2022

San Diego County

In-Custody Death Study

Produced by Analytica Consulting for the San Diego Citizens' Law Enforcement Review Board

April 2022

Analytica CONSULTING

CITIZENS LAW ENFORCEMENT REVIEW BOARD

2022 County of San Diego – In-Custody Death Study

The San Diego County Citizens' Law Enforcement Review Board (CLERB) contracted Analytica Consulting to conduct an independent analysis of in-custody death data over the last 10 years and provide a report of an "apples-to-apples" comparison of San Diego County Sherriff's Department (SDSD) to other California County Sheriff Departments. While the enclosed report contains a detailed analysis on the issue of in-custody deaths, it should be noted that **this report does not make any conclusions regarding any *specific* in-custody death.**

Analytica independently performed all analysis and authored this report. Input on the process, methods, and ultimate findings was provided by members of CLERB, the Sheriff's Department, and experts in academia; nevertheless, Analytica had the final say on the content of this report. Therefore, **any views expressed in this report are those of Analytica Consulting and do not reflect any official statement or policy of San Diego County or any of its employees.**

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Executive Summary

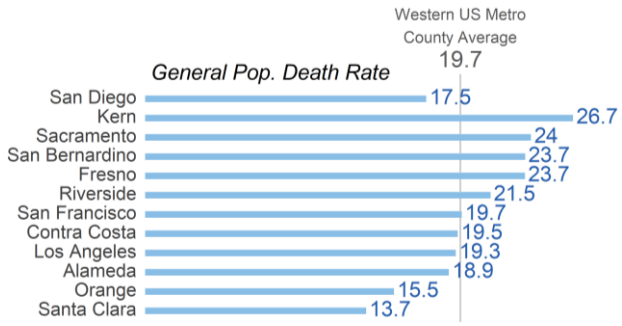
In-custody deaths in California county jails have become an increasingly contentious topic. Reporting by journalists and advocacy organizations conclude that the risk of death is highest in San Diego County jails. Based on data from the California Department of Justice, one inmate dies about every month in San Diego jails; however, research has raised important questions on how to study these deaths. One of these concerns is how best to compare in-custody deaths across different counties. Given that jails primarily admit those from the immediate county, how do mortality rates among the county population influence the total deaths within county jails?

We address this question by applying countywide mortality rates to the in-custody population of the 12 most populous counties in California. Our countywide mortality rates encompass nearly 200 unique groups based on gender, race-ethnicity, and age characteristics and four manners of death. Using arrest and jail population data, we then estimate the distribution of these groups in county jails. This approach allows us to arrive at an expected number of in-custody deaths for each county jail. These expected total deaths provide a baseline for evaluating deaths in San Diego jails and other county jails.

Our final analysis compares the expected deaths to the actual deaths in county jails from 2010-2020. Because the focus of this study is San Diego, we scale each county jail's population to reflect what they would be if they had the same number of inmates as San Diego County (unscaled results can be found in Appendix H). Using this approach, we can identify which county jails have more or less deaths than is expected as well as compare San Diego's total deaths to that of other counties. The analysis and findings have also been peer-reviewed by leading experts in criminology and biostatistics (see Appendix E for these reviews). Our main findings are found below.

Finding #1: Residents of San Diego County are no more likely to die than residents of other California counties.

Previous research has suggested that San Diego County's general population has unique mortality rates, which may explain the number of in-custody deaths in the county. Our comparison of mortality rates among the 12 most populous counties in California shows that San Diego County has similar death rates to other large counties in the state and metropolitan counties in the Western United States. This finding applies to all manners of death including suicides, overdose/accidental deaths, homicides, and natural deaths.

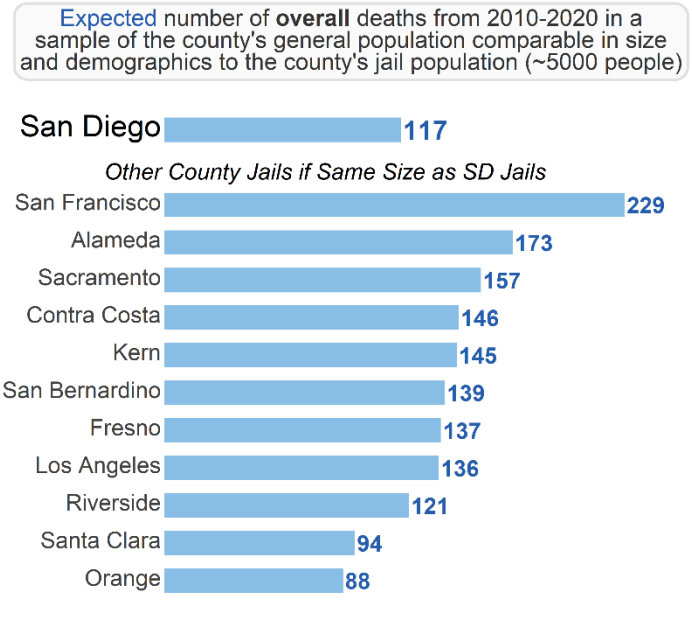


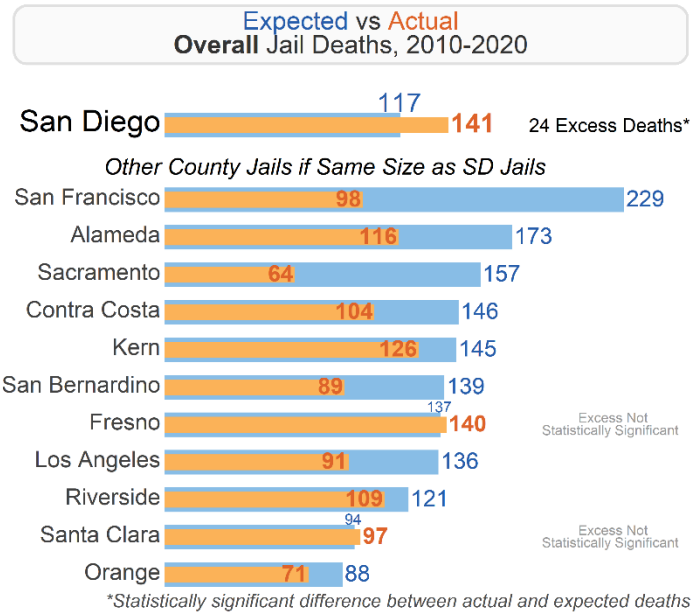
Overall County Mortality Rates
(Deaths per 10k/year, Ages 18-59, 1999-2020)

Finding #2: After considering countywide mortality rates, San Diego jails have the highest number of unexplained deaths

When analyzing overall in-custody deaths, we find that total deaths in San Diego jails surpass the deaths expected based on the county's mortality rates. We compare San Diego to other counties by standardizing their jail population to the size of San Diego jails (approximately 5000 inmates). The number of excess deaths resulting from the actual and expected death difference is the highest in San Diego County.

Additionally, San Diego County is the only county with a statistically significant number of excess deaths.[1] Most other counties have generally fewer total deaths than what is projected by their county mortality rates. This finding corroborates previous reporting suggesting that in-custody deaths are the most acute in San Diego County.



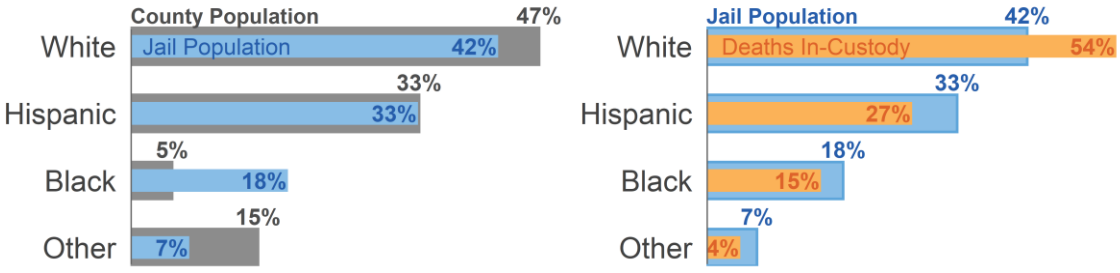


Finding #3: In San Diego County, Whites are more likely to *die* in jail; Blacks are more likely to *be* in jail.

When comparing the race of those who have died in-custody to the racial distribution of the jail population, deaths in San Diego occur disproportionately among Whites. The percentage of jail deaths among both Blacks and Hispanics is less than their percentage of the jail population. Given the large racial disparities between jail populations and county populations (Subramanian, Riley, and Mai 2018), the jail population is the most appropriate population to evaluate the racial proportionality of in-custody deaths.

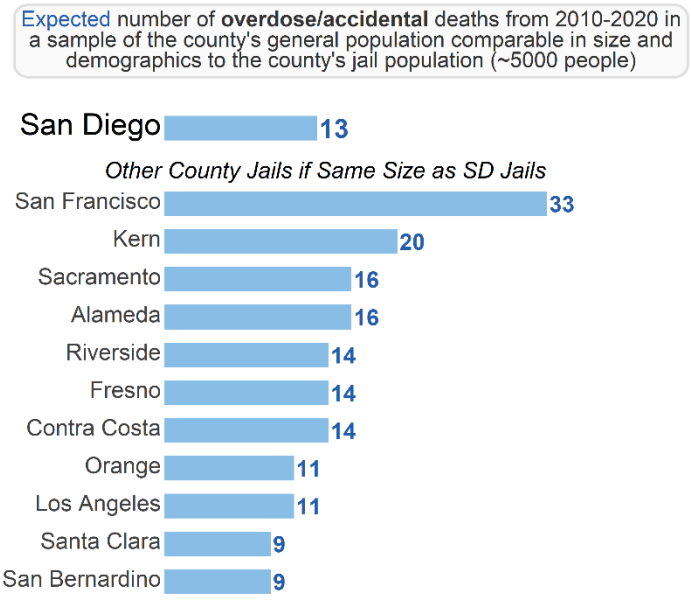
Our analysis shows that racial disproportionality is introduced into the jail system through arrest rates. For example, the proportion of Black inmates in San Diego is three times higher than their proportion of the county population. However, the proportion of White, Hispanic, and other race inmates are all equal or less than their proportion of the county population.

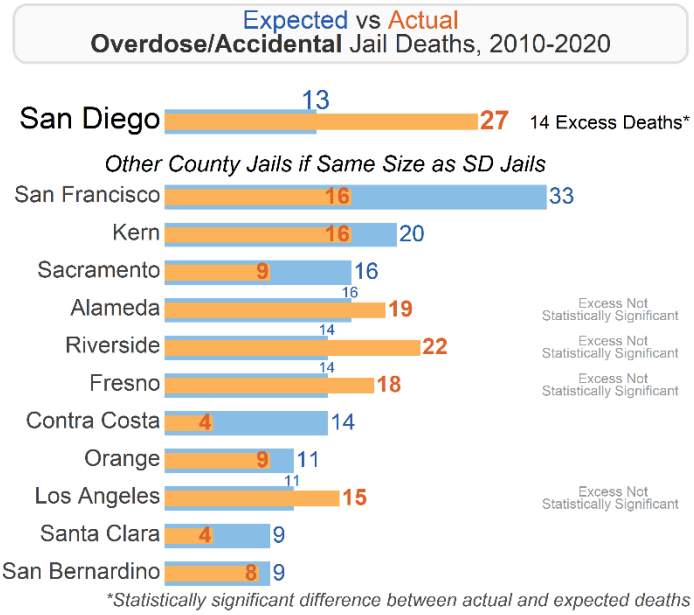
San Diego County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity



[1] Statistical significance means that the observed result was unlikely to occur by chance and is likely attributable to some underlying cause. When we report that the difference between actual and expected deaths is statistically significant, we are stating that these differences are highly unlikely to be a matter of random chance.

Finding #4: The risk of overdose/accidental deaths is the greatest in San Diego jails





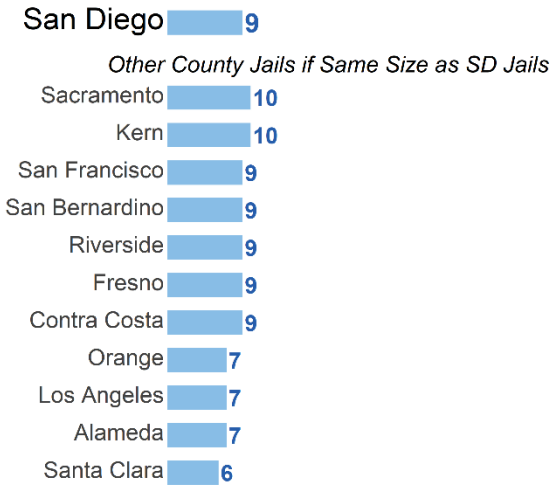
When comparing overdose/accidental death rates among the counties in our study, inmates in San Diego jails have the highest death rates.[2] An inmate in San Diego is two times more likely to die in this manner of death than what is expected based on county mortality rates. This discrepancy results in the highest number of excess deaths among all 12 counties in this study. The actual and expected overdose/accidental deaths for San Diego are also statistically different. The same cannot be said for the other counties that have more overdose/accidental deaths than what is anticipated.

[2] The California Department of Justice broadly refers to these deaths as accidental deaths. Most of these deaths involve overdoses. A much smaller number of these deaths involve other circumstances such as blunt force, falls, and choking. For a complete distribution of these deaths, see Appendix C.

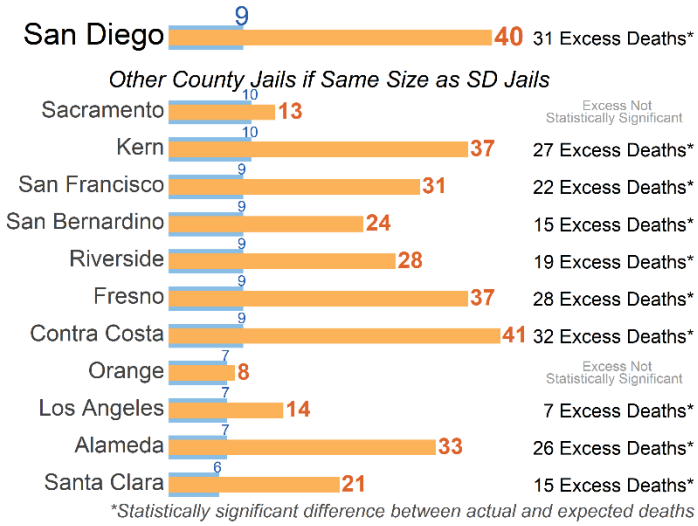
Finding #5: San Diego is one of many counties with high suicide rates in jails.

San Diego County has an elevated suicide rate that is not unlike several other counties in this study. Reported suicides are four times the expected suicides in many of these counties. All 12 counties have more suicides than what is projected, but the number of excess deaths varies from county to county. These findings confirm that suicide remains a severe risk for those in-custody in county jails, a pronounced trend among county jails nationally (Abderhalden 2022).

Expected number of **suicide** deaths from 2010-2020 in a sample of the county's general population comparable in size and demographics to the county's jail population (~5000 people)



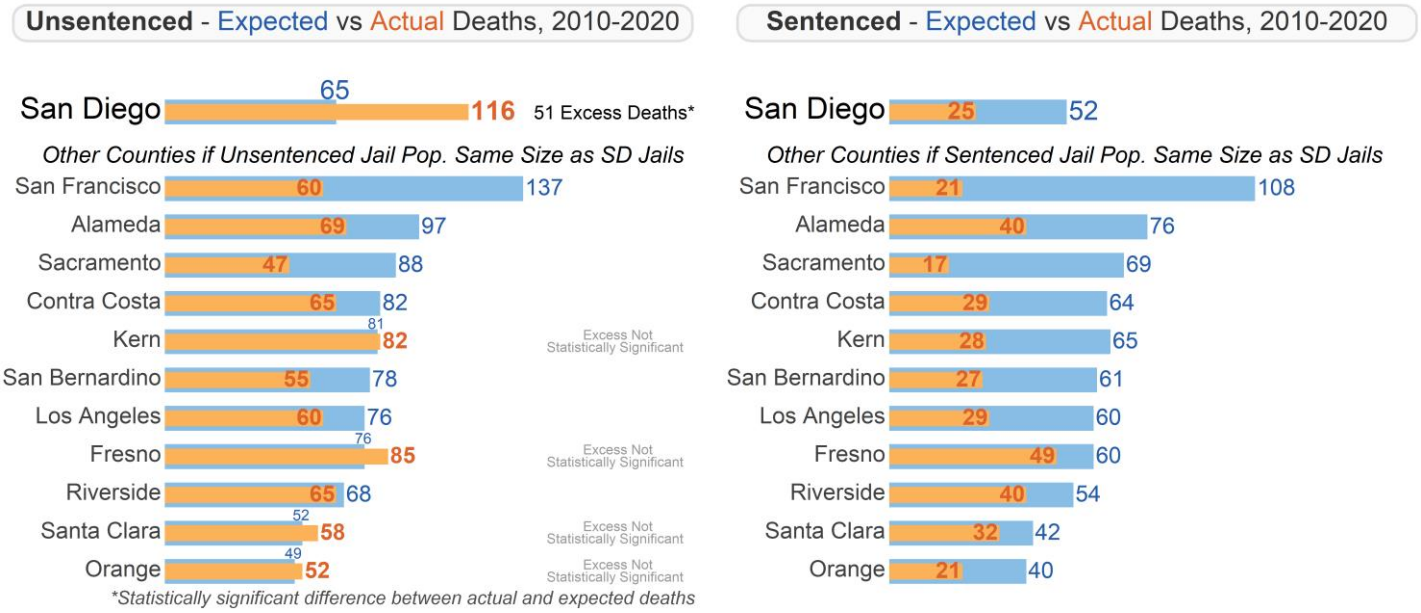
Expected vs Actual
Suicide Jail Deaths, 2010-2020



*Statistically significant difference between actual and expected deaths

Finding #6: Elevated risk of death appears to be isolated to the unsentenced jail population

When comparing jail deaths between unsentenced and sentenced inmates, excess deaths only appear among those who have not yet been sentenced. This finding particularly applies to San Diego County, which had 51 excess deaths among unsentenced inmates and none among sentenced inmates. These results suggest that individuals are the most vulnerable to death when they enter the jail system and/or in the time between when they are convicted and when they are sentenced.



Finding #7: Public oversight of in-custody deaths lacks key information

This study would not have been possible without the diligent and comprehensive data collection efforts of the California Board of State and Community Corrections (BSCC) and the California Department of Justice. Nonetheless, we have found that this reporting lacks key information on the circumstances surrounding these deaths. Reporting could be expanded to include additional information about inmates and jail facilities such as:

- Processing dates of those who died in-custody including the date of the inmate's arrest, booking, conviction, and sentencing
- Name of facility where the death took place
- Average daily jail population by race-ethnicity and age
- Average daily population of city jails (the state discontinued collecting these data in 2020)
- Complete list of the manner of death without missing values
- Number and type of mental health staff at jail facilities

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Executive Summary iii

Finding #1: Residents of San Diego County are no more likely to die than residents of other California counties. iii
Finding #2: After considering countywide mortality rates, San Diego jails have the highest number of unexplained deaths ...iii
Finding #3: In San Diego County, Whites are more likely to *die* in jail; Blacks are more likely to *be* in jail. iv
Finding #4: The risk of overdose/accidental deaths is the greatest in San Diego jails v
Finding #5: San Diego is one of many counties with high suicide rates in jails. vi
Finding #6: Elevated risk of death appears to be isolated to the unsentenced jail population.....vii
Finding #7: Public oversight of in-custody deaths lacks key information vii

1. Introduction 2
2. In-Custody Deaths in California Jails.....3
3. County Mortality Rates 4
4. Who is in the Jails from the County Population?.....6
5. Expected vs Actual In-Custody Deaths 7
6. Differences Between Unsentenced and Sentenced Inmates 11
7. Future Research 14
References 17

Appendix A: Selection of Counties 18
Appendix B: ADP vs. ARP.....19
Appendix C: A Closer Look at Overdose/Accidental Deaths.....20
Appendix D: Estimated vs Actual San Diego Jail Population 21
Appendix E: Peer-Review Letters.....22
Appendix F: Response from San Diego Sheriff's Department 25
Appendix G: Deaths in City Jails 27
Appendix H: Detailed Results.....28

Expected vs Actual Statistical Test Results.....28
Jail Profiles of Each County in The Study 31
Mortality Rates Over Time 43
Comparisons of San Diego Inmate Population to Other California Counties.....44
County Demographics 45
Unstandardized Average Time between Deaths.....46

Appendix I: Email Correspondence with Dr. Elizabeth Carson (U.S. Bureau of Justice Statistics).....46
Appendix J: Data Inclusion Criteria 50
Appendix K: Relevant Policy Changes Provided by the San Diego Sheriff's Department (2014-2021).....51
List of Tables.....55
List of Figures 56

1. Introduction

The number of deaths in California's county jails has been a subject of increasing debate. This discussion has put sheriff's departments, who oversee these facilities, in sharp focus. Initial research on sheriff's departments has highlighted the apparent disparities in death rates among California county jails (Brannon 2020). San Diego County has received considerable scrutiny in these investigations. Reporting by local media and advocacy groups suggests the death rate in San Diego jails surpasses the death rates in all other large county jails in California (McDonald, Davis, and Schroeder 2019). Based on data from the California Department of Justice, about one inmate dies every month on average in San Diego jails.

Throughout this public debate, several important questions regarding how to evaluate county jail death rates have been raised. What population should these deaths be compared to when calculating jail mortality rates? Nearly all previous studies use the average daily jail population (ADP), which adds the daily count of inmates together for the month and then divides it by the number of days in that month.[3] Furthermore, what manners of deaths should be the focus of this research? Suicides have received the most attention in this work. Natural deaths and, to a smaller degree, homicides and accidental deaths also occur in jails. However, one of the primary questions on this topic is how best to compare in-custody deaths across different counties. For instance, some research has considered the racial proportions of counties when explaining these death rates (Kelly 2018). What other county factors should be incorporated into a comparison of jail death rates?

Given that jails primarily admit those from the immediate county, the particulars within a county will likely impact in-custody death rates. As the San Diego Sheriff's Department wrote in response to a recent state audit:

> "As jails are a microcosm of the communities in which they are located, it should come as no surprise that as deaths in the community increase, deaths in-custody will increase as well." (2022)(p.99)

We seek to understand this argument by exploring the relationship between county death rates and jail death rates. Counties have different populations, which exhibit varying levels of risk of death based on demographic profiles, associated behaviors, and the level of services available to residents in the county. Specifically, we seek to answer the following question: do differences in county mortality rates help explain the differences we see in county jail mortality rates?

To address this question, we establish an expected number of total deaths in jails by applying countywide mortality rates to the county's in-custody population. Our countywide mortality rates encompass nearly 200 unique groups based on gender, age, and race-ethnicity and four different manners of death. As such, they capture the distinctive health risks within a county. We then determine the distribution of these groups in county jails using a combination of arrest and jail population data. This step enables us to report the expected number of deaths for each county jail in our study. These expected values provide a county-level baseline for evaluating and comparing in-custody deaths across county jails.

[3] To fairly compare in-custody deaths across counties, we must account for the different number of inmates in each county's jail system. Nearly all studies utilize the Average Daily Population (ADP) for this calculation. We were able to find only two analyses that use the At-Risk Population (ARP) (Kelly 2018). For more discussion on ADP vs. ARP, see Appendix B.

2. In-Custody Deaths in California Jails

To provide some initial context on in-custody deaths in California jails, we examine total deaths between 2010-2020 among the 12 most populous counties. These 12 counties were chosen for this study because they have an adequate sample size of in-custody deaths over time (see Appendix A for more discussion). The first chart in Figure 1 displays the total jail deaths. The number of deaths in these counties varies substantially.[4] San Francisco, Contra Costa, and Sacramento counties have relatively low numbers of total deaths. Los Angeles County has the highest total deaths at 290. San Diego County has the second highest total deaths at 141.

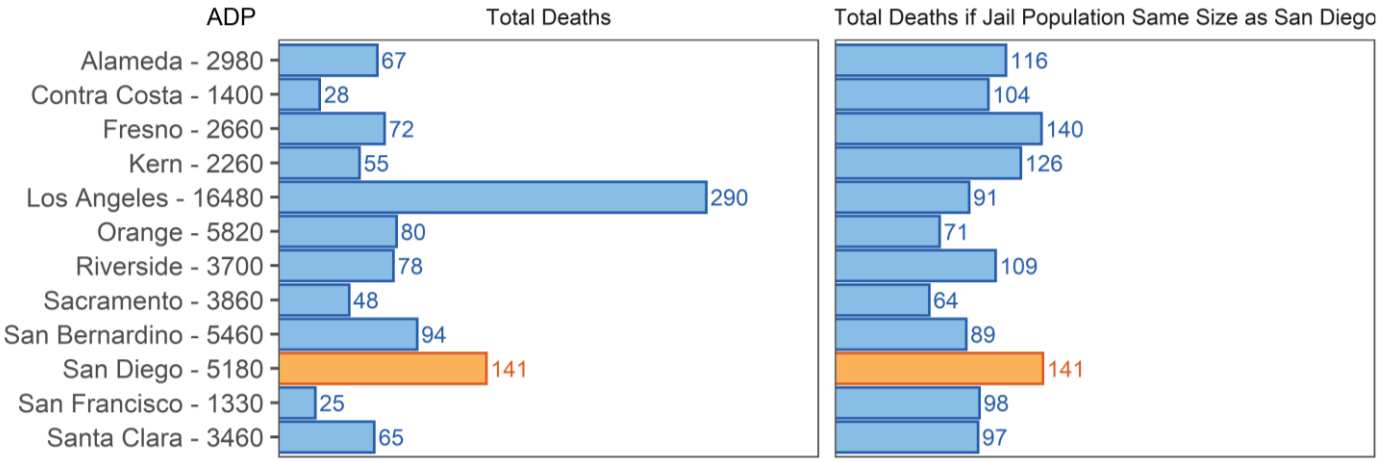

Figure 1: Total Deaths in Various California County Jails (2010-2020) Compared to San Diego County.

In order to fairly compare these numbers of deaths, we consider the size of the jail population in each county. We use the average daily population (ADP), which adds the daily inmate count for the month (typically taken around midnight each day) and then divides by the number of days in the month. The average ADP from 2010-2020 for each county is listed next to the county name in Figure 1. Another infrequently used measure, at-risk population (ARP), combines the January 1 count with the number of annual admissions. While neither measure offers individual-level information on inmates, the average daily population provides a unique number of the jail population without counting many who are re-admitted to jail. As such, the U.S. Bureau of Justice Statistics believes that ADP is “the best alternative” (Carson 2021) (see Appendix B and Appendix I for more discussion).

The second chart in Figure 1 factors the average daily population by displaying total deaths if jail populations were the same size as the San Diego jail population (5180 inmates). Viewing total deaths in this manner allows us to better compare other counties to San Diego. When we base in-custody deaths on a jail population of 5180 inmates, San Diego is now the county with the greatest number of deaths over the past decade. Fresno County has a comparable number of deaths at 140.

Measuring total deaths does not fully describe the nature and circumstances surrounding these deaths. To better compare in-custody deaths among these 12 counties, we break down these deaths by the manner of death. Table 1 presents the average time between deaths for the four major manners of death: natural deaths, suicides, overdose/accidental deaths, and homicides.[5,6] Comparing the average time between death accentuates the frequency of these death. For instance, deaths are more common if the length of

[4] Deaths exclude individuals in custody who died in transit or individuals who died in the process of being arrested. See Appendix J for full list of data inclusions.

[5] For homicides, we only include willful deaths committed by other inmates or law enforcement staff. Two other categories–undetermined and pending investigation—are nondescript and therefore not included in our analysis.

[6] An overwhelming majority of overdose/accidental deaths are drug-related. The remaining deaths in this category are associated with blunt force, choking, and medically-related circumstances. See Appendix C for a full breakdown of these deaths.

time between deaths is only two months versus 2.1 years. The values on Table 1 are also based on the size of the San Diego jail population.

***Table 1**: Average Standardized Time Between Deaths by Manner[7] (2010-2020)**

County	Natural	Suicide	Overdose/Accidental	Homicide
Alameda	2 months	4 months	7 months	2.1 years
Contra Costa	5 months	3 months	3 years	
Fresno	2 months	4 months	7 months	1.1 years
Kern	2 months	4 months	8 months	2.4 years
Los Angeles	3 months	9 months	9 months	2.5 years
Orange	3 months	1.4 years	1.2 years	4.1 years
Riverside	3 months	5 months	6 months	1.3 years
Sacramento	5 months	10 months	1.2 years	1.2 years
San Bernardino	3 months	6 months	1.4 years	1.9 years
San Diego	**2 months**	**3 months**	**5 months**	**1.4 years**
San Francisco	3 months	4 months	8 months	
Santa Clara	2 months	6 months	2.4 years	7.3 years

**To enable an apples-to-apples comparison, all values are standardized to represent what the value would be if that county jail was the same size as the San Diego County jails. See Appendix H for unstandardized values*

The table above reveals that the shortest periods of time between deaths is among natural deaths. On average, there is a natural death in many county jails including San Diego every two months. Suicides also occur in jails with some frequency. Over half of these county jails have a suicide every three to four months. This table also suggests that overdose/accidental deaths and homicides are relatively rare in jails. Many counties go 8 to 12 months without an overdose/accidental death. However, both San Diego and Riverside report this type of death about every five months. Homicides are even rarer occurrences in jails, often happening every two years or more. In fact, two counties (Contra Costa and San Francisco) did not report a single homicide over this eleven-year period. San Diego had a homicide on average every 16 months.

Table 1 also puts in-custody deaths in San Diego County in clearer focus. Inmates die more frequently of natural and overdose/accidental causes in San Diego than in any other county. In addition, San Diego has the second fewest months between suicides and the fourth fewest months between homicides. Are these rates informed by the broader mortality rates among San Diego County's general population? We seek to answer this question by applying county mortality rates to the jail population of each county.

3. County Mortality Rates

An explanation for in-custody deaths may be the residents of the counties themselves. County populations exhibit varying levels of mortality risk based on demographic profiles, associated behaviors, and the level of services available to residents in the county. As a result, mortality rates among the county population may be a useful criterion for comparing in-custody deaths among these 12 counties. For instance, a county jail may experience a high number of suicides because of a high prevalence of suicide in the county at large.

If one looks at San Diego County, several notable demographic features may have implications for mortality rates in the county. San Diego County's White population is almost 10 percent higher than the average White population among the other counties in this study. Consequently, it has fewer Black and Hispanic residents by 2-3 percentage points than these other counties. (See Appendix H for complete comparisons of county demographics.)

[7] Out of the 990 total in-custody deaths in-scope for our study, 64 had a manner of death listed as *Pending Investigation*. Most of these came from three counties: San Bernardino (24), Los Angeles (18), and Santa Clara (9). To obtain missing manner of death values, we filed Public Records Act requests with the coroner/medical examiner of all the counties in our study. We then matched the data we received with the data from the California Department of Justice using death date, race, gender, and birth date as the matching fields. Using this method, we were able to identify the manner of death for 31 of the 64 listed as *Pending Investigation.*

To systematically study different county mortality rates, we use data from the U.S. Centers for Disease Control and Prevention WONDER data base ("Underlying Cause of Death Data, 1999-2020" 2021) to calculate the mortality rates for each manner of death using gender, race-ethnicity, and age as our primary demographic characteristics. For example, one distinct stratum is Black males from age 18-29. Together, these strata form 48 distinct demographic groups which, when combined with our four manners of death, result in 192 different death rates for each county. To maximize the number of observations per stratum, we utilize data ranging from 1999-2020. Mortality rates are measured by counting the yearly number of deaths per 10,000 residents.

Figure 2 displays the general population mortality rates for the 12 counties in our study.[8] These figures also compare these county mortality rates to the Western United States metropolitan county average. The value of 17.5 for San Diego indicates that about 17 people per 10,000 residents die in the county each year on average. In general, the mortality rate for San Diego is between that of Orange County and Alameda County and below the Western United States metropolitan county average. Kern County has the highest overall mortality rate at 26.7 per 10,000 residents.

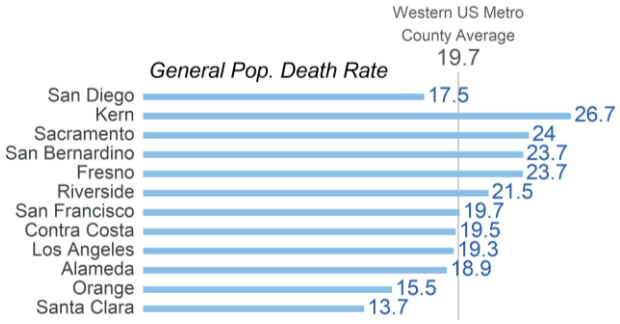

Figure 2: Overall County Mortality Rates (Deaths per 10k/year, Ages 18-59, 1999-2020)

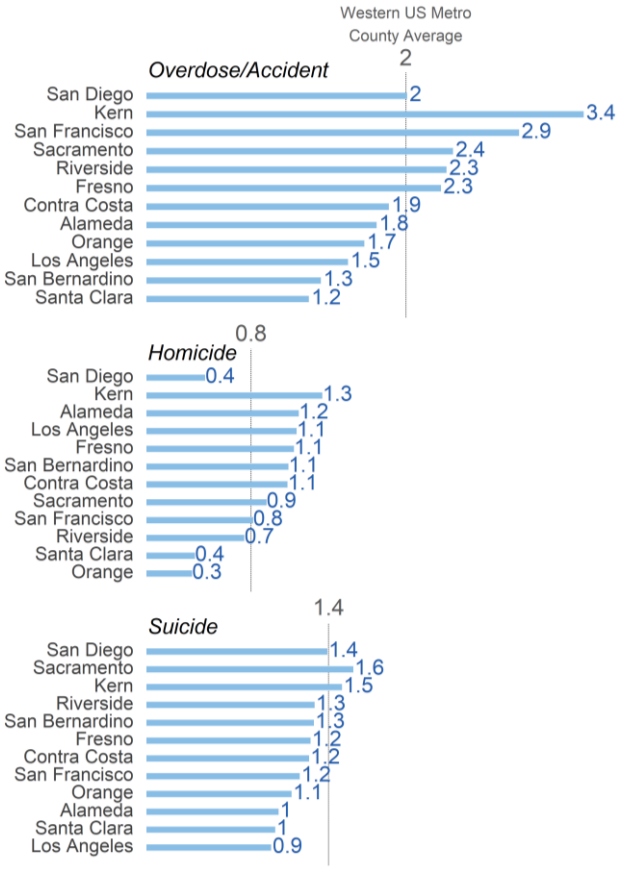

Figure 3: Suicide, Homicide, and Accidental Death Rates (Deaths per 10k/year, Ages 18-59, 1999-2020)

To understand the differences in mortality rates by manner of death, Figure 3 displays the county mortality rates for overdose/accidental deaths, homicides, and suicides. Natural deaths are excluded from this figure because they skew heavily toward older populations and are included in the overall rates in Figure 2. This figure provides a more nuanced picture of mortality rates in San Diego County. Specifically, the County has higher mortality rates for overdose/accidental deaths and suicides than most of the other California counties in this study; however, it largely mirrors the broader Western metropolitan county average in these manners of death. San Diego has one of the lowest homicide rates, closely resembling the homicide rates of Santa Clara and Orange counties.

[8] We restrict these figures to ages 18-59 to focus the analysis on age groups that make up over 97% of jail populations. Additionally, the rates of death increase dramatically over the age of 60 and skew heavily towards natural death.

4. Who is in the Jails from the County Population?

For various reasons, county general populations and jail populations will likely vary, particularly on certain demographic attributes (Tonry 2011). To capture unique jail populations and estimate their mortality rates, we rely on arrest data from 2010-2020 obtained by California's Department of Justice OpenJustice portal. We first create the same demographic groupings used to measure county mortality rates.[9] Then, we calculate the percentage of felony and misdemeanor county arrests that occurred among each group. For example, our analysis estimates that White males and females aged 40-59 constituted nearly 18% of arrests in San Diego County.

However, these arrest rates need to be transformed into jail populations because not all those arrested will remain in-custody at county jails. By comparing each group's felony and misdemeanor arrest rates to the county's felony and misdemeanor average daily population (ADP), we can estimate the population of each group in county jails.[10] After we complete these steps, we estimate that White males and females aged 40-59 make up about 15% of the San Diego jail population.

Figure 4 compares the county population[11] and jail population in San Diego by race-ethnicity and age. Two general trends are clear from this figure. First, racial-ethnic minority groups are disproportionately represented in jail. The most glaring example of this is Blacks aged 18-39. This group makes up only 1.7% of the county population but constitutes about 12% of the jail population. Similar discrepancies exist for other minority strata. Second, the jail population skews younger than the county population. We find that nearly 69% of the jail population is between the ages of 18 and 39. This segment is only 32% of the general population in San Diego County.

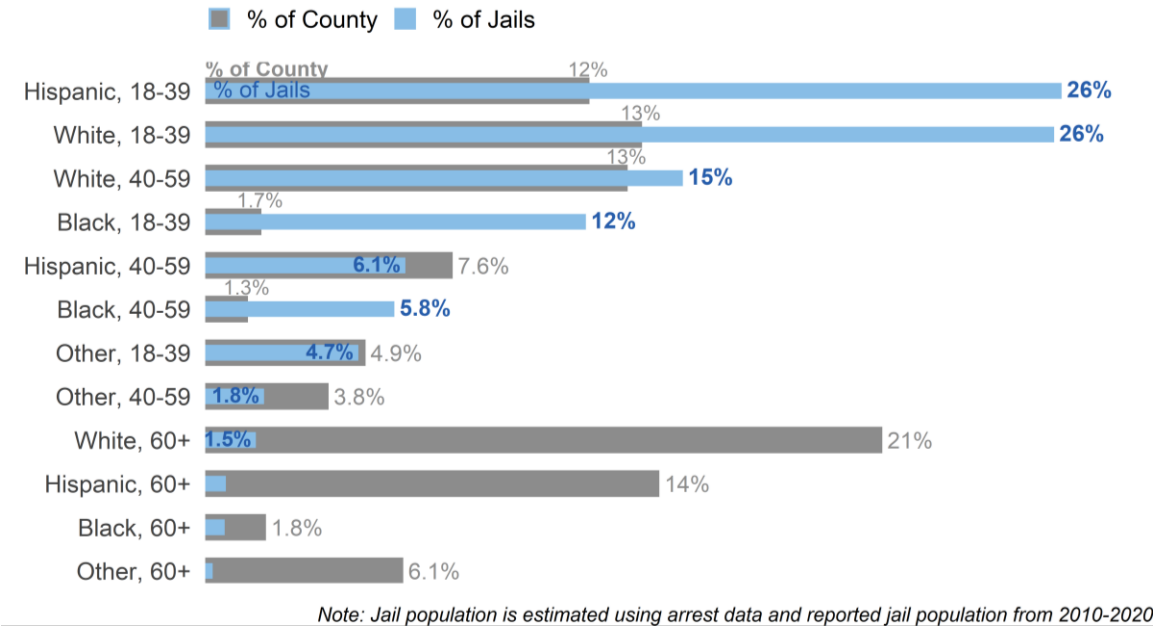

Figure 4: Comparing the Jail and General Population in San Diego County

[9] To generate more accurate expected death rates, we weigh the arrest data age category of 40-69 into three distinct groups—40-49 (66%), 50-59 (26%), and 60-69 (8%). In the California general population, a 69 year old individual is about 15 times more likely to die of natural causes than a 40 year old.("Underlying Cause of Death Data, 1999-2020" 2021). We would expect this 40-69 year old age group to skew much younger in the jail population. Nationwide, people over age 55 make up just 7.3% of inmates while those age 35-54 make up 38.9% of inmates.("Jail Inmates in 2020 – Statistical Tables" 2021). We show a comparison of our resultant estimates to actual values for San Diego County in Appendix D.

[10] A variant of this method for estimating jail populations was also used in Kelly's analysis on suicides in San Diego County (Kelly 2018). Additionally, we used detailed booking data provided by SDSD to evaluate the accuracy of these estimates. See Appendix B for this comparison.

[11] All general population estimates come from averaging 2010-2020 population projections provided by the California Department of Finance. These are the estimates used by all State of California government entities.

5. Expected vs Actual In-Custody Deaths

Our primary interest is to determine if countywide mortality rates can help explain total in-custody county deaths. Now that we have mortality rates for the different demographic groups in these counties and know what proportion of these groups are in jails, we can calculate the expected total jail deaths between 2010-2020.[12] We generate expected total deaths for each manner of death as well as overall total deaths. While these expected total deaths account for the underlying health conditions of the surrounding county population, they do not capture some of the unique problems among incarcerated individuals like substance abuse, poor mental health, and chronic/communicable diseases (Binswanger, Krueger, and Steiner 2009;Faze and Danesh 2002;Vaughn et al. 2014). Mortality rates for people with these types of conditions are not readily available.

These expected total deaths are then compared to the actual total deaths in jails. Both measures are based on the San Diego jail population size. If actual deaths are greater than expected deaths, we classify the difference between these two values as *excess deaths*. It is these deaths that are not explained by county mortality rates. We also conduct statistical tests to determine if expected values and actual values are statistically different.[13,14]

Figure 5 first displays the results for suicides. The bars on the left represent the expected total deaths for each county jail. One helpful way to think about what this bar represents for San Diego is to imagine a town in San Diego County of about 5,000 people, 4,000 of which are men under the age of sixty. Like any other town, death is a natural part of life there, so you'd expect a certain number of people to die between 2010 and 2020. For the other counties, the bars represent what this approximately 5000-person town would look like in each respective county if the town's demographics mirrored the demographics of the county's jails.

The bars on the right compare expected total deaths to actual total deaths. We also show the number of excess deaths on the far right if the expected and actual values are statistically different. Figure 5 illustrates that the number of suicides in jails eclipses the expected number of suicides in every county, indicating that suicides are a severe problem in county jails. The disparities between these two values varies by county. The expected total number of suicides for San Diego is nine while the actual total number of suicides was 40 over this period of time. This four-fold difference of 31 excess deaths is also statistically significant. Only Contra Costa has more excess deaths than San Diego at 32 when their jail population is scaled to match the size of San Diego's jail population.

[13] We used Byar's approximation to test the statistical difference between expected and actual in-custody deaths. This statistical test allows us to compare an expected mortality rate to an actual one to see if they are the same. The null hypotheses for this test is that the rates are the same.

[14] Some of our statistical tests point to negative excess deaths (i.e. actual deaths are statistically less than expected deaths). See Appendix H for the full results of our statistical tests. Negative excess deaths are generally associated with some type of intervention. For example, negative excess deaths during the COVID-19 pandemic have occurred in New Zealand because the country's widespread mask wearing and social distancing also reduced deaths from things like the flu. These types of interventions in the context of county jails are beyond the scope of this study.

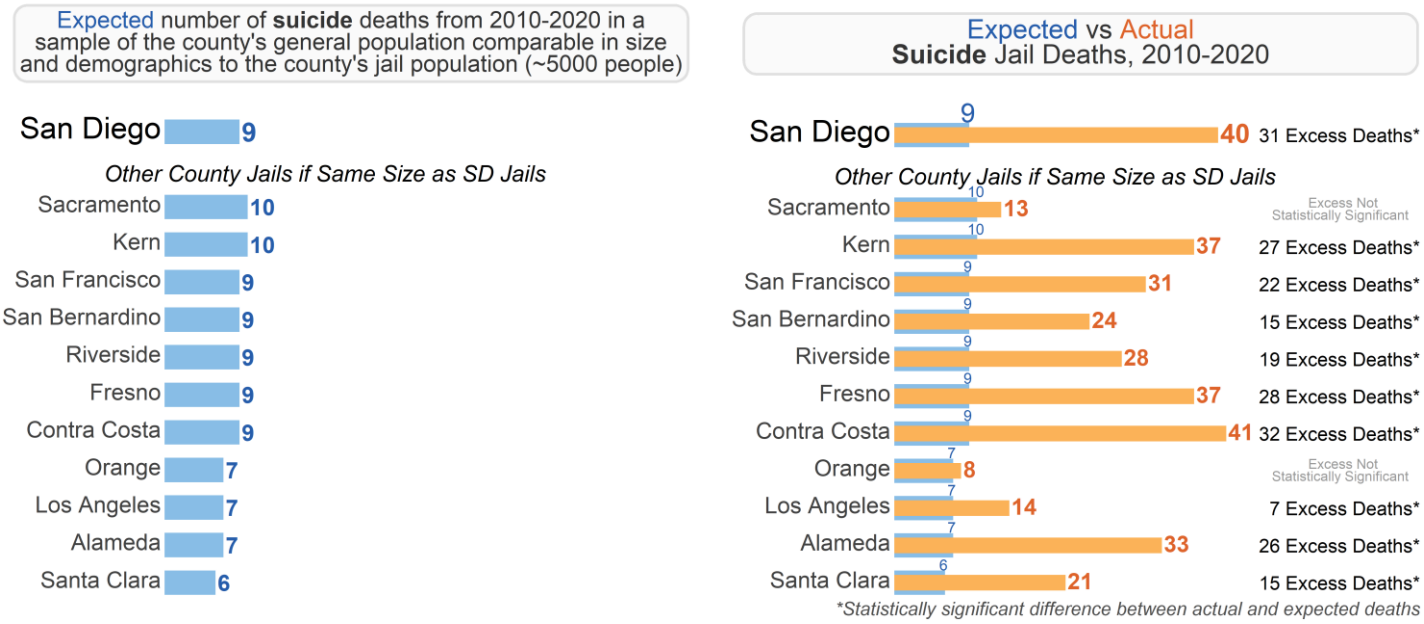

Figure 5: Expected vs Actual Jail Suicides between 2010 and 2020

Overdose/accidental deaths and homicides account for a small proportion of jail deaths. Given the small sample sizes for these manners of death, many of the differences between expected and actual total deaths are not statistically significant. Figure 6 displays the results for overdose/accidental deaths in jail. Here San Diego is one of the counties with a high number of excess deaths. In fact, it has the highest number of excess deaths at 14 out of all the counties in this study. The number of actual deaths is double the number of expected deaths and is the only difference that is statistically significant.

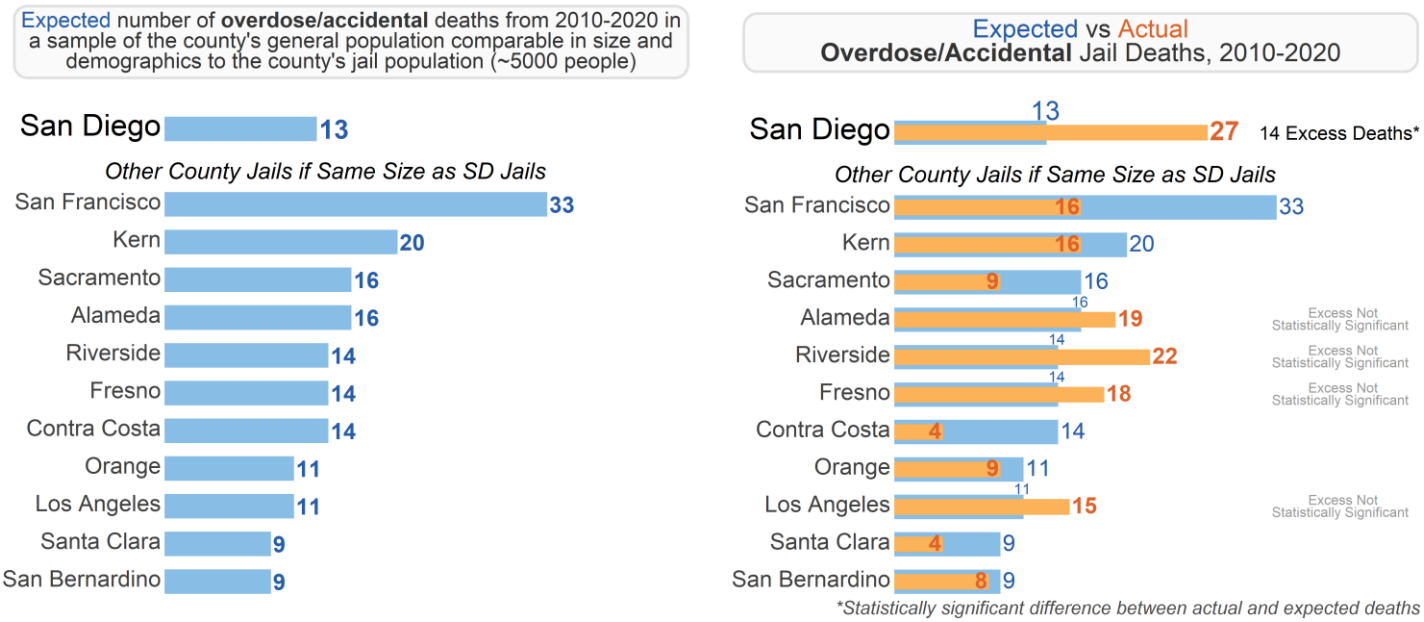

Figure 6: Expected vs Actual Jail Accidental Deaths between 2010 and 2020

It is clear from the bar graphs on the right in Figure 7 that homicides occur infrequently in county jails. For this manner of death, San Diego has the highest number of excess deaths at three although expected and actual values are not statistically different. No other county has more homicides than what is projected by their countywide mortality rates. Riverside County's actual deaths equal their expected deaths.

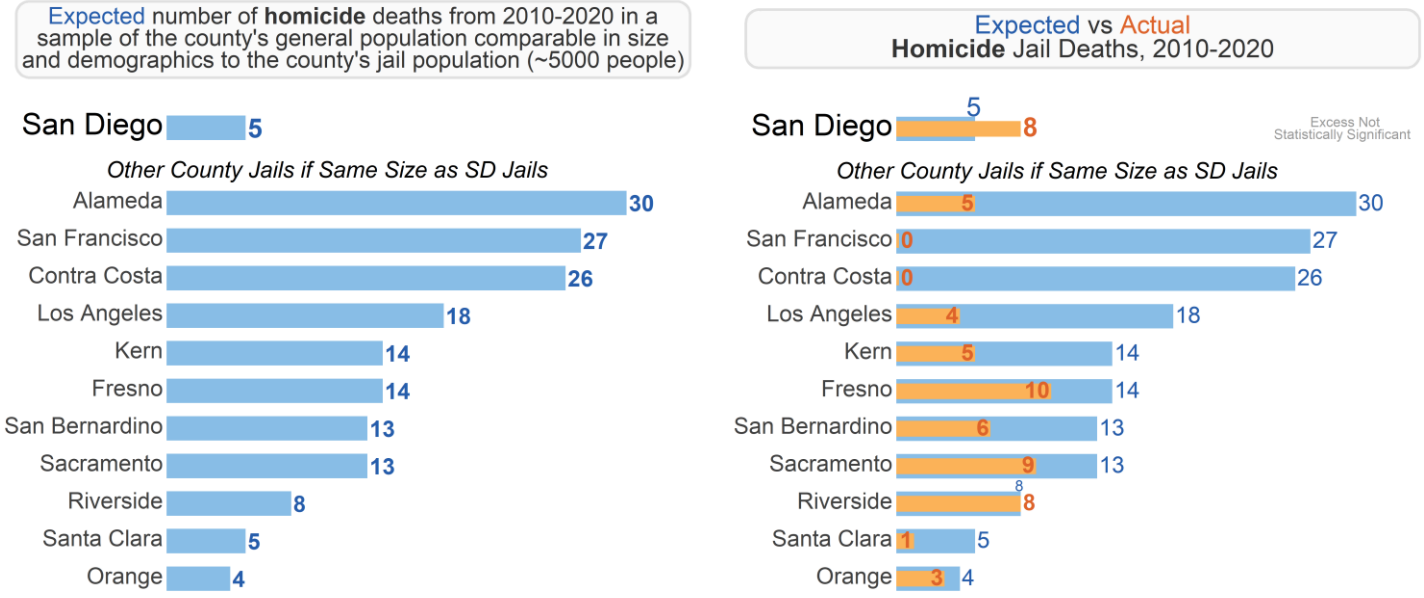

Figure 7: Expected vs Actual Jail Homicides between 2010 and 2020

Figure 8 displays the results for natural deaths. Based on the bars on the right, actual deaths are lower than expected deaths for every county. In other words, natural deaths in jails are lower than what we would expect based on each county's mortality rates over the past decade. For example, we projected that San Diego County would have 90 natural deaths between 2010-2020. The actual number of deaths was only 65. San Francisco and Contra Costa counties are considerably below their projected number of deaths. These differences may be explained by people with certain medical conditions being deemed not fit for jail, and therefore, not being booked; however, more research is required to better understand this phenomenon.

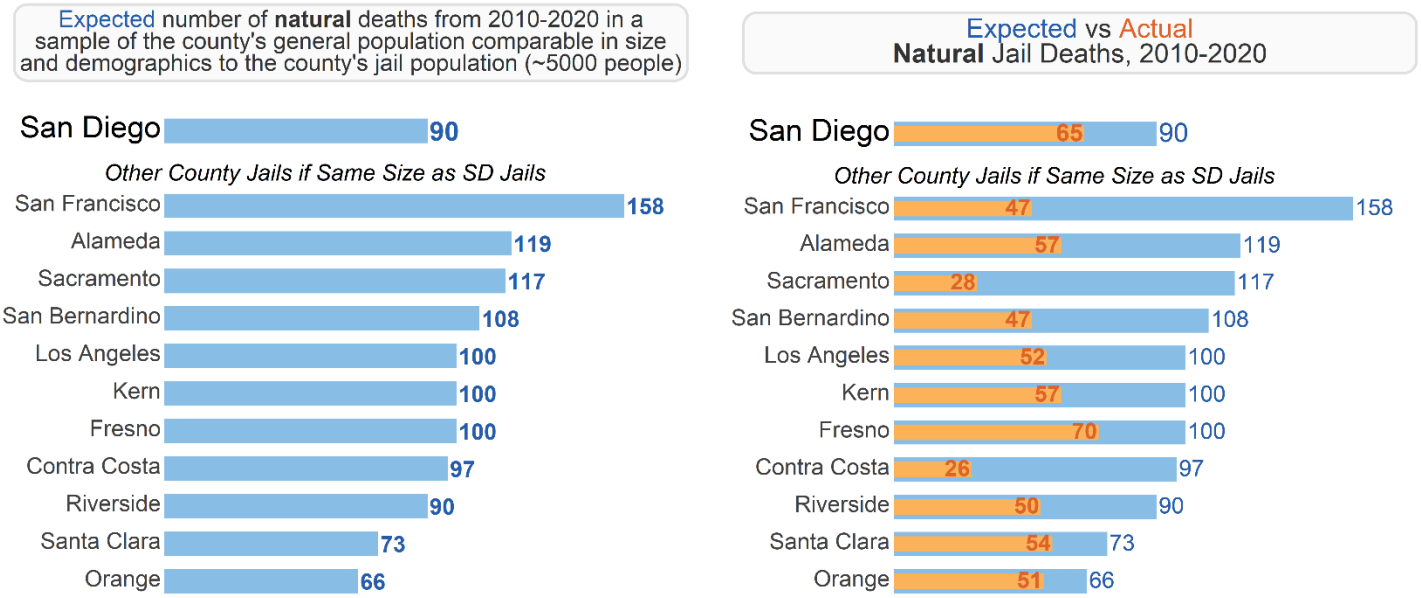

Figure 8: Expected vs Actual Jail Natural Deaths between 2010 and 2020

The last figure presents the overall total deaths. Based on Figure 9, San Diego County has the highest number of excess deaths out of all 12 counties. Specifically, 24 in-custody deaths cannot be explained by county mortality rates. When scaled to the size of San Diego's jail population, both Fresno County and Santa Clara County have the closest number of excess deaths at three. Unlike San Diego, the differences for these two counties are not statistically significant. The remaining counties on Figure 9 have fewer total deaths than what is projected by countywide mortality rates

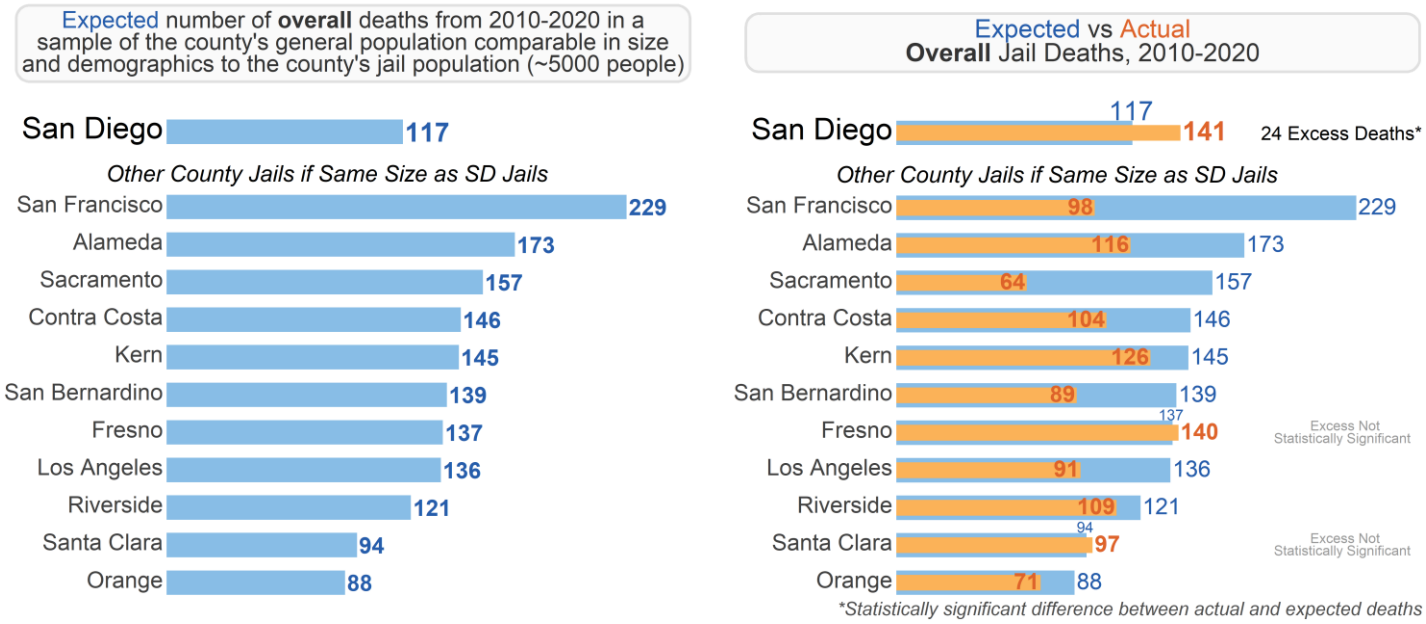

Figure 9: Overall Expected vs Actual Jail Deaths between 2010 and 2020

Together, these figures suggest that those in-custody in San Diego County jails are at a greater risk of death than those in-custody in other California counties. Our analysis suggests that the number of deaths in San Diego jails easily surpasses the number of deaths one would expect based on the county's mortality rates. In other words, even after controlling for county mortality rates and jail population, San Diego still has the highest number of total deaths out of the 12 most populous counties in California.

That said, our analysis indicates the level of risk in San Diego jails varies among the different manners of death. This risk is the highest for overdose/accidental deaths. Inmates in San Diego jails may also be at greater hazard for homicides than in other county jails; however, the low sample sizes don't give us sufficient evidence to say with confidence. Finally, the risk for suicides in San Diego jails is high but not dissimilar to other counties in this study. San Diego is one of a handful of counties that report a large number of excessive suicides in their jails.

6. Differences Between Unsentenced and Sentenced Inmates

Up to this point, this study has examined deaths among the overall jail population without making any distinctions between inmates themselves. One important distinction we can measure and may impact death rates is whether an inmate has been sentenced for the crime(s) for which they have been charged. Generally, those sentenced have been in jail longer than those not yet sentenced. Unfortunately, arrest dates and booking dates are not collected by the state's reporting of in-custody deaths; however, the sentenced/unsentenced classification offers a rough approximation of who has been in jail for longer periods of time. To consider the length of time an inmate has been in jail, we conduct the same expected vs actual analysis comparing unsentenced and sentenced inmates.

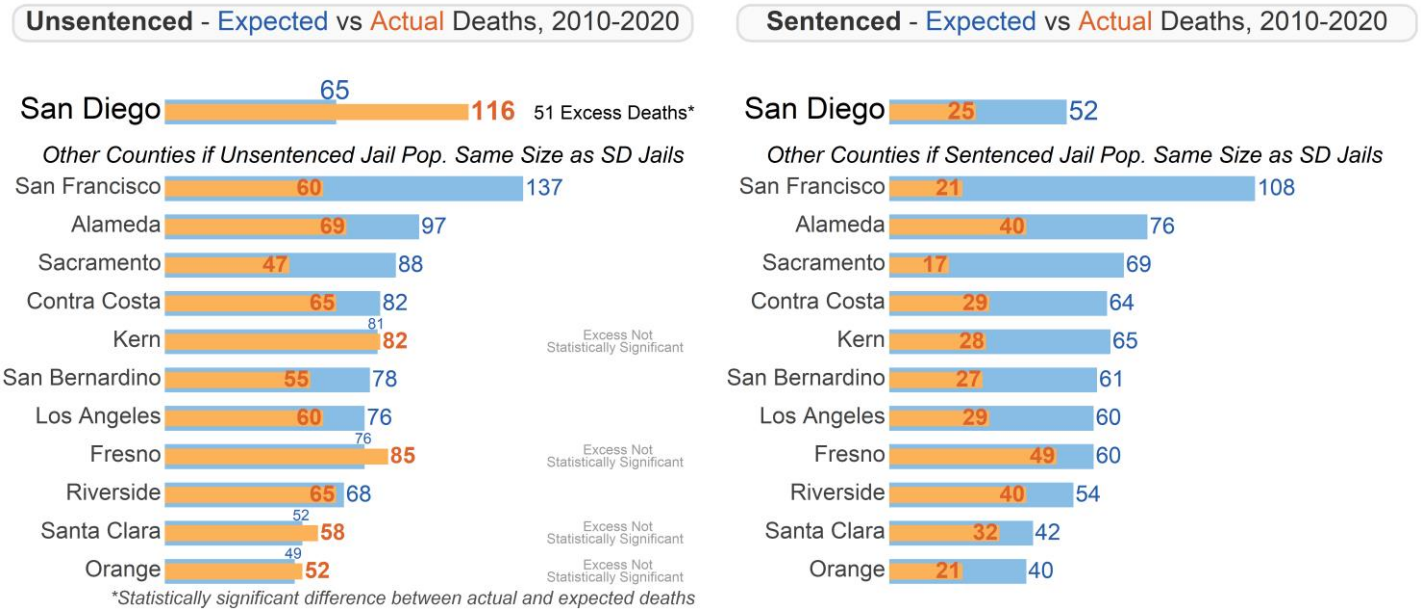

Figure 10: Overall Expected vs Actual Jail Deaths between 2010 and 2020 - Sentenced and Unsentenced

Figure 10 shows the extent to which the unsentenced/sentenced distinction matters to in-custody deaths. This figure summarizes overall deaths. The bar graphs for unsentenced inmates on the left reveal that San Diego jails had 51 excess deaths among this group. The difference between actual and expected total deaths are statistically significant for the county. Kern, Fresno, Santa Clara, and Orange county jails also have more actual deaths than expected deaths but these differences do not reach the level of statistical significance. The bar graphs on the right for sentenced inmates present a contradictory account. All county jails including San Diego have fewer deaths than what is expected based on county mortality rates.

We also conduct this same analysis for each manner of death. The disparities in excess deaths between unsentenced and sentenced inmates varies by the manner of death. On one hand, Figure 11 shows relatively small differences in natural deaths between these two groups. San Diego is the only county with actual natural deaths exceeding expected natural deaths. On the other hand, Figure 12 shows vast differences in suicides between the sentenced and unsentenced. This figure demonstrates how vulnerable the unsentenced are to suicide. Actual total deaths far exceed the expected total deaths in every county. San Diego is the most lopsided county in this regard. The number of actual suicides is nearly seven times the expected suicides. Only a few counties have excess suicides among the sentenced population.

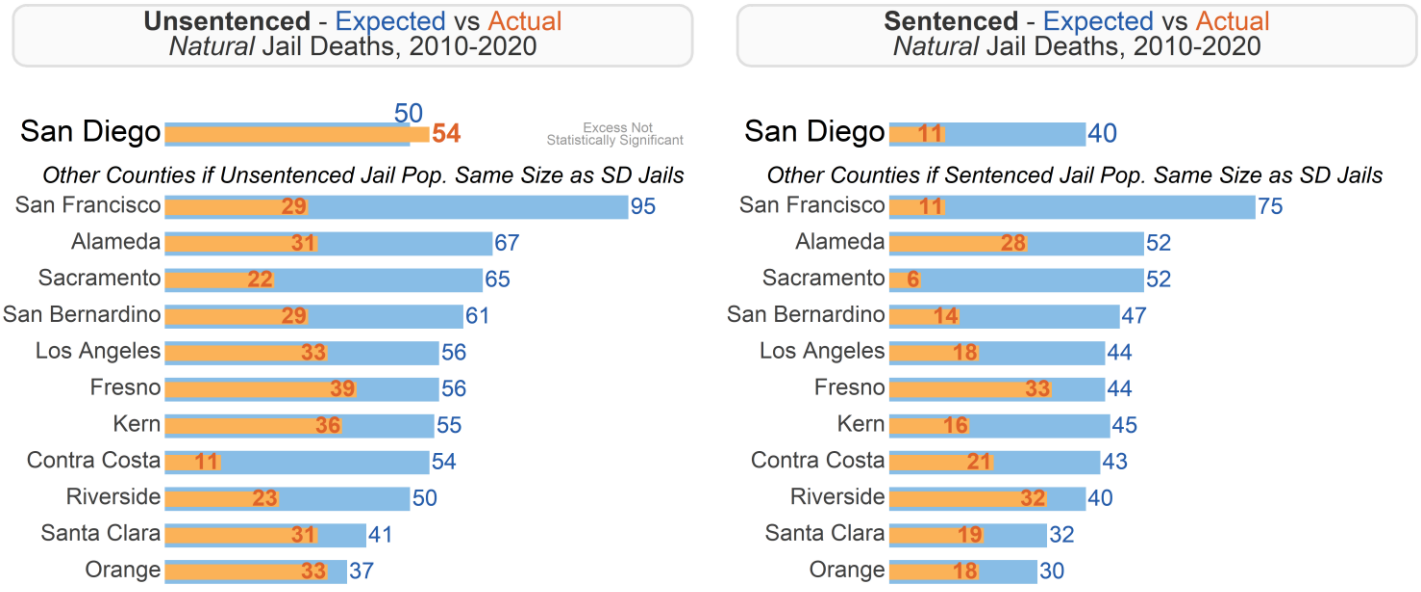

Figure 11: Natural Expected vs Actual Jail Deaths between 2010 and 2020 - Sentenced and Unsentenced

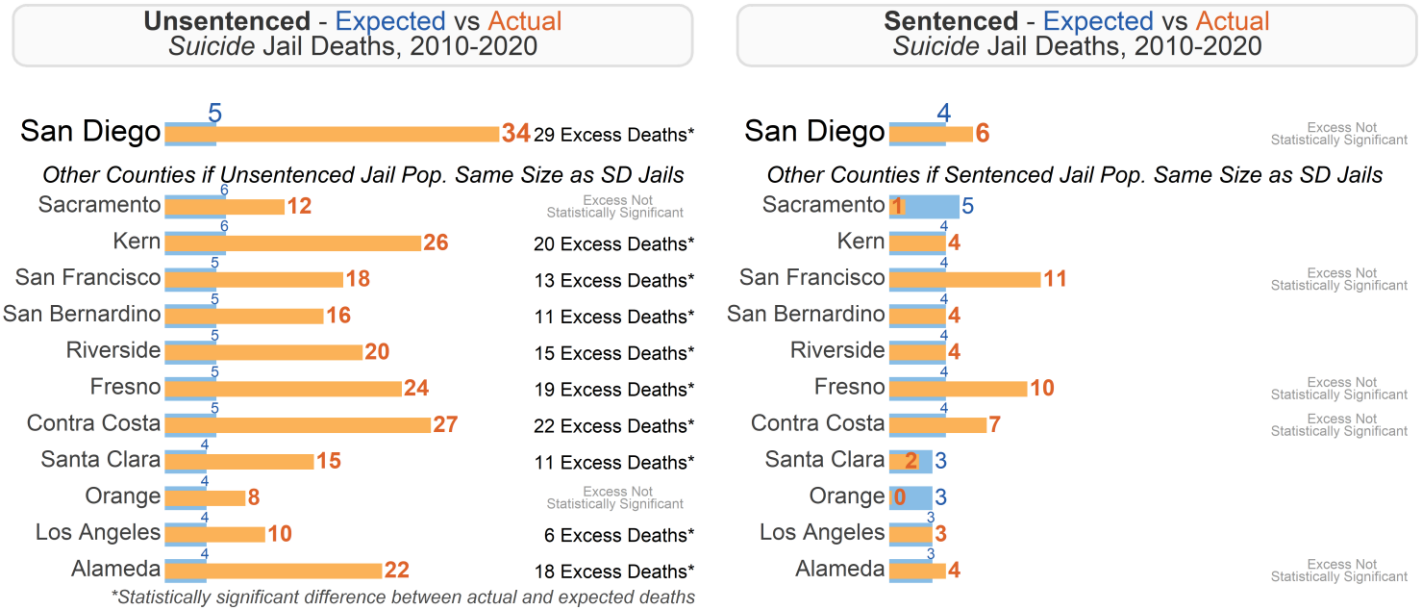

Figure 12: Suicide Expected vs Actual Jail Deaths between 2010 and 2020 - Sentenced and Unsentenced

The gaps in overdose/accidental deaths and homicides among the unsentenced and sentenced are more subtle. Figure 13 confirms excess overdose and accidental deaths occur for both unsentenced and sentenced in several counties although there are more overall deaths among those not sentenced. Riverside and San Diego jails have the highest numbers of excess deaths among the unsentenced. Finally, Figure 14 presents a mixed picture for homicides. Among inmates not sentenced, San Diego is the only county with actual total deaths exceeding expected total deaths. Among inmates sentenced, both Sacramento and Riverside counties have more actual deaths than what is expected.

Overall, these findings strongly suggest that those not yet sentenced and in jail less time are more at risk of death than those sentenced and in jail longer. Specifically, these unsentenced inmates are at greater risk of suicide and overdose/accidental deaths. From a policy perspective, these findings highlight the

importance of providing support for inmates at critical times during their jail incarceration, including when they first enter jail and when they are found guilty but not yet sentenced for a crime.

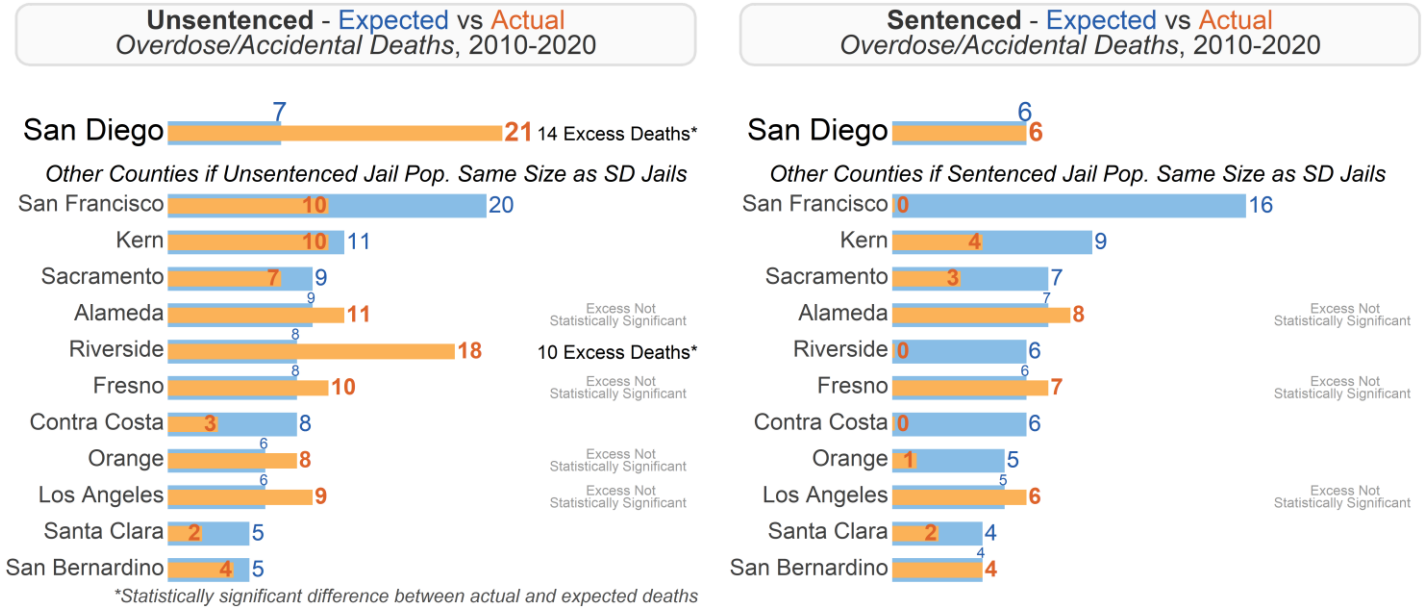

Figure 13: Overdose/Accidental Expected vs Actual Jail Deaths between 2010 and 2020 - Sentenced and Unsentenced

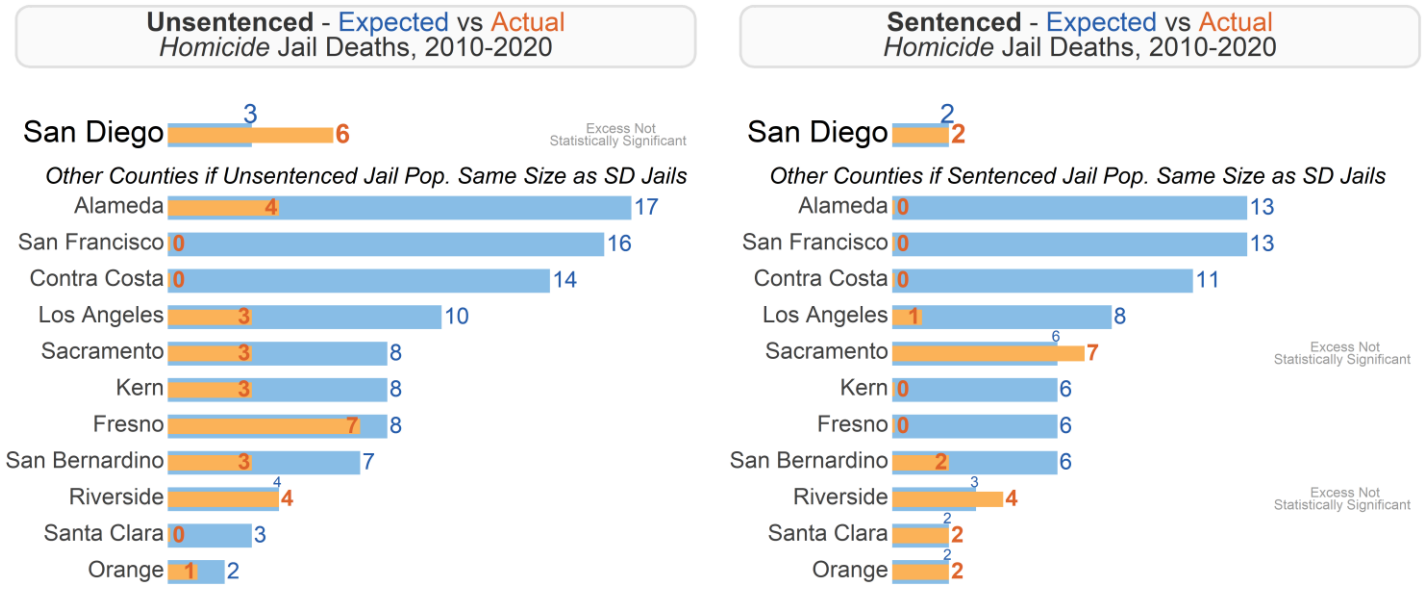

Figure 14: Homicide Expected vs Actual Jail Deaths between 2010 and 2020 - Sentenced and Unsentenced

7. Future Research

The focus of this project has been to consider countywide mortality rates in evaluating in-custody deaths in San Diego and other counties. Toward this end, we have collected and analyzed an extensive amount of data to examine the complex relationships between jail deaths and county mortality rates. As with any research project, this focus has certain limitations that we hope future research can meaningfully address.

First, the questions we could pursue in this study were limited by the data that was available. In estimating county mortality rates, we stratify county populations by several important demographic factors and manners of death. To obtain more precise county mortality rates, other factors should be included in these rates. For example, incorporating the impact of homelessness, mental illness, and other health-related conditions would add more granularity to these mortality rates. Currently, these data are not readily available.

In addition, this study was constrained by time and scope. While our research has delineated the differences in deaths among county jails, we have yet to explain *why* they are different. The latter necessitates analyzing the operations and specific policies of county jails, which are also likely to vary considerably from county to county. Throughout this project, we have amassed data to begin to measure this dimension including:

- Current and rated capacity of each detention facility
- Number of assaults on law enforcement
- Utilization of medical and mental health services among inmates
- Number of mental and health care staff in detention facilities
- Individual-level booking data with a record of admissions and releases

In particular, the data above could be utilized to generate a snapshot of a detention facility at a given moment in time. This snapshot could help county leadership and investigators understand what was happening in a facility at the time a death occurs. Below are sample visualizations of two of these factors that could potentially be part of an operational dashboard. Figure 15 graphs the actual ADP with the rated capacity over time for detention facilities in San Diego.

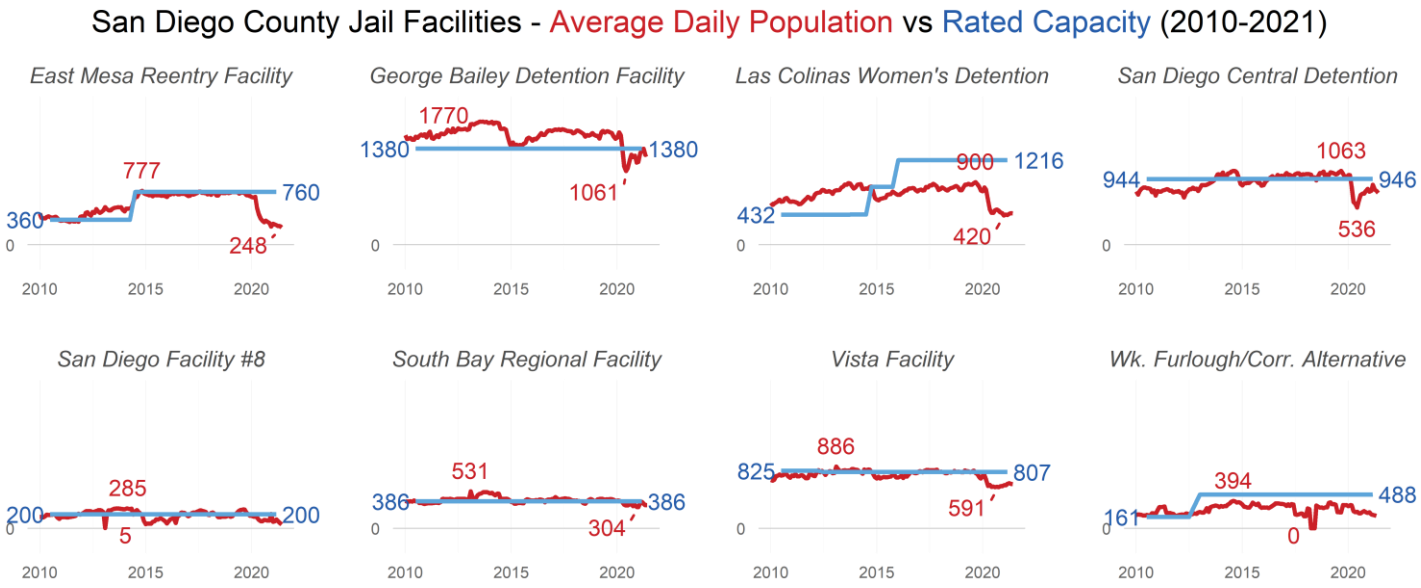

Figure 15: Rated Capacity vs ADP at San Diego County Detention Facilities (2010-2021)

Figure 16 charts the average number of bookings and releases over the course of a day in San Diego jails. This figure shows spikes in the number of releases at 8 am and 8 pm. Dynamically tracking these types of changes would offer insights into the pressure points in the day-to-day operations of detention facilities, instances in which facilities may lack sufficient staffing or support.

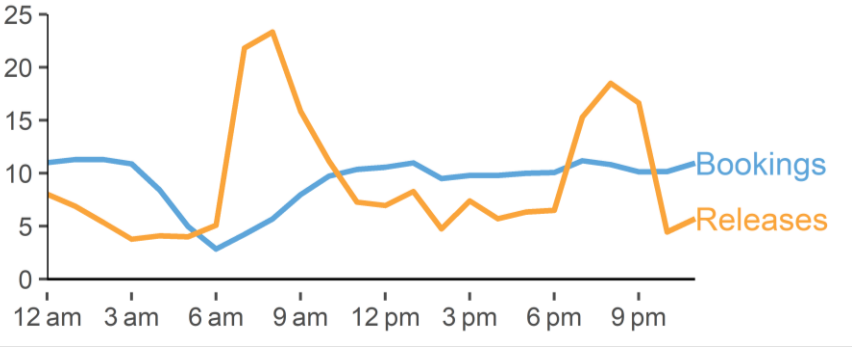

Figure 16: Average Number of Bookings and Releases by Hour of Day in San Diego County (2010-2020)

Finally, this project does not touch upon the complex interactions between race and in-custody deaths. We have confirmed that arrest rates and jail populations are heavily skewed toward racial-ethnic minorities. But how does this disproportionality in jails impact the nature and events leading up to these deaths? Expanding the analysis to discern differences in these deaths based on the race of victims could introduce another set of overlooked factors into this body of research.

Suggested Areas of Research for Future In-Custody Deaths Studies

1. When are inmates most vulnerable to the risk of death? Is it after they are first admitted to jail, after they are found guilty of the crime, or based on another important event?
2. What are the in-custody death rates among inmates with a history of mental illness?
3. What is the underlying relationship between mental health services in jails and in-custody deaths? Does having more available mental health services and related staff reduce in-custody deaths?
4. What role do law enforcement staffing levels play in the number of in-custody deaths?
5. What institutional stresses are associated with in-custody deaths including:
    a) Overcapacity of a jail facility
    b) Processing of new admissions and releases
    c) Frequency of assaults on staff
    d) Extraordinary events such as the COVID-19 pandemic
6. Is there a relationship between re-admissions and in-custody deaths at both an individual and facility level?
7. Are in-custody deaths more prevalent among those charged with a certain type of crime?
8. Does the race, gender or age of an inmate play a role in the circumstances surrounding in-custody deaths and subsequent investigations?
9. What has been the impact of new programs enacted by the San Diego Sheriff's Department on in-custody deaths over time?
10. Why is there a lag in reporting the manner of an in-custody death in several counties?

11. What is the role of county mental health services and other public services such as public housing on jail deaths?
12. How does the fact that San Diego is a border town impact in-custody deaths? Are these issues present in other border towns?
13. What are the in-custody death rates among inmates with a history of homelessness?
14. What is the impact of compassionate releases on the nature and number of in-custody deaths?
15. How has realignment in California in 2011 shaped in-custody deaths in county jails?

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Appendix A: Selection of Counties

Following the approach of other studies examining in-custody deaths in California, we compare San Diego County to other populous counties in the State. These counties include Kern, Fresno, Alameda, Sacramento, San Francisco, Orange, Los Angeles, San Bernardino, Riverside, Contra Costa, and Santa Clara.

We decided to choose these counties for this study because they have an adequate number of in-custody deaths between 2010-2020 for us to conduct a rigorous statistical analysis. The number of deaths in each of these counties roughly correspond to their ADP population. See the table below for select characteristics of the 20 most populous counties in California. Our selection of counties is in bold.

Our primary interest in using these counties is to explore the relationships between their in-custody deaths and countywide mortality rates. These mortality rates are the only areas of county variation we examine in relation to jail deaths in this study.

***Table 2**: Select Characteristics of Most Populous California Counties (2010-2020)*

County	Total Jail Deaths	Population	Avg Yearly Bookings	Avg Yearly ADP
Los Angeles	**290**	**11,026,820**	**115,514**	**16,504**
San Diego	**141**	**3,559,702**	**80,535**	**5,231**
Orange	**81**	**3,427,546**	**57,295**	**5,895**
Riverside	**78**	**2,553,899**	**52,013**	**3,735**
San Bernardino	**94**	**2,317,913**	**65,529**	**5,448**
Santa Clara	**65**	**2,081,267**	**41,058**	**3,428**
Alameda	**67**	**1,761,754**	**45,232**	**2,871**
Sacramento	**48**	**1,631,895**	**42,998**	**3,832**
Contra Costa	**28**	**1,216,381**	**23,424**	**1,383**
Fresno	**72**	**1,072,876**	**33,706**	**2,733**
Kern	**55**	**963,614**	**32,320**	**2,253**
San Francisco	**25**	**944,846**	**19,058**	**1,284**
Ventura	38	919,196	27,762	1,496
San Mateo	12	828,364	14,723	954
San Joaquin	25	799,517	22,823	1,314
Stanislaus	40	588,189	19,177	1,150
Sonoma	24	540,923	16,878	1,005
Tulare	19	506,732	21,083	1,526
Santa Barbara	18	481,891	14,946	929
Monterey	25	472,944	12,185	941

Appendix B: ADP vs. ARP

Average daily Jail population (ADP) measures the average number of individuals in custody each day, typically reported on a monthly basis. According to the California Board of State and Community Corrections, this is calculated by taking the daily inmate count (usually at or near midnight), adding these daily counts together for the month and dividing by the number of days in that month. At-risk population (ARP) measures the number of individuals admitted to a detention facility.

Table 3: ADP vs. ARP by County (2011-2020)

County	Avg Yearly ADP	Avg Yearly ARP	ARP/ADP Ratio
Alameda	2,872	48,148	17
Contra Costa	1,383	24,802	18
Fresno	2,733	36,378	13
Kern	2,254	34,586	15
Los Angeles	16,505	131,953	8
Orange	5,896	63,156	11
Riverside	3,735	55,741	15
Sacramento	3,833	46,821	12
San Bernardino	5,448	70,901	13
San Diego	5,232	85,726	16
San Francisco	1,284		
Santa Clara	3,428	48,124	14

This is typically calculated by adding the inmate count at the beginning of the year with the total bookings for each month. As a result, a county's ARP is much higher than their ADP. The vast difference between these two denominators would certainly impact the standardized in-custody death rate. See below (the dates of 2011-2020 were selected because San Diego County changed how they measured bookings in 2010).

ARP comes with the advantage of measuring new and potentially high-risk entrants into the jail system; however, it does not measure unique inmates in jails over time. A significant portion of those admitted to county jails will be re-booked within a short period of time. For example, Public Policy Institute of California found that the two-year rearrest rate was 70.8% for 12 California counties in 2011-2012 (Bird et al. 2018). Comparable studies on other counties in other states point to similar results (Close et al. 2021).

ADP addresses this shortcoming by measuring unique persons in-custody. Neither measure reflects inmates' length of stay, which would require individual-level data. Bereft of an individual-level data set that would allow of the calculation of unique person-days exposed, the U.S. Bureau of Justice Statistics believes "ADP is the best alternative." (Carson 2021) (See Appendix I for the correspondence between Analytica Consulting and the U.S. Bureau of Justice Statistics.)

While we use ADP per the BJS guidance, ADP data is not available by demographic group, which is a key dimension of our analysis. We therefore assume the makeup of arrestees fairly represents the jail population for a given year, and apply arrest proportions by demographic group to estimate ADP by group (see Appendix D).

Appendix C: A Closer Look at Overdose/Accidental Deaths

Overdose/accidental death is a manner of death that includes various types of circumstances. While we exclude transportation-related accidents from this category, there are still several distinct types of accidents. The tables below break down these deaths further.

It is clear from both tables that drug overdoses make up a substantial portion of these deaths. For example, drug overdoses are 89% of deaths in San Diego jails and 76% of deaths among San Diego's general population.

***Table 4**: A Closer Look at Overdose/Accidental Jail Deaths, 2010-2020*

County	Total Accidental Deaths	Drug Overdose	Choking / Asphyxiation	Medically Related	Other / Pending	Fall or Blunt Force
Alameda	11	72.7%	9.1%	9.1%	9.1%	–
Contra Costa	1	100.0%	–	–	–	–
Fresno	9	88.9%	–	–	11.1%	–
Kern	7	57.1%	–	–	42.9%	–
Los Angeles	47	66.0%	2.1%	8.5%	14.9%	8.5%
Orange	10	80.0%	10.0%	–	–	10.0%
Riverside	16	87.5%	–	6.2%	–	6.2%
Sacramento	7	57.1%	–	14.3%	14.3%	14.3%
San Bernardino	8	12.5%	–	–	87.5%	–
San Diego	27	88.9%	–	–	11.1%	–
San Francisco	4	75.0%	–	–	25.0%	–
Santa Clara	3	66.7%	–	–	33.3%	–
	150	72.0%	2.0%	4.7%	16.7%	4.7%

***Table 5**: Countywide Accidental Death Breakdown (1999-2020)*

County	Deaths per 10k/year	Drug Overdose	Choking / Asphyxiation	Medically Related	Other*	Fall or Blunt Force
Alameda	1.7	75.1%	2.8%	–	15.0%	7.0%
Contra Costa	1.8	76.8%	1.4%	–	13.8%	8.0%
Fresno	2.2	75.7%	1.0%	–	17.0%	6.3%
Kern	3.2	83.7%	1.3%	–	10.1%	5.0%
Los Angeles	1.5	73.0%	1.7%	–	14.4%	11.0%
Orange	1.6	78.7%	2.3%	–	10.6%	8.4%
Riverside	2.2	78.4%	1.5%	–	13.0%	7.1%
Sacramento	2.3	75.3%	2.1%	–	16.3%	6.3%
San Bernardino	1.3	60.8%	1.7%	–	24.8%	12.6%
San Diego	2.0	76.4%	1.6%	–	12.8%	9.2%
San Francisco	3.0	84.8%	1.6%	–	7.1%	6.5%
Santa Clara	1.2	70.5%	2.5%	–	17.2%	9.8%
	1.8	75.4%	1.8%		13.9%	8.9%

**Mostly consists of drownings, fire/smoke exposure, electrocution, firearm discharges, and poisoning (non-overdose)*

Appendix D: Estimated vs Actual San Diego Jail Population

We estimate county jail populations using a combination of arrest and average daily jail population (ADP) data. To assess the accuracy of these estimates, we compared them with the actual San Diego average daily jail population (ADP). We calculated San Diego's actual ADP using detailed booking data from 2010-2022 provided by the San Diego Sheriff's Department (SDSD). To ensure our ADP calculations didn't exclude people booked before our data began in 2010 and who are still in jail, our estimates are for years 2014-2020. Additionally, the age groups in the data provided by SDSD did not exactly match the age groups in our data (e.g., 18-30 vs. 18-29).

This comparison was only used to validate our assumptions since we did not have detailed booking data for other counties. We still use our estimates for the analysis, so our approach is the same for each county in the study.

Below are these comparisons for the five different age groups in our data set.

***Table 6**: Actual vs Estimated San Diego ADP*
(Ages 18-29, 2014-2020)

Gender	Race/Ethnicity	Actual (Age 18-30)	Estimated (Age 18-29)
M	Hispanic	17.1%	14.0%
M	White	9.0%	9.5%
M	Black	6.7%	5.7%
F	White	2.7%	3.7%
F	Hispanic	2.2%	3.2%
M	Other	1.7%	1.8%
F	Black	1.0%	1.6%
F	Other	0.3%	0.6%
Total	-	40.6%	40.1%

***Table 7**: Actual vs Estimated San Diego ADP*
(Ages 30-39, 2014-2020)

Gender	Race/Ethnicity	Actual (Age 31-40)	Estimated (Age 30-39)
M	Hispanic	9.2%	8.1%
M	White	8.5%	8.8%
M	Black	4.3%	3.7%
F	White	2.4%	3.1%
F	Hispanic	1.6%	2.0%
M	Other	1.6%	1.5%
F	Black	0.8%	1.0%
F	Other	0.3%	0.5%
Total	-	28.7%	28.8%

***Table 8**: Actual vs Estimated San Diego ADP*
(Ages 40-49, 2014-2020)

Gender	Race/Ethnicity	Actual (Age 41-50)	Estimated (Age 40-49)
M	White	6.1%	7.8%
M	Hispanic	4.2%	3.7%
M	Black	3.1%	3.4%
F	White	1.7%	2.4%
M	Other	1.0%	1.0%
F	Hispanic	0.7%	0.9%
F	Black	0.5%	0.7%
F	Other	0.1%	0.3%
Total	-	17.5%	20.2%

***Table 9**: Actual vs Estimated San Diego ADP*
(Ages 50-59, 2014-2020)

Gender	Race/Ethnicity	Actual (Age 51-60)	Estimated (Age 50-59)
M	White	4.5%	3.1%
M	Black	2.5%	1.4%
M	Hispanic	1.9%	1.5%
F	White	0.8%	0.9%
M	Other	0.4%	0.4%
F	Black	0.3%	0.3%
F	Hispanic	0.2%	0.4%
F	Other	0.0%	0.1%
Total	-	10.6%	8.0%

***Table 10**: Actual vs Estimated San Diego ADP*
(Ages 60+, 2014-2020)

Gender	Race/Ethnicity	Actual (Age 61+)	Estimated (Age 60+)
M	White	1.2%	1.2%
M	Black	0.5%	0.5%
M	Hispanic	0.4%	0.5%
F	White	0.2%	0.4%
M	Other	0.1%	0.2%
F	Hispanic	0.1%	0.1%
F	Black	0.0%	0.1%
F	Other	0.0%	0.0%
Total	-	2.6%	2.9%

Appendix E: Peer-Review Letters

UC San Diego
HEALTH SCIENCES

March 18, 2022

To Whom It May Concern:

I am writing this letter to endorse the statistical methods used in the draft “In-Custody Death Study”. This draft and supporting materials are authored by Analytica Consulting. This analysis uses county mortality rates to estimate the total number of expected jail deaths between 2010-2020 in San Diego and other large counties in California. It then statistically compares the values of expected jail deaths with the values of actual jail deaths.

My area of expertise is in biostatistics including statistical data interpretation and statistical modeling. I am a Professor of Biostatistics, Department of Family Medicine and Public Health, Director of Biostatistics at the Stein Institute for Research on Aging, and Co-Director of the UCSD CTRI Biostatistics Core, UCSD. I hold a master’s and PhD in statistics and numerical analysis from Duke University and completed postdoctoral studies at Harvard School of Public Health. I have co-authored over 290 peer-reviewed publications, two textbooks and two edited volumes in the fields of U- statistics, categorical data analysis, clinical trials, and social network analysis. My research on statistical methodology includes a wide range of topics such as semiparametric models for longitudinal data with informative missing follow-up data, causal inference, and high throughput data.

I have peer-reviewed the draft “In-Custody Death Study” and the underlying statistical methods. Based on my thorough reading of these materials, I find that the statistical methods utilized are appropriate and sound. In particular, the authors’ use of Byar's approximation to test the statistical difference between expected and actual death rates in county jails is the best methodological approach for comparing these values. This method produces results that are both valid and instructive.

Please contact me if you have any questions regarding this professional endorsement.

Sincerely,

Professor of Biostatistics
Division of Biostatistics and Bioinformatics
Herbert Wertheim School of Public Health and Human Longevity Science
UC San Diego Institute for Research on Aging
UC San Diego CTRI Biostatistics
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CAL STATE LA
CALIFORNIA STATE UNIVERSITY, LOS ANGELES

School of Criminal Justice and Criminalistics

March 25, 2022

To Whom it May Concern:

I was requested to ad hoc peer review the In-Custody Death Study from Analytica Consulting. My expertise on custody related deaths includes: 16 peer-reviewed publications, long term three-phase suicidal behaviors project with the Illinois Department of Corrections which includes Governor approval, partnership with three large urban jail facilities to evaluate risk on death in custody and self-reported information, expert witness consulting on high profile death by suicide cases within jails and prisons, consulting on national and international suicide prevention and intervention programs, grants, and scholarship. As such, I provided feedback, recommendations, and suggestions on the In-Custody Death Study.

Overall, my review finds that this report is well-done, appropriately analyzed, and to the same rigor and standard of much larger national reviews on death in custody. The findings align well within the empirical literature surrounding in-custody mortality rates, and suggest that the counties under study in this report are similar to national death records for incarcerated populations. However, the findings also suggest some insight into the particular populations held in Southern California jails, which provides a unique opportunity for policy recommendations related to public health, safety and security of facilities, and returning healthy citizens into the community.

Nationally, in a report by Carson (2021), between 2000 and 2019 there were 20,413 deaths in county jails in the United States, with an overall mortality rate of 142 per 100,000. By this metric, it would suggest that the counties reported in this report are consistent with deaths in custody to the national averages. In addition, nationally white non-Hispanic individuals accounted for 56% of the deaths in custody, which have a larger proportion of mortality, compared to the national level statistics (Carson, 2021). This finding is also supported in the report and the evaluation of the twelve counties in question. Interestingly, accidental deaths account for a significant number of deaths in San Diego jails, but I suggest this is simply a measurement and operationalization difference between the national level data which accounts drug overdoses as their own category, and does not consider them accidental.

The finding related to elevated suicide in San Diego, and throughout all twelve counties, is consistent with national level jail information surrounding death by suicide. While the numbers are concerning, the rate of death by suicide in the jail nationally is nearly four times as high (49 per 100,000) as the national general population rate of death by suicide (13 per 100,000) (Carson, 2021). This suggests that while suicide deaths are elevated in the twelve counties in the current report, the trend is in alignment with national reporting and not an outlier for elevated risk due to the counties themselves, rather that jail is nationally a risk factor for death by suicide. Suicide is the leading cause of death in jails annually at the national level, so this finding while extreme in first appearance with the excess deaths, is statistically, empirically, and clinically found across the board with jail incarcerated populations (Abderhalden, 2022a; 2022b).

Throughout the report, the references are appropriate and an accurate depiction of empirical evidence related to mortality in jails. The authors did a nice job incorporating the most up-to-date information in their analyses. I see no issues with how any of the information is relayed or interpreted. The analyses are strong and provide a valid and reliable approach to assessing mortality rates of expected and actual information.

In the future research section, I agree with the authors that one of the next steps for this project should be to assess *why* we see differences in death among these counties. In particular, using anecdotal evidence from some of my own ongoing work, we see

the importance of mental and health care policies, including access to care and transitional care to be an important factor to create more protective factors related to death. In addition, shift changes and type of detention cell are important considerations to assess for the suicide deaths in custody, with relatively simple and effective policy changes, should shift times demonstrate a higher risk for death by suicide.

All of this to say, there are policy implications by the work in this report that could be considered to improve the safety and security of the facilities using health based information. In particular, policies that decrease the bodily fluid exposure of other incarcerated individuals to each other, or to correctional staff, can improve the environmental health and lead to a reduction in deaths in custody. In addition, the concern about public health is directly linked to the implications of mortality in custody, and something that this report does a nice job of capturing the differences in custody deaths compared to county mortality rates. Using this information there is a real opportunity for policy to be implemented to address this disparity and begin to work toward a lower mortality rate for incarcerated individuals.

Additionally, as the authors note, an evaluation of race and gender could be a beneficial avenue to further parse out just how these policies could be directly impactful for the specific jail populations within, and between, these twelve counties. In particular, by matching counties to each other to evaluate why San Diego has different rates of mortality compared to their counterparts, could be beneficial for resource allocation and policy recommendations in order to improve the overall health of the population.

In closing, it was a pleasure to review this empirically and statistically sound report. I have no hesitations in supporting the analyses and information provided in this report as being accurate and thorough. I would be happy to answer any further questions, or provide any additional insight, should there be any. Thank you for the opportunity to review.

Sincerely,

FRANCES P. ABDERHALDEN, PH.D.

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Abderhalden, F. P. (2022a). Challenging Normal Science: An Interdisciplinary Approach to Jailed Individuals Self-Report of Lifetime and in-Jail Suicidal Ideations. *Crime & Delinquency*, 00111287211072442.

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Appendix F: Response from San Diego Sheriff's Department

San Diego County Sheriff's Department

William D. Gore, Sheriff

Kelly A. Martinez
Undersheriff

March 16, 2022

Michael Marks, Principal Data Scientist
Analytica Consulting
9810 Scripps Lake Dr., Suite F
San Diego, CA 92131

ANALYTICA CONSULTING: IN-CUSTODY DEATH STUDY RESPONSE

Dear Mr. Marks,

Thank you for the statistical analysis on the San Diego Sheriff's Department's incarcerated population, specific to the number of in-custody deaths from 2010-2020. The Sheriff's Department appreciates the work of the auditors and takes this information to heart.

Acting Sheriff Martinez has made it her priority to implement best practices and to provide a safe and fully staffed work environment to care for individuals in our custody. Along those lines, she has begun to implement the recommendations from the California State Auditor's report.

The Sheriff's Department is currently working on a more rigorous health screening process upon intake as well as continued medical and mental health care for all individuals in our custody. Acting Sheriff Martinez has said and believes no one in our custody should be denied proper health care.

In addition to quality health services, high-quality safety and proof of life checks are necessary to provide incarcerated persons a safe environment. The Department is making every effort to ensure safety checks are conducted thoroughly and consistently by staff.

Already in 2022, the Sheriff's Department has implemented the following projects in our detention facilities:

- Medicated Assisted Treatment Program
- Body Worn Camera (BWC) Pilot-Program in Jail Facilities
- Upgrades to the Wireless Systems in all Jail Facilities
- Critical Incident Review Board (CIRB) also now reviewing all-natural deaths
- George Bailey Detention Facility Renovations scheduled to begin Summer 2022

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ANALYTICA CONSULTING: IN-CUSTODY DEATH STUDY RESPONSE
Page 2
March 16, 2022

- SDSD and CLERB Memorandum of Understanding signed for CLERB Investigator to respond to in-custody death scenes and deputy involved shootings where death occurs
- Prioritizing hiring and retention of detention facilities employees

The Sheriff's Department is continuing to identify new technology, concepts, and procedures which will significantly reduce or remedy deaths occurring in detention facilities. We ask CLERB and the public to continue to work with us to make the positive changes that will shape the future of our detention facilities, and ultimately reduce the in-custody death rates.

Sincerely,

KELLY A. MARTINEZ, ACTING SHERIFF

Michelle Craig, Lieutenant
Office of the Sheriff
Division of Inspectional Services

KAM:mc

Appendix G: Deaths in City Jails

In conducting this study, we discovered that over 100 deaths have occurred in city-run jails since 2005. These jails are classified as Type 1 facilities.[15] It is difficult to obtain current information on the inmate population of these facilities given that BSCC discontinued surveying these facilities in 2020. According to BSCC, the decision to discontinue this survey was due to several reasons including a lack of a statutory requirement to collect these data, little incentive for facilities to report these data, a poor response rate, questionable accuracy of these data, and a general lack of interest or requests for these data.

After contacting BSCC, we were able to obtain the data for Type 1 facilities from previous years of the survey (2010-2018). As the table below indicates, several counties have many of these facilities with a notably high ADP. Los Angeles County has the most facilities (62) and, on average, over 1,000 inmates in these facilities. Orange County has the second highest number of facilities (8) and over 100 inmates in these facilities at any given time. Moreover, a clear majority of the inmates in these facilities are unsentenced and thus are likely at greater risk of death.

***Table 9**: ADP and Bookings by Type 1 Facilities (2010-2018)*

County	Type 1 Facilities	Avg ADP	Avg Unsentenced	Avg Sentenced	Avg Yearly Bookings
Alameda	4	47	43	0	14,776
Kern	3	10	10	0	3,338
Los Angeles	62	1,170	918	186	258,917
Orange	8	104	77	9	28,550
Riverside	1	11	11	0	4,189
San Bernardino	4	84	63	13	23,997
San Diego	1	47	13	0	3,138

We also estimate the expected total deaths for these county Type 1 facilities. The table below compares the total expected deaths with the actual total deaths. It also reports whether the differences between these two values are statistically significant. Los Angeles, Orange, and Riverside counties all have higher total deaths than expected at statistically significant levels. These findings suggest that in-custody deaths are an issue of concern in certain county Type 1 facilities in addition to county jails.

***Table 10**: Deaths in Type 1 Facilities (2010-2020)*

County	Actual Deaths	Expected Deaths	Mortality Ratio	95% Conf Interval	p-value
Alameda	2	1.6	1.28	0.21-4.22	0.67
Kern	0	0.3			
Los Angeles	48	30.8	1.56	1.15-2.07	0.00
Orange	12	1.8	6.72	3.47-11.73	0.00
Riverside	3	0.3	11.64	2.96-31.68	0.00
San Bernardino	1	2.3	0.44	0.02-2.18	0.44
San Diego	1	1.1	0.94	0.05-4.64	1.00

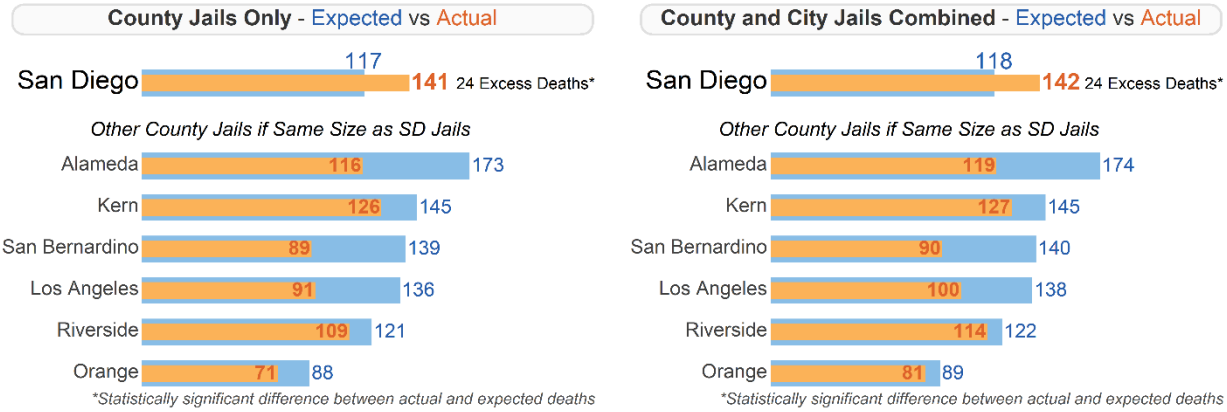


Figure 17: County Expected vs Actual Jail Deaths Including City Jails

[15] Type 1 facilities are used to detain individuals for not more than 96 hours. These facilities may also be used for short-term sentences.

Appendix H: Detailed Results

Expected vs Actual Statistical Test Results

Below are detailed results and confidence intervals for the statistical differences between expected and actual total in-custody deaths. Confidence intervals provide a range of values for these differences at a 95% confidence interval. Any value over one indicates that actual total deaths surpass expected total deaths in that specific county. We display confidence interval values for overall deaths, suicides, and overdose/accidental deaths.

***Table 11**: Overall Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020*

County	Actual Deaths	Expected Deaths	Actual vs Expected		p-value
			Difference (95% Conf.)	*Ratio (95% Conf.)*	
San Diego	141	117	24 (2 – 51)	1.21 (1.02 – 1.43)	**0.029**
Santa Clara	65	63	2 (-12 – 21)	1.04 (0.81 – 1.33)	0.770
Fresno	72	70	2 (-13 – 21)	1.03 (0.82 – 1.31)	0.786
Riverside	78	87	-9 (-24 – 11)	0.9 (0.72 – 1.13)	0.376
Kern	55	63	-8 (-21 – 9)	0.88 (0.67 – 1.14)	0.330
Contra Costa	28	39	-11 (-16 – 10)	0.87 (0.6 – 1.26)	0.468
Orange	80	99	-19 (-35 – 1)	0.81 (0.64 – 1.01)	0.059
Alameda	67	99	-32 (-47 – -14)	0.67 (0.53 – 0.86)	**0.001**
Los Angeles	290	434	-144 (-177 – -106)	0.67 (0.59 – 0.75)	**<0.001**
San Bernardino	94	147	-53 (-70 – -31)	0.64 (0.52 – 0.79)	**<0.001**
San Francisco	25	59	-34 (-41 – -19)	0.45 (0.3 – 0.67)	**<0.001**
Sacramento	48	117	-69 (-81 – -53)	0.41 (0.31 – 0.54)	**<0.001**

***Table 12**: Suicide Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020*

County	Actual Deaths	Expected Deaths	Actual vs Expected		p-value
			Difference (95% Conf.)	*Ratio (95% Conf.)*	
Contra Costa	11	2	9 (4 – 18)	4.77 (2.59 – 8.78)	**<0.001**
Alameda	19	4	15 (8 – 26)	4.53 (2.8 – 7.29)	**<0.001**
San Diego	40	9	31 (19 – 47)	4.44 (3.15 – 6.26)	**<0.001**
Fresno	19	4	15 (7 – 26)	4.33 (2.7 – 6.97)	**<0.001**
Kern	16	4	12 (5 – 22)	3.59 (2.16 – 5.98)	**<0.001**
Santa Clara	14	4	10 (4 – 20)	3.25 (1.88 – 5.67)	**<0.001**
San Francisco	8	2	6 (1 – 13)	3.21 (1.58 – 6.51)	**<0.001**
Riverside	20	6	14 (6 – 26)	3.2 (2.01 – 5.08)	**<0.001**
San Bernardino	25	9	16 (7 – 29)	2.69 (1.77 – 4.1)	**<0.001**
Los Angeles	45	21	24 (11 – 42)	2.14 (1.52 – 3)	**<0.001**
Sacramento	10	8	2 (-2 – 11)	1.31 (0.69 – 2.47)	0.404
Orange	9	8	1 (-3 – 9)	1.11 (0.57 – 2.18)	0.756

***Table 13**: Overdose/Accidental Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020*

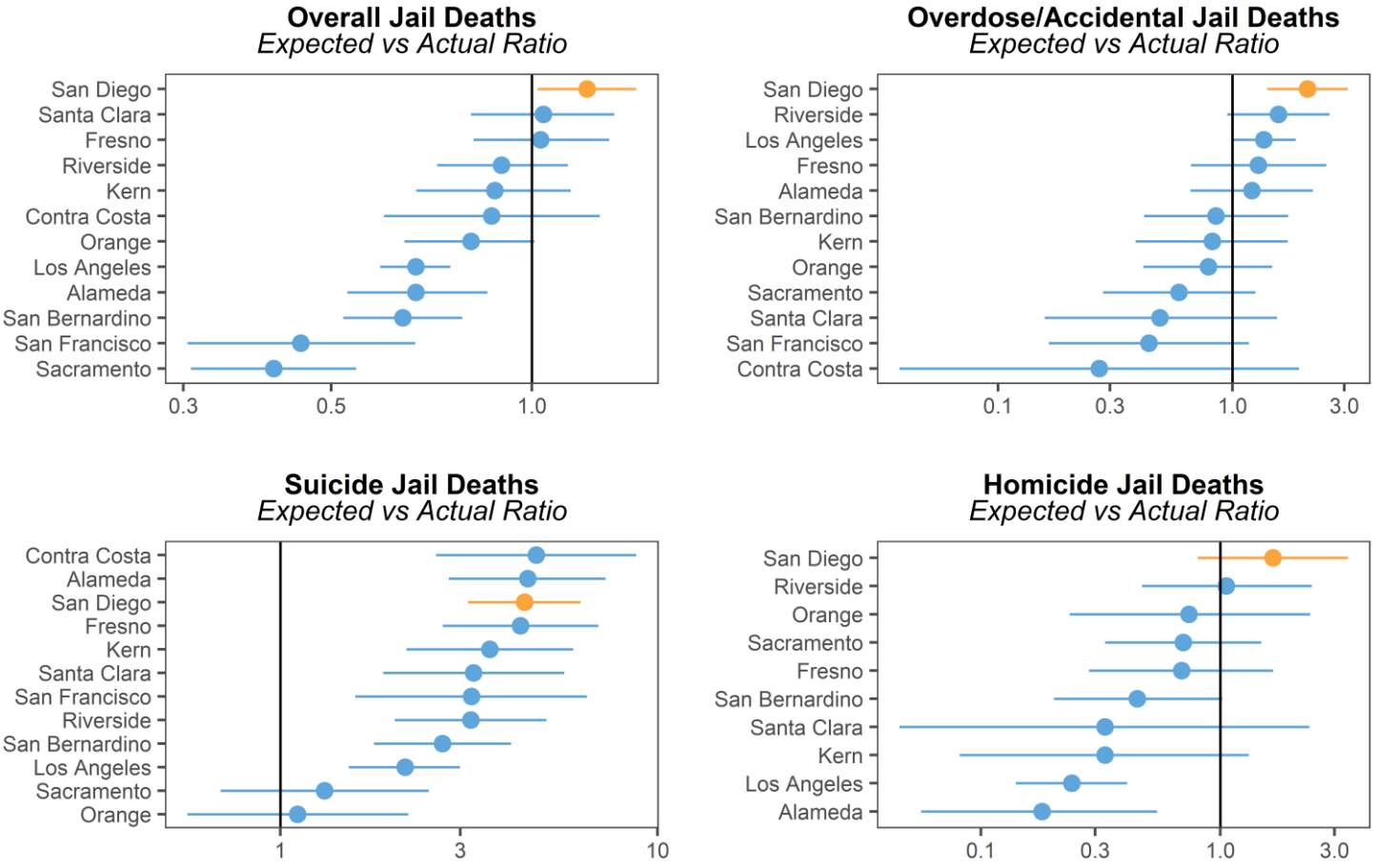
County	Actual Deaths	Expected Deaths	Actual vs Expected		p-value
			Difference (95% Conf.)	*Ratio (95% Conf.)*	
San Diego	27	13	14 (5 – 27)	2.09 (1.41 – 3.11)	**<0.001**
Riverside	16	10	6 (-1 – 16)	1.57 (0.95 – 2.6)	0.076
Los Angeles	47	35	12 (0 – 30)	1.36 (0.99 – 1.86)	0.057
Fresno	9	7	2 (-2 – 11)	1.29 (0.67 – 2.51)	0.446
Alameda	11	9	2 (-3 – 11)	1.21 (0.66 – 2.2)	0.537
San Bernardino	8	9	-1 (-5 – 7)	0.85 (0.42 – 1.73)	0.657
Kern	7	9	-2 (-5 – 6)	0.82 (0.39 – 1.72)	0.592
Orange	10	13	-3 (-7 – 6)	0.79 (0.42 – 1.48)	0.452
Sacramento	7	12	-5 (-8 – 3)	0.59 (0.28 – 1.25)	0.167
Santa Clara	3	6	-3 (-5 – 3)	0.49 (0.16 – 1.55)	0.218
San Francisco	4	8	-4 (-7 – 1)	0.44 (0.16 – 1.18)	0.092
Contra Costa	1	4	-3 (-4 – 3)	0.27 (0.04 – 1.92)	0.161

***Table 14**: Natural Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020*

County	Actual Deaths	Expected Deaths	Actual vs Expected		p-value
			Difference (95% Conf.)	*Ratio (95% Conf.)*	
Orange	57	74	-17 (-30 – 0)	0.77 (0.59 – 1)	**0.048**
Santa Clara	36	49	-13 (-23 – 1)	0.74 (0.53 – 1.03)	0.073
San Diego	65	90	-25 (-39 – -7)	0.72 (0.56 – 0.93)	**0.010**
Fresno	36	51	-15 (-25 – -1)	0.7 (0.51 – 0.98)	**0.036**
Kern	25	44	-19 (-27 – -7)	0.57 (0.39 – 0.85)	**0.005**
Riverside	36	64	-28 (-38 – -14)	0.56 (0.4 – 0.78)	**<0.001**
Los Angeles	166	318	-152 (-176 – -124)	0.52 (0.45 – 0.61)	**<0.001**
Alameda	33	69	-36 (-45 – -22)	0.48 (0.34 – 0.68)	**<0.001**
San Bernardino	50	114	-64 (-76 – -48)	0.44 (0.33 – 0.58)	**<0.001**
San Francisco	12	41	-29 (-34 – -21)	0.28 (0.16 – 0.49)	**<0.001**
Contra Costa	7	26	-19 (-23 – -11)	0.27 (0.13 – 0.56)	**<0.001**
Sacramento	21	87	-66 (-73 – -54)	0.24 (0.16 – 0.37)	**<0.001**

***Table 15**: Homicide Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020*

County	Actual Deaths	Expected Deaths	Actual vs Expected		p-value
			Difference (95% Conf)	*Ratio (95% Conf)*	
San Diego	8	5	3 (-1 – 12)	1.66 (0.81 – 3.42)	0.164
Riverside	6	6	0 (-3 – 8)	1.06 (0.47 – 2.41)	0.877
Orange	3	4	-1 (-3 – 5)	0.74 (0.24 – 2.37)	0.620
Sacramento	7	10	-3 (-7 – 5)	0.7 (0.33 – 1.48)	0.351
Fresno	5	7	-2 (-5 – 5)	0.69 (0.28 – 1.66)	0.403
San Bernardino	6	13	-7 (-11 – 0)	0.45 (0.2 – 1.02)	**0.050**
Kern	2	6	-4 (-6 – 2)	0.33 (0.08 – 1.32)	0.098
Santa Clara	1	3	-2 (-3 – 4)	0.33 (0.05 – 2.36)	0.244
Los Angeles	14	58	-44 (-50 – -35)	0.24 (0.14 – 0.41)	**<0.001**
Alameda	3	17	-14 (-16 – -8)	0.18 (0.06 – 0.54)	**<0.001**
Contra Costa	0	7	–	–	–
San Francisco	0	7	–	–	–



The line on either side of the point indicates the 95% confidence interval of the true value. When the 95% confidence interval does not include 1, we conclude that there is a statistically significant difference between actual and expected deaths.

Figure 18: Confidence Intervals of Standardized Mortality Ratios

Jail Profiles of Each County in The Study

Alameda

***Table 16**: Top 15 Alameda County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Black	18-29	14.6%	29.7	4.9	2.3	2.0	20.4
Male	Hispanic	18-29	9.8%	8.1	2.0	1.6	1.0	3.5
Male	Black	30-39	8.4%	32.7	15.4	4.1	1.5	11.5
Male	Black	40-49	7.7%	59.7	45.8	6.8	1.1	5.7
Male	White	18-29	5.8%	6.9	2.1	2.2	1.8	0.7
Male	Hispanic	30-39	5.6%	9.4	4.8	2.2	1.0	1.2
Male	White	30-39	4.5%	10.4	5.4	2.4	2.0	0.5
Male	White	40-49	4.5%	24.4	18.3	3.0	2.5	0.4
Female	Black	18-29	4.2%	6.7	3.5	0.7	0.6	1.9
Male	Other	18-29	3.2%	4.2	1.4	1.0	1.1	0.7
Male	Black	50-59	3.0%	126.4	112.9	8.5	1.2	3.5
Male	Hispanic	40-49	2.7%	21.1	16.1	3.0	0.9	0.9
Female	Black	30-39	2.5%	15.6	12.0	2.1	0.5	0.9
Male	Other	30-39	2.3%	5.8	3.8	0.7	0.8	0.4
Female	White	18-29	2.2%	2.7	1.4	0.6	0.5	†0.1

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*
†Less than 10 deaths occurred (1999-2020), so exact value is redacted by CDC. Rate is estimated via all metropolitan counties in Western U.S.

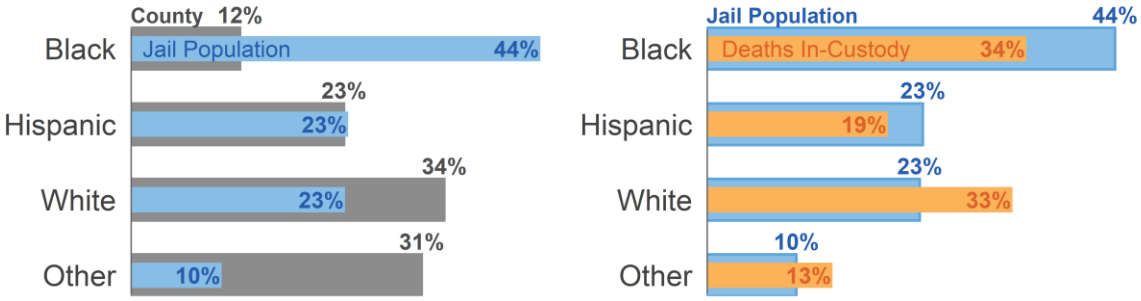


Figure 19: Alameda County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

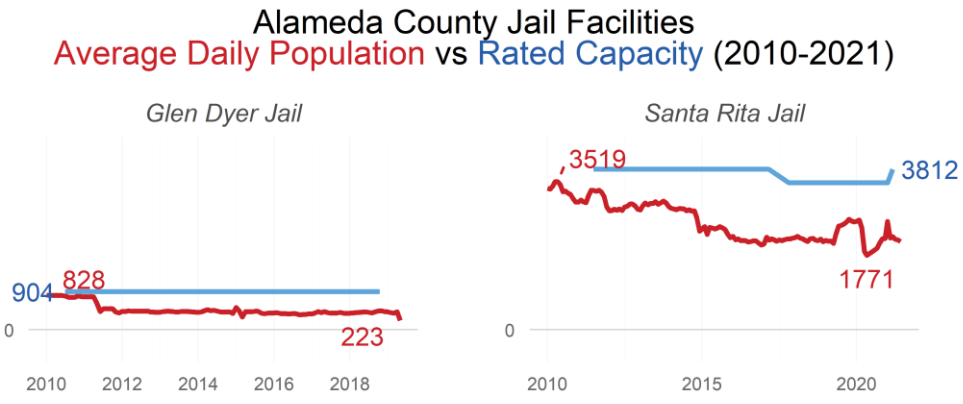


Figure 20: Rated Capacity vs ADP at Alameda County Detention Facilities (2010-2021)

Contra Costa

***Table 17**: Top 15 Contra Costa County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Black	18-29	11.4%	30.9	4.4	2.3	1.5	22.5
Male	Hispanic	18-29	9.9%	8.5	2.3	1.6	1.3	3.2
Male	White	18-29	9.7%	9.0	2.8	2.9	2.2	0.9
Male	White	30-39	7.9%	12.7	6.5	2.9	2.6	0.6
Male	Black	30-39	6.7%	32.8	15.7	3.4	1.5	12.0
Male	White	40-49	6.7%	23.6	17.2	3.3	2.5	0.5
Male	Hispanic	30-39	5.8%	9.0	4.6	1.5	1.3	1.3
Male	Black	40-49	5.5%	49.7	38.1	4.6	1.3	5.4
Female	White	18-29	3.5%	3.7	1.9	0.9	0.5	0.3
Female	Black	18-29	3.3%	7.4	3.6	1.0	0.7	2.0
Female	White	30-39	2.8%	6.7	4.5	1.1	0.8	0.2
Male	White	50-59	2.6%	52.4	45.8	3.4	2.8	0.2
Male	Hispanic	40-49	2.5%	17.3	12.9	2.3	1.2	0.7
Male	Black	50-59	2.2%	104.8	95.4	5.3	1.1	2.7
Male	Other	18-29	2.1%	4.7	1.5	0.9	1.6	0.7

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

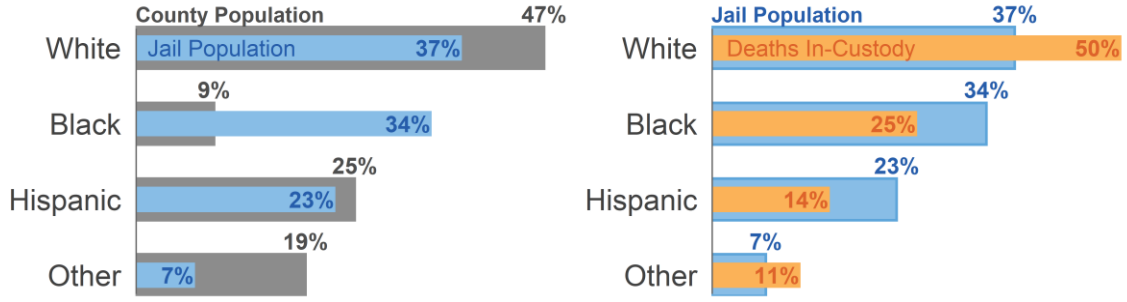


Figure 21: Contra Costa County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

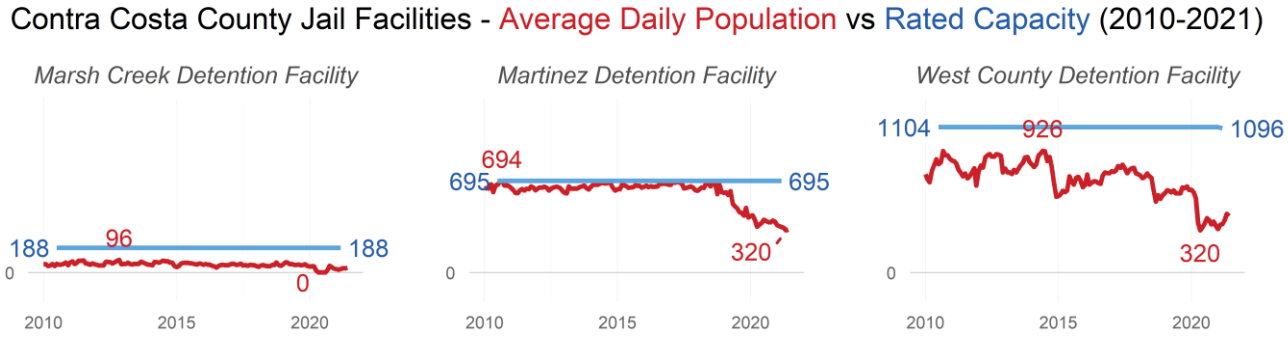


Figure 22: Rated Capacity vs ADP at Contra Costa County Detention Facilities (2010-2021)

Fresno

***Table 18**: Top 15 Fresno County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	21.9%	8.4	2.8	1.2	1.4	2.9
Male	Hispanic	30-39	13.9%	14.1	7.9	2.4	1.6	2.1
Male	Hispanic	40-49	6.6%	31.6	24.8	3.8	1.3	1.5
Male	White	18-29	6.3%	9.1	3.1	2.4	2.6	0.8
Male	Black	18-29	5.7%	22.7	5.7	1.7	1.6	13.5
Male	White	30-39	5.2%	16.6	9.3	3.7	2.7	0.6
Female	Hispanic	18-29	4.7%	2.7	1.8	0.2	0.3	0.3
Male	White	40-49	4.2%	34.8	26.0	5.1	2.8	0.7
Female	Hispanic	30-39	3.5%	6.1	5.0	0.5	0.3	0.2
Male	Black	30-39	2.9%	32.0	17.4	3.7	1.9	8.8
Male	Hispanic	50-59	2.6%	72.2	65.8	4.5	1.0	0.9
Female	White	18-29	2.4%	5.1	3.2	1.0	0.4	0.3
Male	Other	18-29	2.0%	9.3	3.9	1.7	1.9	1.8
Male	Black	40-49	2.0%	57.8	46.8	4.5	†1.3	4.9
Female	White	30-39	1.9%	9.4	6.4	1.9	0.7	0.2

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*
†Less than 10 deaths occurred (1999-2020), so exact value is redacted by CDC. Rate is estimated via all metropolitan counties in Western U.S.

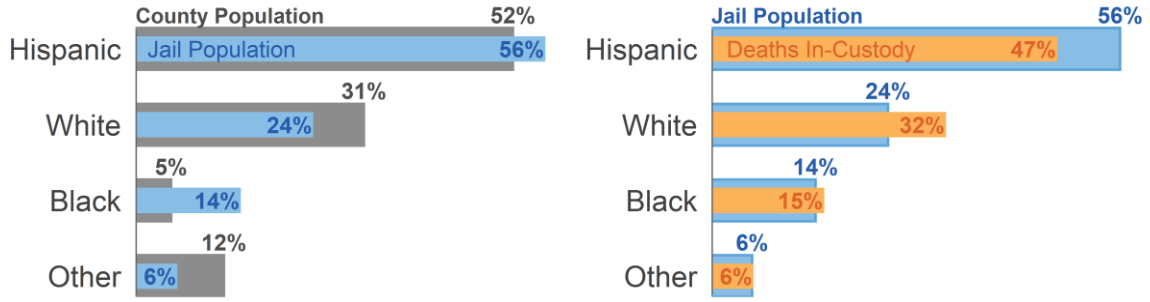


Figure 23: Fresno County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

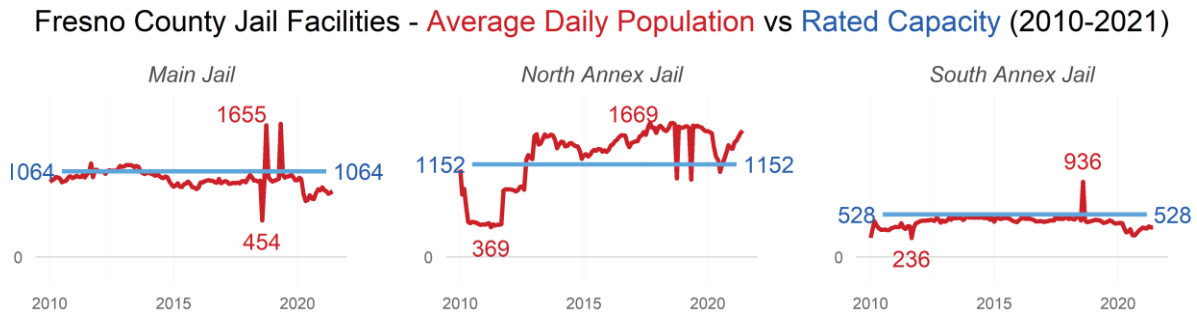


Figure 24: Rated Capacity vs ADP at Fresno County Detention Facilities (2010-2021)

Kern

***Table 19**: Top 15 Kern County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	20.3%	9.6	2.7	1.7	1.6	3.5
Male	White	18-29	11.0%	12.8	4.3	4.5	2.8	1.0
Male	Hispanic	30-39	10.8%	13.6	6.8	2.4	1.4	2.8
Male	White	30-39	7.9%	19.9	9.5	5.7	3.1	1.5
Male	White	40-49	6.1%	43.2	31.1	7.7	3.1	1.1
Male	Black	18-29	5.8%	19.8	5.0	1.9	2.0	10.7
Male	Hispanic	40-49	4.3%	26.4	19.9	3.5	1.4	1.5
Female	White	18-29	3.7%	5.3	2.8	1.4	0.7	0.4
Female	Hispanic	18-29	3.7%	3.2	2.1	0.4	0.2	0.4
Female	White	30-39	2.9%	14.1	9.0	3.6	1.0	0.4
Male	Black	30-39	2.8%	23.0	11.9	3.3	†1.0	6.6
Female	Hispanic	30-39	2.5%	6.4	5.1	0.6	0.2	0.5
Male	White	50-59	2.4%	100.7	85.1	9.9	4.6	0.8
Male	Black	40-49	2.0%	46.2	35.0	5.6	†1.1	4.2
Female	White	40-49	1.8%	31.3	24.5	4.8	1.5	0.3

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*
†Less than 10 deaths occurred (1999-2020), so exact value is redacted by CDC. Rate is estimated via all metropolitan counties in Western U.S.

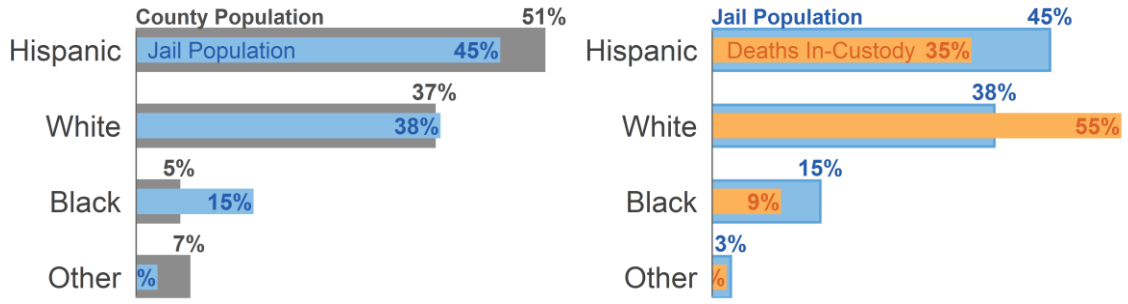


Figure 25: Kern County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

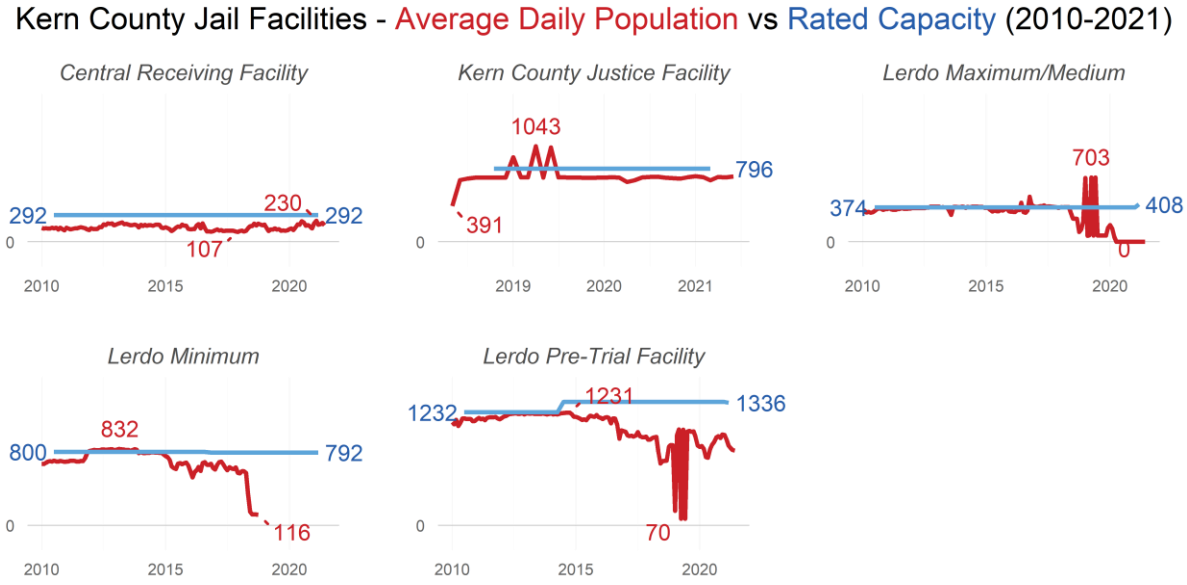


Figure 26: Rated Capacity vs ADP at Kern County Detention Facilities (2010-2021)

Los Angeles

***Table 20**: Top 15 Los Angeles County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	22.5%	9.1	2.7	1.3	1.1	3.9
Male	Hispanic	30-39	11.6%	11.9	7.1	1.9	1.0	1.8
Male	Black	18-29	8.4%	22.1	5.2	1.4	1.5	13.9
Male	Hispanic	40-49	5.5%	24.6	19.8	2.8	0.9	1.1
Male	White	18-29	4.9%	7.1	2.3	2.4	1.5	0.8
Female	Hispanic	18-29	4.7%	2.4	1.7	0.2	0.2	0.3
Male	Black	30-39	4.3%	30.0	16.4	2.5	1.7	9.2
Male	Black	40-49	4.1%	57.0	45.2	4.3	1.4	5.7
Male	White	40-49	3.8%	28.8	21.6	3.8	2.7	0.5
Male	White	30-39	3.8%	12.3	6.6	3.0	2.0	0.6
Female	Hispanic	30-39	2.6%	5.0	4.2	0.3	0.2	0.3
Female	Black	18-29	2.4%	6.0	4.0	0.4	0.3	1.2
Male	Hispanic	50-59	2.2%	55.9	51.4	2.9	0.9	0.7
Female	White	18-29	1.8%	2.8	1.5	0.7	0.4	0.2
Male	Black	50-59	1.6%	124.0	113.3	6.0	1.3	3.3

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

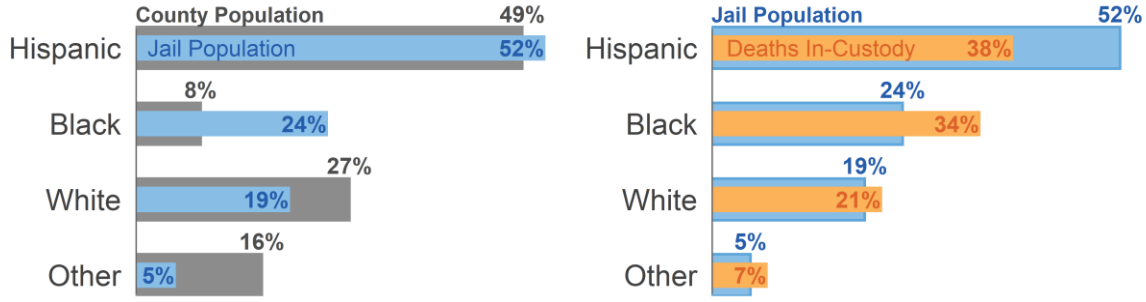


Figure 27: Los Angeles County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

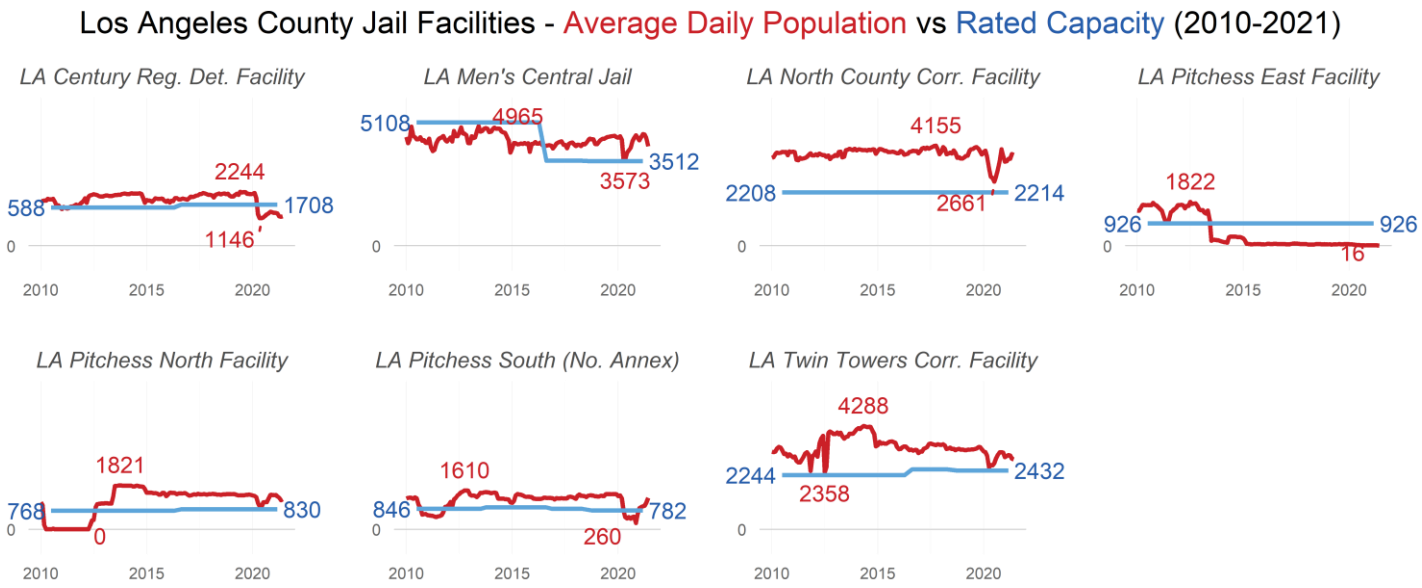


Figure 28: Rated Capacity vs ADP at Los Angeles County Detention Facilities (2010-2021)

Orange

***Table 21**: Top 15 Orange County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	20.0%	6.5	2.5	1.4	0.9	1.6
Male	White	18-29	11.8%	8.1	2.6	3.2	1.8	0.3
Male	Hispanic	30-39	9.3%	9.1	5.7	1.8	0.8	0.7
Male	White	30-39	7.5%	11.9	6.1	3.2	2.2	0.2
Male	White	40-49	7.4%	23.9	17.3	3.6	2.6	0.2
Female	White	18-29	4.7%	3.1	1.5	0.9	0.5	0.1
Female	Hispanic	18-29	4.2%	2.1	1.4	0.3	0.2	0.2
Male	Hispanic	40-49	4.1%	18.6	15.0	2.2	0.8	0.5
Female	White	30-39	3.0%	6.2	4.1	1.1	0.7	0.1
Male	White	50-59	2.9%	54.0	46.5	3.8	3.2	0.2
Male	Other	18-29	2.7%	3.8	1.4	0.9	1.0	0.4
Male	Black	18-29	2.4%	8.2	3.0	1.8	1.8	1.5
Female	White	40-49	2.4%	15.0	11.7	1.9	1.1	0.1
Female	Hispanic	30-39	2.2%	4.1	3.3	0.4	0.2	0.1
Male	Other	30-39	1.8%	6.1	4.0	0.8	1.0	0.2

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

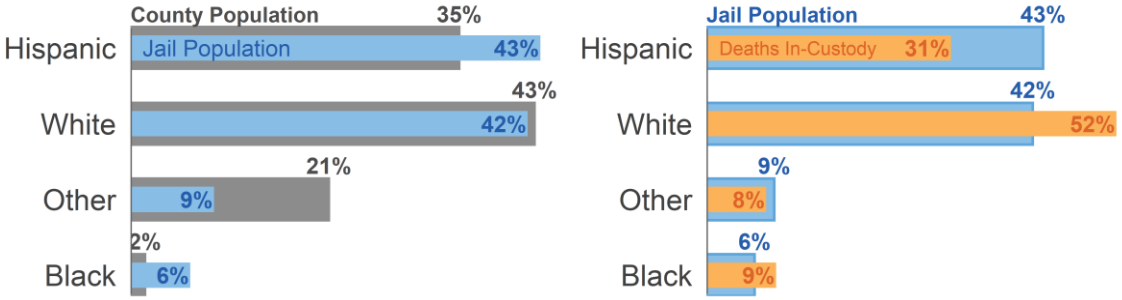


Figure 29: Orange County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

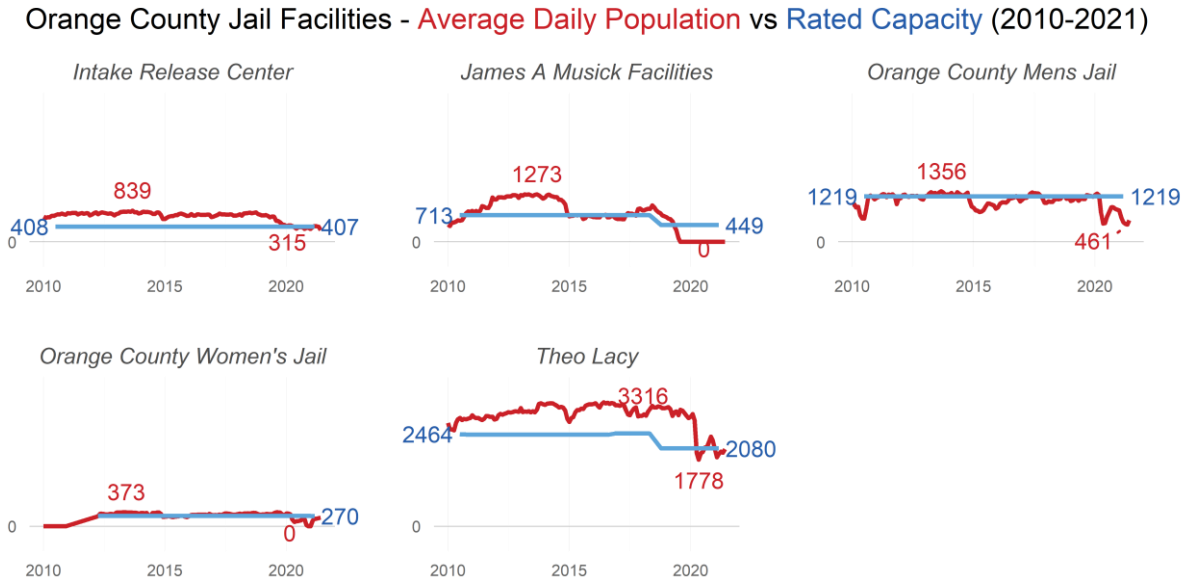


Figure 30: Rated Capacity vs ADP at Orange County Detention Facilities (2010-2021)

Riverside

***Table 22**: Top 15 Riverside County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	19.6%	8.2	2.8	1.7	1.4	2.3
Male	Hispanic	30-39	11.0%	11.4	6.4	2.3	1.2	1.4
Male	White	18-29	9.7%	10.1	3.5	3.2	2.5	0.8
Male	White	30-39	6.7%	16.1	8.8	3.8	2.7	0.7
Male	White	40-49	6.2%	35.0	26.0	5.0	3.2	0.6
Male	Black	18-29	5.5%	14.4	5.3	2.1	1.5	5.4
Male	Hispanic	40-49	5.0%	22.2	17.2	3.1	1.0	0.8
Female	Hispanic	18-29	4.1%	2.6	1.7	0.3	0.3	0.3
Female	White	18-29	3.6%	4.2	2.2	1.1	0.6	0.2
Male	Black	30-39	2.9%	20.0	11.8	2.3	1.3	4.4
Female	Hispanic	30-39	2.8%	5.2	4.2	0.5	0.2	0.2
Female	White	30-39	2.6%	9.5	6.6	1.8	0.8	0.3
Male	White	50-59	2.4%	79.6	69.1	6.0	3.9	0.5
Female	White	40-49	2.1%	21.9	17.7	2.6	1.2	0.3
Male	Black	40-49	2.0%	38.3	31.6	2.9	1.2	2.3

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

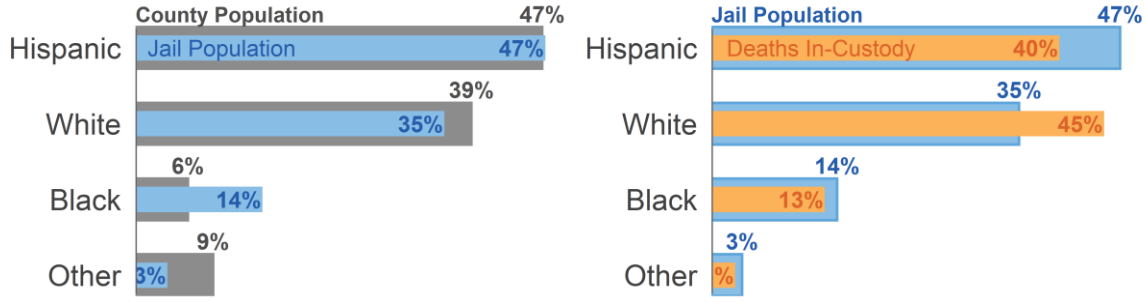


Figure 31: Riverside County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

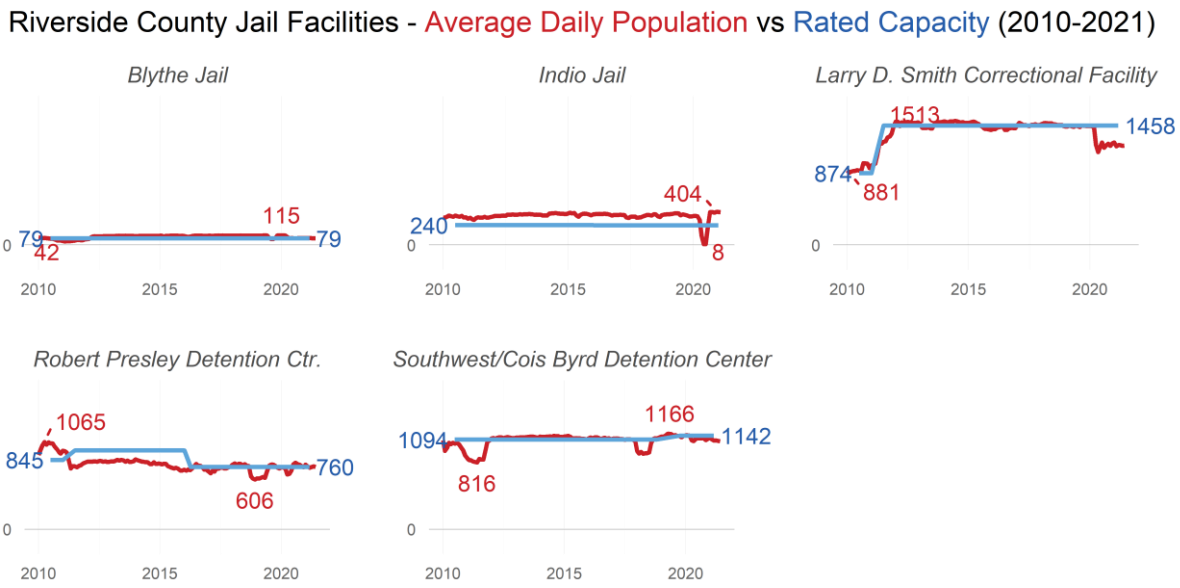


Figure 32: Rated Capacity vs ADP at Riverside County Detention Facilities (2010-2021)

Sacramento

***Table 23**: Top 15 Sacramento County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Black	18-29	11.8%	18.5	5.2	2.5	1.9	8.8
Male	White	18-29	10.7%	9.2	3.3	2.3	2.3	1.0
Male	White	30-39	8.7%	15.2	7.9	3.2	3.0	0.8
Male	Hispanic	18-29	7.4%	8.3	2.1	1.7	1.3	3.1
Male	White	40-49	6.9%	35.0	25.5	4.6	3.7	0.8
Male	Black	30-39	6.6%	25.7	14.8	3.3	1.7	5.6
Male	Black	40-49	5.2%	50.1	40.7	4.8	1.3	3.0
Male	Hispanic	30-39	4.3%	11.3	6.2	2.1	1.4	1.3
Female	White	18-29	3.9%	3.7	2.0	0.7	0.6	0.2
Female	White	30-39	3.2%	8.3	5.7	1.4	0.8	0.3
Female	Black	18-29	3.1%	7.0	4.7	0.5	0.4	1.3
Male	White	50-59	2.7%	80.3	69.2	5.9	4.1	0.5
Male	Other	18-29	2.5%	7.3	2.8	1.3	1.5	1.6
Male	Hispanic	40-49	2.4%	24.8	18.9	3.3	1.6	0.8
Female	White	40-49	2.1%	21.6	17.2	2.4	1.4	0.2

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

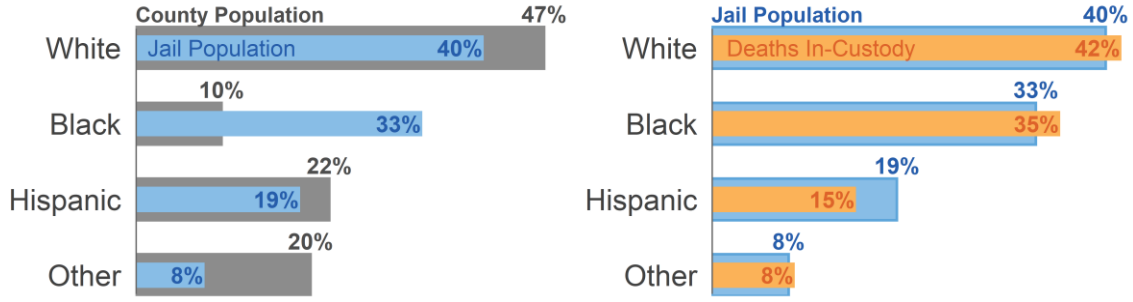


Figure 33: Sacramento County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

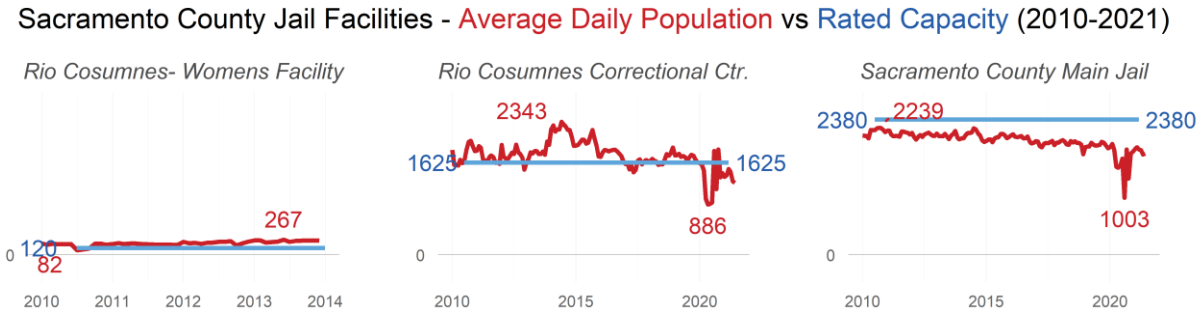


Figure 34: Rated Capacity vs ADP at Sacramento County Detention Facilities (2010-2021)

San Bernardino

***Table 24**: Top 15 San Bernardino County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	18.4%	8.6	3.2	1.3	1.3	2.7
Male	Hispanic	30-39	10.6%	12.0	7.8	1.3	1.2	1.7
Male	White	18-29	8.3%	9.3	4.0	1.8	2.3	1.0
Male	Black	18-29	6.9%	19.2	5.9	1.5	1.3	10.4
Male	White	30-39	5.9%	17.9	11.0	2.5	3.3	1.0
Male	White	40-49	5.5%	40.0	32.0	3.0	3.9	1.0
Male	Hispanic	40-49	5.1%	25.2	20.9	1.7	1.3	1.2
Female	Hispanic	18-29	4.4%	2.9	2.1	0.2	0.2	0.3
Male	Black	30-39	3.8%	26.9	16.2	1.9	2.0	6.7
Female	White	18-29	3.1%	4.5	2.9	0.7	0.5	0.4
Female	Hispanic	30-39	3.1%	5.9	4.9	0.3	0.3	0.3
Male	Black	40-49	2.6%	46.8	37.9	2.8	1.3	4.4
Female	White	30-39	2.4%	11.0	8.7	0.9	0.9	0.3
Female	Black	18-29	2.2%	7.5	5.6	0.4	0.4	1.0
Male	White	50-59	2.2%	89.7	81.7	3.2	3.9	0.7

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

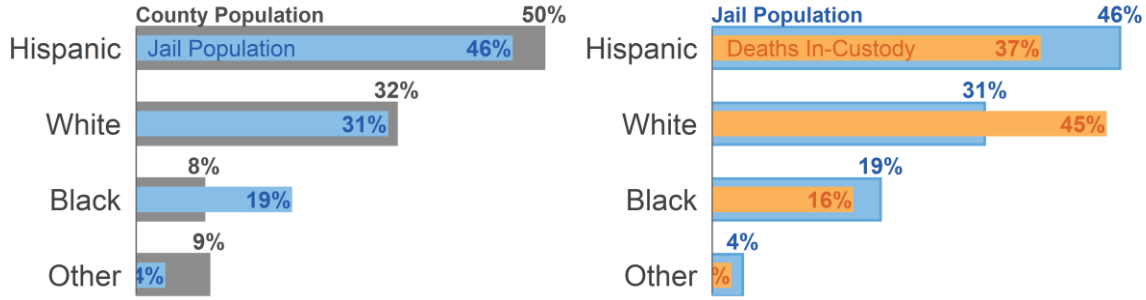


Figure 35: San Bernardino County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

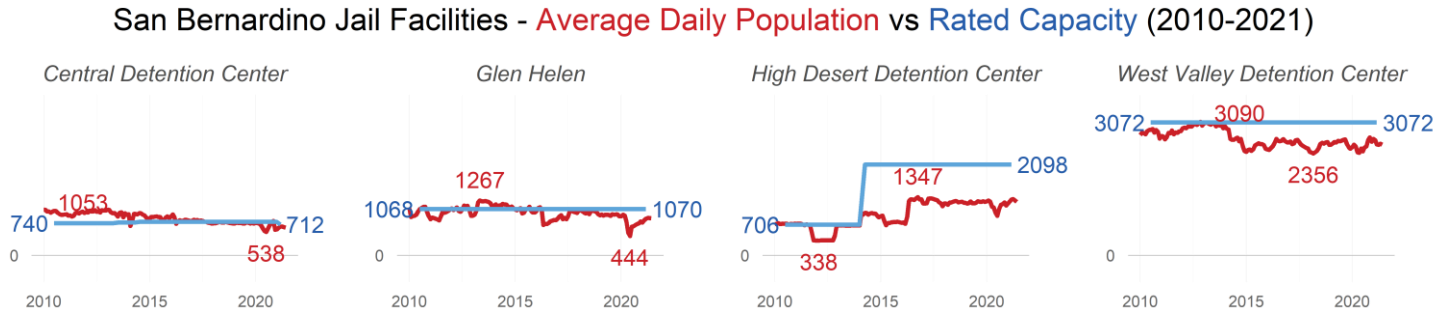


Figure 36: Rated Capacity vs ADP at San Bernardino County Detention Facilities (2010-2021)

San Diego

***Table 25**: Top 15 San Diego County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	13.8%	6.0	2.2	1.2	1.2	1.3
Male	White	18-29	10.9%	6.4	1.8	2.3	1.9	0.4
Male	White	30-39	8.1%	11.7	5.8	3.2	2.3	0.3
Male	White	40-49	8.0%	26.7	18.9	4.1	3.2	0.4
Male	Hispanic	30-39	7.3%	9.5	5.4	2.2	1.1	0.7
Male	Black	18-29	5.8%	10.1	3.0	1.3	1.8	3.7
Female	White	18-29	4.1%	2.7	1.3	0.6	0.6	0.1
Male	Hispanic	40-49	3.5%	20.7	16.5	2.6	1.0	0.5
Male	Black	30-39	3.4%	16.2	9.2	2.3	2.0	2.5
Male	Black	40-49	3.4%	39.7	31.7	4.0	1.8	1.9
Female	Hispanic	18-29	3.3%	2.4	1.6	0.3	0.3	0.2
Male	White	50-59	3.1%	62.8	53.2	5.3	3.8	0.4
Female	White	30-39	2.9%	6.4	4.2	1.2	0.8	0.1
Female	White	40-49	2.5%	17.3	13.4	2.3	1.3	0.2
Male	Other	18-29	2.0%	4.2	1.3	0.7	1.5	0.6

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*

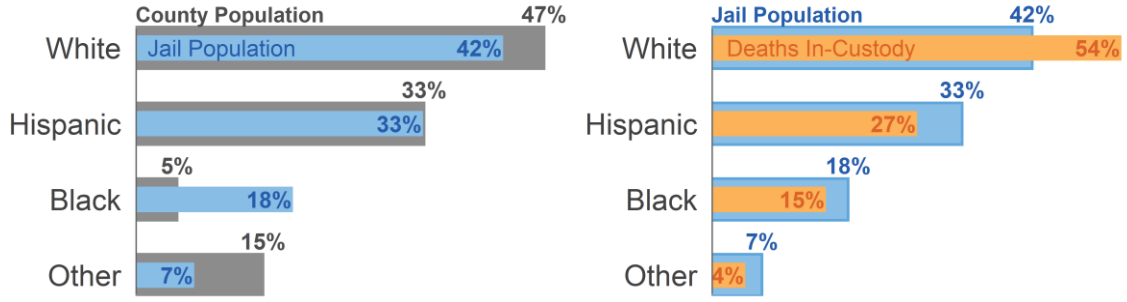


Figure 37: San Diego County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

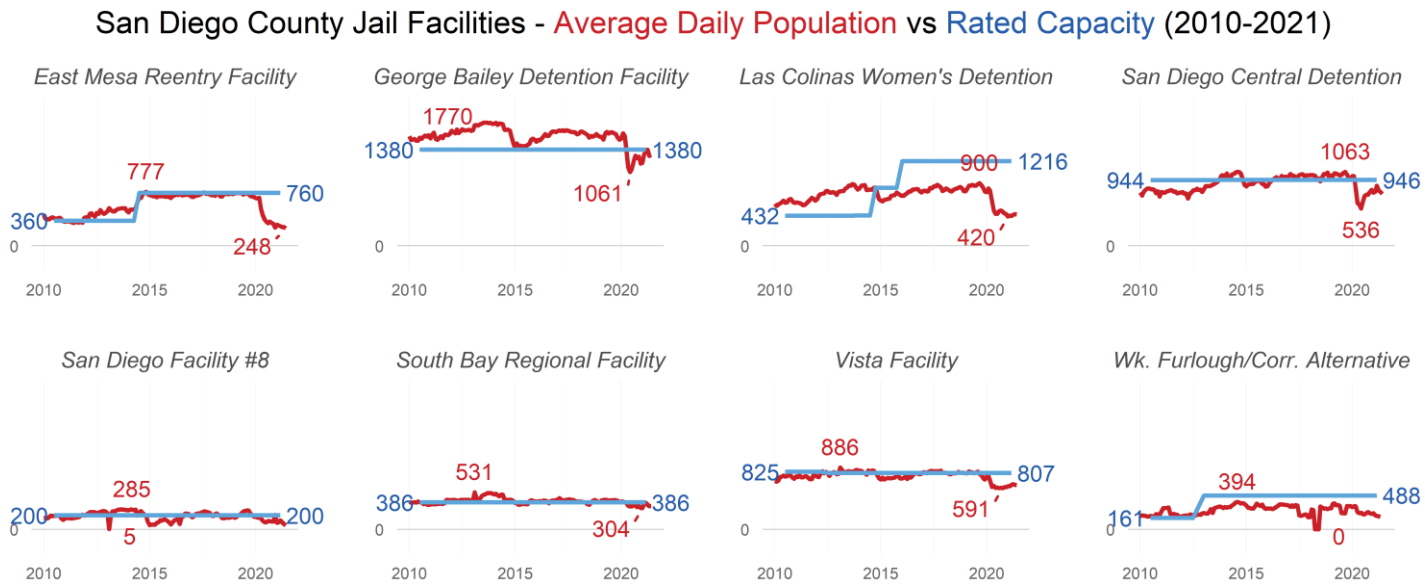


Figure 38: Rated Capacity vs ADP at San Diego County Detention Facilities (2010-2021)

San Francisco

***Table 26**: Top 15 San Francisco County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	White	18-29	13.4%	5.3	1.6	1.9	1.3	0.5
Male	Black	18-29	12.2%	36.0	5.7	3.2	1.7	25.2
Male	White	30-39	11.3%	10.8	5.4	3.5	1.4	0.3
Male	Black	40-49	9.5%	96.7	68.1	18.0	2.7	6.4
Male	Black	30-39	8.1%	43.3	22.5	7.2	2.7	10.7
Male	White	40-49	7.9%	36.0	24.9	7.1	3.2	0.4
Male	Other	18-29	4.5%	3.8	1.4	0.7	1.0	0.7
Male	Black	50-59	3.7%	179.0	146.4	27.1	1.4	3.9
Female	Black	18-29	3.4%	7.0	3.6	1.3	†0.5	1.6
Male	White	50-59	3.1%	76.1	62.4	8.9	3.7	0.6
Male	Other	30-39	3.1%	6.7	4.0	1.2	0.9	0.5
Female	White	18-29	2.7%	2.0	0.6	0.9	0.3	†0.1
Male	Other	40-49	2.2%	18.4	14.9	2.0	1.1	0.3
Female	Black	30-39	2.1%	18.2	13.0	3.2	†0.5	1.4
Female	White	30-39	2.0%	4.4	2.4	1.1	0.7	†0.1

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*
†Less than 10 deaths occurred (1999-2020), so exact value is redacted by CDC. Rate is estimated via all metropolitan counties in Western U.S.

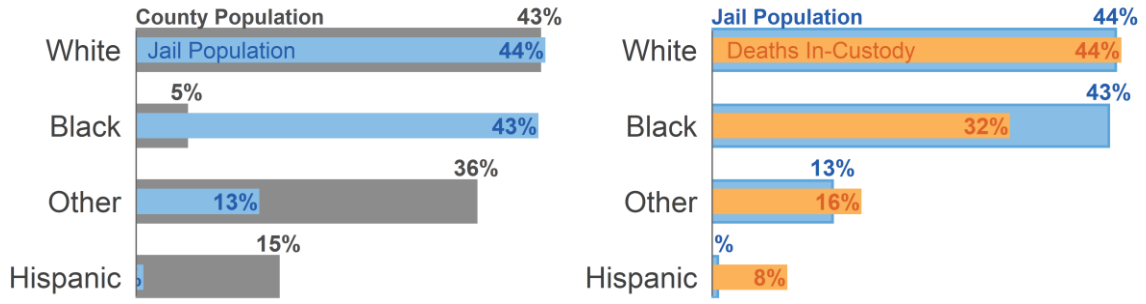


Figure 39: San Francisco County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

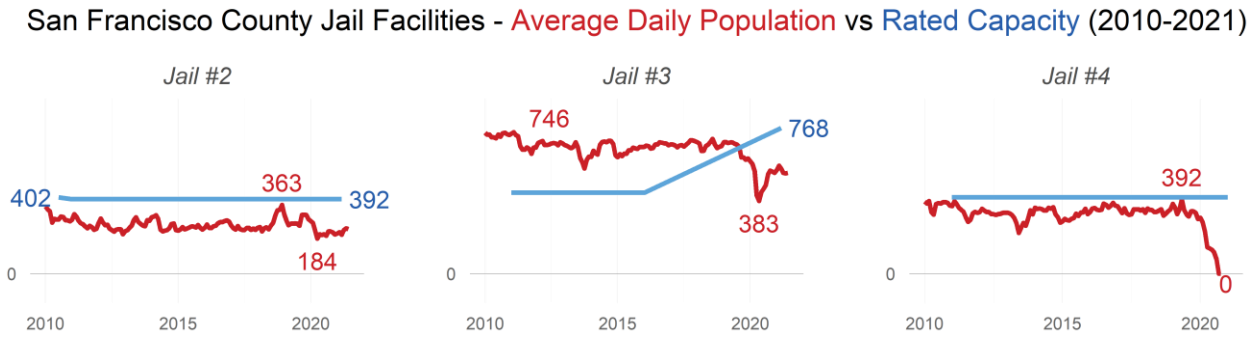


Figure 40: Rated Capacity vs ADP at San Francisco County Detention Facilities (2010-2021)

Santa Clara

***Table 27**: Top 15 Santa Clara County Jail Demographic Groups with Associated Death Rates*

Gender	Race/ Ethnicity	Age Group	Est. % Jail Population	County General Population Death Rate per 10k				
				Overall	*Natural*	*Accidental**	*Suicide*	*Homicide*
Male	Hispanic	18-29	19.3%	6.0	2.1	1.0	1.0	1.8
Male	Hispanic	30-39	11.5%	9.1	5.5	1.5	1.1	0.8
Male	White	18-29	6.5%	5.9	2.0	1.7	1.7	0.4
Male	Hispanic	40-49	6.2%	20.8	16.2	2.5	1.0	0.7
Male	White	40-49	5.4%	21.6	16.0	2.8	2.3	0.3
Male	White	30-39	5.0%	9.0	4.8	1.8	1.9	0.3
Female	Hispanic	18-29	4.2%	2.0	1.2	0.3	0.2	0.2
Male	Other	18-29	3.7%	3.2	1.3	0.5	0.9	0.5
Male	Black	18-29	3.6%	7.2	2.0	†0.8	2.2	2.1
Male	Other	30-39	3.0%	4.3	2.7	0.5	0.8	0.2
Female	Hispanic	30-39	2.7%	4.5	3.5	0.4	0.4	0.2
Female	White	18-29	2.5%	2.6	1.3	0.5	0.6	†0.1
Male	Hispanic	50-59	2.4%	55.4	48.8	4.5	1.1	0.7
Male	Black	30-39	2.4%	13.8	9.2	2.0	†1.0	1.4
Male	Other	40-49	2.2%	11.1	9.4	0.7	0.7	0.2

**Includes overdoses and other drug-related deaths. Excludes transport related accidents (e.g., motor vehicle accidents).*
†Less than 10 deaths occurred (1999-2020), so exact value is redacted by CDC. Rate is estimated via all metropolitan counties in Western U.S.

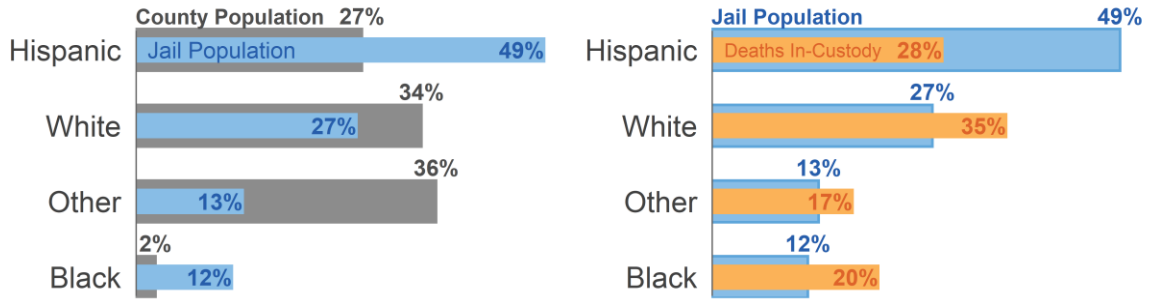


Figure 41: Santa Clara County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity

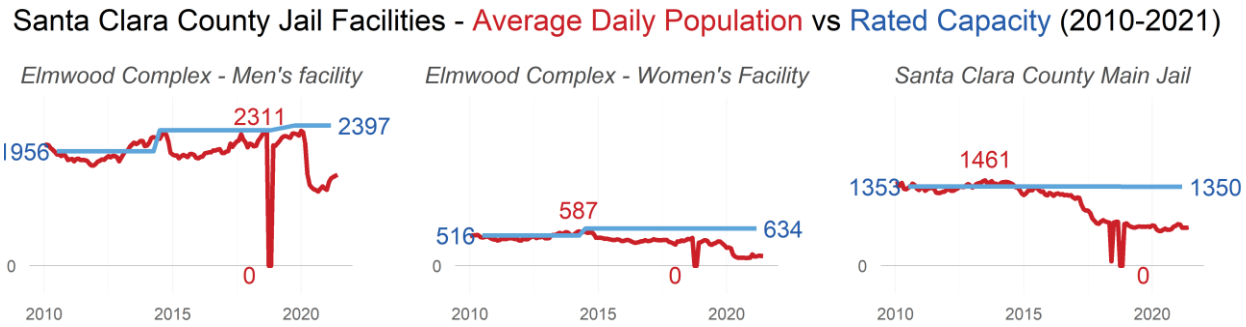


Figure 42: Rated Capacity vs ADP at Santa Clara County Detention Facilities (2010-2021)

Mortality Rates Over Time

This study measures county mortality rates between 1999-2020 to estimate total expected jail deaths. The focus of this study is to compare the total expected jail deaths in San Diego County to that of other counties in California. This approach largely assumes that mortality rates between San Diego and other California counties follow a similar pattern over time.

To test whether this is the case, we graph the mortality rates for each manner of death over time. Below are the figures for overdose/accidental deaths, homicides, natural deaths, and suicides. In general, these figures show that the morality rates for San Diego County and the other counties in this study have a similar trajectory over the past two decades. In other words, San Diego does not deviate from the trend lines of other counties. San Diego County consistently has a much lower homicide rate than the other counties. It also has a moderately higher suicide rate than the other counties.

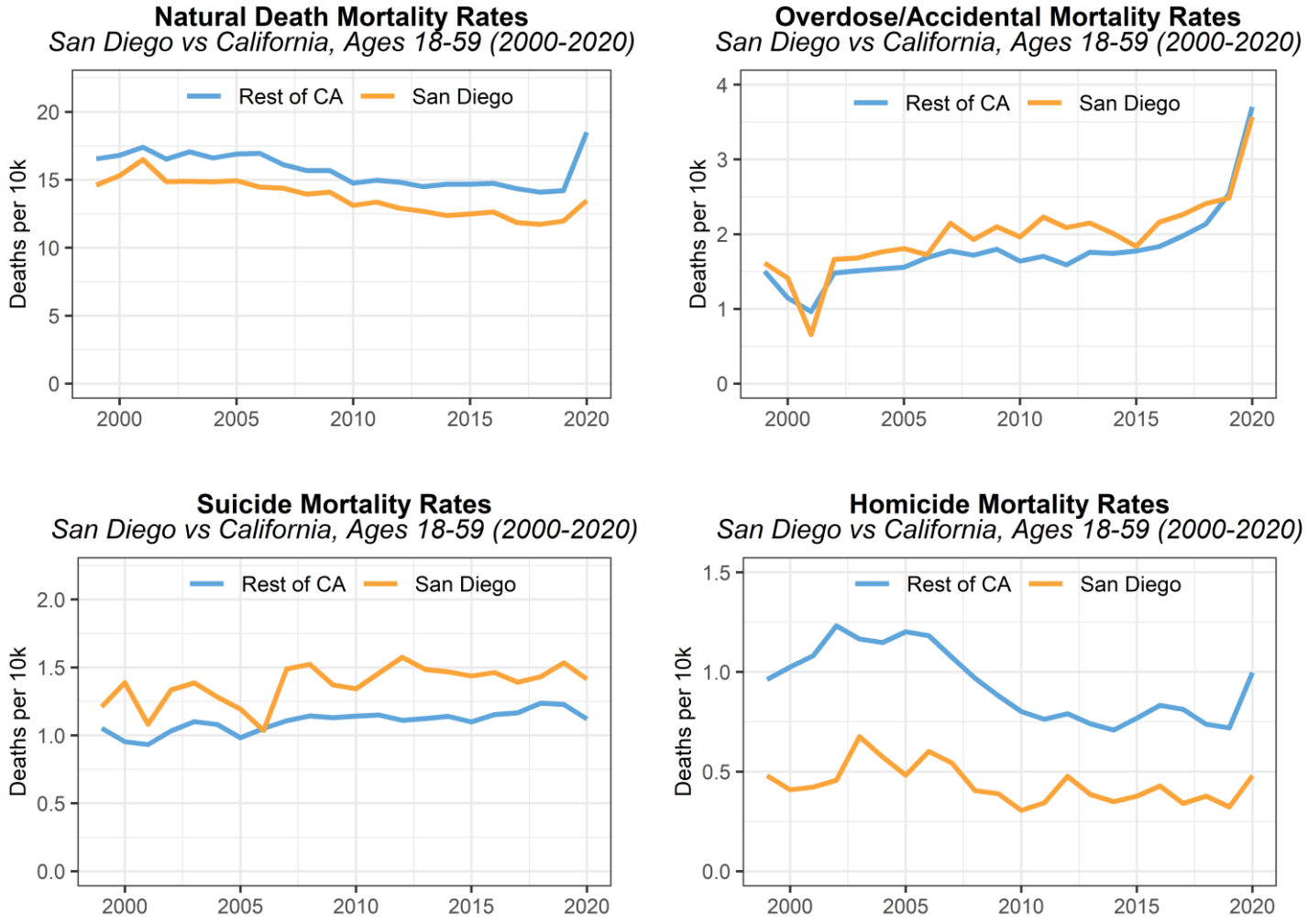


Figure 43: Mortality Rates Over Time, San Diego vs California, Ages 18-59 (2000-2020)

Comparisons of San Diego Inmate Population to Other California Counties

The jail population has generally higher needs than the general population. Attending to these needs may strain the limited capacity of county jails and, as a result, may be a contributing cause to in-custody deaths. We pursue this argument by comparing the mental health cases and violent proclivities of inmates in San Diego jails to that of other California counties between 2010-2020.

We first track reported mental health utilization using the average monthly mental health cases and the average new monthly mental health cases over time. Inmates in San Diego jails have considerably increased their usage of mental health services starting in 2019. This rate of growth is not as steep in other county jails. This increase in mental health services in San Diego is also reflected in the new mental health cases, which, after several years of declines, began to tick up in 2017. The increase in new mental health cases is not as large in other counties.

Violence among inmates is measure by the percent of violent felony arrests in a county and the average yearly assaults on law enforcement staff. San Diego County closely mirror the percent of violent felony arrests in other counties. All counties experienced a significant jump in these arrests in 2014. In terms of assaults on staff, San Diego has a moderate number of average assaults when compared to the other counties. Five counties have a higher average number of assaults than San Diego.

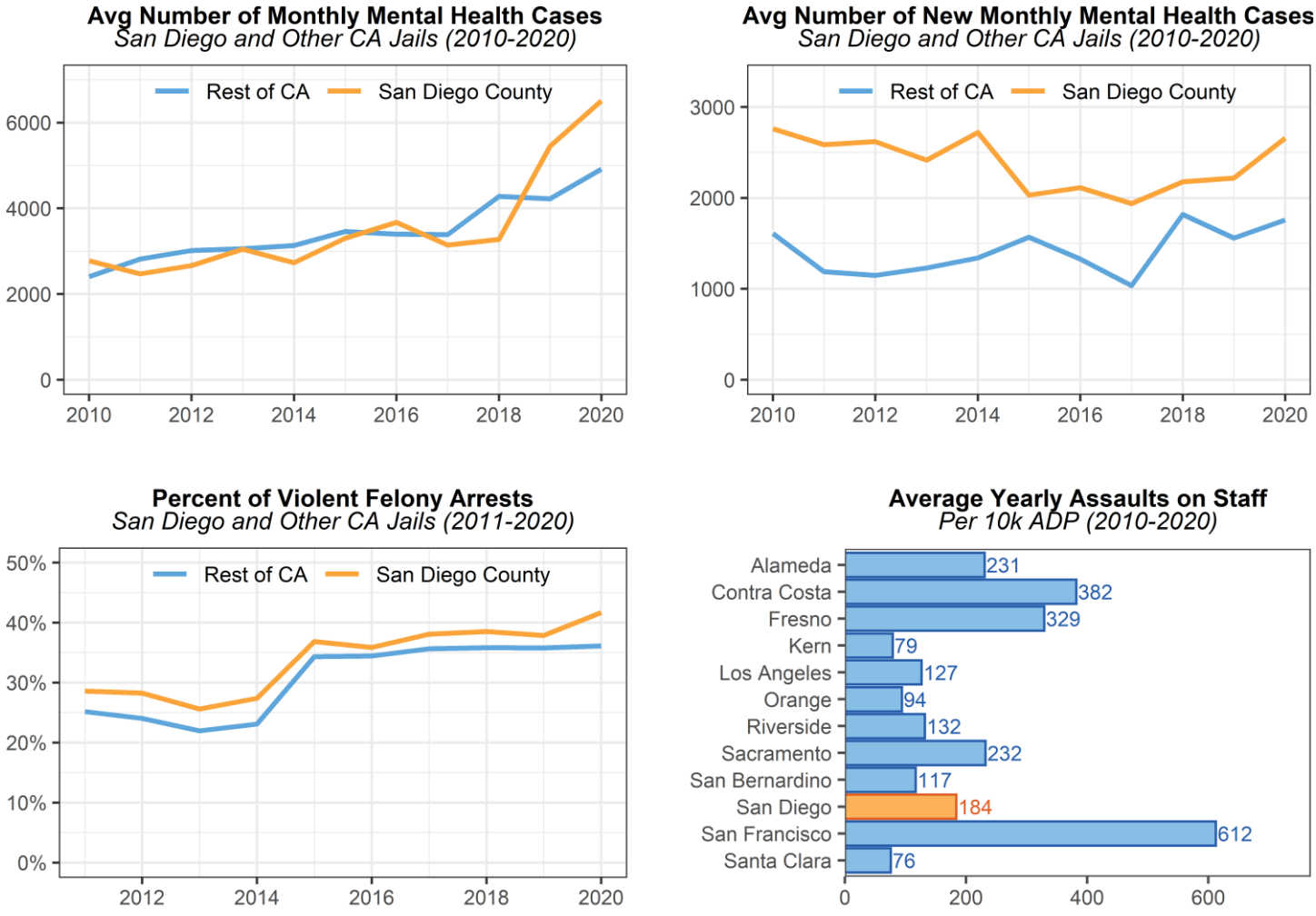


Figure 44: Additional Inmate Comparison Measures, San Diego vs California

County Demographics

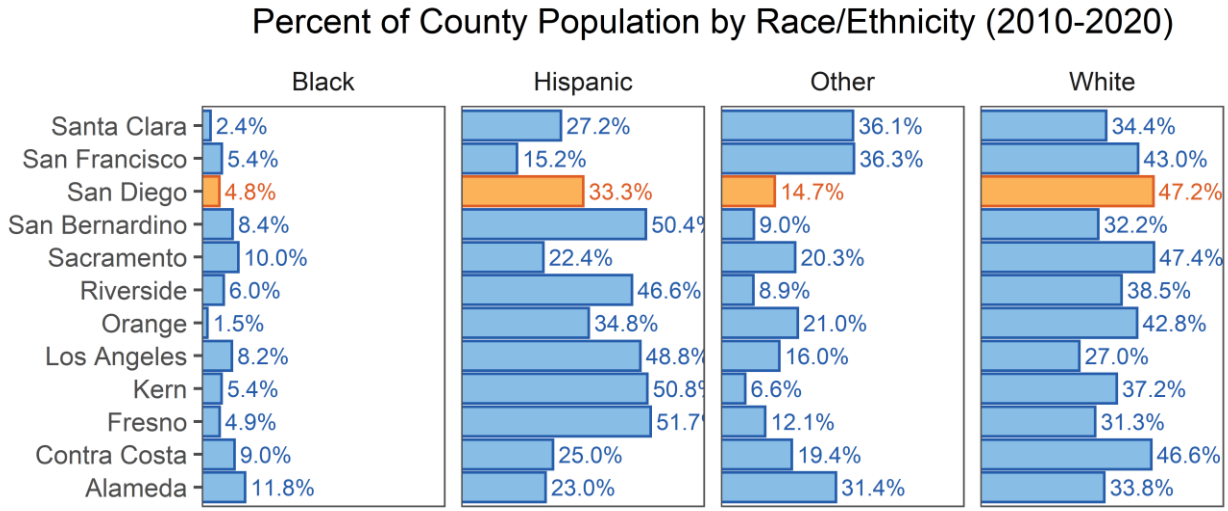


Figure 45: Percent of Each County Population by Race/Ethnicity (2010-2020)

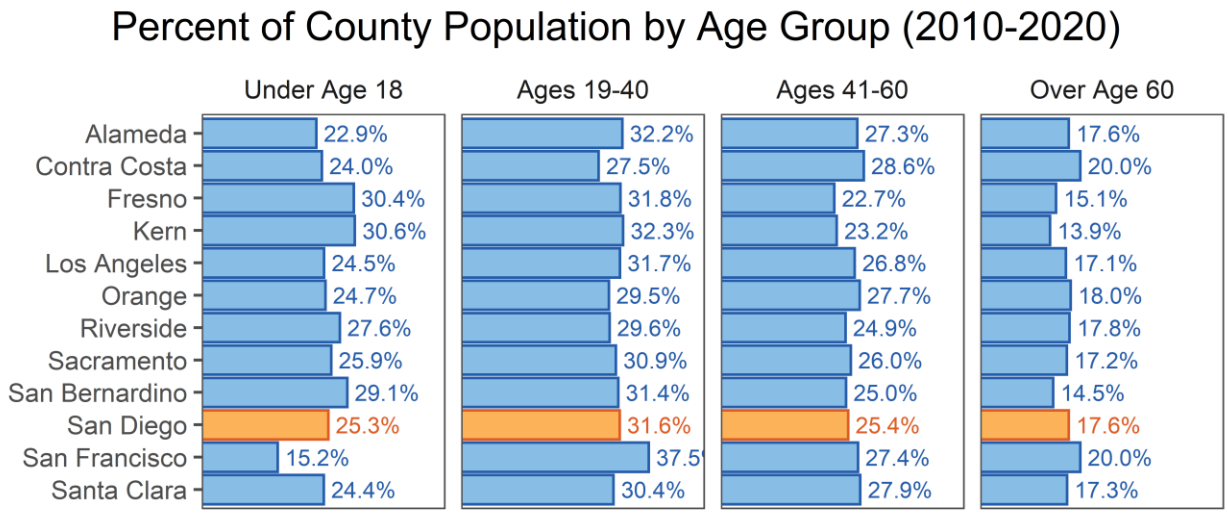


Figure 46: Percent of Each County Population by Age Group (2010-2020)

***Table 28**: Percent of County Population by Gender (2010-2020)*

County	Male	Female
Alameda	49.2%	50.8%
Contra Costa	49%	51%
Fresno	50.1%	49.9%
Kern	51.4%	48.6%
Los Angeles	49.5%	50.5%
Orange	49.7%	50.3%
Riverside	49.8%	50.2%
Sacramento	49.2%	50.8%
San Bernardino	49.8%	50.2%
San Diego	50.3%	49.7%
San Francisco	50.7%	49.3%
Santa Clara	50.5%	49.5%

Unstandardized Average Time between Deaths

***Table 29**: Average Unstandardized Days between Deaths (2010-2020)*

County	Natural Death	Suicide	Overdose/Accidental Death	Homicide
Alameda	4 months	7 months	1 years	3.7 years
Contra Costa	1.6 years	1 years	11 years	
Fresno	4 months	7 months	1.2 years	2.2 years
Kern	5 months	8 months	1.6 years	5.5 years
Los Angeles	1 months	3 months	3 months	9 months
Orange	2 months	1.2 years	1.1 years	3.7 years
Riverside	4 months	7 months	8 months	1.8 years
Sacramento	6 months	1.1 years	1.6 years	1.6 years
San Bernardino	3 months	5 months	1.4 years	1.8 years
San Diego	2 months	3 months	5 months	1.4 years
San Francisco	11 months	1.4 years	2.7 years	
Santa Clara	4 months	9 months	3.7 years	11 years

Appendix I: Email Correspondence with Dr. Elizabeth Carson (U.S. Bureau of Justice Statistics)

To better understand the advantages and disadvantages of different measures used to compare mortality rates among inmate populations, we corresponded with Dr. Elizabeth Carson via email. She is a statistician at the U.S. Bureau of Justice Statistics. Below is the content of this correspondence.

FROM: Mikael Pelz <mikaelpelz@analyticaconsulting.com>

TO: Elizabeth Carson <elizabeth.carson@usdoj.gov>

DATE: 12/15/2021

SUBJECT: Your feedback on measures of inmate mortality rates

Dear Ms. Carson,

I am part of a research team at Analytica Consulting studying inmate deaths in California county jails. The goal of this study is to make apples-to-apples comparisons of inmate mortality rates across multiple counties. In our reading of the literature on this topic, we have found that researchers differ on how best to measure mortality rates among inmate populations.

Drawing upon your expertise on this topic, would you be able to provide your input on the three different measures below?

Average Daily Population (ADP): Although most commonly used, some have criticized this measure for not accounting for differences in length of stay. How does this measure capture high turnover rates in jails, particularly if the unit of analysis is an inmate year?

Total Admissions (or At-Risk Population): An alternative measure is to use total admissions as the denominator for mortality rates in jails. In your opinion, what are the weaknesses of using this measure compared to ADP? Does this generate accurate mortality rates?

Standardized Resident Death Rates: A BJS Special Report from 2005 (“Suicide and Homicide in State Prisons and Local Jails.”) outlines weighing subgroups who are at higher risk of suicide (i.e. gender, race, age) to calculate inmate mortality rates. We don’t see this method being used very often. Do you know why researchers stopped utilizing this method? The California Department of Justice collects a wealth of crime statistics so we could stratify this type of measure in other ways too.

We would welcome any input you can provide on these three different measures as we design the scope of our study. Our first draft of the study is due *Jan. 28* so your timely response would be greatly appreciated.

Please feel free to reach out if you have any follow-up questions regarding this request.

Thanks again,

Mike

–

Mike Pelz, PhD

Senior Data Consultant | Analytica Consulting

<http://www.analyticaconsulting.com>

FROM: Carson, Elizabeth (OJP) <Elizabeth.Carson@usdoj.gov>

TO: Mikael Pelz <mikaelpelz@analyticaconsulting.com>

DATE: 12/16/2021

SUBJECT: RE: [EXTERNAL] Your feedback on measures of inmate mortality rates

Dear Dr. Pelz,

Thank you for contacting the Bureau of Justice Statistics. BJS uses the ADP measure, since it is the only count we have of ***unique*** persons in jails. BJS is investigating whether to try to collect individual-level records for all jail admissions and releases, which would (theoretically) allow us to locate people who recidivate multiple times per year, and only count them once. That would give you the unique number of persons exposed to the jail setting in a given year, and probably the best mortality rate per persons exposed.

The problem with using admissions is that this does NOT measure unique individuals in the denominator. You have a small number of people returning time after time to jail, which drives the 11 million admissions/year. So I suppose if you wanted to calculate the rate for any exposure to the jail setting, with the understanding that a person can have multiple exposures per year, you could use admissions – a long as you recognize you're comparing unique deaths in the numerator to non-unique persons in the denominator. As with the ADP, this doesn't take length of stay into account.

The most accurate method would be to use individual-level records from everyone who was admitted in a given year, calculate the days of exposure to the jail setting (and sum the days for those who were in more than once), and get the rate per person-days exposed. Unfortunately, we're not there yet in terms of having the individual-level data for the nation's jails.

In terms of the resident population standardization, because prisons and jails differ so drastically from the U.S. resident population in terms of age, sex, and race/ethnicity, if you want to make a direct comparison between the two you have to standardize the U.S. residents to "look like" the prison or jail population to which you are comparing (it has nothing to do with which groups are more likely to commit suicide, but rather the demographic makeup of the whole population). This is actually very common in epidemiological analyses – it removes the affects of different age, sex, and race/ethnicity distributions on the death rate. We show this comparison in our annual reports on prison (Mortality in State and Federal Prisons, 2001–2019 – Statistical Tables | Bureau of Justice Statistics (ojp.gov)) and jail deaths (Mortality in Local Jails, 2000–2019 – Statistical Tables | Bureau of Justice Statistics (ojp.gov)).

Please let me know if you have any questions.

Thank you,

Ann

E. Ann Carson

Statistician, Corrections Statistics Unit

Bureau of Justice Statistics

U.S. Department of Justice

810 Seventh Street, NW

Washington, DC 20531

FROM: Mikael Pelz <mikaelpelz@analyticaconsulting.com>

TO: Elizabeth Carson <Elizabeth.Carson@usdoj.gov>

DATE: 12/17/2021

SUBJECT: Re: [EXTERNAL] Your feedback on measures of inmate mortality rates

Hi Dr. Carson,

Thanks so much for your quick response and valuable insights on these different measures. It would be ideal to have individual-level data. If you don't mind, I have two follow-up questions that would help us substantiate which measure to use for our study.

In our study, we are looking to engage two arguments regarding ADP from a report by the San Diego County Sheriff's Department. You might be familiar with this report–it was conducted by another statistician by the name of Dr. Colleen Kelly. I have attached a copy of this report to this email.
Specifically, we would like to address two arguments found on page 3 of this report. First, she states that the number of inmates passing through San Diego's jails far exceeds ADP. If we wanted to quantify how many of these admissions had multiple exposures or arrests, could we just use recidivism rates for a given calendar year? If so, do you know if this statistic is typically tracked by sheriff's departments?

The second related argument regards ADP accounting for shorter lengths of stay. Dr. Kelly asserts that ADP "is flawed when making comparisons across jails with different lengths of stay." In your opinion, would you consider this to be a fair statement? Does ADP fail to address shorter lengths of stay?
Thanks again for lending us your expertise. We really appreciate it!

Best,

Mike

FROM: Elizabeth Carson <Elizabeth.Carson@usdoj.gov>

TO: Mikael Pelz <mikaelpelz@analyticaconsulting.com>

DATE: 12/21/2021

SUBJECT: RE: [EXTERNAL] Your feedback on measures of inmate mortality rates

Dear Dr. Pelz,

We have no good estimates of the number of persons who cycle through jail in a given year – as I said, this would require individual-level records that could be linked to unique individuals. In the absence of a national estimate of within-year recidivism, if you have that value for San Diego, I would suggest you use that. Recidivism across years is ***not*** going to tell you how many of the 11 million admissions to jail within a given year are repeat offenders.

As far as the question of short stays, the risk of death in a jail actually depends on a number of factors. Chief among them is the question of exposure: do you have an increased risk of exposure simply by being in the jail for one hour? Or does a prolonged exposure increase your odds of death?

I would argue it depends on the cause of death – deaths by intoxication typically occur within the first 24 hours of custody because the inmate enters the jail in an intoxicated state – so staying 10 days or 10 weeks makes no difference. The same is not true for deaths by homicide or suicide – in 2015-2019, 25% of suicides occurred after the first month of custody. The median time served for homicides in local jails from 2000-2019 was 30 days. For these causes of death,

time exposed to jail (being in custody) can have some effect on mortality. For illness deaths, depending on the level of health care provided by the jail, it could be argued that being in jail lends a protective effect by providing access to stable medical care and medicines. Other factors include the size of the jail, the mix of persons held (do the police in a given jurisdiction place more or less priority on arresting people for particular crimes – like possessing small amounts of marijuana, public drunkenness, theft of small dollar amounts – compared to others?), the jurisdiction's policies on bond and bail, even the physical layout of the jail and the staff to inmate ratio.

Another way of thinking of this is to use an analogy to COVID infection rates in jails: the denominator for most COVID-infection rates in jail is the number of people exposed (the number of people who cycled through the jail over a given period of time, regardless of how long they stayed). For rates using this denominator, it is simply presence or absence in the jail that determines whether a person is counted in the denominator, and baked into this measure is the assumption that it doesn't matter whether you spent 6 hours or 6 months exposed – you have the same overall chance of catching COVID. Most epidemiologists, however, would argue that the amount of time exposed DOES matter for COVID – if you stay longer, you have a greater chance of catching the disease (and this is where the analogy with mortality breaks down, given what I said above regarding different times served for different causes of death). But other factors are at work as well – vaccination status of the inmates and staff, ability to social distance and use other protective equipment, overcrowding, cleanliness of the facility, etc. So even using a denominator that measures the total number of hours all inmates collectively were in custody wouldn't give you the whole picture of risk of catching COVID.

The same is true for mortality – simply being in jail (whether you measure the denominator as time served or just jail/no jail) doesn't confer the same risk of death for every inmate admitted. Basically, I'm saying that it's not an easy answer of ADP versus time in custody. As I said in my last email, you need individual-level records to calculate time served in jail, and we don't have those. In their absence, ADP is the best alternative in BJS's opinion.

Thank you,

Ann

Appendix J: Data Inclusion Criteria

The primary focus of this study is in-custody deaths within county jails. To ensure our data only captures these types of events, we made several exclusions from the original data sets obtained for this study.

California Department of Justice Inmate Deaths Data, 2005-2020 (n = 11,553)

- Reporting agency equals ‘sheriff’ (n = 2,719)
- Year equals 2010 through 2020 (n = 1,930)
- Custody status not equal to ‘in transit’ or ‘process of arrest’ (n = 1,481)
- Jurisdiction equals San Diego, Los Angeles, San Bernardino, Riverside, San Clara, Orange, Sacramento, Alameda, Fresno, Kern, Contra Costa, San Francisco (n = 1,069)
- Custody status not equal to ‘other’ and custodial responsibility at the time of death not equal to ‘other’ (n = 1,048)
- Manner of death not equal to ’Homicide Justified (Law Enforcement Staff) (n = 1,044)
- Manner of death not equal to ‘Pending Investigation’ (n = 990) (Note: Only excluded when analyzing by manner of death)
- Manner of death not equal to ‘Undetermined’ (n = 968) (Note: Only excluded when analyzing by manner of death)

California Board of State and Community Corrections Monthly Jail Survey, 2005-June 2021 (n = 11,730)

- Year equals 2010 through 2020 (n = 7,752)
- Jurisdiction equals San Diego, Los Angeles, San Bernardino, Riverside, San Clara, Orange, Sacramento, Alameda, Fresno, Kern, Contra Costa, San Francisco (n = 1,584)

California Department of Justice Arrest Disposition Data, 1980-2020 (n = 291,925)

- Arrest disposition code not equal to ‘to other agency’ (n = 189,914)
- Year equals 2010 through 2020 (n = 52,298)
- Jurisdiction equals San Diego, Los Angeles, San Bernardino, Riverside, San Clara, Orange, Sacramento, Alameda, Fresno, Kern, Contra Costa, San Francisco (n = 13,867)

Appendix K: Relevant Policy Changes Provided by the San Diego Sheriff's Department (2014-2021)

This list of major policy changes between 2014-2021 was provided to us by the San Diego Sheriff's Department. We utilized this list to understand policy changes in San Diego jails over time.

2014

- TRI-CITY MEDICAL CENTER. Entered into a contract with Tri-City Medical Center (TCMC). Contracts with both UCSD and TCMC provide the department with additional resources for inpatient hospitalization and specialty medical services.
- NALOXONE PROJECT. San Diego Sheriff's law enforcement deputies in patrol were one of the first law enforcement agencies to train deputies to administer naloxone, an opiate overdose antidote, to individuals who may have overdosed on opiates such as heroin. The department partnered with the County's Emergency Medical Services to launch this program.
- HOSPITAL GUARD UNIT. TCMC's contract provided the department with access to a 40-bed locked and secured medical ward in its facility. The ward is referred to as the Progressive Unit which the department shares with CDCR.

2015

- INMATE SAFETY PROGRAM (ISP). Designed an Inmate Safety Program to include standardized assessments for self-harm based on risk factors and designated housing units (i.e. Enhanced Observation Housing –EOH) where inmates are monitored in an environment that minimizes risk of self-harm. This program included structural modifications to the housing and the cells for patient safety.
- RESTORATION OF COMPETENCY (SAN BERNARDINO). Patients who needed to be restored to competency were sent to San Bernardino for restoration in addition to Patton State Hospital. This helped expedite the process for patients who were accepted to San Bernardino and needing restoration to competency.
- OPIATE REDUCTION. As part of the Hoarding and Cheeking Policy, evaluated the narcotic formulary and instituted ongoing education of onsite doctors on zero tolerance.

2016

- JAIL INTAKE SUICIDAL PILOT EXPANSION. Due to the ISP, the department began accepting arrestees into custody without outright rejection and directing the law enforcement officers to County Mental Hospital (CMH) for clearance.
- INTAKE PROCESS REDESIGN. Unlike other counties such as Orange County, Riverside, and Los Angeles County, San Diego had a two-stage medical intake process. Redesigned the medical intake process to condense both steps into one without compromising the quality of the medical and mental health assessments. Mental health questions were revised to reflect guidelines from the Columbia Suicide Severity Rating Scale (CSSRS).
- JAIL BASED COMPETENCY TREATMENT (JBCT) PROGRAM. The State Department of State Hospitals (DSH) contracted with the Sheriff's Department to have San Diego Central Jail serve as a JBCT site. The State contracted for 30-beds for male inmates who are 1368 and 1370s needing treatment.
- NALOXONE IN DETENTION FACILITIES. In response to the increasing incidents of heroin overdoses in jail, detention facilities were now equipped with Naloxone (Narcan) kits for deputies to use. Detentions Training Unit (DTU) developed a policy a training video and bulletin.
- MENTAL HEALTH MULTI-DISCIPLINARY GROUPS (MDG). MDG meetings are a forum where both sworn and clinical identify and discuss high risk mental health patients to get them the care and services they need in a timely manner. These meetings take place twice a month at each facility.
- LICENSED MENTAL HEALTH CLINICIAN POSITIONS. Six (6) FTE positions were added to the budget to improve the mental health services and assessments conducted in the jails.

- MAIL PROCESSING CENTER. Creation of Mail Processing Center with special equipment and deputies trained in detecting drug-soaked letters, cards, and other contraband.

2017

- JAIL BASED COMPETENCY TREATMENT (JBCT) PROGRAM. Liberty Healthcare was also chosen as the subcontractor to establish a 30-bed JBCT program at SDCJ that will treat 1370s in custody in a more effective and expeditious manner. While it does not prevent patients from being admitted to Patton State Hospital, the program serves as an important adjunct in the spectrum of services that is provided to this population.
- NATIONAL COMMISSION ON CORRECTIONAL HEALTH CARE (NCCHC) TECHNICAL REVIEW. A panel of NCCHC surveyors conducted a one-week evaluation of the jails to help the department prepare for accreditation in the future. NCCHC visited all sites and made recommendations for change to assist the department with compliance with national correctional standards. The two top recommendations that required immediate attention was the acquisition of a new pharmacy business process and an electronic health record.
- DIAMOND PHARMACY. The department eliminated its pharmacy and practice of purchasing bulk medications and having LVNs prepare and administer medications to inmates which according to NCCHC was out of compliance with the LVN licensure. Under Diamond, medications were pre- packaged in unit-dose identifying the inmate's name. This process reduced errors for dispensing of medications when bulk medications are used
- PSYCHIATRIC STEP DOWN UNIT. A one-time funding from Public Safety Group was added to budget to develop a Psychiatric Step-Down Unit at SDCJ with 40 beds.
- PSYCHIATRIC EMERGENCY RESPONSE TRAINING (PERT). Nurses who were assigned to the Psychiatric Stabilization Units (PSU) at both SDCJ and LCDRF were sent to attend PERT classes. PERT served as another training to help staff deal effectively with individuals suffering from mental health conditions.

2018

- INMATE SAFETY PROGRAM (ISP) REVISION. The policy was revised to comply with NCCHC standards and Lindsay Hayes recommendations.
- SUICIDE PREVENTION TRAINING. The department developed an 8-hour training course that is patterned after Lindsay Hayes' training curriculum.
- SUICIDE PREVENTION FOCUSED RESPONSE TEAM. Creation of this workgroup. This workgroup consisting of representatives from sworn, medical, mental health, training, etc. meet once a month to discuss best evidence practices and implement strategies for reducing suicide in custody. This group also reviews suicide and/or suicide attempt incidents to evaluate for training opportunities and policy changes if needed.
- COMBINED & COMPREHENSIVE INTAKE SCREENING PLATFORM. The intake screening questions were further revised based on Lindsay Hayes' recommendation and still incorporates the Columbia Suicide Severity Rating Scale (CSSRS).
- LICENSED MENTAL HEALTH CLINICIANS. 15 (FTE) positions were added into the budget.
- SCENE MANAGER NURSING TRAINING. A program was developed to train a nurse to serve as a scene manager during emergency response and man-downs.
- ELECTRONIC HEALTH RECORD. The department procured a contract with Naphcare. TechCare is the name of the new electronic health record. Rollout is expected in 2019.
- CHIEF LICENSED MENTAL HEALTH CLINICIAN. A 1-FTE position was added to the budget and a second Chief Licensed Mental Health Clinician was appointed to manage the span of control of 27 licensed mental health positions.
- MENTAL HEALTH DEPUTIES. The department received 4 FTE deputy positions dedicated for mental health services.
- NATIONAL COMMISSION ON CORRECTIONAL HEALTH CARE (NCCHC) ACCREDITATION REVIEW. The department intends to pursue accreditation and has dedicated a project team to spearhead efforts for its preparation. A detentions captain and sergeant were embedded in Medical Services to assist with this effort.

- IMPROVEMENTS TO HOUSING AREAS AND FACILITIES. Created and designed clinic areas at SDCJ, VDF, and GBDF to create a more therapeutic physical environment for clinicians and patients.
- MENTAL HEALTH ADVOCACY HOTLINE. A central phone line was established for use by criminal justice stakeholders and community partners for reporting.
- SUICIDE PREVENTION AND MENTAL AWARENESS POSTERS IN HOUSING AREAS. Posted in housing units, public lobbies, clinic areas and staff breakrooms/briefing rooms.
- CHIEF MENTAL HEALTH CLINICIAN. Addition of a 2nd Chief Mental Health Clinician, enhanced oversight of QMHP timely delivery of care
- REVIEW OF SELF HARM REPORTS. Chief Mental Health Clinicians review all NetRMS cases (Incident reports written by sworn staff) involving self-harm, determination of self-harm vs. suicide attempt being reviewed by a QMHP, allows for follow with QMHP staff for corrective action counseling if needed.
- WELLNESS CHECKS. SNP revised to mandate nurses completing wellness rounds in all Administrative Housing units 3x weekly for all patients

2019

- BODY SCANNERS. Upgraded six high tech x-ray body scanners
- ELECTRONIC HEALTH CARE. EHR goes live in September. EHR project was a strategic initiative to improve Medical and Mental Health care within our jails by moving medical care management from the 17-year-old integrated JIMS environment to a modern, agile software platform that incorporates better efficiency, care, and alignment with national standards like those of the National Commission on Correctional Health Standards.
- SOBERING CELL CHECKS. Standard Nursing Protocols (SNP) revised to include nurses taking vital signs of all sobering cell patients twice daily
- PRIVATE CLINIC SPACE. Construction project to expand privacy in intake screening areas for our patients during booking
- ISP POLICY REVISION. Policy state QMHP (non-sworn) staff admit and discharge from ISP only, only under extenuating circumstances shall sworn intervene in this decision. Follow-up appointment protocols were also revised.
- INTAKE SCREENING MODIFIED. Modified intake screening criteria Intake screening to improve acceptance/emergency transfer criteria relating to gate rejects

2020

- MENTAL HEALTH DIRECTOR. Selection of a Medical Director, Mental Health Services.
- WITHDRAWAL PROTOCALS. MSD revised standard nursing protocols related to alcohol and opioid withdrawal to prevent deaths associated with substance use disorders.
- TELEPSYCH. Expanded tele-psych to deal with the increased demand for mental health services and manage the COVID 19 pandemic
- CONTRACTED MEDICAL PROVIDER. MSD changed medical providers (Coastal to CHP) which increased the number of providers systemwide.

2021

- NALOXONE PROGRAM EXPANSION. All sworn members assigned to the detentions bureau were issued 2 naloxone kits to carry on their uniform belt.
- HEALTH AND HUMAN SERVICES AGENCY – CERNER COMMUNITY BEHAVIORAL HEALTH (CCBH). In April, QMHP's gained access to county mental health database CCBH, enhances continuity of care. Cerner Community Behavioral Health is behavioral health-specific electronic health record that specialize in the delivery of community mental health, inpatient mental health, outpatient mental health, substance use disorder

and developmental disabilities care. Although there may be some patients who are not in the database and do not have data entered, we continue to review and enter data referencing our patient encounters while in our care.

- ADDITIONAL RN and MHC POSITIONS. Funding approved in July for 146 new Sheriff's health staff positions to support our on-going priority of building a robust medical and mental health system. With this additional staffing, our plan is to enhance overall care, by implementing a Primary Care Model, Medicated Assisted Treatment (MAT) program and ultimately achieving National Commission of Correctional Health Care (NCCHC) accreditation.
- MAT DEPUTY POSITIONS. 8 detention deputy positions funded in July
- COMPREHENSIVE HEALTHCARE CONTRACT. Sheriff's Department awarded a comprehensive contract to Naphcare on September 1, 2021. This contract will consolidate and expand workflows relating to primary and specialty health care services, oral care, mental health, and related ancillary services to all patients in custody. We are projecting the contract consolidation to be fully operational in fiscal year 2022.
- MOU with HHSA. In September, the sheriff signed a Memorandum of Understanding (MOU) to work collaboratively to expand Medication Assisted Treatment services to our population.
- ENHANCED COVID MONITORING. In December, MSD began utilizing better technology to treat patients in COVID-19 housing modules. This new device captures oxygen levels which will give nurses more accurate information to determine treatment.
- ENHANCED COVID TREATMENT. In December, MSD collaborated with HHSA to on a new treatment for select COVID-19 positive patients. Monoclonal antibody treatment is FDA approved (EUA) and intended to reduce serious side effects of COVID-19.
- CHRONIC CARE ENHANCEMENT. In December, MSD improved the management of diabetic patients in our system under a directive from the CMO.

2022

- MEDICATED ASSISTED TREATMENT PILOT PROGRAM. Will be starting a pilot project at LCDRF to expand MAT related services to our female population. MSD will expand MAT services to our remaining population once our comprehensive vendor is established in 2022.

List of Tables

Table 1: Average Standardized Time Between Deaths by Manner (2010-2020)*....4
Table 2: Select Characteristics of Most Populous California Counties (2010-2020)....18
Table 3: ADP vs. ARP by County (2011-2020)....19
Table 4: A Closer Look at Overdose/Accidental Jail Deaths, 2010-2020....20
Table 5: Countywide Accidental Death Breakdown (1999-2020)....20
Table 6: Actual vs Estimated San Diego ADP....21
Table 7: Actual vs Estimated San Diego ADP....21
Table 8: Actual vs Estimated San Diego ADP....21
Table 9: Actual vs Estimated San Diego ADP....21
Table 10: Actual vs Estimated San Diego ADP....21
Table 11: ADP and Bookings by Type 1 Facilities (2010-2018)....27
Table 12: Deaths in Type 1 Facilities (2010-2020)....27
Table 13: Overall Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020....28
Table 14: Suicide Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020....28
Table 15: Overdose/Accidental Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020....29
Table 16: Natural Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020....29
Table 17: Homicide Jail Deaths, Expected vs Actual, Detailed Results, 2010-2020....29
Table 18: Top 15 Alameda County Jail Demographic Groups with Associated Death Rates....31
Table 19: Top 15 Contra Costa County Jail Demographic Groups with Associated Death Rates....32
Table 20: Top 15 Fresno County Jail Demographic Groups with Associated Death Rates....33
Table 21: Top 15 Kern County Jail Demographic Groups with Associated Death Rates....34
Table 22: Top 15 Los Angeles County Jail Demographic Groups with Associated Death Rates....35
Table 23: Top 15 Orange County Jail Demographic Groups with Associated Death Rates....36
Table 24: Top 15 Riverside County Jail Demographic Groups with Associated Death Rates....37
Table 25: Top 15 Sacramento County Jail Demographic Groups with Associated Death Rates....38
Table 26: Top 15 San Bernardino County Jail Demographic Groups with Associated Death Rates....39
Table 27: Top 15 San Diego County Jail Demographic Groups with Associated Death Rates....40
Table 28: Top 15 San Francisco County Jail Demographic Groups with Associated Death Rates....41
Table 29: Top 15 Santa Clara County Jail Demographic Groups with Associated Death Rates....42
Table 30: Percent of County Population by Gender (2010-2020)....45
Table 31: Average Unstandardized Days between Deaths (2010-2020)....46

List of Figures

Figure 1: Total Deaths in Various California County Jails (2010-2020) Compared to San Diego County.....3
Figure 2: Overall County Mortality Rates.....5
Figure 3: Suicide, Homicide, and Accidental Death Rates.....5
Figure 4: Comparing the Jail and General Population in San Diego County.....6
Figure 5: Expected vs Actual Jail Suicides between 2010 and 2020.....8
Figure 6: Expected vs Actual Jail Accidental Deaths between 2010 and 2020.....8
Figure 7: Expected vs Actual Jail Homicides between 2010 and 2020.....9
Figure 8: Expected vs Actual Jail Natural Deaths between 2010 and 2020.....9
Figure 9: Overall Expected vs Actual Jail Deaths between 2010 and 2020.....10
Figure 10: Overall Expected vs Actual Jail Deaths - Sentenced and Unsentenced.....11
Figure 11: Natural Expected vs Actual Jail Deaths - Sentenced and Unsentenced.....12
Figure 12: Suicide Expected vs Actual Jail Deaths - Sentenced and Unsentenced.....12
Figure 13: Overdose/Accidental Expected vs Actual Jail Deaths - Sentenced and Unsentenced.....13
Figure 14: Homicide Expected vs Actual Jail Deaths - Sentenced and Unsentenced.....13
Figure 15: Rated Capacity vs ADP at San Diego County Detention Facilities (2010-2021).....14
Figure 16: Average Number of Bookings and Releases by Hour of Day in San Diego County.....15
Figure 17: County Expected vs Actual Jail Deaths Including City Jails.....27
Figure 18: Confidence Intervals of Standardized Mortality Ratios.....30
Figure 19: Alameda County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....31
Figure 20: Rated Capacity vs ADP at Alameda County Detention Facilities (2010-2021).....31
Figure 21: Contra Costa County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity...32
Figure 22: Rated Capacity vs ADP at Contra Costa County Detention Facilities (2010-2021).....32
Figure 23: Fresno County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....33
Figure 24: Rated Capacity vs ADP at Fresno County Detention Facilities (2010-2021).....33
Figure 25: Kern County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....34
Figure 26: Rated Capacity vs ADP at Kern County Detention Facilities (2010-2021).....34
Figure 27: Los Angeles County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity 35
Figure 28: Rated Capacity vs ADP at Los Angeles County Detention Facilities (2010-2021).....35
Figure 29: Orange County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....36
Figure 30: Rated Capacity vs ADP at Orange County Detention Facilities (2010-2021).....36
Figure 31: Riverside County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....37
Figure 32: Rated Capacity vs ADP at Riverside County Detention Facilities (2010-2021).....37
Figure 33: Sacramento County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity.....38
Figure 34: Rated Capacity vs ADP at Sacramento County Detention Facilities (2010-2021).....38
Figure 35: San Bernardino County Population, Jail Pop, and In-Custody Deaths by Race/Ethnicity.....39
Figure 36: Rated Capacity vs ADP at San Bernardino County Detention Facilities (2010-2021).....39
Figure 37: San Diego County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity 40
Figure 38: Rated Capacity vs ADP at San Diego County Detention Facilities (2010-2021).....40
Figure 39: San Francisco County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity .41
Figure 40: Rated Capacity vs ADP at San Francisco County Detention Facilities (2010-2021).....41
Figure 41: Santa Clara County Population, Jail Population, and In-Custody Deaths by Race/Ethnicity 42
Figure 42: Rated Capacity vs ADP at Santa Clara County Detention Facilities (2010-2021).....42
Figure 43: Mortality Rates Over Time, San Diego vs California, Ages 18-59 (2000-2020).....43
Figure 44: Additional Inmate Comparison Measures, San Diego vs California.....44
Figure 45: Percent of Each County Population by Race/Ethnicity (2010-2020).....45
Figure 46: Percent of Each County Population by Age Group (2010-2020).....45