Fact Sheet — Minnesota

INTRODUCTION

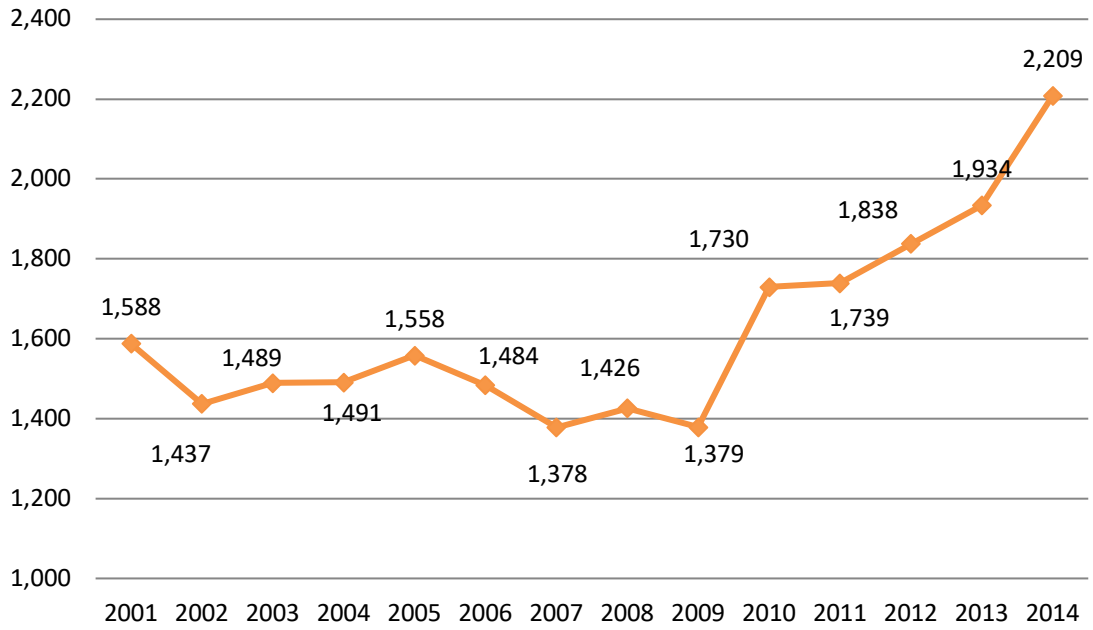
Currently, 1.9 million people are living with limb loss in the United States, with an average of 507 people continuing to lose a limb every day. This results in an estimated 185,000 amputations per year (1), and this number is expected to double by the year 2050 due to increasing rates of diabetes and 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 2,209 amputations were performed in Minnesota 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 Minnesota.

1. AMPUTATION TRENDS OVER TIME

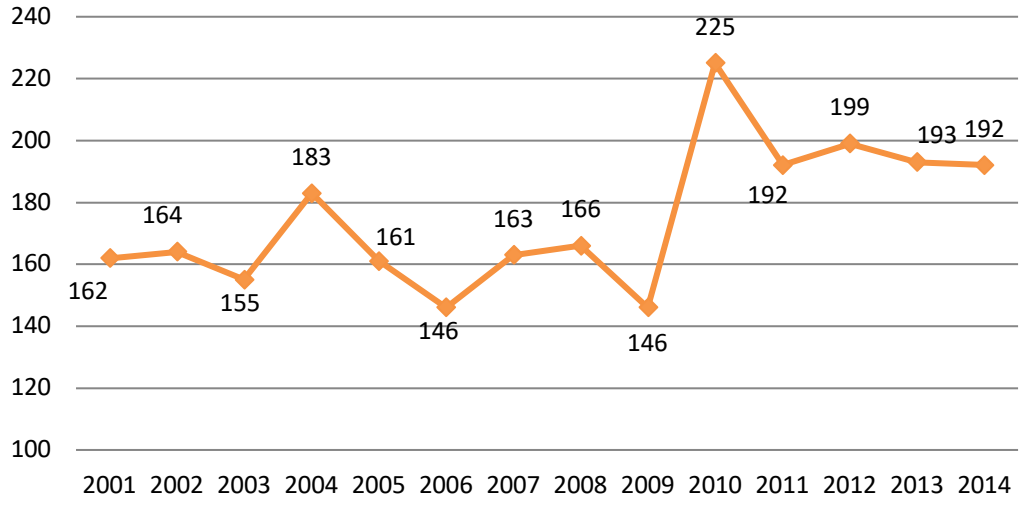
The number of total amputations performed in Minnesota increased 39.11% from 2001 to 2014 according to hospital discharge data. A total of 22,680 procedures were performed in this time period. After a low of 1,378 in 2007, the number of amputation gradually rose to 2,209 in 2014. (See Graph 1.1)

1.1: Amputation Trends, Minnesota (2001-2014)



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

1.2: Upper-Extremity Amputation Trends, Minnesota (2001-2014)

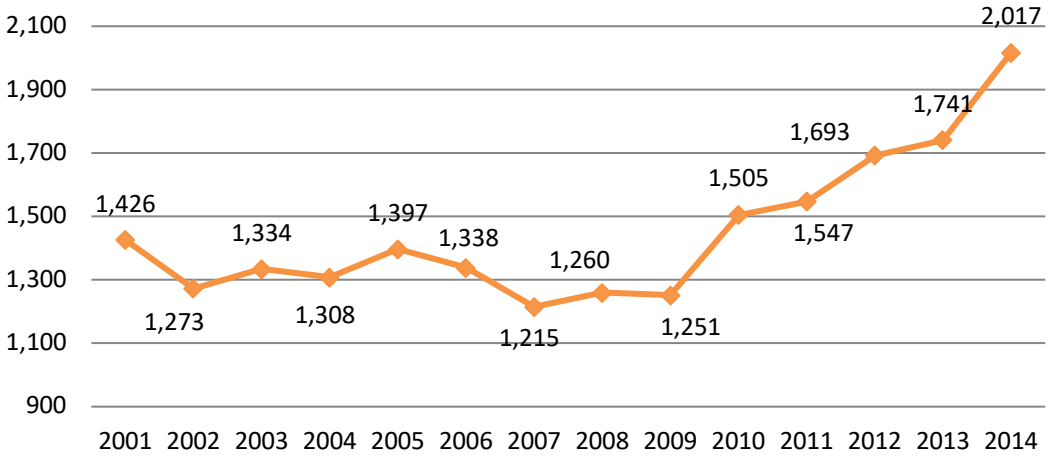


Source: Healthcare Cost and Utilization Project HCUPnet database http://hcupnet.ahrq.gov/

The number of upper-extremity amputations performed each year ultimately increased 18.52% from 2001 to 2014. A total of 2,447 of these procedures were performed in this time period. The lowest incidences of these amputations (146) occurred in 2006 and 2009, while 2010 saw the most upper-extremity amputations (225) in this time period. (Graph 1.2)

1.3: Lower-Extremity Amputation Trends, Minnesota (2001-2014)

From 2001 to 2014, a total of 20,305 lower-extremity amputations were performed in Minnesota. The lowest incidence was in 2007 with 1,215 and then the number of amputations climbed until they reached 2,017in 2014. This is a 41.44% increase from the number of lower-extremity amputations performed in 2001. (See Graph 1.3)

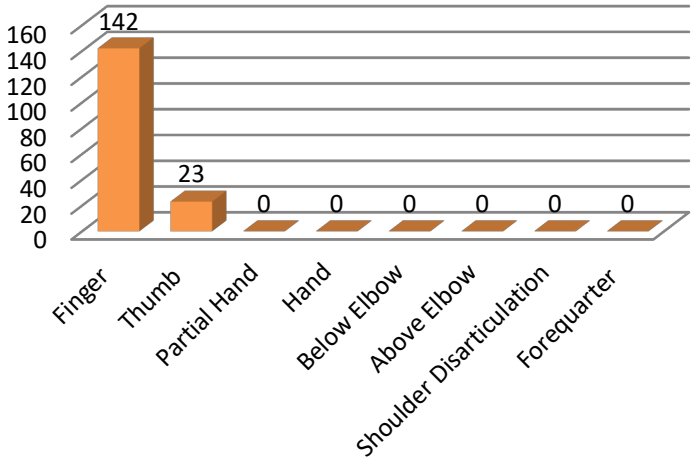


Source: Healthcare Cost and Utilization Project HCUPnet database http://hcupnet.ahrq.gov/

2. TYPES OF AMPUTATIONS PERFORMED

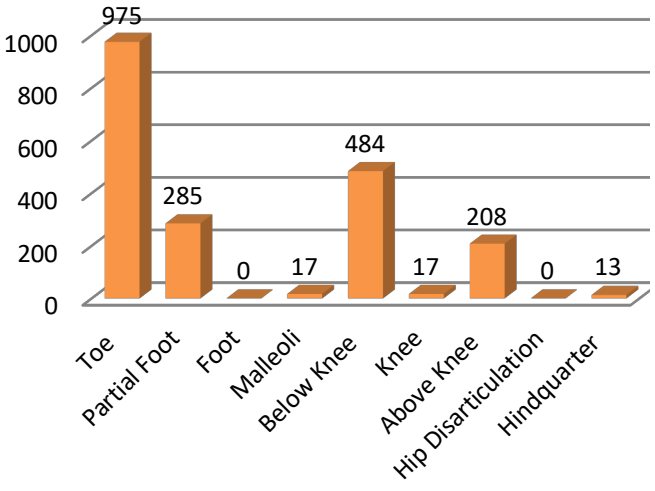
165 upper-extremity amputations were performed in 2014. The most common minor upper-extremity amputations were of the fingers (142) and no major upper limb amputations were reported. (See Graph 2.1)

2.1: Upper-Extremity Amputations, Minnesota (2014)



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

2.2: Lower-Extremity Amputations, Minnesota (2014)



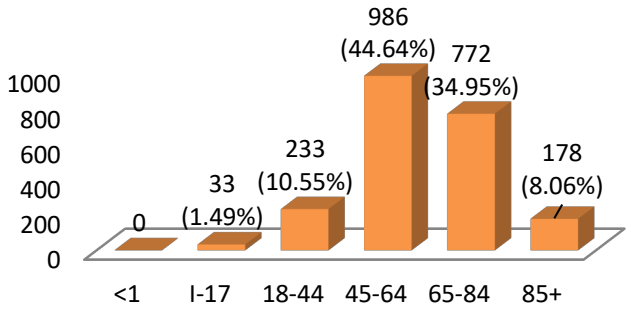
Source: Healthcare Cost and Utilization Project HCUPnet database http://hcupnet.ahrq.gov/

1,999 lower-extremity amputations were performed in 2014. In terms of minor lower-extremity amputations, toes (975) were amputated more often than part of the foot (285). For major lower-extremity amputations, below-knee (484) amputation was the most common procedure. (See Graph 2.2)

3. WHO LOSES A LIMB?

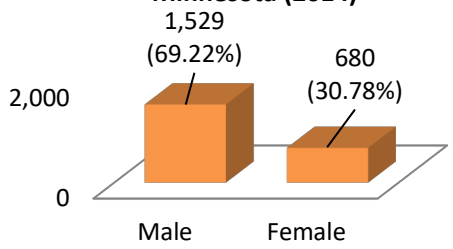
In 2014, most amputations were performed on individuals aged 45-64 years old, followed by the age group of 65-84 year olds (See Graph 3.1).

3.1: Amputations by Age Group, Minnesota (2014)



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

3.2: Amputations by Sex, Minnesota (2014)

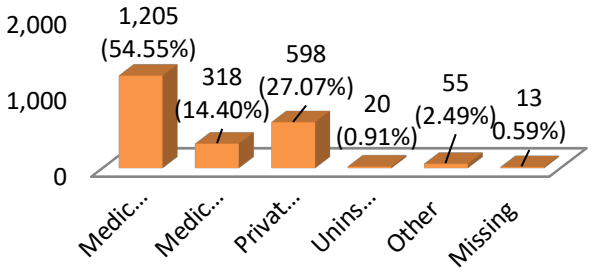


Source: Healthcare Cost and Utilization Project HCUPnet database http://hcupnet.ahrq.gov/

There were roughly 2.5 times more amputations performed on male patients in Minnesota than on female patients in 2014 (See Graph 3.2).

Medicare recipients (54.55%) ranked as the most common group to have an amputation procedure, followed by private insurance (27.07%). (See Graph 3.3)

3.3: Amputations by Payer Type, Minnesota (2014)

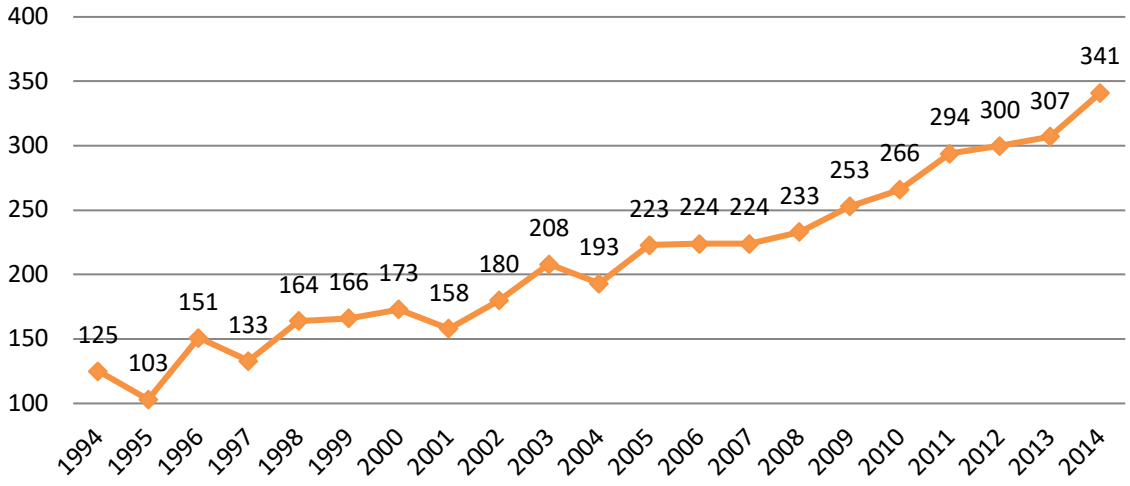


Source: Healthcare Cost and Utilization Project HCUPnet database http://hcupnet.ahrq.gov/

4. DIABETES TRENDS

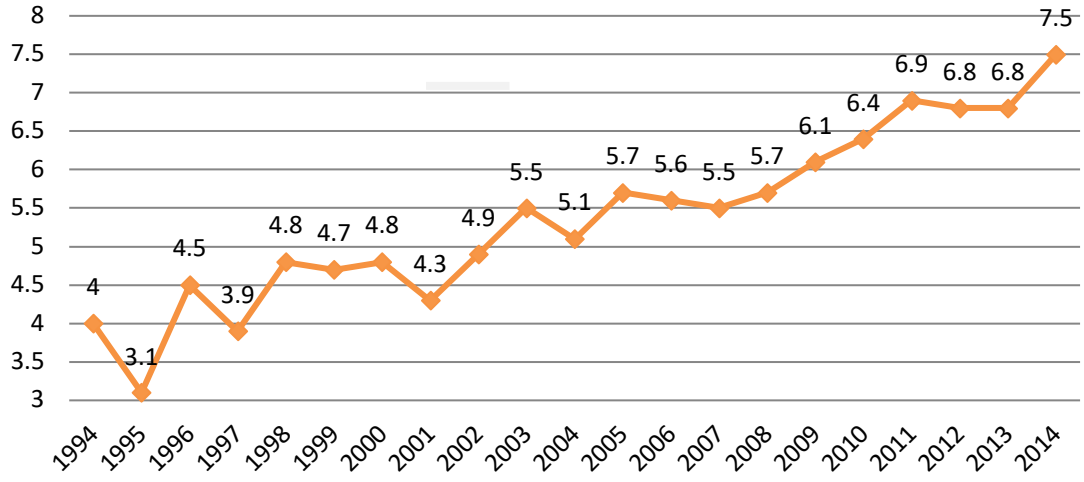
In 2014, a total of 340,638 Minnesota residents indicated that they had been diagnosed with diabetes at some point in their lives. The prevalence of diabetes in the adult population of Minnesota increased 172.8% from 1994 to 2014. (See Graph 4.1)

4.1: Diabetes Cases (in thousands; 18+), Minnesota (1994-2014)



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

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



The annual rate of existing cases of diabetes among adults in Minnesota increased 87.5% from 1994 to 2014. (See Graph 4.2)

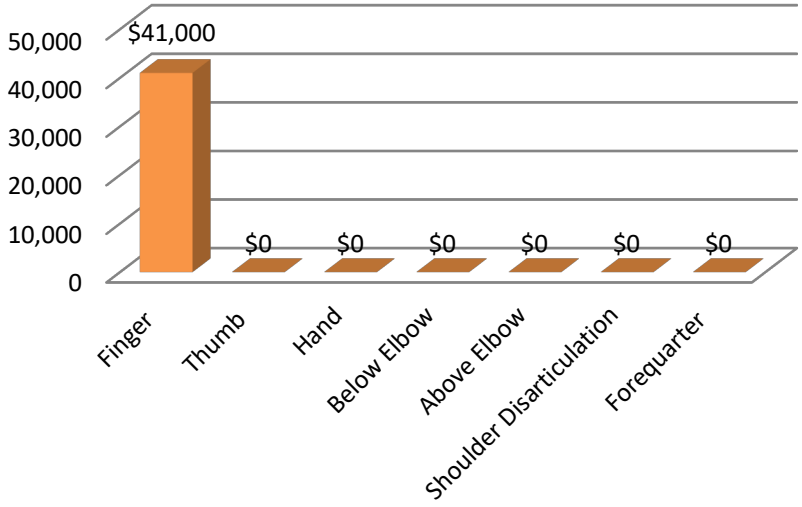
Source: CDC Behavioral Risk Factor Surveillance System https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html

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.

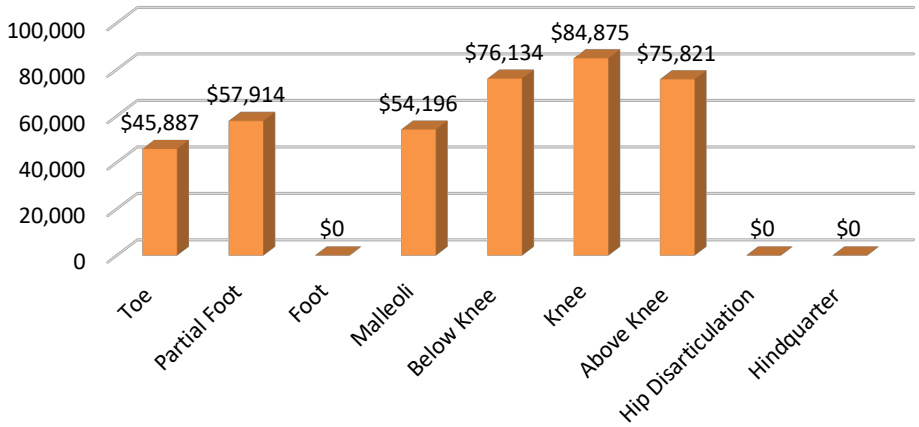
Charges represent what the hospital billed for the case, and may not represent all discharges for amputations. (See graph 5.1)

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



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

5.2: Overall Hospital Charges for Lower-Extremity Amputations, Minnesota (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 Rehabilitation2008;89(3):422-9.

2. Coalition LLTFA. Recommendations from the 2012 Limb Loss Task Force: Roadmap for Preventing Limb Loss in America. [White Paper]. 2012 February 9-12.

3. Bryant PR, Pandian G. Acquired limb deficiencies. 1. Acquired limb deficiencies in children and young adults. Archives of Physical Medicine and Rehabilitation2001;82(3B):00s3-s8.

4. Li Y, Burrows NR, Gregg EW, Albright A, Geiss LS. Declining Rates of Hospitalization for Nontraumatic Lower-Extremity Amputation in the Diabetic Population Aged 40 Years or Older: U.S., 1988-2008. Diabetes Care2012;35(2):273-7.

5. 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.