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STAFF DEVELOPMENT IN REHABILITATION TECHNOLOGY SERVICES

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INTRODUCTION

This paper addresses the professional background and development of individuals working in services of rehabilitation technology at Gillette Children's Hospital. Since the on-the-job training at Gillette is largely experiential, the working environment has a significant impact on the professional development of staff. For this reason, this paper also provides a brief overview of these services, their evolution, and organizational structure.

ORGANIZATIONAL STRUCTURE

Twenty-eight technical persons currently work in the Habilitation Technology Labs(HTL) of Gillette Children's Hospital. There are six sub-departments within HTL, as follows: Adaptive Equipment (5 persons), Rehabilitation Engineering (1), Sitting Support Orthotics and Upper Limb Orthotics(4),Prosthetics (3), Spinal Orthotics (4), and Lower Limb Orthotics (9). Other positions are in an administrative category, including the Director, Administrative Secretary, Receptionist and Orthotic Clinical Intern. Each of these sub-departments has a team leader, whose responsibilities include managing the work load, the personnel, and financial matters of that sub-department.

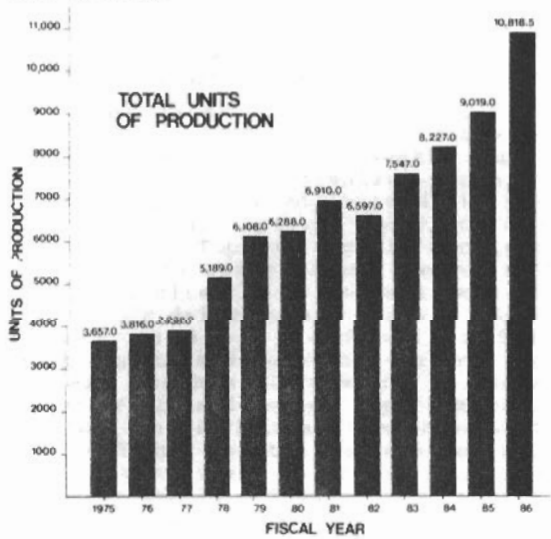
It is extremely important to note that the rehabilitation technology services are provided in a collegiate atmosphere where clients are evaluated by an interdisciplinary team involving some combination of these professionals: physician, orthotist, prosthetist, rehab. technologist, physical and occupational therapist, speech/language pathologist and psychologist. (Note: in this paper, the term "rehab. technologist" is used to define a technical person working in rehab. technology services who is not involved in the provision of typical orthotic or prosthetic services). Persons at all levels within the HTL, not just those with greater experience or team leadership roles, interact with physicians, therapists, and other professionals.

EVOLUTION OF SERVICES

Services began approximately 50 years ago with traditional orthotics and prosthetics. In addition to keeping pace with developments in orthotics and prosthetics, the last 13 years have included the addition of newer rehab. technology areas such as custom seating systems, mobility, and a wide variety of adaptive equipment. Evaluation programs have also been established in the areas of powered mobility, augmentative communication and environmental controls.

The typical client population served at Gillette has evolved to include adults as well as children. The most common disabilities among clients receiving services are cerebral palsy and myelomeningocele, but also served are clients with spinal cord injury, head injury, muscular dystrophy and other neuromuscular disorders.

We have a method for consistent year-to-year monitoring of work volume that is independent of inflation. The measurement units of this method are called Units of Production (UP's). To describe the HTL work volume increase from 1976 to 1986, we can compare 3,816 UP's in 1976 to 10,818.5 UP's in 1986. The following chart further describes this growth.



A major factor contributing to growth in the HTL service volume is a gradual increase in awareness of services, both within Gillette itself and throughout the community among clients, their families, community residential facilities, school clinicians and physicians. The addition of newer rehab. technology services has reflected the needs expressed by clients and their caretakers.

The gradual development of other rehab. technology services out of a traditional orthotics and prosthetics department, which has well established reimbursement and fabrication techniques, probably a primary factor in the current financial success and quality of these services.

TRAINING BACKGROUND

The diverse backgrounds of the specialists in rehabilitation technology within the HTL contribute significantly to the present cost effectiveness and quality of their services. Persons working in rehabilitation technology come from educational and working backgrounds in areas such as art or design, traditional orthotics and prosthetics, classical engineering, rehab. engineering internship, speech and language pathology, machinist work, electronics, communications and plastics technology.

When new persons are added to the HTL staff, we are not looking very closely for the new employees to have experience in rehabilitation technology, but are looking, instead, for potential. This potential is measured, as we are best able to read it, in their personality and intelligence. These traits, combined with the rich work experience at Gillette, have resulted in the high quality staff currently employed. We also feel that the diversity of backgrounds is valuable for maintaining vitality and for bringing creative solutions and experience from many fields. Within the HTL a balanced mix of persons with traditional orthotics and prosthetics and other backgrounds has worked well.

ON-THE-JOB EXPERIENCE

The on-the-job training of all HTL staff in rehab. technology services is largely experiential. The significant numbers of clients served at Gillette *and their varying levels of disability* facilitate this experiential training. A client follow-up system of at least annual clinic visits gives rehab. technology professionals an invaluable opportunity to evaluate their work over time. The instructive value of this follow-up system is enormous, since it allows staff to learn from their mistakes and make appropriate design and fabrication improvements.

Historically, Gillette has emphasized medical education. Within HTL, contact between the new employee and the client is initiated early in the employee's career. Newer employees are able to benefit from both the education and experience of those with more experience. Most training, however, is through supervised hands-on service to clients. In some cases, newer employees in training are matched up with more experienced employees who have exceptional skills.

Medical education is obtained informally by HTL staff as they interact and problem-solve with therapists, physicians and other clinicians at Gillette. It is one of the stated priorities of the HTL to listen to, and learn from, the families, caretakers, school team and other persons outside of Gillette who are working with each client. A significant amount of education is also obtained by the HTL staff from interaction with these families and professionals. Prior to any evaluation, information is obtained from these persons regarding the client's abilities and needs. The caretakers and school team are always included in the client evaluation and equipment design process. This provides an open forum for easy exchange of ideas and professional growth.

Individuals working in areas of rehab. technology at Gillette have had to increase their awareness of third party payers' requirements and create more effective billing procedures to assume a high rate of reimbursement for their services and equipment. Frequently, rationale for doing evaluations is provided to third party payors. Extensive documentation of a client's needs and justification must be submitted by the technical person(s) involved when equipment purchase is recommended. Although extremely time-consuming, this process does cause a person to carefully think through recommendations.

Considerable emphasis is put on making informal education available to the HTL employees through weekly educational inservicing, organized cooperatively by both the Gillette Habilitation Technology Labs and the PT/OT departments. Topics range from client case studies and product demonstrations, to client service philosophies *and service delivery procedures.* Subdepartments of the Habilitation Technology Labs also meet regularly to address business issues and to share new materials and design improvements. In addition, individuals are encouraged to attend work-related conferences and community seminars on professional and technical skills. Several individuals are choosing to obtain formal education in an Orthotic and/or Prosthetic Practitioner certification program offered locally.

The HTL at Gillette has a clearly designated allocation for staff educational support. The HTL, with a staff of 30, annual revenue of $1,746,038.00 and a total direct expenses budget of $1,078,526.00 in 1986,has an Education/ Budget line item of $15,000.00.

SUMMARY: Advantages and Disadvantages

We feel the approach outlined in this paper has been effective but also has some shortcomings.

Advantages, in addition to those mentioned throughout this paper,include the non-transverse division of labor. This allows the HTL employees, from new technical persons with six months experience to team leaders with 10 or more years of experience, to all participate in the full range of service provision, including interviewing clients, device design, fabrication and fit. Another advantage is that learning in a real work situation and direct application of technology challenges people early in their careers and keeps them stimulated. In this environment people also develop a habit of designing and problem-solving quickly, which has a huge impact on the department's financial performance.

A form of staff development which relies heavily on experience, however rich,tends to fall short in areas which typically require more formal instruction such as anatomy, engineering theory and analysis. These strengths must be obtained by other means. The experiential training can sometimes leave "gaps" since it relies upon the mix of work coming through the department which may be incomplete. This phenomena depends upon the size of the facility and lessens as the department's size increases. A larger facility allows the rehab. technologist to see more each day and to benefit from the sharing of knowledge by more experienced professionals on how they have solved similar problems.

CLOSING

This paper attempts to present an overview of the professional development of individuals providing rehabilitation technology services at Gillette Children's Hospital. A special thanks is extended to Debbie Day, Karen Ostenso, Mark Payette and David Wilkie for their contribution to this paper.
For any further information, we welcome inquiries to:

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