

MORTALITY SPECIAL INCIDENTS

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

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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 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 July and December 2011. The two main goals of this report are:

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

	Jul-Dec 2010 (Last Year)	Jan-Jun 2011 (Last Period)	Jul-Dec 2011 (This Period)
Number of Consumers	247,945	251,359	256,220
Number of Reported Deaths	753	903	747
Deaths per 1000 Consumers	2.87	3.59	2.92

Key Findings:

- The number of deaths per 1000 consumers dropped from 3.59 in the January-June 2011 period to 2.92 in the July-December 2011 period, a statistically significant decline. However, additional deaths for the most recent period may be reported in future months.
- The decline returns the mortality rate to approximately the same level as in July-December 2010.

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).

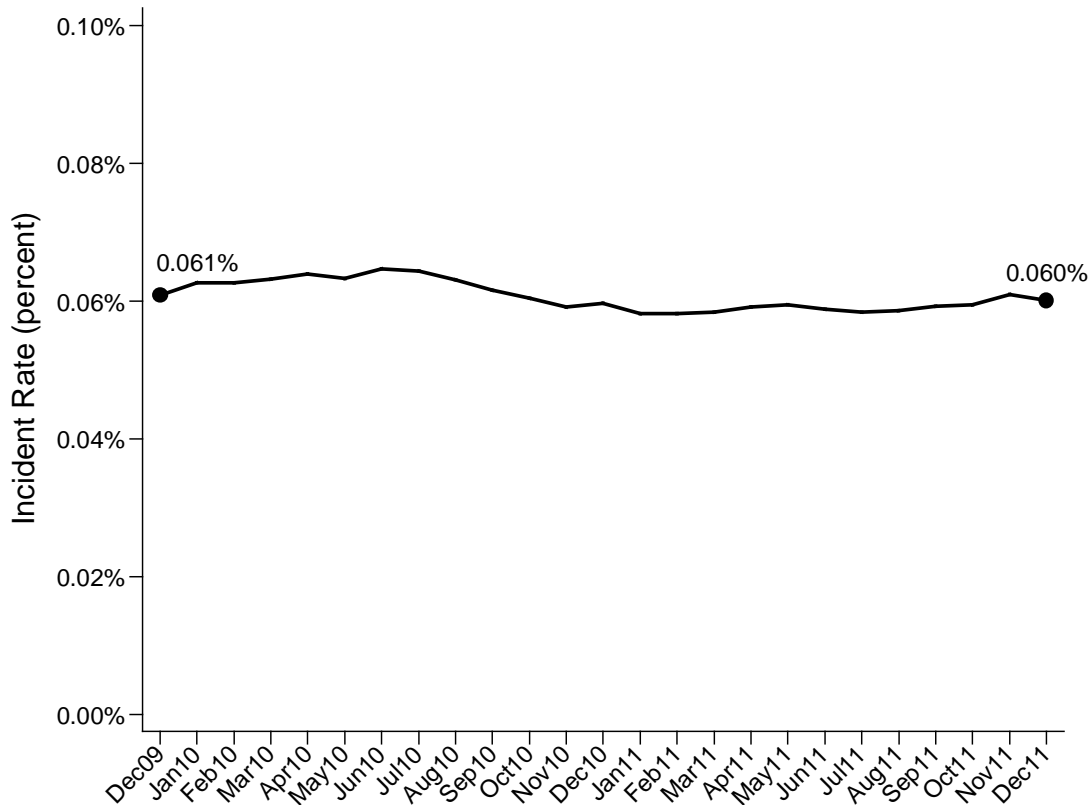
Number of Consumers refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of all consumers served by regional centers at any time during the six-month period.

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 January 2012. 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 shown little change over the past two years.

Figure 1: Mortality Incidents, Statewide Case-Mix Adjusted Monthly Trend DDS Consumers since December 2009



Key Findings:

- Over the past two years, the trend in the statewide average monthly mortality rate has remained relatively constant. There were small increases in the first half of 2010, but by the end of 2010 the trend had returned to its original level. It then remained at this level throughout 2011.
- As a result, the statewide average monthly mortality rate is about the same this year (0.060%) as it was this same period two years ago (0.061%).

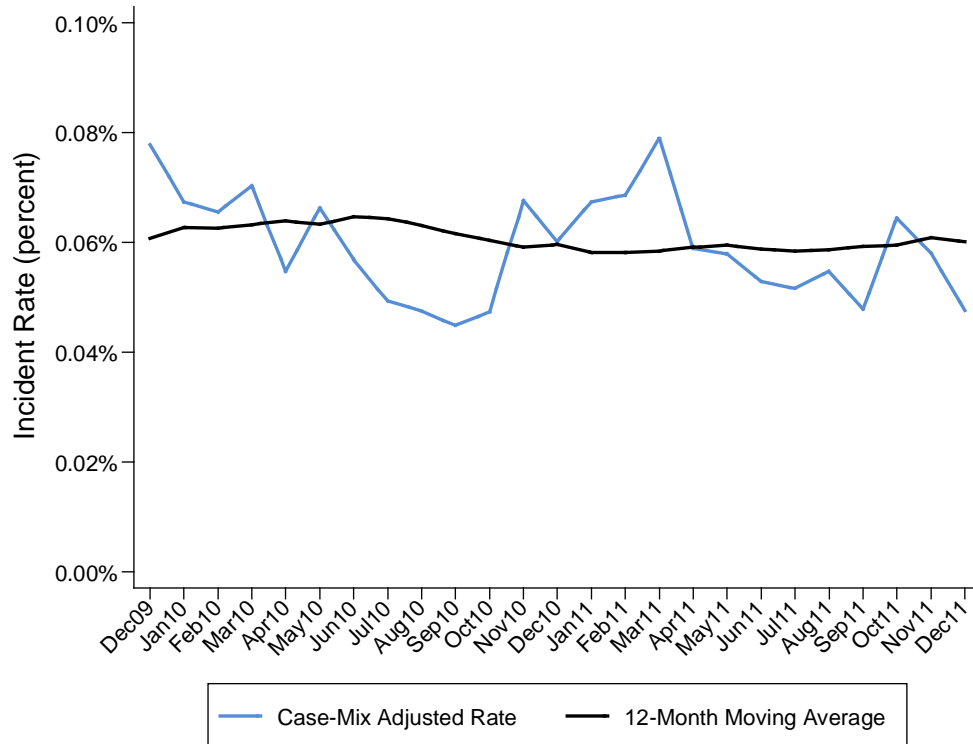
More About These Data

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.

For a second year, mortality rates fell in the summer.

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



Key Findings:

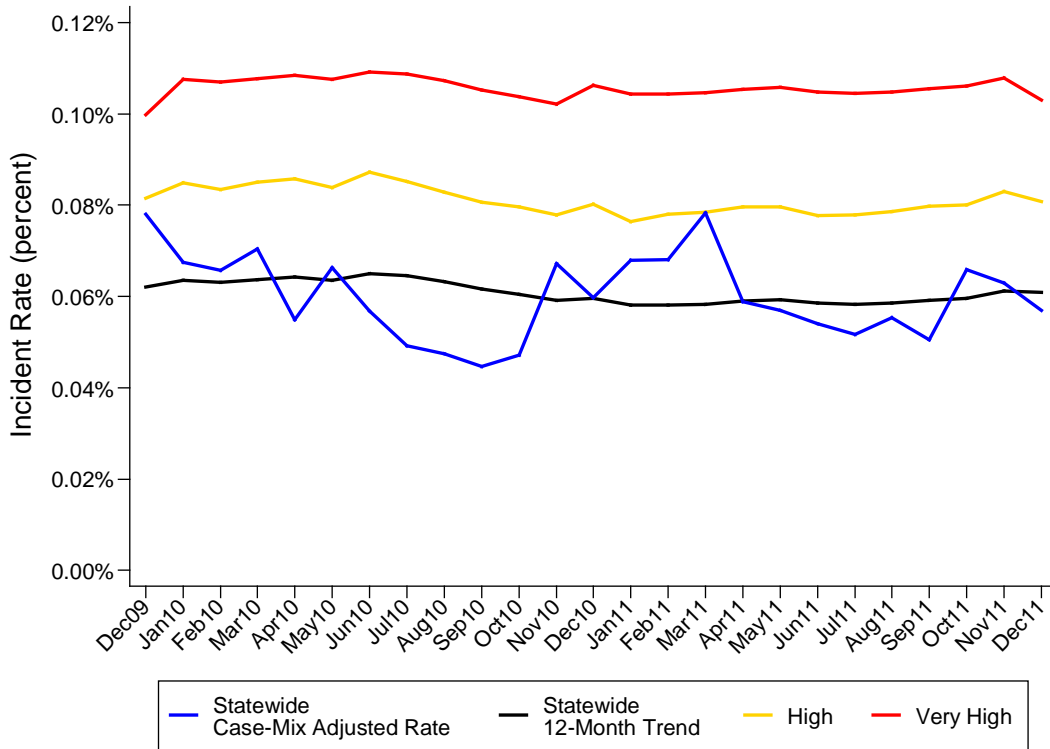
- The adjusted monthly mortality rate was below the 12-month average rate from April through October 2011, a seasonal drop that mirrors that pattern seen in the summer of 2010.
- The lower monthly mortality rate over these past nine months suggests a stronger seasonal pattern in deaths than in previous years. Thus the annual rate has been essentially constant despite the spike in March 2011.
- Additional deaths will likely be included as mortality reviews are completed over time and will increase the rate (see “More About These Data” on page 2). After accounting for these additional reports, we expect the November and December 2011 mortality rates to be similar to the previous year.

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.

The mortality rate has been well below the "high" threshold during the July-December 2011 period.

Figure 3: Statewide Mortality Rates, DDS Consumers Case-Mix Adjusted Monthly Rates since December 2009



Key Findings:



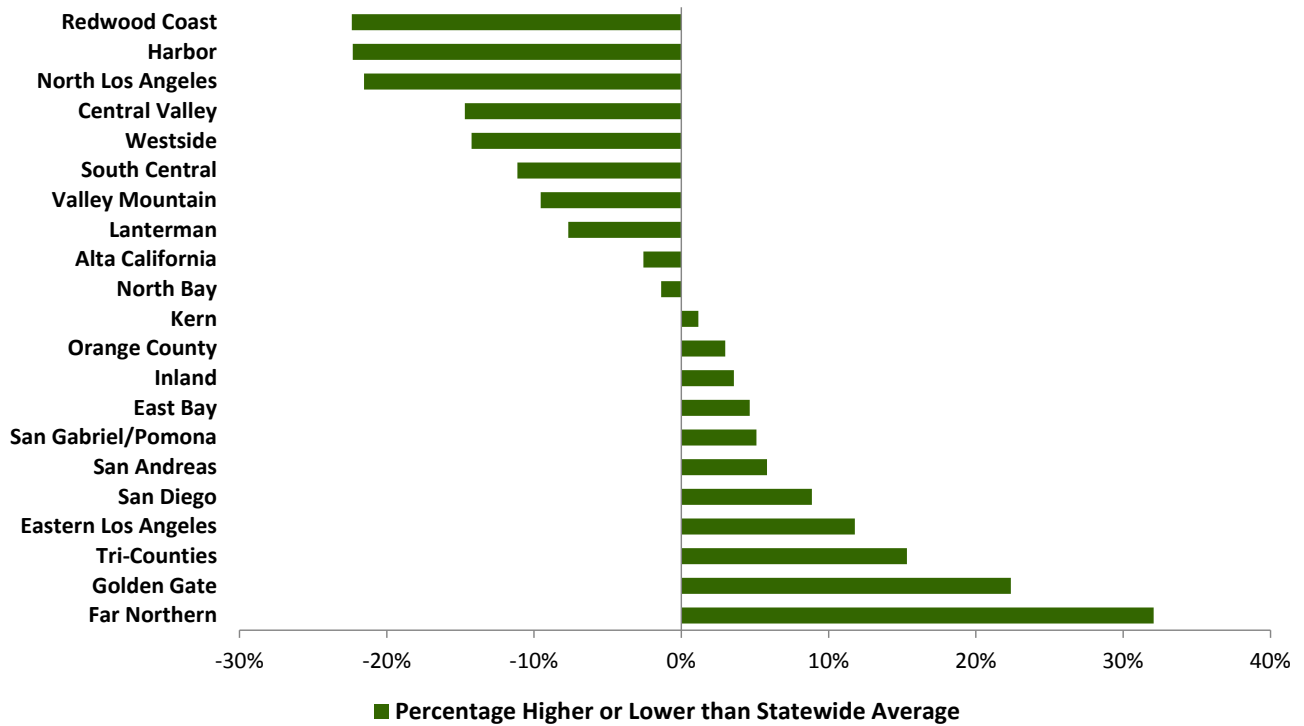
- The “high” mortality rate in March 2011 was followed by nine months of lower than average mortality rates.
- Although the mortality rate was somewhat elevated in October 2011, this increase was well below the “high” threshold.

More About These Data

The updated mortality risk model includes all consumers over three years of age living in the community, regardless of residence status. Residence type (including no residential services) is included as a risk factor in calculating adjusted rates. 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.”

Variation between regional centers is lower than in the previous semi-annual period.

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



Key Findings:



- Over the year ending in December 2011, mortality rates by regional center ranged from 22% below to 32% above the statewide average. For June 2010 to June 2011, these rates ranged from 62% below to 50% above the statewide average.
- Far Northern Regional Center continues to have the highest mortality rate, but its mortality rate is trending down from a peak in April 2011.
- No regional centers experienced spikes in mortality rates between December 2010 and December 2011.

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 increased across all residency types but did not change significantly across age groups.

**Table 3: Breakdown of Reported Deaths by Age and Residence Type
DDS Consumers Aged 3 and Up, Jul-Dec 2011 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jul-Dec 2011	Change from Jul-Dec 2010
Age				
3 to 13	31%	43	0.6	-27%
14 to 21	21%	62	1.4	10%
22 to 31	18%	65	1.7	2%
32 to 41	10%	62	2.8	0%
42 to 51	10%	113	5.3	30%
52 to 61	7%	166	11.3	15%
62+	3%	194	26.5	-1%
Residency Type				
Family Home	73%	251	1.6	8%
CCF	11%	170	7.2	20%
ILS/SLS	10%	84	3.8	6%
SNF/ICF	4%	169	20.5	71%
Other	2%	31	7.0	4%

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

Key Findings:

- There was a statistically significant 71% increase in the raw mortality rate of the SNF/ICF population. There were also smaller, non-statistically significant increases across all the other residency types.
- The July-December 2010 period was an unusually low mortality period.

Follow-Up:

- Because there was no overall spike in mortality, and given the low rate in the comparison period, we will not immediately do follow up on rates in SNF/ICF. However, given the increase, we will monitor this rate to ensure there is no ongoing upward trend.

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 increased for most groups.

**Table 4: Breakdown of Reported Deaths by Diagnosis
DDS Consumers Aged 3 and Up, Jul-Dec 2011 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jul-Dec 2011	Change from Jul-Dec 2010
Diagnosis				
Mild to Moderate MR	51%	344	3.1	7%
Profound to Severe MR	10%	243	11.3	26%
Unspecified MR	9%	47	2.5	7%
Cerebral Palsy	15%	184	5.5	-3%
Autism	25%	36	0.7	11%
Epilepsy	17%	238	6.5	4%

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

Key Findings:

- There was a statistically significant, 26% increase in the raw mortality rate in consumers with profound to severe mental retardation. This raw rate is not adjusted to reflect other factors (such as age) that may affect the risk of mortality.
- No other groups experienced statistically significant changes in the mortality rate.

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 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.