

MORTALITY SPECIAL INCIDENTS

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

JANUARY – JUNE 2013



Mission Analytics Group, Inc.

601 Montgomery St., Suite 400

San Francisco, CA 94111

INTRODUCTION AND BACKGROUND

This report summarizes mortality rates between January and June 2013 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 January and June 2013. There are two main goals of this report:

1. Update time trends in mortality rates from our earlier reports to include data through June 2013. 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 conduct additional analyses. 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) File.
3. The Purchase of Service File.

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 increased in this period.

Table 1: Reported Deaths for DDS Consumers, January – June 2013 Compared to Previous Periods

| | Jan-Jun 2012 (Last Year) | Jul-Dec 2012 (Last Period) | Jan-Jun 2013 (This Period) |
|-----------------------------------|-----------------------------|-------------------------------|-------------------------------|
| Number of Consumers | 250,043 | 254,759 | 258,816 |
| Number of Reported Deaths | 870 | 775 | 867 |
| Deaths per 1,000 Consumers | 3.47 | 3.04 | 3.34 |

Key Findings:

- The number of deaths per 1,000 consumers was higher this period than in the July – December 2012 period, at 3.34 compared to 3.04. The difference was not statistically significant.
- As reported in January 2013, the rate for July – December 2012 was low. The rate for that period has since risen due to delayed reporting of mortality incidents.
- 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).

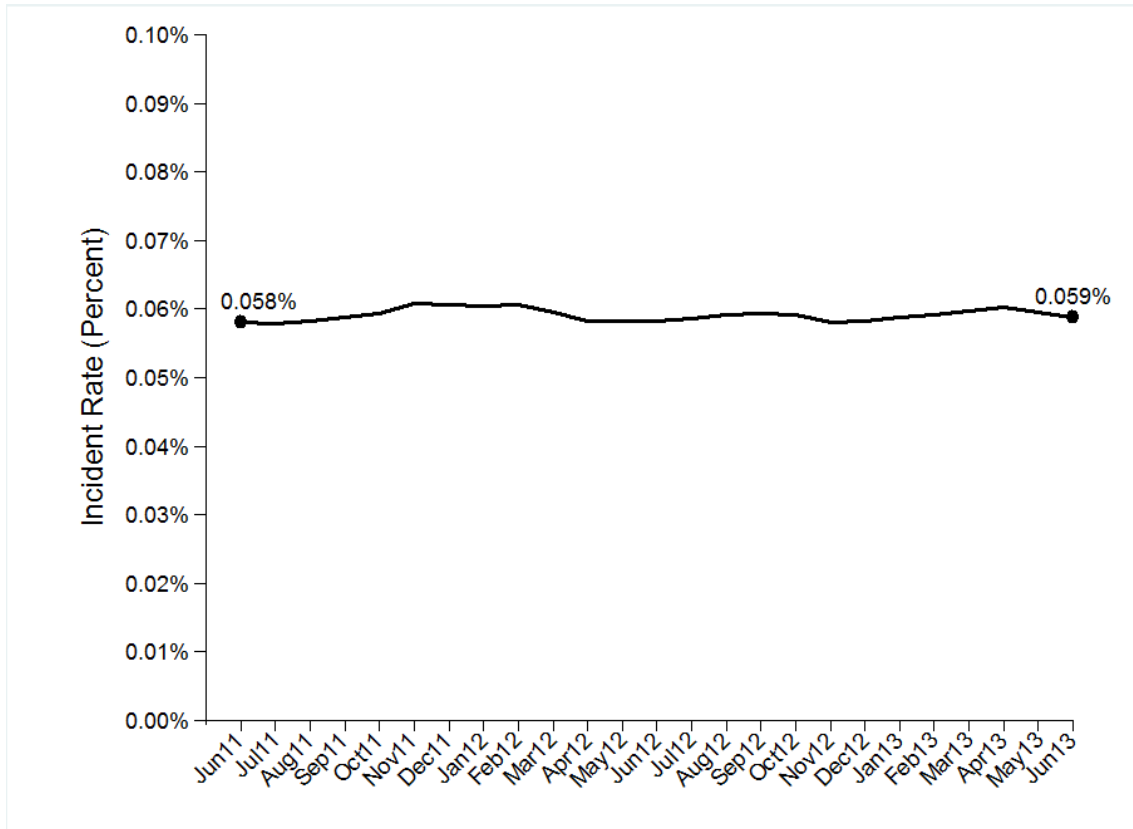
Number of Consumers refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of all consumers served by regional centers at any time during the six-month period. The number of consumers is lower than previously 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 1,000.

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 remained steady over the past two years.

Figure 1: Mortality Incidents, Statewide Case-Mix Adjusted Monthly Trend DDS Consumers since June 2011



Key Findings:



- Over the past several years, the trend in the statewide average monthly mortality rate has remained relatively constant.
- The moving average in June 2013 was almost equal to the moving average two years prior.

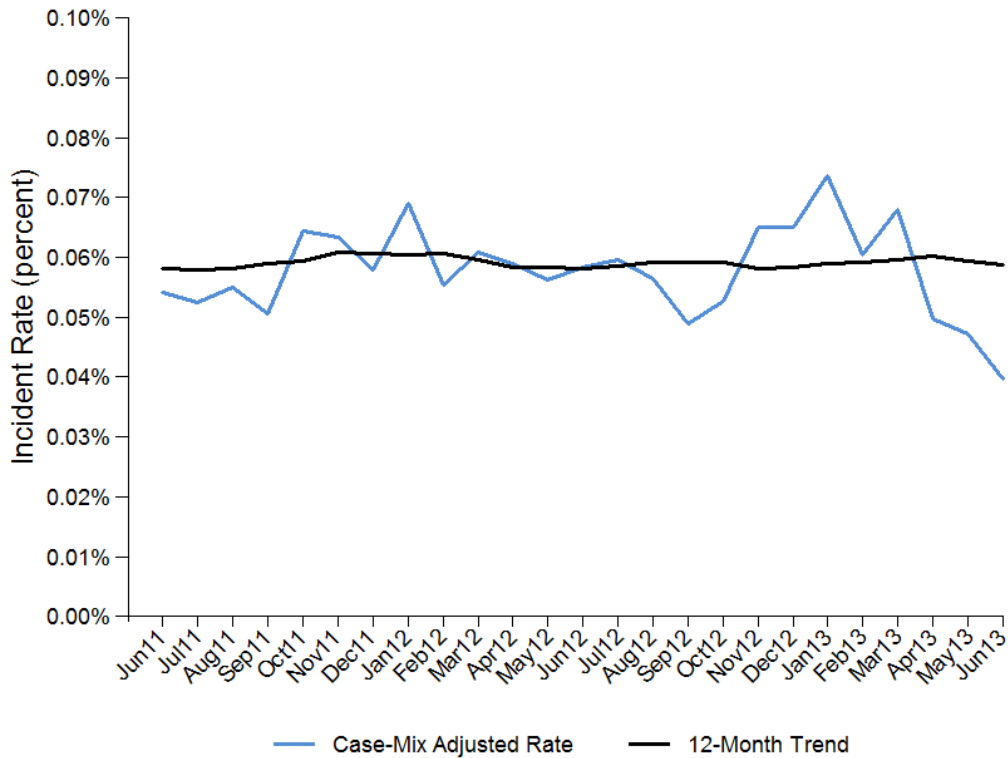
More About These Data

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 above the long-term trend in early 2013.

Figure 2: Statewide Mortality Rates, DDS Consumers
Case-Mix Adjusted Monthly Rates since June 2011



Key Findings:

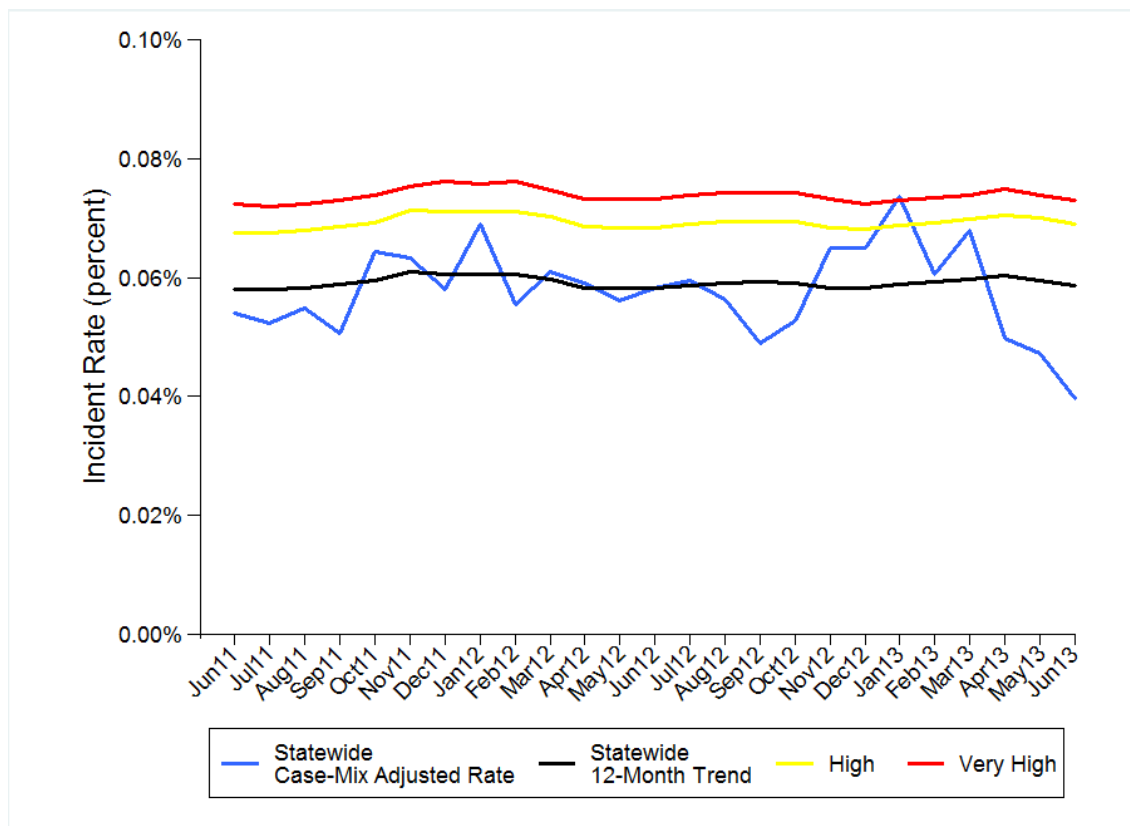
- Mortality rates were higher than the long-term trend in each of the first three months of 2013. The rates were below the trend from the April – June 2013 period.
- Additional deaths will likely be included as mortality reviews are completed over time and may increase the rate (see “More About These 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 exceeded the "very high" threshold in January 2013.

Figure 3: Statewide Mortality Rates, DDS Consumers Case-Mix Adjusted Monthly Rates since June 2011



Key Findings:



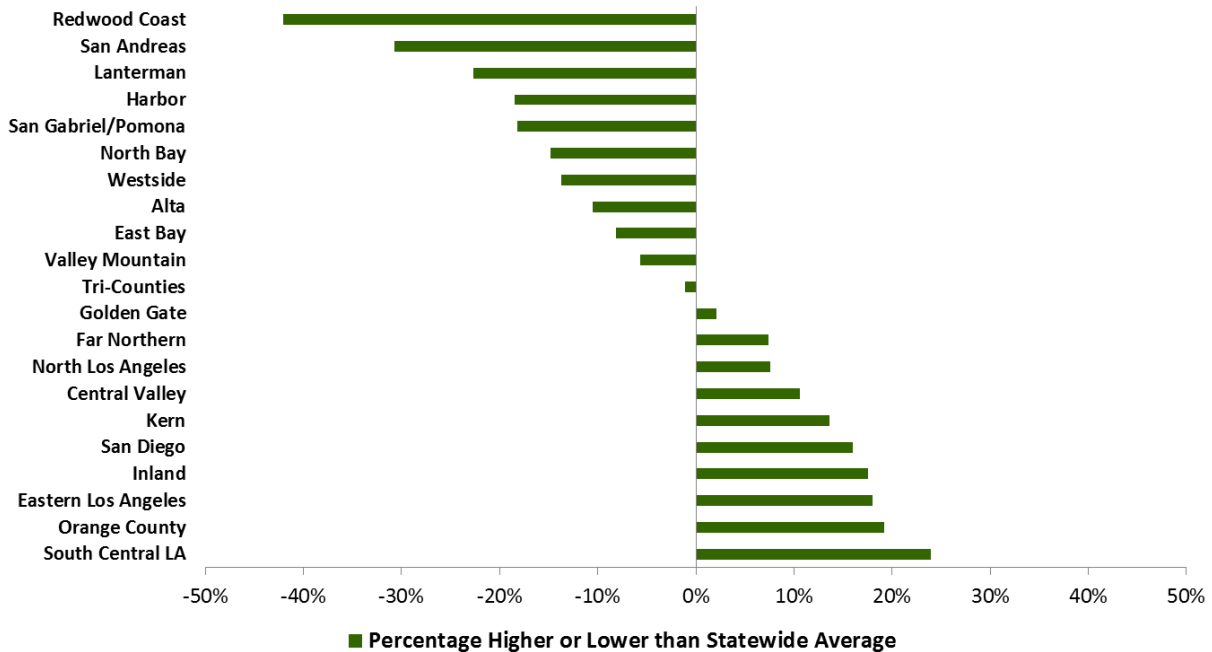
- The statewide rate was unexpectedly high in January 2013. Central Valley Regional Center, Golden Gate Regional Center, and Westside Regional Center each had high rates in this month. However, no regional center had a quarterly spike that required reporting back.

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 higher than in the previous period.

**Figure 4: Mortality Rates by Regional Center Compared to Statewide Average
June 2012 – June 2013**



Key Findings:

- For June 2012 to June 2013, the adjusted regional center mortality rates ranged from 42% below to 24% above the statewide average. The range of rates below average was wider than in the previous period.
- South Central Los Angeles Regional Center had the highest mortality rate, at 24% above average, compared to 7% above average in the previous period.
- Redwood Coast Regional Center had an unusually low mortality rate, at 42% below average, after being 9% below average in the previous period.

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.

Changes in mortality rates were not statistically significant.

**Table 2: Breakdown of Reported Deaths by Age and Residence Type
DDS Consumers Age 3 and Up, January–June 2013 Compared to Same Period Last Year**

| Characteristics in CDER | Share of Consumers | Number of Deaths | Deaths/1,000 Jan-Jun 2013 | Change from Jan-Jun 2012 |
|-------------------------|--------------------|------------------|---------------------------|--------------------------|
| Age | | | | |
| 3 to 13 | 31% | 59 | 0.8 | -12% |
| 14 to 21 | 20% | 60 | 1.3 | 8% |
| 22 to 31 | 19% | 85 | 2.0 | -1% |
| 32 to 41 | 10% | 75 | 3.2 | 13% |
| 42 to 51 | 9% | 130 | 6.1 | 2% |
| 52 to 61 | 7% | 189 | 11.6 | -7% |
| 62+ | 4% | 223 | 26.0 | 2% |
| Residency Type | | | | |
| Family Home | 74% | 258 | 1.5 | -7% |
| CCF | 10% | 179 | 7.5 | 8% |
| ILS/SLS | 10% | 82 | 3.5 | -8% |
| SNF/ICF | 4% | 238 | 28.2 | 5% |
| Other | 2% | 64 | 14.9 | 17% |

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

Key Findings:



- The raw mortality rate was higher than the same period one year ago for adults 32 to 41 years old and lower for children aged 3 to 13. These differences are not statistically significant.
- Consumers in CCF and SNF/ICF settings had higher mortality rates than one year ago; the 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 three groups; the largest decrease was for individuals with epilepsy.

**Table 3: Breakdown of Reported Deaths by Diagnosis
DDS Consumers Age 3 and Up, January–June 2013 Compared to Same Period Last Year**

| Characteristics in CDER | Share of Consumers | Number of Deaths | Deaths/1000 Jan-Jun 2013 | Change from Jan-Jun 2012 |
|-------------------------|--------------------|------------------|--------------------------|--------------------------|
| Diagnosis | | | | |
| Mild to Moderate ID | 50% | 396 | 3.5 | 2% |
| Profound to Severe ID | 10% | 286 | 12.5 | 4% |
| Unspecified ID | 7% | 48 | 2.9 | 2% |
| Cerebral Palsy | 15% | 225 | 6.6 | -10% |
| Autism | 26% | 30 | 0.5 | -10% |
| Epilepsy | 16% | 271 | 7.3 | -12% |

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

Key Findings:



- Compared to the same period a year ago, there were decreases in the mortality rate for three groups: cerebral palsy, autism, and epilepsy.
- No 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 conducts discovery activities and other support when monitoring indicates rises in mortality SIRs.

Mortality continues to be a critical focus for risk assessment and mitigation.

Discovery Activities:

- There was a statistically significant statewide increase in mortality rates in January 2013. After the January spike, the statewide mortality rate fell, moving below the long-term trend in April. No regional center experienced a quarterly spike in mortality rates that required additional review between January and June 2013. The statewide mortality rate fell; 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.