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## **Paradigm shift for VA amputation care**

### **INTRODUCTION**

As the Department of Defense (DOD) identified a need to modify the type and delivery of services to the combat-injured with major traumatic limb loss, so too has the Department of Veterans Affairs (VA). While the majority of veterans with amputations receiving care in VA medical facilities have sustained their amputations because of medical conditions such as diabetes and peripheral vascular disease, a significant number of individuals also sustain amputations because of trauma on the battlefield. Each major military operation has resulted in a new cohort of veterans with combat-incurred traumatic amputation: almost 21,000 in the Union Army during the Civil War, more than 4,000 during World War I, about 15,000 during World War II, over 1,000 in the Korean war, an estimated 6,000 during the Vietnam war, and 15 during the Persian Gulf war [1]. To date, Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) conflicts have resulted in nearly 1,000 amputations.

The VA has always been committed to the principles of rehabilitation, and one of the major goals driving care is to “restore the capability of veterans with disabilities to the greatest extent possible and improve their quality of life and that of their families.” To this end, the VA has invested significant resources into creating a new paradigm of care to meet the needs of the newly combat-injured veterans from OIF/OEF while also improving care to all veterans with amputations due to medical causes.

### **CHALLENGES IN CARE FOR COMBAT-INJURED**

The VA has faced several challenges in providing care to this new group of veterans. A major challenge is that battlefield injuries are often complex, resulting in amputations and residual limbs that prove challenging for later prosthetic fitting because of length, scarring, heterotopic ossification, and additional associated injuries, such as burns or complex fractures. In addition, these veterans access VA healthcare at varying stages in their recovery and rehabilitation, challenging the system to provide care across the entire continuum. Also, these veterans are widely distributed across the country and the VA healthcare system so that any particular VA medical facility may have the opportunity to provide care for only a few individuals. Finally, this is a young, highly trained group of individuals committed to an active lifestyle who are early in their developmental life cycle. They are computer literate and take an active role in learning about and directing their healthcare.

They are often working, going to school, or raising families and thus require efficient and convenient service.

## VA'S VISION FOR NEW AMPUTATION SYSTEM OF CARE

First and foremost, care must be person-centered. The person receiving care must drive the process and set the goals. Care is delivered by an integrated, interdisciplinary team, including medical professionals, therapists, prosthetists, mental health professionals, and other specialists as needed. The focus of care is on meeting the goals of the veteran, maximizing function, community integration, and participation. Care must be evidence-based, comprehensive, and holistic, addressing medical needs and comorbidities, as well as the individual's psychosocial needs, developmental stage in life, and goals (functional, vocational, and leisure). A prosthesis is viewed as a medical device requiring careful evaluation, resulting in a prescription based on joint decision making, best medical evidence, and practice. Finally, care must be provided, as needed, throughout the person's life. The team must provide regular checkups to continually reassess function, satisfaction, and lifestyle and interest changes, and to manage medical problems such as pain, skin problems, cardiovascular changes, or weight loss/gain. Routine checkups can also introduce new developments in componentry that may contribute to an improvement of function or increase in satisfaction.

The model of care is a restorative model focused on restoring the individual who has sustained an amputation to the maximum level of function and maintaining or enhancing that function through prevention of additional disability and introduction of new knowledge and technology that may become available.

The goal of the VA Amputation System of Care is that *all* eligible veterans and Active Duty servicemembers sustaining an amputation should be provided access to a full range of healthcare services that specifically focus on their specialized needs. They

have the choice of prosthetic providers, but the VA seeks to be the provider of choice.

## VA AMPUTATION SYSTEM OF CARE

The comprehensive Amputation System of Care, while developed in response to the needs of the combat-injured, will raise the level of care for all veterans with amputations across the VA healthcare system. The system is designed to provide specialized care as close to a veteran's home as possible, while recognizing the reality that some care needs will be so specialized that they will require the services of a regional center. It is thus designed to balance access and expertise, meeting most needs close to home, but requiring travel and specialized evaluation for the most complex needs. It is designed to ensure the same standard of care throughout the VA healthcare system. This system was approved in 2008 and funded for implementation in 2009.

The Amputation System of Care is comprised of four components: the Regional Amputation Center (RAC), Polytrauma Amputation Network Site (PANS), Amputation Care Team (ACT), and Amputation Points of Contact (APOC).

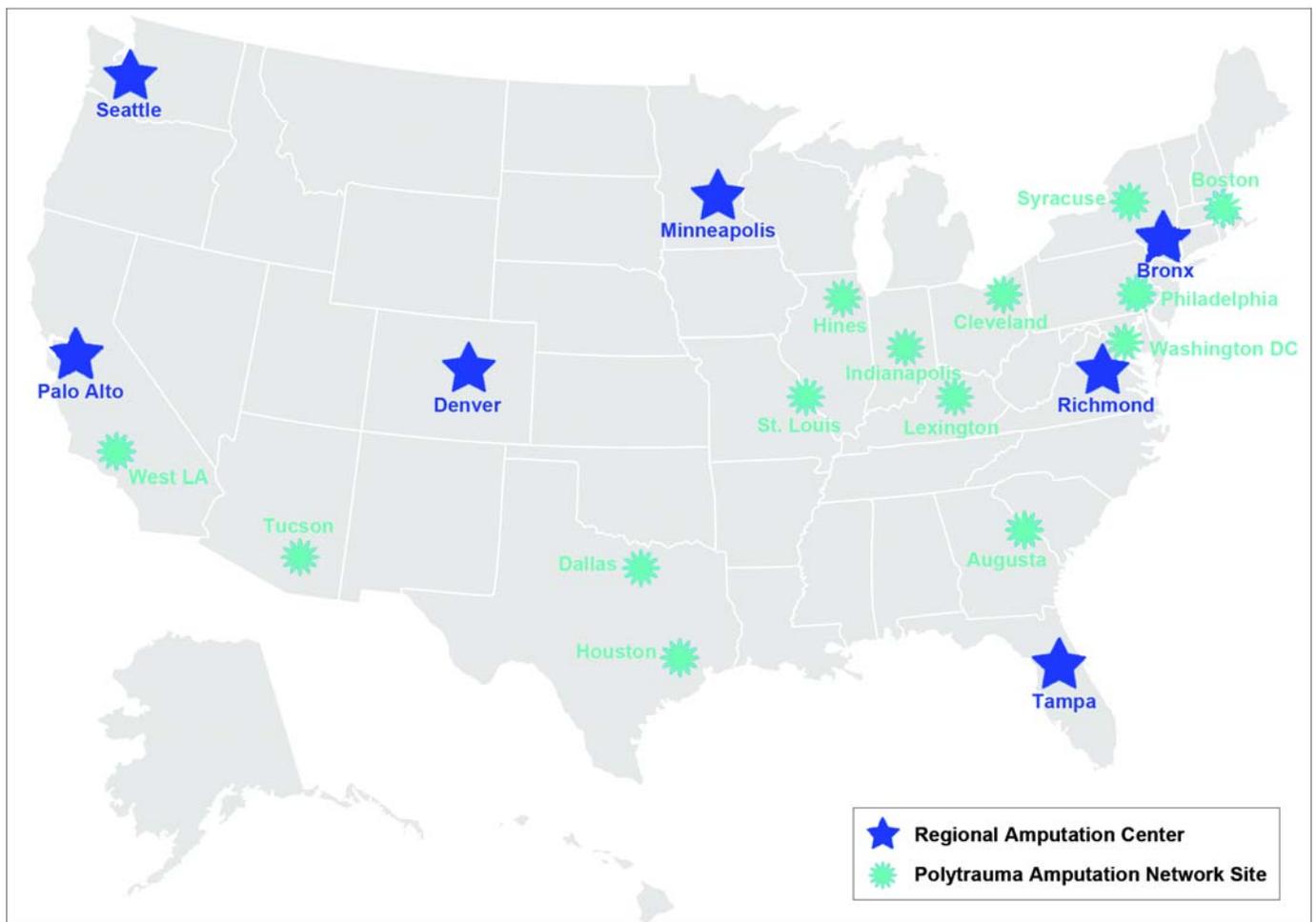
RACs are the banner facilities for amputation care in the VA. These facilities have the highest level of expertise in clinical care and the latest prosthetic concepts and design. They are equipped to provide care for the most complex cases and serve as a resource for other facilities in their region, including educating and training, monitoring outcomes, and providing direct care either face-to-face or via telehealth technology. Teams are comprised of physicians, therapists, prosthetists, nurses, social workers, and mental health professionals. They have highly developed, accredited prosthetic laboratories and services, as well as specialized rehabilitation equipment. The treatment teams have received specialized education and participated in training with DOD colleagues. They are associated with Polytrauma Rehabilitation Centers and Military Treatment Facilities and have inpatient rehabilitation units accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF). They have dedicated care coordinators. They are poised to

participate in research endeavors and evaluation of new technology. Seven VA facilities have been identified to provide this level of care (**Figure**). These sites may also act as the PANS for their Veterans Integrated Service Network (VISN).

PANS provide the full range of clinical and ancillary services and are consultants for other facilities within their VISN. They provide services with a comprehensive interdisciplinary team approach and support a CARF-accredited inpatient rehabilitation unit. They are associated with the VISN Polytrauma Network Site. They provide prosthetic service through an accredited prosthetic laboratory or via contract with the private sector. They provide surgical support services. They use telehealth technology to access veter-

ans in more rural areas or who receive their primary services at smaller VA facilities. They are responsible for the lifelong needs of the veterans with amputation in their VISN. There are 15 PANS across the country (**Figure**).

ACTs are located at smaller VA facilities that may not have the full range of supportive services available at the other component facilities but are located more conveniently to the veteran's home and can provide for the majority of amputation and healthcare needs. They have a core interdisciplinary Amputation Care Team (physician, therapist, prosthetists) but may not have an associated CARF-accredited inpatient rehabilitation facility or accredited prosthetic laboratory. They may refer to a PANS, RAC, or contract



**Figure.**

Regional Amputation Centers and Polytrauma Amputation Network Sites in new Department of Veterans Affairs Amputation System of Care.

in the community for necessary services. They also use telehealth technology to consult with other component facilities to reduce the burden of travel. There are 100 ACTs across the VA healthcare system.

APOCs are individuals, often nurse or social worker case managers, who are knowledgeable about the Amputation System of Care and can refer the veteran to the component of care best suited to meet their needs. The APOCs are located at smaller VA facilities without the resources to provide amputation care services directly.

Specific mechanisms of care delivery are incorporated across components of the system. Staff receive specialized training and experience to maintain a high level of clinical expertise. All programs will be expected to obtain the CARF applicable to their level of services. This ensures an external peer review process reviewing the care regularly. Access to specialty care for pain management, wound care, mental health, surgical support, and other necessary services is readily available either directly or through telehealth technology. A robust system of case management includes a “warm hand-off” when care is transferred within the system or between DOD and VA. This warm hand-off includes a person-to-person contact from one care team to the next with personalized follow-up as needed. Mechanisms and expectations for system-wide communication are in place, including teleconferences, national training sessions, and email groups. National policies and directives standardize the care delivery. The system supports continuous learning and education to train new staff and constantly educate current staff. VA has multiple and innovative mechanisms to accomplish system-wide training, including online satellite broadcasts that can be made available on demand, regional and national conferences and workshops, and cross-training opportunities with DOD personnel. In collaboration with the Amputation Coalition of America, a peer support process will be implemented to assist with adjustment and transition into the community. Finally, a national system of telehealth is available to increase the penetration of clinical expertise into remote or rural areas of the country.

## COLLABORATION WITH DOD

It is critical that the VA and DOD Amputation Systems of Care work closely together. This is accomplished on several levels. VA and DOD clinicians are able to train together in specialized learning sessions, including attendance at conferences sponsored by both agencies. VA staff have rotated through those military treatment facilities that provide rehabilitation care to the combat injured with amputations. VA and DOD clinical staff have collaborated on clinical practice guidelines that have been published for use in VA and DOD. In addition, VA has assigned dedicated staff, social workers, and nurses to military treatment facilities to aid in the transition from the military system to the VA system, as well as dedicated therapy staff to the Center for the Intrepid at Brooke Army Medical Center. These collaborative efforts allow the ongoing sharing of clinical knowledge, expertise, and best practice to ensure a smooth transition from Active Duty status and services to veteran status and services.

## IMPLEMENTATION

Based on the work and recommendations of a task force chartered in 2006, the full proposal for the new Amputation System of Care was finalized early in 2008. It received approval and funding to begin rollout in 2009. Funding has been provided to hire new staff, and RACs and PANS were expected to be fully functional by the end of 2009. ACT and APOC components are expected to be fully functional by the end of 2010. Significant training and education, as well as the development of the clinical practice guidelines, were accomplished during the developmental process. A tool kit to accompany the clinical practice guidelines is being developed. Nationally, Neal Eckrich from Prosthetic and Sensory Aids Service, Cindy Poorman, Dr. Joseph Czerniecki, and Dr. David Cifu from Physical Medicine and Rehabilitation now lead the implementation of the VA paradigm shift for amputation care.

## CONCLUSIONS

VA has been challenged by its stakeholders to implement a paradigm shift in the provision of care to veterans with amputations. It has committed significant new resources to achieving this goal and, when fully implemented, the Amputation System of Care will provide high-quality services to all veterans across the VA.

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