IPRO 309
Fall 2006

Educational and Technical Support of Orthotics and Prosthetics Education in Latin America and The United States

ILLINOIS INSTITUTE OF TECHNOLOGY

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Modules

Palpation of Anatomical Landmarks and Orthometry Measurements:

Illustrates key landmarks used in orthotic measurements. Walks through sample orthometry forms used to construct devices.

Range of Motion Testing and Manual Muscle Testing:

Examines systems for evaluating range of motion and muscle integrity. Describes examination techniques for muscle analysis.

Evaluation of Seated and Standing Posture:

Explores common postural faults and associated musculature problems. Methods for creating a wheelchair seating system unique to patient needs is also examined.

Dermatomes, Myotomes, and Reflexes and Spinal Cord Injuries:

Discusses neurology of the spine, which includes motor, sensory and reflex mechanisms. Relates this information to spinal cord injuries of varying degree.

Observational Gait Analysis and Use of Crutches, Canes and Walkers:

Reviews proper gait and analyzes common gait deviations. Demonstrates different types of walking assistance devices to teach how each should be used.

Approach

The team was divided into groups to create 5 modules to cover general evaluative topics and how they relate to an entry level O & P technician in training.

For our own educational benefit in creating the modules, we looked to professionals in the field for information and critiques of our deliverables.

This included attending a presentation by Bryan Malas, the Director of the Orthotics Department at Children's Memorial Hospital.

We also presented our modules to students and professors at the Northwestern University Prosthetic and Orthotic Center.

ISPO Accreditation

The International Society for Prosthetics & Orthotics (ISPO) accredits its educational programs on a scale from I to III, with III being the lowest. The programs are design to be cumulative; successive accreditation requires the previous level of training.

Category III: Manufacture prosthetic and orthotic devices. 2 year vocational training. No patient interaction.

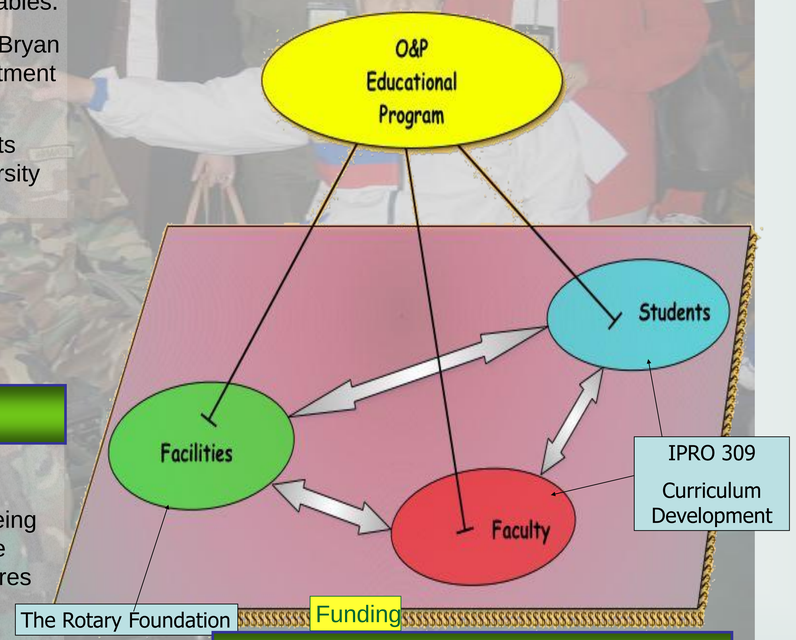
Category II: Category III plus self clinical practitioner training. 3 year program. Involves direct patient care.

Category I: Equivalent to a masters degree in orthotics and prosthetics. Involves research and development of orthotics and prosthetics.

Background

In February of 2005, Centro Don Bosco in Bogotá, Colombia began developing an O&P Category III program. Many of the program components are in place, but one area in particular need of help was the interaction between the faculty and students: the curriculum.

In the spring of 2006 the first IPRO 309 began to develop educational modules for instruction of orthopedic biomechanics. We have continued to develop educational modules, but have shifted the focus to implementation.



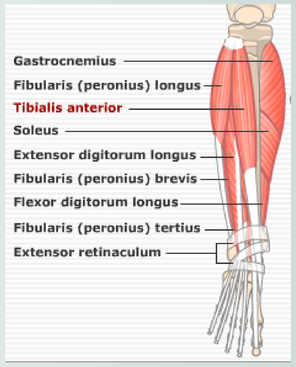
Statistics

IN LATIN AMERICA…
- 2.5 million people with unmet needs for orthotic and prosthetic care
- Fewer than 50 certified O&P practitioners in all of Latin America
- 1 ISPO accredited O&P education program

IN COLOMBIA…
- 250,000 people with unmet needs for orthotic and prosthetic care
- 3000 new cases of spine deformities each year
- Fewer than 10 certified O&P practitioners

EXAMPLE: Drop Foot

Drop foot is the inability to control the dorsiflexor muscles, which create ankle flexion. Drop foot leads to problems walking, since the foot catches as it swings through in a normal gait.



Drop foot as a symptom is treated with an Ankle-Foot Orthosis (AFO). Provides either dorsiflexion assist or plantar flexion stop.

EXAMPLE: Module Relevance

Landmarks/Orthometry: Critical to take proper measurements for AFO fitting and alignment.

ROM/MMT: Determine the extent of dorsiflexor muscle control. Also help determine appropriate type of AFO.

Posture: Postural problems are often seen with common causes of drop foot (stroke).

SCI: If the cause is neurological, can help to determine the extent of neurological damage and recognize accompanying problems.

Gait Analysis: Evaluate effectiveness of treatment in gait efficiency.