

## 3-4-50: Chronic Disease Deaths in San Diego County, Detailed Brief – Municipality Overview, 2014-2021

### What is 3-4-50?

Chronic diseases are among the leading causes of death and disability worldwide.<sup>1</sup> This reflects an improvement in the prevention and treatment of infectious diseases and significant changes in dietary habits, physical activity levels, and tobacco use in the population.<sup>2,3</sup> **Three** behaviors (poor diet, physical inactivity, and tobacco use) contribute to **four** chronic diseases (cancer, heart disease and stroke, type 2 diabetes, and lung diseases such as asthma) that result in over **50** percent of all deaths worldwide. This is the foundation of the 3-4-50 concept.<sup>4</sup> The influence of these three unhealthy behaviors may be seen in San Diego County as these four chronic diseases are among the most common causes of death and disability in our region. Considered together, the 3-4-50 diseases cost \$4 billion in direct treatment expenditures in San Diego County in 2007.<sup>5</sup>

### 3-4-50 in San Diego County

From 2014-2021, there has been a decrease in the percentage of 3-4-50 chronic disease related deaths and an increase in the rates of 3-4-50 chronic disease related deaths in San Diego County. In 2014, 54% of all deaths were due to 3-4-50 chronic diseases. However, by 2021, the percentage had decreased to 43%. In addition, the rate of 3-4-50 chronic disease deaths increased from 330.4 per 100,000 residents in 2014 to 336.2 per 100,000 residents in 2021. Among the 18 municipalities and unincorporated area in San Diego County, the City of Del Mar and the City of National City generally had the highest percentage of deaths due to 3-4-50 chronic diseases from 2014-2018. However, the City of Imperial Beach and the City of Solana Beach had the highest percentages of deaths due to 3-4-50 chronic diseases in 2019 and 2020, respectively. In 2021, the City of Solana Beach continued to have the highest percentage of deaths due to 3-4-50 chronic diseases, followed by the City of Coronado. Overall, the rates of death due to 3-4-50 chronic diseases were generally highest in the Cities of La Mesa and Lemon Grove between 2014 and 2021. Among the municipalities and the unincorporated area, there were considerable differences in the percentage of deaths due to 3-4-50 chronic diseases, as well as in 3-4-50 chronic disease death rates from 2014-2021. More detailed information is provided in the following tables and graphs.

## Understanding Public Health Data

This document presents San Diego County death statistics on stroke, coronary heart disease (CHD), diabetes, chronic obstructive pulmonary disease (COPD), asthma, and cancer from 2014-2021. Beginning in 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).

- A percentage is a way to express a proportion, or how small or large a quantity is relative to another quantity. For example, 9,870 cases out of a population of 654,321 would be 1.5%. This means that we would expect 1.5% of the population to be a case.
- A rate is the number of cases divided by the population, usually multiplied by a constant. For example, 987 cases, divided by population of 654,321 would be a rate of 150.8 per 100,000 population. This means for every 100,000 people, 150-151 cases would be expected.

Both measures are provided to give a more balanced look at the burden of 3-4-50 chronic diseases within the county. Percentages allow for the comparison of the number of 3-4-50 chronic disease deaths relative to the number of deaths overall. Percentages are influenced by both the number of 3-4-50 chronic disease deaths and the number of all cause deaths. It is important to keep this in mind when interpreting the data. For example, two municipalities could have the same number of 3-4-50 chronic disease deaths, but could have completely different percentages of 3-4-50 chronic disease deaths based on the number all cause deaths in each area.

	Municipality A	Municipality B
Number of 3-4-50 Chronic Disease Deaths	50	50
Number of All Cause Deaths	100	80
Percentage of Deaths Due to 3-4-50 Chronic Diseases	$(50/100) \times 100\% = 50\%$	$(50/80) \times 100\% = 62.5\%$

Rates were calculated to allow for comparison between municipalities, accounting for the size of each area's population. Like percentages, two municipalities could have the same number of 3-4-50 chronic diseases deaths but could have completely different rates of 3-4-50 chronic diseases deaths based on the total population of each municipality.

	Municipality A	Municipality B
Number of 3-4-50 Chronic Disease Deaths	50	50
Total Population at Risk	10,000	8,000
Rate of Deaths Due to 3-4-50 Chronic Diseases	$(50/1,000) \times 100,000 = 500$ deaths per 100,000 people	$(50/8,000) \times 100,000 = 625$ deaths per 100,000 people

<sup>1</sup> World Health Organization (WHO). "WHO reveals leading causes of death and disability worldwide: 2000-2019", <https://www.who.int/news/item/09-12-2020-who-reveals-leading-causes-of-death-and-disability-worldwide-2000-2019> (Accessed April 11, 2023).

<sup>2</sup> Centers for Disease Control and Prevention (CDC). "Ten Great Public Health Achievements --- United States, 2001—2010", <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6019a5.htm> (Accessed April 11, 2023)

<sup>3</sup> Centers for Disease Control and Prevention (CDC). "About Chronic Diseases", <https://www.cdc.gov/chronicdisease/about/index.htm> (Accessed April 11, 2023).

<sup>4</sup> 3Four50, [www.3four50.com](http://www.3four50.com) (Accessed September 22, 2011).

<sup>5</sup> County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit. (October, 2010). 3-4-50: Chronic Disease in San Diego County. Retrieved from [www.SDHealthStatistics.com](http://www.SDHealthStatistics.com) (Accessed April 11, 2023).

### 3-4-50 Deaths in San Diego County, 2014-2021

The following tables and figures display trends in overall 3-4-50 chronic diseases deaths for San Diego County and its municipalities.

3-4-50 Death† Percentages* Among San Diego County Residents, 2014 - 2021**								
By Municipality								
Municipality	2014	2015	2016	2017	2018	2019	2020	2021
City of Carlsbad	54%	52%	51%	50%	52%	49%	46%	43%
City of Chula Vista	55%	55%	55%	53%	53%	51%	42%	42%
City of Coronado	51%	44%	47%	51%	49%	47%	40%	47%
City of Del Mar	60%	62%	57%	55%	59%	51%	47%	43%
City of El Cajon	54%	54%	53%	51%	50%	51%	45%	43%
City of Encinitas	50%	49%	45%	49%	47%	47%	46%	42%
City of Escondido	49%	49%	47%	49%	47%	46%	43%	42%
City of Imperial Beach	55%	61%	50%	53%	43%	54%	47%	45%
City of La Mesa	55%	51%	48%	54%	45%	48%	43%	42%
City of Lemon Grove	51%	57%	52%	53%	52%	47%	42%	44%
City of National City	59%	58%	58%	57%	53%	51%	47%	43%
City of Oceanside	53%	57%	54%	51%	52%	52%	45%	42%
City of Poway	55%	50%	53%	53%	51%	48%	45%	41%
City of San Diego	54%	54%	53%	51%	50%	50%	45%	43%
City of San Marcos	55%	58%	53%	51%	51%	51%	46%	44%
City of Santee	57%	52%	56%	51%	51%	48%	47%	45%
City of Solana Beach	50%	53%	52%	52%	40%	53%	57%	47%
City of Vista	54%	51%	55%	49%	48%	47%	41%	39%
Unincorporated	54%	53%	54%	52%	50%	50%	46%	43%
San Diego County	54%	53%	53%	51%	50%	50%	45%	43%

\*3-4-50 deaths as a percentage of all cause deaths.

†3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer. Beginning with 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).

\*\*The COVID-19 pandemic was associated with increases in all-cause mortality. COVID-19 deaths have affected the patterns of mortality including those of 3-4-50 chronic diseases.

Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2021 California Vital Records Business Intelligence System (VRBIS).

Prepared by County of San Diego (CoSD), Health and Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics Unit, April 2023.

Please see page 5 for interpretations of 3-4-50 chronic disease death percentages in San Diego County municipalities and the unincorporated area.

### 3-4-50 Death† Rates\* Among San Diego County Residents, 2014 - 2021\*\*

#### By Municipality

Municipality	2014	2015	2016	2017	2018	2019	2020	2021
City of Carlsbad	334.1	345.5	347.2	341.2	375.6	324.9	352.5	322.2
City of Chula Vista	298.0	308.6	308.9	307.7	316.9	304.1	295.5	310.5
City of Coronado	320.8	268.6	269.5	387.1	392.0	252.1	303.4	353.4
City of Del Mar	379.1	427.6	389.0	374.7	319.2	297.1	388.3	277.6
City of El Cajon	456.8	438.6	449.4	419.9	412.2	433.3	435.2	417.6
City of Encinitas	312.3	329.6	301.2	334.0	283.7	318.4	328.8	303.4
City of Escondido	335.4	355.5	336.1	350.3	347.8	344.9	371.4	374.9
City of Imperial Beach	339.3	307.8	298.9	363.5	252.1	338.8	325.3	295.2
City of La Mesa	511.5	497.8	491.0	506.7	400.8	440.3	427.7	456.0
City of Lemon Grove	440.4	518.0	450.9	515.0	491.9	444.7	465.3	516.2
City of National City	383.9	393.6	426.1	409.0	369.4	380.2	401.5	380.2
City of Oceanside	366.3	442.0	390.1	381.4	388.0	368.6	361.7	369.4
City of Poway	339.7	370.3	372.4	397.2	349.8	341.0	386.1	371.1
City of San Diego	298.7	302.2	298.1	296.8	280.6	287.4	285.2	295.2
City of San Marcos	322.3	370.8	348.3	341.5	323.9	323.9	298.3	332.5
City of Santee	383.7	368.6	422.5	374.4	399.5	369.5	408.8	443.4
City of Solana Beach	318.0	438.7	352.6	373.0	300.9	393.5	392.4	372.2
City of Vista	342.8	307.8	333.0	297.7	316.6	304.7	306.7	324.1
Unincorporated	348.5	353.8	385.9	356.1	355.3	365.7	380.5	385.2
San Diego County	330.4	339.8	339.5	334.4	324.0	325.4	329.1	336.2

\*Rates per 100,000 population. Population estimates for 2020 and 2021 were derived using the 2010 Census and data should be considered preliminary.

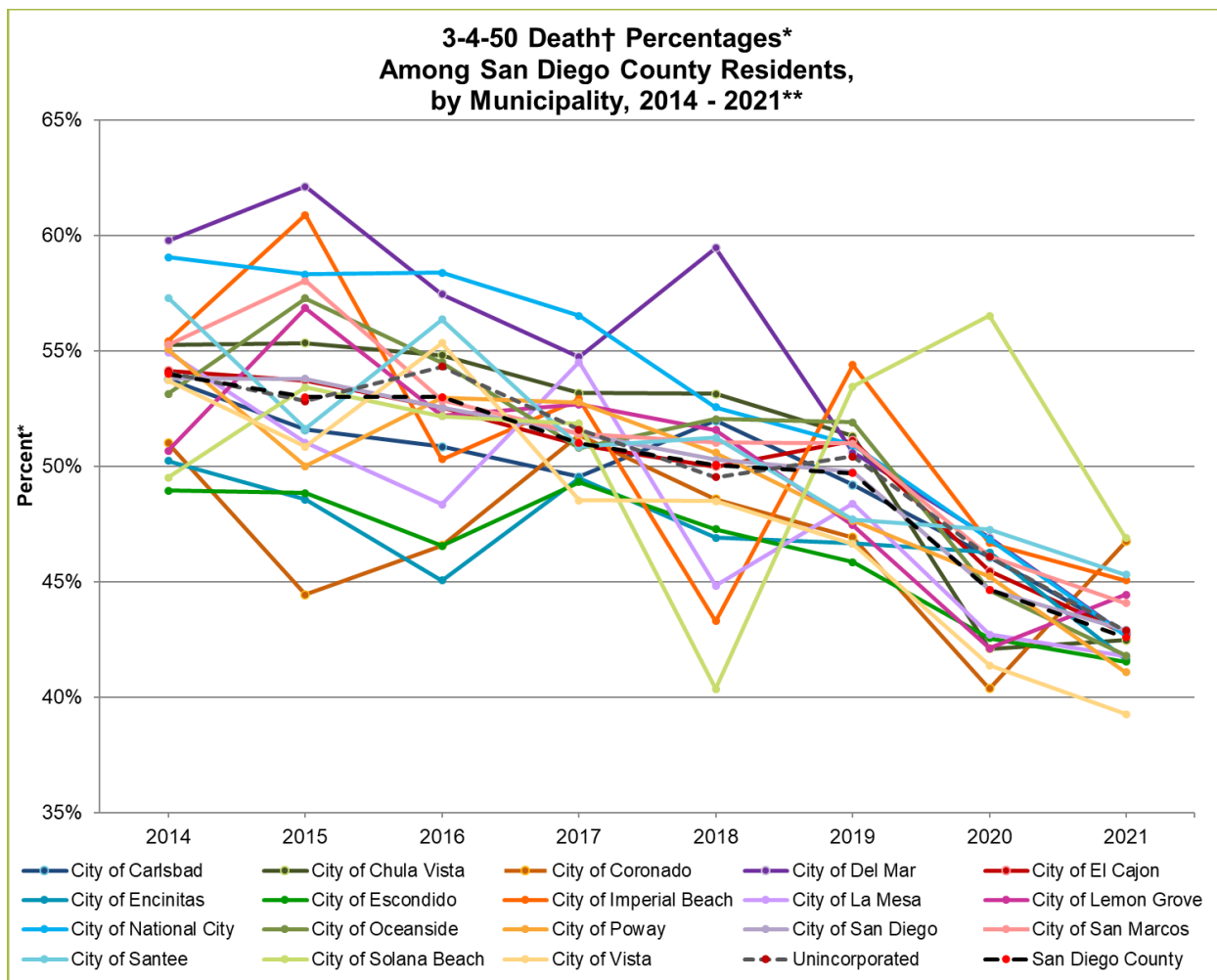
†3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer. Beginning with 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).

\*\*The COVID-19 pandemic was associated with increases in all-cause mortality. COVID-19 deaths have affected the patterns of mortality including those of 3-4-50 chronic diseases.

Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2021 California Vital Records Business Intelligence System (VRBIS).

Prepared by County of San Diego (CoSD), Health and Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics Unit, April 2023.

Please see page 6 for interpretations of 3-4-50 chronic disease death rates in San Diego County municipalities and the unincorporated area.



\*3-4-50 deaths as a percentage of all cause deaths.

†3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer. Beginning with 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).

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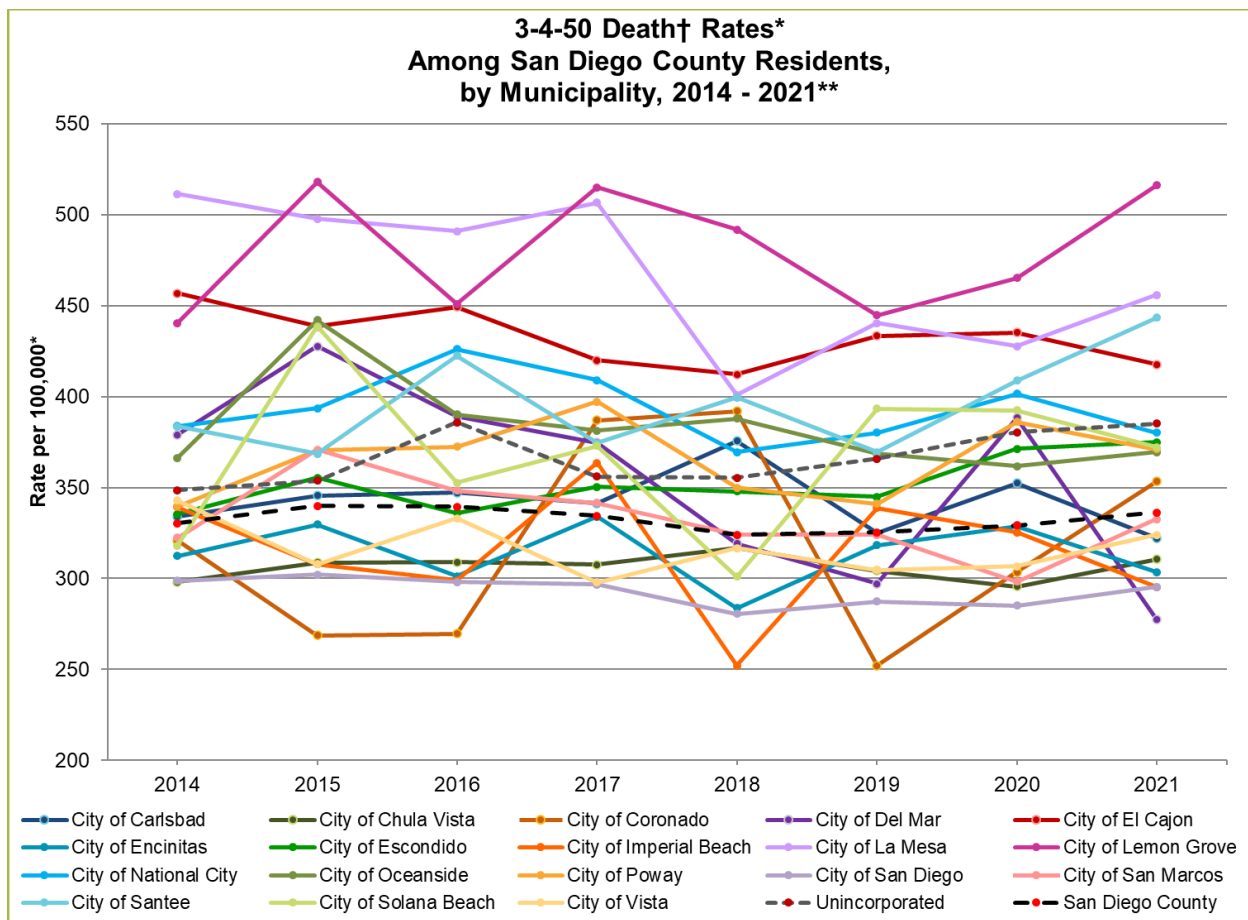
§Percents not calculated for fewer than 5 events for the years 2000 to 2019. Percents not calculated for fewer than 11 events for the years 2020 and 2021. Percents not calculated in cases where zip code is unknown.

Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2021 California Vital Records Business Intelligence System (VRBIS).

Prepared by County of San Diego (CoSD), Health and Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics Unit, April 2023.

### 3-4-50 in San Diego County Municipalities:

- Overall, the percentage of deaths due to 3-4-50 chronic diseases decreased in San Diego County and all its municipalities from 2014-2021.
- From 2014-2021, the City of Del Mar had the greatest decrease (28.6%) in 3-4-50 chronic disease death percentages, followed by the City of National City (27.7%) and the City of Vista (26.9%).
- Among the 18 municipalities and the unincorporated area, the City of Del Mar, the City of National City, and the City of San Marcos had higher percentages of deaths due to 3-4-50 chronic diseases compared to San Diego County overall every year from 2014-2021.



\*Rates per 100,000 population. Population estimates for 2020 and 2021 were derived using the 2010 Census and data should be considered preliminary.

†3-4-50 deaths include stroke, coronary heart disease (CHD), diabetes, COPD, asthma, and cancer. Beginning with 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).

\*\*The COVID-19 pandemic was associated with increases in all-cause mortality. COVID-19 deaths have affected the patterns of mortality including those of 3-4-50 chronic diseases.

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Prepared by County of San Diego (CoSD), Health and Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics Unit, April 2023.

### 3-4-50 in San Diego County Municipalities:

- From 2014-2021, the death rates due to 3-4-50 chronic diseases increased in San Diego County, half of the municipalities and the unincorporated area.
  - 3-4-50 chronic diseases death rates increased in the City of Chula Vista, the City of Coronado, the City of Escondido, the City of Lemon Grove, the City of Oceanside, the City of Poway, the city of San Marcos, the City of Santee, and the City of Solana Beach.
- Among the 18 municipalities and the unincorporated area, the City of La Mesa and the City of Lemon Grove had the highest rate of 3-4-50 chronic disease deaths from 2014-2021.
- From 2014-2021, the City of Lemon Grove had the greatest increase in 3-4-50 chronic disease death rates (17.2%), while the City of Del Mar had the greatest decrease (26.8%).
- Among the 18 municipalities and the unincorporated area, the City of El Cajon, the City of La Mesa, the City of Lemon Grove, the City of National City, the City of Oceanside, the City of Poway, the City of Santee, and the unincorporated area had higher rates of death due to 3-4-50 chronic diseases compared to San Diego County overall every year from 2014-2021.