None so deaf

171st Annual Oration. Royal Victoria Hospital, Belfast
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INTRODUCTION

The tradition of the Annual Oration was introduced in the days when almost all clinical studies were carried out in this hospital, to welcome new clinical medical students. The world has changed since then and with it the curriculum, the academic calendar and, more than anything else, medical care. Although we may bemoan many of these changes, few of us would want to go back to medicine as it was when I was a student.

Last year we heard the 170th Oration from Morrell Lyons, entitled 'Anaesthesia and the Broken Hearted' and he told us about the development of anaesthesia for cardiac surgery. He said 'The broken hearted ... are not my surgical colleagues ... but rather patients with significant heart disease ...' Little did I think as I listened to him then, that between his oration and mine I would become one of his broken hearted patients.

I have now sampled this hospital from the other side and found it to be a very positive experience. I encountered at first hand what in my head I knew already. There are many people here, of all grades, who do a lot more than is included in their job descriptions and who are prepared to go far out of their way to make life easier for the patients. I am very grateful for all that was done for me in the cardiology wards.

To return to the tradition of this oration, I now welcome to this historic hospital all those clinical medical students who have arrived since the last oration one year ago. During the next few years you will have the privilege of many opportunities to understand patients and disease, and to lay the foundations for the rest of your medical careers. If you use the time wisely, you and your patients will continue to reap the reward for the rest of your professional lives. If you don't, you may well still pass your exams and collect your degrees but you will have missed an opportunity that will never be repeated, your future patients will get less than the best and you will gain less satisfaction.

It is my duty to give you some advice about your future. What better than that given by the famous Irishman, C S Lewis, cousin of Dr Ted Lewis, whom many will remember as a Consultant Physician in Wards 1 and 2? Both were born in Belfast exactly 100 years ago. In his Commemoration Address to King's College in London in 1944, C S Lewis gave some advice about professional life.

He advised that you make it your goal to associate with the people who have the right attitude to their profession and whose satisfaction lies in doing the job well. In this way you will preserve your integrity, enjoy what you are doing and hopefully do it well. You might also get fame and fortune. If on the other hand, you make it your aim to get in with those who you think can advance your career, you are more likely to get fame and fortune but possibly at a price that is too high. You will be more likely to lose your integrity and probably also forfeit much of the satisfaction that should come from what you are doing.

OTOLOGY

I am an otologist, and most of what I want to say concerns otology. For the past 30 years I have had the good fortune of working as a consultant in generally very good physical conditions with excellent colleagues, medical, nursing and others, both here and in the Belfast City Hospital. We have all worked diligently to prevent deafness from developing, and where it was present to do something about it. But of course, there is little advantage in being able to hear if one does not listen and hence my title, which as you all know is, in full, 'there are none so deaf as those who will not hear'. This expression seems to have
been first used in the 16th century. The first record of the parallel statement, none so blind, seems to have originated with another famous Irish writer, Jonathan Swift. Now Swift had Ménière’s disease and consequently was deaf in one ear. Maybe it was his personal experience that led him to create the expression “turning the deaf ear” when he said:

‘They never would hear but turn the deaf ear as a matter they had no concern in.’

One of the many negative aspects of our political situation in Northern Ireland is that the majority here tend not to look to Dublin quite enough. This is sad because thereby we are losing part of our heritage. Dublin was a famous European city when Belfast was still little more than a small town and it is doubtful if Jonathan Swift would ever have accepted the post, if such had existed, as Dean of Belfast. It was in Dublin that Irish medicine first established itself.

I’d like to start my story exactly 200 years ago in the Irish uprising of 1798. The final battle of that uprising was at Vinegar Hill (Fig 1) and at that battle, serving with the British Army, was a young Scots doctor who probably deserves the credit of being the first otolaryngologist in Ireland.

He was, of course, a lot more besides. He was a military surgeon named John Cheyne. (Fig 2). He later found life in the army rather boring. Between the battles, he complained, he got tired of billiards and books so he returned to civilian life to do some postgraduate training, both in his father’s practice in Scotland and also with Charles Bell of Bell’s Palsy fame. Cheyne married an Irish girl, daughter of the vicar of Antrim, and as has happened so often, it was he who settled in Ireland. He established himself as a physician in Dublin where he became one of the leading lights. He was appointed to a chair in the College of Surgeons. It was he who launched the journal, Dublin Hospital Reports. He was a prolific writer and his works included a book which justifies me in putting him first in the line of otolaryngologists in Ireland. This was entitled The Pathology of the Larynx and Bronchia and was illustrated by Charles Bell. It was one of the early works of laryngology, in the days before there were specialist laryngologists.

It was in the Dublin Hospital Reports that Cheyne wrote his first description of the pattern of breathing we now call Cheyne-Stokes Respiration. He laid the foundation for the great success of the school of Irish Medicine in the nineteenth century. He retired to England in 1831, shortly before William Wilde (Fig 3) became a medical student in Dublin. Wilde was born in 1815 and went to the same school as Oliver Goldsmith in Elphin, Co. Roscommon.

Following graduation he studied Otology and Ophthalmology in London, Vienna and Berlin, and then returned to Dublin where he developed a very successful practice and opened his own Eye and Ear Hospital. He published a textbook on aural surgery, which was to become world-renowned. In the preface he referred to a concern that was often expressed in nineteenth century otology papers – the need to rescue otology from empiricism and found it upon pathology and reasonable therapeutics. Wilde’s incision is still recognised by otologists.
Sir William Wilde died in 1876 but 11 years earlier, in 1865, another famous otolaryngologist had been born. Sir Robert Woods (Fig 4) was the first Irishman to have practised Otolaryngology exclusively. He became President of the Royal College of Surgeons in Ireland in 1910 and was knighted in 1913. One of his sons was killed in the first world war in 1916, and it is said that it was to seek a diversion that he decided to enter politics. He failed at the first opportunity but when Sir Edward Carson moved to a Belfast seat, leaving one vacant in Dublin University, he was elected, as a Unionist, in 1918.

Sir Robert was a Protestant and a unionist, and his home in Dublin was eventually to become the British Embassy. Belfast Medical School was founded so that the youths of Ulster would not have to go to Edinburgh or Dublin for a medical education, where they would be exposed to undesirable influences. Ulster Presbyterians would have been quite happy to have had Sir Robert Woods teaching their boys, but not one of his protégés, Oliver St John Gogarty.
Gogarty (Fig 5) was a fascinating man. He was a friend of W B Yeats, James Joyce and Augustus John. He was a type that doesn’t exist any more. He had finished his whole medical course, as one could do in those days, before he had passed even his second MB examination. He was an outstanding poet and, when he was short of money, would enter for, and usually win, undergraduate poetry prizes. He was also a master of the obscene limerick which he could produce on the spot in almost an situation. During his time as a student he was one of Ireland’s leading racing cyclists although he was banned from competing for a time because of his bad language. He was also a strong swimmer and on three occasions went into the water fully clothed in a rescue attempt, being successful in two of these.

He was a very close friend of Arthur Griffith, the founder of Sinn Féin and became an active member of that party. He was involved in the 1916 uprising and helped to look after Griffith during Griffith’s terminal illness. I’m told that it was he who did the post-mortem examination on Michael Collins. He was a member of the first Senate after the creation of the Irish Free State and as such was declared a legitimate target for the rebels.

In January 1923 he was taken from his home at gunpoint and driven to a house on the banks of the Liffey where he was held in a dark cellar. He claimed to have diarrhoea and requested permission to go outside to relieve himself. Two guards were sent with him. Getting them to hold his coat, he suddenly ran off and for the fourth time in his life dived fully clothed into the water, and swam to the other side, surviving the gunfire aimed at him.

He played an active role in the Senate and, according to the record, never hesitated to speak, even when he was quite uninformed on the subject!

Gogarty began to lose interest in otolaryngology in the early 1930s. But another Woods had appeared on the Irish stage in the form of Bobby, one of the sons of Sir Robert. In those days there were still no pure otologists in Ireland but R R (Bobby) Woods had a special interest in the ear. In the pre-antibiotic days there was a lot of fatal ear disease, usually from intracranial complications, and in 1936 he published an excellent little book entitled ‘Painful and Dangerous Diseases of the Ear’. I believe that it was shortly before Woods died that he gave his pre-publication copy (Fig 6) to Gordon Smyth, who subsequently, shortly before he died, gave it to me. Maybe I should plan never to give it away!

Bobby Woods was one of the few Irish surgeons who was involved at the very start of the renaissance of otology in 1938 when the single-stage fenestration operation for otosclerosis was introduced.

However, before talking about that let me digress for a moment or two to remind you of the anatomy and physiology of the ear. There are three parts, simply known as outer, middle and inner, and we now know that each one of these plays some role in amplifying sound. First there is the outer ear which, with the auricle, acts as a sound-collecting system and funnels sound down the ear canal. At the inner end of this is the ear drum which with the middle ear ossicles adds further amplification.

In recent years it has been discovered that the outer hair-cells in the cochlea actively contract to boost the signal and therefore add yet more amplification. The brain also amplifies, in that when we concentrate we hear better and, of course, there are none so deaf as those who will not hear.

The balance organs are also situated in the inner ear. Not only do they help to keep us upright on the narrow base of two feet but they are also very important for co-ordination of eye movements.
Now there are many potential problems as sound moves from the environment to the brain. Let us, by way of illustration, look at otosclerosis, one of the more common forms of severe middle-ear deafness, especially in young adults. The stapes, or stirrup, (Fig 7) becomes immobile as the result of new bone growing in the middle ear and preventing normal vibration.

![Fig 7. Diagram of stapes immobilised by new bone. (From Scott-Brown's Otolaryngology, Courtesy of Butterworth-Heinemann.)](image)

Until Lempert’s fenestration procedure, otosclerosis was a fearful diagnosis. It meant a slowly progressive deafness. It usually started in the early twenties and often caused severe and incapacitating hearing loss within 10 years, leading to extreme social isolation. In 1938, when hearing aids were still very primitive, a New York surgeon, Julius Lempert, introduced the one-stage fenestration operation whereby the middle ear was bypassed so that sound got into the inner ear via the balance system. Although this route of entry could not give normal hearing, it was a great leap forward. So far as I can ascertain it was Bobby Woods who introduced this procedure to Ireland.

It was not until after the war that the first fenestrations were done in Northern Ireland, by Kennedy Hunter. (Fig 8) This hospital was probably even more short of money in those days than now, because Kennedy had to buy his own microscope and drill to do the operation. By the time I started otolaryngology in the early 60s Kennedy Hunter did little other than otology and was setting high standards for ear surgery in Belfast.

Lempert’s fenestration operation was a major breakthrough and was the start of the renaissance of ear surgery. But there were potential problems. If an ear is operated upon where the deafness is not due to fixation of the stapes, sound energy will get into the balance organs and cause severe dizziness. Such a patient will be very much worse off. The hearing will not be any better and she will be dizzy every time she comes into contact with a loud noise.

A rather obsessional New York surgeon, Samuel Rosen, was so disturbed by this problem that, to avoid it, he began all his fenestration operations by opening the middle ear under local anaesthesia to confirm that the stapes was indeed fixed. If it was not he didn’t proceed with the operation. In one patient, in 1953, while probing the stapes to confirm its fixation, he inadvertently mobilised it. Because it was under local anaesthesia, the patient became immediately aware of the improvement in his hearing.

Rosen realised the significance of this event and the potential for other patients with otosclerosis, and looked further into this. He was meticulous.

![Fig 8. Kennedy Hunter.](image)
and decided that he would have to develop special instruments and also practise this procedure. This happened around the time that he was having some problems with his hospital and therefore, in order to practise, he brought home whole heads which he obtained from a New York Mortuary. He kept these in his domestic fridge. I think the cleaning woman must have been a little indiscreet and when a decapitated body was found near Rosen’s home the police searched his house, found a head and arrested him. It was only when the police doctor confirmed that the head from the fridge didn’t fit the body, that they believed Rosen’s story and let him out of custody.

Thus began the era of mobilisation of the stapes. When successful, this was a smaller operation than the fenestration procedure and gave better hearing results with fewer complications. Sadly the long-term results were poor, as the new bone tended to regrow and immobilise the stapes again. However, it focused the minds of otologists on the stapes and in 1958, in Memphis, Tennessee, John Shea carried out the first stapedectomy operation. He removed the whole of the stapes, sealed the inner ear with a vein graft and replaced the stapes with a polythene strut. This was an instant success, and added impetus to the development of ear surgery.

Suddenly, ear surgeons all over the world began to think of improving hearing, even in chronically infected ears with long-standing perforations. And it was into this exciting atmosphere that Gordon Smyth (Fig 9) came when he began his otological career under the inspiration of Kennedy Hunter. He was subsequently to become one of the leading otologists in the world and a dominant influence here. I, and most of my otolaryngology colleagues in Northern Ireland, owe him an enormous debt of gratitude.

When he was still a registrar, Gordon Smyth described a new and revolutionary surgical procedure in the management of cholesteatoma, known as the intact canal wall, or closed cavity, tympanoplasty. He became well known before he became a consultant. We all know the scene where the patient is shown into the registrar and requests that he see the consultant. It seems that every generation produces one or two registrars who become better known than the consultants and Gordon was one of those. In the outpatient clinic, when the patient found himself in the cubicle with the consultant, he was liable to say that he had come to see Mr Smyth and please, would it be possible to see him? Some consultants found this hard to take!

Gordon’s idea was that it should be possible in most cases of cholesteatoma to remove all the disease by a combined middle ear and mastoid approach, but yet leave basically normal anatomy. Consequently there would be no open mastoid cavity to cause problems. This procedure was simultaneously but independently described by two surgeons in the United States and by another in Germany.

A lot of emotion was generated by this new surgical procedure and hot debates raged across the otological world about open versus closed cavities. In the UK the young Gordon Smyth was the main voice in favour of this approach and most of the senior British otologists were opposed to it. People came in their scores to Belfast to see it being done and many were looking for reasons to object to it. Technically the procedure was time-consuming and difficult, and it usually had to be done in two stages. To add to the problems many did it without proper training and got disastrous results.
Gordon Smyth had a major emotional investment in this procedure. He maintained a close personal follow-up of his patients and, after about 15 years, he became unhappy about his own long term results. In 1975, he reported his figures which, he said, had caused him to change his opinion and conclude that this was not the best way of dealing with most cases of cholesteatoma.

There must be very few surgeons who have made their names on a procedure and who have then admitted, on their own evidence, that it was seriously flawed. There are often *none so deaf* as those whose work is being criticised. Lempert and Rosen, the two great men who led the way in otosclerosis surgery, were both unable ever to accept that their procedures had been superseded. In this case it was Gordon Smyth himself who both produced and publicised the evidence.

He made innumerable contributions to otology but his detailed record keeping, critical analysis and preparedness to admit openly his changed position were probably his greatest. As surgeons, all of us need to look carefully at what we are doing, especially if any procedure is our own personal contribution to our specialty or if, for any other reason, we have developed an emotional investment in it.

Gordon Smyth was also one of the leaders in our efforts to conquer conductive deafness and, again, his long term records proved to be invaluable. Great strides have been made but sadly some types of middle ear problem have proved resistant to all that we can do and conductive deafness has not yet been totally conquered.

**DEVELOPMENT OF HEARING AIDS**

However, fortunately, the new technologies that allowed many of the advances in surgery also led to advances in hearing aid development. Until the late nineteenth century the only effective form of hearing aid was some system to funnel sound into the ear canal (Fig 10) and thereby increase its amplitude. The old fashioned ear trumpet is not to be scoffed at. It is simple, doesn’t require batteries and is very effective so long as the deafness is not severe.

Alexander Graham Bell was a teacher of the deaf, and married one of his deaf pupils. In the nineteenth century he worked hard to try to produce some form of electrical amplification for his wife; he did this, and on the way he also created the telephone. Despite this, it was not until the 1920s that really practical hearing aids were invented. However, although they were practical, they were unwearable. The aid was bigger than many modern small television sets and was powered by an acid battery that was almost as large. So the hearing aid stayed stationary and the user came to it. It was not until the 1930s that hearing aids became wearable although they were still both heavy and conspicuous, with the batteries being carried separately in a large pack.

With the development of transistors in the 50s the size could be reduced and when I started my ENT career in 1963 many were still marvelling at the wonderful ‘little’ hearing aids that had become available. These were the size of a packet of 20 cigarettes, were worn on the body and had a wire going up to the ear. Nowadays they are considered quite unacceptable.

Hearing aids have continued to improve and the aids available at present under the Health Service are small and, being worn behind the ear are not easily seen, especially in those with long hair. Hearing aids are one of the few things that have survived all health service cuts in that they continue to be free but the downside of this is that the range is limited to certain mass-produced models.

Advances have continued. The latest digital hearing aids can be completely out of sight, pre-programmed by computer to suit the specific hearing loss of the wearer, adjusted to filter out some of the background noise and fitted with automatic volume control. Sadly these really modern digital aids are not available under the National Health Service, but with the current liberalisation of the health service these wonderful aids can now be bought through our hospital service.

![Fig 10. Ear trumpet.](image-url)
None so deaf

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The cinema shows the paper-boys shouting 'Read all about it'. Sadly this is not the case. The papers do not tell us all about anything. And in the so-called Wisheart case they have reported only what suited their desire for a medical scapegoat.

James Wisheart was tried for a list of things including lack of technical expertise and for clinical incompetence. After the evidence was presented by the prosecution, the General Medical Council dismissed the charge of lack of technical expertise without the defence even having to address it. But the papers did not report that. The GMC found the charge of clinical incompetence not proven but, again, this was ignored by most of the press. The GMC declared that his honesty and integrity were not in question. But the press didn’t tell us that.

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I indicated that C S Lewis suggested that if you are properly motivated you will not necessarily get fame and fortune but at least you will have the satisfaction of a job well done and that you will feel good about your achievements at the end of your career. This is usually the case but unfortunately not always.

I have referred to John Cheyne who was at the Battle of Vinegar Hill in 1798 and to C S Lewis who was born in 1898. I want to look very briefly at the last ’98 in my series of three, 1998. This year saw the trial of a Belfast graduate before the GMC, along with another cardiac surgeon and the medically-qualified chief executive of the hospital. I am, of course, referring to the so-called Bristol, or Wisheart, case. Many of the senior people here will remember James Wisheart as an excellent junior doctor who didn’t cut corners, was of the highest integrity and cared for patients well beyond the usual call of duty.

Sir Donald Irvine, President of the GMC has indicated that this case was initiated as a result of an article by William Rees-Mogg in the Times in April 1996, and it was the press which kept up the combined air of tragedy and scandal. Happily Hospital Doctor later made a small effort to correct this. However, I was reminded of what Anthony Trollope said of the leading newspaper, the Jupiter, in his novel The Warden. ‘A man may have the best of causes, the best of talents and the best of tempers; he may write as well as Addison, or as strongly as Junius; but even with all of this he cannot successfully answer, when attacked by the Jupiter.’

The implant differs from the hearing aid in that the sound waves are changed to electrical waves and amplified but not changed back into sound waves. Electrodes are placed into the inner ear and used to stimulate the remnants of the auditory nerve. Many of those with cochlear implants can even use the telephone. Unfortunately, this is a very expensive procedure, with the apparatus costing up to £20,000. The rehabilitation takes many months and the estimated total cost is nearer £30,000 per patient.

The latest in hearing technology is the implantation of tiny hearing aids into the middle ear, rather like a pace maker, only much more expensive. The initial results from this are most encouraging. If their initial promise is maintained they could be the otological equivalent of hip replacement and the cost to the health service could be astronomical.

One of the most exciting developments in electrical hearing has been the cochlear implant for the totally deaf. Enthusiasts have been talking about doing something for the totally deaf for over a hundred years but it was only in the 50s and 60s that proper research was undertaken in any serious way and only in the past decade that reliable results have been achieved.

There are other benefits from this technology such as the use of prostheses. It is very difficult to produce a realistic ear by plastic surgery. Using the implantation technique it is possible to clip on a prosthesis which is stable and usually much more acceptable.

I have been talking only about aids that deliver sound through the ear canal. There are many reasons why these are not suitable for everyone. The most obvious, although not the most common, is absence of an ear canal. In these people amplified sound is delivered into the inner ear through the bone. Advances are being made here also. We now have the bone-anchored bone-conduction hearing aid. A metal screw is implanted into the side of the head and in a few months it becomes bonded with the bone of the skull. A hearing aid fitting is then applied and a hearing aid is snapped on to this. This is more comfortable to wear and produces better quality sound than the conventional bone-conduction hearing aid.

hanging aid department, at the much discounted price of about £1400.

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Here is an extract from what was said by the Professional Conduct Committee in their final judgement, addressing James Wisheart.

'We have considered very carefully the extensive evidence of the care and dedication which you have shown to many patients. We accept that for many years you have worked hard in their service. We accept that there is no evidence that you ever had any intention of acting other than in your patients' interests.'

Many of us would be delighted, at the end of our careers, to have the GMC say that about us. But, of course, again the papers didn't report it.

It seems to me that James Wisheart did what C S Lewis advised, but sadly it didn't work out for him. I don't think any graduate of this medical school has had so much publicity since the trial of John Bodkin Adams, over 40 years ago, on a charge of murdering some of his patients. And it is unlikely that any graduate of this medical school has ever been so unfairly vilified. I suppose that the moral is that no one is, or ever was, safe, once the press start looking for a scapegoat. There are none so deaf to reason as the press when they get going.

This Bristol case will result in changes that all of us will feel. Medicine is, yet again, entering another brave new world that is well illustrated by the poster that says, 'Doctor, the patient will see you now'. There has never been a time when we could do more for our patients than now. But resources are limited and the public have been encouraged by successive governments to have unrealistic expectations. Our standing as a profession is in danger. The GMC may have thought that the production of a scapegoat for both press and government would ensure that we would continue to regulate ourselves. That is far from certain. However, not only do we not want a system that requires a scapegoat from time to time, but most of us realise that if any one of us were to be the subject of scrutiny, in the manner of this recent GMC enquiry, he or she is likely to have areas of considerable discomfort.

In this new world we must audit all our work, which is mandatory. For many this isn't new, but for all it is time consuming. Evidence-based medicine is certainly important, and we must look critically at everything we do. Again for many this isn't new and for all is time consuming. What is new for most of us is that we now have to cope with new situations where we have to think about costs, in some shape or form, in almost every decision we make.

But despite all the trauma and insecurities that we, and indeed all professions, are feeling at the moment, medicine is still a good career. It is satisfying, extremely interesting, reasonably secure and rewarded, and happily, most people still do trust us, despite everything.

To all new clinical medical students I say, 'You have chosen a good profession. Become good at it and you will have a satisfying and rewarding life. You might even become rich and famous'.

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I wish to thank my colleagues for the honour of having been invited to deliver the 171st Annual Oration and also all those, too numerous to list, who have helped me, knowingly and also unknowingly, in its preparation.