HEALTHY YOLO

Our Community Our Future

Mortality in Yolo County, 2010 to 2014

December, 2015

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EXECUTIVE SUMMARY

- Each year approximately 1,200 persons in Yolo County die. The leading causes of death in Yolo County and California are the same, with slightly higher percentages found in Yolo County for diseases of the circulatory system and chronic lower respiratory disease than occur statewide.
- Chronic disease related to the circulatory or cerebrovascular system, i.e., heart disease and stroke, respectively, represented nearly one-third (29%) of all deaths in Yolo County in 2014.
- About 42% of all deaths in Yolo County in 2014 were premature (death in persons aged under 75).
- Chronic heart disease represented 77% (about three-quarters) of all causes of death related to the circulatory system. Heart disease was the second leading cause of premature death, comprising 21% of all premature deaths.
- Premature deaths were most likely to occur in the Dunnigan-Yolo region, in two census tracts in the city of West Sacramento, and in three census tracts south of Main Street near the center of the city of Woodland (see Figure 10. Years of Potential Life Lost (YPLL) in Yolo County by Census Tract, 2014.
- Cancer of any site was the second leading cause of death. Death due to cancer was also the primary cause of premature death, representing 30% of all premature deaths. The leading causes of cancer death were lung, colorectal and pancreatic cancers.
- Yolo County's overall age-adjusted cancer rate for 2013 was higher than the statewide rate in 2013, the latest year for which age-adjusted data are available.
- Deaths due to cancer occurred disproportionately in rural northern areas of the county, in eastern Yolo County (in and around the city of West Sacramento) and in one census tract on the east side of the city of Woodland.
- Deaths due to influenza, pneumonia and infectious respiratory diseases have significantly declined in a nonlinear fashion by 44% from a high of 45 in 2011 to 25 in 2014.
- Infant and childhood death rates were low, averaging only 9 infants and 3 children (aged 1 to 14) per year in the last five years. There were no significant trends up or down for the infant (under 1 year old) death rate, childhood (age 1 to 14) death rate, or young adult (age 15 to 24) death rate.
- Yolo County's childhood death rate of 13.2 deaths per 100,000 persons in 2014 was similar to the statewide rate of 13.2 per 100,000 in 2013.
- Yolo County's young adult death rate, at 26.5 deaths per 100,000 young adults in 2014, was much lower than the statewide rate of 53.7 deaths per 100,000 in 2013.
- There was also no significant difference in death rates for youth (aged 1 to 24) between the periods 2009 to 2011 and 2012 to 2014. However, death rates for Black youth, at 107 deaths per 100,000 population, were significantly higher than any other race-ethnicity, as well as being higher than the countywide rate of 18 deaths per 100,000 youth from 2012 to 2014.

INTRODUCTION

A review of the causes of mortality at the county level can help a local health department evaluate the health of its residents and determine if there are increasing or decreasing death rates from specific causes over time. County rates for major causes can also be compared to statewide rates to determine if some causes of death are more frequent in the county than statewide, suggesting areas for intervention. Calculating mortality rates by race-ethnicity and by geographic area can also elucidate health disparities, so that efforts to improve public health can be directed towards population groups or geographic areas with the greatest need.

Many deaths are caused by chronic conditions. These conditions can be mitigated by public health programs that aim to improve the quality of life for residents and reduce the number of premature deaths (deaths before age 75). These efforts might include improving neighborhood walkability and safety, providing opportunities for family recreation, and making healthy foods more affordable and available.

METHODS

For the years 2010 to 2012, the Death Statistical Master File for Yolo County residents was obtained from the California Department of Public Health (CDPH) Office of Health Information and Research, Vital Statistics Unit. Deaths were coded according to ICD-9 diagnoses. For the years 2013 and 2014, CDPH's new Vital Records Business and Information System (VRBIS) enabled direct download of resident deaths coded to ICD-10 diagnoses. Causes of death were grouped so that ICD-9 and ICD-10 codes mapped to the same major diagnoses. State-level data and rates were obtained from the CDPH Vital Statistics query page (http://www.apps.cdph.ca.gov/vsq/) or published summaries (e.g., CDPH County Profiles 2013, historical *Vital Statistics of California* reports), and from CDC Wonder (http://wonder.cdc.gov). Age-adjusted cancer rates (to the 2000 population) were obtained from the California Cancer Registry (CCR) at http://www.cancer-rates.info/ca/. The last year for which age-adjusted rates were available from the CCR was 2013. Aggregate rates were used to compare age-adjusted rates for site-specific cancers in Yolo County to California for the years 2010 to 2013.

Life expectancy by census tract was calculated using an algorithm in Excel created by Alameda County that calculates death rates for age groups 0 to 4 years, 5 to 85 in 10-year intervals and over 85, standardized to the U.S. 2000 population. Input for the algorithm was the estimated 2013 population and actual deaths for the years 2012 to 2014 by census tract in the previously described age groups.

Population data for the purpose of calculating rates (per 100,000 persons) were obtained from the California Department of Finance (DOF) population tables posted in 2013 at (http://www.dof.ca.gov/research/demographic/dru/index.php). In most cases, percentages were rounded to the nearest whole number for clarity and readability. Linear trends were evaluated using R-squared (ρ^2), the coefficient of determination, with values >0.70 suggesting a significant linear trend. Ninety-five percent confidence intervals (95% CIs) for rates were calculated according to Szklo and Nieto (2000). No age adjustment was made for Yolo County rates, except as specified above.

Geographic population data at the census tract level was sourced from the latest US Census American Community Survey (ACS) five-year estimates (2009 to 2013), Table S0101, which was published in December 2014 at http://www.factfinder.census.gov. These rates were also not adjusted for age due to the small number of residents in census tracts (2,000 to 8,600 in Yolo County). A map showing the percentage of the population aged over 65 in each census tract is included in this report (see Figure 7. Percentage of the Population over 65 by Census Tract, Yolo County 2013.

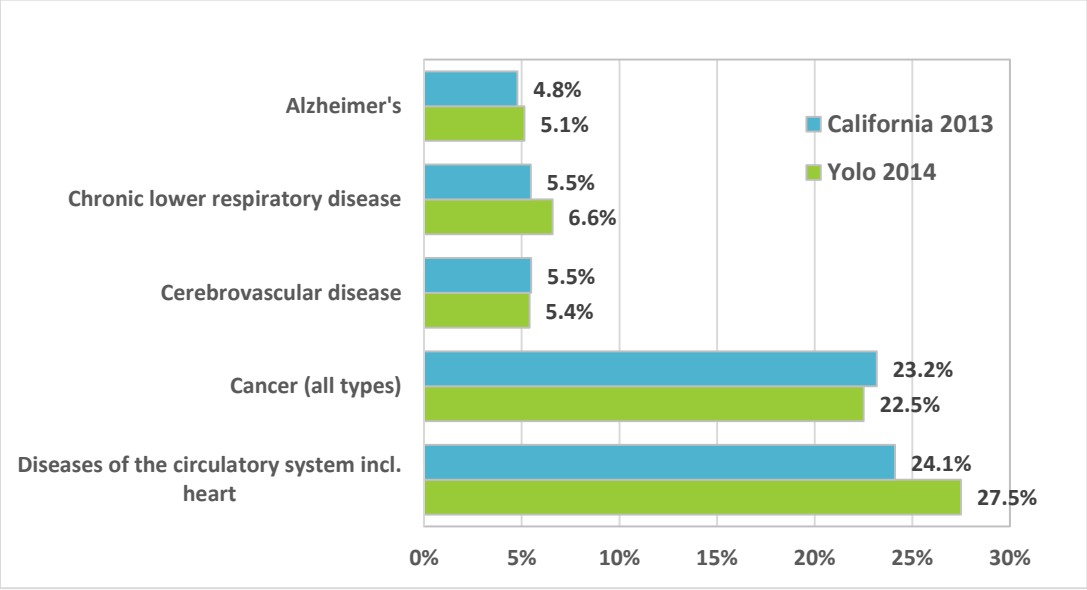
LEADING CAUSES OF DEATH

The leading cause of death was disease related to the circulatory system (and heart), accounting for over one-quarter of Yolo County deaths in 2014. The percentage was slightly higher than the percentage statewide (Table 1 and Figure 1). Cancer represented the second most common cause of death with 22% of all deaths, similar to the state. Chronic lung disease (CLD), cerebrovascular disease (stroke) and Alzheimer's were the third, fourth and fifth leading causes of death in Yolo County, respectively. The percentage of deaths due to CLD was slightly higher in Yolo County than the state.

Table 1. Leading Causes of Death, Yolo County vs. California.

Cause of Death	2014 Yolo County Deaths	% (Yolo)	California Ranking	2013 California Deaths	% (CA)
Diseases of the circulatory system including heart	326	27%	1	59,832	24%
Cancer (all types)	267	22%	2	57,504	23%
Cerebrovascular disease	64	5%	3	13,603	5%
Chronic lower respiratory disease	78	7%	4	13,550	5%
Alzheimer's	61	5%	5	11,868	5%
Total Deaths	1186			248,118	

Figure 1. Percentages of Deaths for the Leading Causes of Death, Yolo County (2014) vs. California (2013).



Causes of death have remained relatively stable over time, with a notable decrease in deaths from respiratory disease (Table 2). This decrease reflects a drop in deaths from infectious respiratory causes (mostly influenza and related pneumonia). There was a slight increase in counts for deaths related to endocrine and nutritional causes, which include diabetes and obesity. A spike in external causes of mortality (accidents, suicide and homicide) occurred in 2013 for unknown reasons.

Table 2. Grouped Cause of Death, 2010-2014.

ICD-10 Code	Cause of Death Category	2010	2011	2012	2013	2014
A00-B99	Infectious (incl. TB)/parasitic diseases	31	30	29	20	19
C00-D48	Cancer (all types)	265	268	321	305	267
D50-D89	Disorders of blood and immune system	<10	<10	<5	<5	<5
E00-E88	Endocrine, nutritional and metabolic incl. diabetes	48	53	57	51	64
F01-F99	Mental & behavioral disorders	36	36	40	39	40
G00-G98	Diseases of nervous system	96	112	106	107	103
H00-H93	Eye/ear diseases	<5	<5	<5	<5	<5
I00-I99	Diseases of circulatory system incl. heart	341	291	345	363	326
J00-J98, U04	Diseases of respiratory system	140	163	144	131	126
J09-J22, U04	*Pneumonia/influenza/lower respiratory**	*33*	*45*	*31*	*31*	*25*
K00-K92	Diseases of digestive system	58	55	59	64	56
L00-L98	Diseases of skin/subcutaneous tissue	<5	<5	<5	<5	<5
M00-M99	Diseases of musculoskeletal system incl. autoimmune	<10	15	11	10	<10
N00-N98	Diseases of genitourinary system	25	13	16	11	14
O00-O99	Pregnancy, childbirth & puerperium	<5	0	0	0	<5
P00-P96	Conditions occurring in perinatal period	<5	<5	<5	<10	<5
Q00-Q99	Congenital (birth) defects	<5	<5	<10	<5	<10
R00-R99	Conditions of infancy not elsewhere classified	<10	<10	11	<10	<10
U01-03, V01-Y89	External causes of mortality incl. motor vehicle (MV) accidents, suicide, homicide	81	81	84	102	92
	Not yet classified					46
	Total	**1153**	**1139**	**1236**	**1226**	**1186**

**The items in italics are excluded from the total*.

MORTALITY DEMOGRAPHICS

Similar numbers of men and women die each year (Table 3). The majority of deaths are among non-Hispanic White residents, who comprise 49% of the population (Table 4). The number of deaths among White residents is falling and the number among Hispanic residents rising as the composition of the population changes over time. Almost three-quarters of deaths (73%) are to those aged 65 or older (Table 5). The age-adjusted death rate for Yolo County of 652 deaths per 100,000 persons did not differ significantly from the statewide rate of 655 per 100,000 (CDPH, County Health Status Profiles, 2013).

Table 3. Deaths by Sex, 2010-2014.

Sex	2010	2011	2012	2013	2014
Male	580	557	604	619	605
Female	573	582	632	606	581

Table 4. Deaths by Race-Ethnicity, 2010-2014.

Race-Ethnicity	2010	2011	2012	2013	2014
Am Ind/AN**	<10	12	<5	<10	<10
Asian/Pac Isl†	59	40	58	57	56
Black	26	39	26	38	27
Hispanic	168	185	193	177	200
Other	17	14	14	13	15
White	873	845	935	930	882
Unknown	2	4	6	3	0
Total	1153	1139	1236	1226	1186

***American Indian/Alaska Native*
†Pacific Islander

Table 5. Deaths by Age Group, 2010-2014.

Age Group	2010	2011	2012	2013	2014
0-14	10	11	10	13	14
15-24	13	12	<10	11	12
25-34	14	<10	16	29	21
35-64	271	270	297	286	272
>64	845	841	905	887	865
Total	1153	1139	1236	1226	1186

INFANT AND CHILDHOOD MORTALITY

Infant deaths (children aged under 1 year) remain low, averaging only nine per year in the past five years. There was no significant linear trend over time (Table 6) and the 2014 countywide infant death rate of 4.6 infant deaths per 1,000 live births was almost the same as the statewide infant death rate of 4.7 per 1,000 live births in 2013.

Table 6. Infant (Age <1) Death Rates (per 1,000 Live Births).

Year	2010	2011	2012	2013	2014
Death rate	3.3	2.6	4.0	3.2	4.6
Live births	2,425	2,338	2,473	2,513	2,409

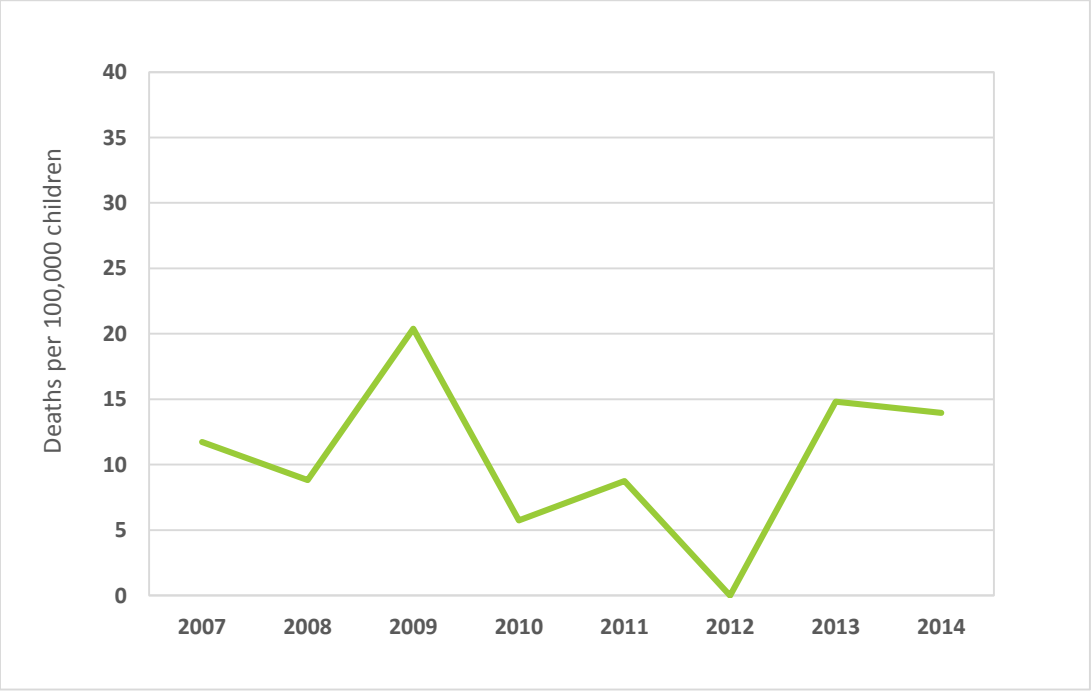
Few children died in childhood (age 1 to 14), on average only three per year. The childhood death rate of 14.0 per 100,000 children in 2014 (Table 7 and Figure 2) was approximately the same as the statewide childhood death rate of 13.2 per 100,000 in 2013. Although childhood death rates were higher in both 2013 and 2014 than in earlier years, there was no significant linear trend from 2007 to 2014.

Table 7. Childhood (Age 1 to 14) Death Rates per 100,000 Population.

Year	2010	2011	2012	2013	2014
Death rate	5.7	8.7	0.0	14.8	14.0
Population size*	34,856	34,313	34,066	33,753	35,817

**From the California Department of Finance.*

Figure 2. Childhood (age 1 to 14) Death Rates per 100,000 Persons, Yolo County 2007-2014.



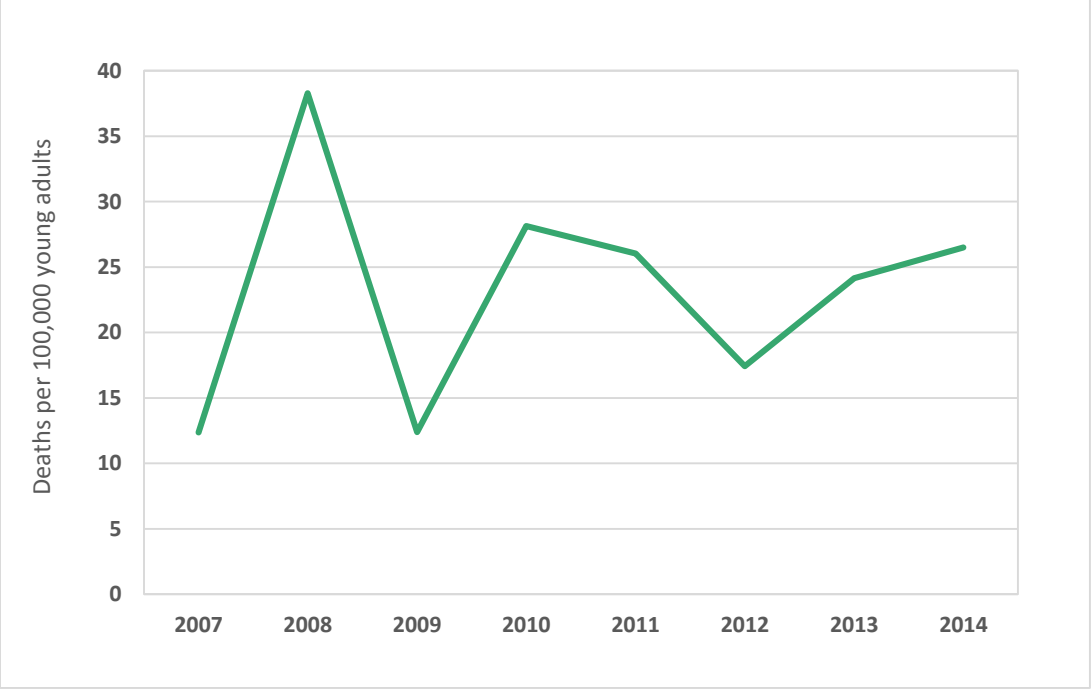
The young adult death rate (age 15 to 24) also demonstrated no significant linear trend in the past five years (Table 8 and Figure 3). At 26.5 deaths per 100,000 young adults in Yolo County in 2014, it was much lower than the statewide rate of 53.7 deaths per 100,000 in 2013.

Table 8. Young Adult (Age 15 to 24) Death Rates per 100,000 Population.

Year	2010	2011	2012	2013	2014
Death rate	28.1	26.0	17.4	24.1	26.5
Population size*	46,212	46,078	45,931	45,552	45,305

**From the California Department of Finance.*

Figure 3. Young Adult (age 15 to 24) Death Rates per 100,000 Persons, Yolo County 2007-2014.



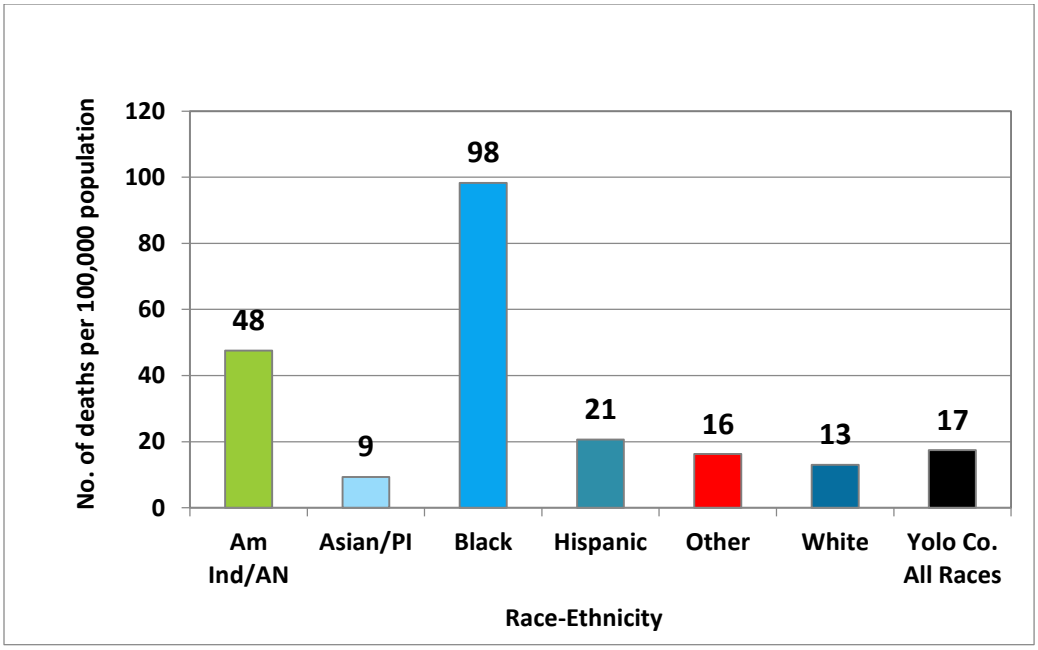
Aggregating rates over three years to account for small cell counts in several of the racial and ethnic categories (Table 9), there was no difference in death rates for youth in the last three years (2012 to 2014) compared to the previous three-year period 2009 to 2011. However, in both three-year time periods the death rate for Black youth was significantly higher than that of most other racial or ethnic groups, based on the 95% confidence interval (Table 9). Figure 4 depicts the death rates for the entire period 2009 to 2014, showing that mortality was highest for Black youth and lowest for Asians and Pacific Islanders.

Table 9. Comparison of Youth (aged 1 to 24) Death Rates by Race-Ethnicity, Yolo County 2009-2014.

	2009-2011				2012-2014			
Race-Ethnicity	**No. deaths**	**Population size**	**Rate per 100K**	**95% CI***	**No. deaths**	**Population size**	**Rate per 100K**	**95% CI**
Am Ind/AN**	1	1,034	97	2-539	0	1,067	0	0-261
Asian/Pac Isl†	5	43,673	11	4-27	3	41,961	7	1-21
Black	6	5,975	100	37-219	6	6,235	96	35-210
Hispanic	20	87,848	23	14-35	16	86,982	18	11-30
Other	3	12,088	25	5-72	1	12,512	8	0-45
White	10	98,403	10	5-19	15	93,919	16	9-26
County Total	45	249,021	18	13-24	41	242,676	17	12-23

**95% confidence interval, Poisson distribution, according to Szklo & Nieto, 2000*
***American Indian/Alaska Native*
†Pacific Islander

Figure 4. Death Rates for Youth (Ages 1 to 24) by Race-Ethnicity, Yolo County 2009-2014.



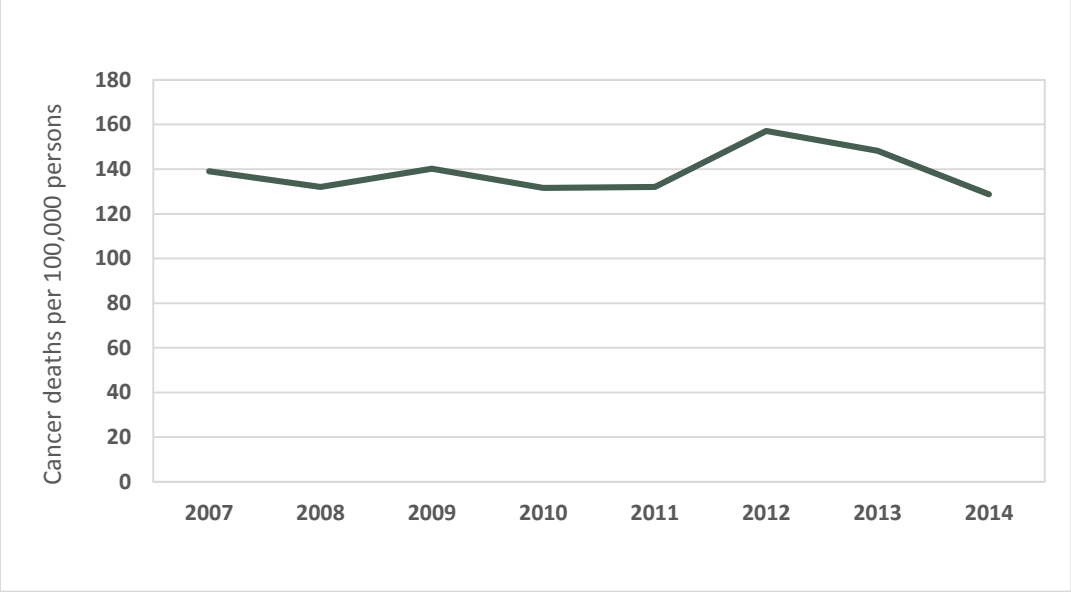
CANCER MORTALITY

In the past five years, on average 285 cancer deaths occurred per year. There has been no significant trend in cancer rates since 2007 (Figure 5). The leading cause of cancer death (Table 10) was lung cancer (about 1 in 5 cancer deaths), followed by colorectal cancer (8%), unspecified cancer site (8%) and pancreatic cancer (7%).

Table 10. Leading Causes of Cancer Death, 2010-2014.

Cancer Site	No. 2010-2014	% of Cancer Deaths
Cancer-lung/tracheal	289	20.3%
Cancer-colorectal	112	7.9%
Cancer-other unspecified	111	7.8%
Cancer-pancreatic	106	7.4%
Cancer-breast (female)	89	6.2%
Cancer-prostate	73	5.1%
Cancer-non-Hodgkin's lymphoma	51	3.6%
Causes for grouped sites		
Cancer-all other intestinal	149	10.4%
Cancer-lymph/blood	105	7.4%
Cancer-urinary organs	74	5.2%
Cancer-female genital system	66	4.6%
Cancer-brain/CNS	41	2.9%
Cancer-oral	30	2.1%
Cancer-skin	26	1.8%

Figure 5. Cancer Deaths per 100,000 Persons (Unadjusted for Age), Yolo County 2007-2014.



For 2013, the age-adjusted cancer rate in Yolo County was 161 cases per 100,000 persons compared to 147 per 100,000 statewide (http://www.cancer-rates.info/ca/). Therefore, Yolo County's age-adjusted cancer death rate in 2013, the last year for which age-adjusted data were available, was higher than California's. Nonetheless, for many specific sites (Table 11) when aggregated over the four years 2010 to 2013, Yolo County rates were similar or lower than California's. The rates were higher for cancers originating in the pancreas and miscellaneous (unspecified) sites.

Table 11. Age-Adjusted Cancer Death Rates per 100,000 Persons for Leading Sites, Yolo County vs. California, 2010-2013.

Cancer Site	Yolo County	California
Cancer-lung/bronchus	32.6	34.0
Cancer-colorectal	12.6	13.7
Cancer-other unspecified	14.0	10.3
Cancer-pancreatic	12.4	10.4
Cancer-breast (female)	16.8	20.5
Cancer-prostate	20.2	20.1
Cancer-non-Hodgkin's lymphoma	5.7	5.6

When mapped by census tract (Figure 6), the eastern areas of Yolo County appeared to have higher cancer rates than the western or southern areas. However, due to low case counts and the small population size when analyzing these data by census tract (about 2,000 to 8,000 persons in a census tract), the rates may be unstable. Rates were also not adjusted for age. The population in the outlying areas of the county tends to be somewhat older, and therefore more likely to die from cancer or age-related illness (Figure 7). Nonetheless, there were some census tracts in the city of Woodland with younger populations that had high cancer rates. Conversely, there were also two census tracts on the western side of Woodland that did not have particularly high cancer rates despite having >15% of the population aged 65 or older.

Figure 6. Cancer Deaths per 100,000 Persons by Census Tract, Yolo County 2014.

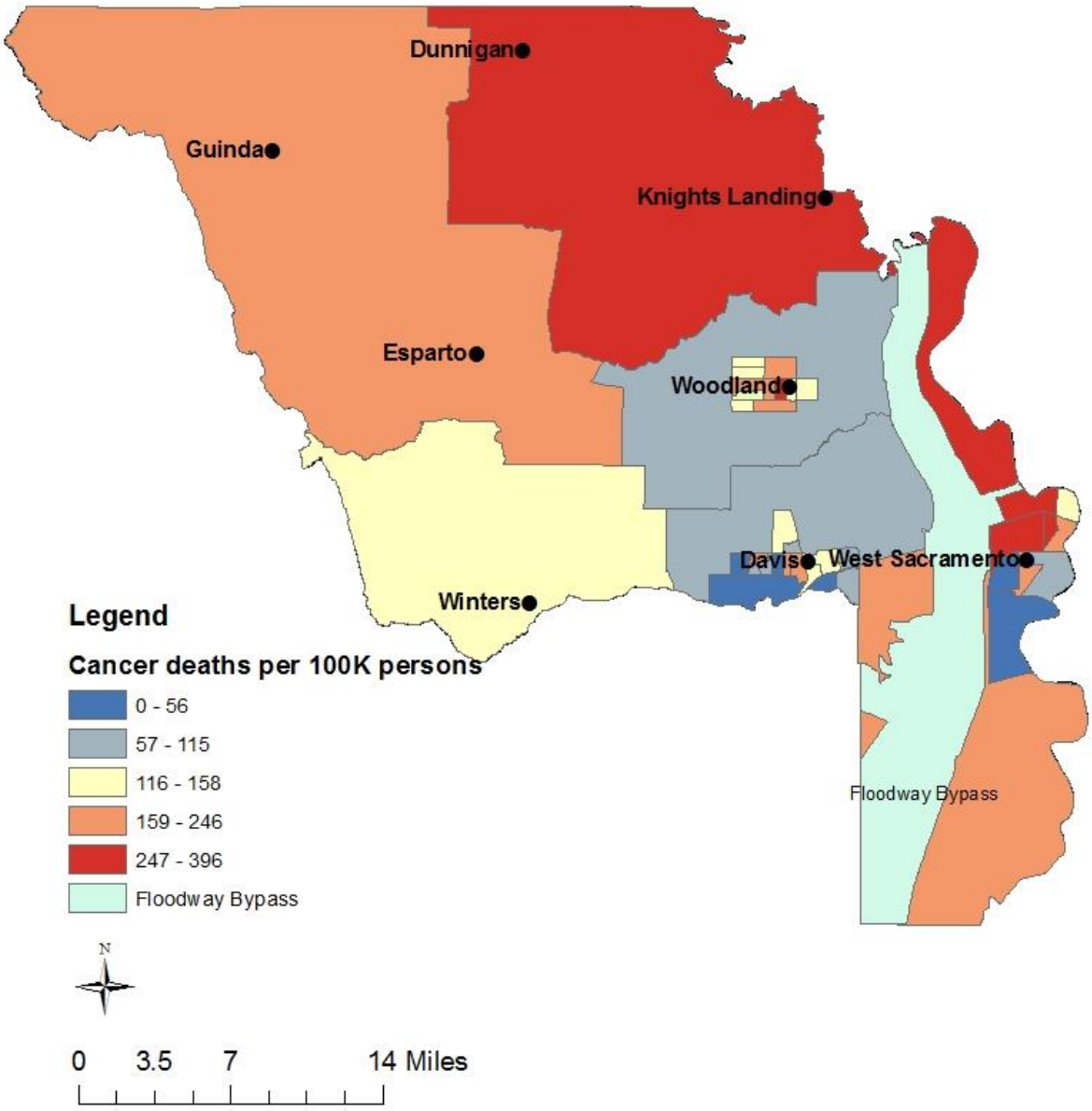
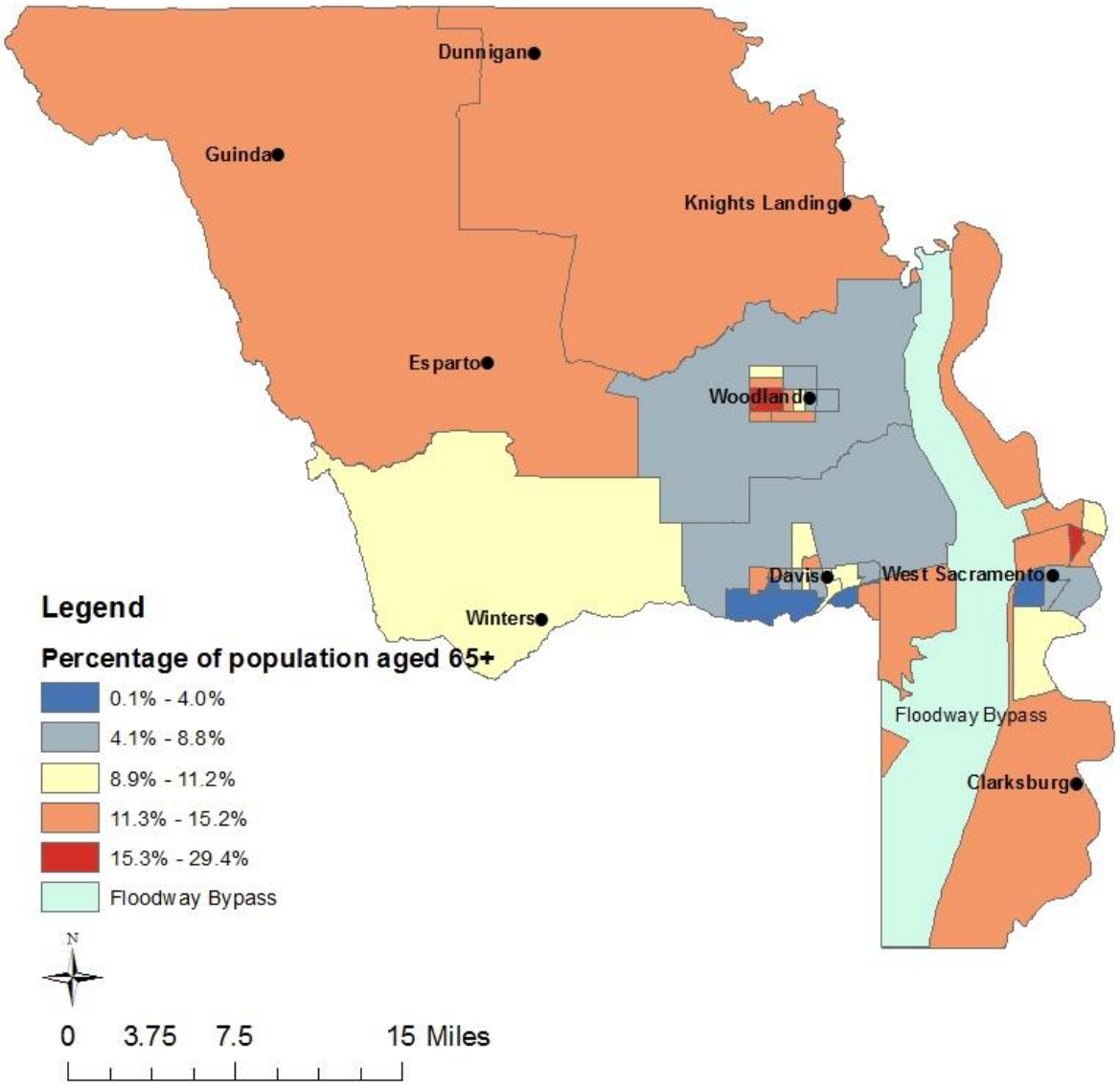


Figure 7. Percentage of the Population over 65 by Census Tract, Yolo County 2013.



MORTALITY DUE TO CHRONIC DISEASE

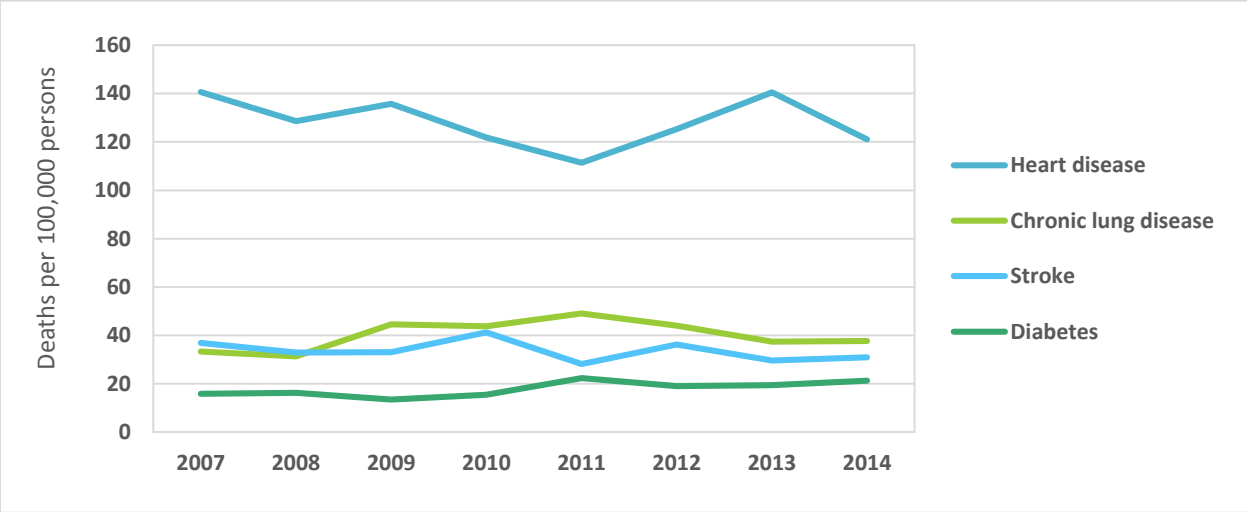
The top four causes of chronic disease deaths accounted for 437 (37%) of all deaths in the county. The leading cause of death due to chronic disease was heart disease (Table 12), which is a subset of deaths caused by diseases of the circulatory system, the leading cause of death in the county. In 2014, 251 (77%) of the 326 deaths caused by diseases of the circulatory system were from chronic heart conditions.

There were no upward or downward trends in rates due to the top causes of chronic disease death (Figure 8), although the rate for deaths directly attributed to diabetes has risen in the past eight years.

Table 12. Number of Deaths due to the Top Causes of Chronic Disease Death, Yolo County 2010-2014.

Cause of death of category	2010	2011	2012	2013	2014	Average/year
Chronic lung disease	88	99	90	77	78	86
Diabetes	31	45	39	40	44	40
Diabetes contributing to death	110	117	139	119	127	122
Heart disease	245	225	256	289	251	253
Stroke	83	57	74	61	64	68

Figure 8. Death Rates per 100,000 Persons due to Chronic Disease, 2007-2014 (Unadjusted for Age).



Deaths due to diseases of the circulatory system and respiratory system have significantly declined since 2000, shown by bolding in Table 13. The decrease in deaths related to diseases of the circulatory system suggests better treatment and management of chronic heart disease. Fewer deaths due to respiratory disease, particularly respiratory infections and influenza, may be a result of increasing immunization rates and an emphasis by medical providers on vaccinating the elderly every year against influenza.

Deaths related to diseases of the nervous system (highlighted in turquoise in Table 13) have quadrupled since the year 2000. This finding is most likely related to increasing numbers of deaths due to Alzheimer's and dementia, which affect the most aged individuals in the population.

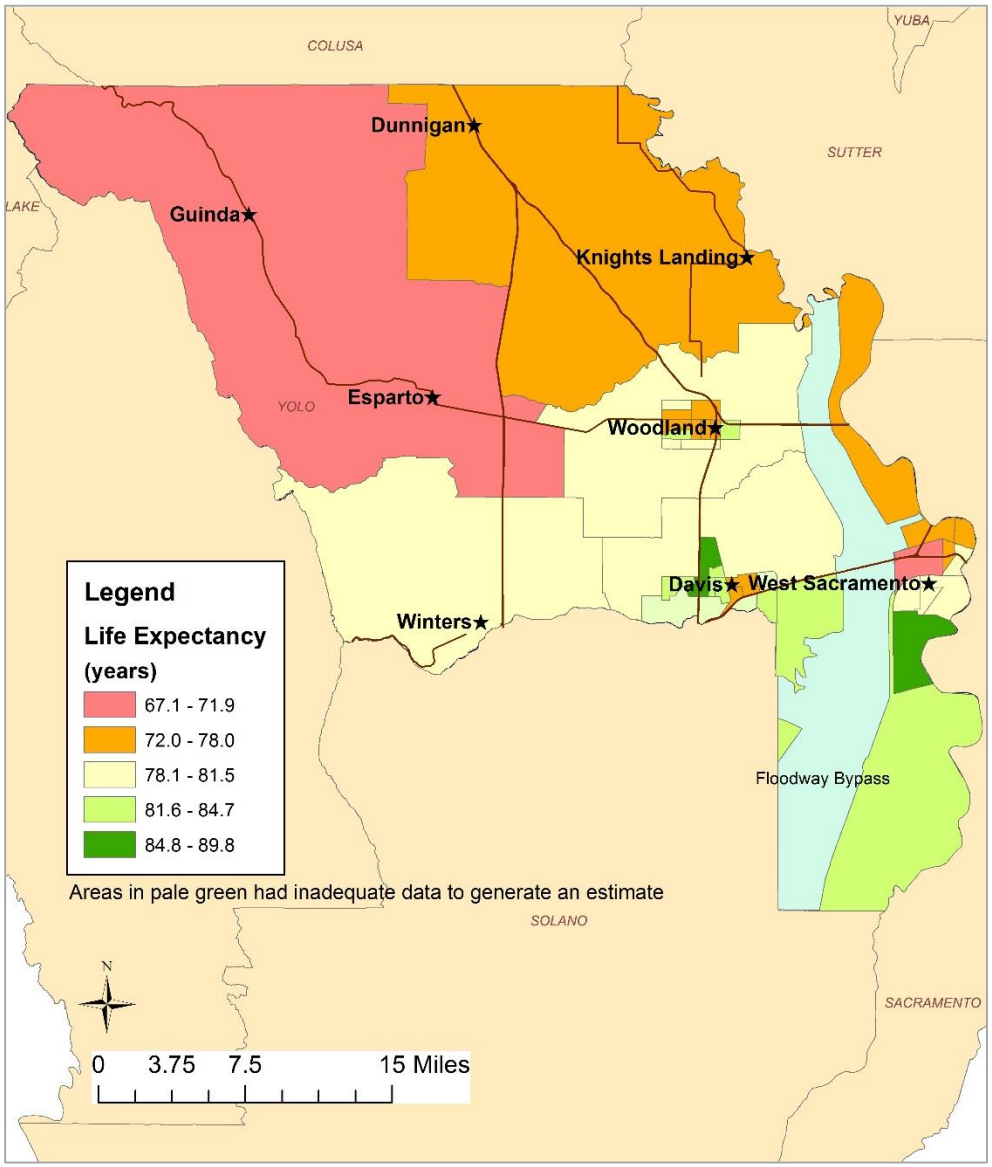
Table 13. Past and Present Grouped Causes of Death by Decade, Yolo County Residents, 1990-2014.

ICD-10 Code	Cause of Death Category	1990	2000	2010	2014	% 1990	% 2000	% 2010	% 2014
A00-B99	Infection (incl. TB)/parasitic diseases	11	18	31	19	1%	2%	3%	2%
C00-D48	Cancer (all types)	224	255	265	267	24%	24%	23%	23%
D50-D89	Disorders of blood and immune system	<5	<5	<10	<5	3%	0%	0%	0%
E00-E88	Endocrine, nutritional and metabolic including diabetes	23	38	48	64	2%	4%	4%	5%
F01-F99	Mental & behavioral disorders	6	18	36	40	6%	2%	3%	3%
G00-G98	Diseases of nervous system	15	41	96	103	**2%**	**4%**	**8%**	**9%**
H00-H93	Eye/ear diseases	0	0	0	0	0%	0%	0%	0%
I00-I99	Diseases of circulatory system incl. heart	355	372	341	326	**38%**	**35%**	**30%**	**27%**
J00-J98, U04	Diseases of respiratory system	131	136	140	126	**14%**	**13%**	**12%**	**11%**
J09-J22, U04	*Pneumonia/influenza/lower respiratory infections (subset of respiratory diseases)*	*63*	*51*	*33*	*25*	*7%*	*5%*	*3%*	*2%*
K00-K92	Diseases of digestive system	45	56	58	56	5%	5%	5%	5%
L00-L98	Diseases of skin/subcutaneous tissue	0	0	<5	<5	0%	0%	0%	0%
M00-M99	Diseases of musculoskeletal system incl. autoimmune	<5	<5	<10	<10	0.2%	0.4%	1%	1%
N00-N98	Diseases of genitourinary system	20	26	25	14	2%	2%	2%	1%
O00-O99	Pregnancy, childbirth & puerperium	0	<5	<5	<5	0%	0%	0%	0%
P00-P96	Conditions occurring in perinatal period	<10	10	<5	<5	1%	1%	0%	0%
Q00-Q99	Congenital (birth) defects	<10	<10	<5	<10	1%	1%	0%	1%
R00-R99	Conditions of infancy not elsewhere classified	11	<10	<10	<10	1%	1%	1%	1%
U01-03 V01-Y89	External causes of mortality incl. MV accidents, suicide & homicide	78	70	81	92	8%	7%	7%	8%
	Pending				46				4%
	Total	937	1063	1153	1186				

LIFE EXPECTANCY

Life expectancy was lowest in West Sacramento census tract 102.03 (67.1 years) and the Esparto area (71.9 years), depicted in Figure 9. It was also lower in census tracts on the north side of West Sacramento, near central Woodland, east of Davis, and in the rural northeastern county (Knights Landing-Dunnigan).

Figure 9. Life Expectancy by Census Tract using Deaths occurring from 2012-2014.



PREMATURE DEATH

Of the 5,940 deaths that occurred in 2010 to 2014, 2,472 (42%) were premature, i.e., in persons under the age of 75 (Table 14). Half of premature deaths were due to just two causes: cancer (30%) and diseases of the circulatory system and heart (21%). Deaths due to external causes, which include motor vehicle accidents, falls, homicides and suicides, were the third leading cause of premature death, representing 13% of all premature deaths.

Table 14. Leading Causes of Premature Death in Yolo County, 2010-2014.

Cause of Death for Premature Death*	No. 2010-2014	Ranking	% of all Deaths
Cancer (all types)	734	1	30%
Diseases of circulatory system incl. heart	531	2	21%
External causes of mortality**	323	3	13%
Diseases of respiratory system	230	4	9%
All other causes	654	n/a	26%
Total	2472		

*Death at age less than 75 years old.
**Accidents (including motor vehicle), falls, homicide and suicide.

Table 15 shows that cancer is the main cause of premature death in Yolo County, whereas diseases of the circulatory system and heart are the leading cause of all deaths. External causes of mortality also represent a much higher proportion of premature deaths than all deaths. Diseases of the nervous system, which particularly reflect deaths in the elderly related to dementia and Alzheimer's, are the fourth most common cause of death in the population overall.

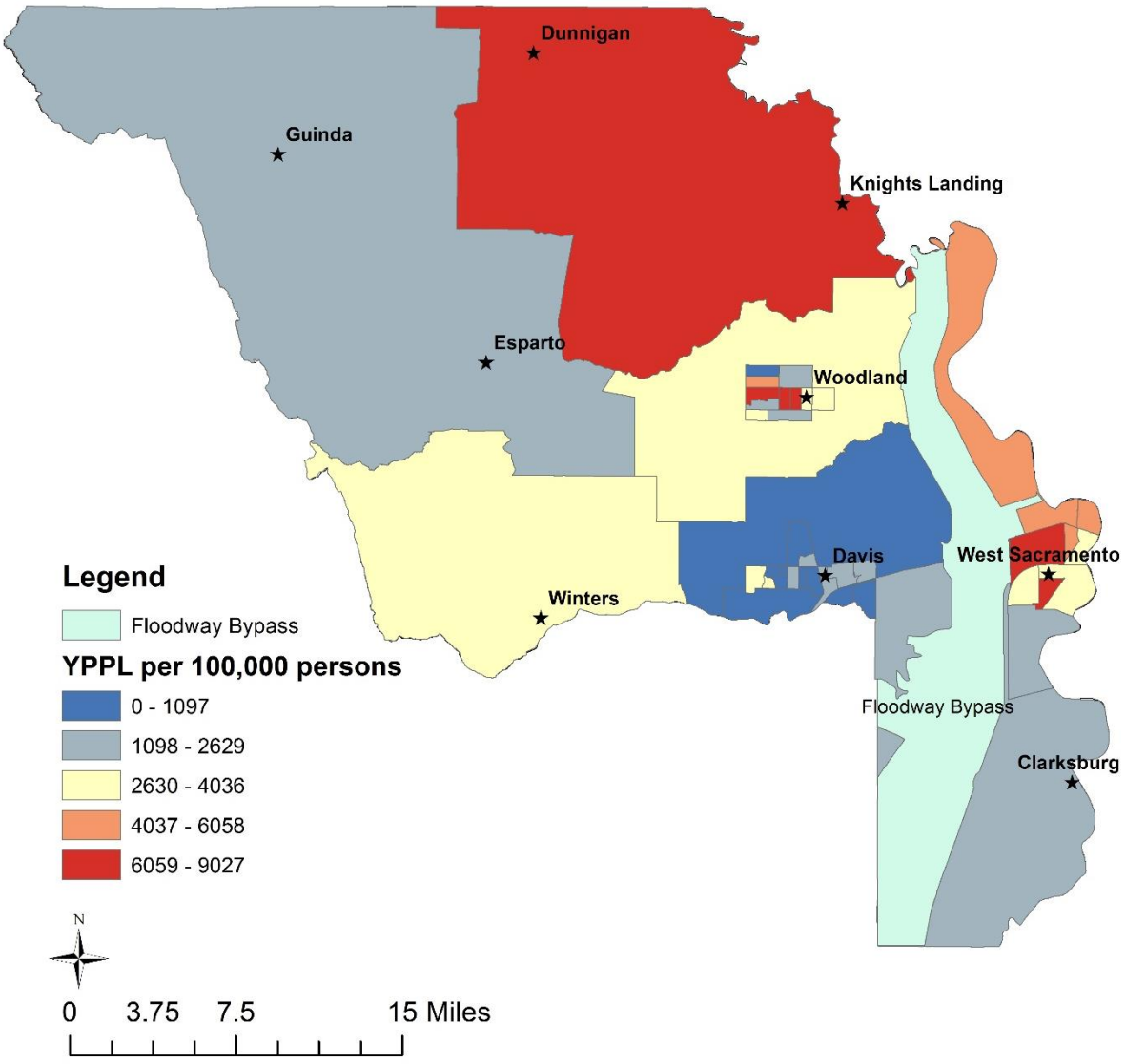
Table 15. Comparison of All Causes of Deaths vs. Premature Death, Yolo County 2010-2014.

Rank	All Deaths	Rank	Premature Deaths
1	Diseases of circulatory system incl. heart	1	Cancer (all types)
2	Cancer (all types)	2	Diseases of circulatory system incl. heart
3	Diseases of respiratory system	3	External causes of mortality
4	Diseases of nervous system	4	Diseases of respiratory system

Another way to measure premature death is to evaluate the Years of Potential Life Lost (YPLL) before the age of 75. This measure is calculated by subtracting the actual age at death from 75, so a person who died at age 55 has a YPLL value of 20. The higher the YPLL, the earlier the death occurred. YPLL rates per 100,000 population can be calculated to compare differences by race-ethnicity and geography, with higher rates indicating more people dying at a younger age. Census tracts with the highest YPLL per 100,000 in 2014 (Figure 10) in general corresponded with the life expectancies depicted in Figure 9. They are not strictly comparable since the life expectancy calculations used three years of death data, the minimum required to compute reliable estimates.

Figure 10 below shows that more residents die at a younger age in northeastern areas of the county, in parts of the city of West Sacramento, and in western and central Woodland than in other regions. In contrast, areas around the cities of Davis and Winters and in the northwestern region of the county have low rates of premature deaths.

Figure 10. Years of Potential Life Lost (YPLL) in Yolo County by Census Tract, 2014.



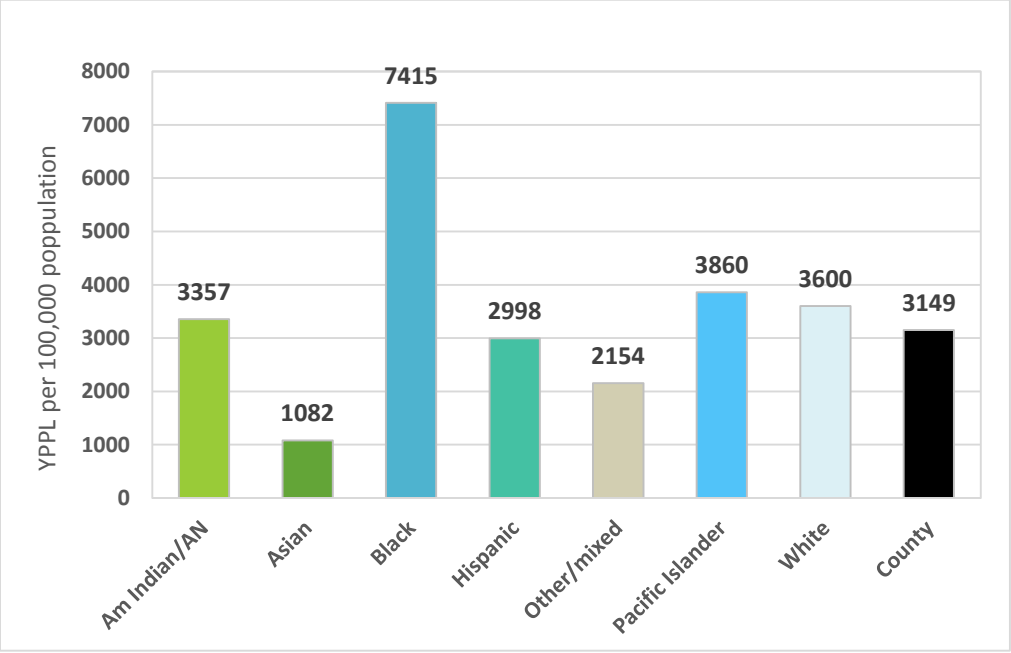
The overall YPLL rate for Yolo County deaths in 2014 was 3,149 YPLL per 100,000 persons. Table 16 and Figure 11 show that Black residents were most likely to die at a younger age, with a YPLL rate almost twice that of any other racial or ethnic group. In contrast, Asian residents were least likely to die prematurely.

Table 16. Years of Potential Life Lost (YPLL) per 100,000 Persons by Race-Ethnicity, 2014.

Race-Ethnicity	YPLL 2014	Estimated Population (DOF 2014)	YPLL per 100K
Am Ind/AN*	38	1132	3357
Asian	290	26797	1082
Black	446	6015	7415
Hispanic	1914	63840	2998
Other/mixed	157	7289	2154
Pacific Islander	33	855	3860
White	3658	101605	3600
County	6536	207533	3149

**American Indian/Alaska Native*

Figure 11. Years of Potential Life Lost per 100,000 Persons, Yolo County 2014.



SUMMARY AND CONCLUSIONS

The leading causes of death in Yolo County were similar to the leading causes of death statewide. The majority of deaths were caused by chronic disease, especially in persons under age 65. Four chronic conditions alone—heart disease, chronic lung disease, stroke and diabetes—accounted for 37% of deaths in 2014. Many such deaths may be prevented through environmental changes that promote a healthy lifestyle, such as safe locations to exercise, interconnected parks and trails, active transportation options such as walking and biking, and living near stores that sell fresh produce. Better management of chronic conditions also can increase life expectancy. New provisions of the Affordable Care Act incentivize providers to improve routine monitoring and encourage active self-management of chronic conditions. The long-term effects of community transformation and improved access to healthcare are yet to be determined.

Diseases related to the circulatory system caused more than one-fourth (27%) of all deaths in Yolo County in 2014. Chronic heart disease represented 77% (about three-quarters) of all causes of death related to the circulatory system. Heart disease was the second leading cause of premature death, comprising 21% of all premature deaths.

Cancer death rates have remained relatively stable over time. Cancer of any site was the second leading cause of death overall in 2014 and the primary cause of premature death, representing 30% of all premature deaths. The leading causes of site-specific cancer death were lung, colorectal and pancreatic cancers. Age-adjusted death rates for lung and colorectal cancers from 2010 to 2013 in Yolo County were slightly lower than the statewide rate. In contrast, the death rate in the same time period for pancreatic cancer was somewhat higher than the state.

In the last year for which data were available (2013), Yolo County's overall death rate from cancer, at 161 deaths per 100,000 persons, was higher than the statewide rate of 147 per 100,000. This may be a reflection of unhealthy lifestyles, poorer management of chronic conditions, or other unrecognized environmental factors. Deaths due to cancer occurred disproportionately in rural northern areas of the county, in eastern Yolo County (in and around West Sacramento) and in one census tract on the east side of Woodland.

When compared to the state, the death rate in Yolo County due to chronic obstructive pulmonary disease (COPD) is also elevated. Higher levels of particulate matter and pollutants in the air exacerbate COPD and increase the risk for death. Traffic contributes to air pollution, and two major highways intersect the county, namely Interstate 5 and Highway 80. These two routes carry approximately 50,000 and 150,000 vehicles, respectively, per day in each direction (http://traffic-counts.dot.ca.gov/2013all/).

About 4% of all deaths were due to diabetes. Death rates for diabetes have been edging upward over the past eight years, and deaths with diabetes as a contributing factor approximately equal the number of deaths directly attributable to diabetes. Management of this chronic condition should continue to be a priority for patients and healthcare providers.

Infant and young adult death rates remain much lower than the state. However, the number of childhood deaths (age 1 to 14) were higher in 2013 and 2014 than the previous two years (only 3 in 2011

and 2012 vs. 10 in 2013 and 2014). In contrast to prior years, Yolo County's childhood death rate in 2013 and 2014 has been similar to the state.

Deaths due to influenza, pneumonia and infectious respiratory diseases have declined by 44% from a high of 45 in 2011 to 25 in 2014. There were on average 45 deaths per year in the three years prior to 2010 (2007 to 2009), when pandemic H1N1 pandemic flu was at its zenith. Most deaths in 2011 due to infectious respiratory diseases occurred early in 2011 (in the 2010-11 flu season). Public health efforts have focused on vaccinating seniors and young children at free flu clinics before and during flu season, and mandating that healthcare workers be vaccinated against influenza or don masks while providing patient care during flu season. The flu clinics offered in Yolo County are open to all residents. Increasing the percentage of residents immunized against influenza also protects the most vulnerable (the very young and the aged) from contracting influenza. The county's public health efforts to mass-vaccinate the public appear to be having their intended effect by reducing infection and consequently deaths from respiratory disease in Yolo County.

It is clear that geography plays a role in health outcomes for Yolo County residents, since life expectancy varied by census tract from a low of 67.1 years in the northwest county (Esparto-Guinda) to a high of 89.8 years in one of the Davis census tracts. Life expectancy is closely correlated with social determinants of health such as educational attainment, household income, quality of housing and neighborhood safety. Many of the factors that contribute to a longer life are lacking in the neighborhoods with the lowest life expectancies. Strategies that make healthy living easier and more affordable where people live, learn, work and play will be needed to improve the quality of life and increase the life span in these neighborhoods.