

# **MORTALITY SPECIAL INCIDENTS**

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

**JULY - DECEMBER 2012**



Mission Analytics Group, Inc.

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601 Montgomery St., Suite 400

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San Francisco, CA 94111

## INTRODUCTION AND BACKGROUND

**This report summarizes mortality rates between July and December 2012 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 (SIR), 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 2012. There are two main goals of this report:

1. Update time trends in mortality rates from our earlier reports to include data through December 2012. 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.
2. The Client Development Evaluation Report (CDER).
3. The Early Start Report.

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, July-December 2012 Compared to Previous Periods**

	Jul-Dec 2011 (Last Year)	Jan-Jun 2012 (Last Period)	Jul-Dec 2012 (This Period)
<b>Number of Consumers</b>	245,738	250,043	254,759
<b>Number of Reported Deaths</b>	816	870	775
<b>Deaths per 1000 Consumers</b>	3.32	3.47	3.04

### Key Findings:

- The number of deaths per 1,000 consumers was lower than the January-June 2012 period, at 3.04 compared to 3.47. However, additional deaths for the most recent period may be reported in future months.
- The mortality rate is significantly lower than the January-June 2012 period.
- The mortality rate is lower than the same period one year ago. This difference is not statistically significant.

### 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).

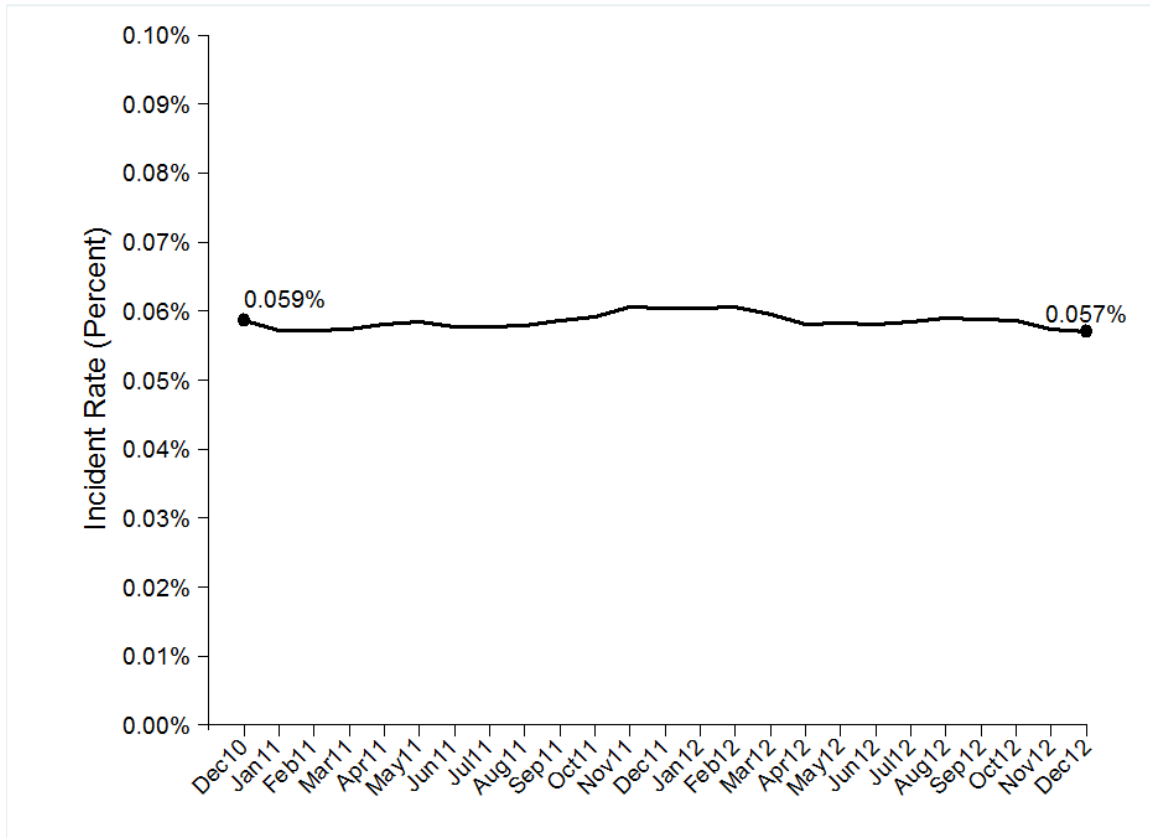
**Number of Consumers** refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of all consumers served by regional centers at any time during the six-month period. The number of consumers is lower than previously reported due to data cleaning of records for non-active clients.

**Deaths per 1,000 Consumers** is calculated by dividing the number of reported deaths by the number of consumers, multiplied by 1000.

The data used to generate this report were provided to Mission Analytics in January 2013. 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 decreased slightly over the past two years.

**Figure 1: Mortality Incidents, Statewide Case-Mix Adjusted Monthly Trend DDS Consumers since December 2010**



### Key Findings:



- Over the past several years, the trend in the statewide average monthly mortality rate has remained relatively constant.
- There was a slight downward trend during much of 2012, bringing the moving average in December 2012 to its lowest point in the past two years (0.057%).

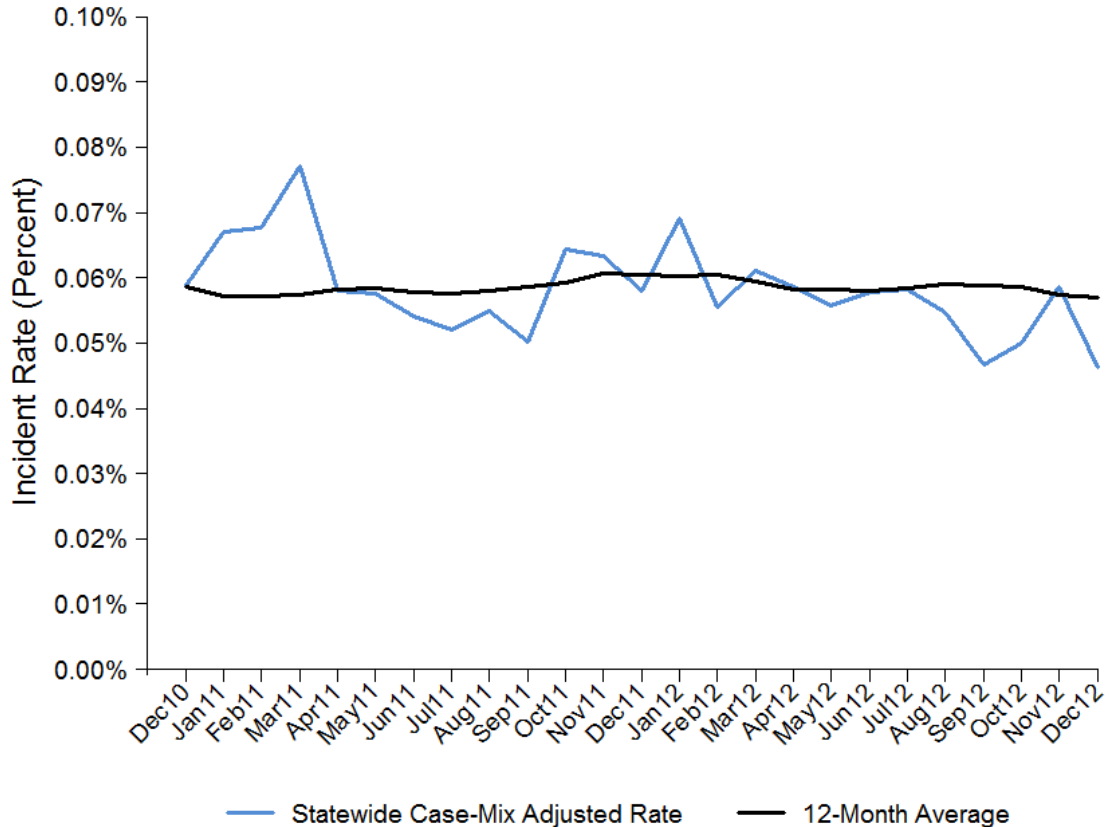
### More About These Data

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 below the long term trend from July to December 2012.**

**Figure 2: Statewide Mortality Rates, DDS Consumers Case-Mix Adjusted Monthly Rates since December 2010**



**Key Findings:**



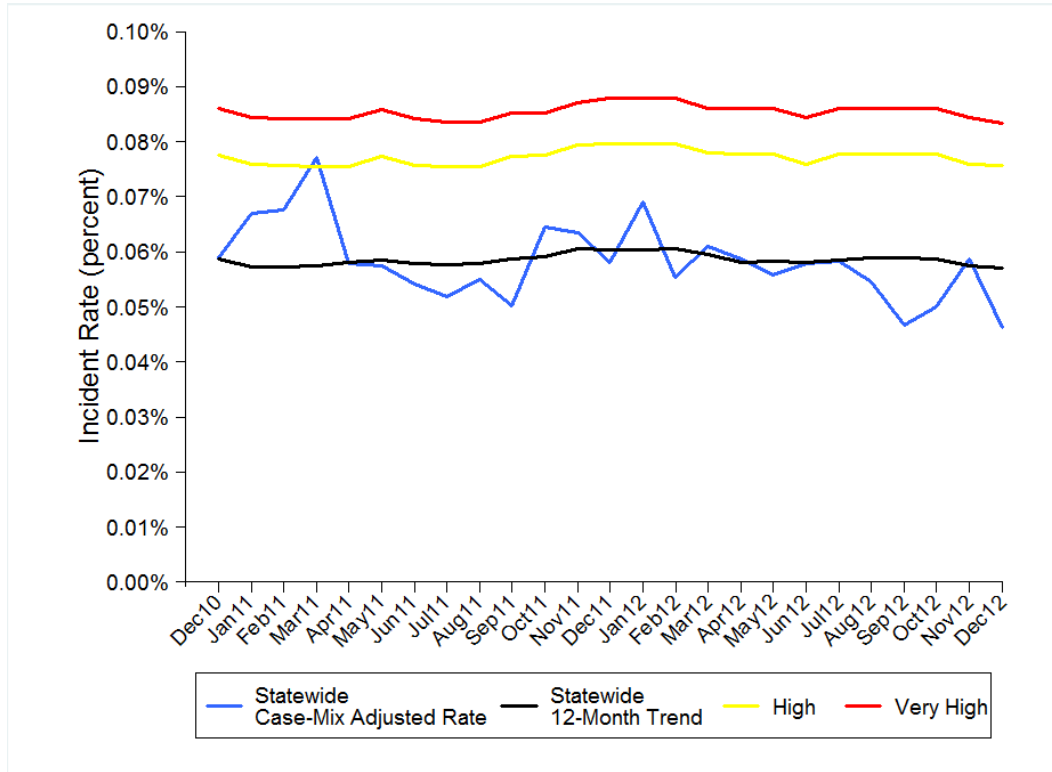
- During calendar year 2012, mortality rates were at or below the long-term trend in eight of the twelve months in the year.
- Additional deaths will likely be included as mortality reviews are completed over time and may increase the rate (see “More About These Data” on page 2).

**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.

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

**Figure 3: Statewide Mortality Rates, DDS Consumers Case-Mix Adjusted Monthly Rates since December 2010**



**Key Findings:**

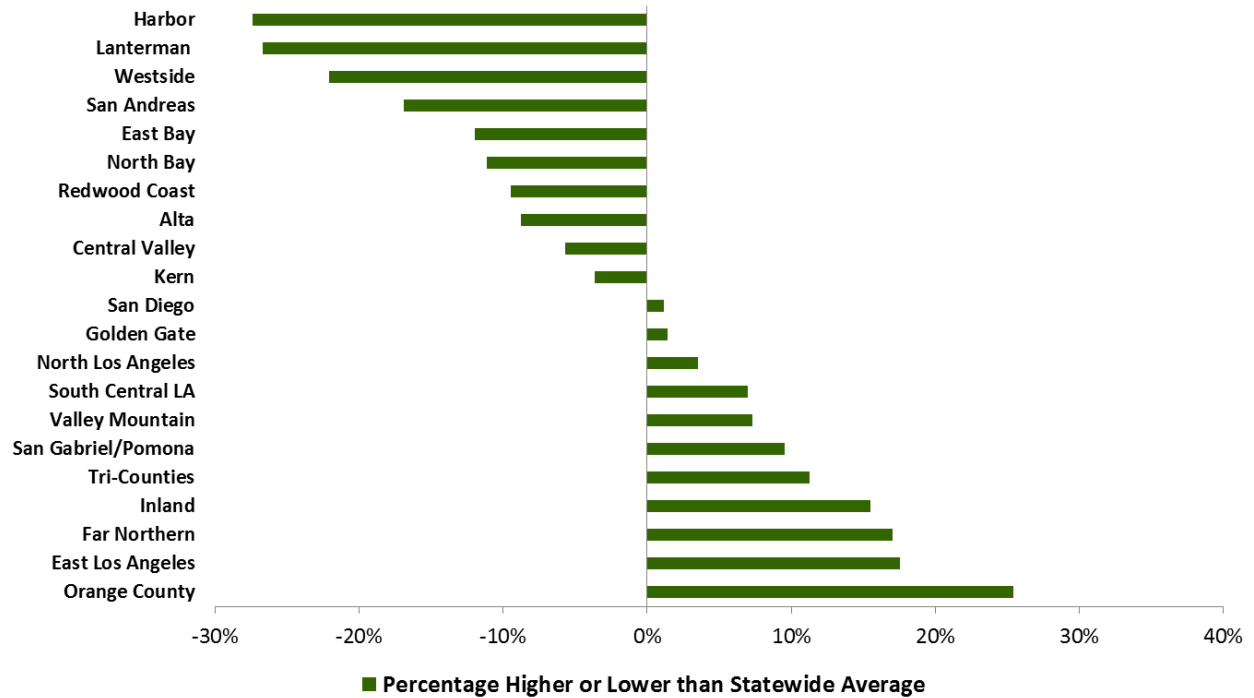
- There have been no spikes in mortality incidents since the "High" mortality rate in March 2011.

**More About These Data**

The updated mortality risk model includes all consumers age three and over 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 period.**

**Figure 5: Mortality Rates by Regional Center Compared to Statewide Average  
January 2012 – December 2012**



**Key Findings:**



- For January to December 2012, adjusted regional center mortality rates ranged from 27% below to 25% above the statewide average. This range is narrower than in the previous period.
- Regional Center of Orange County had the highest mortality rate, largely due to high rates in June, November, and December.
- No regional center experienced a spike in mortality rates that required additional review between July and December 2012.

**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 most residency types and age groups.

**Table 3: Breakdown of Reported Deaths by Age and Residence Type  
DDS Consumers Age 3 and Up, Jul-Dec 2012 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jul-Dec 2012	Change from Jul-Dec 2011
<b>Age</b>				
3 to 13	31%	54	0.8	-19%
14 to 21	20%	46	<b>1.0</b>	<b>-35%</b>
22 to 31	18%	72	1.7	-14%
32 to 41	10%	59	2.5	-17%
42 to 51	9%	113	5.3	-7%
52 to 61	7%	184	11.6	-6%
62+	4%	198	24.0	-16%
<b>Residency Type</b>				
Family Home	74%	227	<b>1.4</b>	<b>-22%</b>
CCF	11%	155	6.5	-11%
ILS/SLS	10%	81	3.5	-4%
SNF/ICF	4%	212	25.1	-14%
Other	2%	51	12.0	-6%

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

### Key Findings:

- At 1.4 deaths per 1,000 consumers residing in the Family Home, the raw mortality rate was significantly lower than the same period one year ago.
- The raw mortality rate among consumers ages 14 to 21 was significantly lower than the same period one year ago.
- All groups had lower mortality rates this year than in the same period a year ago, though most differences are 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.



**Examined by diagnosis, mortality rates decreased for all groups, the largest decrease for individuals with mild to moderate ID.**

**Table 4: Breakdown of Reported Deaths by Diagnosis  
DDS Consumers Age 3 and Up, Jul-Dec 2012 Compared to Same Period Last Year**

Characteristics in CDER	Share of Consumers	Number of Deaths	Deaths/1000 Jul-Dec 2012	Change from Jul-Dec 2011
<b>Diagnosis</b>				
Mild to Moderate ID	50%	353	<b>3.1</b>	<b>-13%</b>
Profound to Severe ID	10%	242	10.6	-8%
Unspecified ID	7%	41	2.5	-10%
Cerebral Palsy	15%	221	6.5	-9%
Autism	25%	31	0.5	-4%
Epilepsy	16%	279	7.5	-1%

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

**Key Findings:**

- There was a statistically significant 13% decrease in the raw mortality rate in consumers with mild to moderate intellectual disability. This raw rate is not adjusted to reflect other factors (such as age) that may affect the risk of mortality.
- Compared to the same period a year ago, there were decreases in the mortality rate for all groups.
- No other groups, other than individuals with mild to moderate intellectual disability, 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 conducts discovery activities and other support when monitoring indicates rises in mortality SIRs.

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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.