

# The Importance of a Team Approach to Achieve the Best Functional Outcome with the Upper Limb Amputee



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## Introduction

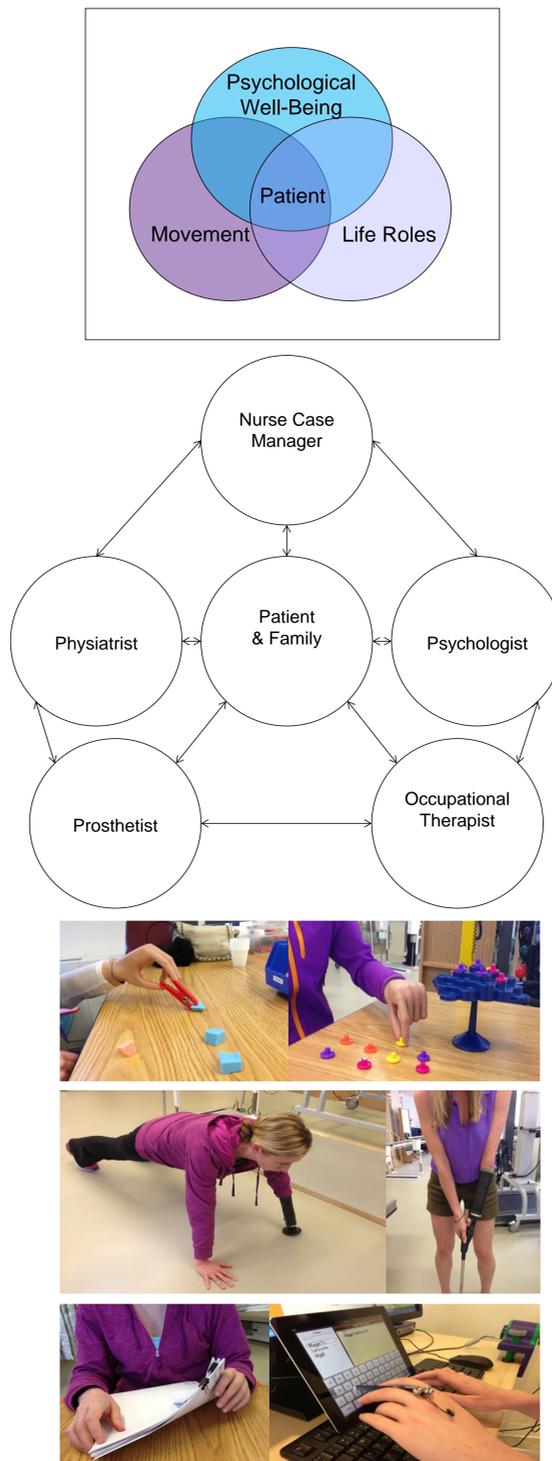
Outside of the traditional rehabilitation center approach to amputee care, it has become increasingly challenging to address the complex needs of the upper limb amputee utilizing a comprehensive team approach. Incorporating the nurse case manager in this model adds a critical ingredient into the overall process and ultimate success in achieving optimal outcomes.

The purpose of this study is to explore the benefits associated with early prosthetic and occupational therapy intervention. This was accomplished by holding monthly team meetings including the patient, nurse case manager (NCM), physical medicine and rehabilitation physician (PM&R), occupational therapist (OT), prosthetist (CP) and family member(s), collaborative appointments with the OT and CP as well as the condensed fitting model.

## Methods

- This study follows the continuum care of a 29-year-old female who sustained a traumatic transradial amputation of her non-dominant hand on September 10, 2012.
- Her care was managed by a catastrophic case management company who coordinated a team to treat their patient.
- The patient was evaluated by a CP two days after being discharged from hospital (18 days post trauma).
- The patient was evaluated by an OT one month post injury. Immediately following was pre-prosthetic intervention that included joint protection modalities, energy conservation and instruction in one handed techniques. Prosthetic training took place as the devices were fit and delivered.
- A four day condensed fitting occurred 3 months post injury during which the patient was fitted and trained in the use of a prototype externally powered prosthesis. In addition, the early stages of fitting the custom passive functional aesthetic prosthesis were completed.
- Over the next 6 months, she was fit with an externally powered prosthesis with multi-articulating digits, a custom passive functional aesthetic prosthesis and an activity specific sports adaptive prosthesis with several attachments.
- Approximately once a month, a team meeting was held including Patient, NCM, PM&R Physician, OT and CP.
- Prior to or directly after each of these team meetings, time was allotted for an OT session with the CP present to facilitate adjustments that were necessary for optimal function of the prosthesis for activities being performed during the session.

## Multidisciplinary Approach



## Results

The results of this case study suggest that there are significant functional benefits to providing team approached collaborative care for the catastrophic upper limb amputee. In this specific case, the patient's progress utilizing multiple prostheses was accelerated significantly due to the team collaboration and communication. This also established a higher level of success with the more advanced and complicated terminal device technology incorporating multi-articulating digits. Upon delivery of the:

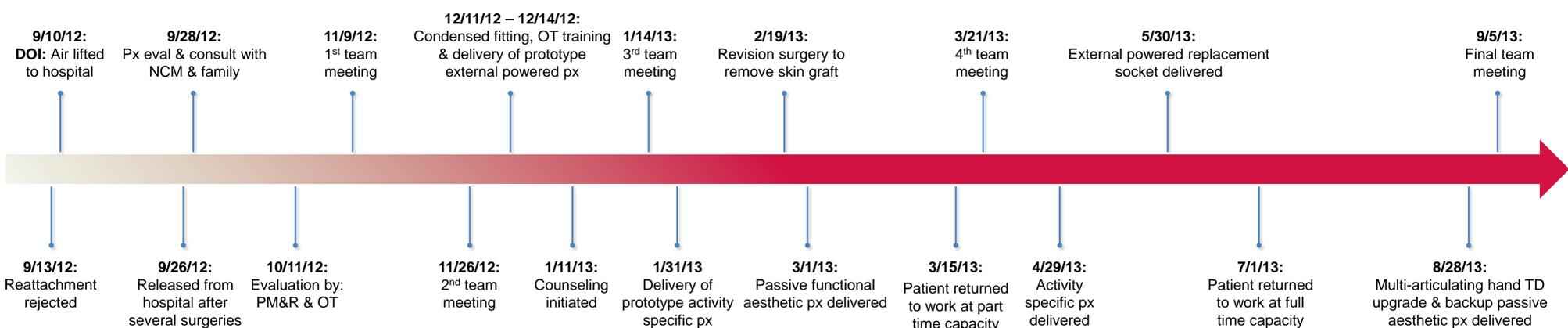
Type of prosthesis	Functional Activity
Externally Powered	Grooming, dressing, meal preparation, cleaning of home
Activity Specific	Yoga, spin class, bicycling, weight lifting, golfing, snowboarding
Passive Functional Aesthetic	Pushing, pulling, stabilizing, holding, gesturing, typing, increased self-esteem

## Discussion

A case study is typically thought to describe the care of an individual. However, this case study provides a reflective sample of industry best practice standards, and how communication that transcends disciplines and organizational stakeholders impacts client care, contributing to a successful outcome. Highlighted is the concept that **no single prosthesis can address the multiple deficits associated with upper limb loss**. Early prosthetic and occupational therapy integration, along with this patient's full return to prior work engagement highlights the "Golden Period"<sup>9</sup> the value of early intervention.

The importance of implementing Occupational Therapy services early was critical, as it ensured that the patient regained lost AROM in the affected side elbow, improved shoulder stabilization and strength, and prepared the residual limb for prosthetic fitting and tolerance. Patient education soon after injury on one-handed techniques for grooming, dressing, eating, meal prep and light home management increased patients' independence prior to receiving prosthesis. One to one training on use of the prostheses was critical to the patients' understanding of how to functionally incorporate her affected limb during all ADL and IADL tasks, thus reducing the potential overuse of her sound side.

Additionally illustrated is the vitally important role of the NCM as it interfaces with the comprehensive team approach, resulting in optimal outcomes in functional independence, return to work and recreational pursuits.



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