



**Hoag Memorial Hospital
Presbyterian, Irvine**

**2010 City of Irvine Health Needs
Assessment Report**



Hoag Memorial Hospital Presbyterian, Irvine 2010 City of Irvine Health Needs Assessment Report



Prepared by the Orange County Health Needs Assessment
Website: www.ochna.org

Table of Contents

I.	Executive Summary: 2010 City of Irvine Health Needs Assessment	1
II.	Introduction	5
III.	Demographics	5
	1. Population and Growth in Irvine	5
	2. Households in Irvine	6
	3. Race/Ethnicity	8
	4. Age Distribution	8
	5. Gender	9
IV.	Socio-Economic Indicators	10
	1. Educational Attainment of Adults	10
	2. Education and Income	11
	3. Families below the Poverty Level	12
	4. Employment Status	13
	5. Tenure of Occupied Housing Units and Size of Residence	14
	6. Marital Status	14
	7. Citizenship Status	15
V.	Health Care Coverage	16
	1. Adults with No Health Care Coverage	16
	2. Adults with Health Care Coverage	17
	3. Other Types of Coverage for Adults	18
	4. Children with No Health Care Coverage	28
	5. Children with Health Care Coverage	28
	6. Other Types of Coverage for Children	29
	7. Spotlight on Koreans: Disparities in Access and Utilization	30
	8. The Safety Net in Irvine	31
VI.	Receiving Medical Care	34
	1. Most Recent Medical Care	34
	2. Need for Interpretation Services	34
	3. Usual Place of Care	35
	4. Emergency Room (ER) Visits	35
	5. Preventative Health Screenings	36
VII.	Mental and Dental Health of Adults	38
	1. Mental Health	38
	2. Dental Health	38
VIII.	Children's Health	39
	1. Health Concerns or Conditions	39
	2. Weight Status of Children (2-17)	40
	3. Vigorous Exercise: Children Ages 6-17	40
IX.	The Health of Older Adults (65+)	41
	1. Coverage Rates of Seniors	41
	2. Care of Senior Household Members	42

X.	General Health and Lifestyle of Adults	42
	1. Health Status	42
	2. Weight Status	44
	3. Exercise	45
	4. Health Concerns and Conditions	46
	5. Utilization of Health Services	47
	6. Activities to Stay Healthy	48
	7. Diet: Five a Day?	49
	8. Smoking and Drinking	49
	9. Interest in Health Information	49
XI.	Morbidity Indicators	50
	1. Morbidity from Communicable Diseases	50
	2. Hospital Discharges	50
XII.	Birth Indicators	51
	1. Number of Live Births in the City of Irvine	51
	2. Live Births by Age of Mother	52
	3. Late or No Prenatal Care	53
	4. Low Birth Weight	53
	5. Inadequate Prenatal Care	53
	6. Cesarean Births	53
	7. Breastfeeding Initiation	54
XIII.	Resident Deaths in Irvine	54
	1. Number of Deaths in the City of Irvine	54
	2. Leading Causes of Death in the City of Irvine	56
XIV.	Methods	58

Executive Summary:

2010 City of Irvine Health Needs Assessment

About the Project

The third most populous city in Orange County and one of the nation's largest planned communities, Irvine has undergone considerable growth and development since its incorporation as a city in 1971. Located within south and central Orange County, Irvine is surrounded by Tustin, Santa Ana, Lake Forest, Laguna Hills, Costa Mesa, and Newport Beach, encompassing an area of 65 miles. Divided into townships called villages, Irvine has over 20 different villages, including some that are currently being developed. Each village has houses of similar architectural style (such as Spanish/Tuscan Ranch, California Modern, and Italian/Mediterranean), schools, religious institutions, and commercial centers. The commercial districts are located around the periphery of each village.

In the fall of 2010, Hoag opened a new hospital in the city, with a strong interest to become part of the fabric of the community and provide quality health care to its culturally diverse residents. Thus, OCHNA developed a health needs assessment of City of Irvine residents to help guide Hoag Hospital at Irvine in designing their health education and outreach programs. This exploration would also allow stakeholders to gain insight as to the level of diversity in both language and cultural issues that impact the way in which residents view and access health care services. The City of Irvine health needs assessment was conducted in collaboration with the City of Irvine's Department of Community Health and Human Services.

Key City of Irvine Characteristics

From 1990 to 2000, the city's population grew by over 18 percent; a more pronounced growth of over 50 percent occurred in the following decade (2000 to 2010). A major economic center for the region, Irvine's population is expected to further increase over the next five years.

The City of Irvine differs from Orange County in numerous ways, especially with respect to its socioeconomics. The median annual household income of Irvine grew dramatically in a decade, from **\$72,978** to **\$95,501** in 2010, when six out of ten Irvine ZIP codes had higher average and median incomes than the county as a whole. Irvine has high educational attainment—almost all adults 25+ years earned their high school degree. Over **60%** of Irvine 25+ year olds had at least a bachelor's degree, compared to a countywide percent of about **35%**. Irvine's employment picture has also been more favorable compared to Orange County and the rest of California. Nevertheless, the city has been touched by the sustained economic downturn, as suggested by unemployment and poverty trends. Despite generally having lower poverty levels than all of Orange County, Irvine has experienced a gradual increase in the size of this struggling group since 2007.

Socioeconomic Variations between Race/Ethnic Groups

The City of Irvine is notable for its cultural richness, being about one-third Asian and home to a large Iranian American community. An examination of key socioeconomic variables by ethnicity provides a nuanced understanding of Irvine demographics and may illuminate groups with more health needs.

- The college completion rate varied from **93%** for Chinese adults (18+) to **64%** for Japanese adults.
- Regarding annual household income, Korean and Iranian adults (18+) were more likely to have incomes below \$50,000 compared to Chinese or white adults: **39%** of Korean adults and **45%** of Iranian adults were in this income category, compared to **17%** of Chinese adults and **20%** of white adults.

Access to Health Coverage: Adults (18+) and Children (0-17)

- **9%** of adults did not have health care coverage, as estimated by the City of Irvine Needs Assessment. Koreans and Iranians had the highest percentages of uncovered adults. The 2009 American Community Survey (ACS) estimated that **10%** of adults had no health care coverage.
- Adults with a high school education or less were much more likely to be without coverage than adults with at least some college.

- Lower income levels were correlated with lower rates of health care coverage. **21%** of adults in households with annual incomes of \$25,000 or less lacked coverage, whereas **2%** of adults in households of annual incomes above \$50,000 lacked coverage.
- The 2009 ACS estimated that **8%** of employed adults 18+ and **30%** of unemployed adults 18+ did not have health care coverage.
- The needs assessment determined that **7%** of children did not have health care coverage. The 2009 ACS estimated a similar percent of uninsured children (**7%**).
- **3%** of CalOptima Medi-Cal members resided in the City of Irvine as of August 2010. **26%** of Chinese and almost **10%** of Korean CalOptima Medi-Cal members resided in Irvine.

Receiving Medical Care: Adults (18+)

- Most adults (**90%**) visited a doctor or other health care provider within the last year; **74%** of adults visited one within the past 6 months, and **16%** visited one sometime between the last 6-12 months.
- **10%** of adults had not visited a doctor or other health care provider in over a year or have never been for treatment. Of those, **71%** did not go for a doctor visit because there was no reason. **12%** did not go because they either did not have health coverage or could not afford to go.
- **55%** of adults indicated that either they or another member of their household spoke a language at home other than English. Of those, **57%** used a language other than English to communicate with their health care provider (Mandarin, Cantonese, Spanish, Korean, Farsi, or Japanese).
- **4%** did not have a usual place of care; over **one in four** of those adults did not have a medical home due to lack of coverage or the cost of medical care.
- **28%** of adults used the ER at least once in the past 12 months. Of those adults, **55%** had been to the ER once, **32%** had been twice, and **13%** had been between 3 and 8 times.

Healthy Weight of Adults (18+)

- **62%** of adults perceived themselves to be about the right weight, **5%** felt they were underweight, and **33%** indicated that they were overweight.
- When calculating BMI from reported weight and height, **38%** of adults were overweight or obese, and **59%** of adults were at normal weight. There were higher percentages of overweight and obese men than women. Whites and Iranians had the highest percentages of overweight or obese adults, followed by Chinese.
- The City of Irvine met the **Healthy People 2020** Objectives for both normal weight adults and obese adults.
- The actual weight status of adults, based on their BMI, was not always aligned with their self-perceived weight status. Of adults who felt that they were about the right weight, **82%** did have normal weight BMI, but **2%** were underweight, and **16%** were overweight or obese.
- **14%** of adults did not exercise as part of their weekly routine.
- **34%** of adults did not eat five servings of fruits/vegetables a day, the most common reason being that it was not a part of their daily routine or something that they gave much thought to.

Healthy Weight and Health Conditions/Concerns for Children

- The needs assessment asked parents about the weight status of their children. **87%** of children ages 2-17 were perceived to be about the right weight by their parents, **3%** were perceived to be underweight, and **10%** were perceived to be overweight.
- According to the OCHNA 2007 survey, **63%** of Irvine children had a healthy weight BMI, and **34%** had BMI in the overweight/obese categories. In Orange County, **60%** of children had a healthy weight BMI, and **31%** had BMI in the overweight/obese categories.
- **54%** of children ages 6-17 in Irvine engaged in at least 30 minutes of vigorous exercise, such as running, biking, swimming, or sports, for less than 5 times in the past week.

Child Health Concerns (0-17)

City of Irvine adults with children in the household were asked whether their child(ren) had certain health conditions or concerns:

- The two most common conditions were eye/vision problems and ADD/ADHD.
- Over **one in ten** parents reported that their child(ren) experienced stress, depression, or emotional problems.
- **One in ten** parents reported that their child(ren) had severe allergies.

Adult Health Status and Conditions (18+)

- **64%** of adults reported having excellent or very good health, and **10%** reported having fair or poor health. With regard to age, seniors (65+) were most likely to rate their own health as fair or poor, compared to adults in the 18-44 and 45-64 groups. With regard to race/ethnicity, Koreans were the most likely to rate their own health as fair or poor, followed by Iranians.
- The most common health conditions among adults were related to vision and the back or neck.
- Almost **one in five** adults experienced depression, anxiety, or emotional problems.
- **26%** of adults required frequent medical care for their condition or concern.
- Overweight/obese adults were more likely to report the following condition/concerns than normal weight adults: high cholesterol, hypertension/high blood pressure, arthritis, diabetes, heart problems, walking problems, and lung/breathing problems.

Activities to Stay Healthy (18+)

- Adults in the City of Irvine reported they routinely engage in many activities and behaviors to stay physically and mentally healthy.
- **88%** of adults get regular exercise, **87%** eat a healthy diet, **65%** drink herbal or green teas, and **65%** avoid fast food.
- **80%** of adults take medication as prescribed, and **71%** take supplements or vitamins.
- **78%** get regular medical check-ups, and **75%** get regular dental appointments.
- **96%** socialize with friends/family, and **79%** take trips, getaways, or vacations.

- To meet their spiritual needs, **55%** of adults meditate/pray and **47%** go to a place of worship (e.g., church, temple, and synagogue).
- **13%** of adults attend health seminars, and **8%** attend community health fairs.

Adult Interest in Health Information (18+)

Adults reported they were *very* or *somewhat* interested in attending workshops/seminars or reading written material about a number of health topics:

- Over **half** of adults were interested in topics on *nutrition/diet* and *exercise/active lifestyles*, **34%** were interested in *health fairs*, **21%** were interested in *parenting classes*, **19%** were interested in *anger/stress* topics, and **17%** were interested in *depression/mental health* topics.

Health Disparities between Race/Ethnic Groups in the City of Irvine

Of the ethnicities highlighted in this study, Koreans and Iranians had the lowest rates of health care and dental coverage. These two ethnicities also had the lowest annual household income levels. In addition, Koreans and Iranians were most likely to rate their own health as fair or poor, and least likely to get regular dental appointments and take medication as prescribed. Koreans, both adults and children, had the lowest coverage rates for all types of coverage—health care, dental, vision, prescription drug, and mental health.



2010 City of Irvine Health Needs Assessment

Introduction

The City of Irvine Needs Assessment, conducted in 2010, included almost 700 respondents. This survey was conducted in five languages: English, Farsi, Japanese, Korean, and Mandarin.

The population estimates for the City of Irvine needs assessment was produced using 2000 Census data instead of more current population data sources because of the level of accuracy needed in estimating specific sub-groups for the study: Chinese, Japanese, Korean, and Iranian/Persian. More current American Community Survey estimates were available for these sub-groups, but not at the city level. Because the purpose of this study is to explore the differences in the health needs of these sub-groups, greater precision took priority at the cost of having the most current estimates.

For more details on the survey, please refer to the Methods section at the end of this report.

Demographics

This section presents information on population and household growth and the gender, age, and race/ethnicity for the residents of the City of Irvine, using both population estimates from the survey results and Census data from Nielsen Claritas.

Data from the 2000 Census was used as the basis for population weighting to obtain population estimates from the responses of the survey. As a result, even though the survey was conducted in 2010, the estimates reflect 2000 population values. Since Irvine has grown substantially in the past ten years, 2010 Census estimates by Nielsen Claritas are provided (where applicable) to present a more current picture, but 2000 Census data are also provided to put the population estimates from the survey results in perspective.

All data presented are from the results of the needs assessment, except where indicated and sourced. For example, all data from Nielsen Claritas will be indicated in the source at the bottom of each table. If not sourced, the information in the table is from the Irvine needs assessment.

Population and Growth in Irvine

The population of Irvine has grown dramatically in the last couple decades. The population grew from 123,576 in 1990 to 146,152 in 2000, an **18.3%** growth. Nielsen Claritas 2010 Census estimates show a current population total of 221,604 in Irvine, a **51.6%** growth in just 10 years. From 2000 to 2010, the population in Irvine grew at a much higher percentage than the county (**8.6%** growth), state (**11.8%**), and nation (**9.8%**). The projected population of Irvine in 2015 is 247,278. The following table shows the population and percent growth in Irvine from 2000 to 2010 by ZIP code.

ZIP Code	2000 Census	2010 Estimates	Percent Growth from 2000 to 2010
92602	4,864	18,117	272.5%
92603	11,119	20,677	86.0%
92604	27,567	30,437	10.4%
92606	17,623	25,733	46.0%
92612	20,008	28,288	41.4%
92614	22,474	28,169	25.3%
92617	10,841	12,785	17.9%
92618	6,849	16,158	135.9%
92620	24,109	40,484	67.9%
92697	698	756	8.3%
Total Population	146,152	221,604	51.6%

- The population in ZIP codes 92602 and 92618 experienced very high levels of growth.
- The population in ZIP codes 92620 and 92604 comprised almost a third of the total population of Irvine in 2010.
- The ZIP code 92697 is the University of California in Irvine.

Source: 2000 Census data and 2010 Census estimates by Nielsen Claritas

Households in Irvine

The following table shows the number of households in Irvine. The average household size in the whole city was **2.71** persons per household in 2010, increasing from **2.66** in 2000. The ZIP codes of 92602 and 92620 had the highest average household sizes of **3.03** in 2010.

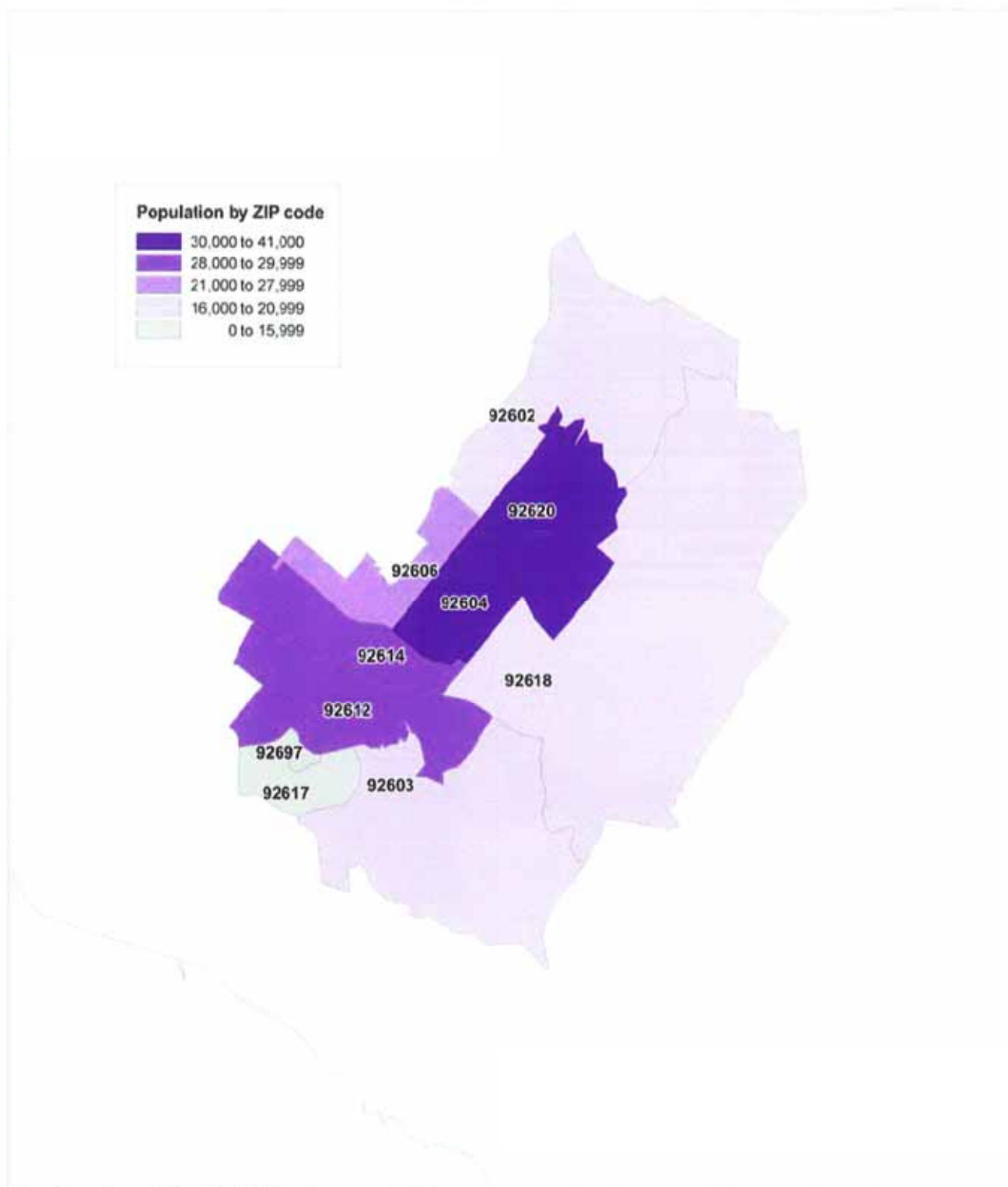
ZIP Code	2000 Census		2010 Estimates	
	Households	Percent	Households	Percent
92602	1,704	3.3%	5,973	7.6%
92603	3,844	7.4%	7,507	9.6%
92604	9,765	18.8%	10,620	13.5%
92606	6,558	12.6%	9,694	12.3%
92612	8,354	16.1%	12,039	15.3%
92614	8,442	16.3%	10,374	13.2%
92617	2,082	4.0%	2,566	3.3%
92618	2,863	5.5%	6,300	8.0%
92620	8,180	15.8%	13,363	17.0%
92697	110	0.2%	118	0.2%
Total Households	51,902	100.0%	78,554	100.0%

Source: 2000 Census data and 2010 Census estimates by Nielsen Claritas

- From 2000 to 2010, the City of Irvine experienced a growth of **51.4%** in households.
- From 2000 to 2010, the number of households in ZIP code 92602 increased by **250.5%**.
- In 2010, **35.2%** (27,657) of households had people under age 18 present, and **64.8%** (50,897) of households in Irvine did not have any people under age 18.



City of Irvine Population in 2010



Map Produced by OCHNA, January 2011
Data Source: 2010 Census estimates by Nielsen Claritas

Race/Ethnicity

The following table shows the breakdown of adults and children by race/ethnicity in the 2010 City of Irvine survey. Population estimates were based on the population counts from the 2000 Census data.

Race/Ethnicity	Adults		Children	
	Percent	Population Estimate	Percent	Population Estimate
White	59.1%	62,843	57.7%	19,374
Iranian/Persian	3.9%	4,096	3.9%	1,313
Chinese	10.5%	11,213	10.6%	3,569
Korean	5.5%	5,870	5.1%	1,709
Japanese	3.8%	4,068	3.6%	1,220
Other API	9.5%	10,073	9.1%	3,060
All Others (including Hispanic)	7.7%	8,190	9.9%	3,309
Total	100%	106,353	100%	33,554

- Asians comprised **29.4%** (31,224) of Irvine's adult population; **28.5%** (9,558) of the child population in Irvine was also Asian.

Age Distribution

The following table shows the age distribution of Irvine compared to the county in 2010, presenting Census estimates by Nielsen Claritas.

Age Group	City of Irvine		Orange County	
	Percent	Population Estimate	Percent	Population Estimate
0 to 5	6.4%	14,271	8.5%	261,739
6 to 11	7.1%	15,916	8.4%	261,111
12 to 17	7.6%	16,925	8.3%	258,082
18 to 24	13.2%	29,438	9.8%	302,738
25 to 34	13.4%	30,056	13.1%	403,869
35 to 44	15.0%	33,636	14.8%	458,473
45 to 54	16.3%	36,358	14.7%	453,641
55 to 64	11.5%	25,730	10.7%	329,746
65+	9.5%	21,287	11.7%	362,274
Total	100%	223,617	100%	3,091,673

Source: 2010 Census estimates by Nielsen Claritas

- In 2010 the median age in the City of Irvine was **36.5 years**; the median age in all of Orange County was **36.3 years**.

The following table shows the age group distribution of the population in Irvine, presenting population estimates from the City of Irvine needs assessment survey results.

Age Group	Percent	Population Estimate
0 to 5	7.0%	9,814
6 to 11	8.5%	11,856
12 to 17	8.5%	11,884
18 to 24	8.9%	12,497
25 to 34	18.6%	26,046
35 to 44	13.7%	19,187
45 to 54	19.5%	27,237
55 to 64	6.7%	9,441
65+	8.5%	11,944
Total	100.0%	139,906

- Adults comprised **76.0%** of the population in Irvine, and children comprised **24.0%** of the population, according to self-reported age.

Gender

The survey results estimate a male-to-female ratio of **0.85** for the adult population. According to population estimates from the survey results, **46.0%** (48,931) of adults in Irvine were male, and **54.0%** (57,422) were female. The survey did not ask about the gender of the child.

The following table presents the ratios calculated using data from Nielsen Claritas, for comparison purposes.

Group	2000	2010
Children Ages 0-17	1.07 (17,660:16,458)	1.14 (25,066:22,046)
Adults Ages 18-64	0.94 (49,028:52,411)	0.96 (76,070:79,148)
Seniors Ages 65+	0.72 (4,429:6,166)	0.81 (9,536:11,751)

Source: 2000 Census data and 2010 Census estimates by Nielsen Claritas

- The male-to-female ratio for all adults in Irvine (from Nielsen Claritas data) was **0.91** in 2000 and **0.94** in 2010.
- The ratio is different for both children and seniors. In the children population, there were more boys than girls. In the senior population, there were more women than men.

Socio-Economic Indicators

This section includes socio-economic information about the residents of Irvine, including the following: education, income, poverty level, employment status, tenure of occupied housing units, marital status, and citizenship status.

Educational Attainment of Adults

The following table compares the educational attainment of adults ages 25+ in the City of Irvine and the entire county in 2010, presenting estimates by Nielsen Claritas.

Education	City of Irvine		Orange County	
	Percent	Population Estimate	Percent	Population Estimate
Less than High School	4.0%	5,881	17.7%	354,682
High School Graduate/GED	10.4%	15,198	18.4%	369,893
Some College	23.5%	34,299	28.6%	574,238
College Graduate	36.3%	52,934	23.1%	463,283
Postgraduate or Professional Degree	25.7%	37,379	12.2%	245,907
Total	100%	145,691	100%	2,008,003

Irvine has a high percentage of college completion. **62.0%** (90,313) of adults 25+ in the City of Irvine have at least a bachelor's degree, compared to **35.3%** (709,190) of adults 25+ in Orange County, **29.5%** (7,179,913) in California, and **27.5%** (56,191,291) in the United States. Almost all (**96.0%** or 139,810) adults 25+ in Irvine completed high school, compared to **82.3%** (1,653,321) of the county.

Source: 2010 Census estimates by Nielsen Claritas

The following table reports the educational attainment level of adults in Irvine, presenting estimates based on the survey responses.

Education Level	Percent	Population Estimate
Less than High School	0.7%	681
High School Graduate/GED	8.5%	8,932
Technical School Graduate	1.1%	1,109
Some College	17.7%	18,579
College Graduate	40.8%	42,714
Postgraduate or Professional Degree	31.2%	32,690
Total	100%	104,705

Irvine had a high percentage of college graduates, with **72.0%** of the population having at least a bachelor's degree.

- Chinese in Irvine had a very high percentage of college completion, with **92.8%** (9,797) of Chinese adults with at least a bachelor's degree, and **50.9%** (5,371) with a postgraduate or professional degree.
- College achievement of whites and Iranians are similar to citywide percentages, with **74.2%** (2,939) of Iranian adults and **74.6%** (46,372) of white adults with at least a bachelor's degree and **32.6%** (1,291) of Iranian adults and **31.2%** (19,388) of white adults with a postgraduate or professional degree.
- Korean and Japanese had lower percentages of college completion compared to citywide statistics, with **70.7%** (4,054) of Korean adults and **63.9%** (2,561) of Japanese adults with at least a bachelor's degree and **19.2%** (1,104) of Korean adults and **17.0%** (682) of Japanese adults with a postgraduate/professional degree.

Education and Income

The survey results showed that adults in Irvine with lower educational attainment levels were more likely to have an annual household income of \$50,000 or less (Chi-square=106.2, $p < 0.001$). **40.6%** (7,319) of adults with some college or less education lived in households with annual income of \$50,000 or less, compared to **19.7%** (5,790) of adults with a college degree and **10.3%** (2,332) of adults with a postgraduate or professional degree.

Table 9: Annual Household Income of Adults, Survey Results

Income	Percent	Population Estimate
\$25,000 or Less	7.8%	5,499
\$25,001 to \$50,000	14.1%	9,966
\$50,001 to \$75,000	13.1%	9,230
\$75,001 to \$100,000	13.4%	9,439
\$100,001 to \$125,000	19.0%	13,377
\$125,001 to \$150,000	7.9%	5,599
\$150,001 to \$175,000	6.9%	4,899
\$175,001 to \$200,000	4.9%	3,471
More than \$200,000	12.9%	9,077
Total	100.0%	70,557

- **21.9%** (15,465) of adults in Irvine had annual household income of \$50,000 or less.
 - **17.4%** (1,328) of Chinese adults and **19.7%** (8,969) of white adults had annual household incomes of \$50,000 or less.
 - Koreans and Iranians had higher percentages of lower annual household income levels. **25.2%** (772) of Korean adults and **23.9%** (549) of Iranian adults had annual household incomes of \$25,000 or less; **13.8%** (422) of Korean adults and **21.1%** (486) of Iranian adults had annual household incomes between \$25,001 and \$50,000.

- More than half of adults (**51.6%** or 36,423) lived in households with annual incomes greater than \$100,000.

Average and Median Income

The median annual household income of Irvine has grown dramatically in a decade, from \$72,978 in 2000 to \$95,501 in 2010. In 2015, the increase in median income is expected to be smaller, estimated to be \$104,473 in 2015.

The following table presents the 2010 average and median income of residents in Irvine by ZIP code.

Six out of ten ZIP codes (92602, 92603, 92604, 92606, 92614, and 92620) in Irvine had higher average and median incomes than the county as a whole. ZIP codes 92602, 92603 and 92620 are the highest income areas in the City of Irvine, exceeding the city's average and median incomes. Compared to the average and median incomes within the city, ZIP code 92617 is a lower-income area. The average and median income is especially low in ZIP code 92697 due to the large student population (92697 is the University of California, Irvine).

Table 10: Annual Household Income by ZIP Code, 2010

ZIP Code	Average Household Income	Median Household Income
92602	\$161,813	\$139,288
92603	\$173,584	\$123,002
92604	\$112,025	\$92,182
92606	\$118,354	\$96,552
92612	\$94,399	\$70,847
92614	\$117,455	\$94,534
92617	\$79,562	\$48,000
92618	\$96,602	\$74,613
92620	\$145,378	\$114,101
92697	\$36,441	\$29,615
City of Irvine	\$123,753	\$95,501
Orange County	\$101,692	\$76,412

Source: 2010 Census Estimates by Nielsen Claritas

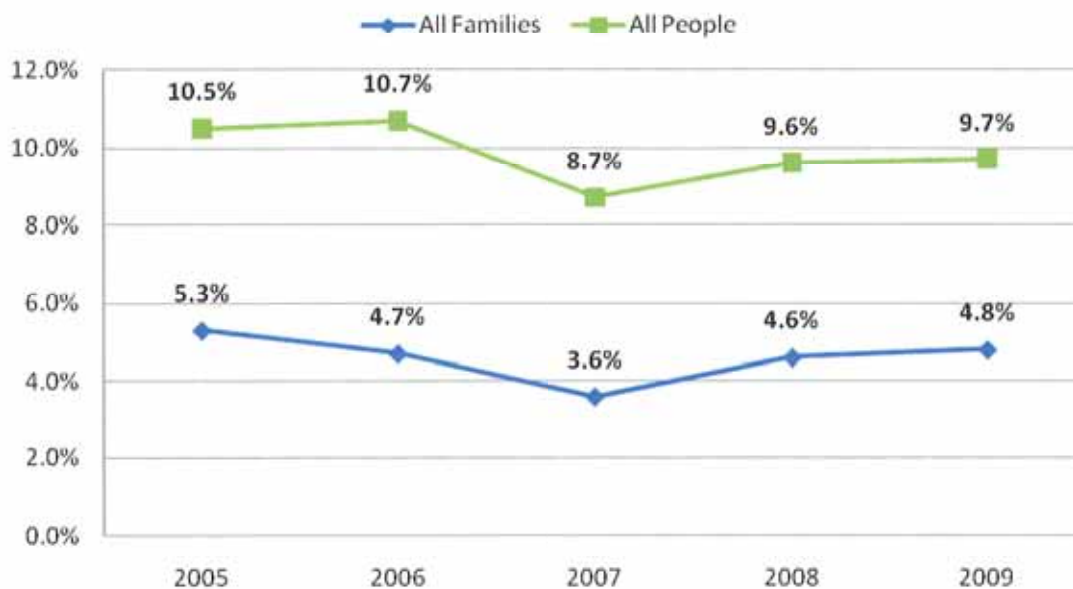
Families below the Poverty Level

The 2010 federal poverty levels (FPL) described a family of four living below the FPL as having an annual household income of \$22,050 or less. A single person living below the FPL had an annual household income of \$10,830 or less. Though Irvine is relatively affluent, poverty still exists in the city. In 2010, **5.4%** (2,849) of families in Irvine had an income below the poverty level, compared to **6.6%** (47,259) of families in Orange County and **9.8%** (855,922) in California (estimates by Nielsen Claritas).

Poverty Rate Trends

The figure below captures the changes in poverty rates over the years in the City of Irvine as determined by the [American Community Survey \(ACS\)](#).

Figure 1: Poverty Rates in the City of Irvine by All Families and All People (All Ages Included), 2005-2009



Source: U.S. Census Bureau, 2005-2009 American Community Survey 1-Year Estimates.

- Within the 2005-2009 timeframe, poverty levels were declining in the City of Irvine until 2007. While the 2009 *all family* and *all people* poverty rates did not reach 2005 proportions, the gradual rise since 2007 may be reflective of the current economic downturn.
- The 2009 ACS determined that **7.3%** of individuals between 0-17 years were in poverty, **10.8%** of individuals 18-64 years were in poverty, and **7.1%** of older adults 65+ lived in poverty in the City of Irvine.
- In 2005, **6.4%** of Orange County families and **8.8%** of Orange County people lived in poverty; the county's individual poverty rate was lower than the City of Irvine's estimate of **10.5%**. In 2009, **7.5%** of Orange County families and **10.7%** of Orange County people lived in poverty, higher rates compared to the City of Irvine (**4.8%** of families and **9.7%** of people).

Employment Status

The following table shows the survey results of the self-reported employment situation of adults in Irvine, excluding those in the military and those who refused to answer.

Situation	Percent	Population Estimate
Employed	54.3%	57,289
Self-Employed	14.2%	15,007
Out of Work for More than One Year	2.5%	2,665
Out of Work for Less than a Year	2.8%	2,945
Homemaker	6.5%	6,894
Student	6.9%	7,242
Retired	11.1%	11,713
Unable to Work	1.6%	1,679
Total	100.0%	105,434

- 26.1% (27,528) of adults were not in the labor force because they were retired, homemakers, students, or unable to work.
- 73.9% (77,906) of adults were part of the labor force.
 - 92.8% (72,296) of them were employed or self-employed. 87.9% were employed full-time, and 12.1% were employed part-time.
 - 7.2% (5,610) were unemployed.

Employment by Occupation

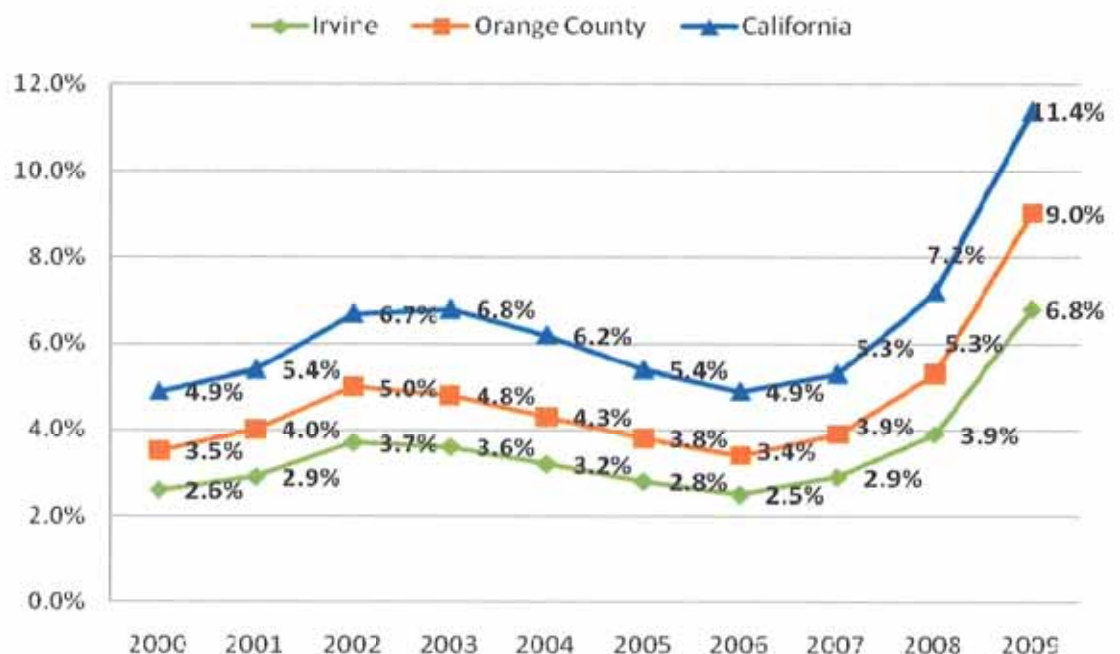
2010 Census estimates by Nielsen Claritas show that of Irvine residents ages 16+ who were employed, 6.8% (7,985) were employed in blue collar occupations, 83.9% (98,786) had white collar jobs, and 9.4% (11,019) were in the service and farm industry. Occupations in Irvine are disproportionately white collar jobs compared to the county. In Orange County, 66.1% (991,603) of the employed population ages 16+ had a white collar job, 18.0% (269,527) were blue collar workers, and 15.9% (238,155) were service and farm workers.

Unemployment

Unemployment affects access to shared-cost employer-based coverage and/or the ability to pay for individual coverage or needed medical services. The unemployment rate measures the average percent of the civilian, non-institutional labor force ages 16+ that is unemployed during the year. The rate does not include individuals who are in the armed forces or who are not in the labor force. According to the [Employment Development Department's](#) latest release on January 21, 2011, the unemployment rate for Irvine in December 2010 was 6.7% (5,500), compared to 8.9% (141,300) in Orange County and 12.3% (2,230,900) in California.

- The unemployment rate has been continually increasing since 2006 on all levels (city, county, and state).
- The unemployment rate for the City of Irvine has been consistently lower than unemployment rates for the county and the state for the past decade.

Figure 2: Unemployment Rates in Irvine, Orange County, and California, 2000-2009



Source: Employment Development Department of the State of California

Tenure of Occupied Housing Units and Size of Residence

Census estimates by Nielsen Claritas showed that in 2010, there were an estimated 78,554 occupied housing units in Irvine. **59.7%** (46,879) were owner-occupied, and **40.3%** (31,675) were renter-occupied. This is comparable to the county, with **38.5%** (384,955) of occupied housing units in the county being renter-occupied.

The survey results for the City of Irvine needs assessment revealed similar results, also showing that more adults owned rather than rented their homes. The survey results estimated that **66.3%** (68,751) of adults owned their own homes, and **33.7%** (34,926) were renters.

The following table shows the number of bedrooms in the homes of adults in Irvine, based on self-reported survey data.

# of Bedrooms	Percent	Population Estimate
One	12.5%	12,698
Two	21.3%	21,691
Three	33.8%	34,519
Four	25.3%	25,793
Five or More	7.1%	7,281
Total	100.0%	101,982

- **66.3%** (67,593) of adults reported that their residence had 3 or more bedrooms.

Marital Status

The following table shows the population 15+ by marital status in Irvine and Orange County.

Marital Status	City of Irvine		Orange County	
	Percent	Population Estimate	Percent	Population Estimate
Never Married	36.2%	66,670	32.2%	787,481
Married	51.1%	94,225	53.5%	1,307,604
Divorced	9.2%	16,880	9.2%	225,731
Widowed	3.6%	6,638	5.1%	124,689
Total	100%	184,413	100%	2,445,505

- The marital status of adults in Irvine is similar to percentages in the county.

Source: 2010 Census Estimates by Nielsen Claritas

The following table presents the survey results of the marital status of adults ages 18+.

Marital Status	Percent	Population Estimate
Single, Never Married	26.3%	27,571
Married or Cohabiting	63.0%	66,194
Divorced or Separated	8.1%	8,469
Widowed	2.6%	2,772
Total	100.0%	105,006

- Survey results estimate that **almost two-thirds** of the adult population in Irvine was married or cohabiting with a partner, and that **over one in four** adults were single and never married.

Citizenship Status

The City of Irvine health needs assessment collected data on an individual's (18+) nationality and citizenship status. A series of three citizenship status questions were asked based on the level of documentation, from U.S. citizen to undocumented: *Are you a citizen of the U.S.? Are you a permanent resident of the U.S.? Do you have a temporary Visa to stay in the U.S.?* If the respondent answered *No* or *Don't Know/Refused to Answer* to any of the previous citizenship questions, he or she was asked the next question in the series. The following table displays the population estimates for the citizenship status of adults in Irvine, based on self-reported survey data.

Citizenship Status	Percent	Population Estimate
United States Citizen	83.5%	88,781
Permanent Resident with Green Card	8.5%	9,032
Temporary Visa Permitting Stay in the U.S.	6.0%	6,352
Don't Know/No Response/Refused	2.1%	2,188
Total	100.0%	106,353

- 2.1% (2,188) of adults in the City of Irvine did not or refused to provide information on their citizenship status.

As this is self-reported data, please keep in mind that some respondents may not have provided accurate information, claiming falsely to be a citizen, to be a permanent resident, to have a temporary visa, or to have a visa that has since expired. It is also important to note that those who did not provide information on their citizenship status cannot be definitively designated as "undocumented."

Citizenship Status of All Ages: American Community Survey

The 2005-2009 [American Community Survey](#) (ACS) dataset reports that **66.0%** (130,370) of all individuals in the City of Irvine were U.S. citizens by birth over the five-year period (2005-2009). **18.9%** (37,413) of individuals became citizens through naturalization, and **15.0%** (29,715) were not U.S. citizens. Many individuals in the last group have permanent residency in the U.S.

Health Care Coverage

Adults with No Health Care Coverage

In the City of Irvine, **9.1%** (9,611) of adults did not have health care coverage, based on estimates from the needs assessment survey results. The 2009 [American Community Survey](#) (ACS) estimates a similar percent of adults with no health care coverage in Irvine (**10.3%** or 17,113), but the population estimate is larger because it reflects the most current year, 2009.

⇒ The **Healthy People 2020** objective is to increase the proportion of persons with health insurance to 100 percent. The City of Irvine has **not met** this objective, with 89.7 percent having health insurance, according to 2009 ACS estimates.

Remember that 2000 Census data were used as the basis in calculating population estimates from the survey results of the City of Irvine needs assessment. Data from the 2000 Census were used instead of more recent data because more accuracy was needed in estimation due to the small sub-groups analyzed in this study. So a compromise was made to have more accuracy in lieu of having the most current data. (See the Methods section at the end of the report for more details.) Keeping this in mind, when reading this report, though the percentages will reflect current data since the Irvine needs assessment was conducted in 2010, the population counts will reflect population numbers in 2000.

Lack of Coverage by Age

Young adults ages 18-34 were more likely to lack health care coverage than adults in older age groups (Chi-square=29.385, $p<0.001$). **16.6%** (6,365) of adults ages 18-34 did not have health care coverage, compared to **5.8%** (2,685) of adults ages 35-54 and **2.6%** (561) of adults ages 55+.

Lack of Coverage by Race/Ethnicity

Koreans and Iranians had the highest percentages of adults with no health care coverage. **30.3%** (1,773) of Korean adults and **13.8%** (564) of Iranian adults did not have health care coverage, compared to only **7.6%** (7,273) of all other groups.

Lack of Coverage by Educational Attainment Level

Adults with a high school education or less were much more likely to go without coverage compared to adults with some college or higher levels of education. **46.1%** (4,434) of adults with a high school education or less did not have health care coverage. Adults with some college/technical school education or who graduated from college were much less likely to be without coverage, with **5.3%** (5,070) of adults with at least some college education lacking health care coverage.

Lack of Coverage by Employment Situation

The employment situation of adults in Irvine has a large impact on their health care coverage status. Adults who were unemployed were more likely to have no coverage than adults who were employed (Chi-square=87.768, $p<0.001$). **8.4%** (6,056) of adults who were employed or self-employed did not have coverage. Over **one-third** of adults who were unemployed (**36.1%** or 1,960) did not have health care coverage.

The 2009 ACS estimates that **7.8%** (8,064) of employed adults 18+ and **30.0%** (2,231) of unemployed adults 18+ did not have health care coverage. Remember that the population estimates from the ACS will be larger because estimates for the City of Irvine needs assessment survey results were calculated based on 2000 Census data.

Lack of Coverage by Household Income Level

Lower income levels were correlated with lower rates of coverage (Chi-square=33.304, $p<0.001$). **20.7%** (1,141) of adults living in households with an income of \$25,000 or less did not have health care coverage, and **13.1%** (1,301) of adults with household incomes between \$25,001 and \$50,000 did not have coverage. Only **2.1%** (1,154) of adults with a household income more than \$50,000 lacked coverage for their health care.

Adults with Health Care Coverage

90.9% (96,493) of adults in Irvine had health care coverage. The following table lists the major types of health care coverage. Note that survey respondents were asked to select all that applied, so respondents could have selected multiple types.

Type of Coverage	Percent	Population Estimate
Employer-Based	60.4%	57,743
Individually-Purchased Plan	13.8%	13,180
Someone Else's Employer	13.0%	12,407
MediCare	10.0%	9,587
MediCal/CalOptima	4.9%	4,648
COBRA	0.9%	905
College/Student Coverage	0.9%	868

The following table lists the names of health care plans as reported by those who had employer-based coverage (including COBRA) and/or an individually-purchased plan.

Name of Plan	Percent	Population Estimate
Blue Cross	20.7%	16,158
Kaiser	18.0%	14,064
Aetna	14.1%	10,998
Blue Shield	12.3%	9,623
Health Net	11.2%	8,715
Blue Cross/Blue Shield	7.4%	5,806
United Healthcare	6.5%	5,078
CIGNA	3.3%	2,568
Anthem/Anthem Blue Cross	1.9%	1,495
Other	4.4%	3,434

- 40.6% (31,112) of adults reported that their health care plan was an HMO (39.2% or 11,847 had Kaiser).
- 59.4% (45,513) reported that their health care plan was a PPO.

Of adults in Irvine who had health care coverage at the time of the survey, 86.2% (91,687) were never without coverage at any point during the last 12 months. Of adults who did not have coverage for the whole year during the past 12 months, 15.5% (2,220) were without health care coverage for one month during the past 12 months, 35.7% (5,101) were without coverage for two to four months, 14.3% (2,047) did not have coverage for six to eleven months, and 34.4% (4,914) were without coverage for twelve months.

The most common reasons for being without health care coverage at any point in the past year were economically related.

- 56.8% (8,013) were without coverage as a result of a job loss or change of employers or the job loss/change of employers of a spouse or parent. 13.5% (1,906) could not afford the premiums.

Other Types of Coverage for Adults

This section will explore the survey results concerning coverage for dental health, vision, prescription drugs, and mental health care.

Dental Health Coverage

33.8% (35,906) of adults did not have dental coverage. **37.0%** (13,245) of adults with no dental coverage avoided getting dental work done because of the cost. However, close to **1 in 4 (23.2%** or 16,351) of adults who did have dental coverage also avoided getting dental work done because of the cost, pointing to the inadequacy of coverage and/or the prohibitive cost of dental services.

The following figure illustrates the percentage of adults with no dental health coverage by income.

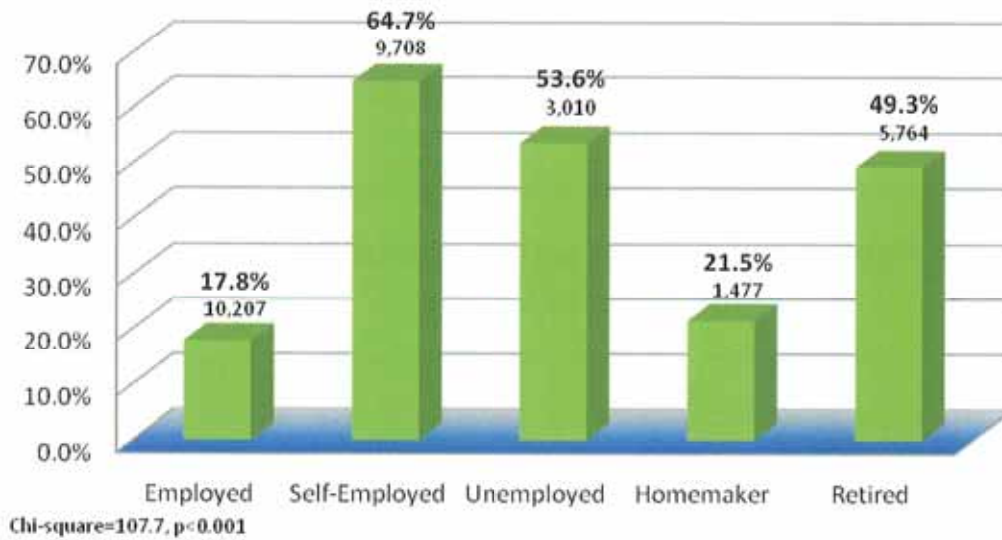
Figure 3: Adults (18+) with No Dental Health Coverage by Income



- Adults with an annual household income of \$50,000 or less were much more likely to be without dental health coverage.

Employment situation is also a critical factor in whether adults have dental coverage or not, as shown in the figure below.

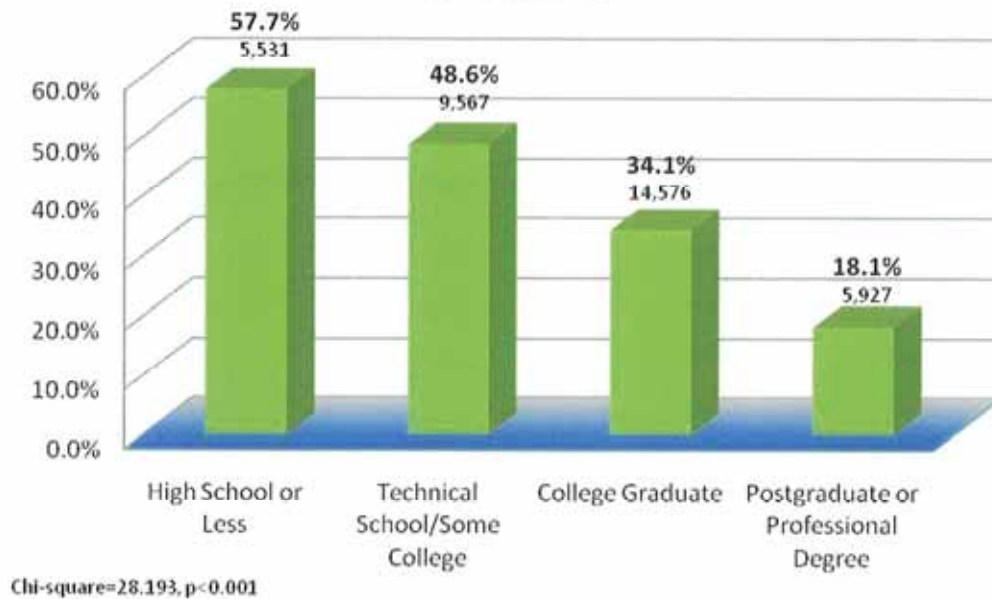
Figure 4: Adults (18+) with No Dental Health Coverage by Employment Situation



- Adults who were employed were the most likely to have dental health coverage. Adults who were self-employed, on the other hand, were the least likely to have dental coverage, even compared to retired and unemployed adults.

The following figure shows lack of dental coverage by educational attainment level.

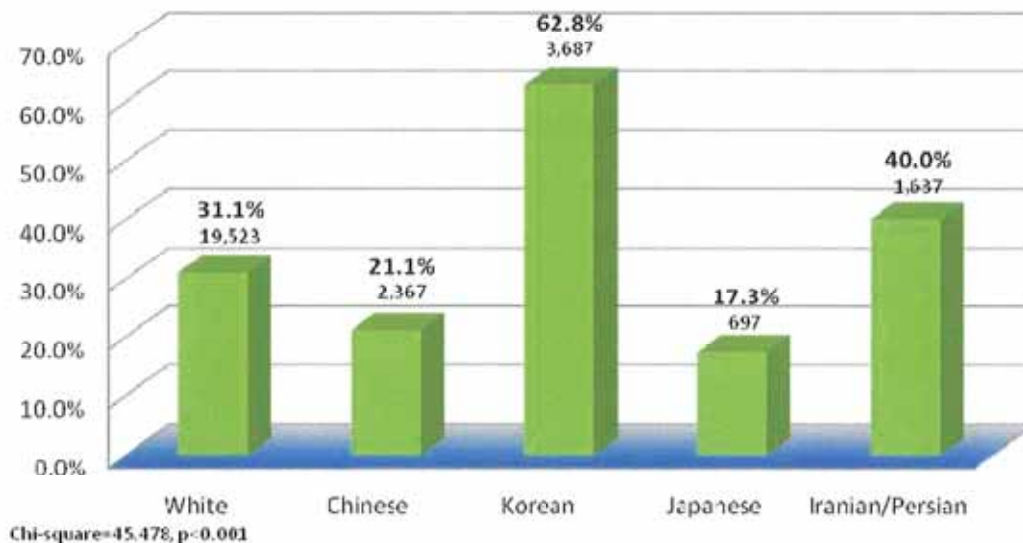
Figure 5: Adults (18+) with No Dental Health Coverage by Education



- More than **half** of adults with a high school education or less did not have dental coverage, compared to less than **1 in 5** adults with a postgraduate/professional degree.
- Educational attainment affects annual income, so the relationship between low educational attainment and lower rates of dental coverage may be more reflective of the impact of income on coverage rates.

The following figure compares adults with no dental coverage by race/ethnicity.

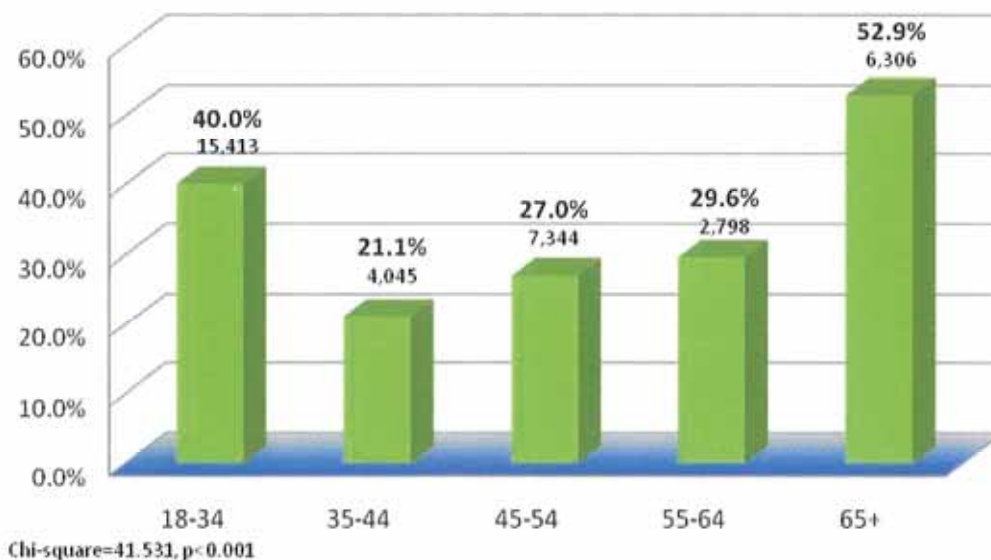
Figure 6: Adults (18+) with No Dental Health Coverage by Race/Ethnicity



- Koreans and Iranians had the lowest rates of dental coverage, with the highest percentages with no dental coverage. Koreans and Iranians also had the lowest annual household income levels compared to the other ethnic groups analyzed in this study.

The following figure shows the distribution of adults who were without dental health coverage by age group.

Figure 7: Adults (18+) with No Dental Health Coverage by Age Group



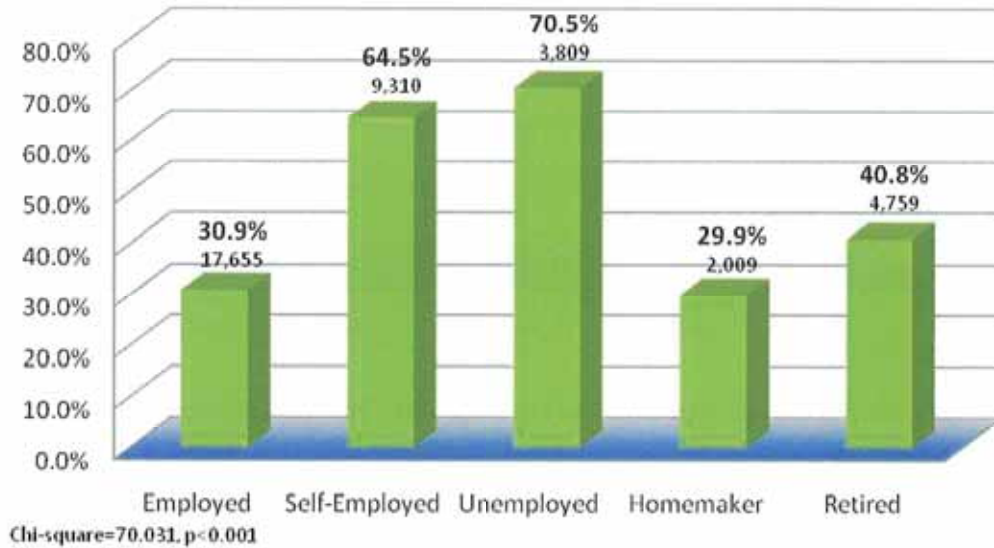
- Young adults and seniors were the most likely to be without dental health coverage.
- Medicare does not cover dental health services, so even though seniors may have coverage for health care and prescription drugs, they won't be covered for their dental needs. (See the section on senior health later in this report for more details on senior coverage rates.)

Vision Coverage

38.3% (40,326) of adults did not have vision coverage. 22.9% (9,205) of adults with no vision coverage avoided vision services because of the cost. Of adults who did have vision coverage, 5.9% (3,785) still avoided obtaining needed vision services due to cost.

Employment situation affects whether adults have vision coverage, as shown in the following figure.

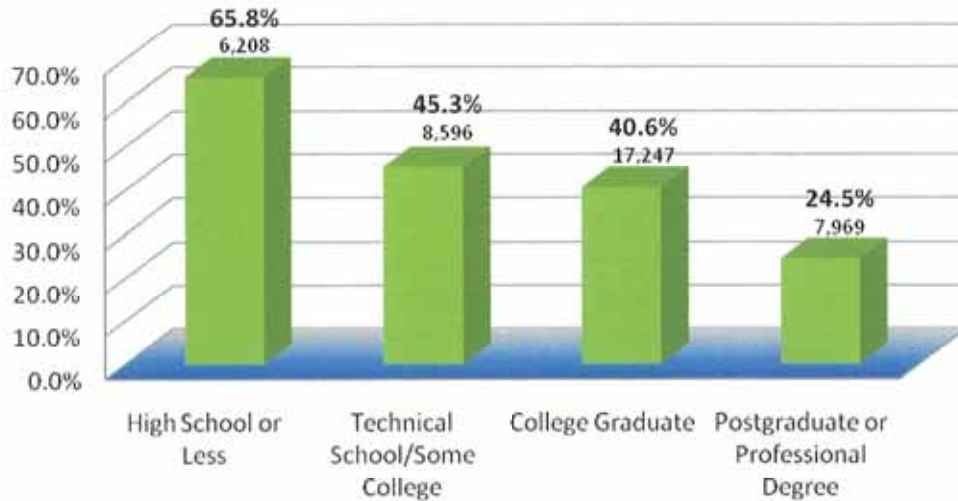
Figure 8: Adults (18+) with No Vision Coverage by Employment Situation



- Employed adults or homemakers were the most likely to have vision coverage.
- Self-employed and unemployed adults had the lowest rates of vision coverage.

The following figure shows the lack of vision coverage by educational attainment level.

Figure 9: Adults (18+) with No Vision Coverage by Education

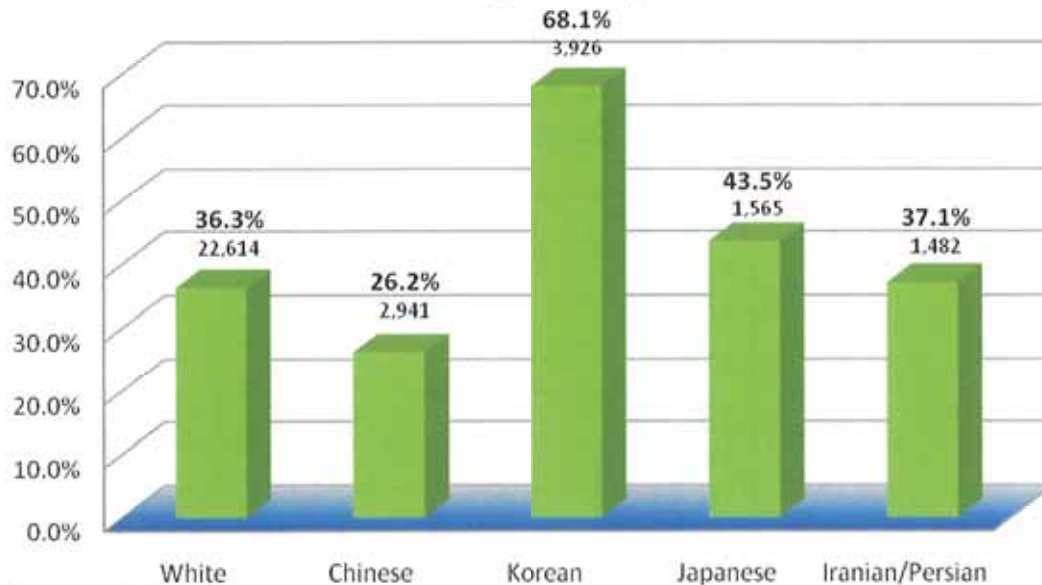


Chi-square=17.413, p=0.008

- Almost **2 in 3** adults with a high school education or less did not have vision coverage, compared to **1 in 4** adults with a postgraduate/professional degree.

The following figure compares adults with no vision coverage by race/ethnicity.

Figure 10: Adults (18+) with No Vision Coverage by Race/Ethnicity



Chi-square=39.878, p<0.001

- Chinese were the most likely to have coverage for vision, while Koreans were the least likely to have vision coverage.

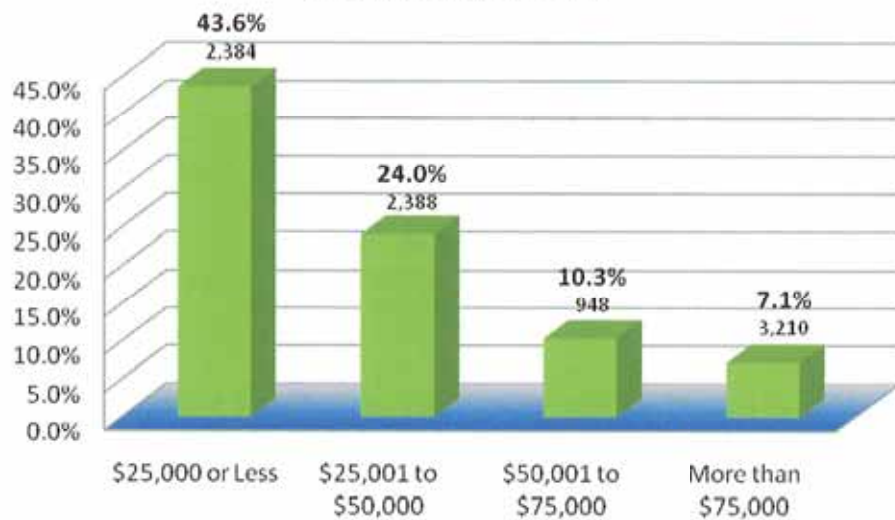
Prescription Drug Coverage

16.5% (17,228) of adults did not have coverage for prescription drugs. 17.9% (3,079) of adults with no prescription drug coverage did not buy prescriptions because of the cost. However, 14.0% (12,144) of adults who did have coverage also did not buy prescriptions because of the cost, pointing to the inadequacy of coverage to cover the cost of prescription drugs.

The following figure illustrates the percentage of adults with no prescription drug coverage by income.

Figure 11: Adults (18+) with No Prescription Drug Coverage by Income

- Adults with an annual household income of \$25,000 or less were much more likely to be without prescription drug coverage.

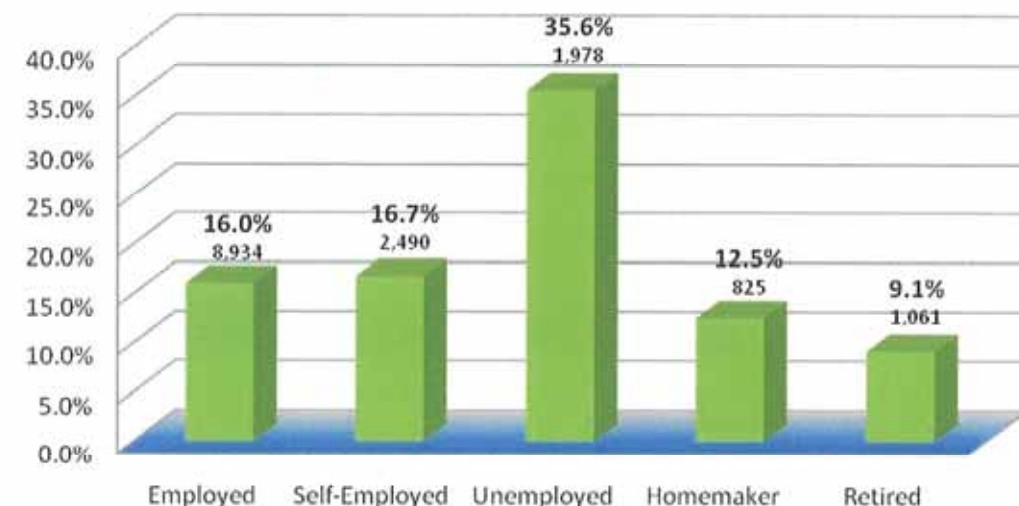


Chi-square=40.414, p<0.001

Employment situation is also a critical factor in whether adults have coverage for prescription drugs, as shown in the following figure.

- Over 1 in 3 unemployed adults did not have coverage for their prescription drugs.

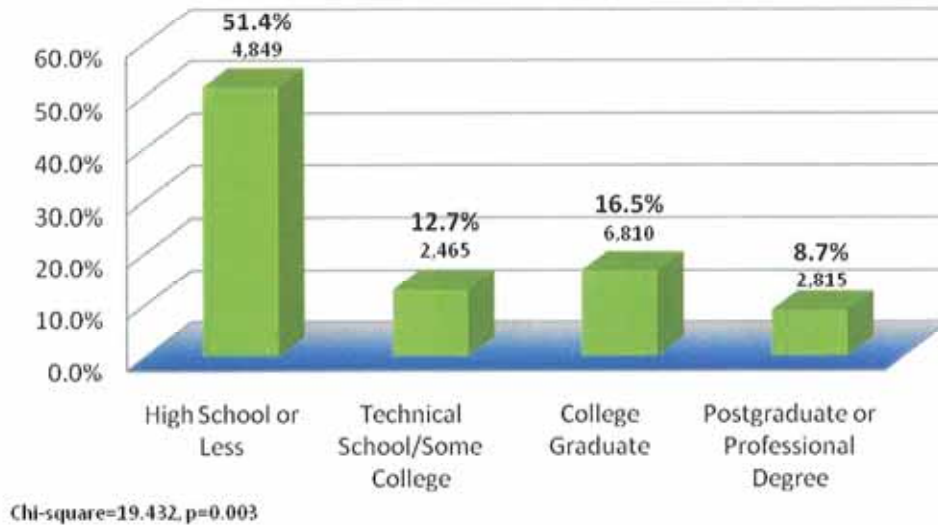
Figure 12: Adults (18+) with No Prescription Drug Coverage by Employment Situation



Chi-square=47.181, p<0.001

The following figure shows the lack of prescription coverage by educational attainment level.

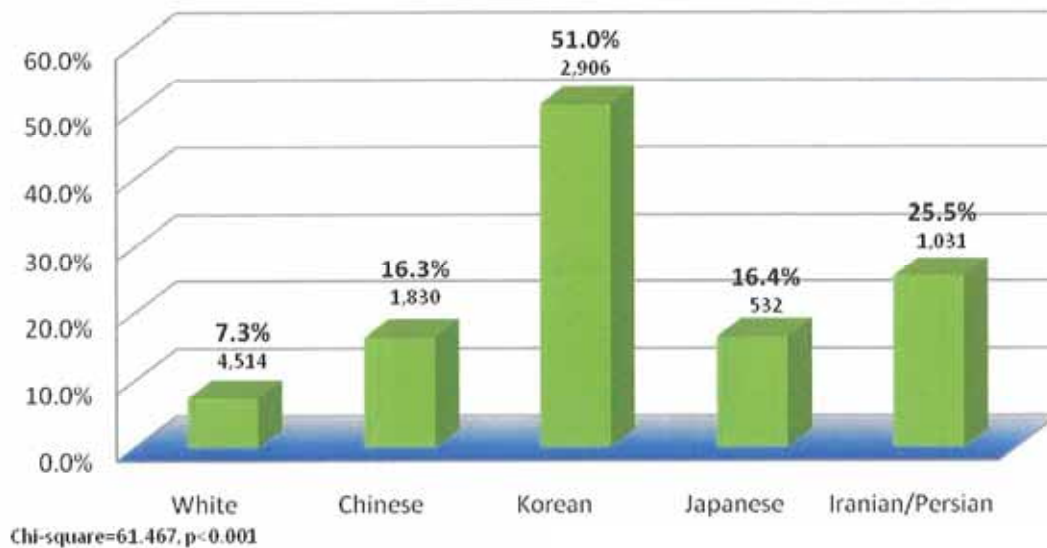
Figure 13: Adults (18+) with No Prescription Drug Coverage by Education



- More than **half** of adults with a high school education or less did not have prescription drug coverage. Educational attainment affects annual income, so the relationship between low educational attainment and lower rates of coverage may actually be more reflective of the impact of income on coverage rates and not necessarily the effect of education per se.

The following figure compares adults with no prescription drug coverage by race/ethnicity.

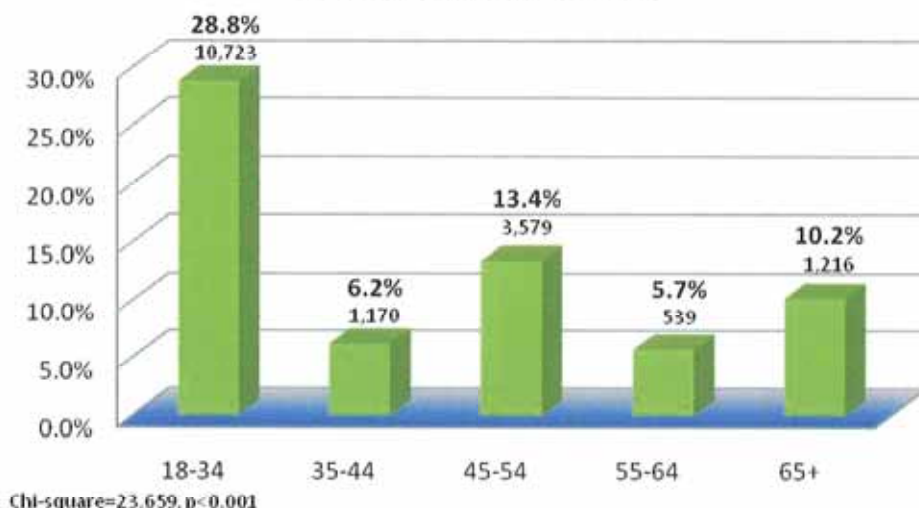
Figure 14: Adults (18+) with No Prescription Drug Coverage by Race/Ethnicity



- Again, Koreans had the lowest rates of coverage.

The following figure shows the distribution of adults who were without prescription drug coverage by age groups.

Figure 15: Adults (18+) with No Prescription Drug Coverage by Age Group



- Young adults were the most likely to be without coverage for prescription drugs.

Mental Health Coverage

34.5% (29,057) of adults did not have coverage for mental health care services. The following figures detail adults with no coverage by income, employment situation, education, race/ethnicity, and age.

Annual household income level affects whether adults have coverage for mental health care services.

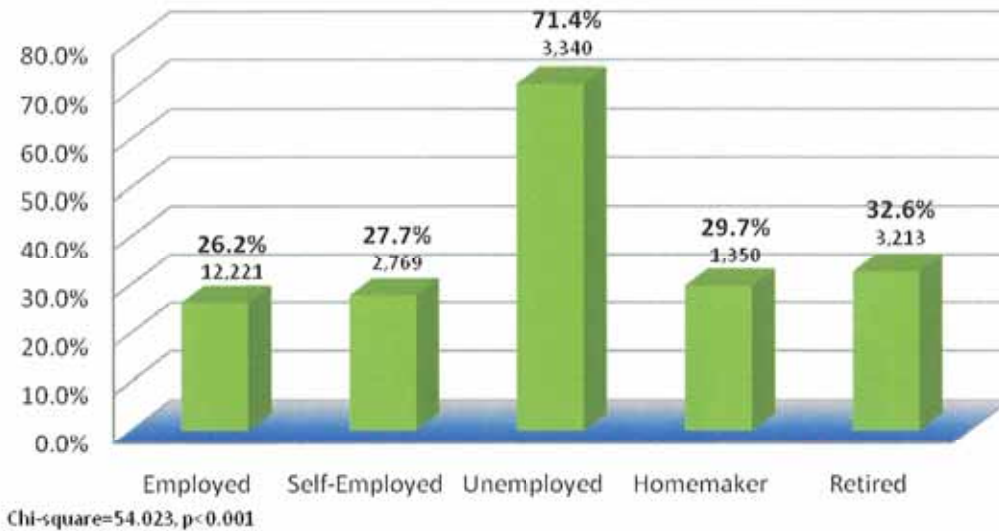
Figure 16: Adults (18+) with No Mental Health Coverage by Income



- Adults with an annual household income of \$50,000 or less were much more likely to be without mental health coverage.

Employment situation is also a critical factor in whether adults have mental health coverage or not, as shown in the following figure.

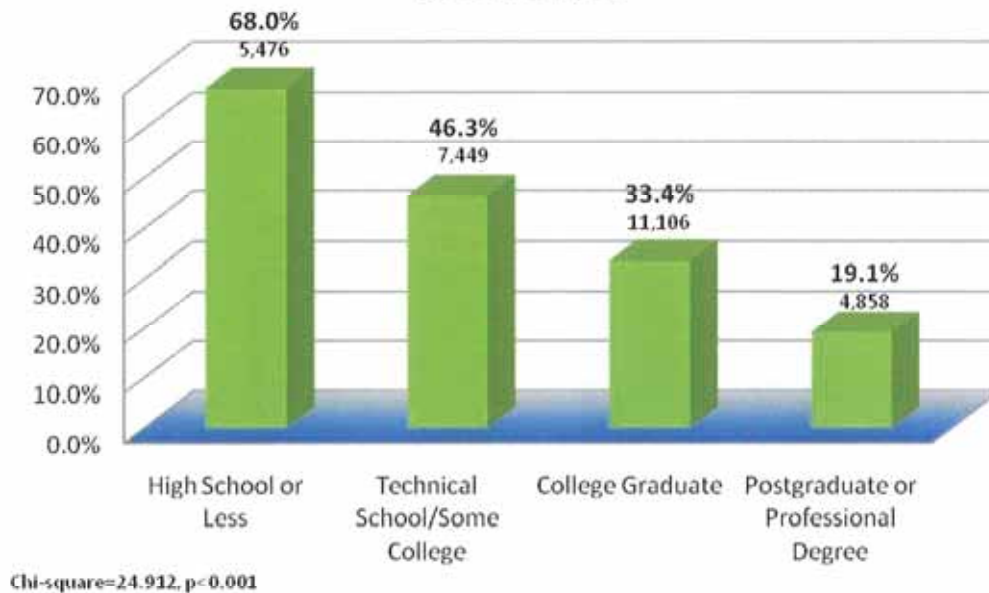
Figure 17: Adults (18+) with No Mental Health Coverage by Employment Situation



- Adults who were unemployed had the lowest rates of coverage for mental health care services. However, they may be in great need for these services due to the frustrations and stressors caused by unemployment.

The following figure shows lack of mental health coverage by educational attainment level.

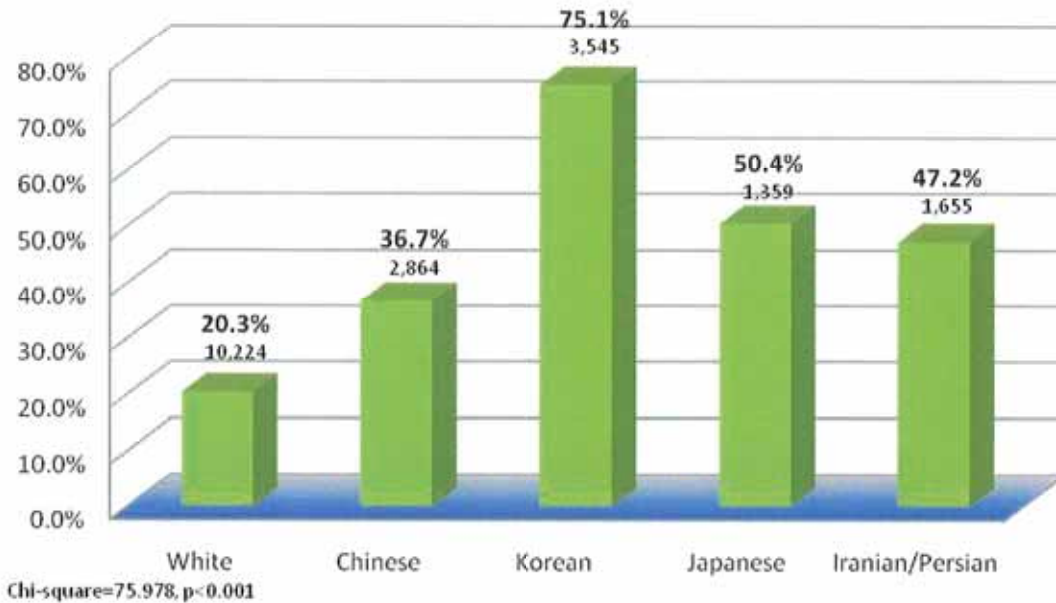
Figure 18: Adults (18+) with No Mental Health Coverage by Education



- Coverage rates for mental health care services were higher among adults with higher educational attainment levels. However, educational attainment affects annual income, so this relationship may be more reflective of the impact of income on coverage rates, not necessarily the effects of education per se.

The following figure compares adults with no mental health care coverage by race/ethnicity.

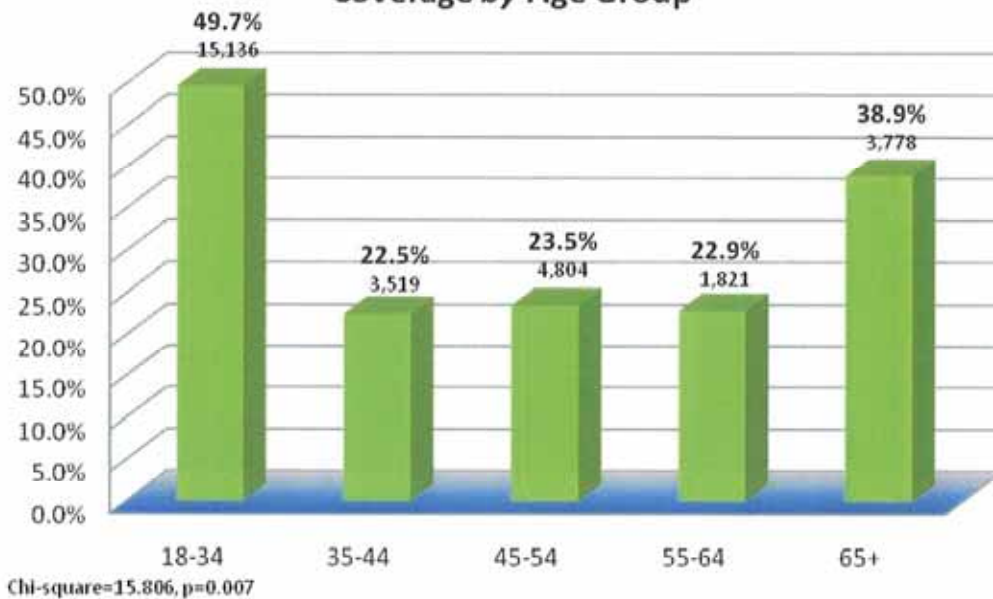
Figure 19: Adults (18+) with No Mental Health Coverage by Race/Ethnicity



- Koreans had the lowest rates of coverage for mental health care services, followed by Japanese and Iranian adults.

The following figure shows the distribution of adults who were without mental health coverage by age group.

Figure 20: Adults (18+) with No Mental Health Coverage by Age Group



- Young adults and seniors were the most likely to be without coverage.
- Medicare does not cover mental health services, so even though seniors may have coverage for health care and prescription drugs, they won't be covered for their mental health needs. (See the section on senior health later in this report for more details on senior coverage rates.)

Children with No Health Care Coverage

In the City of Irvine, **6.5%** (2,140) of children did not have health care coverage, based on estimates from the needs assessment survey results using 2000 Census population data. The 2009 American Community Survey (ACS) estimates a similar percent of uninsured children in Irvine (**7.2%** or 3,042).

⇒ The **Healthy People 2020** objective is to increase the proportion of persons with health insurance to 100 percent. The City of Irvine has **nearly met** this objective, with 92.8 percent of children having health insurance, according to 2009 ACS estimates.

The survey results show that teens were more likely to be without health care coverage than younger children (Chi-square=7.579, p=0.023). **11.1%** (1,322) of children ages 12-17 did not have health care coverage, compared to **3.8%** (818) of children ages 0-11.

Children with Coverage

The needs assessment survey results estimated that **93.5%** (31,011) of children in Irvine had health care coverage. The following table lists the most common health care plans that children had, as reported by adult survey respondents.



Table 18: Most Common Health Care Plans for Children

Name of Plan	Percent	Population Estimate
Blue Cross	23.7%	6,810
Aetna	12.8%	3,675
Kaiser	12.7%	3,654
Blue Cross/Blue Shield	10.4%	2,999
United Healthcare	9.2%	2,644
Medi-Cal / CalOptima	9.0%	2,584
Blue Shield	6.3%	1,809
Cigna	4.9%	1,401
Health Net	4.8%	1,381
Healthy Families	3.7%	1,066

- **75.8%** (23,378) had employer-based coverage.
- **12.0%** (3,703) had an individually-purchased health care plan.
- **9.6%** (2,972) had a government plan.

Other Types of Coverage for Children

This section will explore the survey results concerning the coverage of children for dental health, prescriptions, mental health care, and vision health.

Dental Health Coverage

19.9% (6,547) of children did not have coverage for dental health.

- For Koreans, the percentage is higher. 36.4% (582) of Korean children did not have dental health coverage.

Prescription Coverage

9.8% (3,108) of children did not have coverage for prescription medication. Of children with no prescription coverage, 20.9% (649) were unable to obtain needed medication because of the cost. Of children who did have coverage, 2.6% (742) were still unable to obtain prescriptions because of the cost.

- Again, the percentage for Korean children is higher, with 28.7% (470) of Korean children lacking coverage for prescription medication.

Vision Health Coverage

37.3% (11,812) of children did not have vision health coverage. The following table presents the percentage of children lacking vision coverage by race/ethnicity, ordered from lowest to highest rates of coverage.

Race/Ethnicity	Percent	Population Estimate
Korean	50.9%	819
Japanese	43.1%	460
White	39.0%	7,393
Iranian/Persian	32.7%	404
Chinese	15.0%	515

- Half of Korean children did not have any coverage for vision.
- Japanese and white children also had low rates of coverage.



Mental Health Care Coverage

26.2% (6,269) of children did not have coverage for mental health care. The following table shows the percentages of children with no mental health coverage by race/ethnicity.

Race/Ethnicity	Percent	Population Estimate
Korean	61.9%	795
Iranian/Persian	39.4%	456
Chinese	38.2%	1,026
Japanese	32.4%	224
Other	20.8%	3,768

- Korean children were most likely to be without coverage for mental health care (Chi-square=30.123, $p < 0.001$).

Spotlight on Koreans: Disparities in Access and Utilization

In the City of Irvine, the Korean community is the most in need of having reliable access to health care and the means of utilizing such care. In Irvine, the Korean community had lower rates of coverage and utilization for all of their health care needs compared to city-wide rates. The table below compares the coverage rates of Korean adults and children with city-wide coverage rates to highlight the disparities.

	Adults		Children	
	Koreans in Irvine	City of Irvine	Koreans in Irvine	City of Irvine
Health Care Coverage	30.3%	9.1%	11.9%	6.5%
Dental Coverage	62.8%	33.8%	36.4%	19.9%
Vision Coverage	68.1%	38.3%	50.9%	37.3%
Mental Health Coverage	75.0%	34.5%	61.9%	26.2%
Prescription Coverage	51.0%	16.5%	28.7%	9.8%

As is evident in the table above, both Korean adults and children had lower rates of each type of coverage than the general city-wide coverage rates of all Irvine residents, based on survey results. Some explanation can be found in the literature. Even though there are more studies looking at Asians in general rather than Koreans specifically, a few studies do exist that help to shed some light on these disparities. Note that these studies are not Orange County-based, but they can at least point to directions for future research.

Several factors prevent Koreans in California from obtaining health care coverage: their immigration status, limited English proficiency, cultural beliefs, and self-employment are but a few. Of these factors, Brown et al. (2005) found that self-employment was a strong barrier to health care access and coverage, especially for low-income households, and that Koreans were most likely to be self-employed compared to other ethnic groups. Brown et al. also noted that Koreans were much more likely than other ethnicities to work for small businesses that do not offer employer-based coverage. Lack of access to (shared-cost) employer-based coverage is one key barrier to health care access for the Korean community.

The City of Irvine needs assessment results showed that **22.6%** (586) of Koreans in the labor force were self-employed, which is not any higher than other ethnicities. However, the survey results did show lower percentages of employer-based coverage, which is consistent with Brown et al.'s finding. **52.6%** (1,921) of Koreans in Irvine had employer-based coverage, either through their own employer or someone else's (such as a spouse or parent). In Irvine, **72.7%** (69,491) of adults had employer-based coverage.

Yoo and Kim (2007) found that **29%** of their Korean sample in the Los Angeles and San Francisco areas was without health care coverage. Lack of coverage, however, was only one barrier to access and utilization. For the **71%** that did have coverage, cost was a substantial barrier to the utilization of services. High premiums, deductibles, and co-pays associated with privately-purchased health care coverage prevented many Koreans from obtaining services, filling prescriptions, or participating in preventative care. The out-of-pocket expenses were still too high, and most Koreans with coverage saw their health plan as insurance for emergencies or catastrophic illnesses only. In lieu of obtaining services from a Western provider, **66%** of respondents with health care coverage and **88%** without health care coverage chose to visit a traditional Korean practitioner for routine care or treatment, citing lower cost as the reason. Korean medicine utilizes herbal remedies and acupuncture for many treatments and can be complementary to Western medicine; however, it may not utilize all of the diagnostic tools necessary for the early detection or prevention of disease.

Brown, E. Richard, Shana Alex Lavarreda, Thomas Rice, Jennifer R. Kincheloe, and Melissa S. Gatchell. 2005. *The State of Health Insurance in California: Findings from the 2003 California Health Interview Survey*. Los Angeles, CA: UCLA Center for Health Policy Research. Accessed February 4, 2011. http://www.healthpolicy.ucla.edu/pubs/files/SHIC03_RT_081505.pdf.

Yoo, Grace J., and Barbara W. Kim. 2007. "Korean Immigrants and Health Care Access: Implications for the Uninsured and Underinsured." In *Inequalities and Disparities in Health Care and Health: Concerns of Patients, Providers and Insurers (Research in the Sociology of Health Care, Vol. 25)*, edited by Jennie Jacobs Kronenfeld, 77-94. Emerald Group Publishing Limited. Accessed February 4, 2011. doi:10.1016/S0275-4959(07)00004-X.

The Safety Net in the City of Irvine

Healthy Families Enrollments (July 2010)

As of July 2010, **2,884** Healthy Families recipients lived in the City of Irvine; they lacked private health coverage, but did not qualify for no-cost Medi-Cal and are U.S. citizens, nationals, or qualified aliens under 19 years of age who reside in California. The table below presents the population of Healthy Families members by ZIP code.

ZIP Code	Number of Healthy Families Recipients
92602	423
92603	199
92604	368
92606	352
92612	250
92614	388
92617	49
92618	194
92620	656
92697	2
City of Irvine*	2,884
Total Orange County Recipients	81,968

*Total includes 3 additional Healthy Families recipients in 92619 (2 recipients) and 92623 (1 recipient), both P.O. Box ZIP codes.
Source: State of California, Managed Risk Medical Insurance Board, Healthy Families Enrollments for July 2010

- In July 2010, **3.5%** of the total Healthy Families recipients in Orange County resided in the City of Irvine.

CalOptima Enrollments in the City of Irvine (August 2010)

Full Scope or Share of Cost Medi-Cal Enrollments

Medi-Cal is a state and federally funded safety net health care program that provides needed health coverage and services for those with limited income and resources. The scope of Medi-Cal benefits range from full (free) scope, share-of-cost Medi-Cal to limited-scope Medi-Cal. CalOptima is a county-organized managed care plan that generally oversees full or share-of-cost Medi-Cal in Orange County. There were a total of **10,205** CalOptima Medi-Cal members in the City of Irvine in August 2010. The table below presents the population of Medi-Cal members by ZIP code.

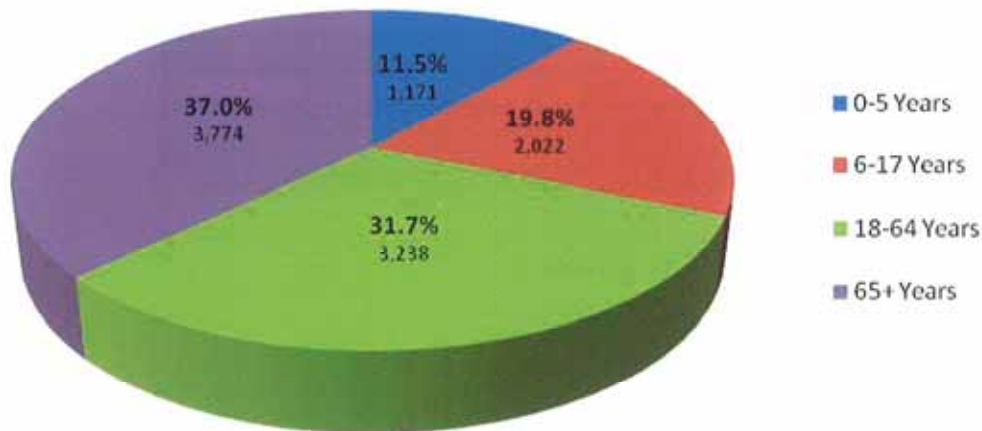
ZIP Code	Number of Healthy Families Recipients
92602	1,001
92603	550
92604	1,611
92606	1,366
92612	1,259
92614	1,548
92617	202
92618	555
92620	2,060
92697	2
City of Irvine*	10,205
Total Orange County Recipients	353,185

*Total also includes 51 CalOptima Medi-Cal recipients in 92616 (11 recipients), 92619 (19 recipients), 92623 (19 recipients), and 92650 (2 recipients), all P.O. Box ZIP codes.
 Source: CalOptima, Medi-Cal Membership Data, August 2010

- **2.9%** of CalOptima Medi-Cal members resided in the City of Irvine as of August 2010.
- In the City of Irvine, **31.9%** (3,252) of CalOptima Medi-Cal members were white, **26.3%** (2,683) were Asian or Pacific Islander, and **10.2%** (1,040) were Hispanic/Latino.
- Countywide, **17.4%** (61,358) of CalOptima Medi-Cal members were white, **20.4%** (72,053) were Asian or Pacific Islander, and **51.2%** (180,659) were Hispanic/Latino.
- **25.8%** (636) of Chinese CalOptima Medi-Cal members and almost **10%** (9.6% or 342) of Korean CalOptima Medi-Cal members resided in the City of Irvine.

The figure below presents the age distribution of CalOptima Medi-Cal members in August 2010.

Figure 21: Age Distribution of CalOptima Medi-Cal Members, August 2010



Source: CalOptima, Medi-Cal Membership Data, August 2010

- **37.0%** (3,774) of CalOptima Medi-Cal members were older adults ages 65+.

Healthy Kids

The [Healthy Kids Program](#) is low-cost insurance for children and teens not eligible for no-cost Medi-Cal or the Healthy Families Program administered by CalOptima. The program is open to individuals ages 18 or younger who live in California and are U.S. citizens or legal residents. Individuals must also meet the income guidelines. However, CalOptima reports that the Healthy Kids Program will have ended on February 28, 2011 due to funding challenges.

- In Irvine, there were a total of **14** Healthy Kids members in August 2010. The total number of countywide Healthy Kids enrollment was **570**.

Medical Services Initiative

The [Medical Services Initiative](#) (M.S.I.) program is the county safety net program which provides medical care to medically indigent adults (18 to 64 years) under the Coverage Initiative (C.I.) Program in Orange County, which was initiated in September 2007. Under C.I., coverage was expanded to include primary and preventive services. C.I. allowed the M.S.I. program to create a medical home network of physicians and clinics that were previously providing uncompensated care to indigent adults in Orange County, giving enrollees access to a comprehensive care delivery system with primary and preventive services provided at private and clinic settings.

The MSI program determined that there were a total of **991** M.S.I. members at the beginning of August 2010 in the City of Irvine, using eligibility date information from May 2010. The table below presents the population of M.S.I. members by ZIP code (information has not been provided for City of Irvine P.O. Boxes).

ZIP Code	Number of Healthy Families Recipients
92602	103
92603	41
92604	163
92606	128
92612	132
92614	142
92617	7
92618	75
92620	197
92697	3
City of Irvine*	991
Total Orange County Recipients	34,508

Source: County of Orange, Health Care Agency, Medical Services Initiative Program

- **2.9%** of M.S.I. members resided in the City of Irvine.

Receiving Medical Care

This section will cover topics related to the receiving of medical care, including the time since the last visit with a doctor, experiences of discrimination, the need for interpretation services, usual place of care, and emergency room use.

Most Recent Medical Care

Most adults (**89.7%** or 95,123) visited a doctor or other health care provider within the last year; **73.6%** (78,138) of adults visited a health care provider within the past 6 months, and **16.0%** (16,985) visited a doctor sometime between the last 6-12 months.

- **58.7%** (55,591) went to see a general practitioner, and **28.7%** (27,169) went to see a specialist.
- **59.9%** (55,792) of adults who visited a health care provider within the last year had gone to receive a routine check-up.
- **40.1%** (37,347) had gone for some other reason besides a routine check-up.
 - The most common reason was for a cold; **3.8%** (1,407) of adults who visited a health care provider within the last year for reasons other than a routine check-up had gone because of a cold.
- **7.1%** (6,711) of adults who visited a doctor within the last year indicated that they were treated unfairly.
 - **72.4%** (4,831) of these adults expressed that unfair treatment affected how they sought health care.
 - **31.1%** (1,825) reported that the reason for unfair treatment was because of their insurance type, such as having Medi-Cal, being covered by an HMO, or not have coverage.

10.3% (10,980) of adults had not visited a doctor or other health care provider in over a year or have never been for treatment.

- **71.3%** (7,945) of adults who have not had a doctor visit in over a year indicated that they didn't go because there was no reason.
- **12.3%** (1,369) did not visit a doctor because they either did not have health coverage or could not afford to go.

Need for Interpretation Services

54.5% (57,823) of adults indicated that either they or another member of their household spoke another language at home other than English. The following table lists the common languages that these adults used to communicate with their health care providers.

- **30.0%** of adults who spoke another language at home still used English to communicate with their health care providers.
- **32.0%** (18,515) felt that interpretation services were important to have when visiting a health care provider or hospital.

Language	Percent	Population Estimate
English	30.0%	17,379
Chinese (Mandarin/Cantonese)	16.1%	9,311
Spanish	14.5%	8,379
Korean	12.5%	7,233
Farsi	7.6%	4,422
Japanese	6.6%	3,824

Usual Place of Care

The City of Irvine needs assessment asked where respondents usually go for routine health care when they were sick or needed advice about their health. An estimated **80.0%** (84,074) went to the doctor's office or an HMO, **6.5%** (6,807) of adults went to Kaiser specifically, and **3.3%** (3,516) went to a county or community clinic.

However, **4.0%** (4,246) did not have a usual place of care.

- The most common reason given for not having a usual place of care was because of infrequency of sickness. **35.2%** (1,356) of adults who did not have a usual place of care indicated that they seldom got sick.
- **28.4%** (1,094) of adults did not have a usual source of care because of the prohibitive cost of receiving medical care and/or the lack of insurance.

Emergency Room (ER) Visits

27.8% (29,338) of adults used the emergency room (ER) at least once in the past 12 months.

- Of adults who used the ER in the last year, **55.1%** (16,179) used the ER once, **32.2%** (9,453) had been twice to the ER, and **12.6%** (3,707) used the ER 3 to 8 times.

The five most common reasons for using the ER in the past year are presented in the following table.

Reason	Percent	Population Estimate
Broken Bones	22.8%	6,263
Injury	11.2%	3,072
Fever	8.0%	2,199
Pain	7.4%	2,049
Heart/Chest Pains	3.0%	828

Most adults (**42.3%** or 12,462) chose to use ER services because it was the fastest way to get care. **17.0%** (5,019) used the ER because they needed services after hours, and **15.5%** (4,578) went to the ER because their doctor told them to go.

Rates of ER Visits

The Orange County Health Care Agency (HCA) compiled data on emergency department visits in the year 2006 from the Office of Statewide Health Planning and Development (OSHPD) and broke down this information by ZIP code, allowing us to compare rates of Irvine to the county. Compared to the county, Irvine had lower rates of emergency room visits. In 2006, the rate of emergency room visits in Irvine was 1,143.2 per 10,000, compared to the county's rate of 1,850.4 per 10,000.

- In Irvine, females (**1,213.0 per 10,000**) had higher rates than males (**1,070.0 per 10,000**) for ER visits.
- The rate of ER visits for seniors (**2,075.5 per 10,000**) was **twice** as much the rate for adults ages 18-64 (**1,024.3 per 10,000**).
- The rate of ER visits for children ages 0-17 years was **1,183.5 per 10,000**.

The following table compares the rates of ER visits of Irvine and the whole county for the most prevalent diagnoses.

Table 27: Rates of ER Visits per 10,000 for Top Diagnoses

Diagnosis	Irvine	Orange County
Abdominal Pain (All Ages)	57.9	94.0
Chest Pain (All Ages)	51.4	64.3
Acute Upper Respiratory Infection, unspecified site (Ages 0-17)	30.3	111.0
Otitis Media (Ear Infections), unspecified (Ages 0-17)	53.1	106.0

Source: 2006 OSHPD emergency department data reported by HCA

★ The **Healthy People 2020** objective is to decrease otitis media (ear infections) in children and adolescents to 221.5 persons per 1,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with a rate of 5.3 per 1,000.

For all the common diagnoses, Irvine has lower rates compared to countywide rates.

Preventative Health Screenings

This section includes information on adults' responses to obtaining needed screenings for breast, cervical, colon, and prostate cancer. [The National Cancer Institute](#) defines cancer screening as a method of detecting cancer or conditions that can lead to cancer in individuals that currently show no symptoms. Detecting cancer or the possibility of cancer early generally increases the effectiveness of treatment outcomes.

Checking for Breast Cancer: Mammograms

In Irvine, there were an estimated 35,978 women ages 35+. Most (**92.4%** or 28,820) have received a mammogram at least once. **73.4%** (21,128) of women who have received a mammogram received one within the last year. For **26.6%** (7,666), it has been over a year since their last mammogram.

- **10.9%** (815) have not received a mammogram in over a year because of cost or lack of coverage. **3.2%** (238) have not received a mammogram or breast ultra-sound in over a year because their doctor did not recommend the screening.

★ The **Healthy People 2020** objective is to reduce the breast cancer death rate to 20.6 deaths per 100,000 females. The City of Irvine has **met** this objective, with a breast cancer death rate of 15.9 per 100,000 females in 2005.

According to the State of California 2005 Death Master File (as reported by HCA in 2008), there were 15 deaths in Irvine from breast cancer. The rate of deaths from breast cancer in 2005 was **15.9 per 100,000** females in Irvine, lower than the countywide rate of **19.4 per 100,000** females.

Checking for Cervical Cancer: Pap Smears

In Irvine, there were an estimated 57,422 women ages 18+. **12.7%** (7,230) have never received a Pap smear. This percentage is higher among Korean adult women, **40.4%** (1,286) of whom have never had a Pap smear to check for cervical cancer.

For women who have received a Pap smear, **74.1%** (36,587) received one within the past year, **14.0%** (6,932) received one within the past one to two years, and for **11.8%** (5,849), it has been over two years ago since the last Pap smear was received. Most women (**98.5%** or 48,971) received the Pap smear as part of a routine exam.

⇒ The **Healthy People 2020** objective is to increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines to 93 percent. The City of Irvine has **not met** this objective, with only 87.3 percent of women who reported that they received a Pap test to check for cervical cancer.

Checking for Colon Cancer: Blood Stool Tests

A blood stool test is done to determine whether the stool contains blood to check for colon cancer. The test can be done at home with a special kit or in a doctor's office. Adults ages 50+ were asked if they have ever had a blood stool test to check for colon cancer and, if so, how long ago was the test done.

59.1% (20,894) of adults ages 50+ did receive a blood stool test.

- 47.9% (9,723) of adults who had a blood stool test done received the test within the past year.
- For 17.9% (3,635) of adults who had received a blood stool test, the last time they received the test was one to two years ago.
- 34.2% (6,947) received the blood stool test over two years ago.

★ The **Healthy People 2020** objective is to reduce the colorectal cancer death rate to 14.5 deaths per 100,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with 8.7 deaths per 100,000.

In 2005, there were 16 deaths in Irvine from colon cancer (HCA 2008). The rate of deaths from colon cancer in 2005 was **8.7 per 100,000** in Irvine, lower than the countywide rate of **10.7 per 100,000**.

Checking for Prostate Cancer: Digital Rectal Exams and Prostate-Specific Antigen Tests

A digital rectal exam is an exam to check for prostate cancer, in which a doctor, nurse, or other health care professional places a gloved finger into the rectum to feel the size, shape, and hardness of the prostate gland. Men ages 40+ were asked if they have ever had this exam. 43.3% (10,140) had never had a digital rectal exam to check for prostate cancer.

Alternatively, men ages 40+ can check for prostate cancer by having a blood test done instead of a manual exam. This test is called the Prostate-Specific Antigen (PSA) test. 53.0% (12,004) of men ages 40+ have received a PSA test.

- 74.4% (8,931) received the test within the past year.
- 8.9% (1,065) of men 40+ who have had the PSA test received it one to two years ago.
- For 16.7% (2,008) of men 40+ who have received the PSA test, it has been over two years ago.

26.3% (5,877) of men ages 40+ received either the digital rectal exam or the PSA test to check for prostate cancer, and 41.9% (9,358) received both screenings. However, a large percentage, 31.8% or 7,102 men ages 40+, did not have either test done to check for prostate cancer.

In 2005, there were 8 deaths in Irvine from prostate cancer (HCA 2008). The rate of deaths from prostate cancer in 2005 was **8.9 per 100,000** males in Irvine, lower than the countywide rate of **14.9 per 100,000** males.

★ The **Healthy People 2020** objective is to reduce the prostate cancer death rate to 21.2 deaths per 100,000 males. The City of Irvine has **met**, and **exceeded**, this objective, with 8.9 deaths per 100,000 males.

Mental and Dental Health of Adults

Mental Health

Adults were asked if either they or another member of their household were ever told by a doctor or other health care professional that they have emotional, mental, or behavioral health problems. **7.2%** (7,581) of adults, or another member of their household, did have problems. **14.7%** (1,098) of adults with a mental problem reported that they suffered from chronic, mild depressive disorder.

15.9% (16,839) of adults in Irvine suffered from stress, anxiety, anger or depression in the last 12 months. **41.0%** (6,453) did not receive help for their condition. More than **half (54.0%** or 3,484) of adults who did not receive help reported that cost and lack of mental health care coverage were the reasons that prevented them from receiving needed help.

Dental Health

79.4% (83,838) of adults visited a dentist or dental clinic within the last year for a dental cleaning or routine check-up; **58.6%** (61,835) of adults visited a dentist within the past 6 months, and **20.8%** (22,003) visited a dentist sometime between the last 6-12 months.

20.6% (21,702) of adults had not visited a dentist in over a year or have never visited a dentist.

- The most common reasons for not visiting a dentist within the last year were related to issues of affordability.
 - **37.9%** (8,241) of adults who did not visit a dentist in the past year indicated that the reason for not doing so was related to cost.
 - **10.8%** (2,353) of adults reported lack of dental coverage as the reason for not visiting a dentist.
- **20.6%** (4,473) of adults did not visit a dentist recently because they had no reason to go; they were not experiencing pain.
- **10.7%** (2,331) did not visit a dentist because they had other priorities.

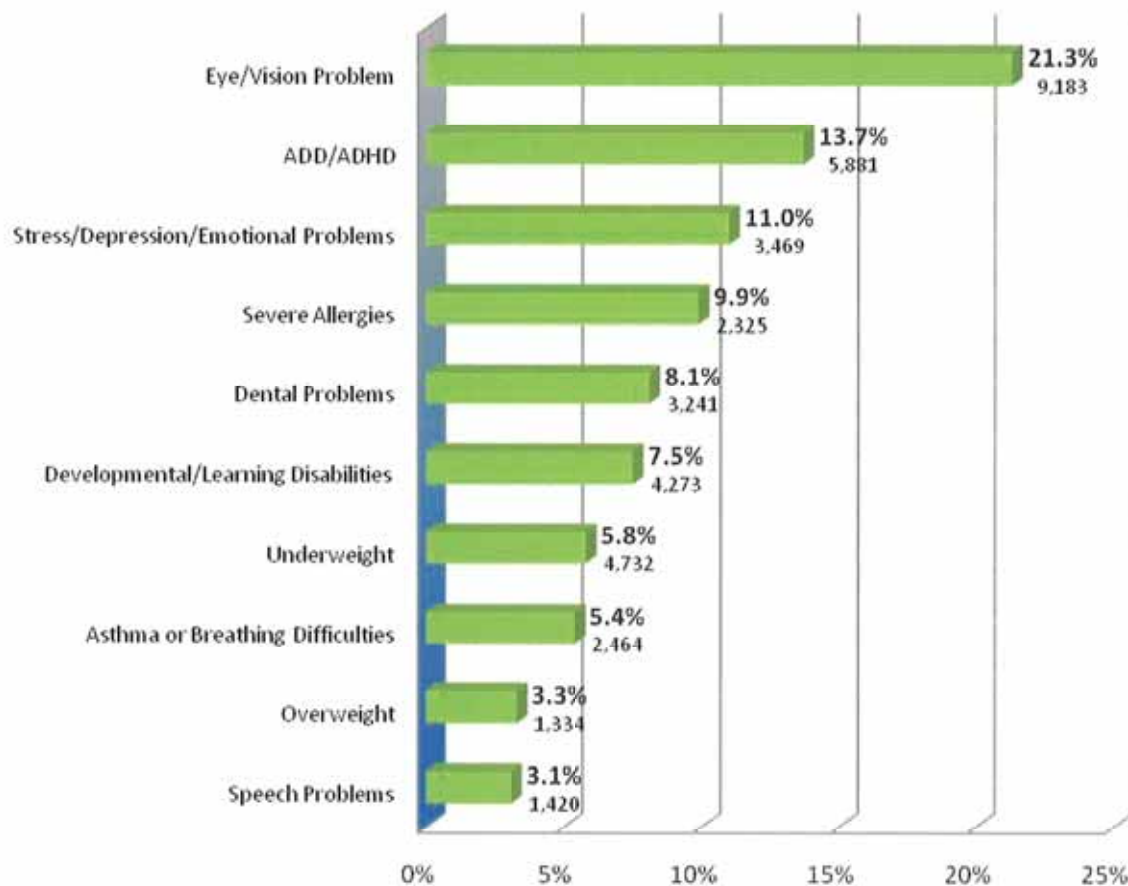
Children's Health

In 2000, there were an estimated 33,554 children in Irvine. This section will present the results to the survey questions about children's health concerns or conditions, weight status, and exercise.

Health Concerns or Conditions

Of all adults in Irvine, adults with children in the household (41.3% or 43,975) were presented with a list of common health concerns/conditions and asked if any child(ren) in their household had the concern or condition. The following figure presents the estimated percentage of parents who reported that the child(ren) in the household had the concern/condition.

Figure 22: Health Conditions and Concerns of Child(ren) in Household, Percentage of Adults with Children



Note: Non-responses were not included in percentage calculations.

- The two most common conditions were eye/vision problems and ADD/ADHD.
- Over **one in ten (11.0%)** parents reported that their child(ren) experienced stress, depression, or emotional problems.
- **One in ten** parents reported that their child(ren) had severe allergies.

Weight Status of Children (Ages 2-17)

The City of Irvine needs assessment asked parents about the weight status of their children. **87.2%** (24,357) of children ages 2-17 were perceived to be about the right weight by their parents, **2.8%** (788) were perceived to be underweight, and **10.0%** (2,799) were perceived to be overweight.

Even though BMI is calculated the same way for adults and children, they are interpreted differently. For adults, interpretation of BMI is not dependent on sex or age, but it is for children because the amount of body fat differs across age and gender. The BMI-for-age growth charts from the CDC take these differences into account and allow for the translation of the BMI number into BMI age- and sex-specific percentiles to interpret BMI.

This survey did not ask for information on the gender of the child, so children's BMI, calculated from height and weight, could not be placed into BMI categories. Instead, we report the population estimates of children's BMI categories using data from the OCHNA 2007 survey.

- In Irvine, **63.1%** (22,881) of children ages 2-17 had a healthy weight BMI, and **33.5%** (12,142) had a BMI falling into the overweight/obese categories.
- In Orange County, **60.1%** (318,626) of children had a healthy weight BMI, and **31.0%** (164,449) had a BMI falling into the overweight/obese categories.

Vigorous Exercise: Children Ages 6-17

Respondents to the survey were asked how many times in the last 7 days their child engaged in at least 30 minutes of vigorous exercise, such as running, biking, swimming, or sports. The following figure presents the estimates of children's activity levels, based on parental responses to the question.

Figure 23: Number of Times Children Ages 6-17 Engaged in at Least 30 Minutes of Vigorous Exercise during the Past Week



- **54.0%** (11,722) of children ages 6-17 in Irvine engaged in at least 30 minutes of vigorous exercise for less than 5 times in the past week, meaning, less than half (**46.0%**) of Irvine children *did* engage in 30 minutes of vigorous physical activity 5 or more times in that week, as recommended for a healthy body.

The Health of Older Adults (65+) in Irvine

There were an estimated 11,944 older adults in the City of Irvine in 2000.

- Most older adults did not have any difficulty with their daily care activities (e.g., dressing, bathing, feeding). However, **1.4%** (162) did have at least some difficulty with their daily care activities.
- **10.8%** (1,290) found it difficult to get transportation when needed.
- **12.5%** (1,490) experienced a fall in the last 12 months that resulted in an injury.

★ The **Healthy People 2020** objective is to reduce the proportion of older adults who have moderate to severe functional limitations to 25.5 percent. The City of Irvine has **met**, and **exceeded**, this objective, with only 1.4 percent of older adults reporting that they had some difficulty with their daily functional activities.

Coverage Rates of Seniors

Most seniors have coverage for health care because they have Medicare. However, Medicare does not cover all services that seniors may need. Medicare is health coverage for people age 65 or older, people under 65 with certain disabilities, and people of any age with End-Stage Renal Disease (ESRD). Medicare consists of different parts that cover specific services:

- Medicare Part A provides hospital coverage to help with inpatient care in hospitals, skilled nursing facilities, hospices, and home health care.
- Medicare Part B provides medical coverage to help with doctors' services, hospital outpatient care, home health care, and some preventive services to help maintain health and to keep certain illnesses from getting worse.
- Medicare Part D is Medicare prescription drug coverage that is run by Medicare-approved private insurance companies and helps cover the cost of prescription drugs.

Medicare does not help cover mental health, vision, and dental services. The table presents the coverage rates for seniors, as self-reported in the City of Irvine needs assessment. Note that health care and prescription drug coverage rates are much higher than coverage rates for mental health, vision, and dental services.

Table 28: Coverage Rates of Older Adults (65+)

Coverage	Percentage	Population Estimate
Health Care	97.9%	11,650
Prescription Drug	89.8%	10,715
Mental Health	61.1%	5,946
Vision	57.1%	6,794
Dental	47.1%	5,625

Care of Senior Household Member

9.9% (10,466) of adults were responsible for the care of another senior adult household member.

- Almost half (47.5% or 4,976) were responsible for the care of their senior spouse.
- 32.4% (3,395) cared for their senior parents or parents-in-law.

Some seniors, in addition to self-care, were also responsible for the care of another senior household member.

- 18.7% (2,234) of seniors were responsible for the care of another senior adult household member.

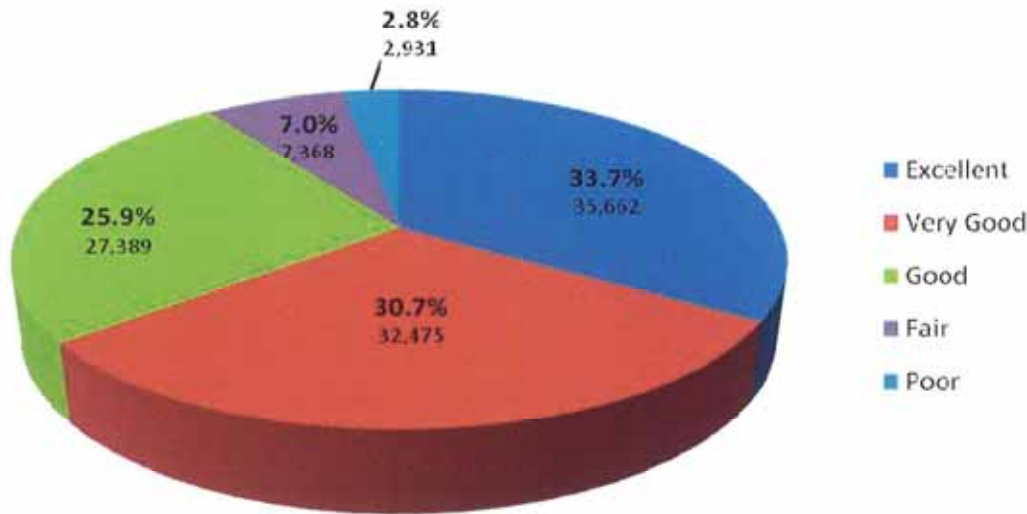
General Health and Lifestyle of Adults

This section will present the survey results for the following topics: general health status, weight status, exercise, health conditions/concerns, the utilization of common health services, activities to stay healthy, diet, drinking, smoking, and interest in educational workshops or materials on health topics.

Health Status

The following figure shows the self-reported health status of adults in Irvine.

Figure 24: Health Status of Adults (18+)



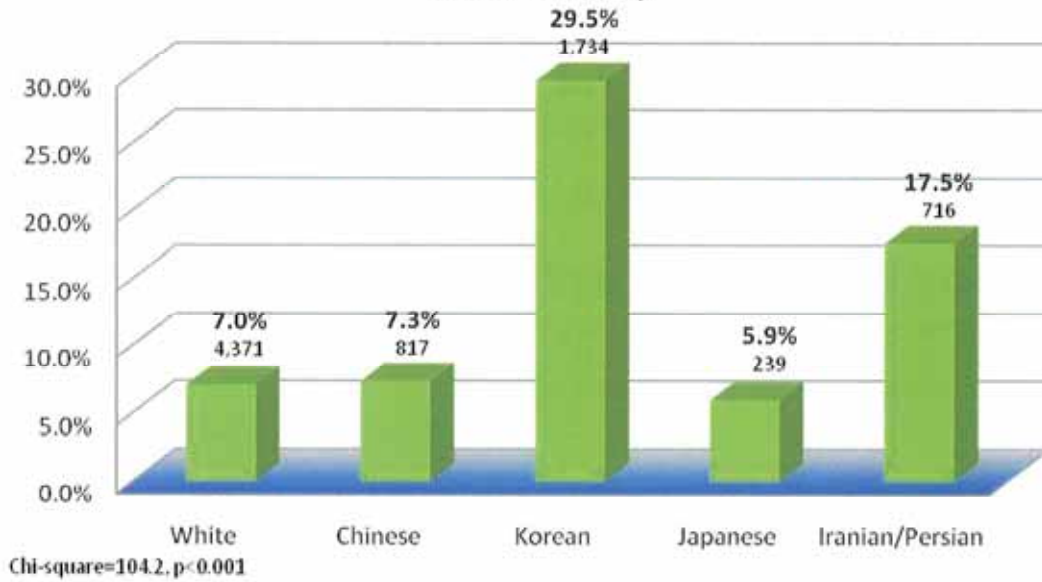
- 64.4% (68,137) of adults had excellent or very good health.
- 9.8% (10,299) had fair or poor health.

Age affected how adults rated their own health status (Chi-square=46.529, p=0.001). 5.2% (2,979) of adults ages 18-44 rated their own health as fair or poor. This percentage increased to 12.8% (4,643) amongst adults ages 45-64. Seniors (65+) were most likely to rate their own health as fair or poor, with 22.4% (2,678) reporting a fair/poor health status.

Income was another factor that affected how adults rated their own health. 21.7% (3,354) of adults with annual household income of \$50,000 or less reported fair/poor health, compared to only 5.1% (2,787) of adults with annual household income more than \$50,000.

There were also differences in self-reported health status across ethnicity, as shown in the following figure.

Figure 25: Health Status of Adults (18+) as Fair/Poor by Race/Ethnicity



- Koreans were the most likely to rate their own health as fair or poor, followed by Iranians. Remember that Koreans and Iranians also had the lowest rates of health coverage and the lowest income levels of the ethnic groups analyzed in this study.

Weight Status

61.9% (65,360) of adults perceived themselves to be about the right weight, **5.0%** (5,237) felt they were underweight, and **33.1%** (34,940) indicated that they were overweight.

BMI was calculated from reported height and weight, using the following formula:

$$\Rightarrow [\text{pounds} \div (\text{inches})^2] \times 703$$

BMI is calculated the same way for both adults and children/teens (ages 2-20), but interpreted differently. Because the amount of body fat varies across age and gender for children and teens, instead of standard weight status categories, BMI-for age percentiles are used to interpret BMI for children and teens. Please refer to the CDC website for additional information on how to calculate and interpret [adult BMI](#) and [child/teen BMI](#).

For this study, the standard weight status categories for adults were used to interpret the BMI numbers for adults ages 21 and over. For adults ages 18-20, the BMI-for-age growth charts for girls and boys were used to categorize BMI. The following table shows the BMI categories of all adults ages 18 and over.

Category	Percent	Population Estimate
Underweight	3.6%	3,337
Normal	58.8%	54,608
Overweight	30.4%	28,275
Obese	7.2%	6,709

- **37.6%** (34,984) of adults were overweight or obese, based on their BMI.

The actual weight status of adults, based on their BMI, was not always aligned with their self-perceived weight status.

- Of adults who perceived themselves as overweight, **87.7%** (25,879) did have BMI falling in the overweight or obese categories, but **12.3%** (3,628) had BMI that was considered normal weight.
- Of adults who saw themselves as underweight, **38.6%** (2,013) had BMI in the underweight category, but the majority (**60.6%** or 3,158) was normal weight.
- Of adults who felt that they were about the right weight, **82.1%** (47,796) did have normal weight BMI, but **2.3%** (1,324) were underweight, and **15.6%** (9,062) were overweight or obese.

There were higher percentages of overweight and obese men than women.

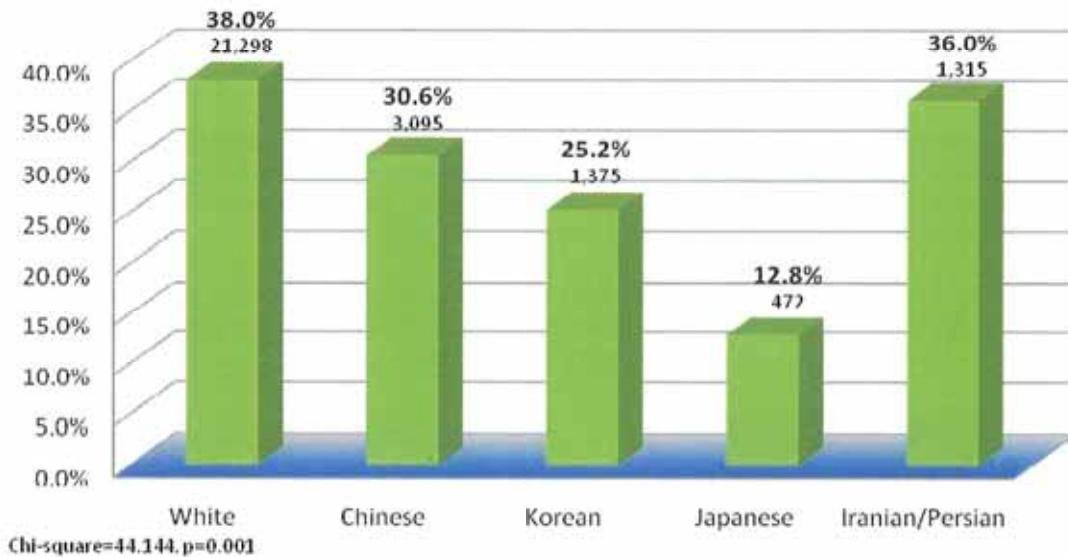
- **56.8%** (25,979) of adult men were overweight or obese; **40.5%** (18,531) were normal weight.
- In contrast, **19.1%** (9,005) of adult women were overweight or obese, and **76.7%** (36,077) were normal weight.

★ The **Healthy People 2020** objective is to reduce the proportion of adults who are obese to 30.6 percent. The City of Irvine has **met**, and **exceeded**, this objective, with 7.2 percent of adults who are obese.

★ The **Healthy People 2020** objective is to increase the proportion of adults who are at a healthy weight to 33.9 percent. The City of Irvine has **met**, and **exceeded**, this objective, with 58.8 percent who are at a healthy weight, based on BMI calculated from self-reported height, weight, and gender.

There were also differences in the rate of overweight/obesity by race/ethnicity.

Figure 26: Overweight/Obese Adults (18+) by Race/Ethnicity

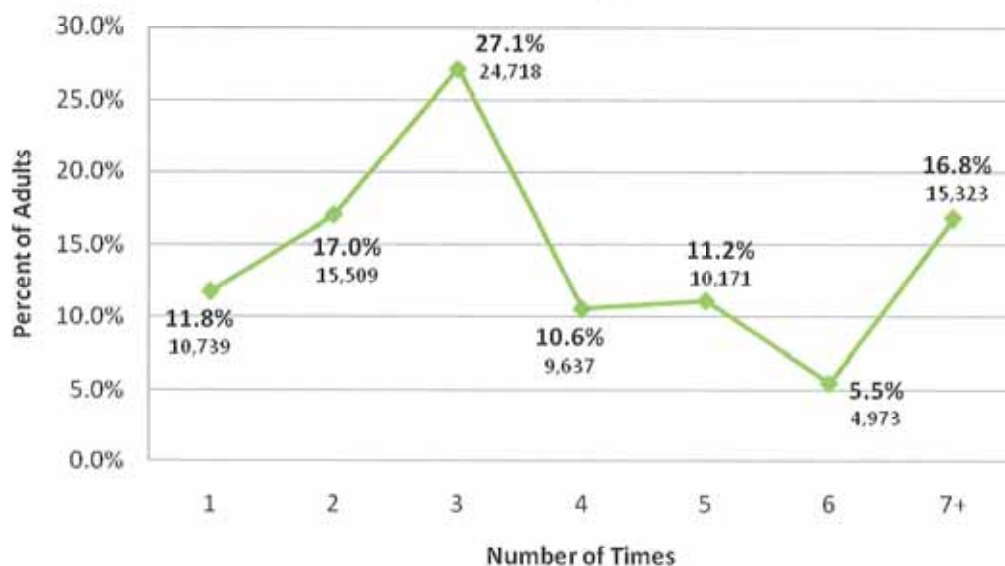


- Whites and Iranians had the highest percentages of overweight or obese adults, followed by Chinese.
- Japanese had the lowest rates of overweight and obesity.

Exercise

13.8% (14,634) of adults did not exercise as part of their weekly routine. For those who did exercise regularly as part of their weekly routine, the following figure shows the number of times that adults exercised for at least 30 minutes in the last seven days. The percentages reflect the proportion out of 91,070 adults who did exercise on a weekly basis for at least 30 minutes each time and excludes those who did not exercise weekly.

Figure 27: Number of Times Adults Engaged in at Least 30 Minutes of Exercise during the Past Week

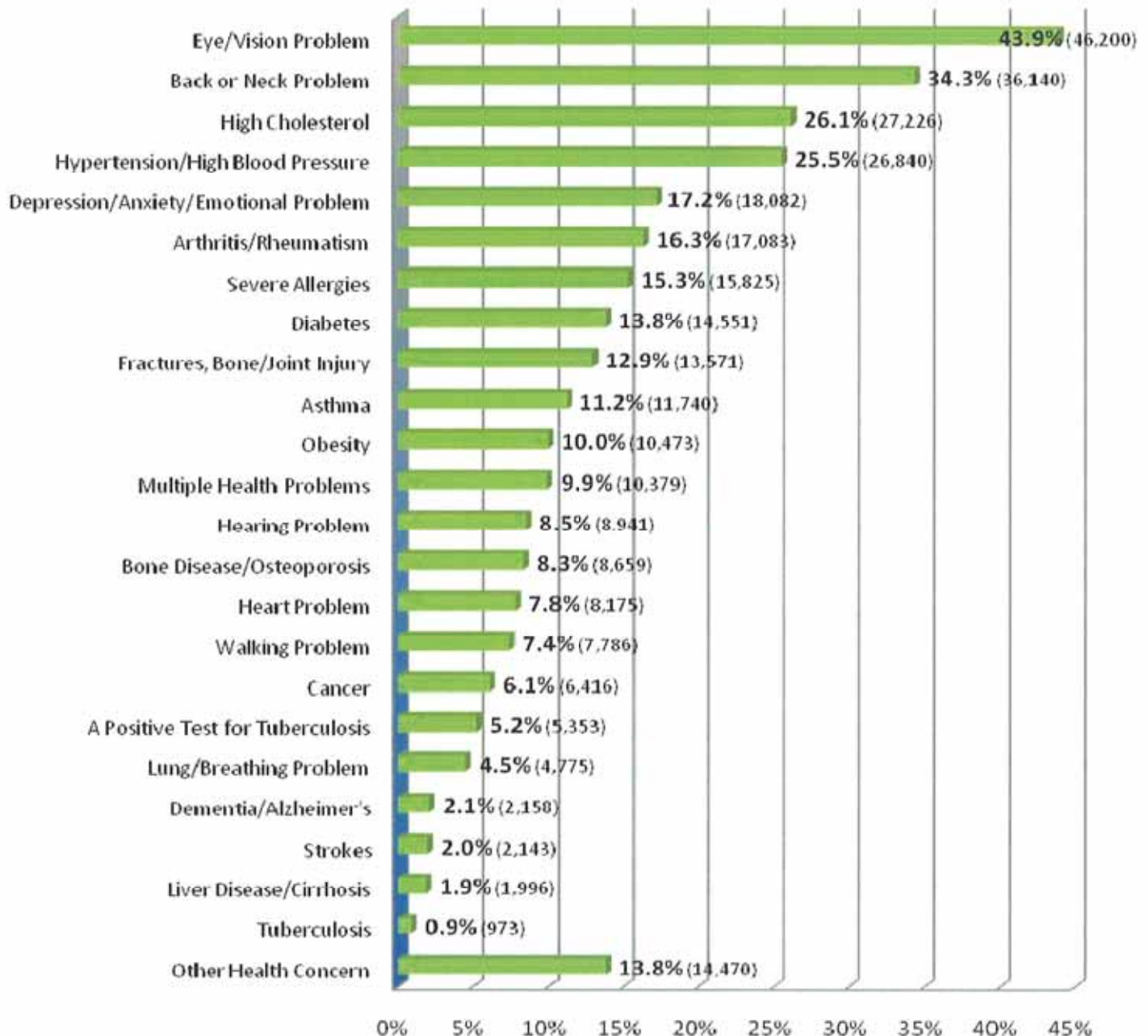


- 55.9% (50,966) exercised 1 to 3 times in the past week; only 33.5% (40,104) exercised 5 or more times per week for 30 minutes.

Health Concerns and Conditions

The survey asked respondents if they had some common health conditions and concerns. The following figure presents the percentage of adults in Irvine who responded that either they or someone in their household had the condition or concern.

Figure 28: Health Conditions and Concerns of Adults

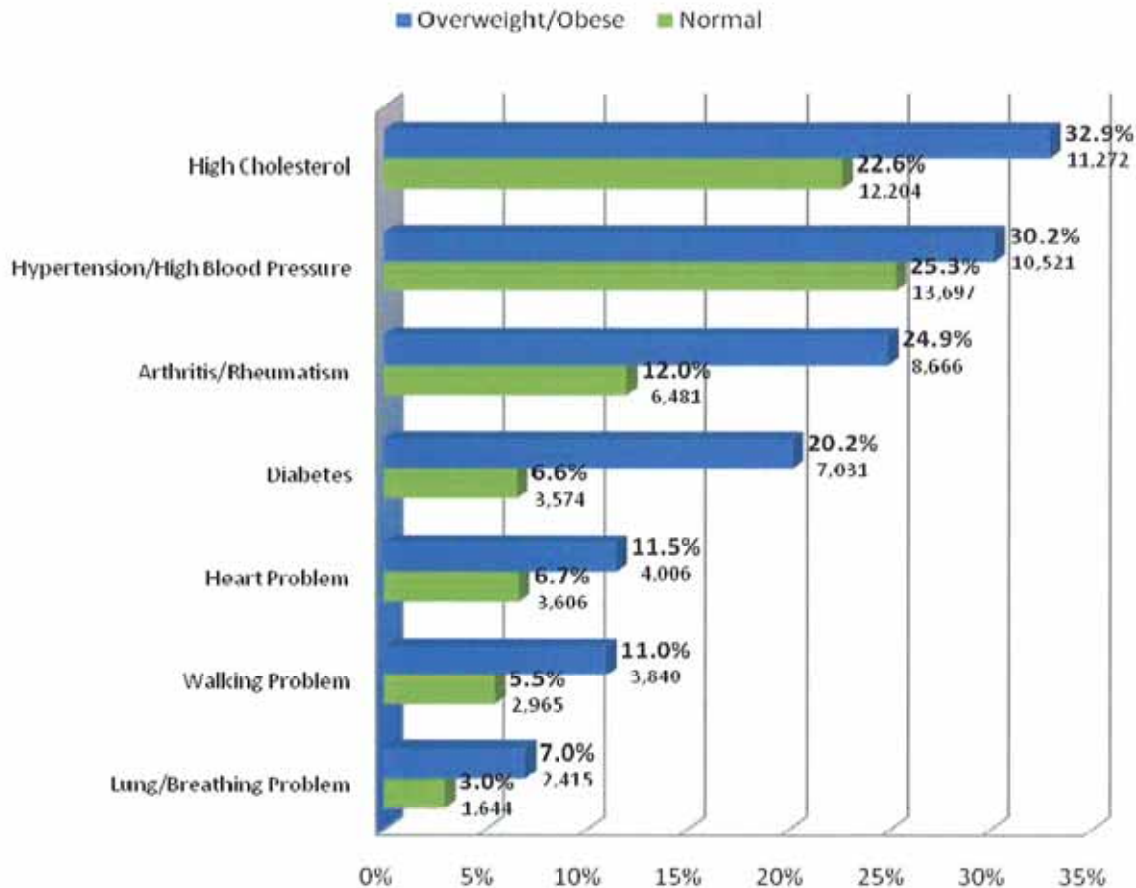


Note: "Other Health Concern" included 57 survey responses that were too varied to include in any category.

- The most common problems/concerns were related to vision and the back or neck.
- Almost **one in five (17.2%)** adults experienced depression, anxiety, or emotional problems.
- Of adults who responded that they had a health concern, **25.9% (22,539)** required frequent medical care for their condition or concern.

Adults who were overweight or obese were more likely to report having some of the above conditions/concerns than normal weight adults. The following figure compares the percentage of overweight/obese adults and normal weight adults who reported that they had certain health conditions/concerns.

Figure 29: Adult Health Conditions and Concerns by Weight Status



- For all the health conditions/concerns listed in the figure, overweight/obese adults were more likely to have the condition/concern than normal weight adults.

Utilization of Health Services

40.0% (42,159) of adults did utilize medical care, but there are many additional health services that are available. The figure below displays the percentages of adults who utilized the following common services within the past year.

- Close to **one in five (17.2%)** adults utilized physical therapy services.
- One in ten (9.9%)** adults utilized mental health services.

Service	Percent	Population Estimate
Home Health Care	5.2%	5,486
Physical Therapy	17.2%	18,203
Occupational Therapy	1.5%	1,558
Skilled Nursing Home	1.5%	1,637
Clinical Services for Acute Rehabilitation	1.1%	1,176
Senior Transportation Services*	1.5%	1,566
Mental Health Services	9.9%	10,487

*Examples of transportation services for seniors include the Irvine Trips Program, OCTA Access, OCTA Runabout (Routes 175 and 86), etc.

Activities to Stay Healthy

The following table lists the reported usual activities and behaviors that adults in Irvine routinely engaged in to stay physically and mentally healthy. The most common activities were avoiding injuries, exercising, eating healthy, and socializing with friends and family.

Table 31: Activities to Stay Healthy		
Activity	Percent	Population Estimate
Attending Health Informational Events		
Attend Health Seminars	12.8%	13,628
Attend Community Health Fairs	8.0%	8,482
Exercise and Prevention		
Avoid Injuries	96.6%	102,774
Get Regular Exercise	87.5%	93,067
Dietary Behaviors		
Eat a Healthy Diet	87.4%	92,930
Drink Green or Herbal Teas	67.8%	72,087
Avoid Junk Food/Fast Food	65.1%	69,269
Vegetarian/Vegan Diet	11.0%	11,729
Taking Medication or Vitamins		
Take Medication as Prescribed	79.8%	83,635
Take Supplements or Vitamins	70.5%	74,828
Take Calcium Supplements	55.0%	57,327
Visiting Providers of Health Care		
Get Regular Medical Check-Ups	78.4%	83,023
Regular Dental Appointments	75.2%	79,552
Visit Acupuncturist	10.5%	11,190
Visit Herbalist/Nutritionist	8.9%	9,424
Spiritual Activity		
Meditate/Pray	55.4%	58,781
Go to Church/Temple/Synagogue	46.8%	49,488
Keeping Socially and Mentally Active		
Socialize with Friends/Family	96.4%	102,498
Take Trips/Get-Away/Vacations	79.3%	84,381
Take Classes at Community Centers	11.4%	12,032
Reading, both for Recreation and to Stay Informed and Engaged	3.8%	3,981

Some ethnicities were more likely to engage in certain activities than others:

- Chinese adults (85.2% or 9,549) and Japanese adults (80.2% or 3,252) had the highest percentage who reported that they drank green or herbal teas.
- Chinese adults (85.0% or 9,533) had the highest percentage of regular medical check-ups. Koreans (49.3% or 2,896) were the least likely to get regular check-ups. On the other hand, Korean adults (30.3% or 1,781) had the highest percentage of acupuncturist visits.
- Korean adults (44.6% or 2,619) and Iranian/Persian adults (58.5% or 2,397) were the least likely to get regular dental appointments.
- Koreans (41.1% or 2,411) and Iranians/Persians (65.2% or 2,641) were also the least likely to take medication as prescribed.
- Koreans (68.1% or 3,998) were the most likely to attend church. Japanese (15.9% or 641) and Iranian adults (24.1% or 986) had the lowest percentage of reported

Diet: Five a Day?

66.4% (69,407) of adults reported that they ate five servings of fruits and vegetables every day. Of the adults who did not eat five servings of fruits/vegetables a day, the primary reasons were as follows in the table.

Table 32: Five Most Common Reasons for Not Having 5 Servings of Fruits/Vegetables a Day

Reason	Percent	Population Estimate
Don't Think About It or Not Used To It	48.7%	17,086
Don't Like Them	11.3%	3,968
Too Long to Prepare/Cook	11.0%	3,869
Too Expensive	10.5%	3,673
Don't Have Them Available	5.1%	1,795

- Cost and inconvenience were both deterrents to eating five servings a day, but the most common reason that adults gave for not including five servings of fruits/vegetables in their daily diet was simply that it was not a part of their daily routine or something that they gave much thought to.

Smoking and Drinking

When asked if anyone in the household smoked, 11.2% (11,888) of adults indicated that there was someone in the household who smoked. Of adults who reported that there was a smoker in the household, 35.7% (4,248) indicated that a child under age 18 resided in the household.

57.6% (61,038) of adults reported that they did not drink in the last seven days. 42.4% (45,017) of adults did drink in the past seven days, and the following table shows the average drinks consumed in one session. One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor.

Table 33: Average Number of Drinks Consumed in One Session During the Past 7 Days

Number of Drinks	Percent	Population Estimate
1	35.0%	15,742
2	45.4%	20,450
3	9.7%	4,345
4+	9.9%	4,479

- 80.4% (36,192) of adults who drank in the past week had one or two drinks on average when they did drink. 9.3% (4,199) drove within two hours after drinking.
- According to the Irvine Police Department, in 2010 there were 619 DUI arrests in Irvine.

Interest in Health Information

Adults were asked about their level of interest in attending workshops or seminars, or reading written material about common health education topics. The following table presents the interest level of adults, by order of the most adults being very interested or somewhat interested to the least number of adults being very/somewhat interested.

- Adults showed the most interest in receiving additional information on diet, nutrition, and exercise.

Table 34: Level of Interest in Health Education Topic

Topic	Very Interested		Somewhat Interested	
	Percent	Population Estimate	Percent	Population Estimate
Nutrition or Diet	22.9%	24,211	33.0%	34,801
Exercise/Active Lifestyles	16.0%	16,944	35.9%	37,890
Weight Concerns	13.6%	14,389	20.7%	21,830
Health Fairs	10.1%	10,633	23.6%	24,937
Parenting Classes	10.6%	11,171	10.1%	10,665
Anger/Stress	6.5%	6,885	12.3%	12,952
Depression/Mental Health Issues	5.8%	6,075	11.2%	11,832
Smoking Cessation	4.0%	4,170	2.9%	3,032
Drugs or Alcohol Use	2.2%	2,329	4.9%	5,171
Sexually Transmitted Diseases	1.0%	1,010	5.2%	5,506
Family Violence/Domestic Abuse	0.8%	847	4.5%	4,716

Morbidity Indicators

Morbidity from Communicable Diseases

The following table lists common communicable diseases, comparing the rates of Irvine with countywide rates.

Disease	City of Irvine		Orange County
	# of Cases (2005-2007 3-year Average)	Rate per 100,000	Rate per 100,000
Chlamydia	295	155.1	262.4
Chronic Hepatitis B	106.3	55.9	34.3
Gonococcal Cases	61	32.1	35.8
HIV/AIDS Cases	19.7	10.3	18.0
Tuberculosis	8.7	4.6	7.5
Chronic Hepatitis C	3.7	1.9	5.3

Source: Orange County Health Care Agency, 2008

- Irvine has higher rates of chronic hepatitis B than the county.

Hospital Discharges

Hospitalization data can serve as a useful proxy for morbidity. In 2006, the rate of hospitalization was 450.0 per 10,000 for Irvine, lower than the countywide rate of 680.6 per 10,000.

- The rate of hospitalizations related to disease of the digestive system was 58.1 per 10,000 in 2006, lower than the countywide rate of 86.9 per 10,000.
- The rate of hospitalizations related to heart disease was 48.4 per 10,000 for Irvine and 79.7 per 10,000 for the county.

The rate of hospitalizations increases with age, as shown in the following table.

Age Group	City of Irvine		Orange County
	# of Hospitalizations	Rate per 10,000	Rate per 10,000
0-17 Years	753	176.8	234.2
18-44 Years	1,673	202.3	313.3
45-64 Years	2,474	496.1	796.9
65+ Years	3,659	2,430.9	2,900.2

Source: HCA 2008

- Irvine has lower rates of hospitalizations across all age groups compared to countywide rates.

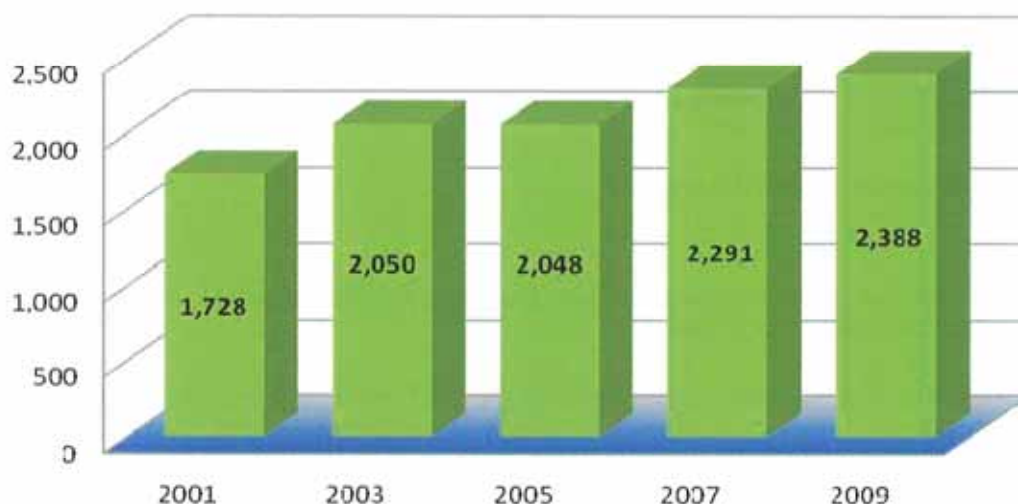
Birth Indicators

An overriding priority of health services is to ensure healthy, risk-free births. A live birth is defined as the complete expulsion or extraction from its mother of a product of conception (irrespective of the duration of pregnancy) which, after such separation, breathes or shows any other signs of life, such as the beating of the heart, pulsating of the umbilical cord, or definite movement of voluntary muscles. This definition was formulated by the [World Health Organization](#) (WHO). Birth rates are defined by the number of live births as a proportion of the total population in a specific region.

Number of Live Births in the City of Irvine

The [California Department of Public Health](#) (CDPH) reported at least **2,388** live births in the City of Irvine during 2009. The CDPH provides the number of live births by the mother’s ZIP code of residence; however, data is unavailable for the ZIP codes where there are fewer than 5 births. The figure below presents the number of reported live births in Irvine from 2001 to 2009.

Figure 30: Numbers of Live Births in City of Irvine, 2001-2009*



- The 2009 crude birth rate in Irvine was **10.8** per 1,000 total Irvine residents, using 2009 U.S. Census Estimates by Nielsen Claritas for the entire city; in comparison, the 2009 crude birth rate for all of Orange County was **13.2** per 1,000 total Orange County residents.

*Data was unavailable for the 92603, 92617, and 92607 ZIP codes in 2001; data was unavailable for the 92617 and 92607 ZIP codes in 2003; data was unavailable for the 92397 ZIP code in 2005, 2007, and 2009.
Source: State of California, Department of Public Health, Birth Profiles by ZIP code, 2001, 2003, 2005, 2007, and 2009

The table below presents the number of births in each Irvine ZIP code of residence.

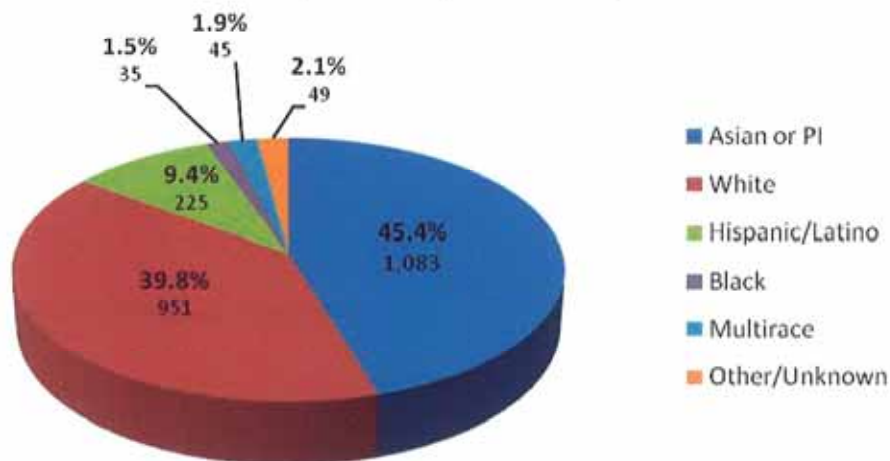
ZIP Code	Number of Live Births	Population	Crude Birth Rate per 1,000 Persons
92602	369	17,241	21.4
92603	238	18,384	13.0
92604	250	31,362	8.0
92606	226	25,375	8.9
92612	199	28,211	7.1
92614	250	27,958	8.9
92617	108	13,520	8.0
92618	249	16,320	15.3
92620	499	42,273	11.8
City of Irvine*	2,388	220,644	10.8
Orange County	40,431	3,075,404	13.2

- The zip code **92602** had a considerably higher crude birth rate compared to the overall city and county birth rate in 2009.
- Births in Irvine accounted for **5.9%** of all countywide births in 2009.

*2009 death data and Nielsen Claritas U.S. census estimates are unavailable for the 92697 ZIP code.
Sources: State of California, Department of Public Health, Birth Profiles by ZIP code, 2009; 2009 U.S. Census Estimates by Nielsen Claritas

The figure below presents the distribution live births in Irvine by the race/ethnicity of the mother.

Figure 31: Live Births in City of Irvine by Race/Ethnicity of Mother, 2009*



*Data was unavailable for the 92697 ZIP code.
Source: State of California, Department of Public Health, Birth Profiles by ZIP code, 2009

- The most live births were by Asian or Pacific Islander mothers in the City of Irvine in 2009, accounting for **45.4%** (1,083) of live births.
- Countywide, half (**50.3%** or 20,323) of live births were by Hispanic/Latino mothers in 2009. Only **17.2%** (6,951) of live births were by Asian or Pacific Islander mothers.

Live Births by Age of the Mother

The table below presents the proportion of births in 2009 by the age of the mother.

Age of Mother	Percent of Live Births	Number of Live Births
Under 20 Years	1.0%	24
20-29 Years	27.2%	649
30-34 Years	40.4%	965
35+ Years	31.4%	750

*2009 death data and Nielsen Claritas US census estimate data are unavailable for the 92697 ZIP code.
Sources: State of California, Department of Public Health, Birth Profiles by ZIP code, 2009

- In Irvine, only **1.0%** of live births were by mothers under 20 years of age. In comparison, **6.8%** (2,764) of live births in the county were by mothers under 20 years of age.

Late or No Prenatal Care

Prenatal care is considered late if it is initiated in the 2nd trimester of pregnancy (after the 12th week) or later. Delaying or forgoing prenatal care can lead to a number of negative health outcomes, such as maternal complications or low birth weights.

- The late or no prenatal care rate in the City of Irvine was **5.5%** (131 of live births) during 2009. The timely prenatal care rate was **94.0%** (2,245). The prenatal care status was unknown for 12 of the live births.
- Orange County's late or no prenatal care rate was **11.1%** (4,501) in 2009.

★ The **Healthy People 2020** objective is to increase the proportion of pregnant women who receive prenatal care beginning in the first trimester of pregnancy to **77.9%**. The City of Irvine has **met**, and **exceeded**, this objective, with **94.0%** receiving timely prenatal care.

Low Birth Weight

Low birth weight babies weigh less than 2,500 grams (5 pounds, 8 ounces). Very low birth weight babies weigh less than 1,500 grams (3 pounds, 5 ounces). Most low birth weight babies are born preterm/premature, although some babies born at full-term may weigh less at birth but would still be considered healthy.

⇒ The **Healthy People 2020** objective is to reduce low birth weight (LBW) to **7.8%**. The City of Irvine has **nearly met** this objective, with **7.9%** of infants born at low birth weight.

- **7.9%** (188) of live births in Irvine had low birth weights; Orange County's low birth weight rate was **6.6%** (2,670) in 2009, slightly lower than the City of Irvine.

Inadequate Prenatal Care

The Kotelchuck Adequacy of Prenatal Care Utilization (APNCU) index examines two components to determine whether a mother's prenatal care was adequate: 1) when prenatal care was initiated and 2) the frequency of prenatal care visits. These two indices are scaled on the APNCU matrix, which provides the overall adequacy level of prenatal care. The levels are inadequate, intermediate, adequate, and adequate plus. The 2008 [Orange County Health Indicators Report](#) reported the inadequate scores for live births between 2004 and 2006 by ZIP code of residence. The following rate is specific to the City of Irvine.

- Out of the **6,310** live births in Irvine between 2004 and 2006, **3.9%** (246) had inadequate prenatal care.
- Out of the **133,278** live births in Orange County between 2004 and 2006, **9.2%** (12,276) had inadequate prenatal care.

★ The **Healthy People 2020** objective is to increase the proportion of pregnant women who receive early and adequate prenatal care to **77.6%**. The City of Irvine has **met**, and **exceeded**, this objective, with **96.1%** of pregnant women receiving early and adequate prenatal care.

Cesarean Births

A Cesarean section (C-section) is usually performed when a vaginal delivery presents health risks to the mother or baby. C-section data is presented in the 2008 [Orange County Health Indicators Report](#) by ZIP codes of residence between 2004 and 2006. The following rate is specific to Irvine.

- Out of the **6,310** live births in the City of Irvine between 2004 and 2006, **33.9%** (2,138) of live births had cesarean sections.
- Out of the **133,278** live births in Orange County between 2004 and 2006, **32.0%** (42,707) of live births had cesarean sections.

Breastfeeding Initiation

California in-hospital infant feeding practices are monitored using data collected by the [Newborn Screening \(NBS\) Program](#). New mothers may initiate *any breastfeeding* (a combination of breastfeeding and formula) and *exclusive breastfeeding* in hospitals. The 2008 [Orange County Health Indicators Report](#) reported *any* and *exclusive breastfeeding* rates of birth mothers between 2004 and 2006 by ZIP code of residence. Countywide, breastfeeding data was captured for 95 percent of birthing mothers over the 2004 to 2006 period (126,780 out of 133,303 mothers). The following rate is specific to the City of Irvine.

★ The **Healthy People 2020** objective is to increase the proportion of infants who are breastfed to **81.9%**. The City of Irvine has **met** this objective, with **91.1%** of mothers initiating breastfeeding.

- Out of the **6,009** live births in Irvine between 2004 and 2006 (data was not captured for all mothers), **91.1%** (5,475) of mothers had initiated *any breastfeeding* and **40.6%** (2,440) of mothers initiated *exclusive breastfeeding*.
- Out of the **126,780** live births in Orange County between 2004 and 2006 (data was not captured for all mothers), **84.8%** (107,522) of mothers had initiated *any breastfeeding* and **28.6%** (36,222) of mothers initiated *exclusive breastfeeding*.

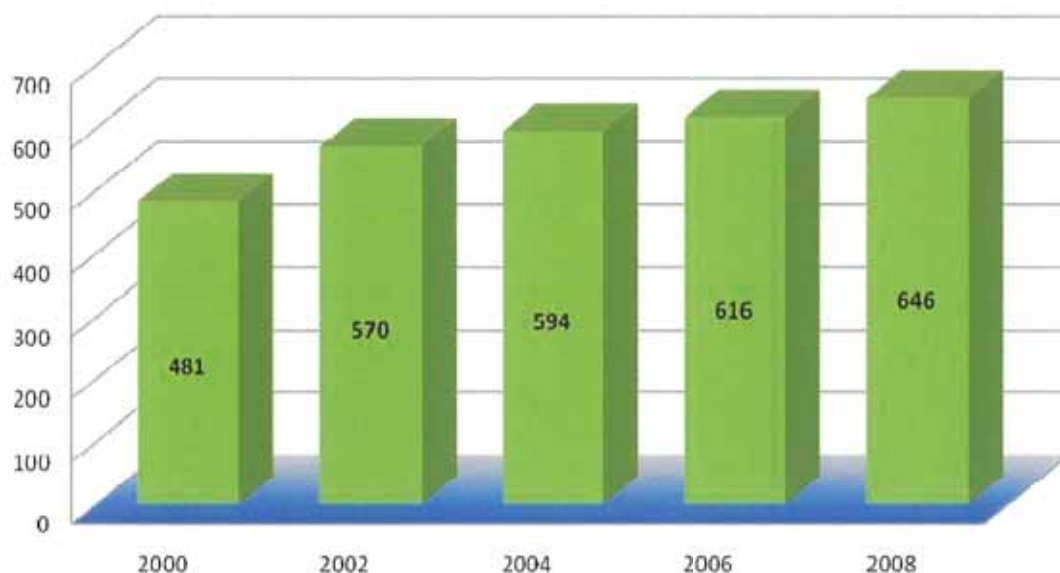
Resident Deaths in Irvine

Information on the death rates and causes of death are valuable from the public health standpoint because they illuminate the most urgent and damaging health issues in a population, thereby helping to focus efforts in developing preventive or disease management strategies.

Number of Deaths in the City of Irvine

The figure below presents the total counts of deaths from 2000 to 2008. Please note that [California Department of Public Health](#) (CDPH) death data is unavailable for ZIP codes where there were fewer than five deaths.

Figure 32: Numbers of Deaths of Irvine Residents from 2000-2008*



- In 2008 there were at least **646** deaths in Irvine.
- In 2008 the estimated crude death rate in Irvine, using 2008 U.S. Census Estimates by Nielsen Claritas for the entire city, was **3.0** deaths per 1,000; in comparison the countywide death rate for 2008 was slightly higher, at **5.6** deaths per 1,000.

*Data was unavailable for the 92803, 92617, and 92697 ZIP codes in 2000 and 2002; data was unavailable for the 92617 and 92697 ZIP codes in 2004; data was unavailable for the 92697 ZIP code in 2006 and 2008.

Source: State of California, Department of Public Health, Death Profiles by ZIP code, 2000, 2002, 2004, 2006, and 2008

- In 2000 the estimated crude death rate in Irvine, using 2000 U.S. Census counts as reported by Nielsen Claritas, was **3.3** deaths per 1,000; in comparison the countywide death rate for 2000 was **5.8** deaths per 1,000.
- From 2000 to 2008, the population of Irvine increased by **45.4%**, from 146,152 to 212,453 individuals, but the crude death rate decreased.

The table below presents the number of deaths by each ZIP code in Irvine.

ZIP Code	Number of Deaths	Population	Crude Death Rate Per 1,000 Persons
92602	35	13,588	2.58
92603	46	16,815	2.74
92604	117	30,324	3.86
92606	50	24,384	2.05
92612	147	27,160	5.41
92614	66	26,629	2.48
92617	7	12,019	0.58
92618	49	16,247	3.02
92620	129	44,553	2.58
City of Irvine*	646	212,453	3.04
Orange County	17,162	3,086,980	5.56

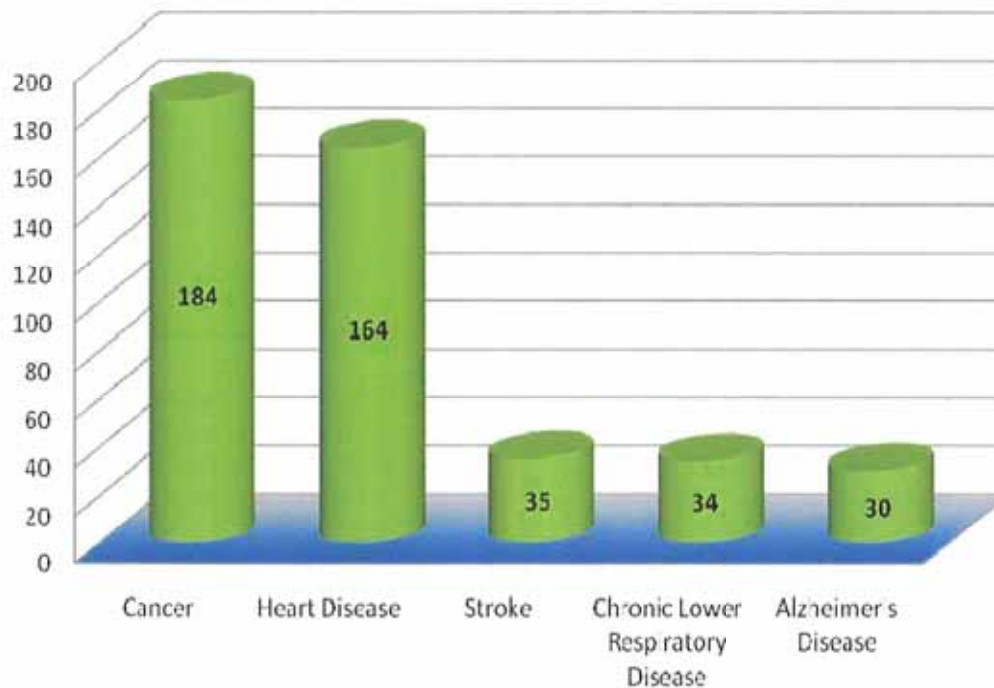
*While death data is unavailable for the 92697 ZIP code, the calculation for the crude death rate includes the 92697 population due to its small size of 734. As a result, the estimated death rate may be slightly underestimated.
Sources: State of California, Department of Public Health, Death Profiles by ZIP code, 2008; 2008 U.S. Census Estimates by Nielsen Claritas

- The ZIP codes of **92604** and **92612** had higher crude death rates compared to citywide crude death rate, with **3.9** deaths and **5.4** deaths per 1,000, respectively.
- The reported deaths of Irvine residents accounted for **3.8%** of all countywide deaths in 2008.
- In total, there were **311 (48.1%)** deaths of males and **335 (51.9%)** deaths of females.

Leading Causes of Deaths in the City of Irvine

Cause of death reporting begins with a death certificate, which records the underlying cause that triggered the sequence of morbid events (which are also listed) leading to death. The certificate also records other conditions that contributed to death, but did not belong to the sequence. With regard to national and local mortality statistics, every death is connected to one underlying condition and is coded according to the [International Classification of Diseases \(ICD\)](#), developed by the WHO. The figure below presents the five leading causes of death for Irvine residents during 2008.

Figure 33: Top 5 Causes of Deaths Among City of Irvine Residents, 2008*



- In 2008 the top 5 causes of death in the City of Irvine accounted for **69.2%** of deaths of residents (447 deaths).
- Cancer accounted for **28.5%** of the deaths, and heart disease accounted for **25.4%** of deaths in 2008.
 - In Orange County the leading cause of death for 2008 was heart disease, accounting for **26.4%** (4,534) of deaths; cancer followed with **24.5%** (4,203) of deaths.
- There were **8** deaths from diabetes, **11** deaths from suicide, and **23** deaths each from injuries and pneumonia/influenza.

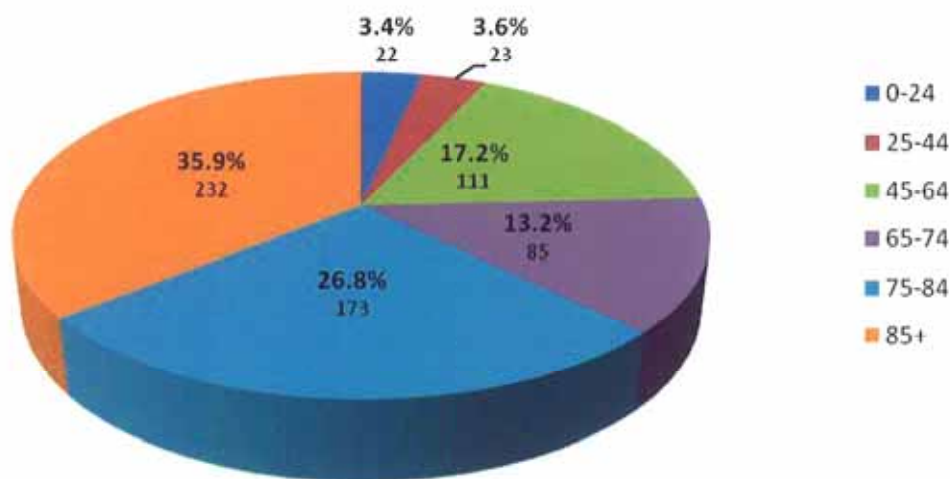
*Data was unavailable for E2897.

Source: State of California, Department of Public Health, Death Profiles by ZIP code, 2008

- ★ The **Healthy People 2020** objective is to reduce the overall cancer death rate to **160.6** deaths per 100,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with an overall cancer death rate of **86.6** deaths per 100,000 population.
- ★ The **Healthy People 2020** objective is to reduce the diabetes death rate to **65.8** deaths per 100,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with a diabetes death rate of **3.8** deaths per 100,000 population.
- ★ The **Healthy People 2020** objective is to reduce the suicide rate to **10.2** suicides per 100,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with a suicide rate of **5.2** suicides per 100,000 population.
- ★ The **Healthy People 2020** objective is to reduce unintentional injury deaths to **36.0** deaths per 100,000 population. The City of Irvine has **met**, and **exceeded**, this objective, with **10.8** unintentional injury deaths per 100,000 population.

The figure below presents the 646 deaths in 2008 by age.

Figure 34: Deaths of City of Irvine Residents by Age, 2008*



*Data was unavailable for 92697.
Source: State of California, Department of Public Health, Death Profiles by ZIP code, 2008

- **75.9%** (490) of deaths were of Irvine residents 65+ years.
- In the City of Irvine there were **6 deaths** of infants under 1 years of age; the infant mortality rate in 2008 was **2.4** deaths per 1,000 live births. The number of infant deaths in Orange County was **202**—the infant mortality rate for Orange County was **4.8 per 1,000** live births in 2008. (In 2008 there were **2,483** births in the City of Irvine and **42,456** births in all of Orange County.)

★ The Healthy People 2020 objective is to reduce the rate of all infant deaths (within 1 year) to **6.0** deaths per 1,000 live births. The City of Irvine has **met** this objective, with **2.4** infant deaths per 1,000 live births.

Methods

The City of Irvine Health Needs Assessment was conducted to find out more information on issues of health care access, primary care utilization, and disease prevention awareness and behaviors of residents in Irvine. The findings of this assessment will guide Hoag Hospital at Irvine in designing their health education and outreach programs and provide insight as to the level of diversity in both language and cultural issues that impact the way in which residents view and access health care services.

Survey Administration

The health needs assessment was designed by OCHNA and administered by the Social Science Research Center (SSRC) at California State University, Fullerton. SSRC utilized a mixed-mode telephone survey, using both random-digit-dial and listed samples. There were target quotas of 100 respondents for each of the following ethnic groups: Japanese, Korean, Chinese, and Iranian or Farsi-speaking respondents. The remaining 200 respondents were randomly sampled.

Number of Actual Respondents to the Survey

There were 686 respondents to the 2010 City of Irvine Needs Assessment Survey. 301 respondents indicated that there were children who resided in the household, and these respondents were asked some questions about the children.

Language of the Survey

The City of Irvine needs assessment was conducted in five languages: English, Farsi, Japanese, Korean, and Mandarin. The following table shows the number of respondents who took the survey in each language.

Table 40: Language of the Survey

Language	Number of Respondents	Percent
English	525	76.5%
Farsi	24	3.5%
Japanese	51	7.4%
Korean	78	11.4%
Mandarin	8	1.2%
Total	686	100%

- Most of the Chinese respondents (93 of 101 Chinese respondents) took the survey in English. 8 respondents chose to take the survey in Mandarin.
- Iranians also showed a preference for English, with 85 Iranian respondents taking the survey in English, and 24 taking the survey in Farsi.
- Korean adults showed a preference for taking the survey in Korean over English. 77 of the Korean respondents took the survey in Korean, and 64 chose English.

Of the Japanese respondents, 53 took the survey in English, and 50 took the survey in Japanese.

Weighting

Weighting was employed to balance the sample demographics to match the known population distribution for gender, age, and race/ethnicity within the City of Irvine. The current study over-sampled Koreans, Chinese, Japanese, and Persians to permit a better understanding of the unique health care needs facing members of these ethnic groups. Over-sampling biases population estimates, such as means and medians, as the study sample has a greater proportion of Korean, Chinese, Japanese, and Persian respondents than exist in the City of Irvine. Adjusting the data by weighting reduces the impact of each Korean, Chinese, Japanese, and Persian respondent and minimizes the biases associated with over-sampling.

Population Estimate

Data from the 2000 Census was used as the basis for population weighting to obtain population estimates from the responses of the survey. As a result, even though the survey was conducted in 2010, the estimates reflect 2000 population values.

The population of Irvine in 2000 was **146,152**, according to the 2000 Census, with **112,034** adults and **34,118** children. The 2000 population estimate from the needs assessment is **139,907**, with **106,353** adults and **33,554** children. The population estimates for the City of Irvine needs assessment were produced using 2000 Census data instead of more current population data sources because of the level of accuracy needed in estimating specific sub-groups for the study: Chinese, Japanese, Korean, and Iranian/Persian. More current American Community Survey estimates were available for these sub-groups, but not at the city level (e.g., Asians were not broken out into Chinese, Japanese, and Korean at the city level, so population estimates would have to be calculated using the umbrella categorization of *Asian* if ACS 2009 were used, resulting in a great deal of accuracy being compromised). Because the purpose of this study is to explore the differences in the health needs of these sub-groups, greater precision took priority, at the cost of having the most current estimates.



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