



Life Expectancy in Orange County

2015

Orange County Health Care Agency – Health Policy & Research



Life Expectancy in Orange County

Orange County Health Care Agency

Mark Refowitz, Director

Richard Sanchez, Assistant Director

Health Policy – Research and Planning

David Polyakov, BS Candidate, Northwestern University

Alaka Nafday, MS, MSc, Research & Planning Manager

Curtis Condon, PhD, Research & Planning Manager

Donna L. Grubaugh, Chief

Report reviewed by:

Public Health Services

Eric Handler, MD, MPH, FAAP, Health Officer

Helene Calvet, MD, Deputy Health Officer

David Núñez, MD, MPH, Family Health Medical Director

University of California, Irvine

Oladele A. Ogunseitan, PhD, MPH, Professor, Chair of UC Irvine Program in Public Health

Kathleen Carlos, MD/PhD Candidate, Medical Scientist Training Program, UC Irvine

Suggested Citation

“Life Expectancy in Orange County (2015).” Orange County Health Care Agency. Santa Ana, California, October 2015.”

This report is available online at www.ochealthinfo.com/pubs.



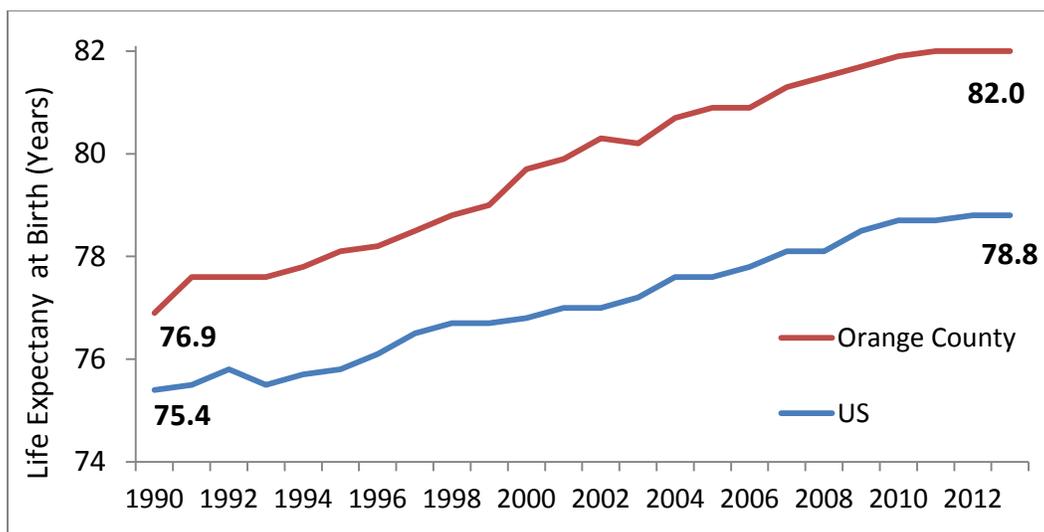
Life Expectancy in Orange County

Average life expectancy at birth is a fundamental tool for measuring the overall health of a community and a means to highlight disparities between different groups (1). Life expectancy is different from taking the average age at death in that it calculates the probable number of years remaining for a person at each specific age. To calculate life expectancy, life tables are made that take into account the population at each age and the number of deaths that occurred at each age during the year.

While Orange County has achieved impressive gains in average life expectancy over the past several years (2), significant differences continue to exist and there are signs of a potential slow-down in longevity. In this report, we examine average life expectancy at birth of Orange County residents in 2013 and break it down based on different criteria, notably gender, race/ethnicity, and city of residence. We also compare longevity in Orange County to that of the state of California, the United States, and other nations whose populations have long average life expectancies.

As shown in **Figure 1**, average life expectancy has systematically improved over the past two decades since 1990 at both the national and local Orange County levels. In 2013, the national life expectancy at birth was 78.8 years, up 3.4 years from 1990. In Orange County, for the same period, life expectancy at birth has risen 5.1 years to where it is today, at 82 years. However, while Orange County's life expectancy is well above that of the United States, it has failed to improve over the past four years at 82. Similarly, average life expectancy in the United States has remained relatively level over the past couple of years.

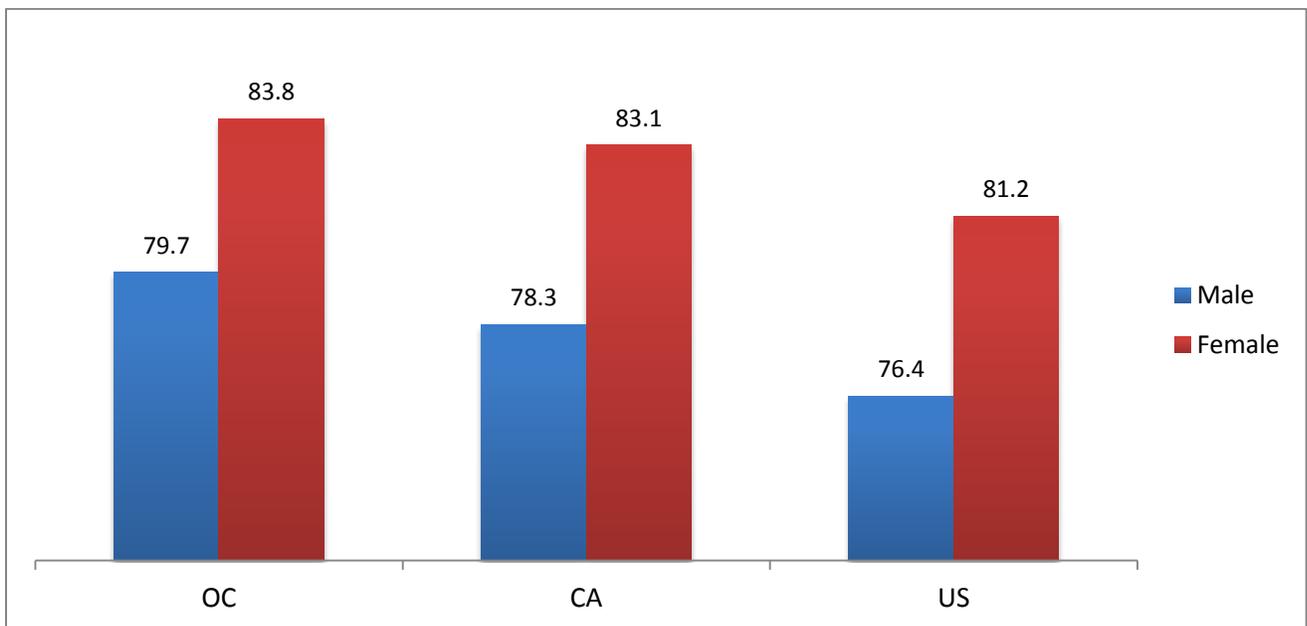
Figure 1: Life Expectancy in Orange County and United States, 1990 to 2013



The four-year plateau in Orange County’s life expectancy could be due to a number of factors that can influence mortality. Between 2010 and 2013, Orange County’s age-adjusted mortality rate increased 2.2% – the first increase in several years. Within Orange County, six of the ten leading causes of death (e.g., heart disease, accidental) have seen their age-adjusted death rates increase since 2010, while decreasing for others like cancer (3). These changes in mortality are undoubtedly influencing the leveling off of Orange County’s life expectancy. Life expectancy estimates are especially sensitive to premature and potentially preventable deaths to younger-aged people. Previous studies including Orange County-specific reports, have found that death due to avoidable causes such as unintentional injuries like motor vehicle accidents, drug overdoses, alcohol abuse, and smoking are disproportionately affecting younger residents (4, 5).

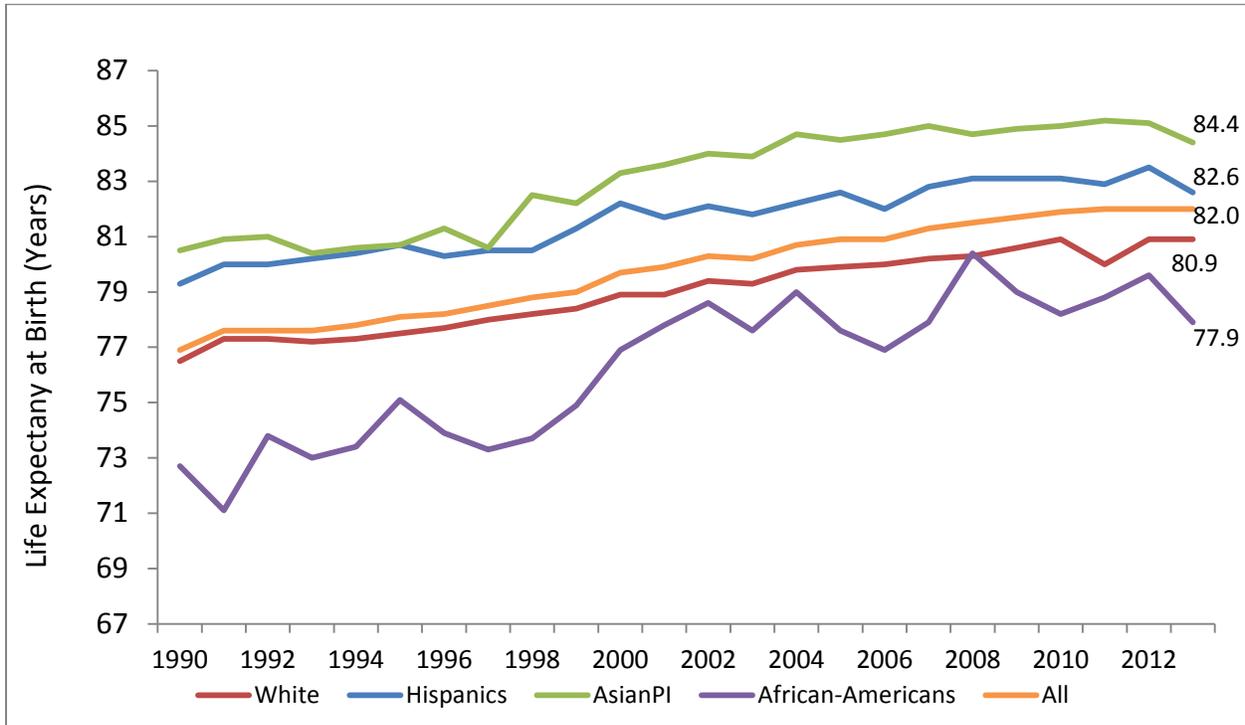
At all geographic levels, females are outliving males, and Orange County continues to experience higher average life expectancies for both males and females compared to both the state of California and the United States (**Fig. 2**). In Orange County, females have a life expectancy 4.1 years greater than that of males. At the state and national level, the disparity is even greater, with females outliving males by 4.8 years at both levels. The gender disparity is due to a combination of genetic as well as behavioral differences that lead to females living longer (6). Males are more likely to engage in high risk behaviors, experience higher rates of automobile crashes, and participate in risky activities outdoors, often leading to fatalities among younger males (7).

Figure 2: Life Expectancy in Orange County by Gender, 2013



Disparities in life expectancy also exist between different racial/ethnic groups in Orange County (**Fig. 3**). Asian/Pacific Islanders continue to have the highest life expectancy of 84.4 years. Following Asian/Pacific Islanders are Hispanics at 82.6, whites at 80.9, and finally African-Americans, which represent a small portion of the population, at 77.9 years. Asian/Pacific Islanders and Hispanics are above the Orange County average life expectancy of 82.0 while whites and African-Americans fall below the average longevity.

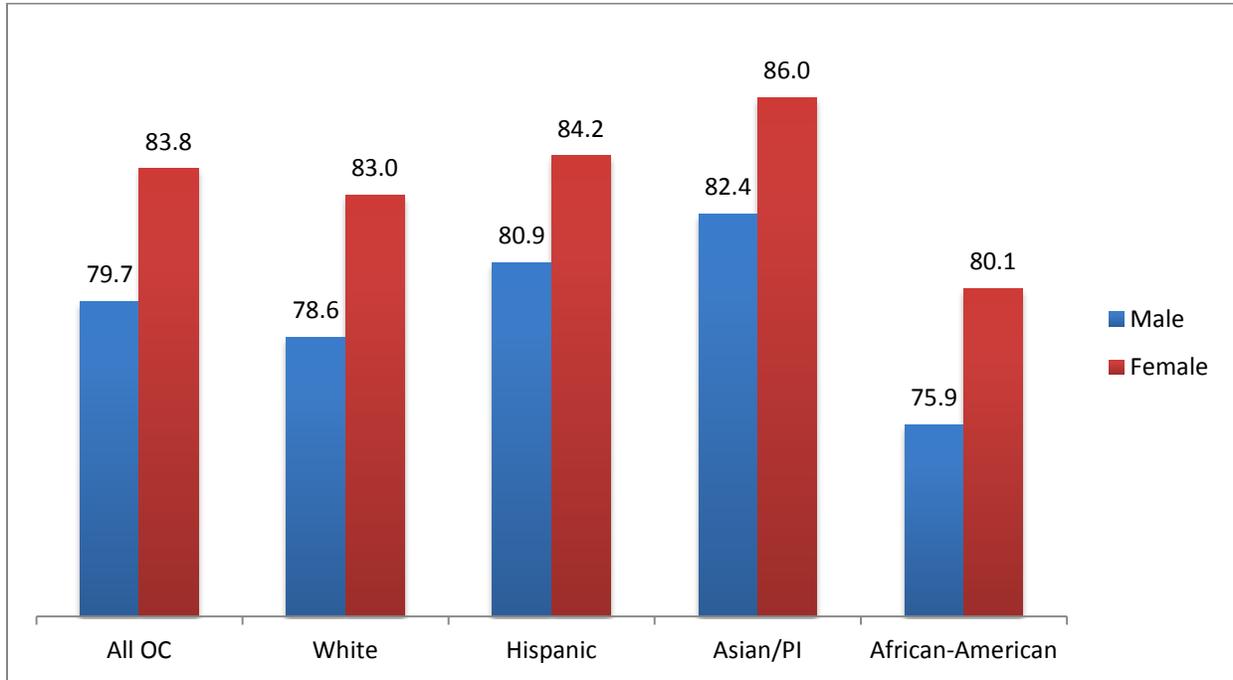
Figure 3: Life Expectancy in Orange County by Race/Ethnicity, 1990 to 2013



Since 1990 all racial/ethnic groups have increased their average life expectancy (**Fig. 3**). The group with the greatest increase since 1990 is African-Americans who increased their life expectancy by 5.2 years. Notably, average life expectancy for Orange County African-American residents fluctuates more from year to year than other groups due to their relatively small percentage of the County's populace (<2%). The next greatest increase in life expectancy was seen in whites (4.4 years), followed by Asian/Pacific Islanders (3.9 years) and finally Hispanics (3.3 years). While life expectancy fluctuates from year to year, over the span of nearly 25 years, each racial/ethnic group has seen significant improvement in overall health based on greater average life expectancy.

Significant differences exist between genders of different racial/ethnic groups as summarized in **Figure 4**.

Figure 4: Life Expectancy in Orange County by Gender and Race/Ethnicity, 2013



County-wide, females continue to outlive males, and the disparity between sexes is now 4.1 years. The greatest disparity between males and females of the same race/ethnicity was between non-Hispanic white males and females (4.4 years). Not far behind were African-Americans (4.2 years), Asians/Pacific Islanders (3.6 years), and finally Hispanics (3.3 years). The biggest disparity (10.1 years) between any two groups was between Asian/Pacific Islander females (86.0) and African-American males at 75.6 years average life expectancy. Similar disparities have been reported for gender and racial/ethnic groups in other jurisdictions (7, 8).



Map 1 below and **Table 1** on the following page illustrate the disparities in life expectancy from one city to the next. Where a person lives can also affect how long they live. Cities noted with the darkest green color have the highest average life expectancy, while the red cities have the lowest average life expectancy. With the exception of Villa Park and La Palma, most of the cities with high life expectancies such as Irvine, Dana Point, and Laguna Beach are in Southern Orange County. Conversely, most of the cities with low life expectancies are in Northern (e.g., Buena Park, Anaheim) and Central (e.g., Stanton, Garden Grove, Westminster) County.

Map 1: Average Life Expectancies in Orange County based on City of Residence

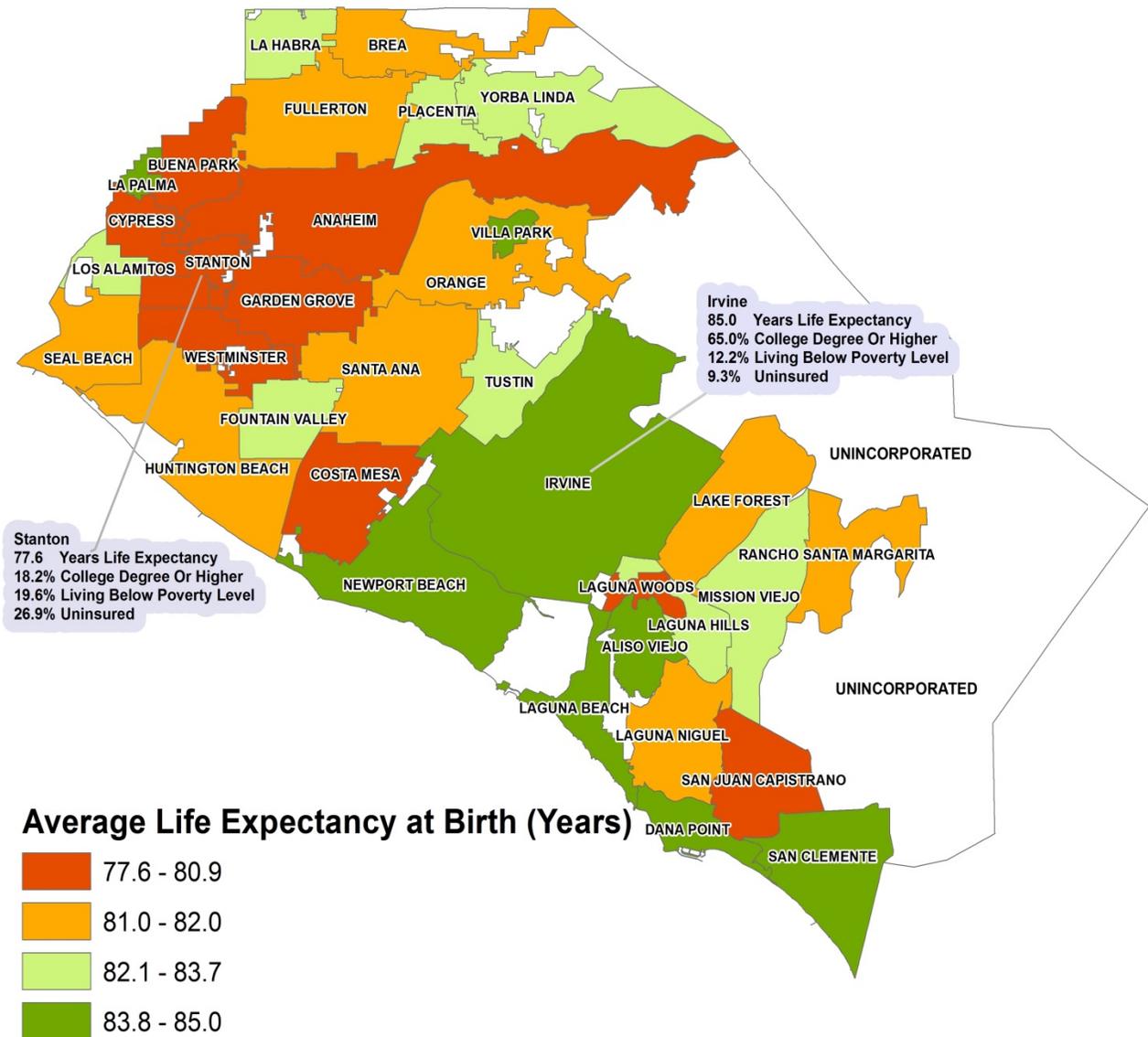


Table 1: Life Expectancy at Birth, Mortality Rates, and Change in Life Expectancy by City

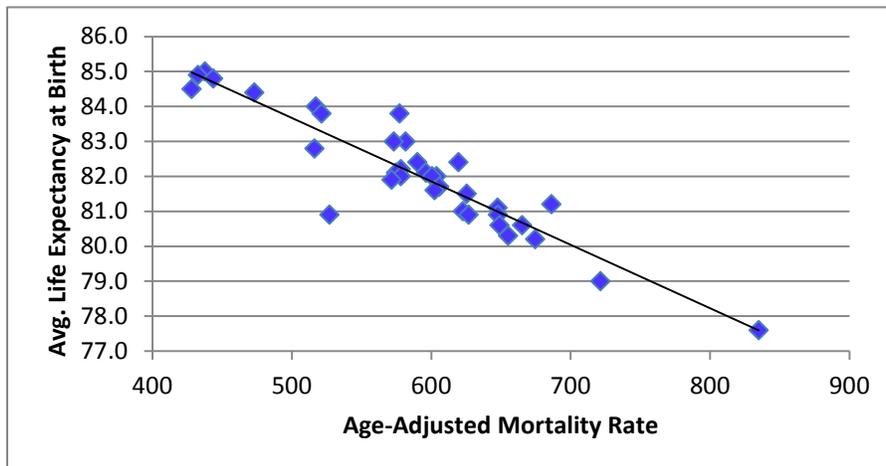
CITY	Number of Deaths in 2013	Population	Mortality Rate per 100k	Age-Adjusted Mortality Rate	Avg. Life Expectancy at Birth	Change From 2010 to 2013
Irvine	763	229,539	332.4	437.9	85.0	1.1
Dana Point	210	33,541	626.1	432.8	84.9	2.3
Laguna Beach	147	24,465	600.9	443.7	84.8	4.0
Aliso Viejo	134	50,699	264.3	428.1	84.5	0.4
Newport Beach	667	86,657	769.7	473.3	84.4	0.9
San Clemente	406	73,689	551.0	517.3	84.0	2.6
Villa Park	57	5,917	963.3	577.4	83.8	1.8
La Palma	96	16,279	589.7	521.4	83.8	1.7
Los Alamitos	190	22,174	856.9	581.6	83.0	2.1
Yorba Linda	386	68,977	559.6	573.3	83.0	0.7
La Habra	373	68,825	542.0	516.3	82.8	2.6
Laguna Hills	267	29,383	908.7	619.6	82.4	1.0
Mission Viejo	734	94,766	774.5	590.2	82.4	0.1
Fountain Valley	436	56,793	767.7	578.2	82.2	1.1
Placentia	319	52,503	607.6	574.9	82.1	1.6
Tustin	382	83,062	459.9	596.2	82.1	2.0
Laguna Niguel	419	64,535	649.3	603.9	82.0	-1.1
Seal Beach	499	24,483	2038.1	578.2	82.0	-1.3
Orange County	18,827	3,118,438	603.7	600.6	82.0	0.1
Rancho Santa Margarita	155	44,816	345.9	571.6	81.9	-1.3
Fullerton	903	139,161	648.9	605.8	81.7	1.0
Huntington Beach	1,362	195,594	696.3	602.5	81.6	0.8
Lake Forest	393	72,578	541.5	625.6	81.5	-0.8
Brea	294	40,120	732.8	686.2	81.2	-0.1
Orange	888	145,253	611.3	647.8	81.1	1.7
Santa Ana	1,536	357,192	430.0	622.8	81.0	1.3
Costa Mesa	634	114,250	554.9	648.0	80.9	0.0
San Juan Capistrano	297	37,273	796.8	627.0	80.9	-1.8
Westminster	648	91,691	706.7	527.2	80.9	-0.9
Cypress	338	49,038	689.3	649.0	80.6	-0.7
Garden Grove	1,088	177,398	613.3	665.2	80.6	0.0
Laguna Woods	634	16,984	3732.9	655.2	80.3	1.5
Anaheim	2,036	367,602	553.9	674.7	80.2	0.0
Buena Park	543	81,467	666.5	721.5	79.0	-1.0
Stanton	244	30,455	801.2	835.0	77.6	-4.6

At the top of the rankings is Irvine with an average life expectancy of 85.0 years, more than seven years longer than the lowest ranking city of Stanton at 77.6 years longevity. In addition to ranking each city from highest to lowest average life expectancy, **Table 1** also summarizes each city’s change in average life expectancy between 2010 and 2013. Most cities experienced small changes in their average life expectancy since 2010. However, a few cities did see large improvement while others saw an equally sizable reduction in average life expectancy. The city that saw the greatest improvement in average life expectancy compared to 2010 was Laguna Beach where life expectancy improved by four years, up to 84.8 years. Other cities also saw notable improvements in their life expectancy including San Clemente (2.6 years), La Habra (2.6 years), and Dana Point (2.3 years). On the other hand, cities that saw a reduction in their average life expectancy included Stanton (-4.6 years) and San Juan Capistrano (-1.8 years). Life expectancy at birth reflects the overall mortality level of a population. It summarizes the mortality pattern that prevails across all age groups - children and adolescents, adults and the elderly. The city of Stanton, for example, experienced an overall increase in mortality, especially to young adults, 18-44 years of age.

The age-adjusted mortality rate for each city is also presented in **Table 1** as a way to make comparisons between different geographic areas that have very different age distributions. For example, the retirement community of the Laguna Woods consists almost entirely of people over the age of 55 years. The crude death rate in this retirement community is 3,733 per 100,000. However, controlling for this retirement community’s senior population, the city’s age-adjusted mortality results in a rate of 655.2 per 100,000, a little higher than the county-wide age-adjusted rate of 600.6 per 100,000 population.

The relationship between the age-adjusted mortality rate and life expectancy is highly correlated ($R = -0.93$, $p \leq 0.001$). Cities with the higher age-adjusted mortality rate have a lower average life expectancy than cities with a lower age-adjusted mortality rate (**Fig. 5**).

Figure 5: Age-Adjusted Mortality Rate vs Life Expectancy by City



A city's life expectancy is also correlated with socioeconomic factors. For example, the higher a city's median household income the longer the life expectancy ($R = 0.61$, $p < 0.001$). Higher educational attainment (e.g., college degree or higher) is also highly correlated with increased life expectancy ($R = 0.77$, $p < 0.001$). Similarly, longevity is inversely related to the percentage of residents who are uninsured ($R = -0.55$, $p = 0.001$). Life expectancy also has an inverse relationship to the percentage of people in a city living below the poverty line ($R = -0.54$, $p = 0.001$); residents in cities with higher poverty rates tend to have a lower life expectancy. Higher income families are more likely to have health insurance and have better access to healthcare, and the resources to pursue a healthier lifestyle.

Table 2 summarizes the top countries in the world with respect to average life expectancy according to the CIA World Fact Book (9). The United States currently ranks 42nd world-wide in average life expectancy. Hypothetically, if Orange County was a country, we would rank 11th in the entire world – tied with Italy and just below Australia in the top 10.

Table 2: National Average Life Expectancy at Birth Ranked by Country

Rank	Country	Population	Average Life Expectancy
1	Monaco	37.8 K	89.6
2	Macau	566.4 K	84.5
3	Japan	127.3 M	84.5
4	Singapore	5.4 M	84.4
5	San Marino	31.4 K	83.2
6	Hong Kong	7.2 M	82.8
7	Andorra	79.2 K	82.7
8	Switzerland	8.1 M	82.4
8	Guernsey	65.8 K	82.4
10	Australia	23.1 M	82.1
11	Orange County	3.1 M	82.0
11	Italy	59.8 M	82.0
13	Sweden	9.6 M	81.9
14	Liechtenstein	36.8 K	81.7
15	Canada	35.2 M	81.7
16	France	66.0 M	81.7
42	United States	318.9 M	78.8

K – thousands; M – millions

Summary

Average life expectancy in Orange County continues to be higher than the state and nation and our residents' longevity compares favorably internationally. According to the CIA World Fact Book, Orange County would hypothetically rank 11th in the world (9). Despite this lofty standing, several disparities exist in the County and some groups live much longer than others.

First, significant disparities exist between males and females across all racial/ethnic groups. Asian/Pacific Islanders live much longer, 84.4 years on average, compared to any other group, followed by Hispanics (82.6), whites (80.9), and African-Americans (77.9). Within each racial/ethnic group, women outlive men by about four years. A full ten-year difference in longevity exists between Asian/Pacific Islander females (86.0) and African-American males (75.6).

Second, where you live also has a large influence on how long you live. The cities with the highest life expectancy are mostly found in South County, while most of the cities with the lowest life expectancies can be found in Northern and Central Orange County. These geographic disparities are arguably related to socio-economic factors given a city's life expectancy is highly correlated with the income and having



health insurance (10, 11). While life expectancy has remained unchanged in the County overall since 2010, some cities have seen improvements in their average life expectancies such as Laguna Beach (+4 years), San Clemente (+2.6 years), and La Habra (+2.6 years). On the flip side, other cities have seen marked decreases in life expecting including Stanton (-4.6 years) and San Juan Capistrano (-1.8 years).

Finally, that the County's life expectancy has plateaued over the last four years is a concern as it may signify a slowdown in the improving longevity of our residents. While Orange County's ethnic and socio-economic diversity may well explain these findings, further study will be required to determine the underlying cause for this leveling and to see if it continues locally and in other jurisdictions. The Health Care Agency and our partners in the community are dedicated to increasing efforts to promote healthier behaviors, such as regular physical activity, eating a healthy diet, not smoking, and not abusing alcohol and/or drugs. Broader adoption of these practices should help to further reduce premature mortality and increase the County's average life expectancy. Together we can work to increase Orange County residents' longevity and quality of life.

References

1. Arias, E. (2014) *United States Life Tables*. National Vital Statistics Reports.
2. Bermudez, R., Condon, C., and Thiessen, D. (2010) *Life Expectancy in Orange County*. Orange County Health Care Agency, Santa Ana, CA.
3. California Department of Public Health, Center for Health Statistics and Informatics. Vital Statistics Query System access at: <http://www.apps.cdph.ca.gov/vsq/>.
4. Nafday, A., Nguyen, H., & Condon, C. (2014) "Premature Mortality in Orange County." OC Health Care Agency, Santa Ana, California. December 2014. <http://ohealthinfo.com/about/admin/pubs/deathoc>.
5. Furry, A., Alberts, J.A., Condon, C.J., & Grubaugh, D. (2014) *Drug & Alcohol Overdose Hospitalization & Death in Orange County*. Orange County Health Care Agency and Orange County Sheriff-Coroner Department. Santa Ana, California, October 2014. <http://cms.ocgov.com/gov/health/about/admin/pubs/od.asp>.
6. Hjelmburg, J.B., et al (2006) *Genetic Influence on Human Life Span and Longevity*. Human Genetics. Vol. 119, Pages 312-321.
7. Lee, H. and McConville, S. (2007) *Death in the Golden State: Why Do Some Californians Live Longer? Public Policy Institute of California*. Vol. 9, No. 1. August.
8. Los Angeles County Department of Public Health, Office of Health Assessment and Epidemiology. *Life Expectancy in Los Angeles County. How long do we live and why? A Cities and Communities Report*. July 2010.
9. Central Intelligence Agency (2015) *The World Fact Book: Life Expectancy at Birth*. Retrieved: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2102rank.html>.
10. Healthy Places, Healthy People – Snapshots of Where We Live, Work, and Play (2012). County of Orange, Santa Ana, CA. <http://ohealthinfo.com/civicax/filebank/blobdload.aspx?BlobID=22787>.
11. Salomon, J.A., et al (2013) *Healthy life expectancy for 187 countries, 1990–2010: a systematic analysis for the Global Burden Disease Study 2010*. The Lancet. Volume 380, Issue 9859, Pages 2144–2162.