INTRODUCTION
As medical care in the US shifts from a fee-for-service to fee-for-value model it is important to understand the relationship between the cost of the services provided and their outcomes (Porter, 2010).

Active individuals with above knee amputations (AKA) are provided a microprocessor controlled knee (MPK) with the belief that the prosthesis reduces their risk of falling (Hafner et al, 2007; Kahle et al, 2008). Yet, the improved quality of life is not without a price; a MPK costs Medicare $21,957 more than a swing and stance control knee (Noridian Healthcare Solutions, 2015).

A cost-benefit analysis has not been performed because the direct medical costs of a fall have never been determined. The rate of limb loss is projected to more than double between 2005 and 2050; understanding the relationship between the cost of an MPK and the medical costs it can help avoid is increasing important (Ziegler-Graham et al, 2008). Thus, we undertook an effort to estimate the six-month direct medical cost of falls for adults with an AKA and compare these costs with the incremental cost of a MPK.

METHOD
Subjects: 77 adults with AKA (28 female, 49 male; 48 with a prosthesis; 16 with a prosthesis who experienced a fall) were included in the analysis.

Procedures: Retrospective study of falls resulting in an emergency department visit or hospitalization from 2000 to 2014. Medical records, administrative data, and chart reviews were used.

Data Analysis: Patient demographics, Elixhauser comorbidities, and standardized medical costs adjusted to 2014 dollars were included. A modification of the Bayesian structural time series approach to predict six-month costs following a fall event had the event not occurred – this cost is then compared to observed costs (Brodersen et al, 2015) was used.

RESULTS
The mean six-month direct medical cost of falls for adults with above knee amputations was $25,652 ($10,468 - $38,872) for those who were hospitalized (Figure 1). The mean cost for those only admitted to the emergency department was $18,091 ($-7,820 - $57,368).

DISCUSSION
This is the first estimate of the cost of falls for individuals with an AKA. The cost is similar to the costs estimated for elderly individuals who fall and are hospitalized ($25,652 and $27,745 respectively) (Bohl et al, 2010). Providing an MPK has the potential to avoid costly falls and reduce overall direct medical costs.

CONCLUSION
Falls that require medical intervention are equal to or slightly more than the incremental cost of providing a MPK to an individual with an AKA.

CLINICAL APPLICATIONS
Comparison of the cost of falls and cost of a MPK offers providers additional evidence to support the decision to prescribe a MPK.

REFERENCES
Noridian Healthcare Solutions, DME Coding System, 2015