

MORTALITY SPECIAL INCIDENTS

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

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INTRODUCTION AND BACKGROUND

This report summarizes mortality rates between January and June 2014 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 2014. There are two main goals of this report:

1. Update time trends in mortality rates from our earlier reports to include data through June 2014. 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 (CMF)
2. The Client Development Evaluation Report (CDER)
3. The Purchase of Service

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.

Changes in the Mortality Incident Rate

Table 1: Reported Deaths for DDS Consumers, January–June 2014 Compared with Previous Periods

	Jan–Jun 2013 (Last Year)	Jul–Dec 2013 (Last Period)	Jan–Jun 2014 (This Period)
Number of Consumers	259,326	264,615	269,107
Number of Reported Deaths	944	821	916
Deaths per 1,000 Consumers	3.64	3.10	3.40

Key Findings:



- The number of deaths per 1,000 consumers is higher in this period than in the July–December 2013 period, at 3.40 compared with 3.10. This difference is not statistically significant.
- The mortality rate is lower in this period than in 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).

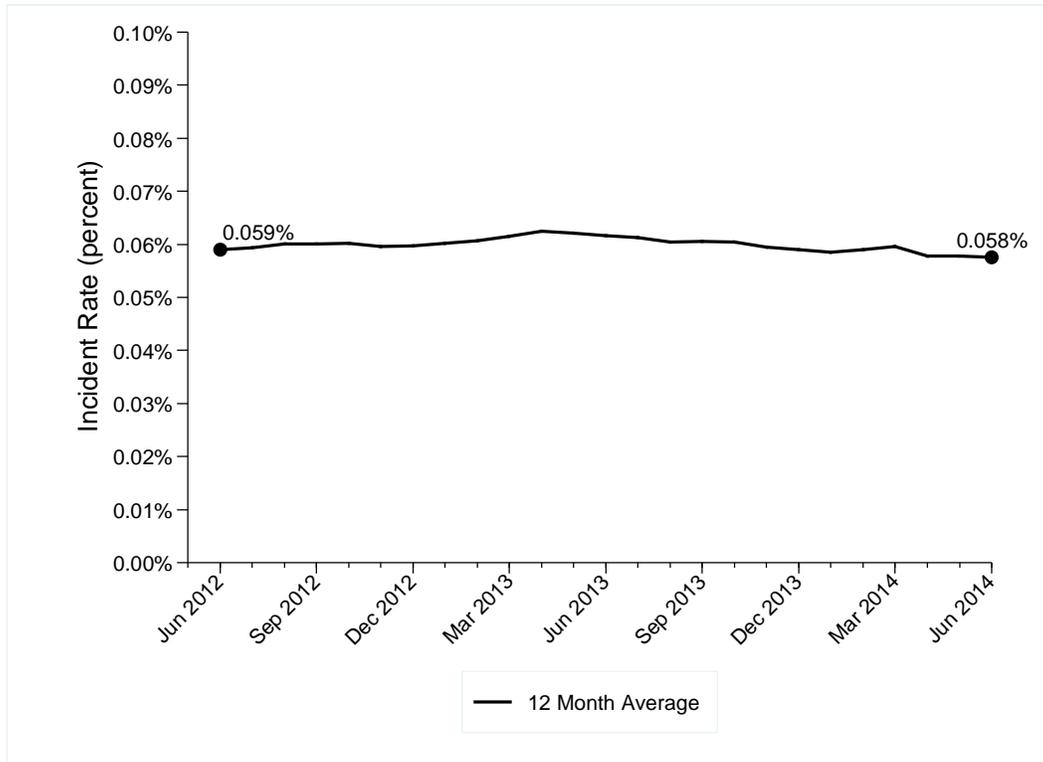
Number of Consumers refers to the average number of consumers served by regional centers in each month during the six-month period. This total is less than the number of all consumers served by regional centers at any time during the six-month period. The number of consumers is lower than previously 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 August 2014. 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.

Trend of Mortality Incident Rate

Figure 1: Mortality Incidents, Statewide Case-Mix Adjusted Monthly Trend DDS Consumers since June 2012



Key Findings:



- Over the past several years, the trend in the statewide average monthly mortality rate has remained relatively constant.
- The moving average increased over the first three months of 2014, then decreased and remained at nearly the same rate in June 2014 as in June 2012.

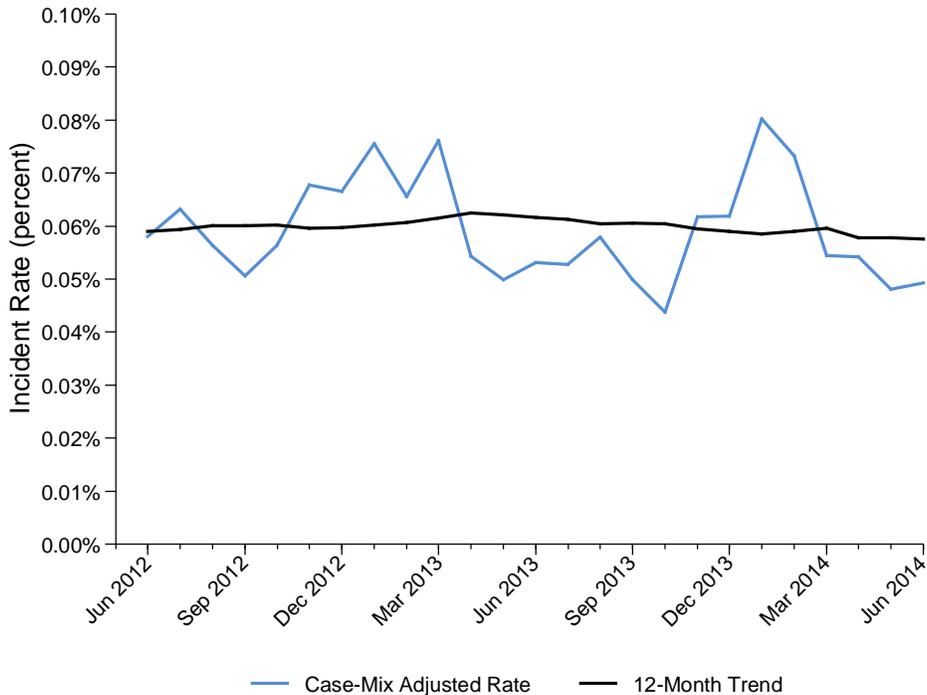
More About These Data

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.

Trend of Mortality Incident Rate

**Figure 2: Statewide Mortality Rates, DDS Consumers
Case-Mix Adjusted Monthly Rates since June 2012**



Key Findings:

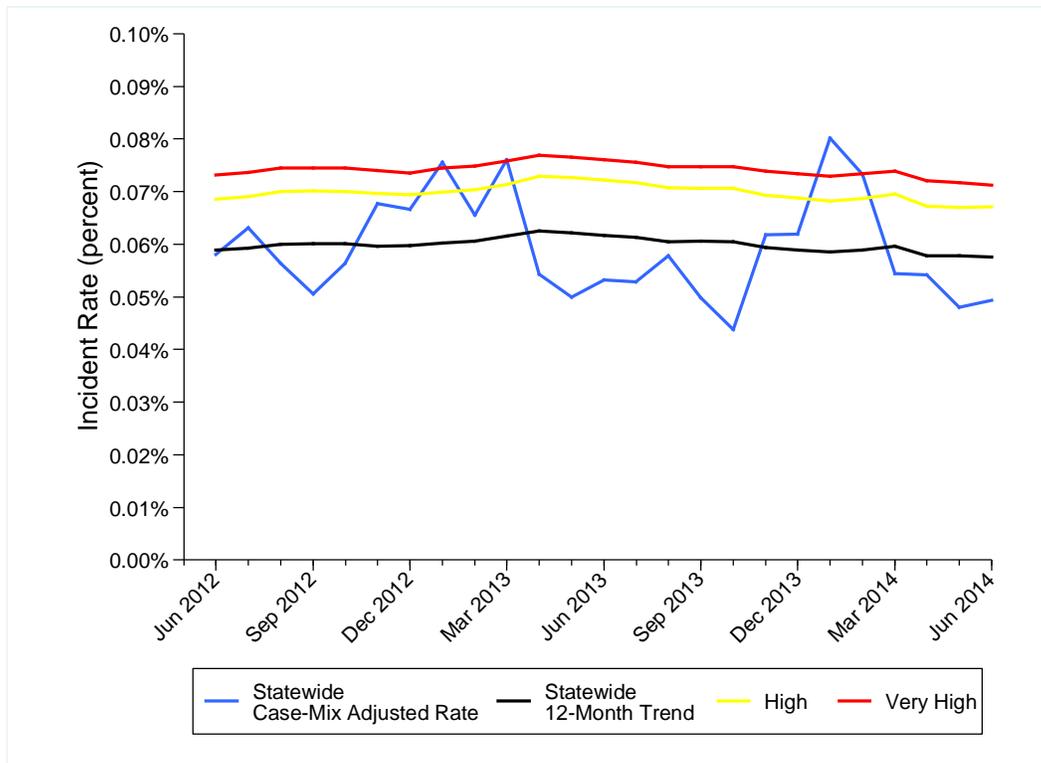
- Mortality rates were above the long-term trend in January and February 2014 and fell below the trend in March–June. This pattern is common; monthly rates displayed a similar trend in the January–June 2013 period.
- Additional deaths will likely be included as mortality reviews are completed over time 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.

Mortality Incident Rate over Time

**Figure 3: Statewide Mortality Rates, DDS Consumers
Case-Mix Adjusted Monthly Rates since June 2012**



Key Findings:

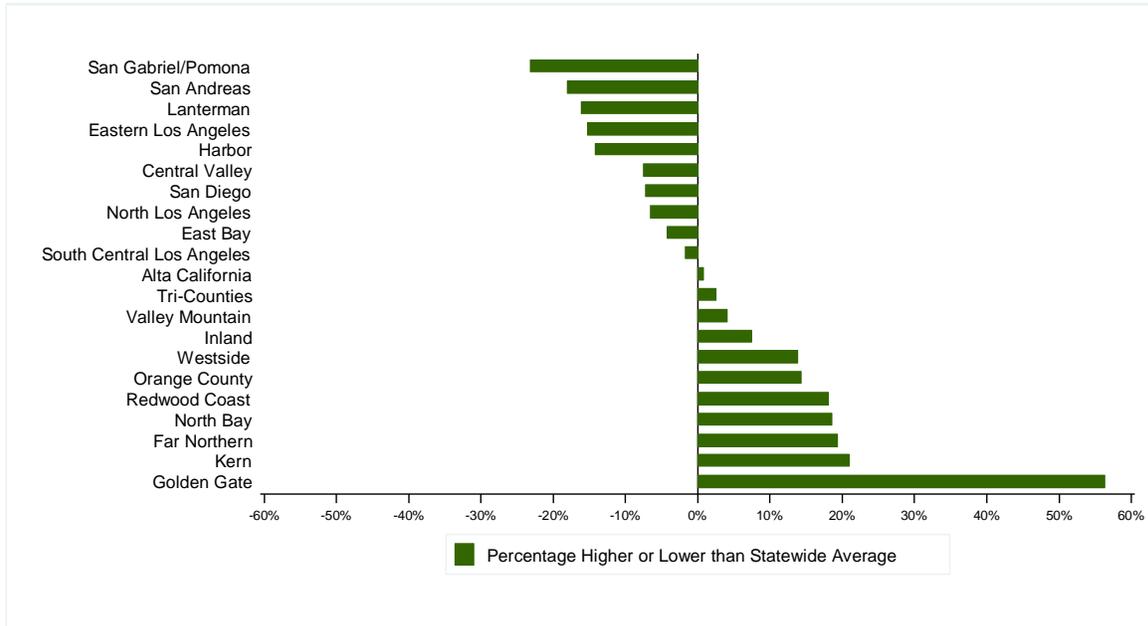
- The statewide rate was unexpectedly high in the January–March 2014 quarter, creating a statistically significant spike.
- Nine regional centers experienced at least one month with an unexpectedly high mortality rate in the quarter, contributing to the statewide spike.
- Alta California Regional Center and North Bay Regional Center had quarterly spikes that required these two regional centers to report back on additional reviews of the incidents. These reviews are ongoing.

More About These Data

The updated mortality risk model includes all consumers age three years 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. Figure 3 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 20 (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.”

Mortality Incident Rate by Regional Center

**Figure 4: Mortality Rates by Regional Center Compared with Statewide Average
June 2013–June 2014**



Key Findings:



- For June 2013–June 2014, the adjusted regional center mortality rates ranged from nearly 30% below to over 55% above the statewide average.
- Golden Gate Regional Center (GGRC) has the highest mortality rate, at 56% above average. This represents a recent increase in the mortality trend at GGRC, which was near the statewide average in June 2013. Mission is reaching out to GGRC to provide additional analyses on this change.
- No regional center stands out as especially low in this period relative to the distribution observed in previous periods.

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 Incident Rate by Age and Residential Setting

**Table 2: Breakdown of Reported Deaths by Age and Residence Type
DDS Consumers Age 3 and Up,
January–June 2014 Compared with Same Period Last Year**

Characteristics in CMF	Share of Consumers (%)	Number of Deaths	Deaths/1,000 Jan–Jun 2014	Change from Jan–Jun 2013 (%)
Age				
3 to 13	31%	53	0.7	-27%
14 to 21	20%	66	1.4	-8%
22 to 31	19%	90	2.0	-11%
32 to 41	10%	79	3.2	-8%
42 to 51	9%	124	5.9	-10%
52 to 61	7%	224	13.2	8%
62+	4%	232	25.1	-9%
Residency Type				
Family Home	74%	291	1.6	-9%
CCF	10%	181	7.6	-1%
ILS/SLS	10%	103	4.2	17%
SNF/ICF	4%	241	28.5	-2%
Other	2%	52	11.7	-26%

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

Key Findings:

- Analyzed by consumer characteristic, no group had a statistically significant difference in rates relative to the same period last year.
- Declines in mortality rates occurred for most groups, although the differences 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 Facility. 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.

Mortality Incident Rate by Diagnosis

**Table 3: Breakdown of Reported Deaths by Diagnosis
DDS Consumers Age 3 and Up,
January–June 2014 Compared with Same Period Last Year**

Characteristics in CDER	Share of Consumers (%)	Number of Deaths	Deaths/1000 Jan–Jun 2014	Change from Jan–Jun 2013 (%)
Diagnosis				
Mild to Moderate ID	49%	442	3.8	0%
Profound to Severe ID	10%	297	12.9	-3%
Unspecified ID	7%	38	2.1	-35%
Cerebral Palsy	15%	245	6.9	-3%
Autism	28%	38	0.6	5%
Epilepsy	16%	291	7.6	-4%

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

Key Findings:

- Compared with the same period a year ago, the mortality rate is lower and statistically significant for consumers with unspecified ID.
- Consumers with autism are the only group to experience an increase in the mortality rate. This difference is 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%.

Key Findings and Activities

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 the January–March 2014 quarter, driven by high rates in January and February. After the February spike, the statewide mortality rate fell, moving below the long-term trend in April. Two regional centers (Alta California and North Bay) experienced a quarterly spike in mortality rates that required additional reviews between January and June 2014.
- Although GGRC did not experience a spike in mortality rates, it has experienced unusually high rates starting in January 2014. Mission is following up with GGRC to provide additional analyses and technical assistance to investigate this trend.

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 by 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 spikes. 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.