or not it occurred while the consumer was under vendored care. Mission Analytics develops this report along with several others under a risk management contract with DDS.

This report summarizes mortality rates for DDS consumers between July and December 2010. The two main goals of this report are:

1. Update time trends in mortality rates from our earlier reports to include data through

December 2010. DDS can use this report to observe long-term trends in statewide mortality rates, comparing the most recent six-month period to previous six-month periods.

2. Identify months in which statewide mortality rates were unusually high. For those months showing a statewide spike in mortality rates, we analyze the incident reports associated with the spike. By doing so, we can detect patterns that may lead to strategies to prevent similar events in the future.

The rates and graphs presented in this report were constructed using data from the SIR System since 2002. These data are augmented with three additional data sources maintained by DDS:

1. The Client Master File (CMF)
2. The Client Development Evaluation Report (CDER), and
3. The Early Start Report (ESR).

This report presents findings based on statistical analyses that measure a consumer's risk of experiencing a special incident. Further details are found at the bottom of each subsequent page.

## The unadjusted mortality rate fell in the most recent period.

**Table 1: Reported Deaths for DDS Consumers**  
**DDS Consumers, July-December 2010 Compared to Previous Periods**

	<b>Jul-Dec 2009 (Last Year)</b>	<b>Jan-Jun 2010 (Last Period)</b>	<b>Jul-Dec 2010 (This Period)</b>
<b>Number of Consumers</b>	<b>228,756</b>	<b>226,987</b>	<b>229,740</b>
<b>Number of Reported Deaths</b>	<b>830</b>	<b>804</b>	<b>624</b>
<b>Deaths per 1000 Consumers</b>	<b>3.63</b>	<b>3.53</b>	<b>2.71</b>

### **Key Findings:**

- 
- Between July and December 2010, the number of deaths per 1000 consumers was significantly lower than in the previous period.
  - When late reported deaths are added this period's rate is still expected to stay below the rates observed over the last year.

### **More About These Data**

This report summarizes mortality rates for consumers living in the community (i.e. consumers receiving services from a regional center who do not reside in a Developmental Center or state-operated facility).

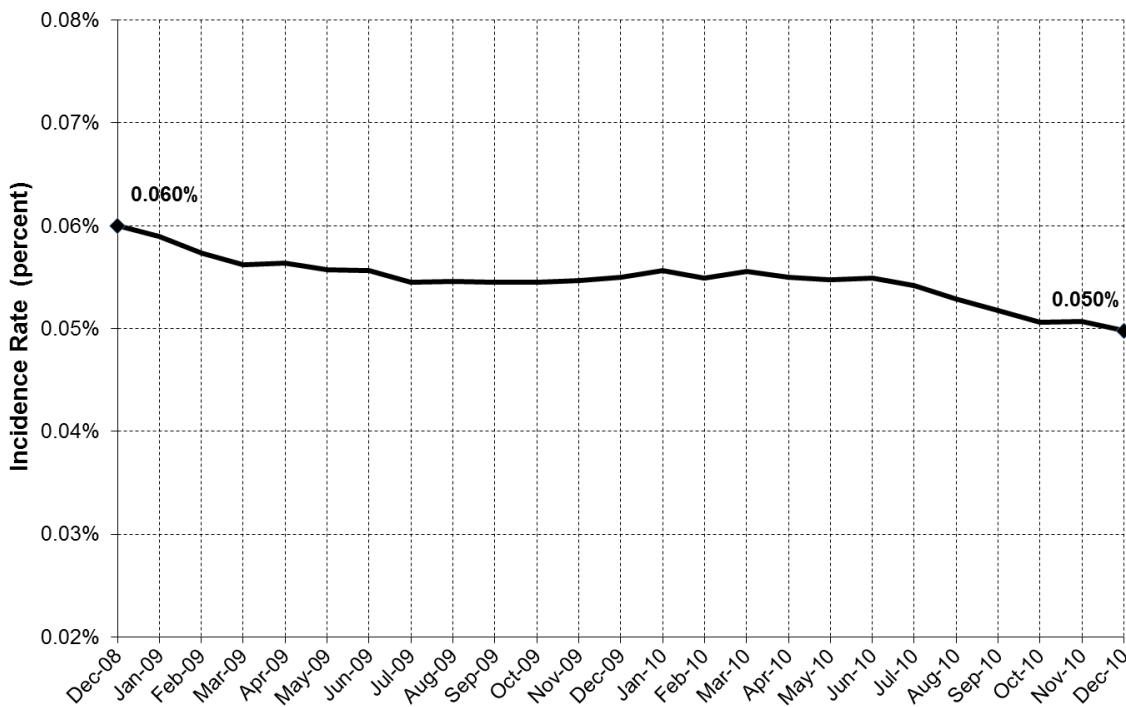
**Number of Consumers** refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of consumers ever served by regional centers during the six-month period.

**Deaths per 1000 Consumers** is calculated by dividing the number of reported deaths by the number of consumers, multiplied by 1000. Note that this total includes Early Start consumers, who were not included in counts in reports prior to the January –June 2010 semi-annual period.

The data used to generate this report were provided to Mission Analytics in July 2010. Although all deaths are reportable as special incidents, it may take time for deaths among consumers not under vendor care to be reported to the regional centers by parents/guardians. For this reason, it is common that additional mortality incidents are entered into the SIR system over time. Thus, the number of reported deaths may rise slightly as additional mortality data are reported to DDS. This is most likely to affect the count for the most recent period, but counts for earlier periods are also updated over time.

## Controlling for consumer characteristics, statewide mortality rates have declined over the past two years.

**Figure 1: Mortality Incidents, Statewide Case-Mix Adjusted Monthly Trend DDS Consumers since December 2008**



### **Key Findings:**

- The trend in statewide average monthly mortality rates has decreased over the past two years, from 0.060% in December 2008 to 0.050% in December 2010. This is a statistically significant decrease.
- This decrease is part of a longer downward trend, although much of the decrease over the last year occurred in the most recent six month period.

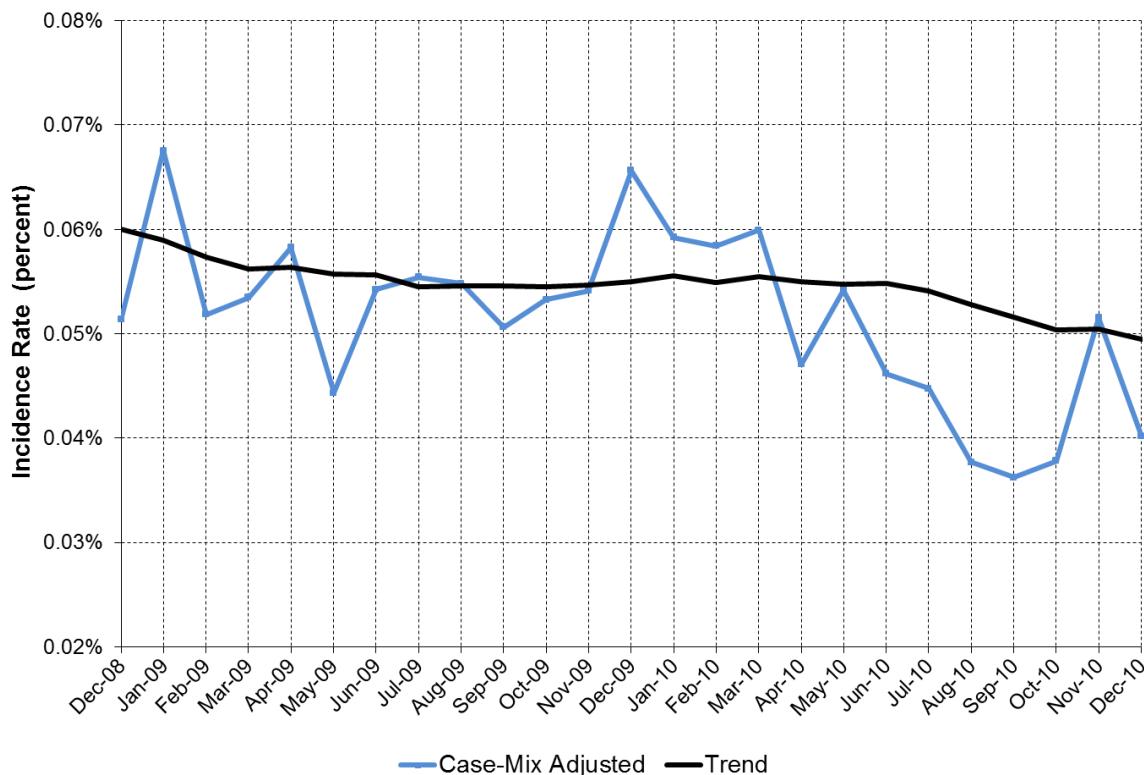
### **More About These Data**

The line in Figure 1 represents a 12-month moving average for all DDS consumers. It is calculated by taking an average of statewide mortality rates from the most recent 12-month period.

The line in Figure 1 also accounts for the differences in the characteristics of the consumer population over time. This approach, called "case-mix adjustment," controls for consumer characteristics and removes these effects from the calculated trend. For example, the share of the population over the age of 65 might increase, which would cause mortality rates to increase.

## Mortality rates were lower than the long-term trend in eight out of the last nine months.

**Figure 2: Statewide Mortality Rates, DDS Consumers  
Case-Mix Adjusted Monthly Rates since December 2008**



### Key Findings:

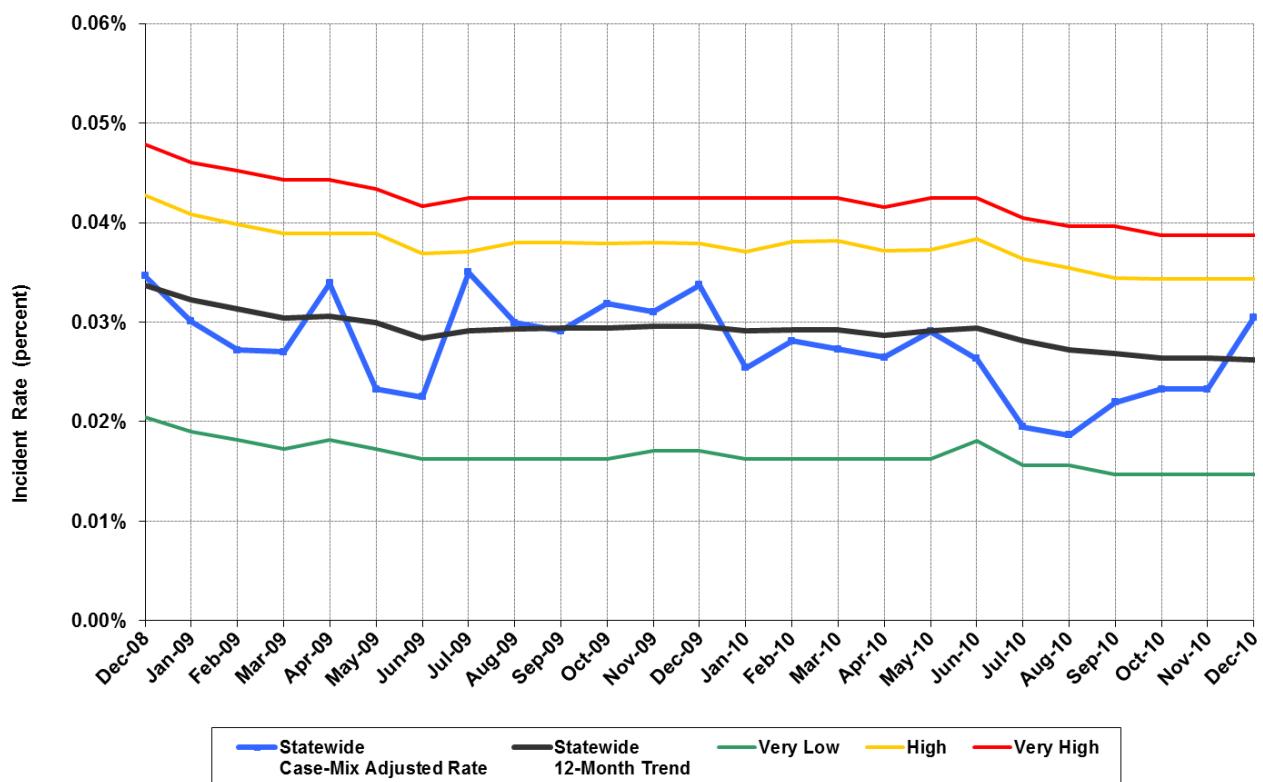
- The decrease in the long-term trend was caused by substantially lower mortality rates in the summer and early fall 2010.
- Between August and October 2010, there were between 92 and 94 deaths per month, compared to 133 deaths per month during the same period in 2009.
- Additional deaths are likely to be included as mortality reviews are completed over time and will increase the rate. (See “More About These Data” on page 2.)

### More About These Data

The line in Figure 2 is case-mix adjusted, accounting for changes in the consumer population. See the “More About These Data” section on page 3 for further details.

## For the in-home population, mortality rates were below the long-term average from January to November 2010.

**Figure 3: Statewide Mortality Rates, In-home Consumers  
Case-Mix Adjusted Monthly Rates since December 2008**



### Key Findings:

- Mortality rates for the in-home population were below the long-term average during each month from January through November 2010.
- The mortality rate for December 2010 was above the long-term average, although not enough to be a statistically significant spike.

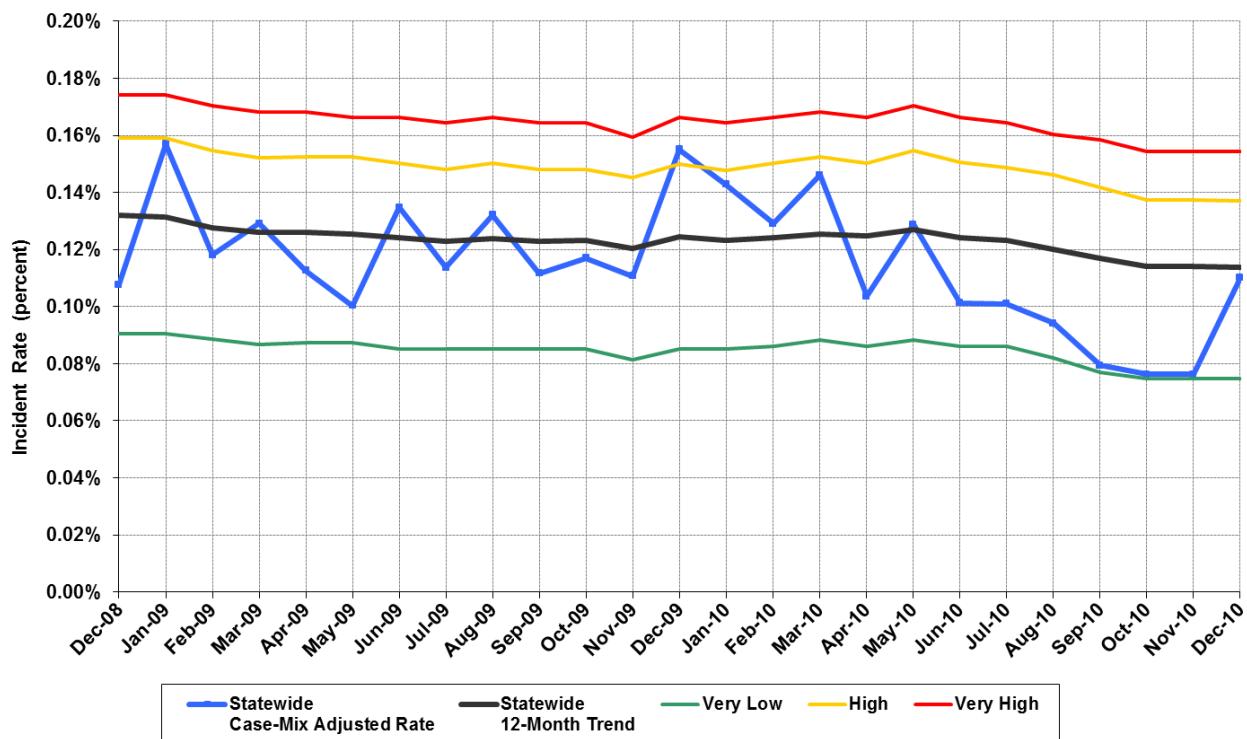
### More About These Data

*In-home Consumers* are defined as individuals residing in their own home or the home of a parent, extended family member, or guardian, and who do not receive licensed residential services, Supported Living Services, or Independent Living Services.

This graph identifies mortality incident rates that are unusually high and, therefore, classified as a “spike.” A rate that rises above the yellow line in a given month will occur randomly in only one month out of twenty (less than 5% of the time) and is considered “High.” A rate that rises above the red line in a given month will occur randomly less than 1% of the time. Rates above the red line, therefore, are very unlikely to be chance events and are classified as “Very High.”

## After a high in December 2009, mortality rates among the out-of-home population were unusually low from June on.

**Figure 4: Statewide Mortality Rates, Out-of-home Consumers  
Case-Mix Adjusted Monthly Rates since December 2008**



### Key Findings:

- The mortality rate for the out-of-home population was below the long-term trend from June through December 2010.
- The low rates from September to November were almost, but not quite, low enough to be a statistically significant difference from the long-term trend.

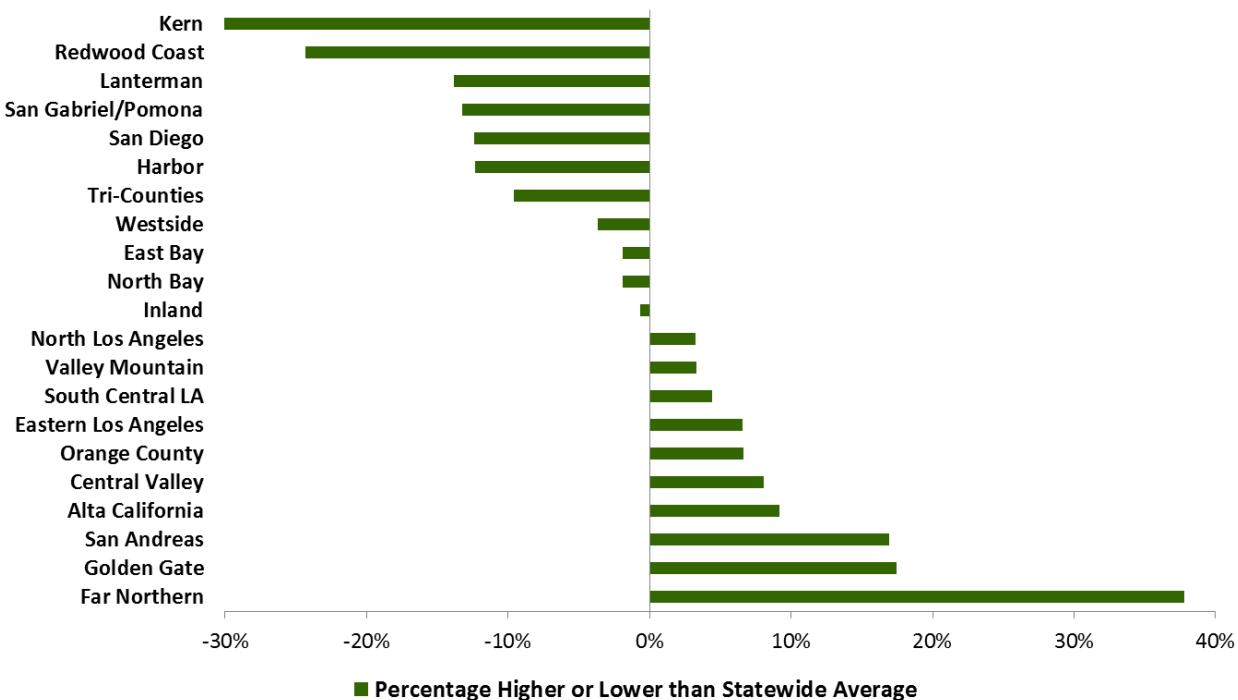
### More About These Data

*Out-of-home Consumers* are defined as individuals residing in community settings such as licensed residential services, Family Home Agency (FHA), Supported Living Services (SLS), or Independent Living Services (ILS).

The yellow and red lines in this graph identify whether a rate is unusually high (a spike or statistically significant increase). See the "More About These Data" section on page 5 for further details.

**Because it did not experience the same dip as in most of the state, Far Northern's mortality rate is higher than others.**

**Figure 5: Mortality Rates by Regional Center Compared to Statewide Average**  
**December 2009 – December 2010**



**Key Findings:**

- • Kern Regional Center's case-mix adjusted mortality rate was 37% lower than the state average. The regional center reported no deaths among its out-of-home population in three out of the six months in the most recent period.
- Far Northern Regional Center's case mix adjusted remains high at 38% above average. However, this divergence does not reflect a particular spike at this regional center. The gap results from Far Northern not experiencing the substantial drop in mortality observed elsewhere in the state in the fall of 2010.

**More About These Data**

The percentages above are case-mix adjusted, meaning that they account for differences in the characteristics of the consumer population over time. See Page 3 for more details.

## Mortality rates fell across all age groups and residency types.

**Table 3: Breakdown of Reported Deaths by Age and Residence Type  
DDS Consumers Aged 3 and Up, Jul-Dec 2010 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jul-Dec 2010	Change from Jul-Dec 2009
<b>Age</b>				
3 to 13	30%	54	0.9	-23%
14 to 21	21%	50	1.2	<b>-35%</b>
22 to 31	18%	58	1.6	<b>-34%</b>
32 to 41	11%	57	2.6	-27%
42 to 51	10%	82	4.0	<b>-34%</b>
52 to 61	7%	128	9.2	-25%
62+	3%	178	26.1	-10%
<b>Residency Type</b>				
Family Home	72%	206	1.4	<b>-28%</b>
CCF	11%	138	5.9	<b>-31%</b>
ILS/SLS	10%	74	3.5	-4%
SNF/ICF	4%	161	19.6	<b>-20%</b>
Other	2%	28	7.6	-25%

**Bold** indicates a statistically significant difference at the 95% confidence level.

### Key Findings:

- Compared to the same period a year ago, raw mortality rates fell for all age groups. Changes for individuals 14 to 21, 22 to 31 and 42 to 51 were statistically significant. This comparison may change somewhat due to late-reported deaths.
- Mortality rates decreased in all residence categories. These decreases were statistically significant for consumers living in family homes, in Community Care Facilities, and in Skilled Nursing or Intermediate Care Facilities.

### More About These Data

The rates shown above are raw rates and do not account for changes in consumer characteristics. CCF: Community Care Facilities. ILS/SLS: Independent Living Setting or Supported Living Setting. SNF/ICF: Skilled Nursing Facility or Intermediate Care Facility. ICF includes ICF/Developmentally Disabled, ICF/Developmentally Disabled-Habilitation, and ICF/ Developmentally Disabled-Nursing. Other: Settings such as hospitals, community treatment facilities, rehabilitation centers, psychiatric treatment centers, and correctional institutions. Statistical significance is tested based on a difference in binomial distribution.

## Breaking rates down by diagnosis, mortality rates decreased for most groups.

**Table 4: Breakdown of Reported Deaths by Diagnosis  
DDS Consumers Aged 3 and Up, Jul-Dec 2010 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths /1000 Jul-Dec 2010	Change from Jul-Dec 2009
<b>Diagnosis</b>				
Mild to Moderate MR	53%	305	2.8	<b>-22%</b>
Profound to Severe MR	11%	196	8.7	<b>-28%</b>
Unspecified MR	7%	33	2.4	-17%
Cerebral Palsy	16%	176	5.4	-22%
Autism	23%	30	0.6	3%
Epilepsy	18%	214	6.0	-18%

**Bold** indicates a statistically significant difference at the 95% confidence level.

### **Key Findings:**

- 
- Compared to the same period last year, raw mortality rates decreased in all diagnosis categories except consumers with autism. These raw rates are not adjusted to reflect differences in risk of mortality by group.
  - The declines among consumers with mild to moderate mental retardation and those with profound to severe mental retardation were statistically significant.

### More About These Data

The rates shown above are raw rates and do not account for changes in consumer characteristics. Most categories above are not mutually exclusive, as consumers may have more than one diagnosis. Percentages, therefore, do not add up to 100%. Statistical significance is tested based on a difference in binomial distribution.

## **Mission Analytics is expanding discovery activities for mortality SIRs and working to improve cause of death reporting.**

---

Although mortality rates have fallen substantially in the most recent period, mortality continues to be a critical focus for risk assessment and mitigation.

### ***Discovery Activities:***

- There was no statistically significant Statewide increase in mortality rates during this period. Therefore, no additional discovery activities are planned.

### ***Monitoring Activities:***

- *Follow-Up on Long-term Increases in Mortality Rates:* Each quarter, Mission Analytics distributes a report to each regional center summarizing trends and changes in mortality rates. These reports identify long-term changes in incident rates as well as monthly spikes. Mission Analytics has developed a method to follow-up with regional centers experiencing long-term increases in mortality rates, analyzing their rates and proposing appropriate follow-up measures.
- *Reporting Back by Regional Centers:* Regional centers experiencing spikes in special incident rates provide structured feedback to DDS describing any follow-up measures taken to address the spike. This information on how regional centers respond to long-term trends may be used to develop strategies on how to mitigate risk to consumers statewide.