

INTRODUCTION

Currently, an estimated 1.9 million people are living with limb loss in the United States. Of those persons living with limb loss, 54% lost their limb(s) due to complications related to vascular disease – including diabetes and peripheral arterial disease – 45% lost their limb(s) due to a traumatic accident and less than 2% had an amputation due to cancer. Non-whites comprise about 42% of the limb loss population in the United States. The number of persons living with limb loss in the United States is expected to double by 2050 due to increasing rates of diabetes and vascular disease. (1)

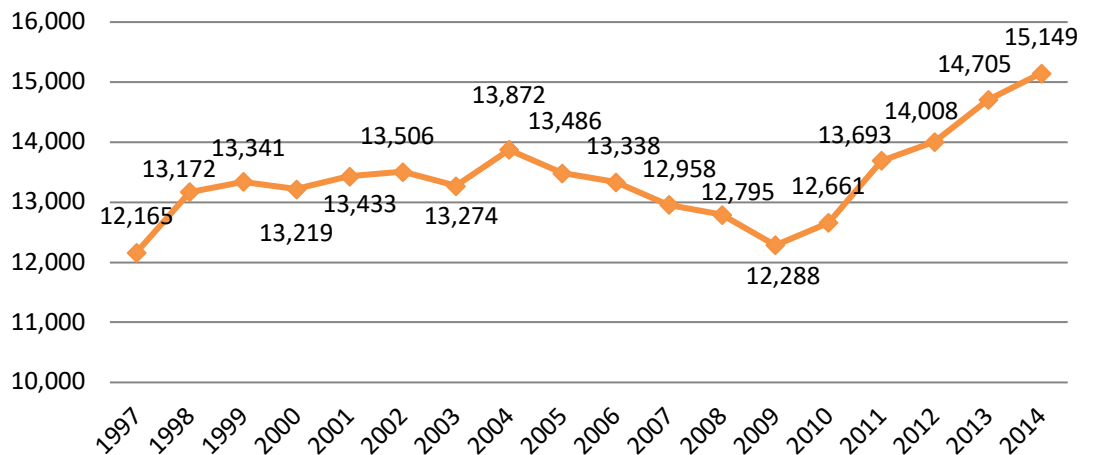
Each year an estimated 185,000 amputation procedures are performed in the United States (2). The leading causes of amputation among adults are vascular disease – including complications related to diabetes and peripheral arterial disease - trauma, and cancer. According to the Centers for Disease Control and Prevention, in 2009 there were 68,000 amputations due to complications related to diabetes (3).

A total of 15,149 amputations were performed in California hospitals in 2014. This Fact Sheet highlights the trends and most current incidence of amputation in California.

1. AMPUTATION TRENDS

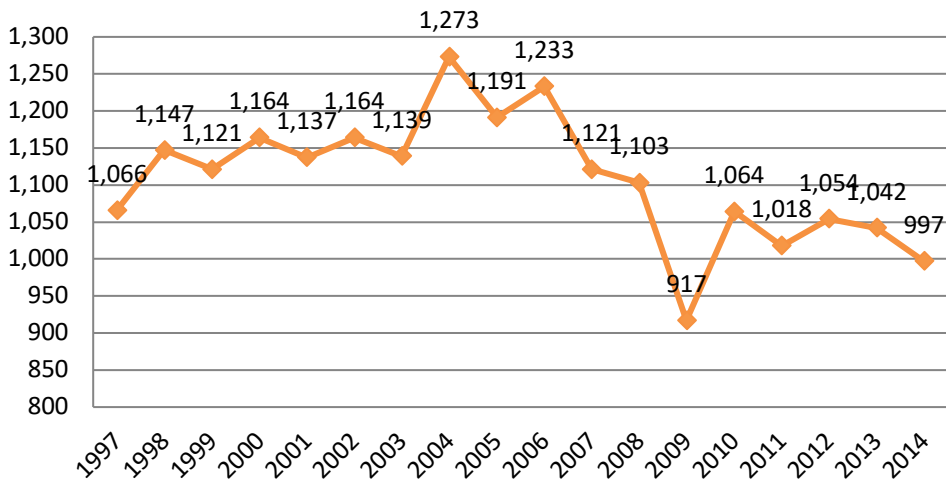
**1.1: Amputation Trends,
California (1997-2014)**

According to hospital discharge data, the number of amputations performed in California increased by 24.53% from 1997 to 2014 (See Graph 1.1). A total of 241,063 amputation procedures were performed in California from 1997 - 2014.



Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

1.2: Upper-Extremity Amputation Trends, California (1997-2014)

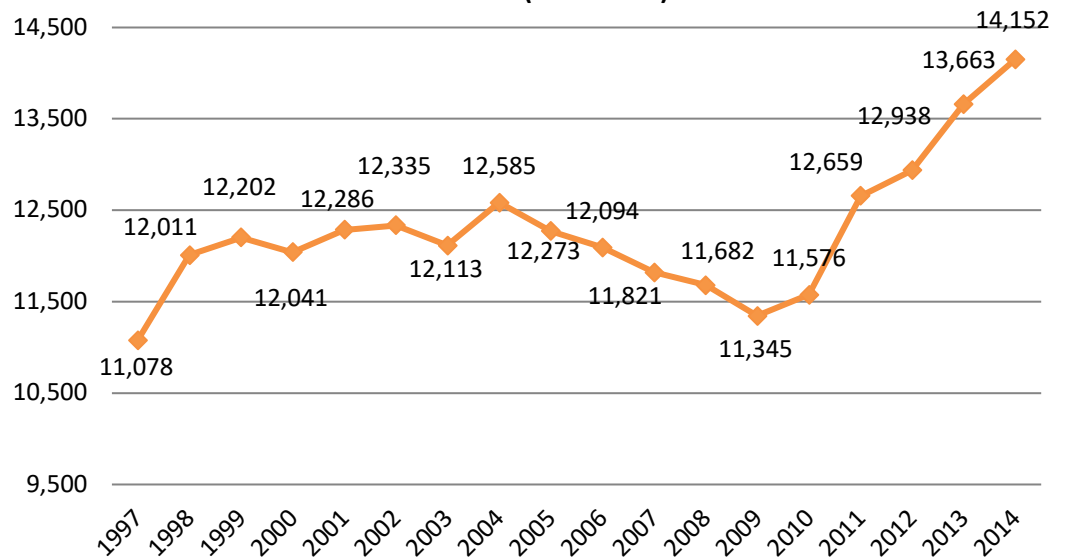


From 1997 to 2014, a total of 19,951 upper limb amputation procedures were performed in the state of California. This represents 6.47% decrease of upper-extremity amputations performed in the state during this time period. (See Graph 1.2).

Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

1.3: Lower-Extremity Amputation Trends, California (1997-2014)

From 1997 to 2014, a total of 220,854 lower limb amputation procedures were performed in the state of California. Since 1997, the number of lower limb amputations in California has increased by 27.75% (See Graph 1.3).

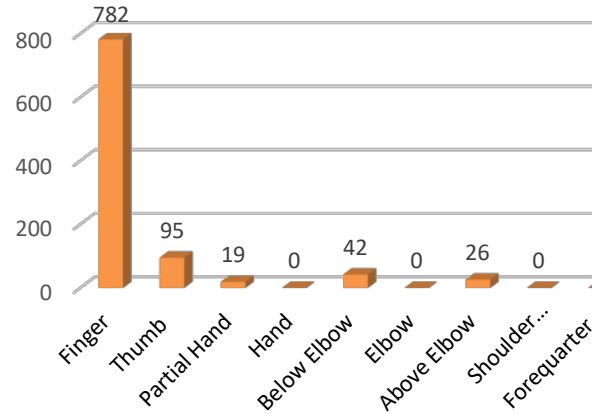


Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

2. INCIDENCE OF AMPUTATION

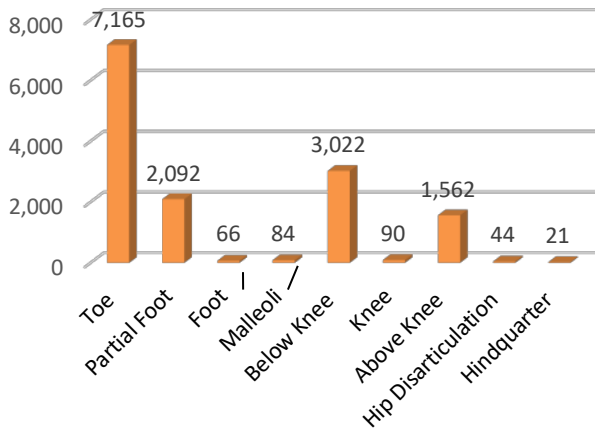
A total of 964 upper limb amputations were performed in California in 2014. Most upper limb amputations involved the fingers (782). Below elbow amputations were the most common (42) major upper limb amputation procedures performed in the state of California in 2014. (See Graph 2.1)

2.1: Upper-Extremity Amputations, California (2014)



Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

2.2: Lower-Extremity Amputations, California (2014)



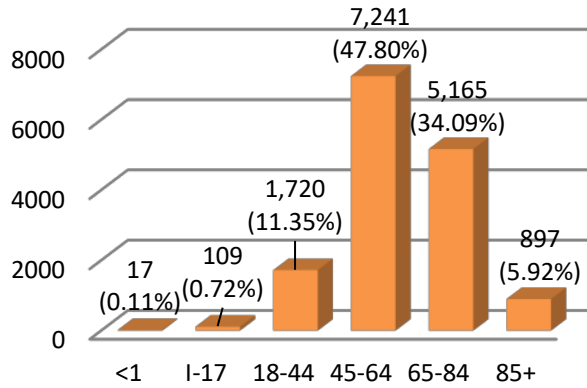
A total of 14,146 lower limb amputation procedures were performed in California in 2014. Most involved the toes (7,165). Below knee amputations accounted for the most (3,022) major lower limb amputations. (See Graph 2.2)

Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

3. WHO LOSES A LIMB? (2014)

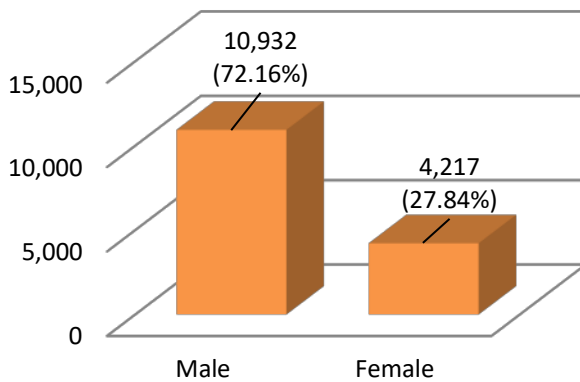
In 2014, most amputations in California were performed on individuals aged 45-64 years old (7,241) followed by the age group of 65-84 year olds (5,165). (See Graph 3.1)

3.1: Amputations by Age Group, California (2014)



Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

3.2: Amputations by Sex, California (2014)

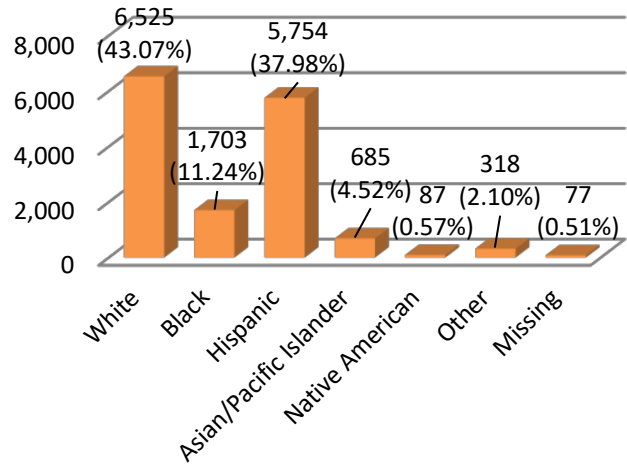


There more than two times more amputations performed on male patients in California in 2014 than on female patients (See Graph 3.2).

Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

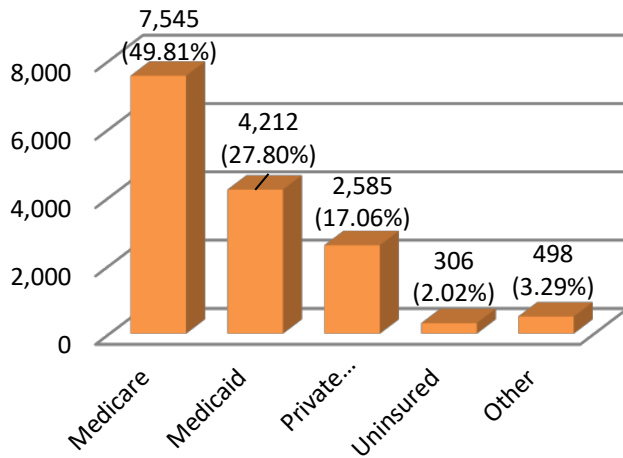
3.3: Amputations by Race/Ethnicity, California (2014)

In 2014 most of the amputations in the state of California were performed on patients who were White (43.07%), Hispanic (37.98%), or African American (11.24%). (See Graph 3.3)



Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

3.4: Amputations by Payer Type, California (2014)



Medicare recipients ranked as the most common group to have an amputation procedure (See Graph 3.4).

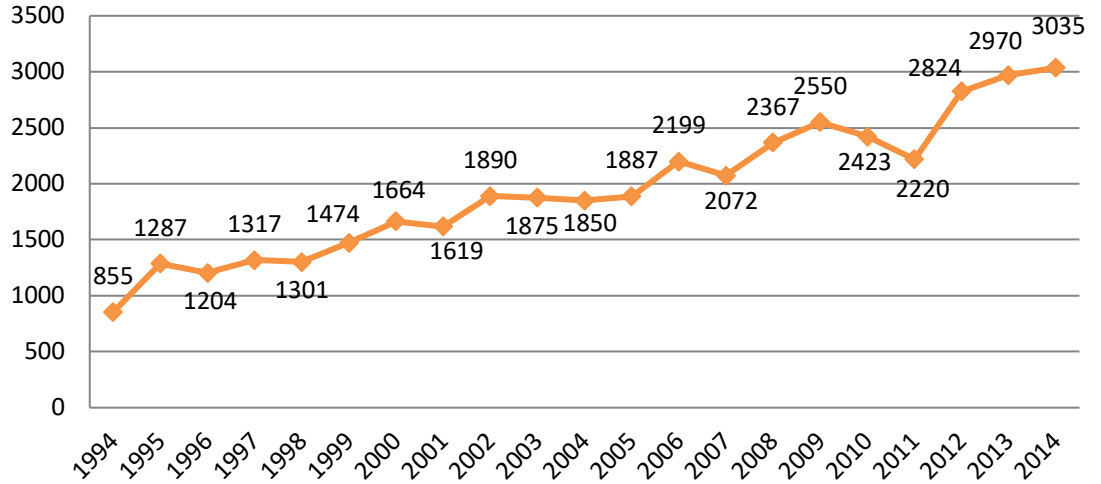
Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

4. DIABETES TRENDS

Diabetes is a leading cause of lower-extremity amputations.

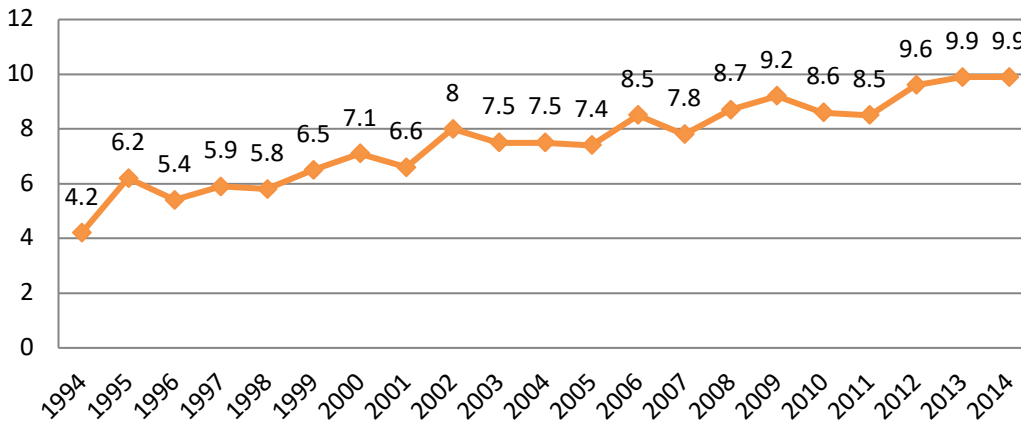
In 2014, a total of 3,035,373 Californians indicated that they had been diagnosed with diabetes at some point in their lives. The prevalence of diabetes in the adult population of California increased 255% from 1994 to 2014. (See Graph 4.1)

4.1: Diabetes Trends (in thousands; 18+), California (2014)



Source: CDC Behavioral Risk Factor Surveillance System <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>

4.2: Existing Diabetes per 100 Adults (18+), California (2014)



The annual rate of existing cases of diabetes among adults in California increased 135.7% from 1994 to 2014. (See Graph 4.2)

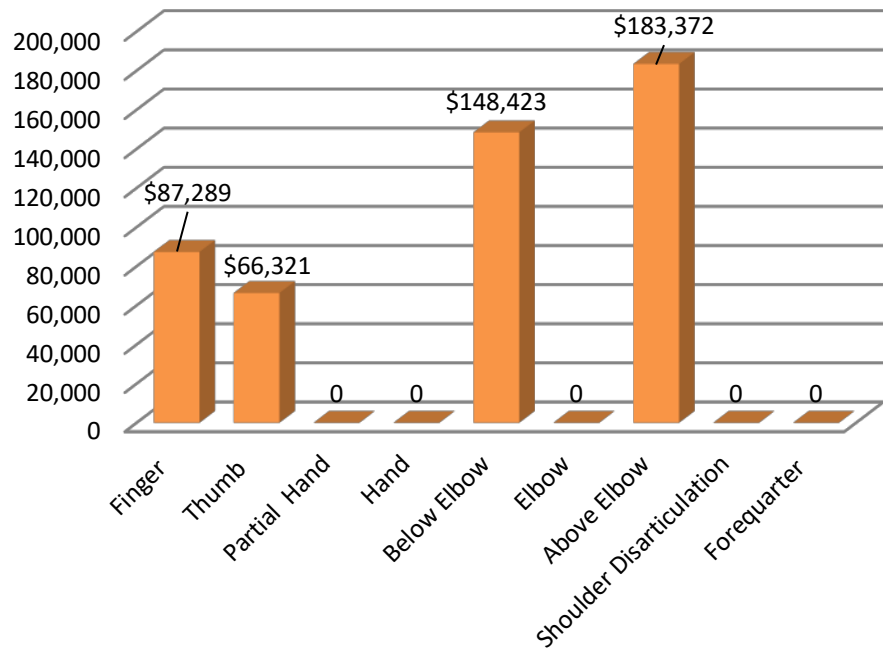
Source: CDC Behavioral Risk Factor Surveillance System <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>

5. HEALTHCARE COSTS

For persons with a unilateral lower-extremity amputation, the two year healthcare costs, including initial hospitalization, inpatient rehabilitation, outpatient physical therapy, and purchase and maintenance of a prosthetic device, is estimated to be \$91,106. The lifetime healthcare cost for persons with a unilateral lower extremity amputation is estimated to be more than \$500,000 (4). It is anticipated that these healthcare costs would be higher for a person with a proximal amputation level and bilateral amputation status, due to higher prosthetic costs

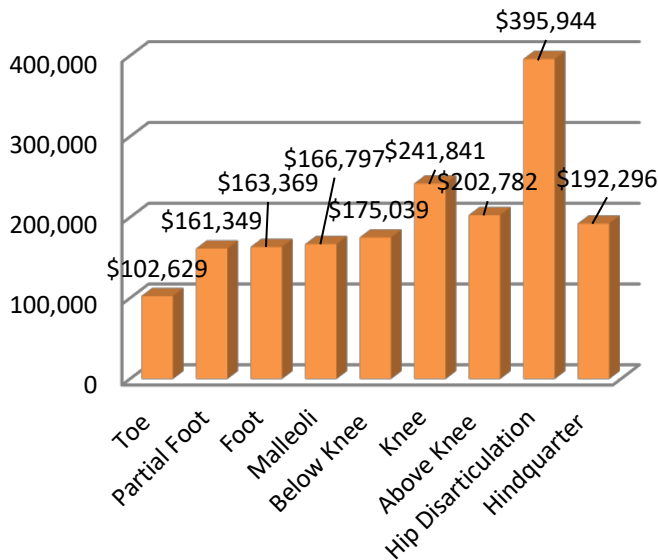
Charges represent what the hospital billed for the case, and may not represent all discharges for amputations. (See Graph 5.1

5.1: Overall Healthcare Charges for Upper-Extremity Amputations, California (2014)



Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

5.2: Overall Healthcare Charges for Lower-Extremity Amputations, California (2014)



Charges represent what the hospital billed for the case, and may not represent all discharges for amputations. (See Graph 5.2)

Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

6. REFERENCES

1. Ziegler-Graham K, MacKenzie EJ, Ephraim PL, Trivison TG, Brookmeyer R. Estimating the prevalence of limb loss in the United States: 2005 to 2050. *Archives of Physical Medicine and Rehabilitation* 2008;89(3):422-9.
2. Owings MF. Ambulatory Procedures in the US 1996. *National Center for Health Statistics Vital Health Stat* 1998;13(139).
3. NCFHS CfDCaP. Number (in Thousands) of Hospital Discharges for Nontraumatic Lower Extremity Amputation with Diabetes as a Listed Diagnosis, United States, 1988–2009. 2012.
4. MacKenzie EJ. Health-Care Costs Associated with Amputation or Reconstruction of a Limb-Threatening Injury. *The Journal of Bone and Joint Surgery (American)* 2007;89(8):1685.