O&P Care Offers Patients a Second Chance (Continued from page 1)

Upper-extremity prostheses range from partial or complete finger replacements to systems addressing complete arm loss at or above the shoulder. Most common are transradial (below-elbow) limbs typically consisting of a socket, which fits over the remaining (or “residual”) human anatomy, and a hand or hook-type terminal device sometimes with a functioning wrist component. Transhumeral (above-elbow) systems generally add a functioning elbow.

Traditional upper-limb prostheses are mechanically controlled and powered by cables actuated by residual limb motion. A newer option, myoelectric control, provides powered actuation of prosthetic and powered by cables actuated by residual limb motion. A newer option, myoelectric control, provides powered actuation of pros-

Orthoses
Orthotic devices are fabricated for all parts of the lower and upper extremities and the spinal and cervical regions. Orthoses are generally named and classified by the area of the body to which they are applied. For example, a TLSO is a spinal orthosis encompassing the thoracic, lumbar and sacral regions of the trunk. Likewise, a KAPO extends from the knee downward to include the ankle and foot.

Orthotic devices can be as minimal as a pair of foot orthoses for planar fasciitis or as involved as a cervical-spinal orthosis to protect and promote healing for a major spinal injury. Some are used for a limited time following an injury, others may be applicable throughout an individual’s lifetime for managing symptoms of diseases such as MS, cerebral palsy and polio.

The list of different orthosis designs currently in use is exhaustive with a significant portion being dedicated to pediatric applications.

Note to Our Readers
Mention of specific products in our newsletter neither constitutes endorsement nor implies that we will recommend selection of those particular products for use with any particular patient or application. We offer this information to enhance professional and individual understanding of the orthotic and prosthetic disciplines and the experience and capabilities of our practice. We gratefully acknowledge the assistance of the following resources used in compiling this issue:

Becker Oregon • Boston Brace Inc. • Freedom Innovations Fillauer Inc. • Orthomerica Products Inc. • Touch Bionics OrthoCare Innovations LLC • Otto Bock Health Care

Supporting, Protecting, Relieving, Replacing

A ppreciating the role of prosthetists and orthotists begins with understanding the services we offer. Our core competency is to provide rehabilitation devices that either replace a missing body part (prostheses) or support and protect anatomical structures to facilitate healing, relieve pain or promote safe ambulation (orthoses).

The process begins with a detailed patient history and physical to gain a clear understanding of the patient’s condition, physical capabilities and lifestyle goals. This step often involves consultation with the patient’s physician and/or surgeon, family members, a social worker, and other rehabilitation practitioners involved in delivering care.

Next come careful anatomical measurements and observations to assist in the design process, typically involving a positive model of the anatomy using casting techniques or CAD/CAM technology. In the design process, practitioners combine the “science” of their training and applicable technology with the “art” of their accumulated experience and personal appreciation for the patient’s needs and abilities. When the finished product is delivered, our role shifts to one of monitoring and upkeep to ensure proper fit and function are maintained.

Scope of Services
Prosthetics
Although some prostheses are created for largely cosmetic reasons, the major focus of prosthetic practice is on restoration of function to compensate for the loss of a limb or congenital absence of a portion or all of an arm or leg. (Continued on page 4)

About Allen Orthopedic Labs
Allen Orthopedic Labs, Inc. is pleased to present the latest issue of Update, a quarterly newsletter published to help health professionals better serve their physically challenged patients and stay abreast of the latest developments in prosthetic and orthotic disciplines. This issue addresses the origins and fundamentals of orthotic and prosthetic practice.

John Allen is an American Board Certified Practitioner in both orthotics and prosthetics. After completing a residency program at the University of Michigan, he remained on staff until returning to his Bay area roots as lead orthotist at Stanford University. John transferred to UCSF prior to opening Allen Orthopedic Labs. His wife and partner, Leslie, is also an ABC-certified prosthetist. Their practice is accredited by the American Board for Certification.

Time does fly! Our doors have been open for five years now, so we thank you for your continued support and referrals. We welcome your comments on Update and requests for further information: (415) 925-1333.

O&P – Who We Are, What We Do
In the whole of American health care are many specialties, ranging from common to esoteric... from well-known to a mystery. But regardless of their size and the awareness they elicit, these unique disciplines are all important to the patients who require their respective form of specialized care and to the decision-makers who make the referrals for that treatment.

The twin rehabilitation fields of orthotics and prosthetics neither constitute a major slice of U.S. health care nor rank high on the typical American’s recognition scale; but to people with limb loss, a neurologic deficit, orthopedic abnormality, or one of various other physical disabilities, the knowledge, skill and experience embodied in these specialties can be nothing short of life-sustaining.

This issue of our newsletter steps back from the details of everyday practice to examine the roots of prosthetic and orthotic rehabilitation, the education and credentials O&P practitioners bring to the care of their patients, and the spectrum of physical challenges they are trained to alleviate, accommodate, and overcome. We hope you find the presentation worthwhile.
Standards of Our Profession: Education, Certification, Licensure

The term “profession,” regardless of the field, evokes certain expectations—advanced, specialized education, demonstrated skill...proven experience. Professionals are measured by specific standards that help define their preparation, capabilities and competence for the patients they serve and the health care providers and facilities with whom they interact.

This condition is every bit as true for orthotics and prosthetics as for other health care professions. In 1993 the American Medical Association recognized orthotics and prosthetics as an allied health profession, culminating a steady evolution of the twin disciplines from medical-related craft to true patient care specialty. Like their counterparts in other allied health professions, O&P practitioners are evaluated against exacting standards of education, clinical experience, professional knowledge and demonstrated competence.

Education

Today nine accredited programs across the U.S. offer formal O&P education curricula to prepare the prosthetists and orthotists of tomorrow with credentials ranging from bachelor’s degrees to post-baccalaureate certificates, to master’s degrees. The instruction in these programs places particular emphasis on anatomy and physiology, patient management skills, clinical practices and professionalism, fabrication and fitting techniques.

Upon graduation from an O&P education program, many students seek to further their preparation with a year-long residency at an accredited site to gain clinical training and experience. The National Commission on Orthotic and Prosthetic Education (NCOPED) has accredited O&P programs since 1970.

Certification

Board certification of practitioners establishes and promotes the highest standards of organizational and clinical performance in O&P service delivery. Since 1948 the American Board for Certification in Orthotics and Prosthetics (Pedorthics was added in 2007) has served as the accrediting body for residency programs and participates with the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in accrediting O&P education programs.

Facility Accreditation

ABC’s facility accreditation program evaluates O&P practices against exacting standards relating to governance, administration, staff qualifications, patient care, quality assessment, facility management and safety. ABC is recognized as an approved certifying organization for suppliers of orthotic and prosthetic services and related medical equipment by the Centers for Medicare and Medicaid Services. Full facility accreditation is good for three years.

As a profession we believe licensure requirements are in the best interests of our field, that prosthetic and orthotic care should be delivered by practitioners who have fulfilled requirements for certification and that state licensure laws should embody similar requirements.

Let’s Talk Terms

Like our counterparts in other medical specialties, we who practice orthotics and prosthetics use a somewhat specialized vocabulary pertaining to the work we do. The terms are not difficult but tend to be confusing to some folks.

Take prosthetic... It will come as a surprise to more than a few people who use it frequently that the word is not a noun! It is correctly used only as an adjective, as in prosthetic rehabilitation. The proper term for what in past times was generally called an “artificial limb” is a prosthesis (pl. prostheses)... not a “prosthetic.” Similarly, an orthotic device (popularly termed a “brace” in past times) is correctly termed an orthosis (pl. orthoses).

Adding further confusion to the discussion are the words prosthetics and orthotics, which are nouns, as they refer to the science and practice of providing prostheses and orthoses. (Prosthetics are not necessary for replacement of a missing limb, nor are orthotics two or more orthopedic braces.)

Let’s Talk Terms

And finally, the individuals who provide prostheses and orthoses: An orthotist is a practitioner who measures, designs, fabricates, fits and services orthoses to support or correct disabilities; likewise, a prosthetist is a practitioner who measures, designs, fabricates, fits and services prostheses for replacement of a missing limb, appendage (hand, fingers, toes) due to congenital or acquired limb loss.

Now, further muddying the water are different uses of these terms in other specialties.

For example, while the technically correct term for a molded shoe insert is a foot orthosis, that particular product is often called an “orthotic” by some podiatrists and sellers of prefabricated insoles. Moreover, providers of various devices that do not have an impact on the musculoskeletal functions of the body—artificial eyes or appliances for the eyes, dental plates, and largely cosmetic ears and noses for example—like to call these items “prosthetics.” So it can be confusing.

A few other terms pertinent to our specialties:

O&P (or P&O) — Widely used abbreviation for orthotics and prosthetics.

Pedorthist — An individual trained in the manufacturing, fitting and modification of foot appliances and footwear for the purposes of alleviating painful or debilitating conditions of the lower limb.

Rehabilitation team — A group of allied health care professionals that frequently includes physician, surgeon, orthotist/prosthetist, physical therapist, occupational therapist, social worker and counselor assembled to help a debilitated individual regain a functional life.

Residual limb — The portion of an arm or leg remaining after amputation... sometimes referred to as a stump or residuum.

Licensure — An alternative pathway for individual certification and facility accreditation is licensure. The National Commission for Establishing Individual and Organization Licensure (NCOPE) was established to further the scientific research on standards for practitioner knowledge and skill to maintain their credential. Certification is renewable every five years once candidates demonstrate they have reached required continuing education thresholds established to ensure practitioners stay on top of advances in technology and current patient management standards.

Facility Accreditation

ABC’s facility accreditation program evaluates O&P practices against exacting standards relating to governance, administration, staff qualifications, patient care, quality assessment, facility management and safety. ABC is recognized as an approved certifying organization for suppliers of orthotic and prosthetic services and related medical equipment by the Centers for Medicare and Medicaid Services. Full facility accreditation is good for three years.

As a profession we believe licensure requirements are in the best interests of our field, that prosthetic and orthotic care should be delivered by practitioners who have fulfilled requirements for certification and that state licensure laws should embody similar requirements.

Current licensure states include Alabama, Arkansas, Florida, Georgia, Illinois, Kentucky, Mississippi, New Jersey, Ohio, Oklahoma, Rhode Island, Tennessee, Texas and Washington.

O&P Has a Long Way, Baby

The origin of orthotic and prosthetic practice is traceable back to ancient times. The first reference to an artificial appendage is found in the 6th century B.C. in ancient Egypt. The earliest prosthetics emerged from mankind’s physical and spiritual need for functional and cosmetic wholeness in response to limb loss in battle or an accident or a congenital absence. Evidence of prosthetic care in America and with it the need for formalized prosthetic education and building better relationships with the medical community appeared in the early 1800s.

Professions, O&P practitioners are evaluated against exacting standards of education, clinical experience, professional knowledge and demonstrated competence.

In 1948 the formation of the American Board for Certification in Orthotics and Prosthetics (Pedorthics was added in 2007) has served as the accrediting body for residency programs and participates with the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in accrediting O&P education programs.

In 1970 the American Academy of Orthotists and Prosthetists was established to further the scientific research followed, accompanied by creation of university-based orthotic and prosthetic training programs. In 1970 the American Academy of Orthotists and Prosthetists was established to further the scientific and educational attainments of O&P practitioners. Increased demand for O&P services led to improved technology in components, materials and clinical skills beginning in the 1960s.

Accelerated innovation in orthotic and prosthetic design has continued into the 21st century, driven by increased worldwide demand, microprocessor technology and government programs to provide top-quality prostheses and orthoses for military casualties of U.S. campaigns in Iraq and Afghanistan. Though still in their infancy, powered prosthetic limbs and electric orthotics promise to be the “next big thing” in our field; many other exciting concepts are also on the drawing board.

Although its roots are thousands of years old, the practice of orthotics and prosthetics may just now be coming into its own. Growth and development in this country.

O&P practitioners are evaluated against exacting standards of education, clinical experience, professional knowledge and demonstrated competence.

In 1970 the American Academy of Orthotists and Prosthetists was established to further the scientific and educational attainments of O&P practitioners. Increased demand for O&P services led to improved technology in components, materials and clinical skills beginning in the 1960s. Particularly noteworthy was the introduction of composite materials such as fiberglass and high-temperature thermoplastics in the 1970s.

Accelerated innovation in orthotic and prosthetic design has continued into the 21st century, driven by increased worldwide demand, microprocessor technology and government programs to provide top-quality prostheses and orthoses for military casualties of U.S. campaigns in Iraq and Afghanistan. Though still in their infancy, powered prosthetic limbs and electric orthotics promise to be the "next big thing" in our field; many other exciting concepts are also on the drawing board.

Although its roots are thousands of years old, the practice of orthotics and prosthetics may just now be coming into its own. Growth and development in this country.
O&P Care Offers Patients a Second Chance

Orthoses

Orthotic devices are fabricated for all parts of the lower and upper extremities and the spinal and cervical regions. Orthoses are generally named and classified by the area of the body to which they are applied. For example, a TLSO is a spinal orthosis encompassing the thoracic, lumbar and sacroiliac regions of the trunk. Likewise, a KAF0 extends from the knee downward to include the ankle and foot.

Orthotic devices can be as minimal as a pair of foot orthoses for plantar fasciitis or as involved as a cervical-spinal orthosis to protect and promote healing for a major spinal injury. Some are used for a limited time following an injury, others may be applicable throughout an individual’s lifetime for managing symptoms of diseases such as MS, cerebral palsy and polio.

The list of different orthosis designs currently in use is exhaustive and powered by cables actuated by residual limb motion. A newer component, Transhumeral (above-elbow) systems generally add a joint or above the shoulder. Most common are transradial (below-shoulder) systems addressing complete arm loss and powered by electrical signals generated in the patient’s residual limb. Lower-extremity prostheses compensate for limb loss ranging from a single toe to an entire leg at the hip or even higher. Transfemoral (below-knee) systems incorporating a socket, prosthetic foot and connecting pylon are by far the most common, followed by transtibial (above-knee) systems, partial foot prostheses, and replacement limbs for disarticulations through the ankle, knee or hip joints. The degree of difficulty increases the higher the level of limb loss.

For most of history, the primary functional role of lower-limb prostheses has been to provide weight bearing for standing and ambulation: The wearer provided all power through residual limb musculature. Now, the future of lower-extremity prosthetics may just be coming into sight with the development of the first electrically powered knee, ankle and foot components, which in turn could revolutionize prosthetic science.

Supporting, Protecting, Relieving, Replacing

Although some prostheses are created for largely cosmetic reasons, the major focus of prosthetic practice is on restoration of function to compensate for the loss or congenital absence of a portion or all of an arm or leg.

Note to Our Readers

Mention of specific products in our newsletter neither constitutes endorsement nor implies that we will recommend selection of those particular products for use with any particular patient or application. We offer this information to enhance professional and individual understanding of the orthotic and prosthetic disciplines and the experience and capabilities of our practice.

We gratefully acknowledge the following of those resources used in compiling this issue:

Becker Oregon • Boston Brace Inc. • Freedom Innovations Fillauer Inc. • Orthomerica Products Inc. • Touch Bionics OrthoCare Innovations LLC • Otto Bock Health Care

O&P – Who We Are, What We Do

In the whole of American health care are many specialties, ranging from common to esoteric…from well-known to a mystery. But regardless of their size and the awareness they elicit, these unique disciplines are all important to the patients who require their respective form of specialized care and to the decision-makers who make the referrals for that treatment.

The twin rehabilitation fields of orthotics and prosthetics neither constitute a major slice of U.S. health care nor rank high on the typical American’s recognition scale; but to people with limb loss, a neurologic deficit, orthopedic abnormality, or one of various other physical disabilities, the knowledge, skill and experience embodied in these specialties can be nothing short of life-sustaining.

This issue of our newsletter steps back from the details of everyday practice to examine the roots of prosthetic and orthotic rehabilitation, the education and credentials O&P practitioners bring to the care of their patients, and the spectrum of physical challenges they are trained to alleviate, accommodate, and overcome. We hope you find the presentation worthwhile.