3-4-50: Chronic Disease Deaths in San Diego County –

North Central Region, 2000-2016

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 2000 to 2016, 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 2000, 63% of all deaths were due to chronic disease. However, by 2016, the percentage had decreased to 53%. In addition, the rate of chronic disease deaths decreased from 440.6 per 100,000 in 2000 to 339.5 per 100,000 in 2016. Among the Regions, South Region had the highest percentage of deaths due to chronic disease in every year from 2000 to 2016. However, South Region also generally had the second lowest number of deaths from all causes in the county during the same time period. The rate of death due to chronic disease was generally highest in East Region and lowest in Central Region for each year from 2000 to 2015 with the exception of North Central region having the lowest rates in 2002, 2010, 2014, and 2016. Within the regions there were considerable differences in the percentage of deaths due to chronic disease among the Subregional Areas (SRAs), as well as in chronic disease death rates. 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 2000 – 2016.

- A percentage is a way to express how small or large a quantity is relative to another quantity.

- 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 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 of between regions, accounting for the size of the each area's population.

[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).

3-4-50 Deaths in San Diego County – North Central Region, 2000-2016

The following tables and charts display trends in chronic disease deaths for the North Central Region of San Diego County.

3-4-50 Death† Percentages Among San Diego County Residents - North Central Region, 2000-2016
By SRA

Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
San Diego County[a]	63%	63%	61%	60%	59%	58%	57%	57%	56%	56%	56%	54%	54%	55%	54%	53%	53%
North Central Region	63%	61%	62%	60%	60%	59%	58%	56%	56%	55%	54%	54%	55%	53%	53%	53%	51%
SRA																	
Coastal	61%	61%	57%	59%	61%	57%	61%	53%	55%	53%	54%	51%	53%	52%	50%	52%	49%
Del Mar/Mira Mesa	63%	58%	62%	59%	57%	60%	53%	58%	55%	56%	55%	55%	52%	55%	58%	55%	56%
Elliot-Navajo	65%	62%	68%	61%	60%	59%	61%	57%	54%	51%	50%	54%	55%	54%	53%	50%	52%
Kearny Mesa	65%	61%	62%	62%	61%	61%	58%	55%	56%	59%	56%	54%	56%	51%	53%	54%	48%
Miramar	§	§	§	§	§	§	§	§	§	§	§	§	§	§	57%	50%	56%
Peninsula	61%	62%	60%	61%	55%	58%	56%	57%	60%	54%	54%	55%	55%	55%	53%	53%	49%
University	64%	70%	62%	60%	58%	57%	54%	50%	54%	54%	51%	55%	56%	49%	48%	54%	52%

[a]Deaths with unknown Region or SRA are reflected in the county total, but not in the individual categories. Category sums may not add up to county total.
† 3-4-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer.
§ Rates and Percentages not calculated for fewer than 5 events. Rates not calculated in cases where zip code is unknown.
Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2016 California Vital Records Business Intelligence System (VRBIS); SANDAG, Current Population Estimates, Received 03/2017.
Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 2019.

3-4-50 Death† Rates* Among San Diego County Residents - North Central Region, 2000-2016
By SRA

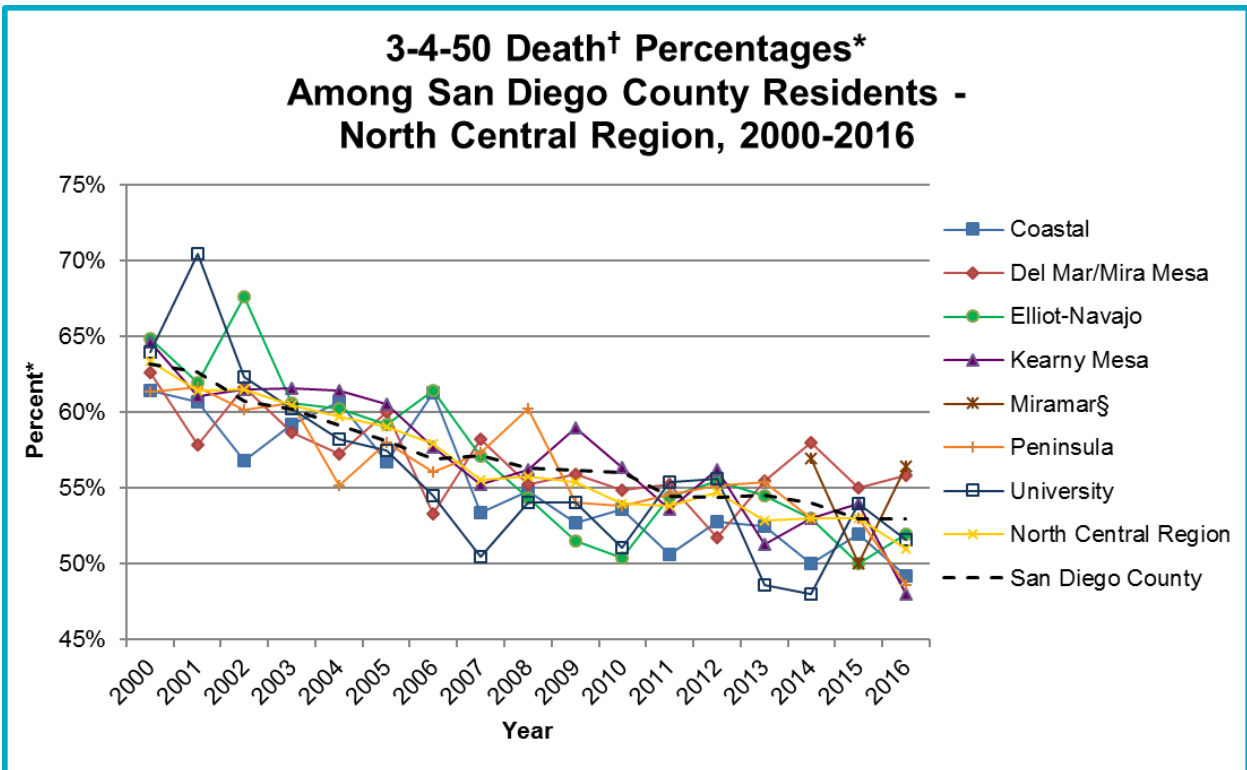| Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
San Diego County[a]	440.6	435.2	402.8	402.7	386.7	373.8	357.8	353.1	347.5	336.6	347.0	347.0	346.2	356.3	329.6	338.8	339.5
North Central Region	417.1	388.3	360.1	351.7	348.9	337.6	331.9	305.1	316.6	302.2	299.4	309.3	314.6	310.2	297.4	301.9	283.4
SRA																	
Coastal	572.7	505.1	449.3	468.4	495.5	449.9	455.7	377.9	403.1	380.4	406.0	390.4	384.8	404.0	315.2	285.6	272.3
Del Mar/Mira Mesa	208.5	169.5	192.9	167.2	173.5	162.9	161.9	171.6	148.8	153.2	170.7	186.8	178.0	182.0	208.5	213.9	222.1
Elliot-Navajo	439.6	428.1	434.9	371.2	402.1	366.5	389.1	354.9	329.5	301.4	335.6	355.6	360.1	370.0	341.3	336.3	351.0
Kearny Mesa	579.1	559.6	491.3	529.0	496.9	490.5	451.0	416.1	468.4	458.4	431.2	425.2	450.7	415.6	375.0	383.0	337.0
Miramar	§	§	§	§	§	§	§	§	§	§	§	§	§	§	249.0	209.1	254.6
Peninsula	397.7	388.0	361.8	314.4	292.5	334.0	317.5	311.8	323.6	322.7	257.4	282.3	287.7	326.4	304.0	330.6	265.2
University	307.8	301.2	233.8	245.6	241.3	238.3	250.8	206.9	247.7	202.4	191.3	231.6	239.4	201.8	252.9	284.1	263.7

* Rates per 100,000 population.
[a]Deaths with unknown Region or SRA are reflected in the county total, but not in the individual categories. Category sums may not add up to county total.
† 3-4-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer.
§ Rates and Percentages not calculated for fewer than 5 events. Rates not calculated in cases where zip code is unknown.
Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2016 California Vital Records Business Intelligence System (VRBIS); SANDAG, Current Population Estimates, Received 03/2017.
Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Community Health Statistics, 2019.

3-4-50 Death† Percentages*
Among San Diego County Residents -
North Central Region, 2000-2016

*3-4-50 deaths as a percentage of all cause deaths.
†3-Four-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer.
§Percentages not calculated for fewer than 5 events. Percentages not calculated in cases where zip code is unknown.
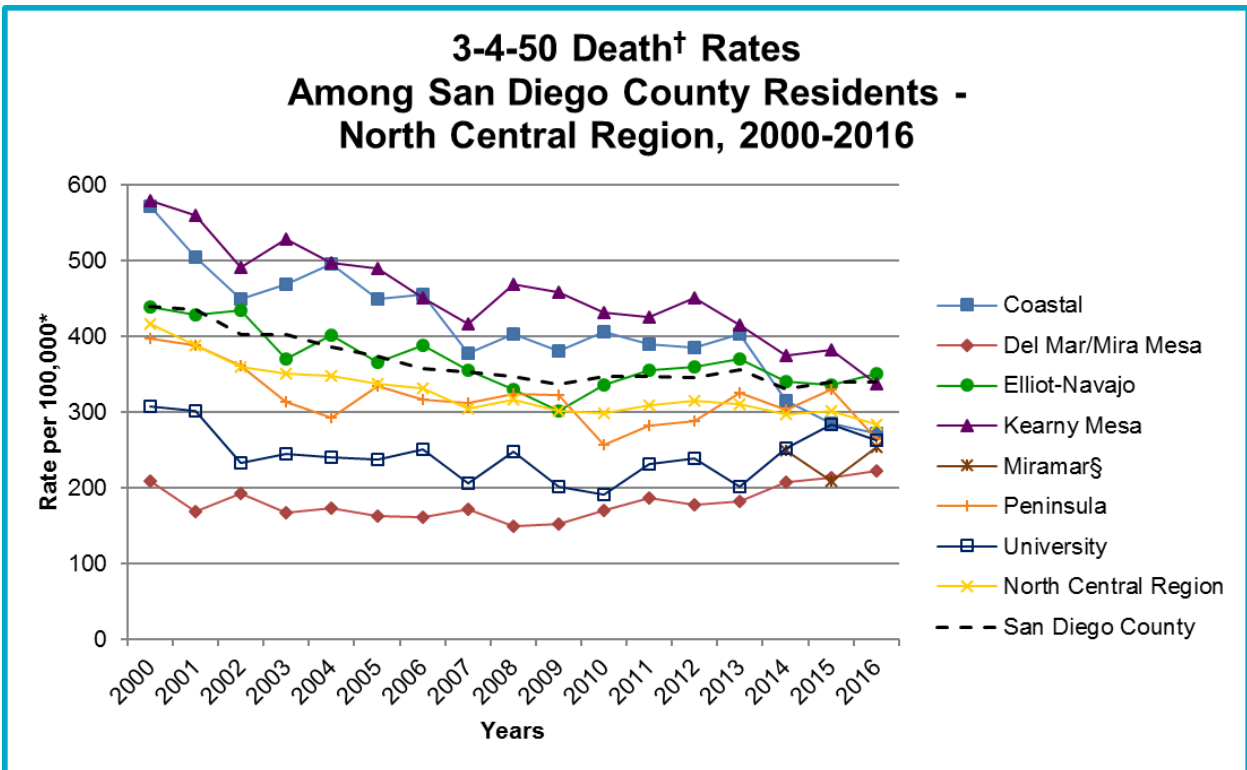‡Percentages cents not shown due to fewer than 5 events.
Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2016 California Vital Records
Business Intelligence System (VRBIS); SANDAG, Current Population Estimates, Received 03/2017.
Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services, Community Health
Statistics Unit, 2019.

3-4-50 in North Central Region:

- Overall, the percentage of deaths due to chronic disease decreased in North Central Region and its Subregional Areas (SRAs) from 2000-2016.
- Among the North Central Region SRAs, Del Mar/Mira Mesa and Miramar had the highest percentages of deaths due to chronic disease in 2016.
- Among the North Central Region SRAs, Kearny Mesa had the lowest percentages of chronic disease deaths in 2016.

3-4-50 Death† Rates
Among San Diego County Residents -
North Central Region, 2000-2016

*Rates per 100,000 population.
†3-Four-50 Deaths include Stroke, Coronary Heart Disease (CHD), Diabetes, COPD, Asthma, and Cancer.
§Rates not calculated for fewer than 5 events or in cases where zip code is unknown.
‡Rates not shown due to fewer than 5 events.
Source: California Department of Public Health, 2000-2013 Death Statistical Master Files, 2014-2016 California Vital Records
Business Intelligence System (VRBIS); SANDAG, Current Population Estimates, Received 03/2017.
Prepared by County of San Diego (CoSD), Health & Human Services Agency (HHSA), Public Health Services, Community Health
Statistics Unit, 2019.

3-4-50 in North Central Region:

- Overall, the chronic disease death rate decreased in North Central Region and its SRAs from 2000-2015 with the exception of the Del Mar/Mira Mesa and Miramar SRAs which increased in 2015.
- Among the North Central Region SRAs, Kearny Mesa generally had the highest chronic disease death rates from 2000-2015. In 2016, Elliott-Navajo had the highest chronic disease death rate.
- Among the North Central Region SRAs, Del Mar/Mira Mesa had the lowest chronic disease death rates from 2000-2016.
- Because of the small number of chronic disease deaths (less than 5), rates were not calculated for Miramar from 2000-2013.