Audiology | A Sound Profession

A CAREER GUIDE TO **AUDIOLOGY**

‘Why choose Audiology?’

‘Each day is filled with variety and challenge. The interaction with the people that I come into contact with leaves me with a sense of satisfaction. What more could you ask for?’

BAA
BRITISH ACADEMY
OF AUDIOLOGY

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Foreword by the president of BAA, 2008

Audiology is a tricky profession to summarise in a just a few short lines. If you like a challenge, want to put your scientific knowledge to good use and enjoy working with people of all ages then this may well be the career for you. Audiologists can work in a variety of settings including hospitals and private practice; they carry out a wide range of duties including assessment and rehabilitation of people with hearing loss or balance disorders. Read more about this varied profession in this brochure.

The British Academy of Audiology is the largest organisation in Europe for advancing audiology. With around 2500 members our activities span education, conferences, influencing policy and the promotion of audiology to the public.

We hope that this brochure will inspire you to join our high profile, fast moving profession.

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Disclaimer: Please note that education and training requirements may change and students should contact the appropriate university for the most up to date information.

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Introduction

This brochure has been designed to provide you with information about audiology and help you make an informed choice for your chosen career. The aim is to give you realistic views, from real clinicians in different areas of the profession, to help you decide if audiology is the right career for you.

The British Academy of Audiology

The British Academy of Audiology (BAA) is the united body for the audiology profession throughout the UK.

- It offers encouragement, inspiration and guidance to its members, and is the driving force to develop the profession.
- The BAA works to develop and promote excellence in services for patients.
- The BAA aims to raise the profile of audiology as an autonomous profession and be a united and powerful voice.

For further information or to join the BAA please visit our website: **www.baaudiology.org**

Why choose audiology?

Audiology is a challenging and expanding field of clinical science and technology involving the study of hearing and balance. As a healthcare profession, audiology also involves assessment, management and therapeutic rehabilitation of people with hearing and balance problems, and associated disorders. This work involves patients of all ages – from newborn babies and children to working adults and elderly people. Currently, audiology is a high-profile profession, and it is a leader in the NHS modernisation programme. New and exciting opportunities exist in this expanding field. Audiology is a fast-evolving and varied discipline. Individuals with an interest in biological sciences, psychology, physics and electronics, as well as speech and language development, may find that audiology has a lot to offer them. Many audiologists work in multidisciplinary teams, frequently liaising with medical, education and research professionals. A desire to work with and help people is essential and forms an important component of both training and the job.

Employment prospects are good owing to many developments, including the provision of digital hearing aid technology and universal newborn hearing screening. Employment opportunities are available both in the NHS and private sector.

Qualities of an audiologist

Audiologists need the following skills:

- ability to communicate well with all types of people
- good problem-solving skills
- a scientific educational background
- ability to work as part of a team
- a caring and understanding attitude
- good manual dexterity
- analytical skills.

1 Section One: Getting Started...

Paediatric audiology

Working as a clinical scientist in paediatric audiology is an exciting experience. Every child and parent you meet presents a new challenge, and gaining their co-operation (which sometimes requires extreme powers of persuasion and patience) is very rewarding.
As a clinician who works with babies referred from the newborn hearing screening programme I undertake diagnosis of those born with permanent hearing loss. This can be a distressing situation for parents and I try to support them during this difficult time. I am fortunate to be able to help and I see the parents go through the full process of starting to accept that their child has a hearing loss and growing to be able to help their child reach his or her full potential in life.
I enjoy working closely with our multiprofessional

team, which includes teachers of the hearing-impaired and specialist speech and language therapists as part of the family-friendly early rehabilitation programme. Seeing the parents and children regularly allows us to build up a strong relationship as time passes, and watching children learn to talk after wearing hearing aids or having cochlear implants is simply amazing.

Clinical scientist in paediatric audiology.

Being a neonatal hearing screening local co-ordinator might involve visiting a health visitor or meeting up to download data from the health visitor's equipment. This then has to be checked to ensure that all data matches with the eSP (software) system. This can be done manually or by using the community data-checker.

Faulty equipment is time-consuming and frustrating, and a considerable amount of time may be spent troubleshooting and completing incident forms if a fault has caused data to be lost. Liaison with equipment manufacturers in relation to problems has led to some improvements.

Collecting data from the eSP software and preparing reports is an interesting part of the job, as is the education and training of health visitors in relation to the programme and use of equipment. It is not without its frustrations but on the whole it is a very challenging and rewarding job.

Neonatal hearing and speech programme local co-ordinator.

My role as a specialist hearing screener means I have one-to-one contact with newborn babies. The health visitor refers the babies to me once she has tested their hearing. I then go to the family home with further screening equipment to test the baby's hearing.
The aim of my work is to test the baby's hearing and help parents to understand the process that we follow to find out if their baby has a hearing problem.
I explain and help the parents to understand what the equipment does, what readings I obtain and what will happen at the next stage if I do not get any responses from the baby's ears. I enjoy my job very much as I have the opportunity to meet new mums and dads in the first few weeks of parenthood and help to put their minds at ease about their baby's hearing by answering any questions they may have. I feel my job is very rewarding, and I am happy to know that I may have helped to find a child who may have a hearing problem and assisted in making their life different.

Neonatal hearing screening programme specialist screener.

As a trainee, supervised training can begin with play audiometry and visual reinforcement audiometry in second and third-tier clinics. Trainees gain experience in testing children and in building rapport with them and their families. History-taking is a key part of the appointment, and trainees are guided through the process of taking a full, yet concise, history from parents and, if appropriate, from the children themselves. Debriefing parents and children sensitively and thoroughly is crucial, and through observing senior clinicians and by gaining experience, trainees develop confidence in this area.

More advanced practise comes later in training, and may include paediatric hearing aid fitting and review appointments as well as electrophysiological testing. Trainees are encouraged to participate fully in these sessions and to develop their skills in testing, communication and problem-solving.

There is time for tutorials in different aspects of paediatric audiology, as well as for research and development. Paediatric audiologists work in a multidisciplinary environment and trainees are encouraged to develop relationships with a variety of different professionals, including ear, nose and throat (ENT) specialists, speech and language therapists, and teachers of the hearing-impaired.

Pre-registration trainee.

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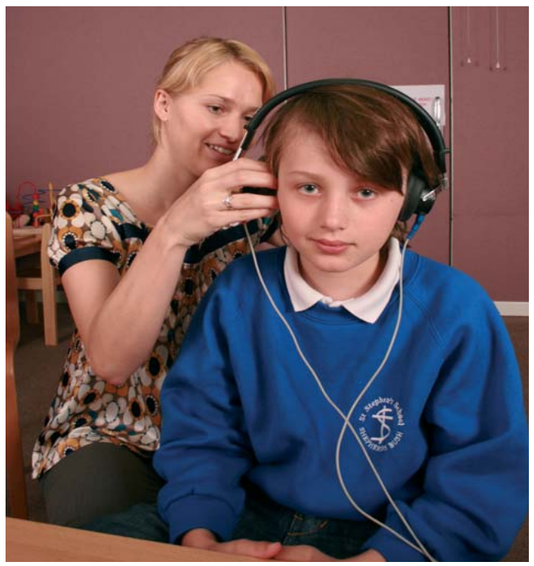
Section Two: Day To Day...

Adult rehabilitation

Hearing assessment and rehabilitation forms a large part of the day-to-day running of an audiology department. This includes tests such as pure tone audiometry, tympanometry and hearing aid fittings.

Although this element of the work can appear routine, the reality is that every patient poses a different challenge. Senior audiologist.

My general role involves maintaining stocks of audiology equipment and supporting the Ear Nose and Throat (ENT) department by performing hearing tests on adults and older children. I also take ear mould impressions on adult patients and check ear moulds on their return from the factory where they are made. The majority of my time is spent supporting ENT clinics and covering hearing aid repairs. I enjoy this part of the work because I meet different people and being able to help them hear better makes the job worthwhile. Assistant technical officer.



The life of an assistant technical officer is varied and interesting, making each day different from the next. A typical day starts with the open repair clinic, a set time during which patients can call in and have their hearing aids repaired or modified. Any maintenance, from simple re-tubing to more in-depth adjusting of digital hearing aids, may be carried out at the clinic.

We perform otoscopy examinations, and we are trained to recognise any conditions that may need further attention. I have recently been trained to take ear impressions so this is something else I may do. After doing repairs there may be some administration work to catch up on, such as writing triage letters or checking patients' ear moulds which have come back from hearing aid manufacturers. These moulds are then filed away so they are easily located when a patient needs a new hearing aid. I also fit moulds to those patients who need them.
Some days I am needed to assist at the children's hearing clinic and with domiciliary visits. As an assistant technical officer I am also responsible for stock control and ensuring that the audiology department's booths are fully stocked. I really enjoy working in audiology as no two days are the same!
Assistant technical officer.

I learnt about the underpinning theoretical knowledge of hearing loss and its effects on an individual, plus strategies of management, during the first year of my MSc degree in Audiological Science. A compassionate nature, patience and the ability to build rapport with patients are all essential attributes of a clinical scientist. The in-service practical training which followed my MSc allowed me to put my knowledge into practice and to further develop my communication skills. Adult rehabilitation involves eliciting the patient's main concerns and hearing needs, followed by assessing the extent of the hearing loss and the effects this may be having on the patient's daily life. I then use my teaching skills to ensure that the patient fully understands their condition before outlining the options for its management. One management option is to fit hearing aids, so I am required to keep up to date on available hearing aid technology.

Periodically I am asked to present case histories during monthly meetings, in order to reflect on my patient management strategies and consider ways to improve further practice. I am also encouraged to contribute to this rapidly developing service by participating in clinical audit and research. I find this career challenging and extremely rewarding, especially when I have improved someone's quality of life by helping them to hear.
Pre-registration trainee clinical scientist.

I am often scheduled to cover the open-access repairs clinic on a Monday afternoon. Patients can attend this clinic if they have any problems with their hearing aids. Because it is a 'walk-in' clinic it can get very busy and it may be a bit stressful when you arrive and there are already 15 people waiting to be seen because they have all attended early to avoid the queue! There are two audiologists and one volunteer at the clinic and we usually see 20–30 patients between us. Although most patients do not need to attend the repairs clinic very often, some of them turn up almost every week. One patient, who has tried every suitable hearing aid – both analogue and digital – with numerous fine-tuning adjustments made to each one, is finding it very hard to accept her hearing loss, and it can be very difficult and frustrating for the staff who are trying to explain that there is not much more that can be done for her. For the most part, though, working at the clinic is very rewarding. Often, problems are quite simple to sort out and patients are delighted to be hearing well again, particularly if they are just about to go on holiday or have an event to attend when they need to hear as well as possible. Because patients can arrive with a variety of difficulties we need to be 'on our toes' to try and work out how to best solve their problems.
Senior clinical scientist.

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Section Three: Testing...

Diagnostic audio-vestibular testing

Testing the hearing system

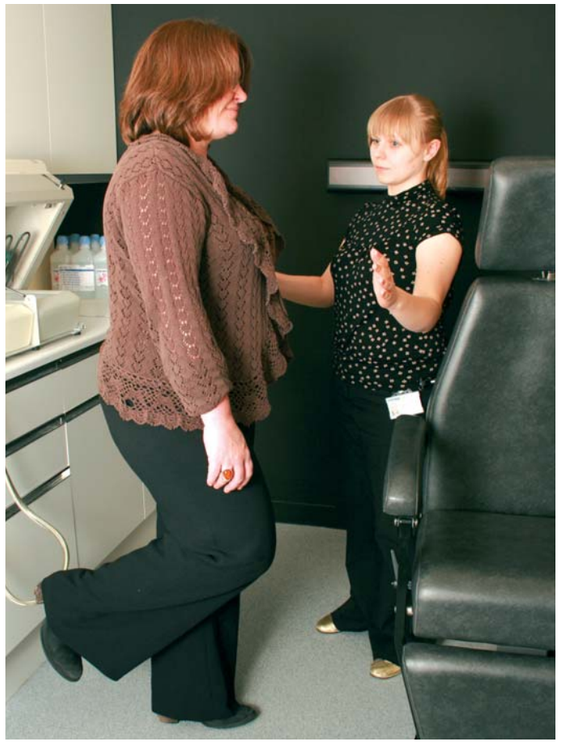
In audiology you may be involved in carrying out a range of tests of the hearing system during which the patient does not have to actively respond to sound. Some of these tests, such as the auditory brainstem response (ABR) test and cortical evoked response audiometry, involve the patient wearing electrodes on the skin and the electrical activity from the auditory system is recorded. These tests can provide information about how well the auditory nerve transmits sounds to the brain.

As well as providing information about the function of the ear, testing in this way is also useful if the patient is unable to perform other types of hearing tests, and it is used in medico-legal cases where an objective assessment of hearing is required. It is an exciting time in audiology as these types of tests are still being developed so there is a need for further research.

Testing balance function

You may also be involved in assessment of balance function. Many patients can experience problems with their balance, such as dizziness, light-headedness or vertigo. Balance disorders may be ear-related or non ear-related in nature. The use of diagnostic tests can determine whether vestibular function is normal or impaired, can ascertain the degree of impairment, and may indicate the site of a lesion.

Videonystagmography (VNG) or electronystagmography (ENG) are two methods that are used, during which eye movements or 'flicks' (called 'nystagmus') are recorded by electrodes placed around the eyes or by special video cameras fitted on goggles placed over the eyes. A computer analyses the eye movements for a number of different tests. Initially, patients are asked to observe a moving target so that observations may be made of how they control their eyes. The ability to keep the eyes focused on a point, with and without fixation, may then be assessed. Positioning the patient in certain ways by either head, neck or body movements may also provoke their dizziness. Then each vestibular system is assessed individually by the use of hot and cold water to stimulate each balance organ and by assessing eye movements and comparing the function of each system.



Measuring body sway

Computerised Dynamic Posturography (CDP) include the 6 point Sensory Organisational Test (SOT) that looks at the functional interaction of the three main inputs to Balance. The Visual System, The Somatosensory system and the Vestibular System.

During a rotating chair test the patient sits in a special chair that is controlled by a computer and which moves very slowly in a full circle and then at faster speeds back and forth in a very small arc. A video camera focused on the patient's eye records the corresponding eye movements (nystagmus); these measurements help to determine if the dizziness may be caused by a vestibular or a non-vestibular disorder.

Working in balance services

Most of my job involves working with patients with balance problems. Balance services are a relatively small but very important area of audiology as 20–40% of people have a balance problem at some point in their lives. During an average appointment I will first take a history of a patient's symptoms before performing a number of tests using specialised equipment to help me, in conjunction with the history, to come to a likely diagnosis. The majority of patients have dizziness caused by a disorder of the vestibular system and I am then able to help relieve their symptoms by giving them some kind of balance rehabilitation or exercises.
I enjoy the work as no two patients are the same, which is very challenging. Vestibular rehabilitation can have a profound impact on a patient's quality of life. Many patients arrive extremely incapacitated and anxious about their symptoms and are discharged symptom-free, which is very satisfying. With continuity of care I am able to really get to know a patient (as I will spend a number of hours with each individual during their treatment) and will follow their progress until they are discharged. There is still much to learn and it is exciting and stimulating to work in this area of audiology.

Senior audiologist, diagnostic audio-vestibular.

Working in vestibular rehabilitation

It can also be the role of the audiologist to take part in the rehabilitation of dizzy patients. This may be done as part of a multidisciplinary team led by audiological physicians and consisting of other professionals, such as physiotherapists, relaxation and stress counsellors, and psychologists. Their role can be in the implementation of a specialised exercise regimen, application of repositioning manoeuvres in a particular type of vertigo known as 'benign positional paroxysmal vertigo' (BPPV) or in the use of complicated visual images to help in cases of visual

vertigo where patients rely too much on the input from the eyes in maintaining their balance.

Clinical scientist in diagnostic audio-vestibular testing.

I work as part of a small team that specialises in audio-vestibular work. We see patients from all walks of life, with many different problems. Most of our patients have some sort of 'dizziness'; in fact, the word 'dizzy' means many different things to many different patients. It is our skill at history-taking that enables us to try and get to the bottom of patients' symptoms, understanding them in quite some depth and, occasionally, we are able to suggest a cause for a patient's dizziness from their history alone. We then use our tests to confirm or disprove our hypothesis.

A rehabilitation plan is normally suggested to enable patients to recover from, or manage, their symptoms. On many occasions we are unable to find the exact cause of dizziness but can still recommend exercises which are beneficial to patients – some of whom report a full recovery from their symptoms.

The tests we perform range from simple, such as standing still with eyes closed, to the more complex. One test requires us to ask the patient questions, the 'seven-times table' for example, in the dark, having just squirted warm water into their ears, which makes them feel like they are spinning, whilst we watch the computer screen to ensuring the recordings of the patient's eyes are clear and accurate.

Senior clinical scientist, diagnostic audio-vestibular.

Hearing therapy

Hearing therapy provides a comprehensive rehabilitation service for adults who have hearing difficulties or associated disorders, or both. A hearing therapist uses a variety of methods to work out an individual programme for each patient to assist them to maximise their communication skills and social contacts. These include:

- communication strategies
- hearing aid support
- tinnitus management
- advice about assistive listening devices
- counselling patients and their families
- support for patients with complex needs, such as dual sensory loss and learning disabilities
- lip-reading instruction
- auditory training
- balance retraining therapy.

Hearing therapists usually work in hospitals and the community as part of a multidisciplinary team, liaising with audiological, medical and social work staff.

Tinnitus

Tinnitus is not usually medically curable, but therapy can help people cope with it successfully. The aim is 'habituation' – reducing sufferers awareness of noises and minimising their negative effects. There are various forms of habituation therapy, but these all include giving information and counselling. Sufferers are taught to think about, and react to, tinnitus differently. Sound therapy – which reduces tinnitus awareness and annoyance – is also an important component. As tinnitus is often affected by stress and can disturb sleep, relaxation and sleep tactics form part of therapy as well. No two individuals with tinnitus are the same, which makes this a rewarding area of work for those who are interested in people.

Balance retraining therapy

The majority of people with a balance disorder will benefit from balance retraining therapy, which combines traditional vestibular rehabilitation exercises with counselling, explanation, reassurance, relaxation and confidence-building. The programme is designed to encourage normal movement and thereby develop a central compensation for dizziness by habituation. Because the exercises can provoke the symptoms, patients frequently feel worse before they feel better, so support and follow-up is esssential throughout the programme, which normally lasts for two to three months.

Cochlear implants

The assessment and post-implant rehabilitation of adults with cochlear implants is mainly to assess the pre-implant speech perception, quality of life, expectations and motivation of patients and their partners. Where appropriate, counselling significant others about the likely outcome of cochlear implants may be conducted. Post-implant there is an intensive course of rehabilitation, which will include auditory training, assistive devices and communication strategies. This also covers any other concerns that arise, such as tinnitus, balance or relaxation. Some of this work may be done in a group setting and some is done a one-to-one basis with the patient, who is invited to bring a family friend along to sessions.

Auditory training

Auditory training involves working intensively with 'hard of hearing' adults in order to help them to understand speech and environmental sounds more easily. Patients are taught to listen to the pattern, rhythm and intonation of speech, as well as to the sounds themselves. Sessions are individually planned to suit the patient concerned and so can be very varied. Someone with very poor hearing may need to start by learning to distinguish between environmental

sounds, such as a telephone ringing or a knock at the door. Auditory training can be very effective in helping people who have difficulty hearing in noisy surroundings, or those who have lost confidence in using the telephone. Sessions are usually held on a one-to-one basis and are carried out over a period of weeks at short intervals.

Lip-reading

Lip-reading is one of the many tools a hard of hearing, deaf or deafened person can use to improve their communication skills. Lip-readers do not just observe the movements of a speaker's lips, but also their facial expressions, gestures and body language. Teaching lip-reading is not merely about lip-shapes but also involves teaching communication tactics, building confidence and training in assertiveness. Lip-reading encourages people to make the most of their residual hearing by wearing hearing aid(s) or having cochlear implants where appropriate. Lip-reading tuition can change lives, whether in a class or on an individual basis.

Provision of assistive listening devices

Hearing therapists liaise with social services for the provision of equipment to help with the television, doorbell, alarm clock, baby alarm, smoke alarm and the telephone. What can be provided free of charge varies from county to county, but advice on purchasing a device can be given if it cannot be obtained without charge, and referrals can be made to other agencies if necessary, for example to the fire service. It is an interesting and rewarding part of the job, and patients are nearly always pleasantly surprised by what is available to them.

Relaxation therapy

Relaxation therapy is a valuable part of the rehabilitation techniques. Frequently, patients attending appointments exhibit a significant level of anxiety. This may be directly related to their hearing difficulties or because of tinnitus experience or balance disorders. In addition, other concerns in their lives often add extra strain, which often exacerbates their symptoms. An appropriate method needs to be selected, and training given, so that patients can make use of relaxation effectively in their lives to support their progress. Senior hearing therapist.

As an audiology student who has attended a placement to observe the work of a hearing therapist, I have found the experience to be most interesting and valuable. I have learnt more about the role of a hearing therapist in providing a comprehensive rehabilitation service for those with hearing impairments or associated difficulties, or both. I have also observed a variety of management options. Patient management is based on an individually tailored programme and includes the need for advice, support and counselling. Hearing therapy has highlighted an alternative approach to providing a service for hearing-impaired people, supporting the more 'technical' approach typically associated with the audiologist. Student hearing therapist.

Lecturing

Working in academia

My academic post is very different from my previous NHS positions. There is much less structure, fewer routine activities and no two days are ever alike. My week can be split into three: teaching, research and administration. It is stimulating to be surrounded by bright, creative researchers and students. Sometimes I wake up and think, 'What shall I research for the next couple of years?' No other job offers that amount of freedom and range of opportunities. It is great to contribute to the education and training of future audiologists and researchers. Of course, there are pressures to perform well in a highly competitive environment but the rewards are high, too.

Reader in audiology, University of Manchester.

I became involved with the BSc (Hons) Audiology programmes when I was asked to take part in the Department of Health evaluations of courses that would be offered by universities. Once that was completed I became involved with the BSc course provided at Aston University. I worked closely with a really good team which had a strong idea of what the course required and how we could develop something that would create capable practitioners with a patient-centred approach to audiology. I have been part of the programme for the past four years. It has been very hard work, but is very exciting and rewarding. It is great to see our first graduates leaving the course, and I hope that having a new career pathway will help to take audiology into new and exciting areas.

Having the opportunity to work both in a clinical environment (which I still do) and in an academic environment has been challenging and stimulating. Each aspect has contributed to my ability to work in the other, and I am constantly learning new things or gaining a new perspective in one area, which I can then apply to the other. There are many great people in audiology who are willing to contribute to its development and it has been a privilege to have the opportunity to do so.

Senior lecturer on the BSc Audiology course, Aston University.

6 Section Six: Research...

Audiology research

Working in research

My job involves contributing to the teaching of BSc and MSc audiology students at the University of Southampton, but I am also working towards a PhD, exploring the experiences of adolescents who use cochlear implants. My research is mainly qualitative and will employ a novel approach to interviewing young people, which I hope will generate richer data than has been previously reported. I hope that my findings will highlight the needs of this often overlooked group and help to inform professionals working in this field.

I believe that getting involved in research has not only helped me to increase my knowledge of a particular subject area, but also to develop a range of skills that are transferable to many other aspects of my work, such as critical thinking and time management. Although it can sometimes be challenging to find the time to devote to research owing to the pressures of a full-time job, I find that my week is more varied and satisfying as a result.

Clinical scientist studying for PhD.

7 Section Seven: Management...

Management and audiology

Working as an audiology service manager - The practical role

This morning it is the local neonatal hearing and speech programme (NHSP) steering group meeting. I am the team leader for the county screening programme, and I meet with the local co-ordinators and lead audiologists from each of the hospitals in the area to discuss the progress of the screening programme and solve any problems that arise.
In the afternoon I am seeing a five-year-old boy with delayed development. He passed a hearing screening at birth but his speech and language development is delayed and the speech and language therapist at his school has requested that it is checked again. The results from the tests confirmed that the suspicion about the boy's hearing loss. I went on to fit hearing aids. When I fitted the hearing aids he became noisy for the first time in the clinic; it was as if he was enjoying hearing how things sound with his new aids. He seemed very happy, and I am looking forward to monitoring his progress to see if his speech and language now develop more quickly. Tomorrow I am working at my desk, writing a protocol for children's hearing aid review clinics. I need to make sure that we meet the national recommendations and guidelines for what should happen in this clinic, for example that the right tests are done by appropriately trained staff and reports are sent to the correct people. By having a protocol that all staff use we can make sure the quality of our service is consistent and we are all doing what we should be. In the afternoon I am going to the operating theatre with two members of staff to do some training on auditory brainstem response (ABR) testing while patients are under general anaesthetic. This technique can be used with children who are very hard to test. Often they have grommets fitted at the same time, so the surgeon does the operation first, and then I carry out the ABR test. You have to wear theatre gowns, clogs and hat, and make sure all the equipment has been cleaned. After this I return to my desk and start going through the 15 e-mails which have arrived while I have been away.

Audiology service manager, NHS.

The management role

The heads of NHS audiology departments need to have good leadership qualities and strong management skills. Resources are scarce for care of older people in general, and for audiology, in particular. Audiology is a specialty that is concerned with improving quality of life, and this is often not seen as a priority by governments or service commissioners. Many services have limited budgets, and there is what seems like an infinite demand for hearing, balance and tinnitus services. The NHS Institute, among others, has long recognised that providing high-quality patient experiences that meet patients' needs, and eliminating waste is the only way to reduce long-term costs and give maximal health gain, and these are important concepts for audiology managers to understand and apply. Being an audiology service manager requires a strong focus on providing the best possible service while controlling costs and grasping whatever opportunities are presented to secure extra funding, reduce waiting times, and improve equipment and accommodation, in competition with other services. Many successful managers of NHS audiology departments invest considerable time and money on staff education and training. Working as an audiology manager will appeal to people who enjoy a challenge, who can manage their time effectively between different tasks and can handle stress. They often have responsibilities for staff, equipment, information technology (IT), accommodation and budgetary management, provide an expert clinical function and have teaching and research responsibilities. Audiology service manager.

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Section Eight: Working...

Cochlear implants

Working with adults

Working as part of the adult cochlear implant team is challenging, rewarding and varied. Each patient is managed by a multidisciplinary team of professionals, including hearing therapists, speech and language therapists, consultants and, of course, audiologists.

As an audiologist you tend to follow individual patients right through the assessment and implantation process, and given that appointments typically last for one to three hours, you to get to know your patients and, often, their close relations very well. It is wonderful to see the change in a person's life when implantation is successful, but there are also times when things do not go as planned and, as an audiologist, you need to have the counselling and technical skills to be able to deal with this.
The assessment process for cochlear implantation in adults is lengthy and detailed, and is not just about assessing a patient's suitability for implantation. In the initial stages of assessment we must ensure that the patient has been fitted with the most appropriate hearing aid(s) for their hearing loss and that they have any environmental equipment or other support (such as note-takers for meetings) that they may need. The audiologist also performs a comprehensive range of tests, including pure tone, free-field and speech audiometry testing using recorded speech with and without lip-reading, oto-acoustic emissions (OAEs) and completes a number of questionnaires with the patient.
In the first year after implantation rehabilitation is intensive and thereafter patients are usually seen at least annually for the rest of their life.
In addition to technical knowledge it is important to have good counselling skills. The range of outcomes of cochlear implantation are very varied, ranging from recognition of environmental sounds only to being able to converse on the telephone. It is important that patients have appropriate expectations of what a cochlear implant is likely to do for them so that they are able to make informed decisions, but conveying this information can be quite challenging at times, particularly when patients' expectations are inappropriately high.

Adult audiologist, cochlear implant centre.

Working with children

Working as a paediatric cochlear implant audiologist is a very rewarding job. I see children of all ages and abilities, from all over the country. Each appointment lasts for about one and a half hours, so you get to know the families well.

There are various aspects to the role. At the pre-implant assessment(s), various hearing and speech tests are carried out. The functionality of the child's hearing aids, and how well they hear with them, is checked. I work with a multidisciplinary team comprising ear, nose and throat (ENT) consultants, speech and language therapists, and teachers of the hearing impaired, and, together with the family, decisions are made as to whether a child would benefit from a cochlear implant.
Once the decision has been made for a child to have a cochlear implant, and the support team has been established, the child undergoes surgery and

approximately one month later attends the clinic to have the device activated for the first time, known locally as a child's 'switch on'. At this appointment the child begins to have the potential to access sound by gradual increases in the level of stimulation that is put through the processor and cochlear implant.

The children are seen initially quite frequently and then as their 'map' becomes more stable we usually see them annually. To work as an audiologist within a cochlear implant team you will be required to have lots of different skills. You need to be a good communicator as, by the nature of the programme, the children you work with will be severely or profoundly deaf. Many of the children will communicate using sign language and many will have very complex needs. You will need to be flexible in your technical skills so that you can obtain as much information as possible from the child. The technology in this field is constantly developing and so you will have to keep up to date with developments.

Paediatric cochlear implant audiologist.

9 Section Nine: Private practice...

Private practice and industrial audiology

Working in the private sector

As a hearing aid audiologist you are responsible for assisting patients who choose to purchase their hearing system commercially. You may be based in a high street store or work on a domiciliary basis, seeing people in their own homes.

Hearing systems in the private sector are available in a wide range of sizes, styles, colours and budgets, and you need good interpersonal skills to discover what motivates the patient to seek a private hearing system. Some will require advanced levels of technology, others a discreet solution and many will request both.

Most people will feel more inclined to accept a hearing system if they have been empowered with choice, so it is essential to give a clear explanation of the features and benefits of each system you present to them. As in every hearing aid fitting, people require appropriate follow-up and support to make them successful hearing aid wearers. Is it easy to balance these considerations? Not really. Is it worth it? Of course it is … every time someone says 'Thank you for changing my life'. Commercial hearing aid dispenser.

Industrial audiology

Occupational audiometry is a surveillance technique used to detect early damage to hearing resulting from noise exposure. It is required for all employees who are regularly exposed to noise above the Health & Safety Executive (HSE) noise at work upper exposure action values of 85 dB(A). For individuals who are at greater additional risk, it provides individuals and the employers with an opportunity to become aware of potential problems, to prevent any damage getting worse and to assesses the effectiveness of noise control techniques.

An audiologist or occupational physician with specialist training in audiometry would be the designated individual in charge of a hearing screening programme. They may oversee other individuals who have undertaken a training syllabus for industrial audiometry to undertake screening tests. Screening programmes will include pre-test questionnaires, ear examination, quality-controlled testing in appropriate environments, advice on hearing protection, record keeping and the classification of any hearing loss with onward referral when indicated.

10 Section Ten: Different roles...

Multidisciplinary teamwork

The role of speech and language therapy

The speech and language therapist is trained to assess and treat difficulties with all aspects of communication and feeding. Some speech and language therapists specialise in working with deaf children and those with ear, nose and throat (ENT) related difficulties. We work closely with our audiology and teacher of the deaf colleagues. Children with a significant, permanent hearing loss are likely to need intervention from speech and language therapists. Sometimes the child's hearing loss may be only part of the picture, or even a 'red herring', and over time the presence of a specific speech or language difficulty, or both, may be diagnosed. Working closely with our audiology colleagues ensures that we get timely referrals so that we can be confident that we understand a child's hearing status and potential from any amplification. We can then give feedback on changes in their speech and language profile over time.

The role of ENT

Most audiology professionals work closely with ENT specialists and support clinics by performing audiograms and tympanometry where required, for both adult and paediatric populations. Working in collaboration with ENT specialists is essential to provide a seamless service, especially when diagnosing children with hearing loss or if there is a need for ear-wax removal before further rehabilitation can continue.

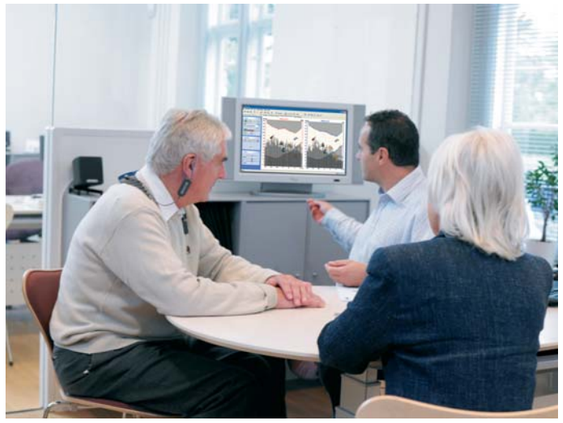
Educational services and educational audiology

The educational services aim to offer an initial contact response to all referrals within five working days (three days in the case of pre-school children). The service offers informed professional advice and practical support to enable parents to make decisions to meet

the needs of their child (and themselves). Advice and a recommended support programme, together with a written report, are provided within eight working weeks. Baseline measurements of hearing are taken to assist with monitoring a child's progress and outcomes to assist the audiology and other professional services. Most teams aim to represent joint education/audiology pre-school hearing aid review clinics. Teaching programmes, supported by a service-level agreement, are formally agreed with each school in the case of a school-aged child. A programme plan is agreed with each family in the case of a pre-school child and there may be pre-school family support groups available.

The educational audiologist

The educational audiologist is a qualified teacher of the deaf with an additional qualification in paediatric audiology. The role of the educational audiologist is to support the link between the clinic and the real world in which the child is living. Educational audiologists have a key role in interpreting and sharing educational and audiological assessments and their educational impact and significance. They have a responsibility to ensure that the equipment issued to each child is effective in their particular educational setting and home. Thus, the advice given, both in the clinic and at home or school, is specific to the individual needs of each child and family, and is based on social and physical environment and needs.



Paediatrics

After the identification of a permanent hearing loss, at any age, a child will be referred for a paediatric assessment. The role of the paediatrician is two-fold, firstly to try to identify the cause of the hearing loss; and secondly to assess the child's health and development, and identify any other problems that they may have. However, many children with hearing loss do not have any additional problems.

The initial assessment can vary, but it is likely to last between one and one and a half hours. It should include taking a full history of the child's health and development, as well as a family history, a developmental assessment if child is less than five years old and a full medical examination.

At the end of the assessment the paediatrician will discuss the findings with the parents and arrange investigations to try to identify any underlying medical cause of the hearing loss. These usually include blood and urine tests and an electrocardiogram (ECG) – a heart trace. The paediatrician may also refer the child to the ophthalmology department, even if there are no concerns, just to ensure that their vision is entirely normal. In addition, with parental agreement, a referral is usually made to a geneticist.

Studying for a career in audiology

Where to start

There are currently four routes to becoming a registered audiologist:

- BSc degree in Audiology
- MSc degree in Audiology
- a fast-track converstion diploma for those with a BSc degree in another relevant science subject, this is available at Edinburgh, London, Manchester and Southampton universities, as well as University College London (UCL)
- Foundation degree in Hearing Aid Audiology.

BSc in Audiology (UCAS code B610): a four-year sandwich course

At school I loved studying biology and psychology, and audiology is a great way to combine the two in a specialist healthcare profession. I am really enjoying my studies; they form a great mix of practical and theory-based learning. Along with lectures we have practical sessions, which give us 'hands on' experience of all the procedures we are required to know. We also make clinical visits throughout the year. In the first year we make two day-visits to two separate hospitals, and this offers a real taste of what real work will be like. We observe audiologists in their day-to-day routine activities and see how they help their patients. I really enjoy being able to help people in whatever work I am doing, and as an audiologist you are right out there on the front-line helping to improve your patients' quality of life. People depend on hearing, not only for work but socially as well, and to help someone to regain some of the sense that they have lost is very satisfying and rewarding, and the patients are all so appreciative that you have helped them. Each time I finish a clinical visit I come away smiling with a sense of pleasure that I have helped someone.

First-year BSc Audiology student, Southampton University.

Deciding to do the BSc Audiology course was a great choice. So far I have had a great time attending lectures and have had the opportunity to work across England on my placements. In my second year I took a placement at Ipswich Hospital. This was a great experience as I had 'hands on' experience with everything that we had learnt in lectures. Audiology is a profession full of excitement and I would definitely recommend it to other students. It offers a career in an area that is full of potential and is totally rewarding. I have had many great experiences during my time on the course and I hope to have many more.

Second-year BSc Audiology student, De Montfort University.

I chose audiology as I have always been really interested in science-based work but wanted to have the fulfilment of working with patients and helping to solve problems. My third-year hospital placement has been a real eye-opener – it has helped me to understand what I need to work on, as well as preparing me for graduating. The hospital-based placement year is a great experience and really enables you to grow in confidence and develop your clinical skills. It also lets you 'test drive' the job and see if it is right for you.

Third-year placement BSc Audiology student, Bristol University.

When I was deciding what to read at university, audiology appealed to me for a number of reasons. I loved science at school and felt that I wanted to do something healthcare-related. The BSc degree in Audiology offered me a vocational science-based course that would lead to career as an audiologist. An additional bonus of the course is that tuition fees are paid by the NHS and there is a paid placement year, which means you are less likely to graduate with big debts. Audiology is a small course so you get to know your lecturers well and they are able to give you adequate help and attention. Another great thing about it is that many lecturers divide their

time between lecturing and continuing their hospital work. When considering what to do next, I found my degree gave me a number of options: I could get a job as an audiologist, do further study or go into research. During my final year I was offered a job as an audiologist and, based on my positive experiences so far, I would definitely like to do more studying in the future. Fourth-year BSc Audiology student, Swansea University.

MSc degree or Postgraduate Diploma in Audiology

These courses, supplemented by an in-service clinical training year, are suitable for those who wish to become state-registered audiologists. Graduates go on to work in the NHS or private sector, or within research environments. Entry requirements include a degree at upper-second class or first-class level in a suitable science subject, and applicants should have visited at least one NHS audiology department and should be able to show a keen interest in and knowledge of the subject.

Doctorate in Clinical Practice (DClinP)

This programme is designed to meet the specific needs of students who wish to pursue a high-level career in clinical practice, and to help practitioners lead innovative, evidence-based practice. The course includes a structured, modular, taught component which occupies approximately one-third of the programme, with the remaining two-thirds focusing on an original piece of research. The programme aims have been closely matched to the NHS Knowledge and Skills Framework. The entry requirements for this course are an upper-second class Honours degree or higher in a relevant subject or a higher degree in a health-related subject (or equivalent) and a health professional qualification leading to registration with the appropriate professional body and a minimum of three years relevant clinical practice.

Acknowledgements

- Aston University, Birmingham
- The University of Bristol
- De Montfort University, Leicester
- The University of Manchester
- The University of Southampton
- The University of Swansea

Training to be an audiologist

Foundation degree in Hearing Aid Audiology

Foundation degrees are designed to appeal to learners wishing to enter a profession as well as those who are seeking continuing professional development. They can also provide pathways for lifelong learning and the opportunity to progress to other qualifications. The qualification may be offered through flexible modes, enabling learners to 'earn and learn' and accommodate the learning needs of their employer.

Higher education institutions are developing audiology foundation degrees to complete the career pathway and provide career progression from assistant practitioner level to associate practitioner level. This is to coincide with the decommissioning of the Hearing Aid Council and will provide an academic route on to the Health Professions Council (HCP) register. The design of the foundation degree also includes a one year option for potential students working as assistant practitioners who may not possess the qualifications to meet the admission criteria. Students enter at year 0 with an optional 'step-off' award of Foundation Year in Audiology.

Where can I train?

Entry to a foundation degree course requires:

- employment in a UK hospital in a department of audiology (as a trainee associate practitioner or higher) or employment in the private hearing aid provider sector
- numeracy and English language (written and spoken) equivalent to GCSE Grade C (British Council IELTS – Band 6.0) and one A-level in science (which may be mathematics) or BTEC National Certificate in science or Advanced GNVQ or AVCE Science or NVQ Level 3 Healthcare or equivalent

Foundation degree courses are currently available at:

- City of Westminster College
- Middlesex University
- Charing Cross Hospital (Audiology Foundation Degree with Year 0).
- Aston University, Birmingham
- DeMontford University, Leicester

There are currently 10 universities offering a BSc degree in Audiology:

- Aston University, Birmingham
- The University of Bristol
- University College, London
- DeMontfort University, Leicester
- Queen Margaret University College, Edinburgh
- The University of Leeds
- The University of Manchester
- The University of Southampton
- The University of Sunderland
- The University of Swansea

What qualifications are offered?

BSc in Audiology

- Entry qualifications: Ideally, three A levels (or equivalent), which should include a science subject. Consideration can be given to those without the above, for example if you have an appropriate science access course qualification. In addition, you should have evidence of ability to work effectively with people of all ages, in particular with the elderly and young children.
- Course structure: Years 1 and 2 are university-based but may include some time in a clinical placement at an NHS audiology clinic. Year 3 is primarily a full-time salaried supervised clinical practice placement, working under the guidance of a qualified audiologist. A national training scheme and logbook is a requirement, based on

competency assessments. Year 4 is the final year, back at university, and involves the completion of a project, although some advanced clinical practice and assessment may be required. Successful completion of the four-year course and clinical assessments qualifies you to register and practise as an audiologist.

Postgraduate Diploma

- Entry qualifications: Ideally, a good (i.e. second-class honours or above) undergraduate degree in a relevant science subject.
- Course structure: A one-year university-based course followed by a one-year full-time salaried supervised clinical practice placement, working under the guidance of a qualified audiologist. A national training scheme and logbook is a requirement and competence-based assessments are required to be undertaken. The in-service training period is currently under review and may be extended to three years.

MSc in Audiology

- Entry qualifications: A good relevant science degree (usually upper-second class honours or above), preferably some knowledge of physics or behavioural science and a proven interest or experience in audiology. Excellent interpersonal and communication skills and an interest in direct patient care are also essential. Training posts are obtained via the NHS Regional Scheme (see the websites: www.nhsclinicalscientists.info or www.baaudiology.org).
  Some NHS audiology departments employ trainee clinical scientists directly.
- Course structure: A one-year full-time MSc in Audiology may be undertaken at Southampton University, University College London or Manchester University.

This is then followed by 18–24 months of supervised in-service clinical placement, culminating in written, practical and oral examinations to obtain the BAA Certificate of Audiological Competence. Successful completion of the MSc practical training also includes a portfolio of clinical training, research and personal development leading to the Association of Clinical Scientists Certificate of Attainment, which is required for registration with the Health Professions Council.

MSc in Rehabilitation Studies

The new MSc degree in Rehabilitation Studies has been developed to reflect the unique expertise required in rehabilitative practice and research, and the emerging demand for professional qualifications and expertise that fulfil the new requirements for professional progression. See the BAA website (www.baaudiology.org) for further details.

Higher Training Scheme

Many audiologists are keen to carry on learning throughout their careers. One great way to do this is through the British Academy of Audiology (BAA) Higher Training Scheme (HTS). All BAA members are eligible to register. The scheme is intended to be most applicable to audiologists at Level 5 on the career framework, but it is also suitable for those on higher bands who want to develop their knowledge and skills in particular clinical or non-clinical areas.

- What does it include? The HTS is a modular scheme, based on learning outcomes, and is very flexible. For the most up-to-date information on available modules see the BAA website (www.baaudiology.org). All the clinical modules contain elements of studying to increase your theoretical knowledge in the area, continuous assessment and practical assessment by external examiners.
- What do you need to apply? For clinical modules your workplace has to be accredited by the BAA, you have to complete the Higher Certificate in Clinical Competence (HCCC) registration form and pay the registration fee. Similarly, for non-clinical modules you need to identify a suitable module, complete the non-clinical registration form and, again, pay a registration fee.
- What do you gain from the HTS? Successful completion of clinical modules leads to the award of a BAA Higher Certificate in Clinical Competence (HCCC) in a particular area, whereas at the end of a non-clinical module you will receive a BAA certificate in that area. Those who complete a certain combination of both clinical and non-clinical modules have an opportunity to earn the Higher Award in Audiology (HAAud); see the BAA website (www.baaudiology.org) for details.

Industrial audiology

The British Society of Audiolgogy (BSA) has approved a number of courses for individuals who wish to become involved with health surveillance testing, and details may be found on the BSA website (www.thebsa.org.uk). The Health and Safety Executive (HSE) Control of Noise at Work Regulations 2005 also provide more details, including the classification of hearing loss and hearing health questionnaires; see the HSE website (www.hse.gov.uk/noise).

MA in Educational Audiology

The MA degree in Educational Audiology is designed for qualified teachers of the deaf and other professionals involved in the education of hearing-impaired children. It aims to equip students with the skills and knowledge required to practise as educational audiologists.

- Course structure: there will be five residential weekends and one summer school in each of the first two years, which combine the Postgraduate Diploma elements. Students who wish to take an MSc degree take the Research Methods module and write a dissertation in their third year. Assessment takes a variety of forms, including written coursework, experimental reports, seminar presentations, a clinical practice diary and demonstration of clinical competence. Unlike MA students, MSc students are required to write a dissertation.
- Where do I apply? Candidates should apply directly to Mary Hare Grammar School (www.maryhare.org.uk).

Please contact the relevant university directly for details of the fast-track course.

Applications can be made direct to the preferred university or via the clearing system. Universities in other areas are awaiting accreditation to run the BSc in Audiology – keep checking their websites to acquire the latest information. There are many short courses available, please look on university websites for more details. ■