

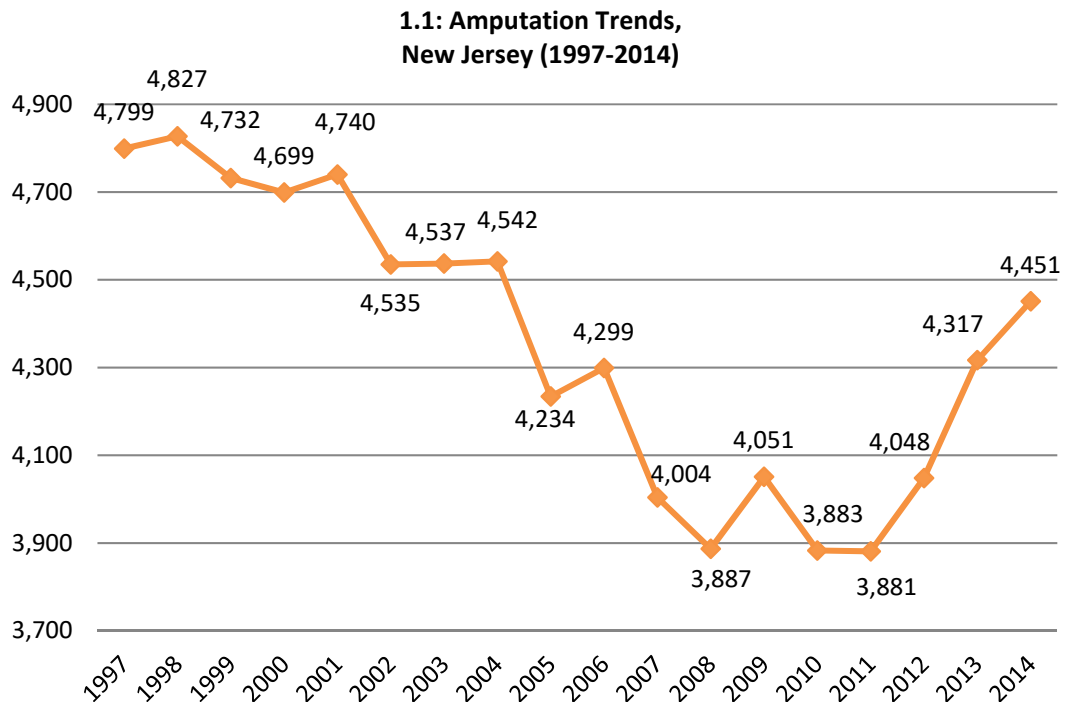
INTRODUCTION

Currently, 1.9 million people are living with limb loss in the United States, with an average of 507 people continuing to lose a limb every day. This results in an estimated 185,000 amputations per year (1), and this number is expected to double by the year 2050 due to increasing rates of diabetes and vascular disease (1). Among those living with limb loss, the major causes of their amputations are vascular disease (54%) – including diabetes and peripheral arterial disease – trauma (45%) and cancer (less than 2%) (2). The most common causes of pediatric amputations, however, are lawn mower accidents (3). Non-whites comprise about 42% of the limb loss population in the U.S. (1). In 2008, the diabetes related amputation rate among African Americans was nearly four times that of whites (4).

A total of 4,451 amputations were performed in New Jersey hospitals in 2014. These amputations were performed for a variety of reasons, including diabetes and peripheral arterial disease complications. The following information details the trends and most current rates of amputation and diabetes in New Jersey.

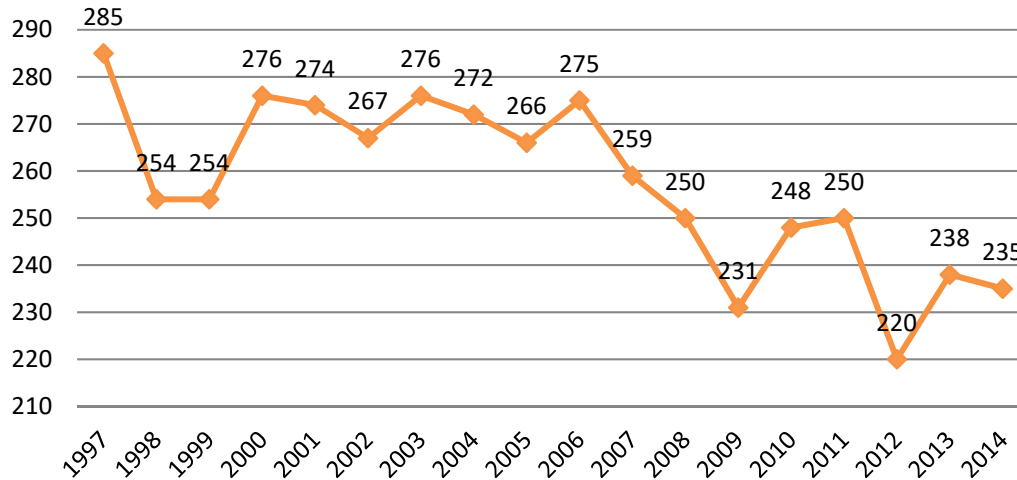
1. AMPUTATION TRENDS OVER TIME

According to hospital discharge data, there was an overall 7.25% decrease in total amputations performed in New Jersey from 1997-2014. A total of 78,466 amputations were performed in this time period. Amputations per year dropped to 3,881 in 2011 and were at their highest at 4,827 in 1988. (See Graph 1.1)



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

**1.2: Upper-Extremity Amputation Trends,
New Jersey (1997-2014)**

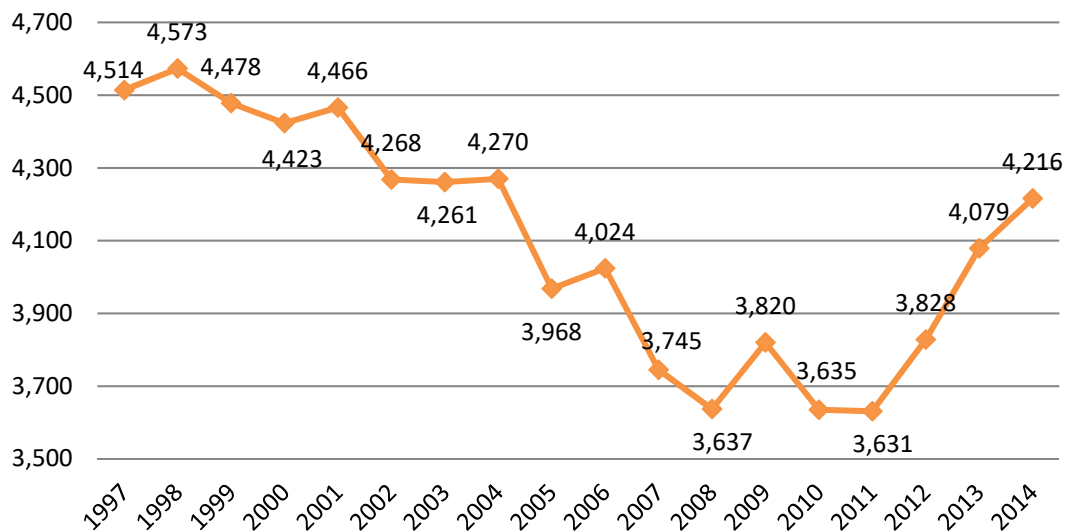


The number of upper-extremity amputations performed each year ultimately decreased 17.54% from 1997 to 2014. A total of 4,630 upper-extremity amputations were performed in this time period. The highest incidence of these amputations (285) occurred in 1997, while 2012 saw the least upper-extremity amputations (220) in 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,
New Jersey (1997-2014)**

The number of lower-extremity amputations performed each year ultimately decreased 6.6% from 1997 to 2014. A total of 73,836 lower-extremity amputations were performed in this time period. The lowest of these occurred in 2011 (3,631) and the highest in 1998 (4,573). (See Graph 1.3)

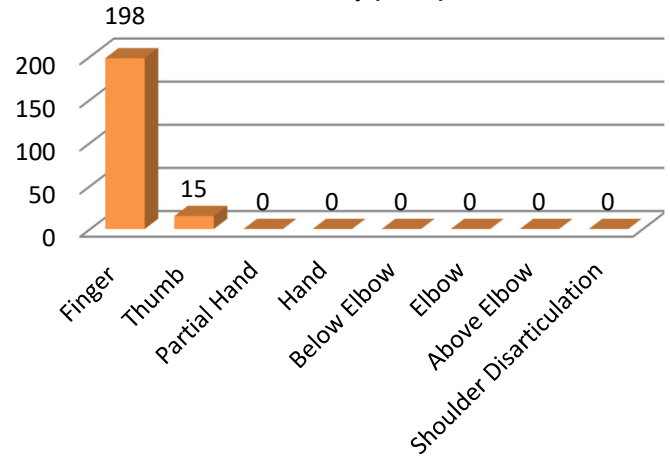


Source: Healthcare Cost and Utilization Project HCUPnet database <http://hcupnet.ahrq.gov/>

2. TYPES OF AMPUTATIONS PERFORMED

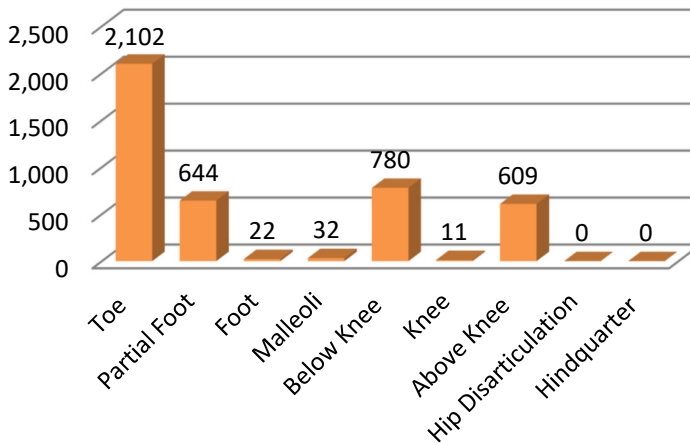
213 upper-extremity amputation types were recorded in 2014. The most common minor upper-extremity amputations were of the fingers (198) and records indicate that no major upper-extremity procedures were performed. (See Graph 2.1)

2.1: Upper-Extremity Amputations, New Jersey (2014)



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

2.2: Lower-Extremity Amputations, New Jersey (2014)



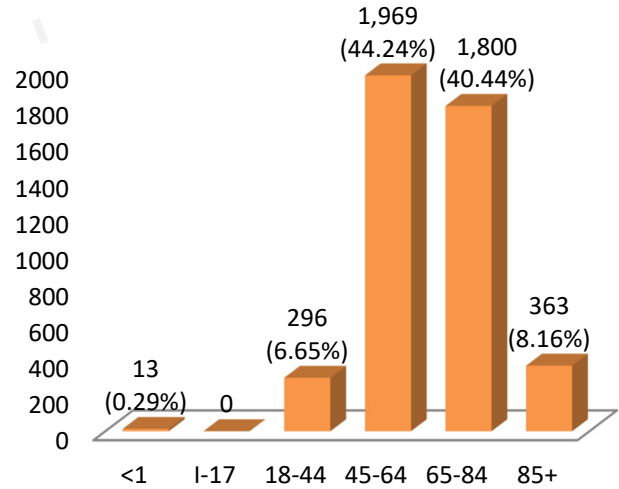
4,200 lower-extremity amputations were performed in 2014. In terms of minor lower-extremity amputations, toes (2,102) were amputated more often than part of the foot (644). For major lower-extremity amputations, below-knee (780) amputation was the most common procedure. (See Graph 2.2)

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

3. WHO LOSES A LIMB?

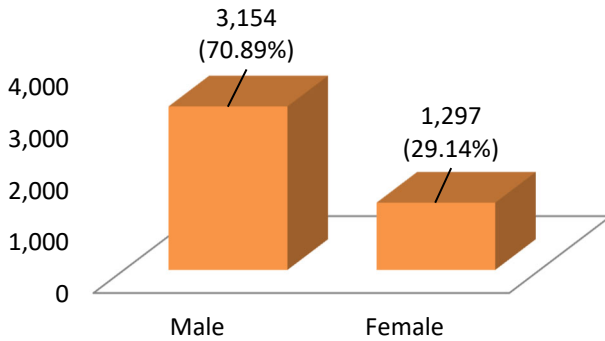
In 2014, most amputations were performed on individuals aged 45-64 years old, followed closely by the age group of 65-84 year olds (See Graph 3.1).

3.1: Amputations by Age Group, New Jersey (2014)



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

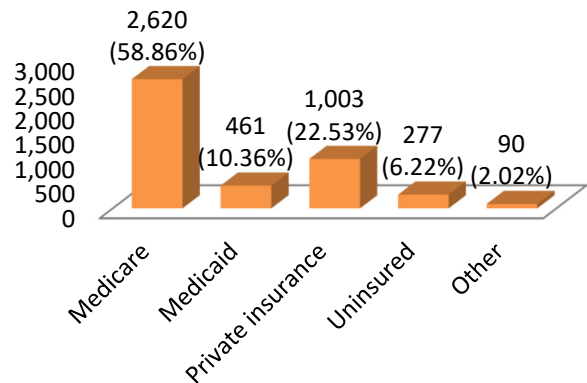
3.2: Amputations by Sex, New Jersey (2014)



There were nearly 2.5 times more amputations performed on male patients in New Jersey than on female patients (See Graph 3.2).

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

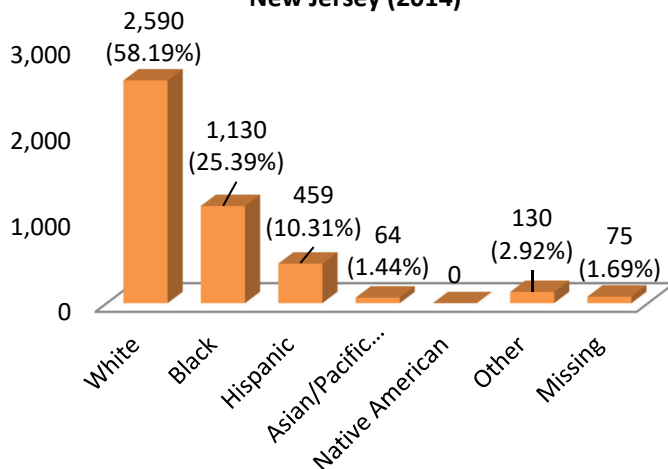
3.3: Amputations by Payer Type, New Jersey (2014)



Medicare recipients (58.86%) ranked as the most common group to have an amputation procedure, followed by private insurance (22.53%) (See Graph 3.3).

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

3.4: Amputations by Race/Ethnicity, New Jersey (2014)



We can see that the African American population of New Jersey bears the heaviest burden of amputation (0.094% of the African American population underwent amputations). This is evident when compared with the percentage of the white population that underwent amputations (0.043%), and with amputations in the state's population as a whole (0.05%). (See Graph 3.4)

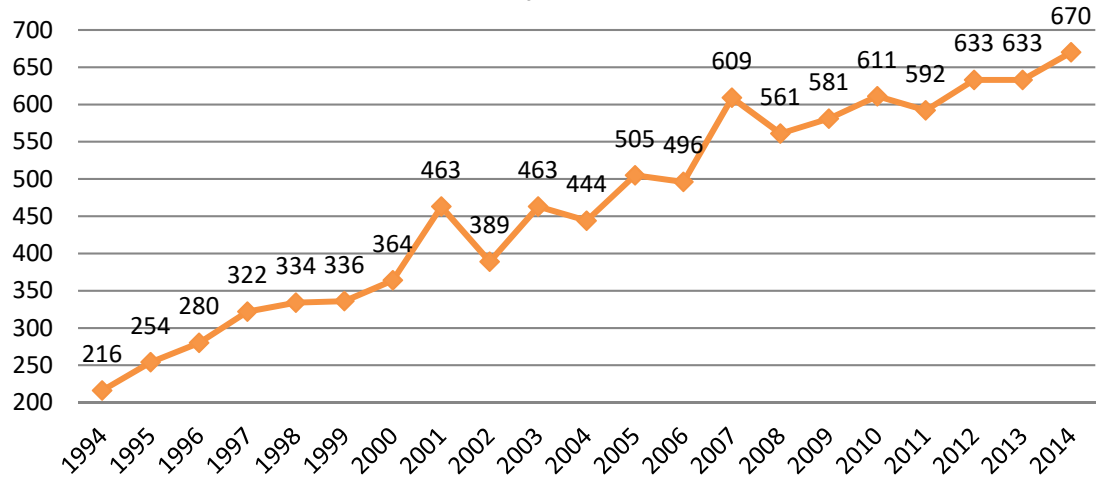
Source: Healthcare Cost and Utilization Project HCUPnet database
<http://hcupnet.ahrq.gov/>

* According to Census Bureau estimation data (<http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?sr=c=bkmk>) the population of New Jersey in 2014 had 8,874,374 citizens and consisted of 6,094,052 white residents and 1,201,339 African American residents.

4. DIABETES TRENDS

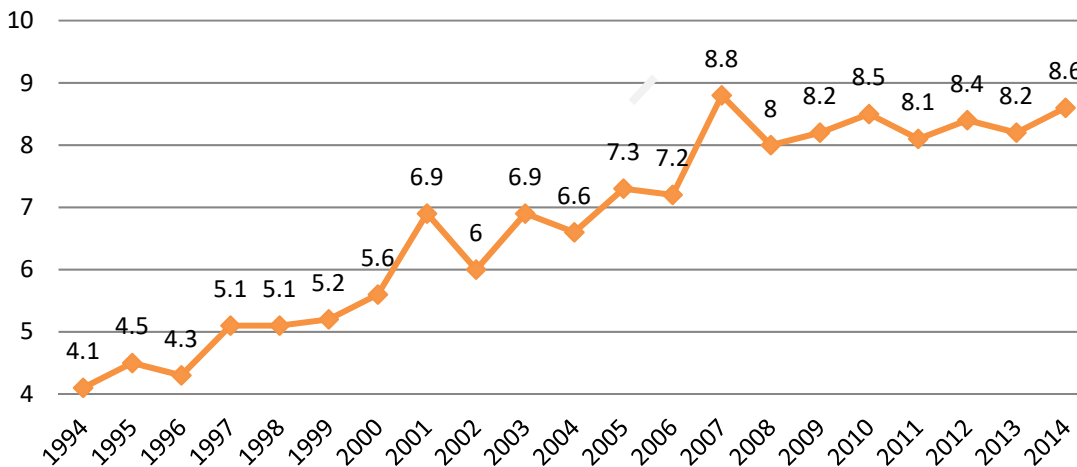
**4.1: Diabetes Cases (in thousands; 18+),
New Jersey (1994-2014)**

In 2014, a total of 669,861 New Jersey residents indicated that they had been diagnosed with diabetes at some point in their lives. The prevalence of diabetes in the population of New Jersey increased 210.2% from 1994 to 2014. (See Graph 4.1)



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

**4.2: Existing Diabetes Cases per 100 Adults (18+),
New Jersey (1994-2014)**



The annual rate of existing cases of diabetes among adults in New Jersey increased 109.8% from 1994 to 2014. (See Graph 4.2)

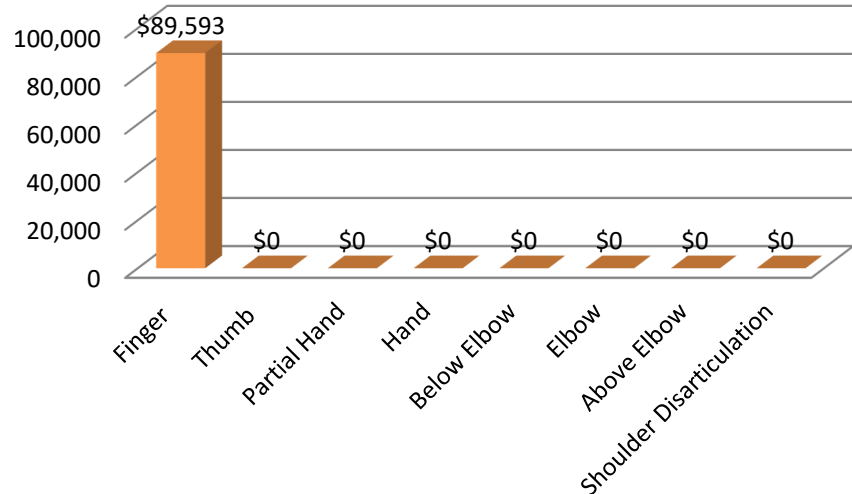
Source: CDC Behavioral Risk Factor Surveillance System <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>

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 (5). 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.

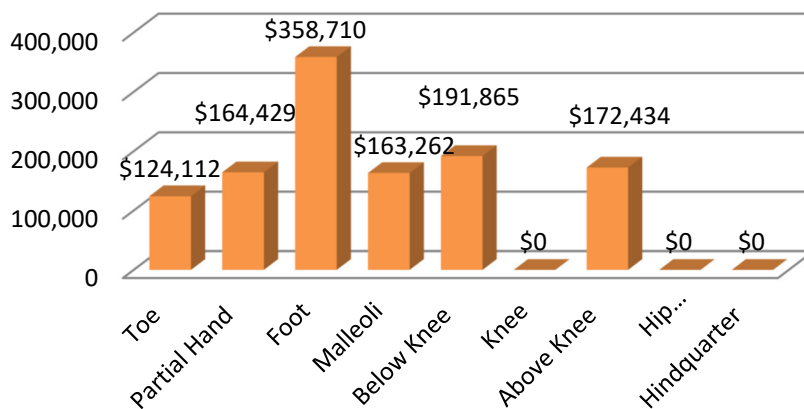
Charges represent what the hospital billed for the case, and may not represent all discharges for amputations. (See graph 5.1)

5.1: Overall Hospital Charges for Upper-Extremity Amputations, New Jersey (2014)



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

5.2: Overall Hospital Charges for Lower-Extremity Amputations, New Jersey (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, Travison 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.
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