REPORT PREPARED: **October 2011**

MORTALITY SPECIAL INCIDENTS

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

JANUARY – JUNE 2011

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INTRODUCTION AND BACKGROUND

This report summarizes mortality rates between January and June 2011 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 January and June 2011. The two main goals of this report are:

1. Update time trends in mortality rates from our earlier reports to include data through June 2011. 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, January-June 2011Compared to Previous Periods

	Jan-Jun 2010 (Last Year)	Jul-Dec 2010 (Last Period)	Jan-Jun 2011 (This Period)
Number of Consumers	**226,987**	**229,798**	**233,301**
Number of Reported Deaths	**804**	**680**	**780**
Deaths per 1000 Consumers	**3.53**	**2.96**	**3.35**

Key Findings:

- After a statistically significant drop in the mortality rate in the previous period, the number of deaths per 1000 consumers returned closer to its historic norms this 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).

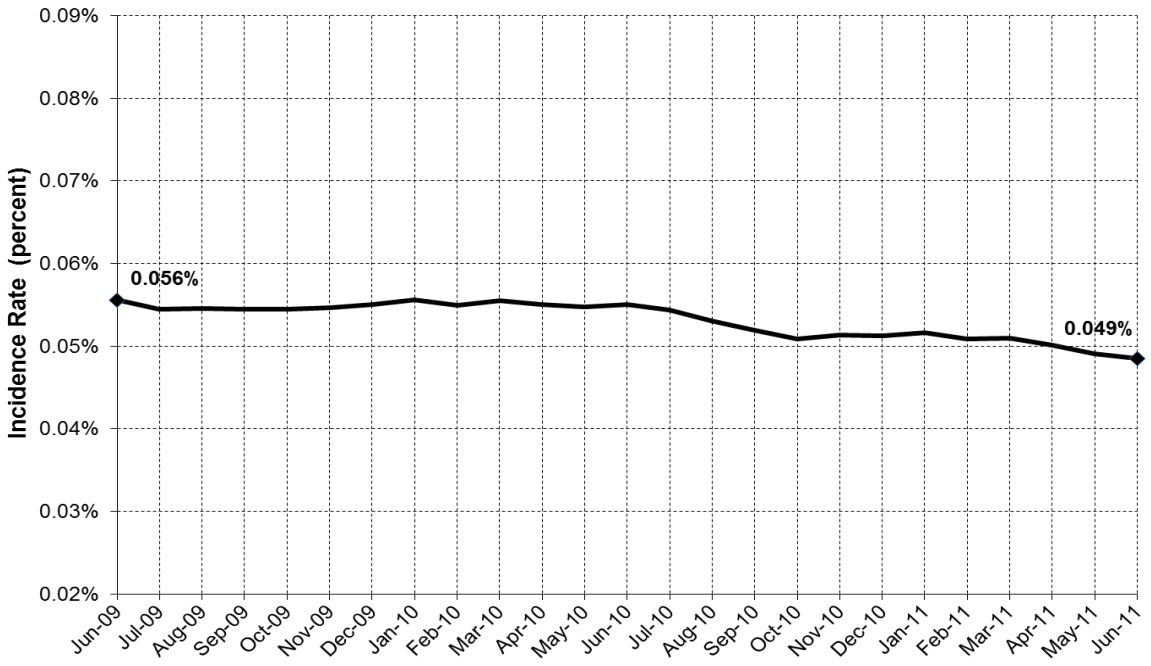
Number of Consumers refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of consumers ever served by regional centers during the six-month period.

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 2011. Although all deaths are reportable as special incidents, it may take time for deaths among consumers not under vendored 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 June 2009



Key Findings:

- The trend in statewide average monthly mortality rates has continued to decrease, declining from 0.056% in June 2009 to 0.049% in June 2011. Although this decrease is not statistically significant, the pattern over the last two years is part of a longer downward trend with statistically significant decreases from 2008 and earlier.

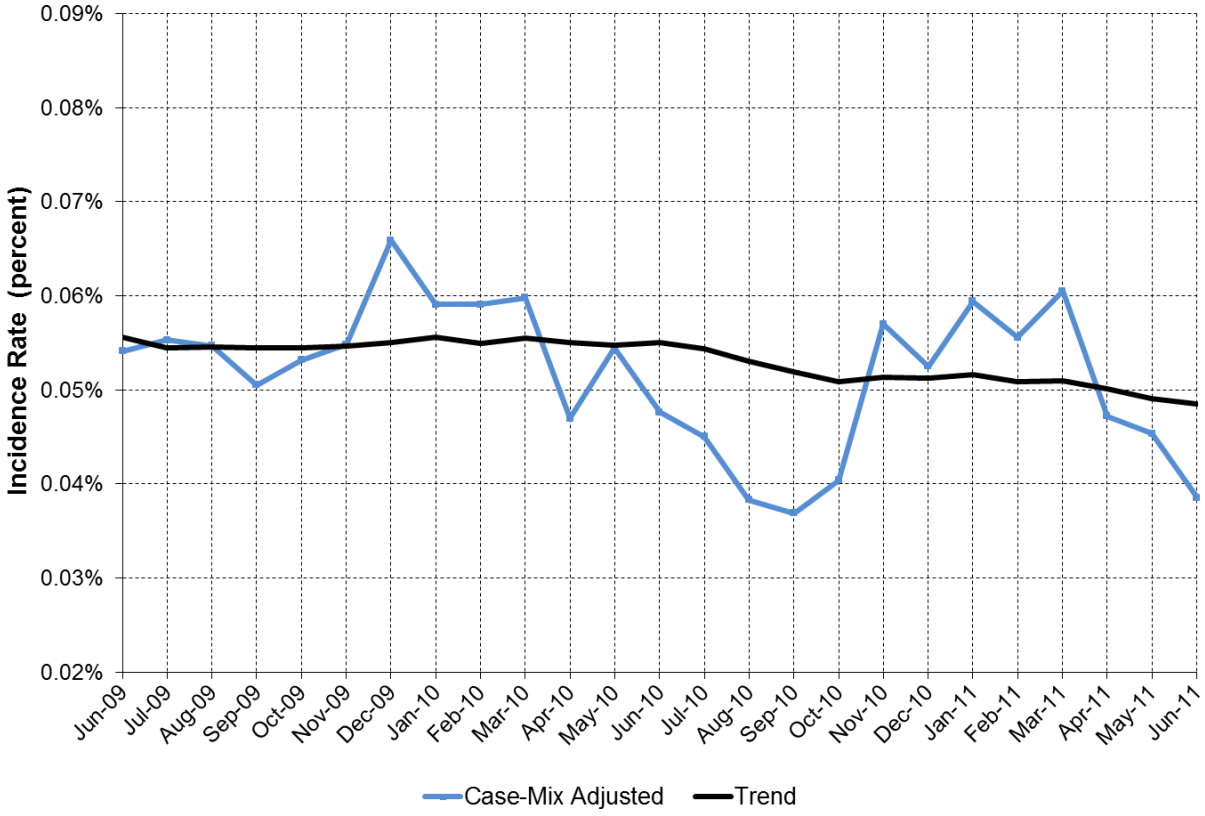
More About These Data

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.

Consistent with prior years, the mortality rate was higher in the winter than in the spring and summer.

Figure 2: Statewide Mortality Rates, DDS Consumers
Case-Mix Adjusted Monthly Rates since June 2009



Key Findings:

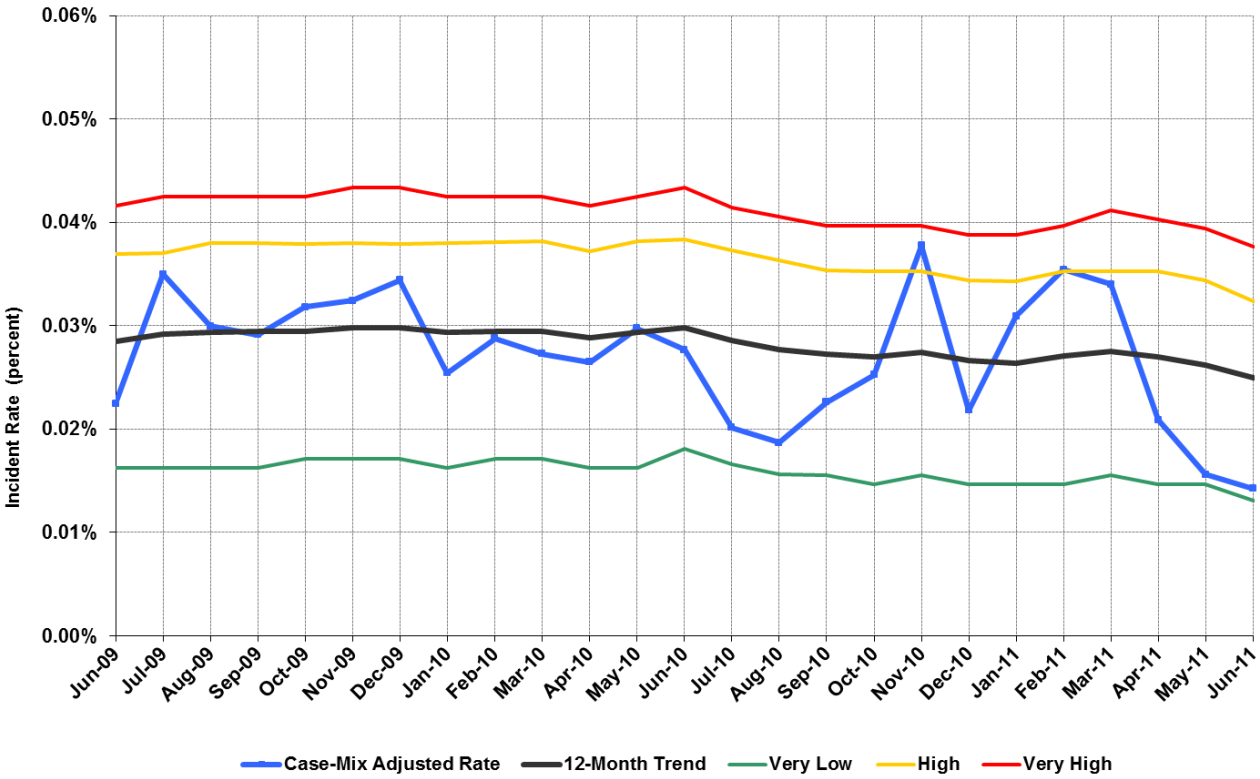
- The decline in the long-term trend is largely a continuing effect of substantially lower mortality rates in the summer and early fall 2010.
- Mortality rates were above the long term trend from November to March, but the peak rate was lower than it had been in prior years.
- Additional deaths are likely 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 above the long-term trend in most months from November 2010 to March 2011.

Figure 3: Statewide Mortality Rates, In-home Consumers
Case-Mix Adjusted Monthly Rates since June 2009



Key Findings:

- Late-reported deaths contributed to a "high" spike in the November 2010 mortality rate for the in-home population.
- The mortality rate for February 2011 also hit the "high" threshold.

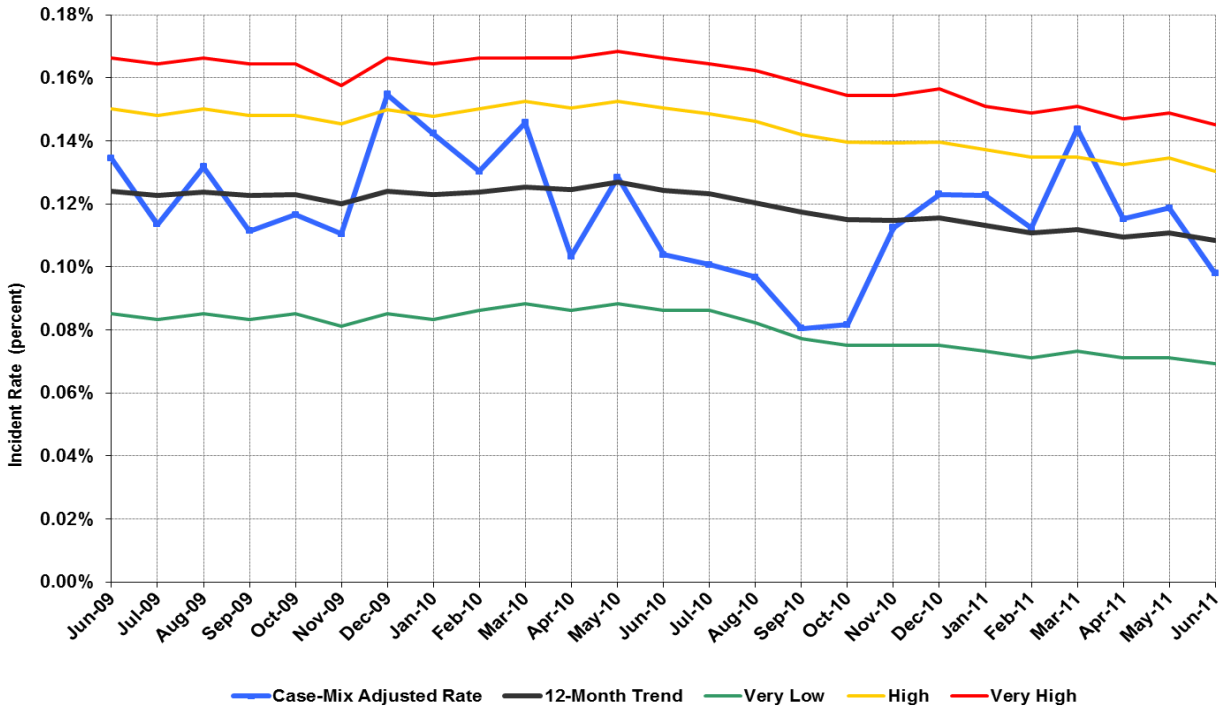
More About These Data

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."

Except for a spike in March 2011, mortality rates among the out-of-home population were close to the long term trend.

Figure 4: Statewide Mortality Rates, Out-of-home Consumers
Case-Mix Adjusted Monthly Rates since June 2009



Key Findings:

- The mortality rate for the out-of-home population in March spiked above the "high" threshold. This threshold was lowered due to the period of very low mortality rates in 2010. Considering all consumers, rather than just out-of-home, this increase was just below the high threshold.

Follow-Up:

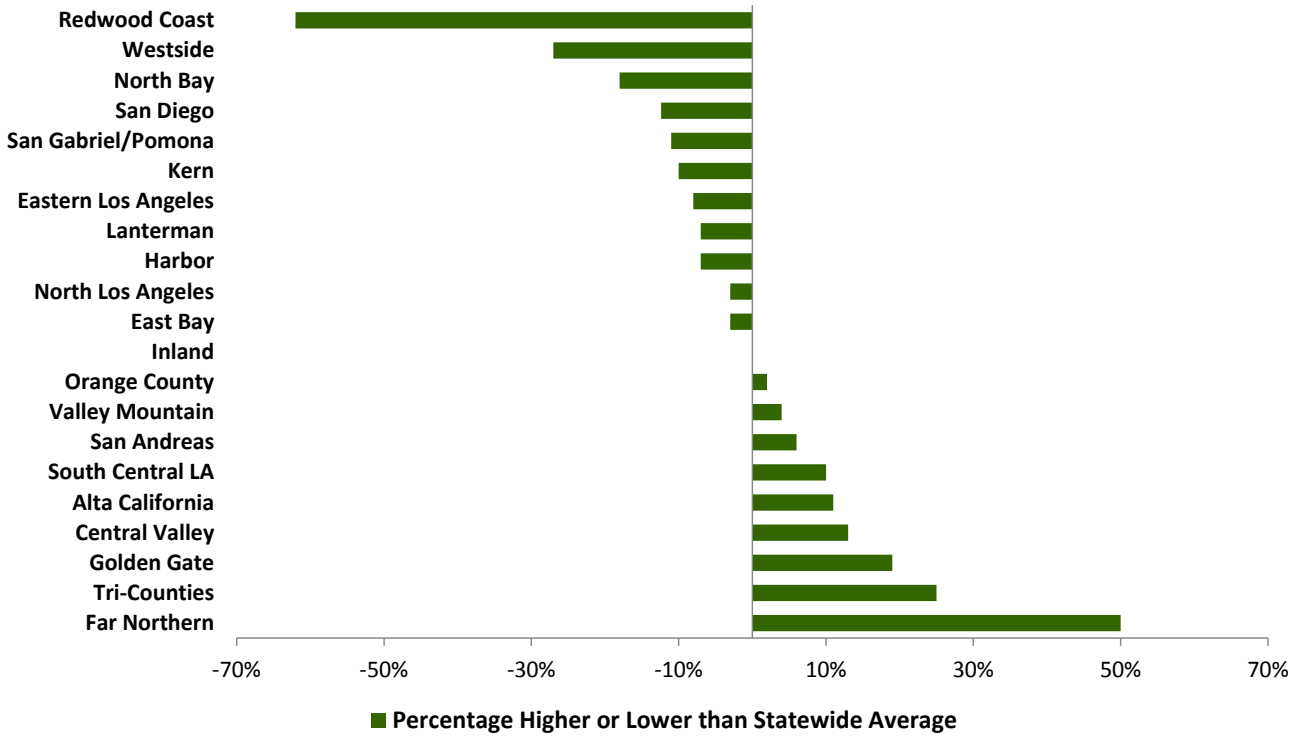
- We will continue to monitor mortality rates to determine whether the transient spikes persist or represent a seasonal pattern that should be accounted for in the risk models. If there is a pattern, we will conduct case review and further analysis.

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.

Redwood Coast's mortality rate has been exceptionally low relative to the state average, while Far Northern's is high.

Figure 5: Mortality Rates by Regional Center Compared to Statewide Average June 2010 – June 2011



Key Findings:

- Redwood Coast has a case-mix adjusted mortality rate 62% lower than the state average for the last year. The regional center reported no deaths among its in-home population from March 2010 to April 2011 and no deaths among its out-of-home population in 7 of the last 12 months.
- Far Northern Regional Center had the highest case mix adjusted mortality rate, at 50% above the statewide average. This divergence is in part due to the fact that Far Northern did not experience the substantial drop in mortality observed elsewhere in the state in the fall of 2010. Far Northern experienced monthly spikes in mortality in February and May 2011. However, neither spike was large enough to significantly drive up the quarterly rate.

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 2: Breakdown of Reported Deaths by Age and Residence Type
DDS Consumers Aged 3 and Up, Jan-Jun 2011Compared to Same Period Last Year

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jan-Jun 2011	Change from Jan-Jun 2010
Age				
3 to 13	30%	38	0.6	**-41%**
14 to 21	21%	67	1.6	+19%
22 to 31	18%	57	1.6	**-43%**
32 to 41	11%	74	3.4	-7%
42 to 51	10%	123	6.0	+11%
52 to 61	7%	152	10.6	-9%
62+	3%	215	30.5	+3%
Residency Type				
Family Home	72%	231	1.5	-8%
CCF	11%	191	8.2	+3%
ILS/SLS	10%	77	3.6	-19%
SNF/ICF	4%	203	24.8	+3%
Other	2%	24	6.5	-36%

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 significantly for all individuals 3 to 13 years old and 22 to 31 years old. Changes for other age groups were not statistically significant.
- The decrease for the 22 to 31 year old age group reflects a reversal of an elevated rate the previous year.
- Mortality rates decreased for consumers residing in family homes, in ILS/SLS and in other settings. However, these decreases were not statistically significant.

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 3: Breakdown of Reported Deaths by Diagnosis
DDS Consumers Aged 3 and Up, Jan-Jun 2011 Compared to Same Period Last Year

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jan-Jun 2011	Change from Jan-Jun 2010
Diagnosis				
Mild to Moderate MR	53%	383	3.6	+4%
Profound to Severe MR	11%	233	10.7	-13%
Unspecified MR	7%	51	3.1	+53%
Cerebral Palsy	16%	197	6.1	-9%
Autism	23%	21	0.4	-19%
Epilepsy	18%	254	7.1	-7%

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

Key Findings:

- Compared to the same period last year, raw mortality rates stayed about even or decreased in all diagnosis categories except consumers with unspecified mental retardation level. These raw rates are not adjusted to reflect differences in risk of mortality by group.
- Although the raw mortality rate increased 53% for individuals with unspecified mental retardation level, this increase was not 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%.

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

Although mortality rates have fallen over time, 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.

- *New Risk Models*: Mission Analytics has updated the risk models used for the case-mix adjustment and subsequent surveillance of incident rates by regional center over time. The new risk models incorporate more detailed information from the CDER, additional history such as developmental center residence, and drill down to more detailed incident types. The new mortality model combines the in-home and out-of-home populations together in estimating the risk factors for mortality. As a result, it does not generate separate adjustments for the in-home and out-of-home population.