

## The Barrow Acoustic Neuroma Center

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*The Barrow Acoustic Neuroma Center is a subspecialty program within the Skull Base Center at Barrow Neurological Institute. The multidisciplinary team is designed to provide comprehensive evaluation, diagnostic testing, and treatment for patients with acoustic neuromas. The team supports collaboration between clinical and research specialists and facilitates educational programs to advance the diagnosis and treatment of this lifestyle-altering disease. This subspecialty program offers patients the latest technological and medical advances and unites clinicians from numerous disciplines to insure optimal treatment for patients seeking curative or palliative care for their condition.*

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Acoustic neuromas, also known as vestibular schwannomas, are rare cranial lesions that can significantly alter the lives of patients. Although histologically benign, this disease can leave patients with motor and sensory disturbances, including facial paralysis, hearing loss, and difficulties with balance. These problems can occur during the growth of the lesion or during the course of treatment itself. Careful assessment of the patient's symptoms, overall health, and lifestyle must be considered when a treatment plan is developed. For this reason, a multidisciplinary team is critical for these complex patients to attain a successful outcome.

Each patient must be assessed carefully to devise an appropriate individualized treatment plan that meets the mutual goals agreed upon by the patient, family, and medical team. These goals, which are clearly defined from the outset of a patient's referral, consistently focus on the patient. Although a successful outcome is the ultimate goal of the team, providing emotional and spiritual support to patients and their families is also critical. This article describes the multidisciplinary Barrow Acoustic Neuroma Center and how it is designed to meet these goals.

### Comprehensive Management of Patients at Barrow

Barrow Neurological Institute is a nationally recognized center of excellence in the areas of clinical care, medical education, and research. The vision is to be the premiere neurological treatment center in the country for the compre-

hensive management of patients with diseases of the brain, spinal cord, and peripheral nervous system. The leaders of this institution recognize the importance of continued growth and innovation and seek to remain at the forefront of neurological research, community education, and quality patient care.

A notable objective of Barrow is the creation of a comprehensive medical center that is inclusive of various subspecialties. Multidisciplinary teams have been established to provide the comprehensive care necessary to evaluate and treat patients with complex neurological conditions because no single physician can possess the expertise to evaluate and treat all the abnormalities of these patients.

The subspecialty programs serve to unite numerous disciplines that require complex diagnostic testing, treatment planning, and evaluation. The collaboration of these subspecialty programs encourages and comforts patients seeking a collection of qualified individuals within different specialties in one location. Barrow is one of the few institutions throughout the country that offers such comprehensive services to the members of its community as well as worldwide.

Regionalization of treatment centers that provide care to patients with rare neurological disorders ensures that each team has a large enough patient load to maintain the expertise needed to provide state-of-the-art treatment. The more procedures the team performs together, the better their skill level becomes. Such expertise translates into decreased operative time, fewer complications, and better outcomes for patients. Acoustic neuroma procedures performed on an irregular or occasional basis invite disaster and are not in the best interest of the patient.

## **Barrow Acoustic Neuroma Center**

The Barrow Acoustic Neuroma Center provides the latest technology and medical advances to patients seeking curative or palliative care for their condition. As a comprehensive treatment

center, individuals with an acoustic neuroma are offered all of the critical diagnostics at one facility. Treating rare lesions near vital structures in the brain requires the collaboration of a multidisciplinary team. The acoustic neuroma team is codirected by the primary neurotologist and neurosurgeon who have received extensive additional training in surgical approaches and techniques for treating acoustic neuroma lesions. Their practice is predominantly dedicated to the treatment of skull base disorders.

Successful treatment often entails several types of treatment modalities, including surgery, stereotactic radiosurgery, observation, medical management, or a combination thereof. Barrow is the only center in the Southwest with the Cyberknife system offering fractionated radiation therapy.

Ideally, an individual suffering from this disease can come to Barrow for diagnostic testing, evaluations with specialists in the identified field, an individualized treatment strategy, and discharge planning. Patients traveling to Barrow from outside of Arizona are given specific follow-up recommendations to help their referring physicians care for them during their recovery.

After the patient's medical records, radiographic tests, and other diagnostic examinations are reviewed, a treatment plan is fashioned to meet the specific needs of each patient based on the expertise and experience of each team member. At this juncture all pertinent information must be available to the team to ensure that their recommendations are informed and educated. The plan of care is then outlined and coordinated with the patient and pertinent team members. For the treatment plan to be successful, all individuals must understand their roles. Collaboration among the physicians, nurses, administrative support personnel, and other individuals involved in the treatment process is critical.

## **The Multidisciplinary Team Approach**

The benefits of the team approach are numerous. Members of the Barrow

Acoustic Neuroma team work together to ensure that the patient is evaluated and treated in a coordinated manner and that all of the patient's needs, physical and psychological, are met. The team combines the expertise of each specialist to provide a level of comprehensive care that no single physician, no matter how reputable, could provide. This dynamic is critical to the success of the program.

The primary team members assume an active role in the planning, implementation, and evaluation of the treatment plan for each patient. These individuals include the neurosurgeon, neurotologist, neuroradiologist, radiation oncologist, and nurse program coordinator. Supportive team members include neurologists with subspecialties in balance difficulties and neurofibromatosis, ophthalmologists, anesthesiologists, geneticists, nurses, physical therapists, and local physicians. These individuals interact with the patients at various stages of care.

The collaborative efforts of physicians, nurses, therapists, and office personnel are successful as a result of role definition, mutual respect, flexibility, goal setting, sharing of responsibility for successes and tribulations, and recognizing the contribution of all individuals involved in the care of each patient. These dynamics create a positive environment where creative, quality patient care can flourish.

## **Role of Nurse Coordinator**

Unlike other institutions that assist individuals only after they have been admitted to their facility, the nurse coordinator provides services to patients before they are admitted. This role provides the opportunity to act as a patient advocate through all of the various levels of care delivered to patients in a detailed and organized manner. It also enables the institution to individualize the care provided to patients and to ensure that patient care is coordinated from the preoperative phase through discharge and follow-up, bringing the plan of care full circle.

As the patient liaison, the program coordinator functions in a variety of roles. She coordinates team consultations and orchestrates reviews of patients' medical records. A large portion of her time is spent educating patients and families about the individualized treatment plan developed for them. She also prepares them for what to expect at each phase of their care.

Considerable effort is needed to coordinate out-of-state and out-of-country patients who choose to travel to Barrow for treatment. In addition to helping such patients with their travel arrangements, plan of care, and discharge teaching, the coordinator arranges the extensive follow up needed by these patients to ensure continuity of care and successful outcomes. The follow up also provides useful information for research on the disorder.

The program coordinator serves as the centralized contact to provide information and direction to the team. This information is shared through a formal communication system established to facilitate collaboration, efficiency, quality, and continuity of care. As the primary facilitator for the team, the coordinator has the responsibility of assessing many of the team's objectives such as the development of program protocols for their community education efforts. The coordinator also participates in national conferences, col-

laborates on publications, and helps establish new services such as the Barrow Auditory Brainstem Program. The focus of the program coordinator also has broadened to include evaluation of the team's goals such as timeliness of completion, conformance to standards set by the team, resources consumed, and patient satisfaction.

### **Support Groups**

In the quest for quality care of patients with rare diseases, individuals frequently seek support and direction of care from national and local support groups. The team at Barrow encourages patients to participate in support groups where they and their families can meet in a relaxed, social environment to share their experiences and concerns with each other. The Barrow Acoustic Neuroma Center works with the nationally recognized Acoustic Neuroma Association to provide resources and support for patients with this debilitating disease.

In November 2003, with the assistance of the Barrow team, the first local acoustic neuroma support group was established. Although the intent of any support group is to maintain its independence from a medical center, the Barrow team strongly endorses sharing knowledge and resources to help this patient population. We will continue to offer facility support and to sponsor

speakers as long as the group finds these services valuable.

### **Conclusion**

The differences in quality of care become greater and matter more when patients need sophisticated medical care for a complex condition. Early diagnosis by magnetic resonance imaging, audiological tests, neurological assessment, and evaluation of symptomatology can increase the treatment options available to patients with acoustic neuromas. Surgical treatment must provide adequate exposure of the lesion while avoiding surrounding vital structures. The use of cutting edge technology and effective surgical approaches as well as a thorough understanding of the anatomy and physiology has led to successful treatment of patients with acoustic neuromas. Because the multidisciplinary team can better understand what treatments individual patients can tolerate, the incidence of lingering complications such as hearing loss and facial paralysis is decreased.

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### **Resources**

[www.ana.usa.org](http://www.ana.usa.org) (National Acoustic Neuroma Association)

[www.thebarrow.com](http://www.thebarrow.com) (Barrow Neurological Institute-Acoustic Neuroma Center)