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?