

IPRO 309

Orthotics and Prosthetics
Educational Support of Latin
America and the US

Current State of Orthotic and Prosthetic Care in Latin America

- 513 million people
- Less than 50 certified practitioners and 1,500 uncertified practitioners
- One accredited O&P educational program, 3 non-accredited

The lack of practitioners and education =

- 2.5 million people with unmet needs

Our Approach

- To improve the care, it has been identified that the O&P technician training system needs to be strengthened
- Technician training program established in Bogota, Colombia
- Objectives based on previous accomplishments from last semester IPRO

Spring 2006 Accomplishments

- Last semester established connections
- Designed 5 modules
 - Biomechanics, Materials, Upper Limb, Lower Limb, Spine
- Held 4-day presentation in Colombia
- Focus
 - Basic principles
 - Spanish translation for conference

IRPO 309 Fall 06 Objectives

- Re-evaluate structure and content of last semester presentations and website
- Develop educational modules extending from last semester
- Identify other institutions that can benefit from the low cost educational materials
- Strengthen contacts in Latin America in order to expand the educational program and explore other projects

Strategy to complete objectives

- Organize groups
 - ISPO Curriculum and Review Group
 - Module Subgroups
 - Communication Liaisons
 - IPRO Deliverables
- Define project and subgroup goals
- Access practitioner input to help understand clinical problem solving approach
- Obtain outside feedback on presentations

Completion of Objectives

- We compiled information using medical literature searches(Medline PubMed), textbooks, and internet references
 - Each member invested around 80 hours into creating their module
 - Modules consist of presentation, handout, and interactive learning materials

Background Review

- Created presentation to illustrate anatomical locations and movements
- Very Visual
- Created “Dance Dance” Review game
 - Participants respond to anatomical movements in order to perform familiar dances
 - Currently consists of 4 dances

Subgroup 1

- First module was created to teach what landmarks are, how they're used, how they're located, and why they are important to the O&P field.
- The second module was to give an introduction to orthometry, or the measurement of landmarks.
 - Measurements are used to prescribe prosthetic and orthotic devices.
 - Sample orthometry forms were shown, explanation of common symbology given, and the most common types of measuring devices were described and shown.

Subgroup 2

- Range of Motion
 - Developed presentation relating the previous limb, spine and biomechanics modules to specific range of motion testing
 - Emphasized the importance of understanding joint movements and limitations with respect to clinical evaluation
 - Active hands on demonstration of measurement with goniometer

Subgroup 2

- Manual Muscle Testing
 - Completed module pertaining to manual muscle testing, its clinical importance, and relevance to orthotic treatment
 - Employs variety of visual aids and hands on learning exercises
 - Relates material to the previous limb and biomechanic modules

Subgroup 3

- Examination of the fundamentals of standing and seated posture.
 - For standing, we analyze common postural faults and how to recognize them.
 - For seating, we explore the critical effect of posture in seating systems (wheelchairs) and how to make postural adjustments.

Subgroup 4

- Designed educational aids to guide a module addressing the spinal cord and its significance in the body.
- This consisted of presentations on spinal neurology, spinal cord injuries, and handouts to assist in the understanding of dermatomes, myotomes, reflexes, and testings.

Subgroup 5

- PowerPoint Presentation, videos, and handouts
- Covered the basics of crutches, canes and walkers: why one would be prescribed over another, and basics of how to fit them and train a patient to walk.
- Observational Gait Analysis
 - Basically, the way a patient walks is analyzed for any deformities or musculoskeletal pathologies.

Group Accomplishments

- Organized and gave presentation for students and faculty at Northwestern University Prosthetics and Orthotics Center
 - Half-day, November 11
 - Tailored modules to explore two case studies
 - Obtain feedback on accuracy and clarity

Ethical Issues

- US case studies
 - HIPAA
- Accuracy of information
 - Educational modules used to train actual technicians
 - Material absolutely has to be correct
 - □

Resolved Ethical Issues

- HIPPA
 - Ongoing
 - Secured by the integrity of the group members and respect for the people we are trying to help
- Information
 - Contacts with NUPOC to verify accuracy
 - Bi-weekly peer review presentations
 - Understanding own limitations with material

Essential Tools

- Actual Clinical tools
- Constant updates and information dissemination
 - Email
 - IGroups
- Video
 - NUPOC presentations
 - “30 Second Elevator Pitch”

Resources

- Dr. Meade's extensive background/library
 - 2004 Graduate Orthotics program: NUPOC
- Brian Malas
 - Certified Orthotist, M.P.H.
 - Director of Orthotics
Children's Memorial Hospital
- Dr. Miguel Gomez
 - Trauma surgeon from Bogota
 - practices orthotics and prosthetics in Colombia and in the US (Dynamic O&P, Houston, TX). He was on the spring 2006 IPRO team trip.

Improved Training Affect on People

- Each technician can fabricate 250 new prosthetic/orthotic devices per year
- Over a 20 year career they could affect over 5,000 patients.
- \$3,000 tuition for 2 year program in Colombia
- Cost of training per patient less than \$1

Thank You

Questions?