Thank you for your interest in the Vanderbilt Bill Wilkerson Center Cochlear Implant Program. A cochlear implant is designed for individuals with severe to profound hearing loss in both ears that receive little or no benefit from hearing aids. Cochlear implantation requires surgery followed by multiple visits for programming the cochlear implant system and aural (re)habilitation therapy.

An individual must undergo a series of evaluations to determine if a cochlear implant is an appropriate treatment for his/her hearing loss. The evaluation process is extensive and involves assessments by the ear, nose, throat (ENT) doctor and audiologist.

The first step in the evaluation process is to complete the intake packet that is enclosed. **The following five items must be received prior to scheduling the appointment:**

1. **Case History form,**
2. **Release of Information form,**
3. **Copy of the front and back of your insurance card**
4. **Copy of your most recent hearing test results (audiogram), and**
5. **Referral from your primary care physician for “medical, radiological, and audiological evaluations for cochlear implant work-up”**.

Your physician and audiologist can fax their materials to us at 615-936-1225. Upon receipt of all five items, we will check with your insurance company regarding coverage of the audiologic evaluations. Once we have received information on the insurance coverage, you will be contacted regarding an appointment for the cochlear implant evaluation.

The evaluation may be conducted over a one or two day period. It is very important that you bring your hearing aids and earmolds to the evaluation. Once all the testing is complete, a decision regarding your candidacy for cochlear implantation will be decided by the implant team members.

Enclosed you will find some general information about our program. If you would like additional information about the cochlear implant or our team, please call Kelly Newhouse, Program Assistant at (615) 936-8623.
Adult Case History

Date_________________________   Referred by_________________________

I. General Information

First Name___________________ Middle Initial_____ Last Name__________________
Street Address______________________________________________________________
City_________________________ State_______ Zip Code__________________________
Occupation___________________ Employed By_______________________________
Home Phone ____________________ Work Phone _____________________________
Birth Date_______ Age __ Gender_________ SSN____________________ Martial Status____
Email: _________________________________________________________________
Contact Person __________________ Phone ______________ Relation ________

II. Associated Professionals

Physician’s Name_____________________ Phone Number_____________________
Address______________________________________________________________
Otologist/ENT’s Name_____________________ Phone Number_________________
Address______________________________________________________________
Audiologist’s Name____________________ Phone Number____________________
Address______________________________________________________________
Other Professional_____________________ Phone Number____________________
Address______________________________________________________________

III. Statement of Problem

At what age was your hearing loss first diagnosed?______________________________
Do you know what caused your hearing loss?  YES    NO  If so, what?  

What diagnosis have you received regarding the degree of hearing loss you have?  

Which is your better ear?  Right    Left    Same  

Is there a family history of hearing loss?  YES    NO  If so, please describe  

IV. Health History  

Please circle if you have had any of the following:  

- Epilepsy  
- Seizures  
- Sinusitis  
- Dizziness  
- Allergies  
- Diabetes  
- Cancer  
- Stroke  
- Hypertension (high blood pressure)  
- Tinnitus (ringing in your ears)  
- Loud noise exposure  

Ear infections:  If so, how many per year?  Treatment?  

Are you on any regular medication (other than vitamins)?  No    Yes: please specify  

Have you ever had any ear surgery?  No    Yes: please describe  

Has your vision been evaluated?  No    Yes: when and what were the results?  

V. Amplification History  

Do you wear hearing aids?  No    Yes: which ear?  Right    Left    Both  

When did you:  Start wearing aids:  Stop wearing aids:  

On average, how many hours do you wear your hearing aids each day?  

How old are your current hearing aids?  

Do you feel that you benefit from your hearing aids?  

Do you use any assistive listening devices?  (TTY, FM System, closed captioning, etc.)  Please specify
VI. Communication Information

Do you communicate verbally?  
No  Yes

Can your family understand you when you talk?  
No  Yes

Can others understand you?  
No  Yes:  Most people  Some people  A few people

Please circle any of the following ways you use to communicate with others:

ASL*  Sign Language*  Cued Speech  Gestures  Speak  Other________________________

*Do you need/want a professional interpreter for your appointments?  
Yes  No

Have you ever received training and/or special classes for the hearing impaired?  YES  NO

What do you expect from the cochlear implant?_________________________________________

VII. Cochlear Implant History (Complete the following information if you have a cochlear implant but did NOT receive your cochlear implant at the VBWC Cochlear Implant Program.)

Hospital__________________________________Surgeon______________________________________

Audiologist___________________________Phone________________________________________________

Address______________________________________________________________________________

Date of surgery_______________________Activation date________________________________________

# of electrode inserted__________________Description of activation experience________________________

_____________________________________________________________________________________

Rehabilitation services provided by cochlear implant program______________________________

Other information_______________________________________________________________________

VIII. Release of Information

I authorize the release of any information that may be necessary for my cochlear implant work-up from the above mentioned professionals to the Vanderbilt Bill Wilkerson Center.

______________________________  __________________________
Patient Signature                Date

______________________________  __________________________
Witness                        Date
Introduction

Since the early 1980's, the Vanderbilt Bill Wilkerson Center (VBWC) has been actively involved in providing cochlear implant services for children and adults as well as being involved in research efforts to improve technology and intervention services. This exciting technology has improved the quality of life for countless adults and children with hearing loss. The experienced team of surgeons, audiologists, speech-language pathologists, and educators of the deaf at the VBWC are well prepared to provide the much needed services for successful usage of the cochlear implant system. We have two programs – one for adults and one for children – to better meet the needs of the families. The children's program is located within the Service Division of the National Center for Childhood Deafness and Family Communication. The adult program is located within the Division of Audiology.

Cochlear implants are safe and effective in helping deaf individuals hear sounds – and for some, depending on their hearing history and age, with proper training this may lead to speech understanding. In 1985, the United States Food and Drug Administration (FDA) approved their use for people with hearing loss. Currently, there are three FDA approved cochlear implant systems available in the United States: (1) Clarion by Advanced Bionics Corporation (www.advancedbionics.com), (2) Nucleus by Cochlear Americas (www.cochlear.com), and (3) PULSAR CI 100 by Med El Corporation (www.medel.us.com). The Vanderbilt Bill Wilkerson Center (VBWC) implants all three systems.

What is a cochlear implant?

Hearing loss is usually the result of damage to special cells in the inner ear (called “hair cells”) which sense changes in sound pressure and trigger nerves to send signals to the brain resulting in the perception of sounds. Even though deaf individuals have damage to these hair cells, there are many usable nerve fibers that can be stimulated by the cochlear implant's electrical signals.

Thus, a cochlear implant is a device that uses advanced technologies to enable a person with hearing loss to hear sounds. Cochlear implants have two parts - the internal part which is placed in the inner ear during surgery and the external portion which can be worn in several ways (like a hearing aid or on the body with a portion going to the head). The internal part has a wire with multiple electrodes on it which is placed in the cochlea, the part of the inner ear responsible for hearing. The external part picks up sound signals, changes them to an electronic signal, and sends this signal across the skin to the internal part.

A cochlear implant is much different from a hearing aid. A hearing aid makes sound louder – called amplification. A cochlear implant bypasses the normal middle ear and electrically stimulates the nerve responsible for hearing. Thus, it is for people with more severe forms of hearing loss than those who can use hearing aids.

What are the benefits of the cochlear implant?

People who have cochlear implants tell us that they feel more connected to the world around them. They can hear sounds like birds singing, telephones ringing, and cars approaching – to name but a few. People with the cochlear implant can learn to talk and understand speech – although this depends upon hearing history, age, training and practice. There are two big groups who benefit from cochlear implants – young children born deaf and adults who lose their hearing later in life.

Children who benefit the most from cochlear implants are those who have been deaf for short period of time. That is why we try to identify deaf children at a young age. We have also found that children benefit most when they are in good auditory-oral educational programs and have the support of their family. Family support
is essential in helping children get the most out of their cochlear implants. Children get better and better results as they use their cochlear implant – those who have used their device for more than three years still show improvement.

For adults who have gone deaf after hearing and developing speech, cochlear implants often allow them to hear and understand speech again. Benefits are many and may include the ability to improve their jobs, the opportunity to do more social events, an increased sense of security, and freedom to enjoy hearing events like musical concerts.

What is the cost of the cochlear implant?

As with most medical devices, cochlear implants are expensive. Many insurance carriers provide full or partial coverage. As a courtesy to the families, VBWC cochlear Implant Program will submit paper-work to your insurance carrier for approval. The amount of coverage, however, depends on your specific insurance carrier. Your implant coordinators will work with you to see how much your insurance will cover.

Who is a cochlear implant candidate?

Before a person is considered to be a candidate for a cochlear implant, there are a series of tests that will need to be performed. These include hearing tests, x-rays of the inner ear, medical tests, psychological evaluation, and speech testing. Because cochlear implants are intended to be permanent, these tests are important to determine who is likely to benefit. As directed by the FDA, all candidates must have recently tried hearing aids. Children also need to be enrolled in pre-implant training to demonstrate that they will take part in therapy after cochlear implantation.

What about the cochlear implant surgery?

Cochlear implant surgery is done as an outpatient – meaning you go home the same day as surgery is done. Surgery is done under general anesthesia and you are completely asleep for the procedure. The whole process takes a couple of hours. Typically, a small amount of hair is shaved above and behind the ear. The internal part of the cochlear implant is designed to last a lifetime. The external devices will need to be upgraded periodically – cochlear implant recipients are responsible for upgrade costs. Furthermore, cochlear implant recipients are responsible for the cost of maintenance, repairs, batteries, and non-warranty items.

Cochlear implant surgery has been performed for over 30 years and is considered safe and effective. The risks of cochlear implant surgery include those of general anesthesia as well as risks unique to ear operation – including infection, bleeding, facial nerve injury (the nerve which moves your face is located very close to the inner ear), leakage of fluid from around your brain (called a CSF leak), dizziness after surgery, rupture of the ear drum, and failure to be able to put the cochlear implant in place. While these all can occur, they are very rare, occurring in less than 1 out of 100 people.

What happens after the cochlear implant surgery? When do I first start hearing with the cochlear implant?

Approximately two to three weeks following surgery, the person returns to the VBWC for fitting and activation of the cochlear implant. This is the first time the person will be able to hear with the cochlear implant. The cochlear implant audiologist at VBWC will use a computer to set the levels that allow comfortable hearing for each electrode. These levels are unique for each person. The person returns often during their first six months to adjust the programs which run the implant. These frequent visits are necessary since it takes time for the ear to adjust to the new sounds. There will also be several evaluations of benefit with the implant. These typically occur at 3 months, 6 months, and 12 months following activation of the implant. After the first year, evaluations should be done annually to ensure continued benefit with the cochlear implant.
Do I have to be enrolled in therapy in order for me to receive a cochlear implant?

For both children and adults who have been without hearing, therapy is needed for successful use of the cochlear implant. Adults who have developed speech before they lost their hearing typically have many years of sound memories to draw upon and usually learn to recognize sound as speech in a short period of time. Therapy consists of listening to sounds, words, phrases, sentences, and conversations, and practicing using different techniques to communicate better.

For children with little or no listening experiences, there are no sound memories on which to draw. Without intensive therapy and appropriate educational placement, children will show little to no benefit from the cochlear implant. In May 1995, the National Institute of Health (NIH) held a conference on cochlear implants. A statement issued by the panel at the end of this conference was "Access to optimal educational and (re)habilitation services is important to adults and is critical to children to maximize the benefits available from cochlear implantation."

As part of the cochlear implant process, the VBWC Cochlear Implant Program requires families to commit to intensive and consistent therapy for their child, with a professional who is specifically trained. This must occur before surgery is recommended. The rehabilitation process can take many years, much as it takes normal children many years to learn how to hear and to speak.

What should I expect from the cochlear implant?

Since each person's brain and inner ear is different, it is difficult to predict how well an individual will perform with a cochlear implant. While each person's experience with cochlear implants are different, adults can expect that they will be able to detect everyday sounds in their environment, improve face-to-face communication, and have an increased ability to understand speech through hearing alone (if they were able to do this before they lost their hearing). This often leads to greater confidence to interact and socialize. Children can often achieve the same benefits as adults, although the progress is often slower. Many children are able to understand speech by listening alone with no visual cues. There are some children and adults, however, who will still require the use of lip reading and/or sign language to help them understand spoken language. Research does show that the longer the person has had their hearing loss, the more difficult it is for them to benefit from a cochlear implant. The VBWC Cochlear Implant Program team members will discuss reasonable expectations with you at the time of the evaluations.

For more information about the VBWC Cochlear Implant Program, please contact:

Program Assistant:
Kelly Newhouse
Vanderbilt Bill Wilkerson Center
Cochlear Implant Program
Medical Center East-South Tower, Suite 6209
1215 21st Avenue South
Nashville, TN 37212-8105
(615) 936-8623 ph.
(615) 936-1225 fax
Vanderbilt Bill Wilkerson Center  
**Cochlear Implant Program**  
Medical Center East, South Tower, Room 9302  
1215 21st Avenue South  
Nashville, TN 37232-8025  
Adult Program: 615-936-8623  
Children's Program: 615-936-8623  
Fax: 615-936-1225

**Team Members**

**Director and Coordinators**  
David Haynes, MD, Medical Director  
Susan Amberg, Au.D., CCC-A, Adult Coordinator  
Tamala S. Bradham, Ph.D., CCC-A, Pediatric Coordinator  
Kelly Newhouse, Program Assistant

**Neuro-Otolologists/Otologists**  
Marc Bennett, MD  
David Haynes, MD  
Robert Labadie, MD, Ph.D.

**Audiologists**  
Susan Amberg, Au.D., CCC-A  
Tamala S. Bradham, Ph.D., CCC-A  
Andrea Hedley-Williams, Au.D., CCC-A  
Catherine Hayes, Au.D., CCC-A  
Linsey Watkins, Au.D., CCC-A  
Anne Marie Tharpe, Ph.D., CCC-A

**Speech-Language Pathologists**  
Emily Byram, MS, CCC-SLP  
Carrie Cohen, MS, CCC-SLP  
Ginger Jones, MA, CCC-SLP, LSLS Cert. AVT  
Emily Lund, MS, CCC-SLP  
Geneine Snell, M.Ed., CCC-SLP

**Social Worker**  
Dolores Smith, MSSW, LCSW
The following is a list of evaluations and procedures necessary to determine an individual’s cochlear implant candidacy. A team member will serve as case manager and will assist the family during the candidacy evaluations. Several trips to Vanderbilt for testing may be required to complete all the evaluations that are necessary before a decision can be made regarding candidacy. Every effort will be made to minimize the number of trips required. Not all evaluations will be necessary for every patient.

**Candidacy Evaluations**

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audiological Evaluation:</strong></td>
<td><strong>Location</strong></td>
</tr>
<tr>
<td>A comprehensive hearing assessment will be completed with and without the hearing aids. This may require more than one visit. <em>It is essential that the individual brings his/her hearing aids and earmolds to the evaluation.</em></td>
<td>VBWC Medical Center East, South Tower, 9th Floor</td>
</tr>
<tr>
<td><strong>Auditory Brainstem Response:</strong></td>
<td><strong>Location</strong></td>
</tr>
<tr>
<td>This test is an objective measure of hearing sensitivity.</td>
<td>VBWC Medical Center East, South Tower, 7th Floor</td>
</tr>
<tr>
<td><strong>CT Scan:</strong></td>
<td><strong>Location</strong></td>
</tr>
<tr>
<td>A specialized x-ray to evaluate the anatomy of the hearing organ.</td>
<td>Vanderbilt University Medical Center, 1st Floor</td>
</tr>
<tr>
<td><strong>MRI Scan:</strong></td>
<td><strong>Location</strong></td>
</tr>
<tr>
<td>A specialized x-ray to evaluate the anatomy of the hearing organ.</td>
<td>Vanderbilt University Medical Center, 1st Floor</td>
</tr>
<tr>
<td><strong>Medical Examination:</strong></td>
<td><strong>Location</strong></td>
</tr>
<tr>
<td>The otologist/otolaryngologist will take a medical history, review the CT scan, and determine if there are any medical contraindications that would prohibit the surgery.</td>
<td>VBWC Medical Center East, South Tower, 7th Floor</td>
</tr>
</tbody>
</table>

Additional evaluations may be recommended based on the information obtained during the candidacy assessment.

After all the assessments are complete, the Vanderbilt cochlear implant program team members will meet and determine if the individual meets the criteria for a cochlear implant. If the individual is determined to be a candidate, following receipt of insurance authorization, a surgery date will be scheduled. Approximately four weeks after the surgery and medical clearance, the individual will need to return to VBWC for cochlear implant activation and programming. If the individual is not a candidate, alternative hearing management options will be discussed.
Clarion Cochlear Implant
Advanced Bionics Corporation
12740 San Fernando Road
Sylmar, California 91342
800-678-2575 (V)
800-678-3575 (TTY)
info@advancedbionics.com
www.bionicear.com

Alexander Graham Bell Association of the Deaf and Hard of Hearing (AG Bell)
3417 Volta Place, NW
Washington, DC 20007
202-337-5220 (V)
202-337-5221 (TTY)
303-337-5221 (TTY)
info@agbell.org
www.agbell.org

Nucleus Cochlear Implant
Cochlear Americas
61 Inverness Drive East, Suite 200
Englewood, Colorado 80112
800-523-5798 (V, TTY)
customer@cochlear.com
www.cochlear.com

Cochlear Implant Association
5335 Wisconsin Ave, NW, Suite 440
Washington, DC 20015-2052
202-895-2781
info@cici.org
www.cici.org

MED-EL Cochlear Implant
2222 East NC HWY 54,
Beta Building Suite 180
Durham, NC 27713
888-633-3524
implants@medelus.com
www.medel.com

Self Help for Hard of Hearing People (SHHH)
7910 Woodmont Ave, Suite 1200
Bethesda, Maryland 20814
301-657-2248 (V)
301-657-2249 (TTY)
info@hearingloss.org or
cochlearinfo@hearingloss.org
www.shhh.org

This partial list of resources is provided by the Vanderbilt Bill Wilkerson Center Cochlear Implant Program team members. For more information regarding cochlear implants and/or our program, please call Kelly Newhouse, Program Assistant at (615) 936-8623.