



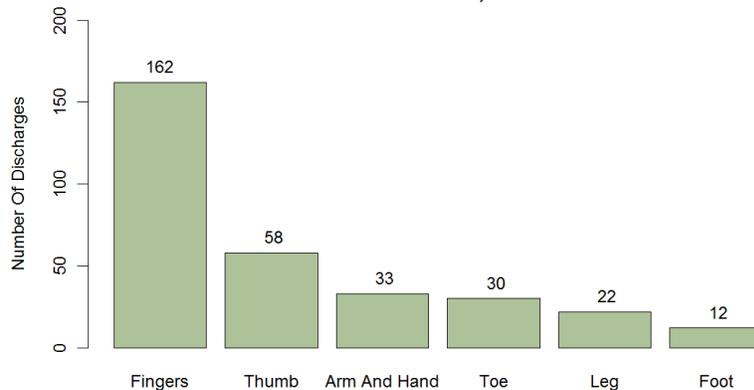
### Traumatic Amputations In Montana, 2000-2009<sup>1</sup>

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Traumatic amputations are preventable conditions with a lifelong impact. Amputees face challenges beyond the initial amputation. Prosthetics may cost up to \$50,000 for a lower limb and \$30,000 for upper limb.<sup>2</sup> Furthermore, the Occupational Safety and Health Administration found that work related upper limb amputations resulted in an average of 18 days away from work.<sup>3</sup> An English study found that although 73% of upper limb amputees return to work, 67% had to change jobs.<sup>4</sup>

Traumatic amputations were defined as hospitalizations with amputation of an upper or lower limb (ICD-9-CM: 885-887, 895-897) as either primary or secondary diagnosis. Identification of traumatic amputations is different than that for non-traumatic amputations; the former are defined by diagnosis codes, the latter are defined by procedure codes. There were 317 hospitalizations for traumatic amputations among Montana residents between 2000 and 2009. Upper limb amputations accounted for 79% of traumatic amputations, with the great majority to the fingers, followed by the thumb (Figure 1). Males (85%) and those aged 18 to 64 years (74%) accounted for most traumatic amputations. Hospitalizations for traumatic amputation cost an average of \$25,000 per hospitalization between 2008 and 2009.

Figure 1. Hospitalizations For Traumatic Amputation, Montana Residents, 2000-2009



<sup>1</sup> The Montana Hospital Discharge Data system (MHDDS) receives annual de-identified hospital discharge data set through a Memorandum of Agreement with the Montana Hospital Association. Most hospitals in Montana participate in voluntary reporting of discharge data from their Uniform Billing Forms, version 2004 (UB-04). The MHDDS receives information on more than 95% of the inpatient admissions from in the state.

<sup>2</sup> <http://www.disabled-world.com/assistivedevices/prostheses/prosthetics-costs.php>

<sup>3</sup> <http://www.bls.gov/opub/cwc/sh20030114ar01p1.htm>

<sup>4</sup> Datta D, Selvarajah K, Davey N. Functional outcome of patients with proximal upper limb deficiency—acquired and congenital. *Clin Rehabil.* 2004;18(2):172–177.

Supplement Classifications of External Causes of Injury and Poisoning codes (E-codes) identify the manner, mechanism, and place of occurrence of injuries.<sup>5</sup> From 2000 through the first half of 2008, the MHDDS received one or more E-codes for only 27% of traumatic amputation hospitalizations. Due to software upgrades by the third party data manager that supplies the MHDDS datasets, the MHDDS was able to capture more E-codes from the hospital record beginning in the latter half of 2008 and for all of 2009: 30 of 34 traumatic amputation hospitalizations had at least one E-code.

The MHDDS examined all available E-codes for upper limb amputations; there were not enough hospitalizations with E-codes to examine lower limb amputations. For traumatic amputations of the upper limb, there were 85 hospitalizations with E-codes in all years from 2000 through 2009. The two most common external causes were woodworking machinery, such as circular saws (19 hospitalizations), and cutting instruments, such as knives and hand saws (18 hospitalizations), all of which were amputations of the fingers or thumb. Only six amputations were caused by farm machinery, which were all amputations of the fingers. Only 25 upper limb hospitalizations had place of injury codes: six occurred at home, and 11 occurred at industrial places such as shops and factories. There were only five upper limb amputation hospitalizations from motor vehicle crashes.

### Conclusions

The great majority of traumatic amputations can be prevented through greater awareness and adherence to safety recommendations. Because E-codes are generally not required for reimbursement, E-coding lags behind other data elements (such as primary and secondary diagnosis codes) in accuracy and completeness.<sup>6</sup> Although a single E-code is sufficient to identify manner and mechanism of injury, a second E-code for place of injury greatly improves the usefulness of the discharge record to target and evaluate injury prevention programs.

Please visit our website at <http://dphhs.mt.gov/PHSD/MTHDDS/>  
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<sup>5</sup> [http://www.phdsc.org/about/committees/presentations/ECIC\\_Tutorial2006.PPT](http://www.phdsc.org/about/committees/presentations/ECIC_Tutorial2006.PPT)

<sup>6</sup> <http://www.eicd.com/Guidelines/ECodes.htm>