3-4-50: Chronic Disease Deaths in San Diego County – Municipality Overview, 2014-2019

What is 3-4-50?

Chronic diseases are now among the leading causes of death and disability worldwide. 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.[1] **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.[2] 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.[3]

3-4-50 in San Diego County

From 2014 to 2019, there has been a decrease in the percentage of county deaths due to chronic disease, as well as a decrease in the rate of chronic disease-related deaths. In 2014, 54% of all deaths were due to chronic disease. However, by 2018, the percentage had decreased to 50% and remained at 50% in 2019. In addition, the rate of chronic disease deaths decreased from 330.4 per 100,000 residents in 2014 to 325.4 per 100,000 residents in 2019. Among the San Diego municipalities, the City of Del Mar and the City of National City generally had the highest percentage of deaths due to chronic disease, from 2014 - 2018. In 2019, the City of Imperial Beach had the highest percentage of deaths due to chronic disease. Overall, the rate of death due to chronic disease was generally highest in the Cities of La Mesa, Lemon Grove, and El Cajon between 2014 and 2019. More detailed information is provided in the following tables and graphs.

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[1] World Health Organization (WHO). "The Global Strategy on Diet, Physical Activity and Health." http://www.who.int/dietphysicalactivity/media/en/gsfs_general.pdf (Accessed September 22, 2011).
[2] 3Four50, www.3four50.com (Accessed September 22, 2011).
[3] County of San Diego, Health and Human Services Agency, Public Health Services, Community Health Statistics Unit, "Economic Burden of Chronic Disease" (September 2010).

Understanding Public Health Data

This document presents San Diego County death statistics on cancer, stroke, coronary heart disease (CHD), diabetes, asthma, and chronic obstructive pulmonary disease (COPD) from 2014 – 2019. 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, 5,018 deaths due to cancer out of a total of 21,940 deaths would mean that 22.9% of all deaths were due to cancer.

- 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 that 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 chronic disease within the County. Percentages allow for the comparison of the number chronic disease deaths relative to the number of deaths overall. Percentages are influenced by both the number of 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 regions could have the same number of chronic disease deaths, but could have completely different percentages of chronic disease deaths based on the number all cause deaths in each area.

	Region A	Region B
Number of Chronic Disease Deaths	50	50
Number of All Cause Deaths	100	80
Percentage of Deaths Due to Chronic Disease	(50/100) *100% = 50%	(50/80) *100% = 62.5%

Rates were calculated to allow for comparison between regions, accounting for the size of each area's population. Like percentages, two regions could have the same number of chronic disease deaths but could have completely different rates of chronic disease deaths based on the total population of each region.

	Region A	Region B
Number of Chronic Disease Deaths	50	50
Total Population at Risk	10,000	8,000
Rate of Deaths Due to Chronic Disease	(50/10,000) *100,000 = 500 deaths per 100,000 people	(50/8,000) * 100,000 = 625 deaths per 100,000 people

3-4-50 Deaths in San Diego County, 2014-2019

The following tables and figures display trends in overall chronic disease deaths for San Diego County and its municipalities.

	Table 1: 3-4-50 Death† Percentages* Among San Diego County Residents, 2014 - 2019 *By Municipality*						
	Municipality	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
1	City of Carlsbad	54%	52%	51%	50%	52%	49%
2	City of Chula Vista	55%	55%	55%	53%	53%	51%
3	City of Coronado	51%	44%	47%	51%	49%	47%
4	City of Del Mar	60%	62%	57%	55%	59%	51%
5	City of El Cajon	54%	54%	53%	51%	50%	51%
6	City of Encinitas	50%	49%	45%	49%	47%	47%
7	City of Escondido	49%	49%	47%	49%	47%	46%
8	City of Imperial Beach	55%	61%	50%	53%	43%	54%
9	City of La Mesa	55%	51%	48%	54%	45%	48%
10	City of Lemon Grove	51%	57%	52%	53%	52%	47%
11	City of National City	59%	58%	58%	57%	53%	51%
12	City of Oceanside	53%	57%	54%	51%	52%	52%
13	City of Poway	55%	50%	53%	53%	51%	48%
14	City of San Diego	54%	54%	53%	51%	50%	50%
15	City of San Marcos	55%	58%	53%	51%	51%	51%
16	City of Santee	57%	52%	56%	51%	51%	48%
17	City of Solana Beach	50%	53%	52%	52%	40%	53%
18	City of Vista	54%	51%	55%	49%	48%	47%
19	Unincorporated	54%	53%	54%	52%	50%	50%
	San Diego County	54%	53%	53%	51%	50%	50%

*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).

Source: 2014-2019 California Vital Records Business Intelligence System (VRBIS).

Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics, 2021.

Please see Figure 1 for interpretations of 3-4-50 death percentages among San Diego County residents by municipality and the unincorporated area.

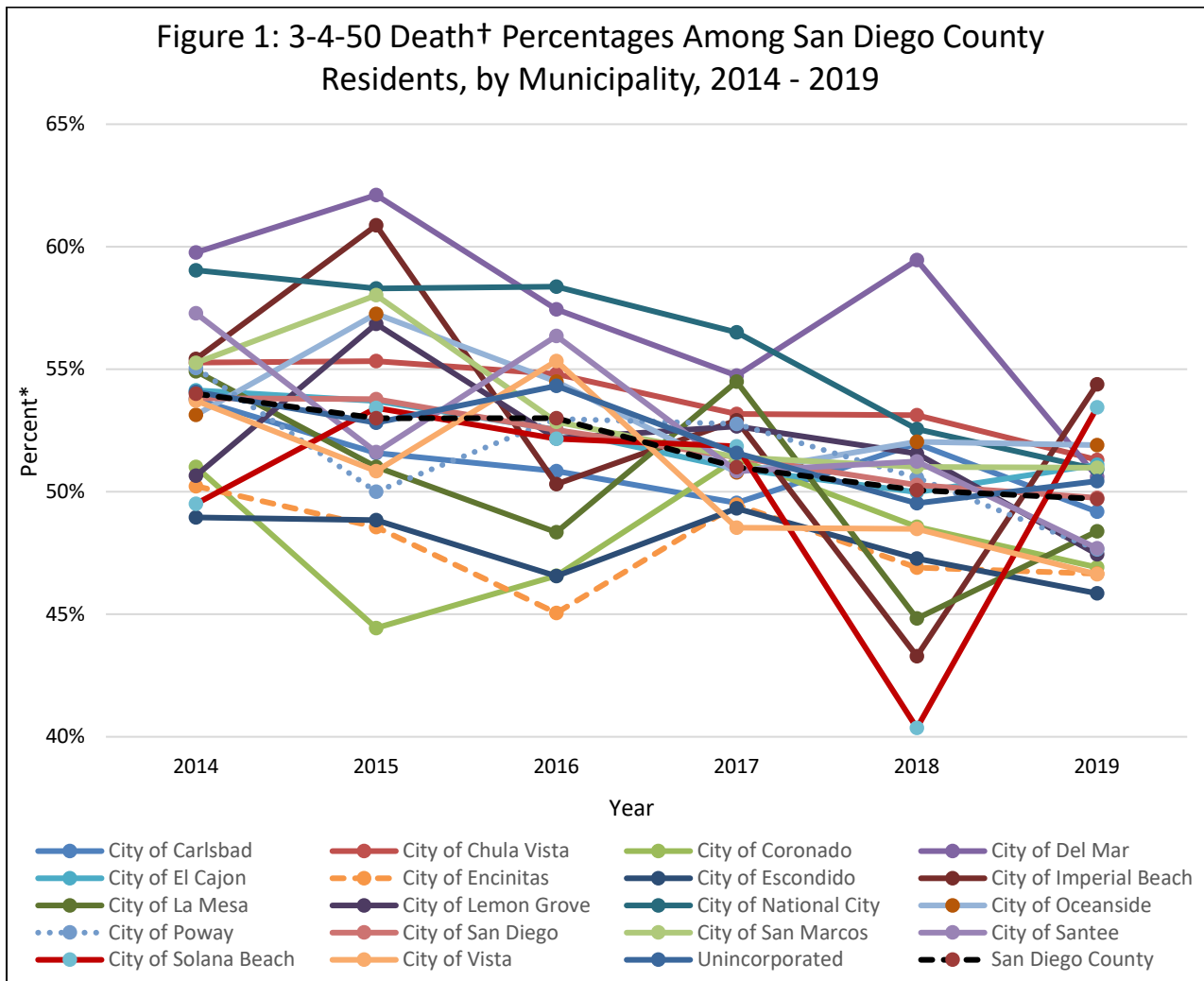|	Municipality	2014	2015	2016	2017	2018	2019
	Table 2: 3-4-50 Death† Rates* Among San Diego County Residents, 2014 - 2019 *By Municipality*						
1	City of Carlsbad	334.1	345.5	347.2	341.2	375.6	324.9
2	City of Chula Vista	298.0	308.6	308.9	307.7	316.9	304.1
3	City of Coronado	320.8	268.6	269.5	387.1	392.0	252.1
4	City of Del Mar	379.1	427.6	389.0	374.7	319.2	297.1
5	City of El Cajon	456.8	438.6	449.4	419.9	412.2	433.3
6	City of Encinitas	312.3	329.6	301.2	334.0	283.7	318.4
7	City of Escondido	335.4	355.5	336.1	350.3	347.8	344.9
8	City of Imperial Beach	339.3	307.8	298.9	363.5	252.1	338.8
9	City of La Mesa	511.5	497.8	491.0	506.7	400.8	440.3
10	City of Lemon Grove	440.4	518.0	450.9	515.0	491.9	444.7
11	City of National City	383.9	393.6	426.1	409.0	369.4	380.2
12	City of Oceanside	366.3	442.0	390.1	381.4	388.0	368.6
13	City of Poway	339.7	370.3	372.4	397.2	349.8	341.0
14	City of San Diego	298.7	302.2	298.1	296.8	280.6	287.4
15	City of San Marcos	322.3	370.8	348.3	341.5	323.9	323.9
16	City of Santee	383.7	368.6	422.5	374.4	399.5	369.5
17	City of Solana Beach	318.0	438.7	352.6	373.0	300.9	393.5
18	City of Vista	342.8	307.8	333.0	297.7	316.6	304.7
19	Unincorporated	348.5	353.8	385.9	356.1	355.3	365.7
	San Diego County	330.4	339.8	339.5	334.4	324.0	325.4

*Rates per 100,000 population.

†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).

Source: 2014-2019 California Vital Records Business Intelligence System (VRBIS). SANDAG, Current Population Estimates, 05/2020. Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics, 2021.

Please see Figure 2 for interpretations of 3-4-50 death rates among San Diego County residents by municipality and the unincorporated area.

Figure 1: 3-4-50 Death† Percentages Among San Diego County Residents, by Municipality, 2014 - 2019

Legend:
- City of Carlsbad
- City of Chula Vista
- City of Coronado
- City of Del Mar
- City of El Cajon
- City of Encinitas
- City of Escondido
- City of Imperial Beach
- City of La Mesa
- City of Lemon Grove
- City of National City
- City of Oceanside
- City of Poway
- City of San Diego
- City of San Marcos
- City of Santee
- City of Solana Beach
- City of Vista
- Unincorporated
- San Diego County
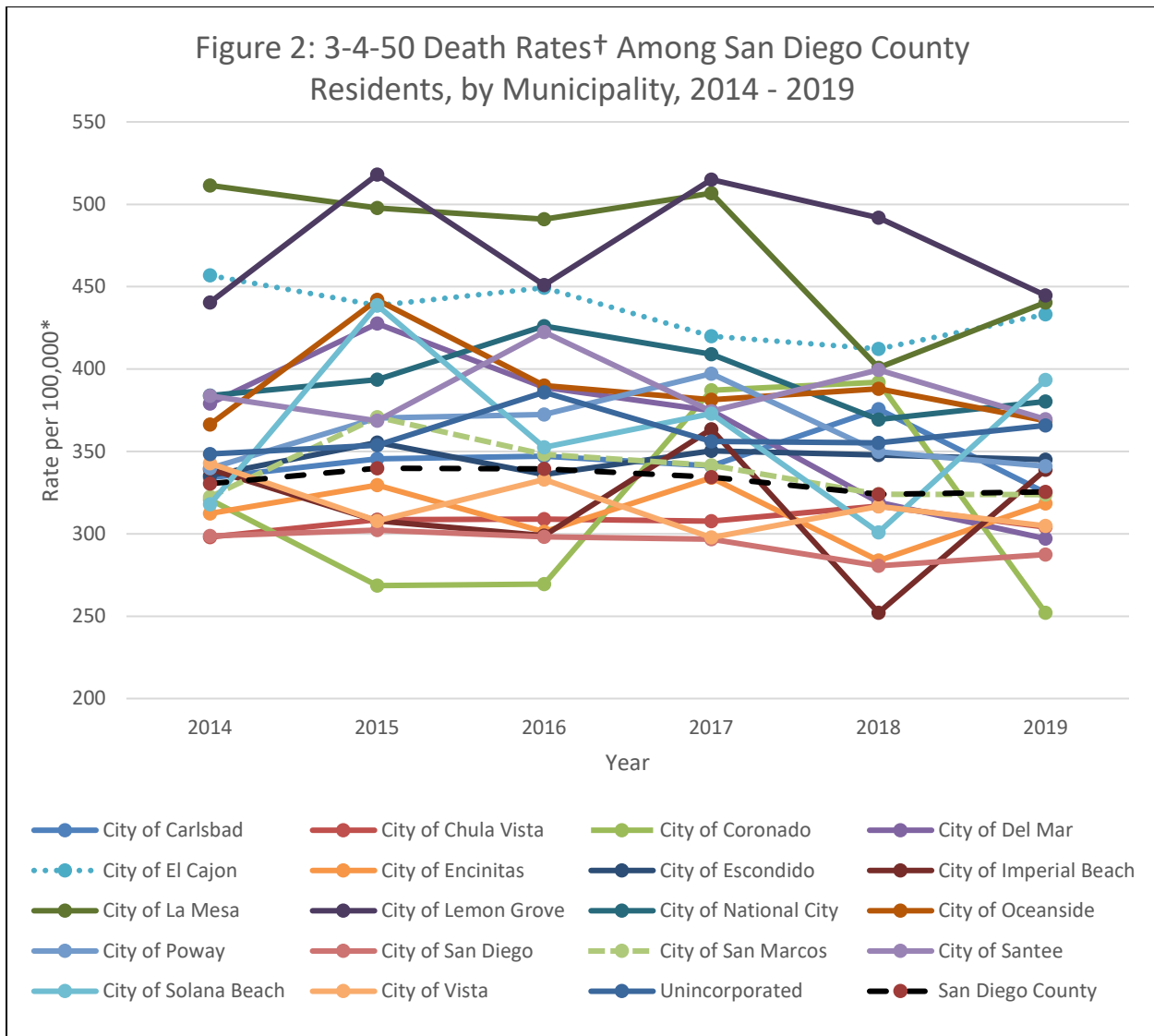
*3-4-50 deaths as a percentage of all cause deaths.
†3-4-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer. Beginning with 2017, COPD includes chronic lower respiratory diseases (COPD/chronic lower respiratory diseases).
Source: 2014-2019 California Vital Records Business Intelligence System (VRBIS).
Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics, 2021.

3-4-50 Among San Diego Municipalities:

- Overall, the percentage of deaths due to chronic disease decreased in San Diego County and all of its municipalities from 2014 – 2019, with exception to the City of Solana Beach, whose percentage of deaths due to chronic diseases increased in 2019.
- Among the 18 municipalities and the unincorporated areas, the City of Del Mar and the City of National City generally had the highest percentage of deaths due to chronic disease from 2014-2018; however, in 2019, the City of Imperial Beach had the highest percentage.
- Among the 18 municipalities and the unincorporated areas, the City of Coronado, the City of Encinitas, and the City of Vista generally had the lowest percentage of deaths due to chronic disease from 2014 - 2019.

Figure 2: 3-4-50 Death Rates† Among San Diego County Residents, by Municipality, 2014 - 2019

*Rates per 100,000 population.

†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).

Source: 2014-2019 California Vital Records Business Intelligence System (VRBIS). SANDAG, Current Population Estimates, 05/2020.

Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services (PHS), Community Health Statistics, 2021.

3-4-50 Among San Diego Municipalities:

- Overall, the chronic disease death rate decreased in San Diego County from 2014-2019. The rate decreased in about half of the municipalities.
- Among the 18 municipalities and the unincorporated areas, the City of Lemon Grove generally had the highest rate of chronic disease death from 2014 - 2019.
- Among the 18 municipalities and the unincorporated areas, the City of Coronado and the City of San Diego generally had the lowest chronic disease death rate from 2014 - 2019.