(5q/B)

ROLES AND RESPONSIBILITIES IN THE PROVISION OF ADAPTIVE EQUIPMENT

INTRODUCTION

Assistive technology can be extremely useful in the lives of disabled individuals. Even the simplest piece of equipment can enhance someone's functional abilities, improve posture, or increase comfort. The challenge lies in choosing the correct device(s) and putting them together into a system that works well for any one individual. Once the device is obtained, adjusted and fitted to it's user, the ongoing challenge is maintaining and adjusting the device(s), and using it correctly throughout it's lifespan. None of this is simple. Provision of assistive technology requires input from everyone involved with the end user. Adequate information must be gathered, a careful assessment done, and goals set before anyone begins to think about what type of equipment should be recommended. Product trials are helpful in making decisions, as is simulation of the recommended positioning using specialized equipment.

In most cases, in the NYC area, the provision of specialized equipment happens through the medical model. Someone identifies the need for intervention (new equipment or revisions to existing equipment). If the identifier is the user, a caregiver, family member, or teacher they should report the problem to the treating therapist if the person is on an active therapy program. For students who are not on an active therapy program, the problem should be reported directly to the facility which manages his/her equipment needs. If the treating therapist receives the report he/she should assess the student to see if simple adjustments can be made on site using available tools. If the need is greater, the treating therapist should refer the student to the medical clinic that manages their equipment needs. The clinic will need a great deal of input from the treating therapist regarding therapy goals which might be assisted by the use of assistive technology. It is the treating therapist who understands the daily life of the student, and the environment he lives and learns in. The clinic therapist will only see the student in the hospital setting, and only for the relatively brief clinic visit. Once the student reports to clinic, the therapist and/or physician in charge can use the referral information to begin an assessment. They can use their specialized knowledge about available technology to recommend equipment which will assist the treating therapist and the student and his/her family. This may take extra time, but the input from varied sources enriches the process and usually results in a better end product.

The following document serves to explain the roles of the various people involved in the identification, assessment and provision process. It should be helpful to people working with disabled students in the NYC public schools, as they try to ensure that students have appropriate technology for use in the classroom and throughout the school building. In each stage the document describes who is involved, and what they are required to do. It will help you understand your role, and how valuable your input is to the process.

is the responsibility of the ATP to obtain all the necessary information regarding the student's abilities and goals, and the environment where he will be using the equipment. Some of this information will be gathered before any clinic visit by the treating therapist or the ATP depending upon the mechanism set up during the initial discussion. Once a product decision is made the ATP acts as described in Example #1 above.

(See the attached directory for a partial listing of clinics where assistive technology assessments are available in the NYC area). If a clinic does not have a therapist acting as an ATP the treating therapist should request to speak to the professional who will fill this role in order to provide adequate collaboration in an attempt to ensure a satisfactory outcome.

REHABILITATION TECHNOLOGY SUPPLIER: Formerly called the equipment vendor, sometimes still called a durable medical equipment supplier, this person works for a local company that supplies durable medical equipment. A rehabilitation technology supplier has special expertise and experience which allows him/her to work with the clinical team as part of the hands-on assessment. They are especially knowledgeable about the types of equipment available in the commercial marketplace as well as possible custom modification and/or fabrication of various types of equipment. He/she will also have information on equipment prices and funding, and should offer the team a menu of choices for discussion. provide equipment for product trials, be available for assessments, interim fittings and delivery as directed by the assistive technology practitioner. He should work for a company capable of providing support services to users and their equipment in the field. Rehabilitation technology suppliers with specific levels of competency can apply for membership in the NATIONAL REGISTRY OF REHABILITATION TECHNOLOGY SUPPLIERS. Durable medical equipment companies can submit to voluntary inspection by the JOINT COMMISSION FOR ACCREDITATION OF HEALTH ORGANIZATIONS to document the quality of the service they provide to consumers.

MANUFACTURER: This is the company that actually makes the piece of equipment. Some durable medical equipment suppliers create seating systems "in house" and might be called manufacturers or fabricators. Some manufacturers of assistive technology will sell directly to consumers, but most require that the consumer purchase the items through a durable medical equipment supplier. This allows the manufacturer to be sure that the equipment is being supplied appropriately, and that the consumer will have a local source for service and repairs when they are needed. (eg. Rifton, Quickie Designs)

MANUFACTURER'S REPRESENTATIVE: This person can work directly for a manufacturer, or be an independent representative who works for several manufacturers. It is usually the manufacturer who chooses how they want to be represented in a geographical area (direct or independent). The "REP" usually has samples available for trials, and is able to give inservices about their products. They also work directly with the durable medical equipment suppliers in their territory, providing equipment for trials, giving inservices, and trouble shooting when problems arise with the manufacturer or a consumer has a special need. The representative has a vested interest in offering information about the product they represent. Their commissions are based on how many pieces of equipment are ordered from the company they represent through the durable medical equipment companies in their geographical area.

DISTRIBUTORS: Distributors gather equipment manufactured by multiple companies and offer it for sale. They usually show this equipment in a catalog. Some distributors may manufacture a few of the featured items. (eg. JA Preston)

THE STEPS IN THE PROCESS

Step 1: IDENTIFICATION AND NEEDS ASSESSMENT

This process can initially occur at school. Information gathered must be shared with the assistive technology team at the medical clinic. This process depends on communication-- written, phone and face/face.

User/Family/Caregiver/ Paraprofessional/Teacher/Treating Therapist

1. Identifies a need for adaptive equipment, postural support and/or mobility. (Usually based on reports from others or personally feeling or observing that the student is uncomfortable, unstable, unsupported, etc. and that maybe revisions to existing equipment, or provision of new technology could help)
2. Articulates the goal to be achieved using the equipment
3. Actively participates in collecting and providing accurate information to whomever is doing the assessment
4. Identifies potential funding source(s), including information on any preferred provider restrictions the insurance company may have

Treating Therapist (s)

These therapists can be home or school based. They are actually involved in the day to day therapeutic management of the student.

Interview and information gathering
- *Reports to the team about the student's present therapy program, including assessment findings and treatment goals
- *Clarifies the student's and therapeutic team's short and long term goals to be achieved through the use of equipment

Assistive Technology Practitioner and Physician

(This is usually a clinician (PT,OT,SP,MD) working primarily with technology. In NYC this person usually works inside the medical model, at a hospital or rehab center based wheelchair/equipment clinic. This person may also be the primary treating therapist for some students.)

Interview and information gathering
- *Gathers all medical and therapeutic information
- *Acts as a facilitator uniting student, therapists and supplier
- *Knows the identified funding sources and their limitations
- *Determines all technologies to be integrated
- *Suggests and handles referrals to needed professionals outside the seating team

Rehabilitation Technology Supplier

Interview and information gathering
- *Understand, concur or re-formulate student, clinician and ATP goals
- *Determine status of currently used equipment, if any
- *Represent options for procurement based on funding sources

Step 3: EXPLORING OPTIONS/ USING INFORMATION RESOURCES

This step usually occurs at the medical equipment clinic.

User/Family/Caregiver/Teacher/Treating Therapist (s)

1. Participate in simulation and product evaluation
   *verbalize pros and cons
   *suggest modifications to product which will improve user's function

2. Read product information, be prepared to prioritize goals

3. Communicate with other users

4. Explore alternative sources of funding

Treating Therapist (s)

1. Evaluate user's functional abilities with proposed options using product trials at primary function site (school,work,home)

Assistive Technology Practitioner

1. Research potential solutions
   *catalog review
   *access data bases
   *literature review
   *communication with other professionals and RTS

2. Product evaluation
   *Simulation or mock-up
   *product trials
   *communicate with RTS

3. Eval user's functional abilities with the proposed options
4. Educate user on alternative funding sources

Rehabilitation Technology Supplier

1. Researches potential solutions
   *catalog review
   *access data bases
   *communication with manufacturers/reps/technicians
   *communication with other RTS's and clinicians
   *combining technologies

2. Provides evaluation equipment
   *demonstration equipment
   *arrange for manufacturer's sample equipment
   *if possible provides simulation products
   *instructs in use of sample, when needed

3. Participates in Product Eval and Eval of User's functional Status

Step 5: FUNDING, FABRICATION, DELIVERY, EDUCATION AND SUPPORT

User/Family/Caregiver/Teacher/Treating Therapist(s)

1. Submit signed forms with justification and cost information to private insurance carrier
2. Self-Advocate with private insurers to get a timely decision
3. When appropriate remit deposit necessary to initiate order
4. Participate in fitting and adjustment of equipment for
   *comfort
   *function
5. Understand preventive maintenance needed and warranty info (purchase simple tools if needed to perform periodic maintenance, and simple adjustments)
6. Understand role of supplier in repairs and follow up, including manufacturer's expressed and implied warranties

Assistive Technology Practitioner

1. Provide Evaluation results, letter of justification and other support materials (photo, video, etc.) expressing cost-effective solution to meet client need
2. Educate user on funding process, including time line and appeal processes available
3. Track status of all requests
4. Answer questions and appeal funding decisions when appropriate
5. Check delivered product for
   *operability
   *no damage
   *adjustability
   *complete order
6. Arrange for delivery to user with RTS
7. Participate in fittings and set-up to assure product meets intended goal
8. Provide user training in proper use of the equipment
   *safety issues
   *potential misuse
9. Schedule routine appointments to follow-up post delivery

Rehabilitation Technology Supplier

1. Provide product information and price to be submitted to third party funder, submit papers if appropriate
2. Answer questions and appeal funding decisions when appropriate
3. Track status of all requests
4. Once funding is secured, order from all suppliers (if significant time has passed since assessment, contact ATP regarding need to reasses or remeasure)
5. Answer all manufacturer's questions during fabrication
6. Check assembled product against original order
7. Provide quality assurance check-out for
   *safety
   *durability
   *reliability
8. Make fitting adjustments to customize the equipment to user
9. Provide user education
   *care/maintenance
   *warranty info
   *repair info
   *safety precautions
10. Provide warranty and non warranty repairs promptly if needed (warranty repairs may require payment of a labor fee)

consequences of ignoring limitation of range:

when this is present	ignoring or attempting to over correct causes:
limited hip flexion.x2	posterior pelvic tilt
limited hip flexion.x1	pelvic obliquity (higher on limited side)
limited add and/or int rot	posterior pelvic tilt
limited int rot x1	pelvic obliquity (higher on limited side
windswept deformity	pelvic rotation

MAINTAINING THIS
REQUIRES SEATING SYSTEM COMPONENTS THAT ALLOW PROPER PLACEMENT OF THE CLIENT AND SUPPORTS TO LIMIT THE POSSIBILITY OF MOVEMENT OUT OF THE POSITION

- lapbelt
  - proper size
  - proper placement (angle to seat)
  - proper cinching method
  - direction of pull after closure
  - location of buckle
  - padding for comfort or to enhance control
- rigid pelvic stabilizer
- anterior knee blocks

AFTER STABILIZING PELVIS, FACILITATE OPTIMAL POSTURAL ALIGNMENT IN OTHER BODY AREAS, ACCOMMODATE LIMITATIONS AND DEFORMITIES

- for better balance, stability, comfort and function
- base decisions in this area on careful assessment of joint/muscle mobility and deformity, as well as postural control in each position (can client do it, or do we need supports)

LIMIT ABNORMAL MOVEMENT, FACILITATE NORMAL MOVEMENT, IMPROVE FUNCTION

- use equipment as adjunct to therapy and to assist in inhibiting abnormal tone, postures and movements
- improve health, comfort and function
- find key points of control
- determine the source of the problem

PROVIDE THE LEAST AMOUNT OF SUPPORT NEEDED TO GET THE RESULT DESIRED

- provide the least restriction and allow desired movement to come throug
- make the system dynamic, change it as the person changes
- use two systems if goals conflict
  - eg. oversupport and restrict in a chair where the client might need to isolate out fine motor controls for switch access or driving
    - provide a less restrictive environment for relaxing and practicing gross motor control

ASSESSMENT

CLIENT CENTERED ASSESSMENT

1. GATHER INFORMATION
   why are we here?????
   gather info about client needs and expectations from everyone
   what are major life problems that might respond to equipment
   list present problems and present treatment, seating and mobility goals
   what has been tried, what worked and what did not work
   medical and management issues (braces, medications, surgery)
   psycho social issues
   environmental issues
   funding issues, determine preferred provider if applicable
   etc.

2. CLINICAL ASSESSMENT
   * PERCEPTUAL/MOTOR
   * PSYCHOSOCIAL
   * PHYSICAL
     1.look at client in existing equipment with clothes on
       ask if this is how they always look
       ask them to correct their own posture
       ask caregiver to reposition
       WATCH, ASK QUESTIONS
     2.ask if client will take their shirts off, or atleast
       let you peak underneath
       check for pelvic alignment, visually and hands on
       check for trunk alignment (wrinkles !), AP and lateral
     3.have client transfer or be transferred to the mat table
       watch how this happens, you need this information!!!
       check equipment for wear patterns
     4.do thorough supine mat assessment to determine
       *potential for trunk alignment without gravitational pul
       *pelvic mobility (ant posterior, rotation,lateral)
       *isolated hip flexion on each side with knees flexed
         enough to eliminate hamstring influence, do both legs
         together and then each individually, maintain
         any available lumbar arch. **YOU HAVE REACHED THE END OF THE AVAILABLE RANGE WHEN THE PELVIS STARTS TO MOVE OUT OF IT'S MOST OPTIMAL POSITION**
       *abduction, adduction, internal and external rotation
         range without moving the pelvis
       *and record: distance from posterior pelvis to pop foss
         distance from pop fossa to heel
         angle you will need between seat/backrest
         seat/calfrest
         calfrest/footre
     5.sit client at the edge of the raised mat or on a chair
       with a thin top to keep knees flexed greater than 90 deg
       in order to eliminate hamstring influence
         repeat assessment of all areas done in #4 and note
         differences with the influence of gravity

INTAKE AND ASSESSMENT FOR ASSISTIVE TECHNOLOGY

BEFORE CLIENT APPEARS

NAME: ____________________ AGE: __________

DIAGNOSIS: ____________________ FUNDING: __________

FACILITY: ____________________ THERAPISTS: __________

____

REASON FOR VISIT: ______________________________

____

MAJOR PHYSICAL PROBLEMS: ______________________

____

____

MAJOR PSYCHOSOCIAL ISSUES: (include family expectations) __________

____

MAJOR ENVIRONMENTAL ISSUES: (transport, residential, school, recreation)

____

____

EQUIPMENT PRESENTLY BEING USED: ________________

____

PROBLEMS: ______________________________________

GOOD RESULTS: __________________________________

EQUIPMENT TRIED ALREADY: ________________________

PROBLEMS: ______________________________________

GOOD RESULTS: __________________________________

PHYSICAL ASSESSMENT

OBSERVE CLIENT IN PRESENT EQUIPMENT AND RECORD OBSERVATIONS:

POSTURE: GENERAL: ____________________

HEAD: ____________________

SHOULDERS: ____________________

ARMS: ____________________

TRUNK: ____________________

PELVIS: ____________________

LEGS: ____________________

PROPULSION IF WHEELCHAIR: ____________________

____

TRANSFERS: ____________________

____

MAT EVAL

SUPINE RANGE OF MOTION AND ALIGNMENT LIMITATIONS:

TRUNK: ____________________

PELVIS: ____________________

HIPS: FLEX WITH KNEES FLEXED: ____________________

WITH KNEES EXT PAST 90 DEG: ____________________

ABDUCTION: ____________________

ADDUCTION: ____________________

INT ROT: ____________________

EXT ROT: ____________________

KNEES: ____________________

FEET: ____________________

SKIN PROBLEMS: ____________________

RESPONSE TO MOVEMENT: ____________________

RESPIRATORY STATUS: ____________________

MISC. ____________________

SEATING PROPERTIES NEEDED

ENTER CORRECT LETTER(S) NEXT TO THE ITEM:

NOT NECESSARY: N

SURFACE		FLEXIBILITY		ATTACHMENT	
PLANAR:	P	SOFT/FLEXIBLE:	S	FIXED:	F
CONTOURED:	C	SEMI RIGID :	SR	REMOVABLE: HDW:	RH
MOLDED:	M	RIGID :	R	VEL:	RV
				BELT:	RB
				SWINGAWAY:	SA
				FLIP DOWN:	FD

PRIMARY SUPPORT SURFACES:

BACK________ SEAT:_________ ARMS _________ FEET _________________

SECONDARY SUPPORT SURFACES:

POSTERIOR HEAD: ________________ ANT HEAD ___________________

ANTERIOR SHOULDER:____________ ANT CHEST ______________________

LATERAL TRUNK ______________ LATERAL HIP __________________

POSTERIOR PELVIS:____________ ANTERIOR PELVIS: ___________________

LATERAL KNEE _________________ MEDIAL KNEE _____________________

ANTERIOR KNEE ________________ LATERAL FOOT _______________________

MEDIAL FOOT __________________ ANTERIOR FOOT_________________________

POSTERIOR FOOT ______________

BASE

NON MOBILE:_______ CASTERED: ______________

DEPENDENT MOBILE: _______ MANUAL INDEP MOBILE ____________ POWER __________

OTHER EQUIPMENT ISSUES

INTERVENTION PLANNING

SET OBJECTIVES
- INHIBIT
- FACILITATE
- CONTROL
- ACCOMMODATE

do this for each body segment

LIST PROPERTIES OF SUPPORTING SURFACES
(see additional work by Faith Saftler PT)

ARE THEY NEEDED?
- primary: seat, back, head, feet, upper extremities
- secondary: lateral thoracic, hip, knee; medial knee, anterior knee, posterior foot, anterior chest......

WHAT ARE THEY FOR?? (objective)
- support
- correct
- facilitate
- accommodate
- increase comfort
- safety

PROPERTIES

SURFACE TYPE: planar, contoured molded

planar: flat, foamed or not, type of covering

+- offers minimal support
- least assistance in maintaining seated posture
- pressure maximized over areas which protrude from the main surface contour (ischials, vertebrae, posterior pelvic crests, sacrum, coccyx, scapulae)
+ usually least costly
+ simplest to maintain
+ simplest for transfers

contoured: primarily an approach to accommodating posterior body surfaces (under surface of buttocks and thighs, posterior trunk) shaping fairly shallow, minimal lateral control, may have some problems with transitions (edges where contour begins or ends)

* appear flat but assume contour with pressure
  - one firmness
  - multi-firmness
  - foam, air filled, gel
* pre contoured for a generic shaped person
* created from planar surface + accessories which grow out from the surface as a transition
* created by pushing up from underneath a planar surface
* created by opening a space for the planar material to move into secondary to pressure

DIMENSIONS: size, shape
size: linear dimensions, height, depth, width, length
shape: outside configuration

PLACEMENT: relationship to other parts
to person
to support frame

ATTACHMENT: swingaway, removable, adjustable
strength, durability

CHOOSE PRODUCTS

work with a NRRTS member
supplier should be present for entire assessment and participate, asking questions and gaining an understanding of goals and what will be needed to achieve them
supplier should understand and discuss the properties of support surfaces and be prepared to offer choices to the team, along with information which will help them make educated choices
supplier should provide product for trials as needed
be sure you are offered choices