

Traumatic Amputation QUERI Workshop

Department of Veterans Affairs Executive Summary

Prosthetic Prescriptions

Issues

- I. One of the major injuries seen as a result of Operation Iraqi Freedom Enduring Freedom (OIFEF) is traumatic amputation. Amputations include foot, below-knee, above-knee, hand, below-elbow, and above elbow. Approximately 20% of the amputees returning from OIFEF have experienced amputation of more than one limb.
- II. Presently, several different product designs exist to address the socket and limb needs of major-limb amputees. Designs include incorporation of vacuum pumps, microprocessors, and myoelectric devices.
- III. Although prosthetic companies like Otto Bock, the largest manufacturer of prostheses, and Ossur, the second largest manufacturer, develop guidelines for prescribing one prosthesis over another, evidence-based standardization of clinical guidelines for prescription and use of prostheses does not exist.
- IV. In order to create prescription guidelines within Medical Treatment Facilities (MTFs) such as Walter Reed Army Medical Center (WRAMC) and healthcare systems such as VA, we must execute short- and long-term research protocols that answer pertinent questions related to use, best use, and long-term use of prostheses.

Background

- I. On 3 May 2004, the number of returning soldiers entering MTFs --including those with disease, non-battle injuries, and battle injuries had reached 12,932. Of these returning soldiers, over 120 are major limb amputees. Although the majority of amputees are below-knee single amputees, many have lost multiple limbs and/or have suffered multiple injuries. Without evidence-based prescription of proper prostheses, these men and women face unnecessary barriers to function, additional complications, and possible long-term medical consequences.
- II. In order to ensure that traumatic amputees and others receive best-care with respect to proper prescription of prostheses, there must be a standardized, systematic formula that takes into account age, activity level, short-term rehabilitation goals, long-term rehabilitation goals, contralateral limb function, overall function, and ancillary comorbidities.
- III. Presently, WRAMC addresses prosthetic prescription using a coordinated rehabilitation team approach within a standardized clinic. In order to assess patient status, WRAMC staff use evaluation tools such as the Amputee Mobility Predictor and the 6-Minute Walk Test. Even so, these assessments are not necessarily incorporated into the decision of

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which prosthesis is best for the patient. Currently, all lower limb amputees receive components designed for Medicare Functional Level Classifications 3 and 4, the highest rate functional levels and all knee disarticulation and high-level lower limb amputees receive microprocessor unit knees (Otto Bock C-leg). Although this technology is considered “top of the line,” without proper studies, these prostheses may not be best for all patients.

- IV. In addition to determining which prosthesis is best for which patient, follow-up of patients once they leave WRAMC can be problematic. Access to practitioners able to provide proper follow-up and maintain continuity of care must be taken into account when prescribing one prosthesis over another. For example, if a soldier is able to return to active duty, future prescriptions and follow-up care will be handled by their local MTFs.
- V. If a soldier is not able to return to active duty or chooses medical discharge, future prescriptions, fittings and adjustments, and rehabilitation become the responsibility of one of 163 VA Medical Facilities. Add to this problem the complexity of a healthcare system in which most prosthetic care is performed by contract employees and the fact that most VAMC staff prosthetists are not ABC or BOC certified, a soldier’s chances of receiving optimized care could be diminished.
- VI. In VA, staff physicians generate initial prescriptions that are given to contract prosthetists to fill. If the contractor develops functional ongoing relationships with VA physicians and other members of the VA amputee rehabilitation team, he will provide valuable input into determining which prescription is best for the patient. Unfortunately, this may not always be the case. Physical distance between VAMC and contract prosthetic services and contractor turnover may lead to discontinuity of care and loss of cohesive rehabilitation team interaction.
- VII. In the private sector, physicians often generate prescriptions following a prothetist’s evaluation of the patient and the prosthetist’s recommendation of componentry (i.e. knee unit, foot, type of socket, etc). This approach ensures that someone familiar with available componentry, working knowledge of that componentry, and design specifications for function and fabrication is part of the rehabilitation team from the very beginning.
- VIII. One could argue that the best-case scenario is the on-site coordinated educated team approach of WRAMC. However, a systematic evaluation of current practices at WRAMC, VA, and the private sector has not been performed. It is time to review determination of prosthetic prescriptions in and outside of VA. It is time to assess which prosthesis is best for whom and when. It is time to systematically review factors and processes governing prosthetic prescription at MTFs, VA, and the private sector.

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Discussion and Recommendations:

There are many issues to discuss when prescribing prostheses for traumatic, diabetic, and dysvascularized amputees. Top priorities for discussion include: (1) accessing qualified reviewers and members of a strategic planning committee, (2) method of determining amputee's functional level, (3) method of determining prosthetic component rationale, and (4) determinants used when pairing functional level with componentry.

Steps necessary to facilitate the above activities may include: (1) creation/maintenance of comprehensive team approach begun at WRAMC, (2) increase in human capacity at VAMCs, (3) creation of checks and balances to ensure continuity of care, (4) literature reviews, (5) adaptation of methods used by other healthcare systems/countries

What will be discussed is a timeline for research and/implementation of ideas put forth by the group in the form of QUERI steps.