

Southwest Riverside County Regional Cancer Treatment Task Force

What Do We Know About Cancer in the Region? A Secondary Data Analysis



by



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Contents

EXECUTIVE SUMMARY	1
INTRODUCTION	5
Geographic Context	6
RESULTS.....	8
Cancer Prevalence and Incidence.....	9
Cancer Prevalence.....	9
Cancer Incidence.....	10
Cancer Mortality.....	13
Cancer Treatment	15
Health Insurance	15
Primary Care Provider Supply.....	15
Cancer Screenings.....	16
Cancer Surgeries in Southern California.....	17
Cancer Surgeries for Locals	18
Oncologist Supply as a Reason for Outmigration	20
“Prestige”-Seeking as a Reason for Outmigration.....	22
Other Types of Cancer Treatment	24
CONCLUSION.....	25
APPENDICES	26

Table of Tables

Table 1. Southwest Riverside County Geography by Zip Code.....	7
Table 2. Cancer Incidence Rate – All Cancer Sites.....	10
Table 3. Age-Adjusted Incidence Rate – Cases per 100,000	11
Table 4. Riverside County Cancer Incidence	12
Table 5. Cancer Death Rate – All Cancer Sites	13
Table 6. Cancer Screening in Southwest Riverside County.....	16
Table 7. Cancer Surgeries in Southern California.....	17
Table 8. Oncology Surgeries for Patients from Southwest Riverside County.....	18
Table 9. Oncologists in the Immediate Region.....	20

Table of Figures

Figure 1. Map of Southwest Riverside County	6
Figure 2. Cancer Deaths in Southwest Riverside County	13
Figure 3. Cancer Deaths in SW Riverside County 2014 – 2016 by Type of Cancer	14
Figure 4. Cancer Deaths in SW Riverside County 2014 – 2016 by Age at Death	14
Figure 5. Location of Oncology Surgeries for Southwest Riverside County residents.....	19

EXECUTIVE SUMMARY

Background

Today, cancer is the second-leading cause of death in America. Treatment can be expensive, time-consuming, exhausting, and can have serious side effects. Thus, the burden on cancer patients and their loved ones is substantial.

To address this locally, in November of 2016 the Southwest Riverside County Regional Cancer Treatment Task Force was created to assess the state of cancer-related services and treatment options in Southwest Riverside County, California.

The Task Force is comprised of representatives from a number of jurisdictions and organizations, including: County of Riverside, City of Lake Elsinore, City of Temecula, City of Murrieta, City of Menifee, City of Wildomar, City of Canyon Lake, Temecula Valley Hospital, Loma Linda University Medical Center Murrieta, Michelle's Place (Breast Cancer Support), American Cancer Society, Inland Empire Health Plan (IEHP), Riverside University Health System - Public Health, University of California- Riverside School of Medicine, University of California-San Diego Health, Scripps Health, Sharp Healthcare, and Medical professionals.

The Task Force's mission is to ease the burden of those suffering from cancer in our region by promoting comprehensive treatment options, resources, and support services closer to home. Specifically, the Task Force strives to:

- Identify and promote existing cancer care resources within the region
- Identify and address any barriers to accessing those existing resources
- Identify and address any gaps in resources, including: the pipeline of care facilities and providers, prevention, diagnosis, treatment, and post-treatment.
- Create a plan to promote, foster, and maintain desired cancer care resources within the region

In April 2017, HARC, Inc. (Health Assessment and Research for Communities) was hired to conduct a community needs assessment of the region in support of those goals. This report represents the first step in the needs assessment: an analysis of the existing data about cancer in the region. This report summarizes the secondary data that is available from multiple sources to describe what we do know about cancer in the region and what we don't know. The gaps in knowledge will be used to design the needs assessment survey questionnaires.

Prevalence, Incidence, and Mortality

Overall, people living in Southwest Riverside County are less likely to get cancer than those in California or the U.S., and are more likely to survive it. The age-adjusted cancer incidence rate in Riverside County is 410.1 diagnoses per every 100,000 people, in contrast to 417.1 diagnoses in California and 448.4 diagnoses in The United States. The survival rate in Riverside County is 154.6 deaths per every 100,000 people and is much larger for the United State with 168.5 deaths. However, it remains a major issue—over 22,500 local adults have been diagnosed with cancer, and more than 900 die from cancer in Southwest Riverside County each year. About half of local cancer deaths are due to cancers of the digestive organs (e.g., stomach, small intestine, colon, anus, liver, pancreas, etc.) and the respiratory and intrathoracic organs (e.g., lungs, bronchus, larynx, etc.)—these types of cancers trend similarly to California and the United States as a whole.

Problem Areas

Local incidence rates (the number of new cancer cases) compare favorably to those in California and the U.S. as a whole, with one exception: skin cancer. People living in Southwest Riverside County are significantly more likely than other U.S. adults to be diagnosed with skin cancer. In Riverside County there are approximately 22.0 skin cancer cases per every 100,000 people, which is significantly higher than the United States at a rate of 20.3. In addition, local incidence rates for skin cancer are on the rise.

Treatment - Access

In the U.S., it is very difficult to access preventive care and cancer screening without health insurance. Approximately 9.1% of people in Riverside County are uninsured—which equates to more than 47,775 people in Southwest Riverside County.

Even with insurance, it can be difficult to get an appointment and receive care if there is not a sufficient supply of providers. Unfortunately, there is a shortage of primary care providers in Southwest Riverside County. Specifically, all of Riverside County has been officially designated a registered nurse shortage area. According to OSHPD, Most of the region has also been officially designated as a Medically Underserved Population and a Primary Care Shortage Area. Temecula South is the one region not experiencing these shortages. The average population-to-primary-physician ratio in Southwest Riverside County is approximately 3,600:1, indicating a shortage of physicians.

Treatment – Screening

Locally, cancer screening rates are higher than the U.S. average for mammograms, pap smears, and various colorectal cancer screening procedures (BRFSS, 2014). However, there are still hundreds of people who are not getting the recommended cancer screenings and may not be catching them in time. Reasons for not getting the screenings will be explored in the next phase of the project.

Treatment - Surgery

Approximately 1,000 locals require cancer related surgery each year. About a third of these surgeries were conducted in one of the hospitals that is located within Southwest Riverside County, indicating that they did not need to travel long distances to obtain treatment. An additional third of these surgeries were performed in Riverside County (but outside the target region), and the remaining third had to travel to other nearby counties to receive surgery (OSHDP, 2014; OSHDP, 2015). Thus, there is certainly room to increase the number of surgeries that are completed locally.

There are approximately 17 oncologists working in or within 10 miles of Southwest Riverside County—which are listed on page 19 of this report. This high number of oncologists should be sufficient to treat the size of the population (see page 19 to 21), and thus, lack of oncologists does not seem to be a barrier. It may be that there is a lack of community awareness of this resource, or that patients leave the area to seek out treatment centers with prestigious accreditations. The motivations for the outmigration will be explored in more depth during the next phase of the project, the community survey and provider survey.

Next Steps

The next step in this process is to collect our own data to answer the questions that went unanswered here. This will include two surveys: one for the cancer community (those who currently or previously have had cancer, their caregivers, and others who've been touched by cancer) and another for cancer providers. We will work with the Task Force and relevant subcommittees to design surveys that will provide us with the relevant information we need to better meet the Task Force goals and ease the burden for those suffering from cancer.

Southwest Riverside County Cancer by the Numbers

Prevalence:

Approximately 6.1% of local adults (22,578 people) have been diagnosed with some form of cancer (excluding skin cancer), according to data from OSHPD (2014).

Incidence:

- The age-adjusted incidence rate (cases per 100,000) for Riverside County is 410.1 per 100,000 people—a rate that is significantly lower than California (417.1 per 100,000 people) or the U.S. as a whole (448.4 per 100,000 people).
- Incidence rate has been falling—1.3 points in the past five years.
- Locally, about 2,000 people are diagnosed with cancer each year.
- The top five most common types of cancer in the region are:
 1. Prostate (120.0 cases per 100,000 people)
 2. Breast (115.3 cases per 100,000 people)
 3. Lung and bronchus (47.2 cases per 100,000 people)
 4. Colon and rectum (39.4 cases per 100,000 people)
 5. Skin (22.0 cases per 100,000 people)
- Comparing local incidence rates to California and the U.S. as a whole, Riverside County is roughly the same or better in every type of cancer—with one exception: skin cancer. Local incidence rate for skin cancer is significantly higher than for people in the U.S. as a whole.
- Most cancer incidence rates have stayed the same over the last few years, with three exceptions:
 1. Colon and rectum: significant decrease of 4.9 over 5 years
 2. Prostate: significant decrease of 5.0 over 5 years
 3. Skin: significant increase of 5.7 over 5 years

Mortality:

- The age-adjusted death rate due to cancer in Riverside County is 154.6 per 100,000; which is lower than the rate of the state or the nation (SEER, 2009).
- About 900 people die from cancer each year in Southwest Riverside County.
- About half of the deaths are due to cancers of the digestive organs (e.g., stomach, small intestine, colon, anus, liver, pancreas, etc.) and the respiratory and intrathoracic organs (e.g., lungs, bronchus, larynx, etc.).

Treatment:

- Insurance: Approximately 9.1% of people (47,775 people) lack healthcare coverage in Southwest Riverside County.
- Primary Care Providers: Southwest Riverside County is officially designated as a registered nurse shortage area, a primary care shortage area, and a medically underserved population. The average ratio of population-to-primary-care-physician is about 3,600:1.
- Cancer Surgery: Approximately 1,005 cancer surgeries were performed on locals last year. About a third of these were done in Southwest Riverside County; another third elsewhere in Riverside County. The remaining third had to leave the county for their surgeries.
- Oncologists: There are roughly 17 oncologists practicing in Southwest Riverside County, which should be sufficient to treat the community (see page 21).

INTRODUCTION

Cancer refers to a group of diseases characterized by the excessive division, growth, and possible invasion of cells. Cancer is the second-leading cause of death in America.¹

There are many factors that cause and increase the chances of developing cancer. Some of these factors are uncontrollable, such as age and genetic makeup. Other more controllable factors include alcohol consumption, diet, infectious agents, obesity, radiation, sunlight, and tobacco usage.²

Recent medical advancements have introduced many effective ways to treat cancer, including chemotherapy, surgery, and radiation, among others. However, these treatments are often expensive, time-consuming, physically exhausting, and can include serious side effects. Even with treatment, cancer is often incurable. As a result, the burden on cancer patients and their loved ones is substantial.

To address this locally, a regional Cancer Treatment Task Force was created in November 2016 to assess the state of cancer-related services and treatment options in Southwest Riverside County, California. See Appendix A for a list of current Task Force Members.

The Task Force's mission is to ease the burden of those suffering from cancer in our region by promoting comprehensive treatment options, resources, and support services closer to home. Specifically, the Task Force strives to:

- Identify and promote existing cancer care resources within the region
- Identify and address any barriers to accessing those existing resources
- Identify and address any gaps in resources, including the pipeline of care facilities and providers
- Create a plan to promote, foster, and maintain desired cancer care resources within the region

In April 2017, HARC, Inc. (Health Assessment and Research for Communities) was hired to conduct a community needs assessment of the region in support of those goals. This report represents the first step in the needs assessment: an analysis of the existing data about cancer in the region. This report summarizes the secondary data that is available from multiple sources to describe what we do know about cancer in the region and what we don't know. The gaps in knowledge will be used to design the needs assessment survey questionnaires.

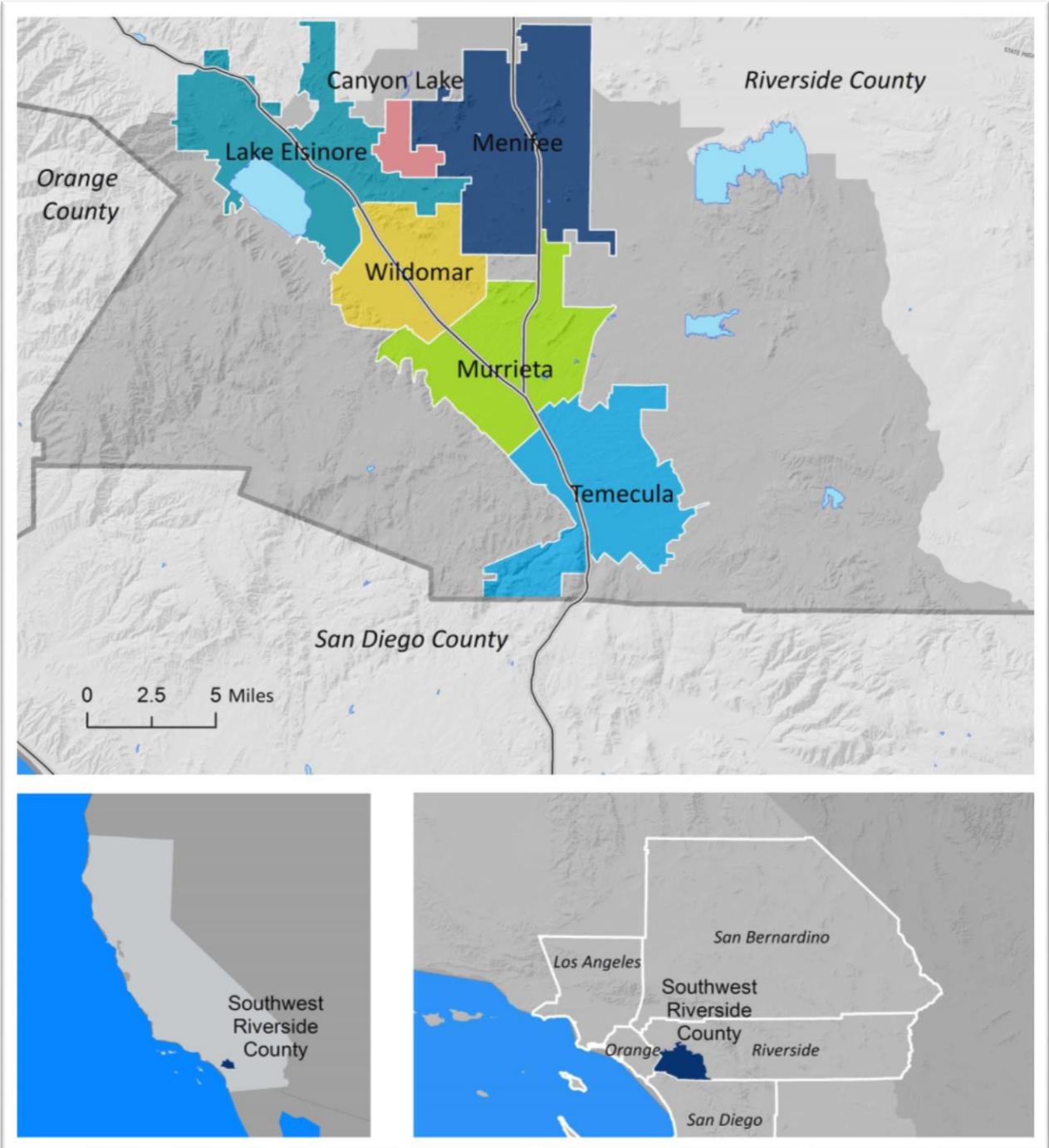
¹ Centers for Disease Control and Prevention (2017). Leading Causes of Death. Available online at <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>

² Risk Factors for Cancer. (2015). National Cancer Institute. <http://www.cancer.gov/about-cancer/causes-prevention/risk>

Geographic Context

For the purposes of the Task Force project, “Southwest Riverside County” includes the geographic area illustrated in Figure 1.

Figure 1. Map of Southwest Riverside County



This encompasses the cities/zip codes listed in Table 1.

Table 1. Southwest Riverside County Geography by Zip Code

City	Zip Code
Wildomar/Lake Elsinore	92530
Lake Elsinore	92531
Lake Elsinore	92532
Hemet	92543
Murrieta	92562
Murrieta	92563
Murrieta	92564
Lake Elsinore	92570
San Jacinto/Lakeview/Gilman Hot Springs	92582
San Jacinto/Gilman Hot Springs	92583
Menifee/Lake Elsinore/Wildomar	92584
Menifee	92585
Menifee	92586
Menifee/Lake Elsinore/Canyon Lake	92587
Temecula	92589
Temecula	92590
Temecula	92591
Temecula	92592
Temecula	92593
Lake Elsinore/Wildomar	92595
Menifee	92596

There are approximately 525,000 people living in Southwest Riverside County, which is 22% of the total population of Riverside County.

RESULTS

HARC examined existing data sources to understand what is already known about cancer and cancer treatment in the region. This data is all secondary data; that is, no new data was collected to create this report.

The results section is separated into three sections:

1. ***Prevalence and Incidence:*** How common is cancer in the region?
2. ***Mortality:*** How deadly is cancer in the region?
3. ***Treatment Options:*** Where do people go to seek treatment for cancer?

Cancer Prevalence and Incidence

In order to understand cancer in the Southwest Riverside County Region, we must first understand the prevalence of cancer, and how that prevalence compares to other communities.

Cancer Prevalence

Cancer prevalence is defined as the number of living people who have had cancer in the past. This may include people who have been diagnosed in the past and successfully recovered, and may also include those who were recently diagnosed and are currently in treatment.³

The 500 Cities Project is a project from the Centers for Disease Control and Prevention (CDC) which provides city- and census tract-level small area estimates for chronic disease risk factors, health outcomes, and clinical preventive service use for the largest 500 cities in the United States.⁴ One of the health outcomes examined in the 500 cities project is cancer prevalence. Three cities from Southwest Riverside County are a part of the 500 cities project: Menifee, Murrieta, and Temecula.

Menifee, Murrieta, and Temecula each have an age-adjusted cancer prevalence of 6.1%. This indicates that 6.1% of all adults (18 and older) in each city have been diagnosed with some type of cancer (excluding skin cancer) sometime in their lives. This local prevalence rate is quite similar to the U.S. age-adjusted rate of 5.9%.

It is not unrealistic to assume that the other areas in Southwest Riverside County that were not included in the 500 Cities Project (e.g., Wildomar, Lake Elsinore, Canyon Lake, unincorporated areas) have similar cancer prevalence rates.

Adults make up about 70.5% of the population in Southwest Riverside County—the other 29.5% of the population are children under the age of 18.⁵ Given that the total population of Southwest Riverside County is 525,000, that equates to 370,125 adults living in the region. Extrapolating the cancer prevalence rate, this means approximately 22,578 adults in Southwest Riverside County have had some type of cancer (excluding skin cancer). This is a substantial portion of the population, and their needs certainly bear addressing.

³ American Cancer Society (2014). Cancer Prevalence: How Many People Have Cancer? Available online at <https://www.cancer.org/cancer/cancer-basics/cancer-prevalence.html>

⁴ Centers for Disease Control and Prevention: 500 Cities Project. Available online at www.cdc.gov/500cities

⁵ U.S. Census Bureau, QuickFacts, by city. Available online at www.census.gov/quickfacts

Cancer Incidence

Cancer incidence rate is the number of new cancer diagnoses occurring each year.

Cancer incidence in Riverside County is significantly lower than that in California as a whole—which in turn is significantly lower than incidence rates across the nation. This indicates that people in our region are significantly less likely to have cancer than those living elsewhere.

Cancer incidence rates have fallen significantly in the past five years across all three regions, as illustrated in Table 2.

Table 2. Cancer Incidence Rate – All Cancer Sites

Location	Age-Adjusted Incidence Rate (cases per 100,000)	Average Annual Count	Recent 5-Year Trend in Incidence Rates
United States	448.4	1,540,559	Falling (-1.9)
California	417.1	158,259	Falling (-2.5)
Riverside County	410.1	9,063	Falling (-1.3)

Note. Data in this table are from SEER 2009 – 2013, available online at seer.cancer.gov



Table 3 compares age-adjusted incidence rates for 21 common cancer sites between Riverside County, California, and the U.S.

Much of the time, cancer incidence rates are relatively similar between geographies (indicated by yellow cells in the table, as measured by statistical significance). In many cancer sites, incidence rates in Riverside County are statistically significantly lower than those in California or the U.S. (indicated on the chart below by green cells). Specifically, Riverside County incidence rates are significantly lower than California rates in seven of the 21 sites, and significantly lower than U.S. rates in 14 of the 21 sites.

There is only one type of cancer that is statistically significantly higher in Riverside County—skin cancer. As illustrated in Table 3, there are 22.0 skin cancer cases per 100,000 people in Riverside County, which is significantly higher than the U.S. rate of 20.3. This indicates that people in our region are at greater risk for skin cancer than those living elsewhere in the country.

Table 3. Age-Adjusted Incidence Rate – Cases per 100,000

Cancer Site	Riverside County	California	U.S.
Bladder	19.9	18.2	20.7
Brain ONS	5.8	6.1	6.6
Breast	115.3	121.4	123.3
Breast in situ	26.5	28.9	30.9
Cervix	8.0	7.5	7.6
Childhood (age < 20, all sites)	15.6	17.3	17.4
Colon, rectum	39.4	38.3	40.6
Esophagus	4.1	3.8	4.7
Kidney, renal, pelvis	15.0	14.2	16.0
Leukemia	12.1	12.6	13.4
Liver, bile duct	7.2	9.6	7.6
Lung, bronchus	47.2	46.5	62.4
Non-Hodgkin lymphoma	16.9	18.7	19.1
Oral cavity, pharynx	10.3	10.4	11.3
Ovary	10.7	11.9	11.6
Pancreas	11.0	11.6	12.3
Prostate	120.0	118.7	123.1
Skin	22.0	21.2	20.3
Stomach	6.4	7.8	6.7
Thyroid	11.6	12.3	14.0
Uterus	22.3	24.3	25.6

Note. Data in this table are from SEER 2009 – 2013, available online at seer.cancer.gov

Most cancer incidence rates in Riverside County are stable. There are three exceptions:

- Colon and rectum: significant decrease (-4.9 trend in incidence rate over 5 years)
- Prostate: significant decrease (-5.0 trend in incidence rate over 5 years)
- Skin: significant increase (5.7 trend in incidence over 5 years)

Unfortunately, for concern of confidentiality, the California Cancer Registry and the National Cancer Institute’s Surveillance, Epidemiology, and End Results Program (SEER) do not release data below the county level for incidence or prevalence. As such, HARC used population data to create approximations for the region.

Southwest Riverside County accounts for approximately 22.0% of the total population of Riverside County. Assuming that cancer incidence is fairly evenly distributed across the county, there is an average annual count of 1,994 cancer cases in our target community. The most common sites for cancer include prostate, breast, lung/bronchus, and colon/rectum, as illustrated in Table 4. These common cancer sites account for over 1,000 new cancer diagnoses each year in our target community.

Table 4. Riverside County Cancer Incidence

Cancer Site	Age-Adjusted Incidence Rate (cases per 100,000)	Average Annual Count	Estimated Average Annual Count in SW Riverside County
Breast	115.3	1,336	294
Prostate	120.0	1,266	279
Lung and bronchus	47.2	1,031	227
Colon and rectum	39.4	867	191
Skin	22.0	483	106
Bladder	19.9	433	95
Non-Hodgkin lymphoma	16.9	371	82
Kidney and renal pelvis	15.0	333	73
Breast (in situ)	26.5	308	68
Leukemia	12.1	267	59
Uterus	22.3	264	58
Thyroid	11.6	251	55
Pancreas	11.0	243	53
Oral cavity and pharynx	10.3	232	51
Liver bile duct	7.2	164	36
Stomach	6.4	142	31
Brain and ONS	5.8	128	28
Ovary	10.7	124	27
Childhood (age < 20, all sites)	15.6	108	24
Esophagus	4.1	90	20
Cervix	8.0	86	19

Note. Data in this table are from SEER 2009 to 2013 (available online at seer.cancer.gov). The Southwest Riverside County column manually extrapolates 22% of the average annual count.

Cancer Mortality

Overall, death rates in Riverside County and the State of California are significantly lower than they are in the entire United States—meaning the local population has a better chance of surviving their cancer diagnosis than people who live elsewhere in the U.S.

As illustrated in Table 5, the cancer death rate is generally falling.

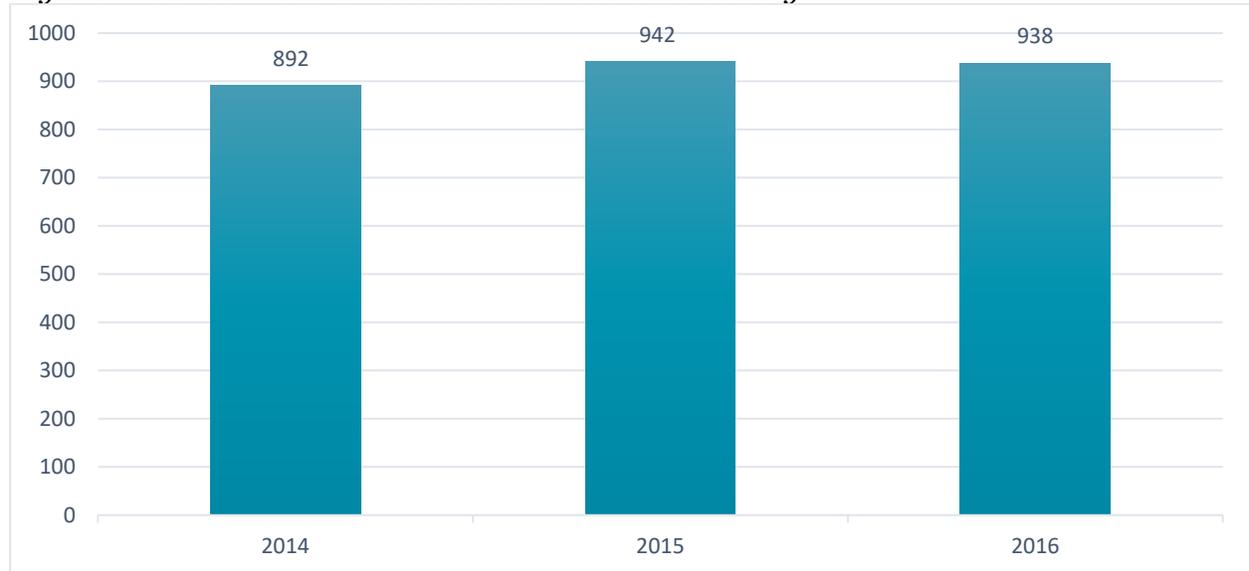
Table 5. Cancer Death Rate – All Cancer Sites

Location	Age-Adjusted Death Rate	Average Deaths Per Year	Recent 5-Year Trend in Incidence Rates
United States	168.5	577,303	Falling (-1.5)
California	152.6	56,856	Falling (-1.6)
Riverside County	154.6	3,377	Falling (-1.9)

Note. Data in this table are from SEER 2009 – 2013, available online at seer.cancer.gov

In Southwest Riverside County, deaths due to cancer have remained relatively stable over the past few years, as illustrated in Figure 2.

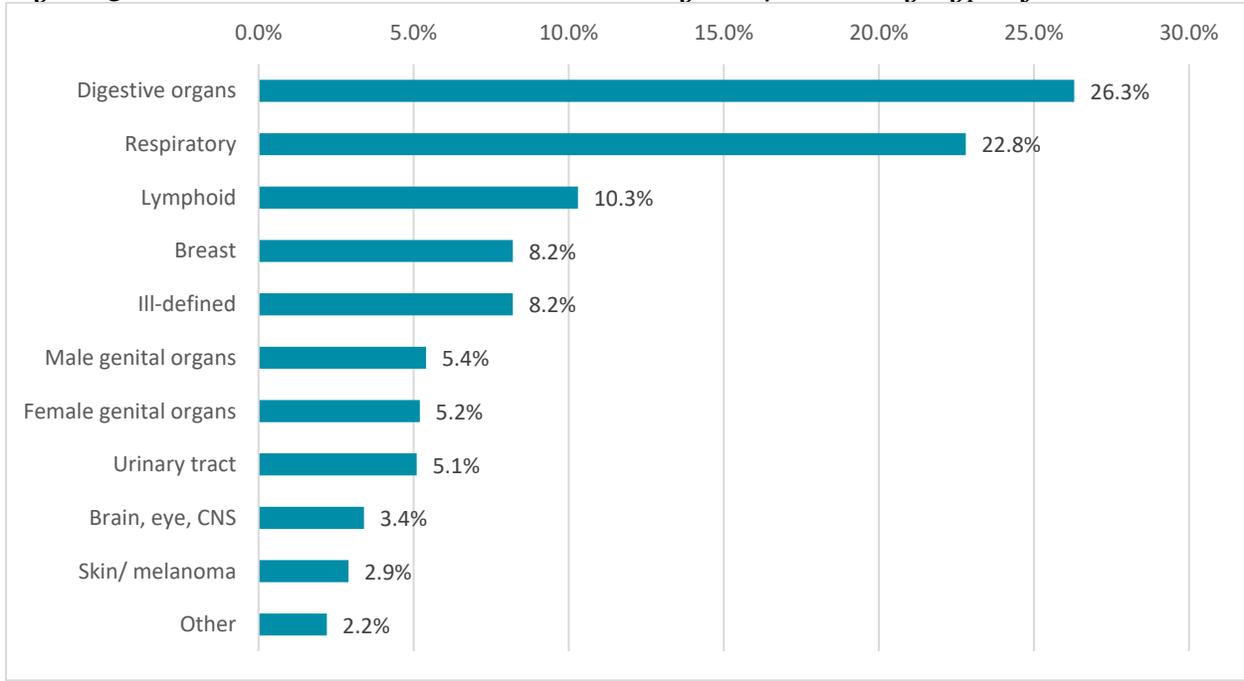
Figure 2. Cancer Deaths in Southwest Riverside County



Note. Data in this chart are from Riverside University Health System – Public Health.

As illustrated in Figure 3, about half of local cancer deaths are caused by cancers of the digestive organs (e.g., stomach, small intestine, colon, anus, liver, pancreas, etc.) or respiratory and intrathoracic organs (e.g., lungs, bronchus, larynx, etc.).

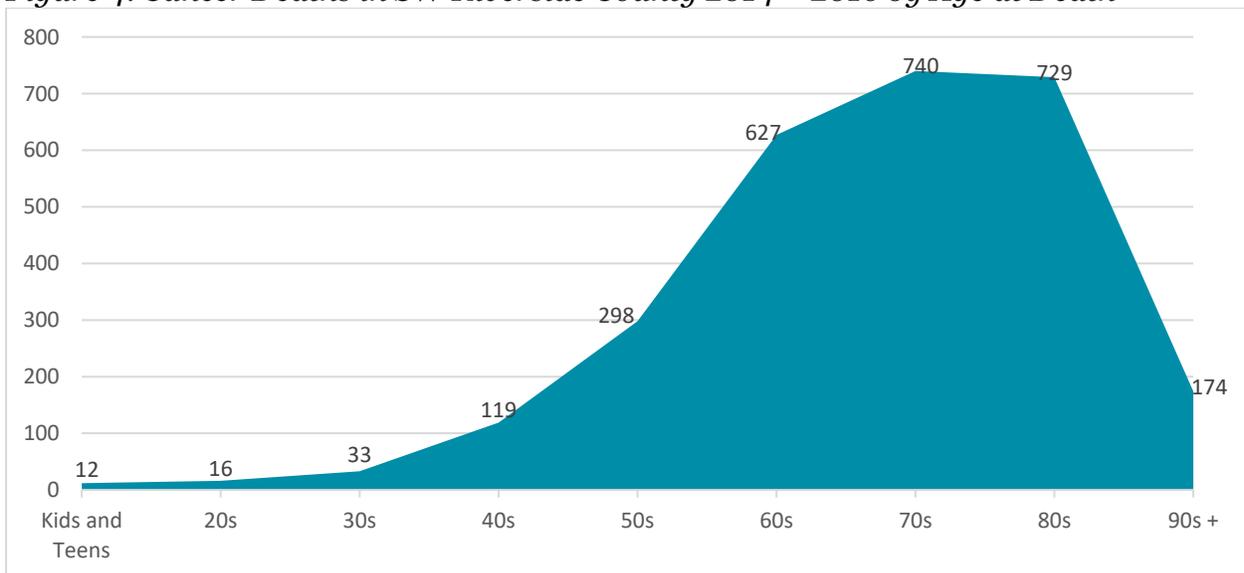
Figure 3. Cancer Deaths in SW Riverside County 2014 – 2016 by Type of Cancer



Note. Data in this chart are from Riverside University Health System – Public Health.

The age for locals who have died of cancer ranges from less than one year old to over 100, as illustrated in Figure 4. The median age for someone in Southwest Riverside County who dies of cancer is 73. Cancer disproportionately impacts older adults.

Figure 4. Cancer Deaths in SW Riverside County 2014 – 2016 by Age at Death



Note. Data in this chart are from Riverside University Health System – Public Health.

Cancer Treatment

Cancer treatment begins with prevention and screening, which allows the cancer to be identified in its early—and often more treatable—stages. Thus, the first real step to cancer treatment is ensuring that all have access to care.

Health Insurance

In the U.S., it is very difficult to receive regular treatment and cancer screenings without health insurance. Thus, uninsured people are more likely to have their cancer diagnosed at late stages, when treatment is more drastic and less likely to be effective. In 2015, approximately 9.1% of people in Riverside County did not have health insurance.⁶ [Note: sub-county estimates for this variable are available, but the data are older—2014. Since insurance status has been changing rapidly in the post-Affordable Care Act era, HARC chose to use the most recent statistics for the entire County.] Extrapolating this uninsured data to Southwest Riverside County, there are approximately 47,775 people who remain uninsured in the region, who likely are not getting regular cancer screenings.

Primary Care Provider Supply

Having health insurance is not a guarantee of access to care—there must be providers available to treat those individuals. Unfortunately, Southwest Riverside County has a substantial shortage of primary care providers.

To assess shortages, the Office of Statewide Health Planning and Development (OSHDP) divides regions into Medical Service Study Areas (MSSAs). MSSAs are sub-county regions that function as “rational service areas”, that is, where people likely go for services.⁷ There are four MSSAs that make up Southwest Riverside County:

- 131a: Lake Elsinore, Murrieta West, Sedco Hills, Wildomar
- 131b: French Valley, Murrieta East, Temecula, Winchester
- 131c: Temecula South
- 131.1: Canyon Lake, Perris, Quail Valley, Romoland, Sun City, Winchester

All of Riverside County has been designated a Registered Nurse Shortage Area (RNSA), indicating a strong need to recruit and retain additional RNs to serve the community.

Much of Southwest Riverside County has also been designated a Medically Underserved Population, which identifies high-need areas as those with high poverty levels, high number of senior citizens, high levels of infant mortality, and low numbers of providers available who treat low-income people.

⁶ California Health Interview Survey (CHIS) 2015. Available online at askchis.ucla.edu

⁷ Office of Statewide Health Planning and Development (OSHDP). Medical Service Study Areas (MSSAs). Available online at https://www.oshpd.ca.gov/documents/HWDD/GIS/MSSA_Definition.pdf

Additionally, the majority of Southwest Riverside County—with the exception of Temecula South—has a designation of a Primary Care Shortage Area, indicating that there is a primary care physician ratio of 3,500:1 (or 3,000:1 with especially vulnerable populations), and a lack of access to healthcare because of excessive distance, overutilization, or access barriers.⁸

One 2015 study of the Inland Empire explored OSHPD data for the primary care physician ratios by zip code.⁹ In Southwest Riverside County, this ratio ranges from 1,337 people per primary care provider (in 92563, Murrieta, and 92591, Temecula) to 9,023 people per primary care provider (in 92582, San Jacinto). The average is approximately 3,600, easily identifiable as a shortage.

Cancer Screenings

Another critical factor to examine is the available cancer screenings and medical procedures that can identify cancer. These important screenings are recommended for those with a family history and for older individuals.

Data on cancer screenings for the three largest cities in Southwest Riverside County—Meniffee, Murrieta, and Temecula—are included as a part of the 500 Cities Project.¹⁰ Overall, people residing in these three Southwest Riverside County cities are significantly more likely to have appropriate cancer screenings than their counterparts across the U.S, as illustrated in Table 6.

Table 6. Cancer Screening in Southwest Riverside County

Type of Cancer	Test	Age-Adjusted Rate			
		U.S.	Meniffee	Murrieta	Temecula
Breast cancer	Mammogram in the past 2 years - women aged 50 to 74	75.5%	80.3%	81.9%	82.0%
Female genital cancer	Papanicolaou (Pap) smear in the past 3 years - women aged 21 to 65	81.1%	83.4%	84.0%	84.1%
Colorectal cancer	Recent colorectal screening - adults aged 50 to 75	64.0%	63.7%	66.4%	66.7%

Note. Data in this table are from the CDC’s 500 Cities Project, which utilizes small-area estimates based on the CDC’s Behavioral Risk Factor Surveillance Survey (BRFSS) 2014 data.

⁸ Office of Statewide Health Planning and Development (OSHPD). Health Professional Shortage Areas. Available online at

<https://www.oshpd.ca.gov/HWDD/Shortage-Designation-HPSA.html>

⁹ Greg Facktor and Associates (2015). Socioeconomic Index for San Bernardino and Riverside Counties. Produced on behalf of the Community Clinic Association of San Bernardino County. Available upon request from HARC.

¹⁰ Centers for Disease Control and Prevention: 500 Cities Project. Available online at www.cdc.gov/500cities

Despite comparing favorably to the U.S. as a whole, there is certainly room for improvement in cancer screening rates locally. In the next phase of the project, the community survey, we will explore what prevents people from being screened. Is it lack of insurance? Lack of available providers? Or other reasons, such as lack of awareness or fear? Once we better understand the barriers, we can address them strategically.

Cancer Surgeries in Southern California

Once a patient has been diagnosed with cancer, the next step is treatment. One of the more common types of treatments is surgery.

In 2014, there were 50,881 cancer surgeries performed in California hospitals (Office of Statewide Health and Planning Division; partial-year numbers are available for 2015, but 2014 is the most current complete year of data). A total of 1,994 cancer surgeries were performed in Riverside County in 2014, as illustrated in Table 7.

Table 7. Cancer Surgeries in Southern California

County	Cancer Surgeries Performed in 2014	Percent of All California Cancer Surgeries Performed in 2014	Percent of the Population of California
Statewide	50,881	100.0%	100.0%
Los Angeles	14,309	28.1%	25.8%
Orange	4,483	8.8%	8.1%
Riverside	1,994	3.9%	6.1%
San Bernardino	2,236	4.4%	5.5%
San Diego	4,781	9.4%	8.5%

Note. Data in this table are from OSHPD 2014, full year.

Overall, the distribution of cancer surgeries is fairly similar to the distribution of population. Approximately 28.1% of all cancer surgeries in California were performed in the County of Los Angeles—but then again, that county does contain 25.8% of the state’s population. Overall, this seems to indicate that each of our Southern California counties are doing the same proportion of surgeries to total population.

Cancer Surgeries for Locals

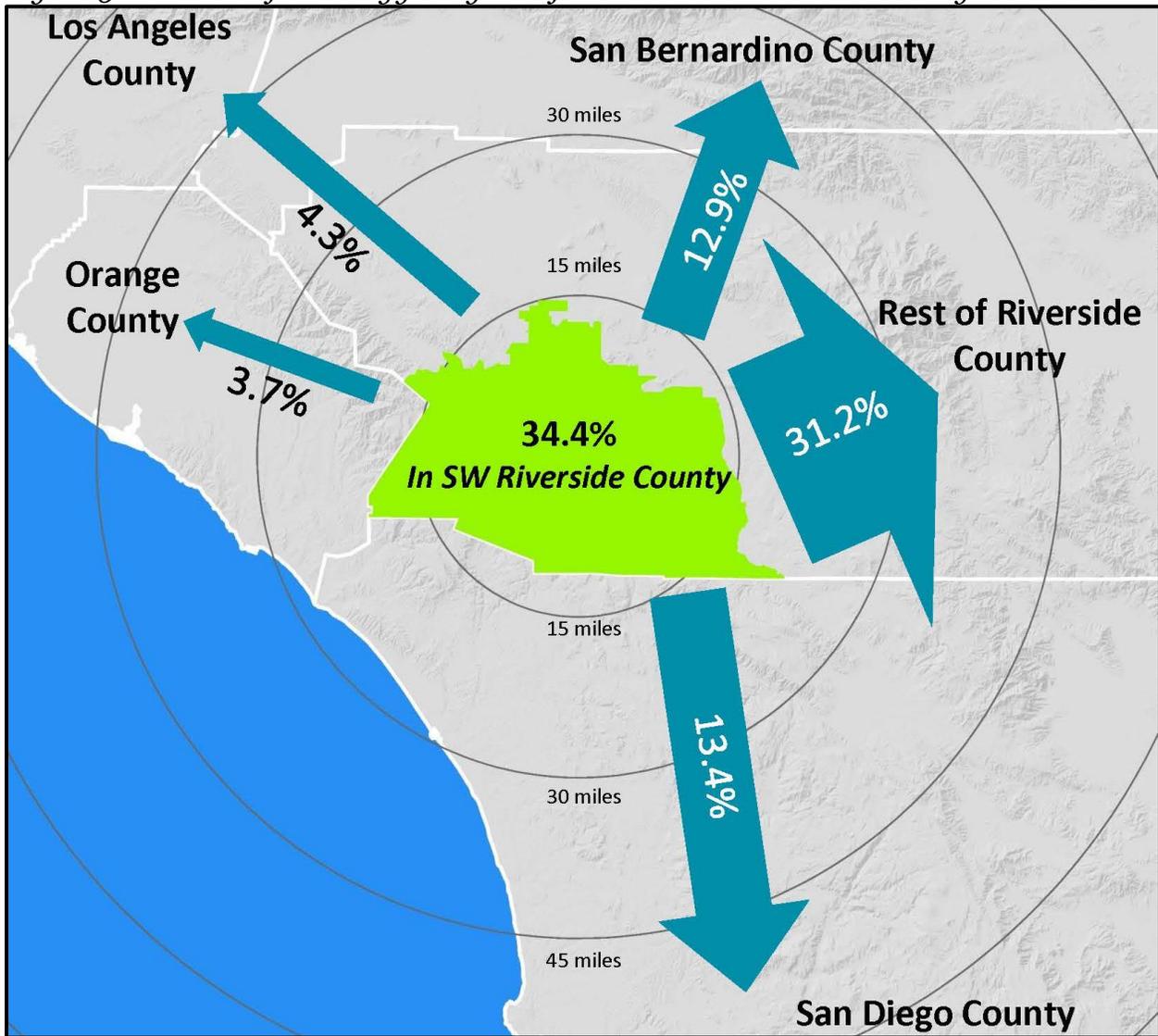
There were 1,005 oncology surgeries performed on patients living in Southwest Riverside County in 2015. Approximately a third of these patients were able to have their surgery conducted in Southwest Riverside County, as illustrated in Table 8 and Figure 5. Another third of patients were able to receive their treatment further afield in Riverside County. However, the remaining third had to go to other counties to get their surgeries, and thus, likely traveled long distances.

Table 8. Oncology Surgeries for Patients from Southwest Riverside County

County	Hospital	N	%
Riverside	Loma Linda Murrieta	124	12.3%
	Menifee Valley	33	3.3%
	SW Healthcare Murrieta	147	14.6%
	Temecula Valley Hospital	42	4.2%
	Hemet Valley	101	10.0%
	Kaiser Permanente Riverside	60	6.0%
	Other Riverside County Hospitals	153	15.2%
	<i>County Subtotal</i>	<i>660</i>	<i>65.7%</i>
San Bernardino	Loma Linda University Health System	99	9.9%
	Other San Bernardino County Hospitals	31	3.1%
	<i>County Subtotal</i>	<i>130</i>	<i>12.9%</i>
San Diego	Rady Children's Hospital	40	4.0%
	UCSD Hillcrest	45	4.5%
	Other San Diego County Hospitals	50	5.0%
	<i>County Subtotal</i>	<i>135</i>	<i>13.4%</i>
Orange County	All Orange County Hospitals	37	3.7%
Los Angeles	All Los Angeles County Hospitals	43	4.3%
Total		1,005	100.0%

Note. Data in this table are from OSHPD 2015 data and summarize oncology surgeries for 18 patient zip codes in Southwest Riverside County.

Figure 5. Location of Oncology Surgeries for Southwest Riverside County residents



Note. Data in this table are from OSHPD 2015 data and summarize oncology surgeries for 18 patient zip codes in Southwest Riverside County. N = 1,005 total oncology surgeries.

Oncologist Supply as a Reason for Outmigration

One potential reason for the surgery outmigration may be due to a lack of oncologists within the region. To assess this, HARC used a variety of internet search tools (such as cancer.net, health.usnews.com, webmd.com, healthgrades.com, etc.) to search for local oncologists. HARC identified 17 oncologists in Southwest Riverside County or within 10 miles of Southwest Riverside County, as illustrated in Table 9.

Table 9. Oncologists in the Immediate Region

Doctor	City	Specialty
David Bell	Wildomar	Radiation Oncology
Alberto Bessudo	Murrieta	Oncology
Amy Bremner	Murrieta	Surgical Oncology
David Bush	Murrieta	Radiation Oncology
Rae Felthouse	Murrieta	Hematology/Oncology
Bruce Hayton	Wildomar	Hematology/Oncology
Arun Kalra	Murrieta	Hematology/Oncology
Benjamin Larson	Murrieta	Prostate Oncology
James Mason	Temecula, Wildomar	Radiation Oncology
Evelyn Mendoza	Murrieta, Hemet	Hematology/Oncology
Brian Ronson	Temecula	Radiation Oncology
Stanley Schinke	Murrieta, Hemet	Hematology/Oncology
Kishore Sehgal	Murrieta, Hemet	Hematology/Oncology, Medical Oncology
James Tsai	Murrieta	Hematology/Oncology
Thavinsakdi Viravathana	Hemet	Radiation Oncology, Diagnostic Radiology
Tara Washington	Temecula, Wildomar	Radiation Oncology
Joy Wells	Perris	Pediatrics, Hematology/Oncology

This search may not be comprehensive, and, since it has not been verified by secondary data sources (e.g., calling each provider, etc.), there may be some discrepancies (e.g., some of these physicians may not be currently practicing in the region, information on these websites may be outdated, etc.). However, for the purposes of this report, we shall assume that the number is approximately close to 17 practicing oncologists in the region.

Are 17 oncologists enough? To answer that question, HARC sought out guidelines on the recommended physician-to-population ratios for individual specialties such as oncology.

There are several generally accepted guidelines that dictate how many specialty physicians are required to meet the needs of a population of 100,000 people.

1. Graduate Medical Education National Advisory Committee (GMENAC): This was a one-time committee of healthcare experts that was commissioned by Congress in 1980 to estimate physician-to-population ratios.
2. Goodman: A 1996 article by Goodman et. al in the Journal of American Medical Association (JAMA) revised estimates based on several different types of service populations.
3. Solucient/Thomson Healthcare: A healthcare consulting firm produced their estimates based on a 2003 study which analyzed data from several sources.

Relating to cancer care, GMENAC estimates that 3.7 hematology/oncology providers are required per 100,000 people, while Goodman estimates it at 1.2 and Solucient at 1.1.

Given that the population of Southwest Riverside County is approximately 525,000, this means there should be between 6 and 19 oncologists practicing in the region. Thus, according to recommendations, it seems that there are sufficient physicians available to treat the patients in Southwest Riverside County; a deficit does not appear to be present in the region.

Awareness may still be an issue—people may not be seeking treatment locally because they don't know it is available. The community survey will strive to measure this. If awareness does turn out to be a barrier, possible solutions could be education and awareness outreach programs, increased media presence, and targeted advertising.

“Prestige”-Seeking as a Reason for Outmigration

Many savvy patients want to receive the best possible cancer care, and thus, use the internet to search out the best places to receive treatment. Websites like the American Cancer Society’s www.cancer.org offer a wealth of information on seeking treatment. If local hospitals and treatment facilities are not coming up in this search—or do not have accreditations that patients perceive as “prestigious”—they risk not being the treatment-of-choice for local residents.

Commission on Cancer Accreditation

The first piece of advice for people seeking treatment on www.cancer.org is to find an accredited cancer hospital:

“Approximately 71% of all newly diagnosed cancer patients in the United States are treated in the more than 1,400 facilities that are accredited by the Commission on Cancer (CoC) of the American College of Surgeons. Accreditation as a cancer center is granted only to those facilities that have voluntarily committed to provide the best in cancer diagnosis and treatment and are able to comply with established CoC standards. Receiving care at a CoC-accredited cancer program hospital or facility ensures you high-quality, comprehensive care from teams of specialists who can coordinate the best treatment options available for you.”¹¹

There are no CoC-accredited cancer centers in Southwest Riverside County. The following CoC-accredited cancer centers are within 25 miles of the region:

1. Loma Linda University Medical Center in Loma Linda
2. Riverside Community Hospital in Riverside
3. The VA Loma Linda Healthcare System in Loma Linda
4. Mission Hospital Regional Medical Center in Mission Viejo
5. Tri-City Medical Center in Oceanside

Accredited Breast Center

The American Cancer Society’s website also recommends that people with breast cancer seek out an accredited breast center:

“The American College of Surgeons evaluates breast centers through its National Accreditation Program for Breast Centers. To be approved, centers must meet strict standards for providing services, managing patients, participating in clinical trials, continuing physician education, and community outreach. Accredited centers voluntarily agree to maintain a high level of clinical care and are recertified every 3 years.”¹²

¹¹ <https://www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/other-sources-of-information.html>

¹² Ibid.

Once again, there are no accredited breast centers in Southwest Riverside County. The following accredited breast centers are within 50 miles of the region:

1. Long Beach Memorial Breast Center in Long Beach
2. PIH Health Hospital – Whittier Breast Cancer Program in Whittier
3. St. Joseph Hospital in Orange
4. St. Jude Breast Center in Fullerton
5. Scripps Polster Breast Care Center in La Jolla

Association of American Cancer Institutes

Another recommendation from the American Cancer Society is to find a member of the Association of American Cancer Institutes:

“Members of the Association of American Cancer Institutes are dedicated to eradicating cancer through a comprehensive and multidisciplinary program of cancer research, treatment, patient care, prevention, education and community outreach.”¹³

The closest AACI hospitals are:

1. Loma Linda Cancer Center in Loma Linda
2. UC Irvine Chao Family Comprehensive Cancer Center in Orange
3. Salk Institute Cancer Center in La Jolla
4. UC San Diego Moores Cancer Center in La Jolla

National Cancer Institute Designated Cancer Center

Another designation that patients may seek out is the designation given by the National Cancer Institute (NCI):

“NCI-Designated Cancer Centers are institutions dedicated to research in the development of more effective approaches to prevention, diagnosis, and treatment of cancer. NCI-Designated Cancer Centers deliver cutting-edge cancer treatments to patients across the United States. There are a total of 69 NCI-Designated Cancer Centers.”¹⁴

The closest NCI-Designated Cancer Centers that provide patient treatment include:

1. UC Irvine Chao Family Comprehensive Cancer Center in Orange
2. UC San Diego Moores Cancer Center in La Jolla

¹³ <https://www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/other-sources-of-information.html>

¹⁴ “Find a Cancer Center” National Cancer Institute at the National Institutes of Health. Available online at <https://www.cancer.gov/research/nci-role/cancer-centers/find>

In short, no local Southwest Riverside County hospitals have any of these designations, which are likely appealing to patients seeking treatment. The local hospitals should work towards applying for one or more of these types of accreditations, which would make them more appealing to patients seeking high-quality treatments.

There may be other reasons for the outmigration that are not captured in this secondary data report. The community survey conducted at the next phase will seek to capture the views of people who have engaged in out-migration to better understand the reasons why. Understanding why outmigration occurs will help us to design effective strategies to combat it.

Other Types of Cancer Treatment

Surgery is just one type of treatment for cancer. There are many other effective and common treatments, including chemotherapy, radiation therapy, immunotherapy, clinical studies, targeted therapy, and DNA research, just to name a few. However, HARC was unable to find concrete, community-level data on these variables through a search of secondary data. Thus, this is a topic that will need to be addressed in the next phase of the project—the community survey and provider survey.

CONCLUSION

The data presented in this report present a picture of what we know about cancer in the region. We know that while our cancer incidence rates are lower locally than rates elsewhere, cancer has still impacted thousands of people in the region—and about 2,000 more get diagnosed each year. Similarly, we know that while mortality rates are lower in our region than elsewhere, we know that over 900 people die from cancer each year. Roughly a third of people are able to get cancer surgeries within Southwest Riverside County, while another third get them elsewhere in Riverside County. The remaining third, however, must leave the County to get surgery and are therefore traveling great distances at an extremely challenging time in their lives.

The data presented in this report also outlines what we don't know—thus presenting topics to explore during our upcoming conversations/surveys with the cancer community. Why are people getting surgery outside of the region? What could be done to serve them here, in their own neighborhoods? What other types of treatment(s) are they seeking? Are needed treatments available? Are treatments lacking? What problems and issues arise during while obtaining treatment? What can be done to overcome these obstacles? These questions, and many more, will be addressed in the next phase of the project.

APPENDICES

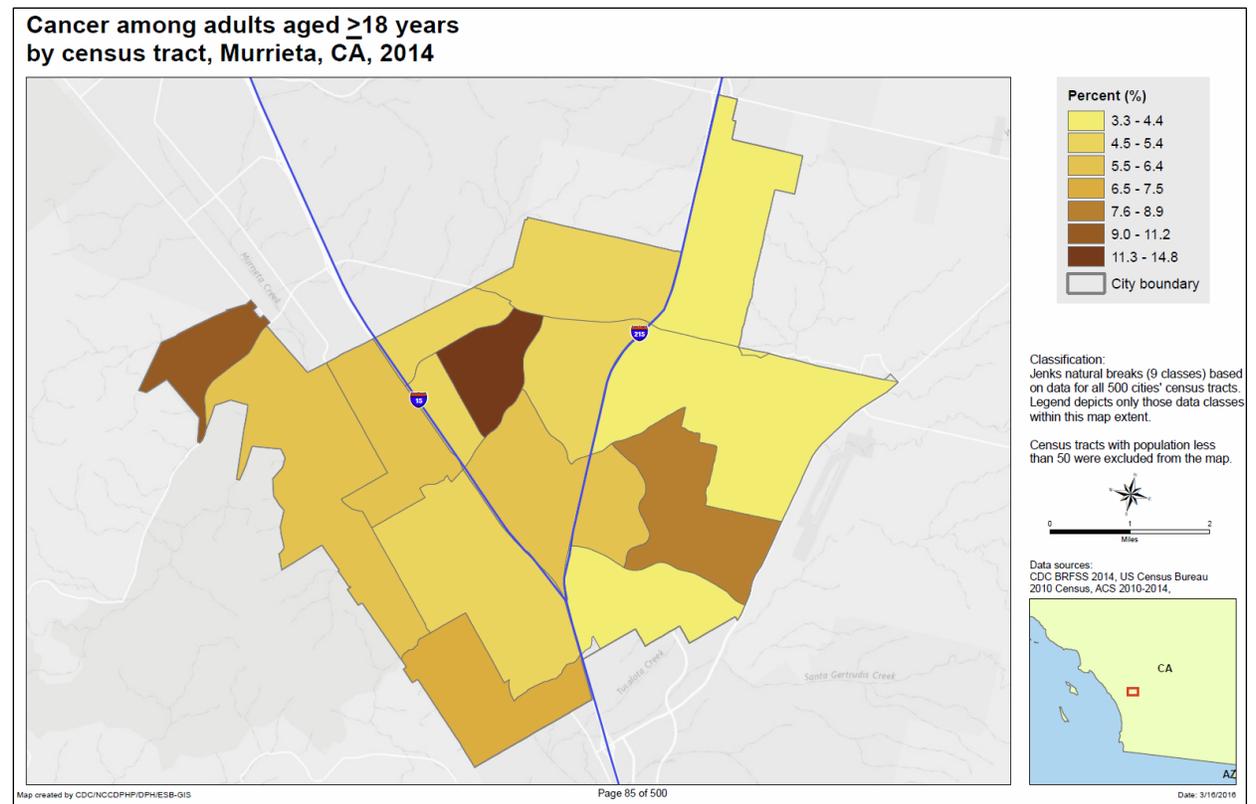
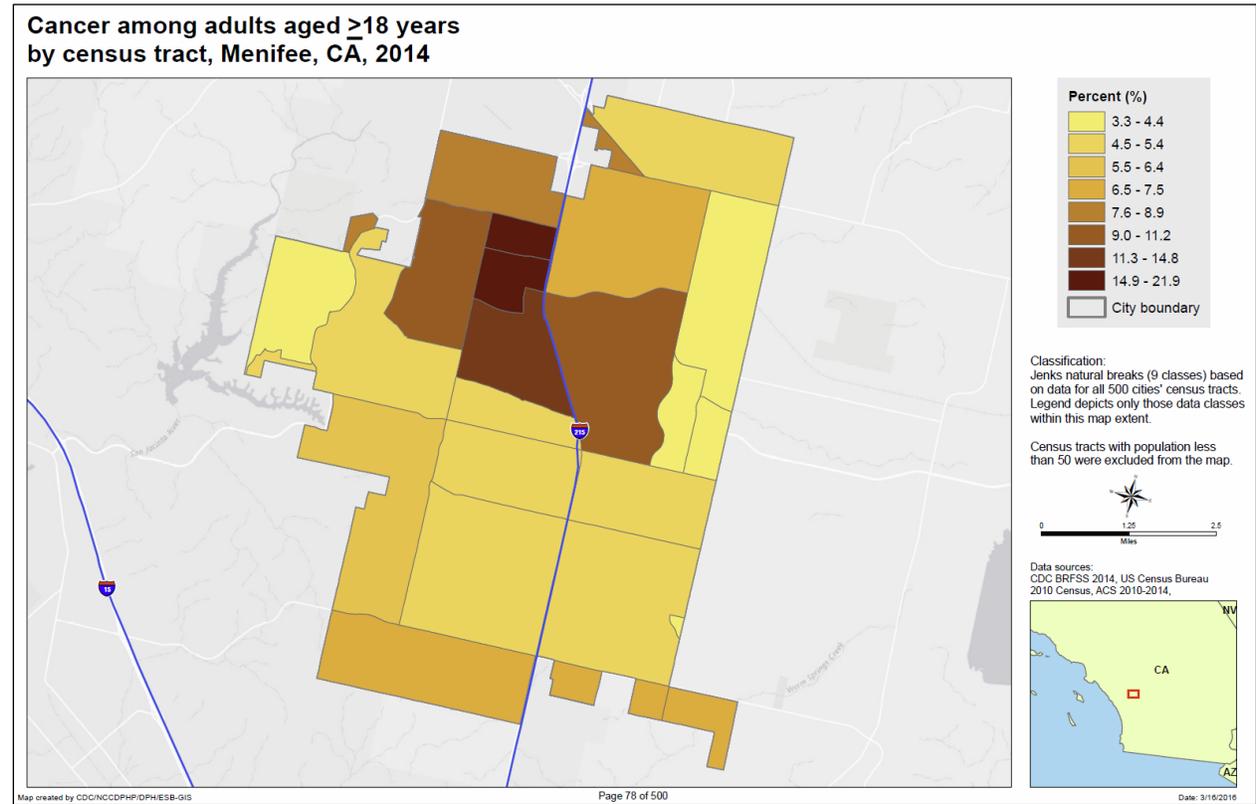
Appendix A: Southwest Riverside County Regional Task Force Members

Appendix B: Relevant City Maps from the 500 Cities Project

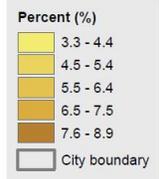
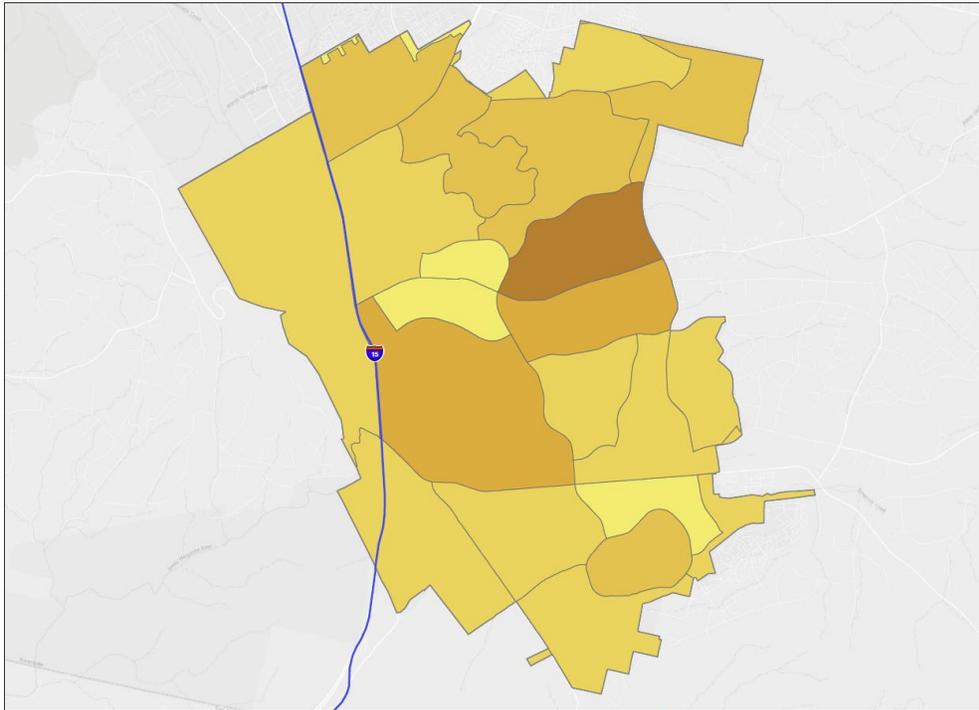
Appendix A: Southwest Riverside County Regional Task Force Members

- **County of Riverside 3rd District County Supervisor:** Chuck Washington (Sundae Sayles, Legislative Assistant)
- **City of Temecula:**
 - Mayor Maryann Edwards
 - Council Member Mike Naggar
- **City of Murrieta:**
 - Mayor Rick Gibbs
 - Council Member Alan Long
- **City of Menifee:** Council Member Lesa Sobek
- **City of Lake Elsinore:** Council Member Steven Manos (Johnathan Skinner, Community Services Director)
- **American Cancer Society:** Susan Heppner, Senior Market Manager, Community Engagement
- **Michelle's Place:**
 - Marilyn Watson, President
 - Kim Goodnough, Executive Director
- **Inland Empire Health Plan (IEHP):** Dr. Jennifer Sayles, Chief Medical Officer
- **Loma Linda University Medical Center:**
 - Peter Baker, VP of Operations
 - Cheryl Allred, Radiology Director
- **Riverside University Health System, Public Health:** Salomeh Wagaw, Epidemiologist
- **Scripps Health:**
 - Michael D. Bardin, Senior Director of Public Government Affairs
 - Alice Feng, Senior Director of Corporate Business Development
- **Sharp Healthcare:** Jillian Barber, Community Benefits and Health Improvement Strategic Planning
- **Temecula Valley Hospital:** Darlene Wetton, CEO
- **UC Riverside School of Medicine:** Dr. Samar Nahas, GYN/ONC Division Director
- **UC San Diego Health:**
 - Brandon Chase, Business Development
 - Aaron Byzak, Senior Director of Government and Community Affairs
- **Local medical doctors:**
 - Dr. Amy Bremner
 - Dr. Richard Chinnock
 - Dr. Jerry Hizon
 - Dr. David Horner
 - Dr. Arun Kalra
 - Dr. Evelyn Mendoza
 - Dr. Julie Schwenka
 - Dr. Mark Spicer

Relevant Maps from the 500 Cities Project

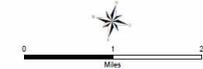


**Cancer among adults aged ≥ 18 years
by census tract, Temecula, CA, 2014**



Classification:
Jenks natural breaks (9 classes) based
on data for all 500 cities' census tracts.
Legend depicts only those data classes
within this map extent.

Census tracts with population less
than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau
2010 Census, ACS 2010-2014.

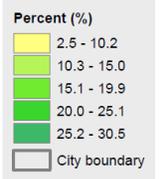
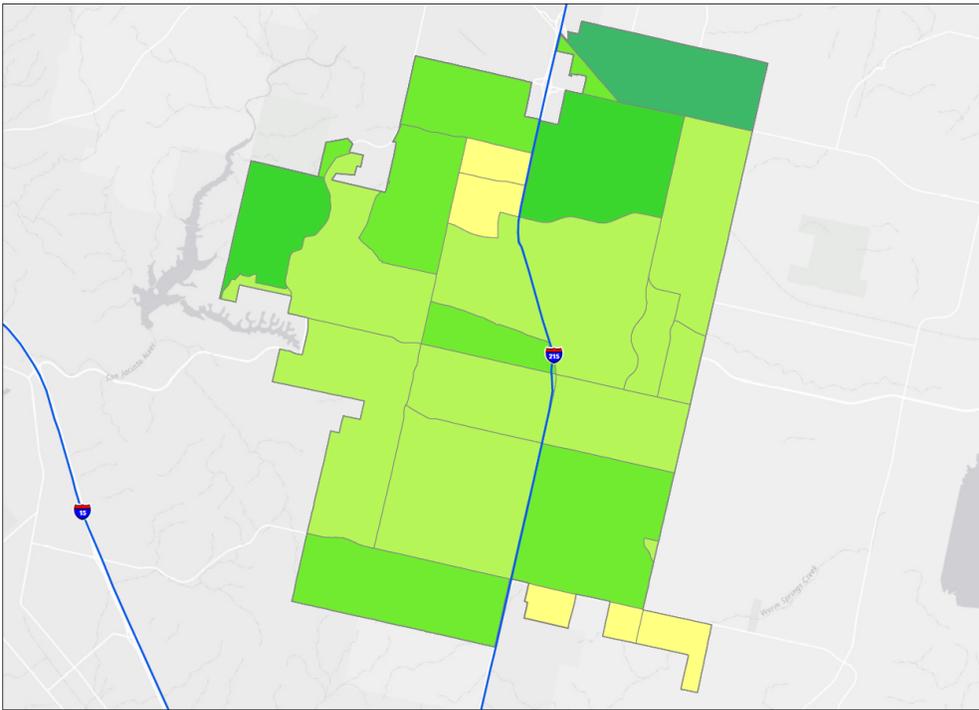


Map created by CDC/NCCDPHP/DPHESB-GIS

Page 130 of 500 (14)

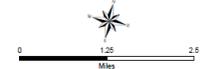
Date: 3/16/2016

**Current lack of health insurance among adults aged 18-64 years
by census tract, Menifee, CA, 2014**



Classification:
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on data for all 500 cities' census tracts.
Legend depicts only those data classes
within this map extent.

Census tracts with population less
than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau
2010 Census, ACS 2010-2014.

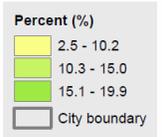
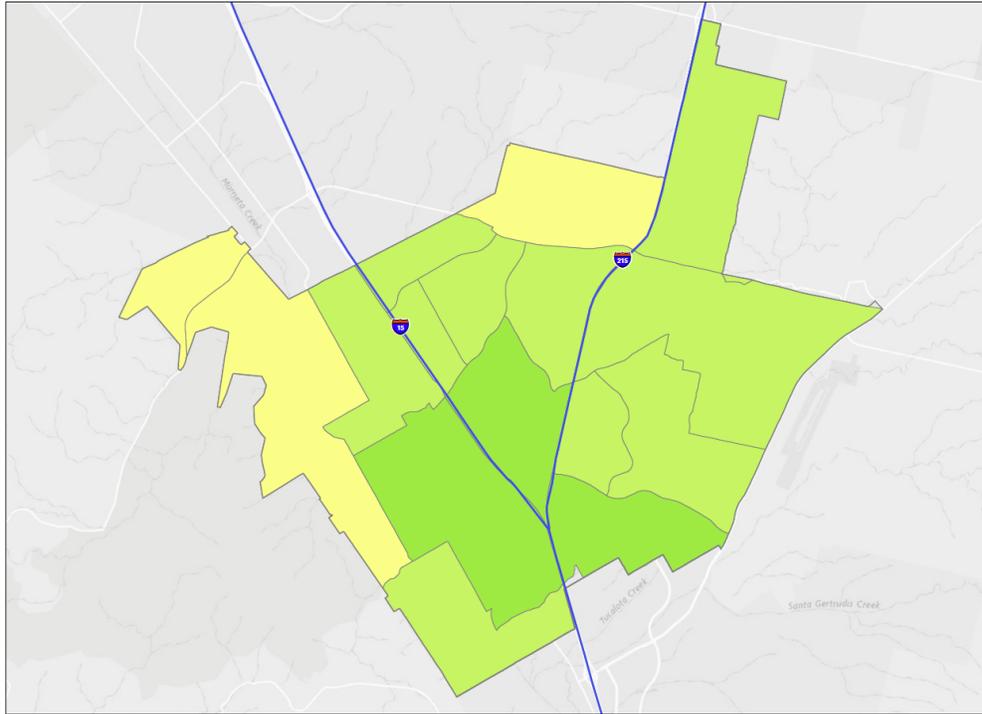


Map created by CDC/NCCDPHP/DPHESB-GIS

Page 78 of 500

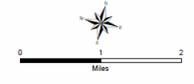
Date: 3/15/2016

Current lack of health insurance among adults aged 18-64 years by census tract, Murrieta, CA, 2014



Classification:
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Census tracts with population less than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau 2010 Census, ACS 2010-2014.

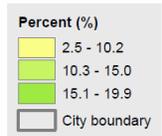
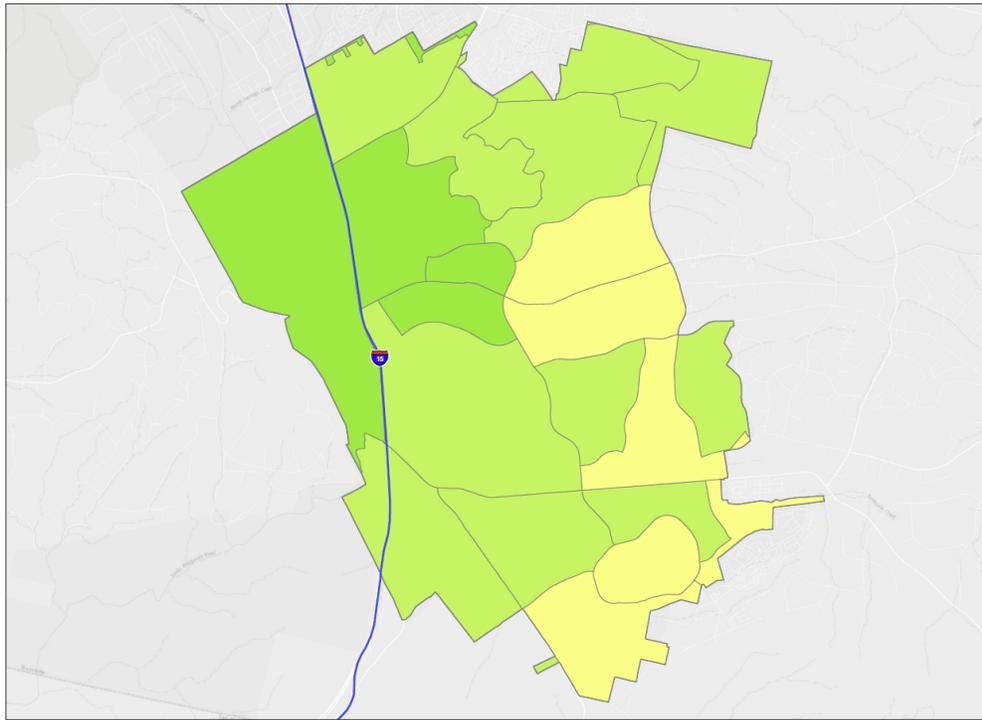


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Page 85 of 500

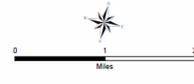
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Current lack of health insurance among adults aged 18-64 years by census tract, Temecula, CA, 2014



Classification:
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Data sources:
CDC BRFSS 2014, US Census Bureau 2010 Census, ACS 2010-2014.

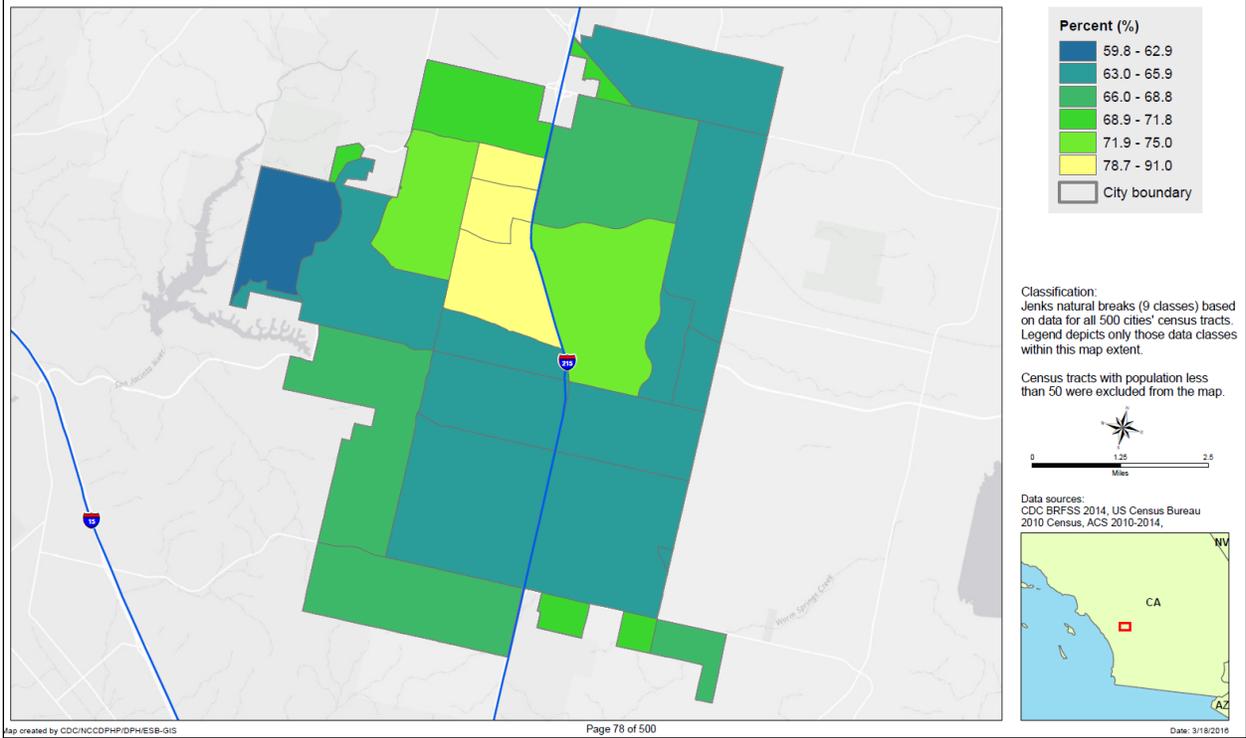


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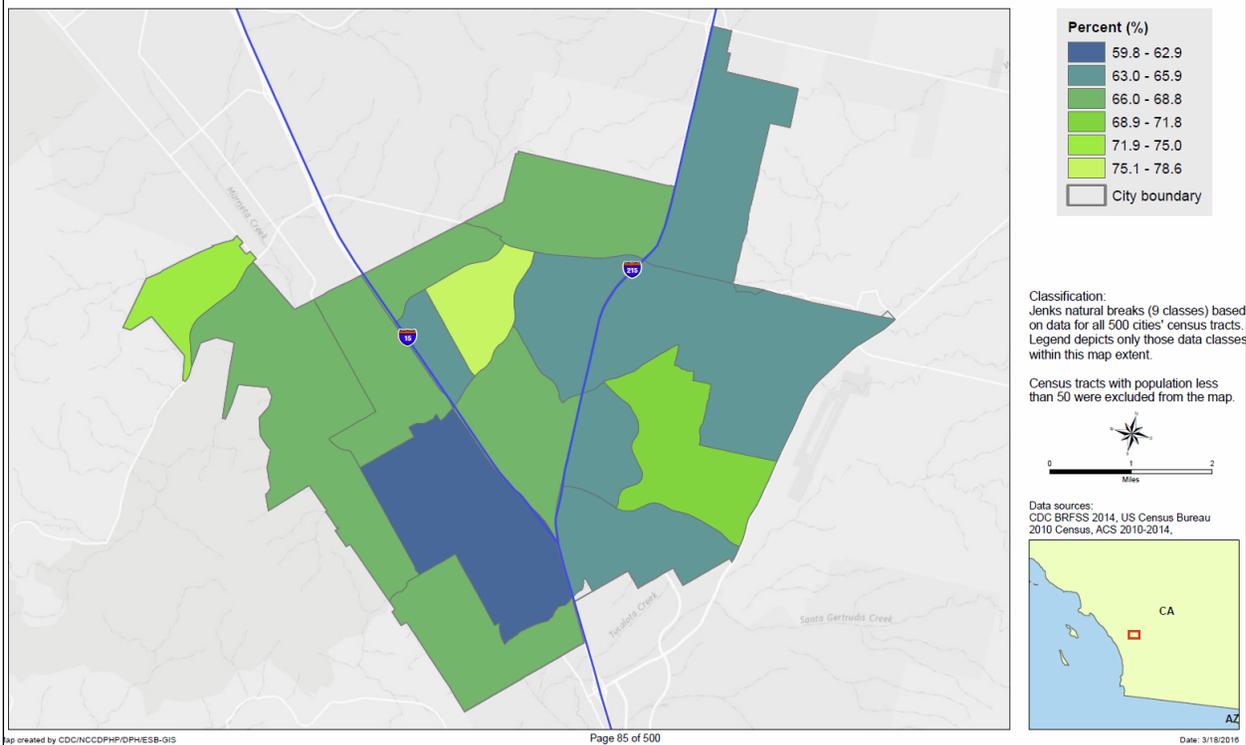
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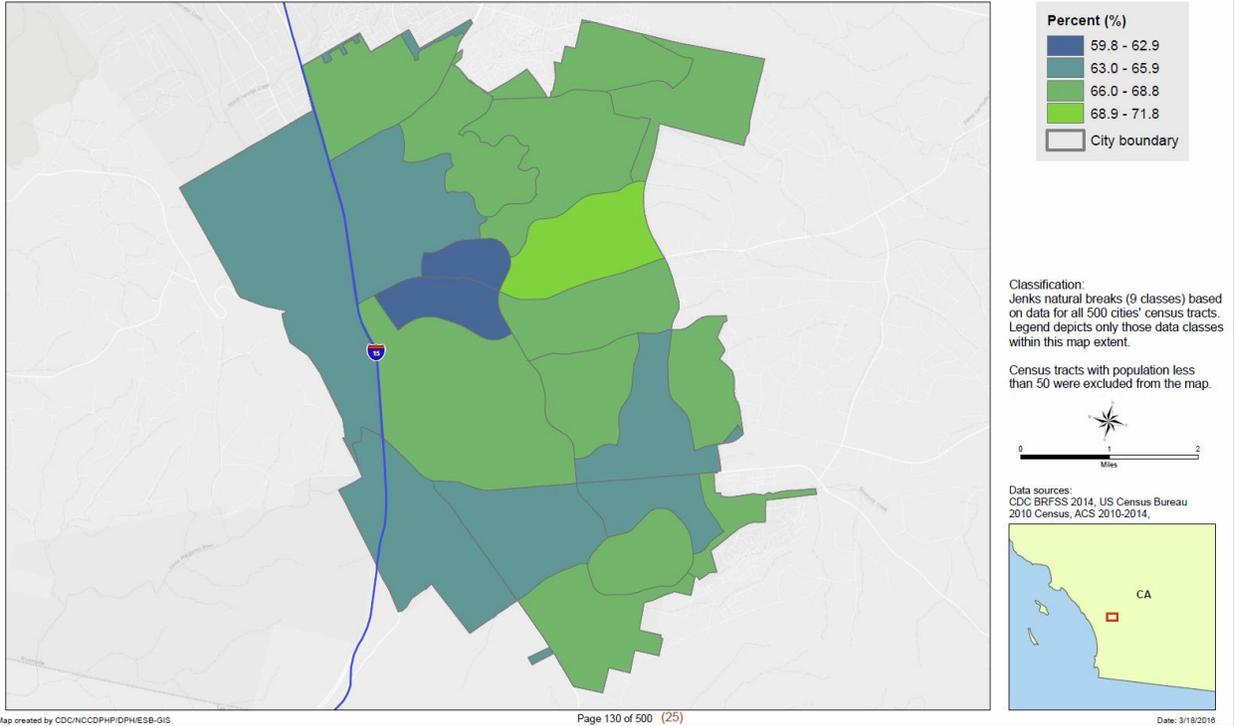
Visits to doctor for routine checkup within the past year among adults aged ≥ 18 years by census tract, Menifee, CA, 2014



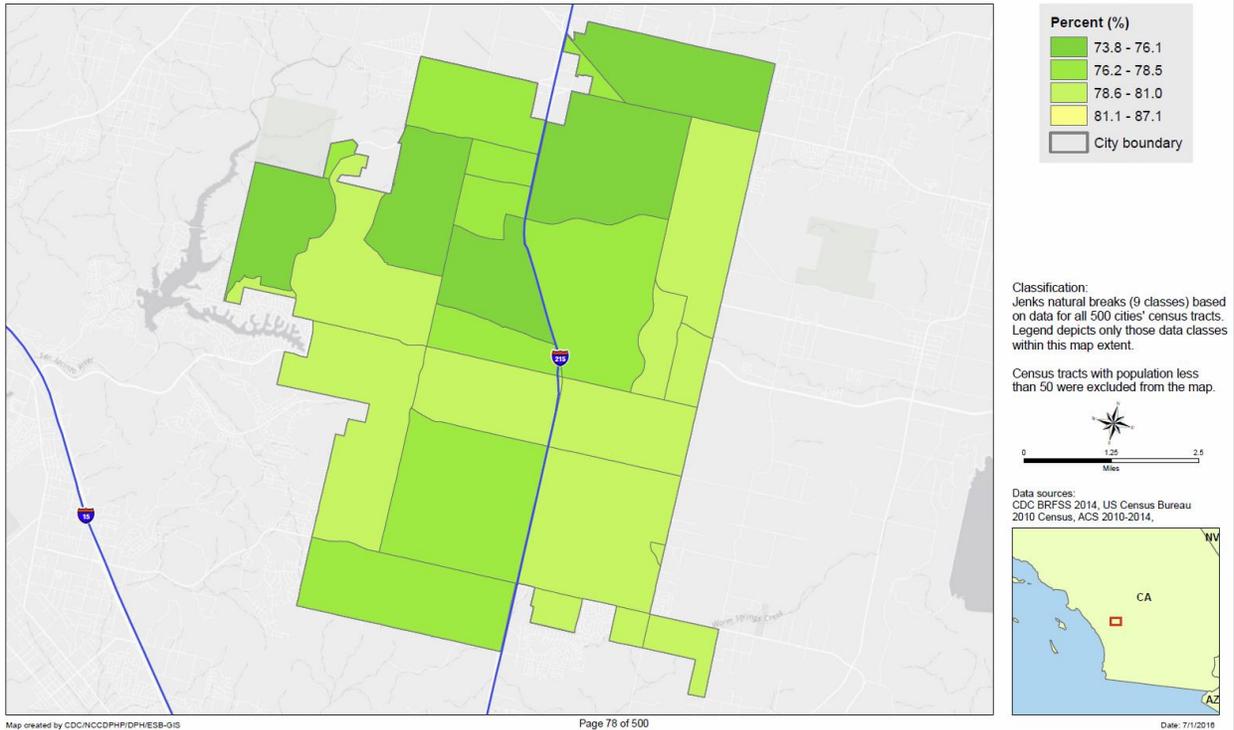
Visits to doctor for routine checkup within the past year among adults aged ≥ 18 years by census tract, Murrieta, CA, 2014



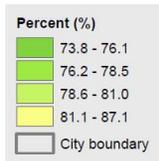
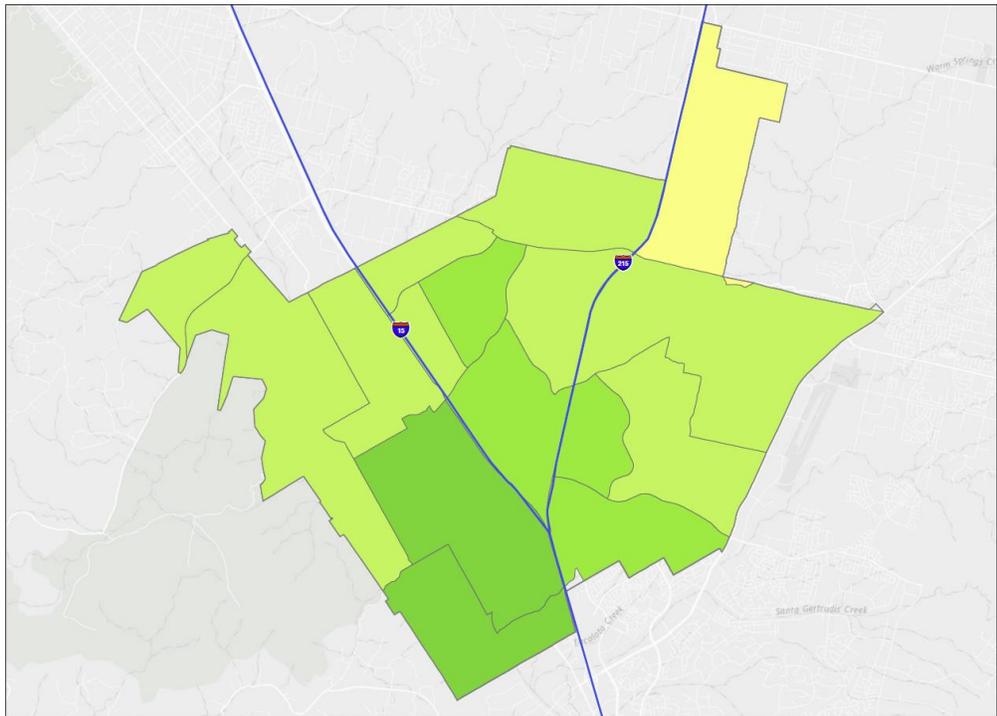
Visits to doctor for routine checkup within the past year among adults aged ≥ 18 years by census tract, Temecula, CA, 2014



Mammography use among women aged 50-74 years by census tract, Menifee, CA, 2014



**Mammography use among women aged 50-74 years
by census tract, Murrieta, CA, 2014**



Classification:
Jenks natural breaks (9 classes) based
on data for all 500 cities' census tracts.
Legend depicts only those data classes
within this map extent.

Census tracts with population less
than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau
2010 Census, ACS 2010-2014.

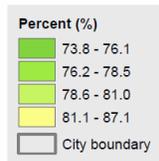
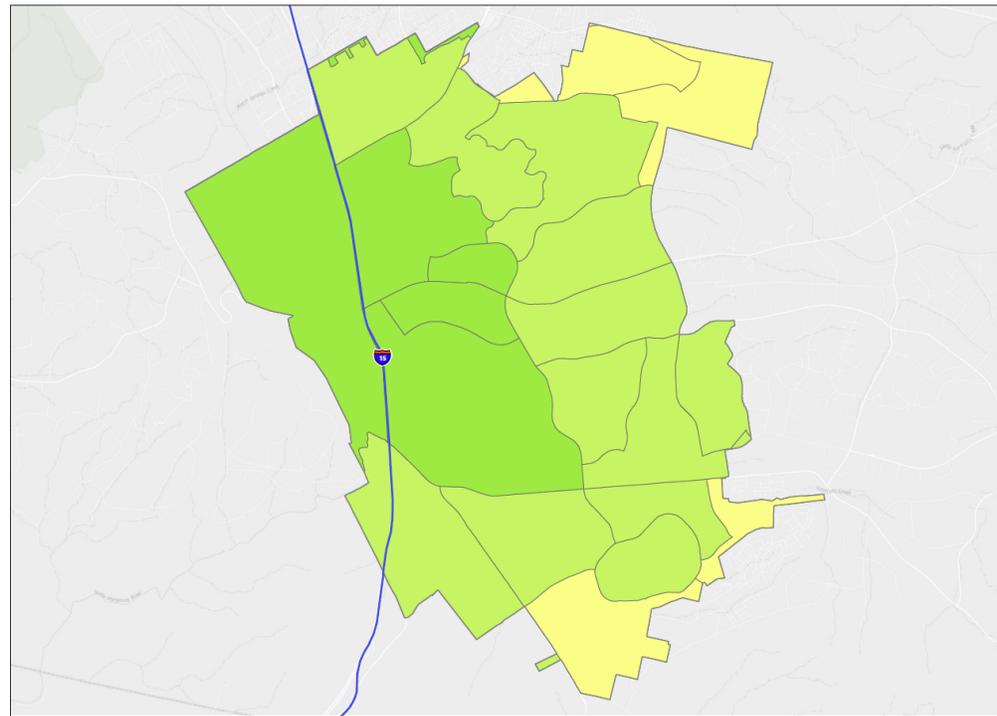


Map created by CDC/NCCDPHP/DPH/ESB-GIS

Page 85 of 500

Date: 7/1/2016

**Mammography use among women aged 50-74 years
by census tract, Temecula, CA, 2014**



Classification:
Jenks natural breaks (9 classes) based
on data for all 500 cities' census tracts.
Legend depicts only those data classes
within this map extent.

Census tracts with population less
than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau
2010 Census, ACS 2010-2014.

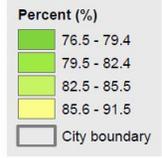
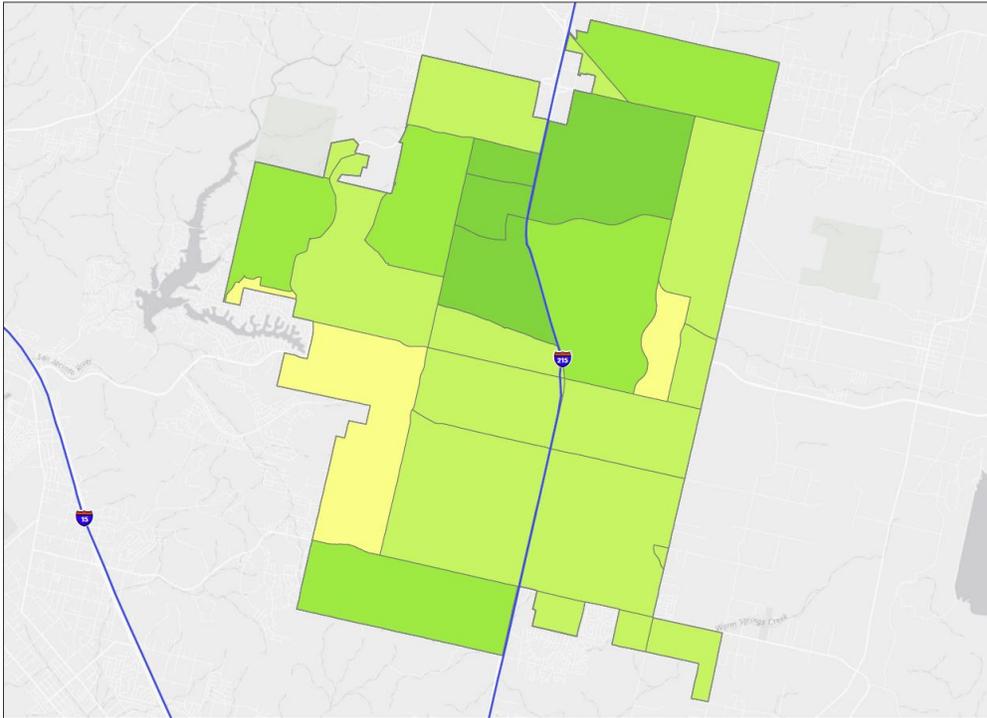


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Page 130 of 500

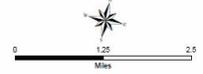
Date: 7/1/2016

Papanicolaou smear use among adult women aged 21-65 years by census tract, Menifee, CA, 2014



Classification:
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Census tracts with population less than 50 were excluded from the map.



Data sources:
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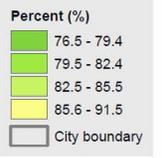
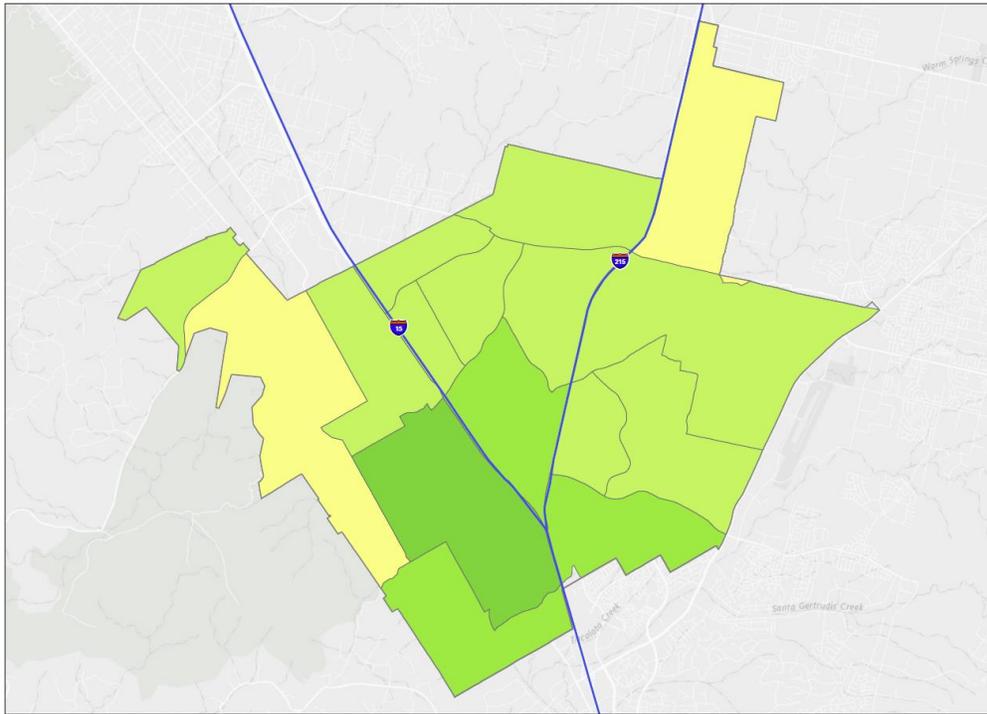


Map created by CDC/NCCDC/PHI/DPH/ESB-GIS

Page 78 of 500

Date: 7/5/2016

Papanicolaou smear use among adult women aged 21-65 years by census tract, Murrieta, CA, 2014



Classification:
Jenks natural breaks (9 classes) based on data for all 500 cities' census tracts. Legend depicts only those data classes within this map extent.

Census tracts with population less than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau 2010 Census, ACS 2010-2014.

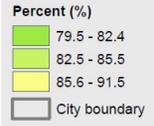
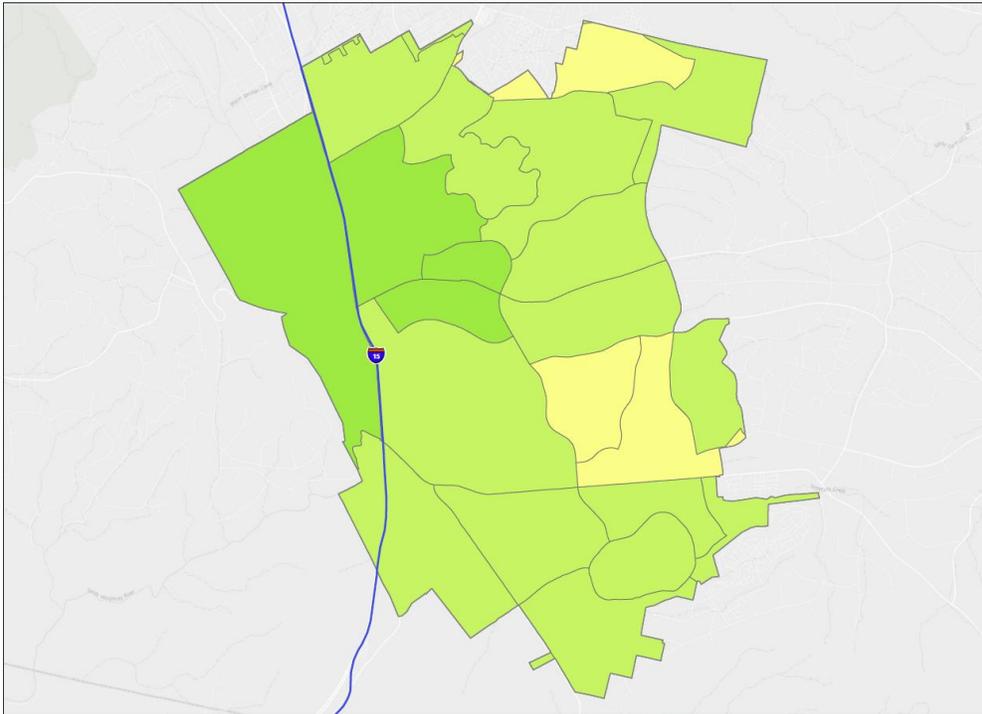


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Page 85 of 500

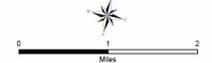
Date: 7/5/2016

Papanicolaou smear use among adult women aged 21-65 years by census tract, Temecula, CA, 2014



Classification:
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Census tracts with population less than 50 were excluded from the map.



Data sources:
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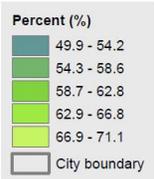
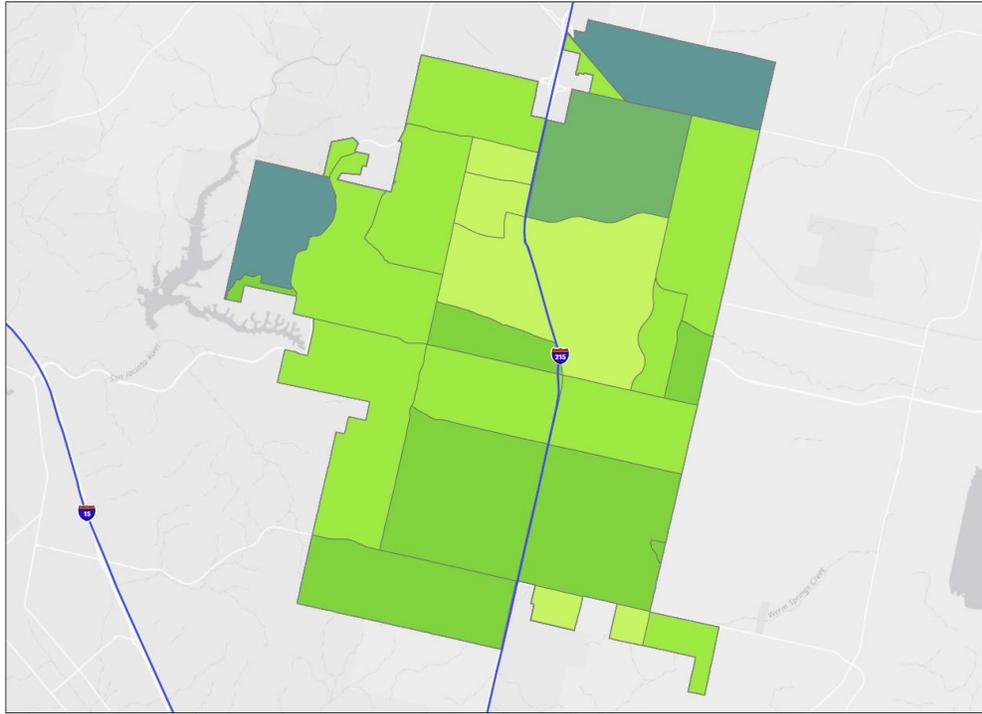


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Page 130 of 500 (30)

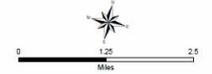
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Fecal occult blood test, sigmoidoscopy, or colonoscopy among adults aged 50-75 years by census tract, Menifee, CA, 2014



Classification:
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Census tracts with population less than 50 were excluded from the map.



Data sources:
CDC BRFSS 2014, US Census Bureau 2010 Census, ACS 2010-2014,

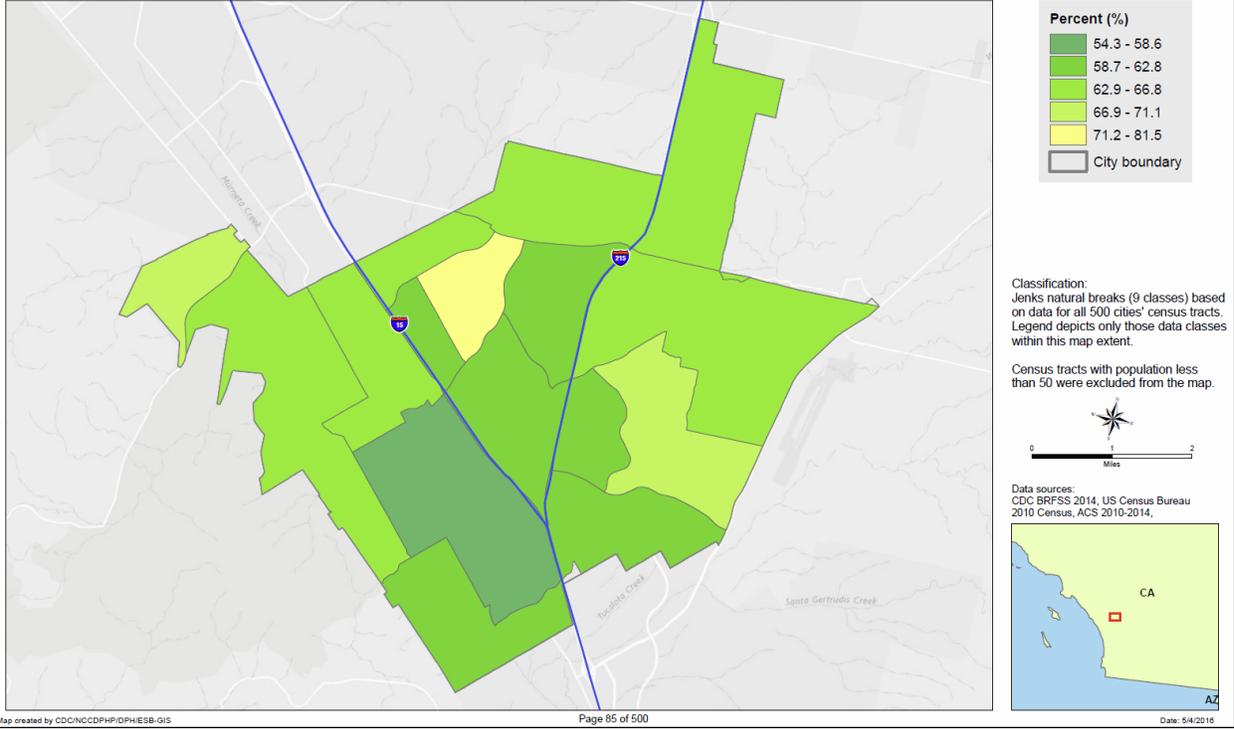


Map created by CDC/NCCDPHP/DPHIESB-GIS

Page 78 of 500

Date: 5/4/2016

Fecal occult blood test, sigmoidoscopy, or colonoscopy among adults aged 50-75 years by census tract, Murrieta, CA, 2014



Fecal occult blood test, sigmoidoscopy, or colonoscopy among adults aged 50-75 years by census tract, Temecula, CA, 2014

