Independent Review of Audiology Services in Scotland

Review report and recommendations

Contents

Abbreviations

ABR	Auditory Brainstem Response
AHCS	Academy for Healthcare Science
ASAG	Audiology Services Advisory Group
BAA	British Academy of Audiology
BAPA	British Association of Paediatricians in Audiology
BSA	British Society of Audiology
CPD	Continuing Professional Development
CNOD	Chief Nursing Officer Directorate
ENT	Ear, Nose and Throat
GCU	Glasgow Caledonian University
HCPC	Health and Care Professions Council
HINCYP	Hearing Impairment Network for Children and Young People
HIS	Healthcare Improvement Scotland
HTS	Higher Training Scheme
KPIs	Key Performance Indicators
MCN	Managed Clinical Network
NSD	National Services Division
NDCS	National Deaf Children's Society
NES	NHS Education Scotland
NSS	National Services Scotland
QMU	Queen Margaret University
RCCP	Registration Council for Clinical Physiologists
RNID	Royal National Institute for Deaf People
RTT	Referral To Treatment
SCIP	Scottish Cochlear Implant Programme
SLWG	Short Life Working Group
SSND	Scottish Strategic Network for Diagnostics
STP	Scientist Training Programme
UCAS	University and College Admissions Service
UKAS	United Kingdom Accreditation Service
UNHS	Universal Newborn Hearing Screening
VRA	Visual Reinforcement Audiometry
WTE	Whole-Time Equivalent

Foreword

This Independent National Audiology Review was commissioned by the Cabinet Secretary for Health and Social Care, after concerns were identified in the standards of care provided by NHS Lothian Paediatric Audiology service. The Review was asked to examine hearing services and make recommendations on how these could be improved. It has been a privilege to be involved in this process.

This Review and this Report represent the combined efforts of a large number of people and organisations. We would like to thank the patients and the public whose views have been central to our discussions, and the Health and Social Care Alliance who facilitated the engagement. The Review also benefitted from the commitment of audiologists, who shared their experience and also contributed information, with particular thanks due to those participating in the sampling audits. We are enormously grateful to all of the members of the Review group, Reference group and Sub-Groups. I would personally like to thank the Chairs of the Sub-Groups and Reference Group, Angela Bonomy, Adrian Carragher and Robert Farley and Vice Chair of the Review, John Day, who have worked tirelessly and given generously of their time and expertise. We are also very appreciative of the guidance and support provided by colleagues in the Scottish Government's Chief Nursing Officer Directorate throughout the Review process.

While the Review found examples of good practice, there are many areas ripe for improvement, and there is a huge appetite for change. We firmly believe that implementation of the Review recommendations is an opportunity which must be grasped, to ensure the development of sustainable, high quality Audiology services for everyone in Scotland.

Professor Jacqueline Taylor MBE
Independent Chair

Executive summary

Executive summary

In January 2022, the Cabinet Secretary for Health and Social Care announced that an Independent National Audiology Review (the 'Review') would be established to examine hearing services provided to children and adults in Health Boards across Scotland and to make recommendations on improvements to services.

The Cabinet Secretary commissioned the Review because of failings identified in standards of care provided by the NHS Lothian Paediatric Audiology Service. This followed an independent review by the British Academy of Audiology (BAA), which revealed significant failures in the care of 155 children.

Membership of the National Audiology Review Group and its terms of reference are detailed on the Review website (1). The Review Group consisted of key stakeholders from across the clinical pathway. Patient views and experiences were central to the Review, and an extensive public engagement exercise was undertaken by the Health and Social Care Alliance Scotland (the 'ALLIANCE') (2).

The Review focused on key areas critical to the delivery of quality audiology care and outcomes for people living with hearing-related conditions. These areas were:

- structure, governance and leadership of services;
- education and training of audiology staff;
- quality assurance of services.

A range of methods was employed including questionnaires to Health Boards, assessment of some Key Performance Indicators (KPIs) and some patient-level sampling.

The Review identified a range of concerns in all the areas scrutinised. A combination of factors is responsible, but in particular there has been a lack of profile, national oversight, accountability and clarity around Health Board-level clinical governance arrangements. There has also been an absence of national leadership, strategic planning and workforce planning.

In recent years there has been no quality assurance of services, despite the existence of national quality standards for paediatric and adult audiology services. In addition, there is clear evidence of workforce shortages, limited access to undergraduate and postgraduate training programmes and few opportunities for continuing professional development (CPD) and skills maintenance and acquisition once in post.

There are multiple, systemic problems within audiology services in NHS Scotland. Resolving these requires a whole-system approach. The wide-ranging recommendations in this report provide the foundation for improvements that will ensure high-quality, joined-up, patient-centred services.

Implementation of the Review recommendations will require the establishment of an Implementation Board, with expertise from across the patient pathways and, most importantly, patients. The Implementation Board must report directly to the Scottish Government and have the necessary delegated authority and project management support to be effective.

We believe that the recommendations detailed in this report will not only improve the quality of audiology services in the short term, but also provide the structure, governance and leadership required to bring sustained improvement to services.

Introduction

Introduction

Hearing loss has a significant impact on people at every stage of life: for infants and children, failure to identify it can have lifelong consequences for development of language, and for cognitive, emotional, educational and social development. Early identification and effective management are essential to allow children to attain their full potential.

Every step of the care pathway must be effective, timely and coordinated. There is an international evidence base showing that newborn hearing screening, if followed up by timely and appropriate diagnostic assessment, medical and audiological management, and family support to aid communication development can significantly improve outcomes and opportunities for children with hearing loss. The importance of seamless transitions of care and effective multidisciplinary coordinated care are emphasised in international guidelines (3).

While there are very time-sensitive issues in terms of identification and management of hearing loss in infants and children, hearing loss in adults can have an enormous impact on life in general, and on quality of life in particular. It can affect ability to work, which has potential economic implications. It can impact on the ability to participate in and manage activities of daily living. Hearing loss can also have a huge adverse effect on socialisation, leading to social isolation. There is also growing evidence that in older adults, hearing loss increases the risk of developing cognitive decline and dementia (4), with all the associated adverse health and socio-economic outcomes. The principles of seamless, integrated care across the patient pathway are equally applicable to adults.

Identification, assessment and management of hearing loss are therefore essential across the age spectrum. Audiology services play a key role in this, but do not work in isolation. They have important links to other healthcare services, education, employment and the third sector. They require an organisational structure and oversight to function effectively.

During the course of this Review, we have learned that audiology services are historically lacking in profile. Audiology professionals feel strongly that they belong to a specialty that is poorly appreciated. At a time when NHS Scotland is facing unprecedented and unrelenting pressures, audiology must compete with other sectors for finite funding and resources.

Hearing loss is common; in fact, it is one of the most common disabilities in the UK. In 2015, Action on Hearing Loss estimated that there were 945,000 people with hearing loss in Scotland – one in six of the population (5).

The presence of hearing loss rises with age: it is estimated that 70% of over 70s have some degree of hearing loss. Given the demographic changes in our population the prevalence of hearing loss will have increased since 2015 and will continue to rise.

There are approximately 3,600 young people in Scotland with hearing loss: it is estimated that 1.1 children per 1,000 are born with permanent bilateral deafness and 0.6 per 1,000 are born with unilateral deafness (4).

The Scottish Government's See Hear Strategy (4) provides a strategic framework that applies to children and adults living with a sensory impairment in Scotland. The aims of the strategy include the seamless provision of assessment, care and support to children and adults with a sensory impairment; and the assurance that they should expect the same access to education, employment and leisure as everyone else.

In addition, the strategy states that children and young people with a sensory impairment should expect appropriate and timely intervention in the early years and for as long as is required; and that people with a sensory loss should be able to access information and be supported to live as independently as possible.

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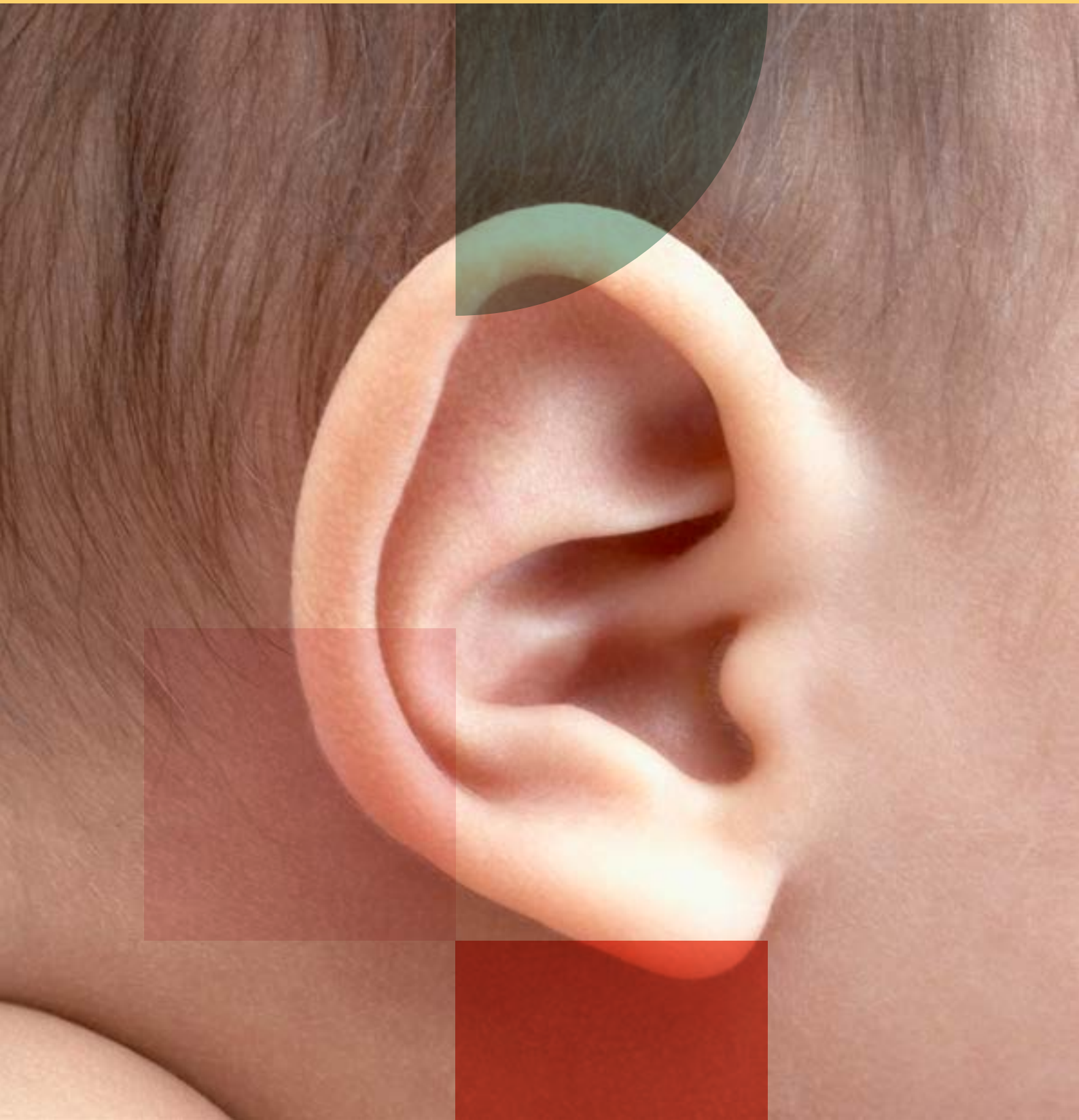
Driver for the Independent Review



Driver for the Independent Review

The Cabinet Secretary for Health and Social Care commissioned the Review because of failings identified in standards of care provided in the NHS Lothian paediatric audiology service. NHS Lothian Health Board commissioned the BAA review after the Scottish Public Services Ombudsman upheld a complaint by parents against the paediatric audiology service (6). This independent audit and governance review by the BAA identified a range of failures over a prolonged period caused by "a lack of scientific leadership, knowledge, reflection and enquiry in the presence of a lack of routine and robust quality assurance processes".

Detailed scrutiny of the paediatric audiology caseload from 2009–2021 identified 155 children (15.7% of cases audited) as having "significant failures" in their care. The report made 36 recommendations to improve the paediatric audiology service in Lothian. The Health Board was placed at level 3 of the NHS Board Performance Escalation Framework.[1] As a result, NHS Lothian produced a consolidated action plan with clear timescales for implementation.

This National Audiology Review Group was tasked with making recommendations to improve both adult and paediatric audiology services in Scotland. Essentially, the Cabinet Secretary for Health and Social Care was seeking assurance that the failings identified in Lothian were due to a unique set of circumstances and that similar issues were not prevalent across Health Boards in Scotland.

1 In January 2023, given the progress made with regards to the BAA recommendations, NHS Lothian was de-escalated to level 2 having provided sufficient assurance through evidence of significant progress against its plan, improved governance and culture, and sustainable changes.

Purpose and scope of the Review

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The purpose of the National Review was to establish the current level of assurance within existing audiology services; to assess this within the scope of the Review; and to make recommendations to improve the assurance of audiology services within NHS Scotland. The full Terms of Reference of the Review can be found on the Review webpage (1).

The remit of the Review Group was to:

- review the current structure, governance and leadership of paediatric and adult audiology services;
- provide a quality assurance appraisal of services, surveying key elements of existing service provision, with a particular focus on issues impacting on patient outcomes;
- review existing quality assurance arrangements, making recommendations necessary to establish robust quality assurance processes, and to effect improvements in service quality, and outcomes for patients on a permanent basis;
- review current education and training and CPD provision;
- understand the lived experience of people living with hearing loss and their carers and families.

It was important that the Review took a pragmatic approach, made best use of current information and resources, avoided duplication of other workstreams and was mindful of ongoing work in this area including:

- the See Hear Strategy currently being taken forward by the Scottish Government;
- the Universal Newborn Hearing Screening (UNHS) programme;
- work undertaken by the Scottish Heads of Audiology Group, the Hearing Impairment Network for Children and Young People (HINCYP) and Diagnostics in Scotland Strategic Group (DiSSG) in consideration of any identified opportunities for improving audiology services;
- use of established and evidenced-based Quality Standards for Adult Rehabilitative Audiology and Paediatric Audiology Services;
- the Scottish Government Healthcare Science Education and Workforce Review and forthcoming Healthcare Science Strategy;
- recommendations proposed by the National Deaf Children's Society (NDCS) and any work undertaken by wider partners.

While the Review Group was well aware of the issues affecting audiology care in NHS Lothian and elsewhere, it also recognised that there is evidence of high quality in audiology services in Scotland, where service-user needs are identified and addressed in a timely, efficient and compassionate manner.

This is reflected in some of the comments from parents quoted in the ALLIANCE report (2). Here are some examples:

> **“The staff were fantastic. Understandably my husband and I were in shock and very upset. The staff were so supportive and reassuring that my son would get all the help he needs to thrive…The audiologists are so caring and have really taken the time to get to know my son and his hearing loss.”**

> **“We have always, as a family, been fully supported and everyone involved in service provision has been outstanding. Overall, the quality of service has made a profoundly positive difference to our child’s life.”**

By contrast, other parents had a far less positive experience and their comments indicate the scale of the challenges ahead:

> **“I am more concerned about the two-year waiting times for children who are clearly deaf but have to wait to be assessed while their crucial opportunities for language development and perhaps even cochlear implants are missed.”**

> **“Given the length of time it took for my daughter to be diagnosed, I would imagine they are very much under pressure and in need of more staff.”**

Structure and approach

Structure and approach

The Cabinet Secretary for Health and Social Care appointed Professor Jacqueline Taylor as Chair of the Independent Review, working alongside Mr John Day, Head of Audiology, Betsi Cadwaladr University Health Board, NHS Wales, as Vice Chair. Full membership of the Review Group is available on the Review website (1).

A Reference Group and three Sub-Groups were established to fulfil the Review Group's remit. The areas of focus for these were as follows.

- The Reference Group, chaired by Mrs Angela Bonomy, Chief Executive Officer, Sense Scotland, was tasked with ensuring stakeholder views were understood and properly considered during the Review; and that the recommendations captured the lived experience of people with sensory loss and their carers and families. A section providing detail on the role and work of the Reference Group can be found under People at the Centre, below.
- Structure, Governance and Leadership, chaired by Mr Adrian Carragher, Head of Audiology, NHS Ayrshire and Arran.
- Education and Training, chaired by Dr Robert Farley, Associate Director – Healthcare Science, NHS Education for Scotland;
- Quality Assurance, chaired by Mr John Day, Clinical Director of Audiology, Betsi Cadwaladr University Health Board, North Wales.

The Review Group's membership reflected key stakeholders across the clinical pathway, with expertise from a wide range of stakeholders including NHS audiologists, heads of service in audiology, NHS Education Scotland (NES), Newborn Hearing Screening Scotland, the Scottish Cochlear Implant Programme (SCIP), Hearing Impairment Network for Children and Young People (HINCYP), Healthcare Improvement Scotland (HIS), the British Academy of Audiology (BAA), the British Society of Audiology (BSA), National Services Scotland (NSS), the National Deaf Children's Society (NDCS), the Royal National Institute for Deaf People (RNID), the British Association of Paediatricians in Audiology (BAPA), and Sense Scotland. Secretariat support for the Review was provided by the Chief Nursing Officer Directorate (CNOD) in the Scottish Government.

The involvement of expertise from outside Scotland was essential to provide an external perspective. Conflict of interest guidance was produced and members invited to complete a declaration.

The core principle adopted throughout the Review was that of “learn, not blame”. It was essential to have wide stakeholder engagement and that, moving forward, all stakeholders should have joint responsibility for delivering change.

The Review Group met nine times every six to eight weeks, with the Sub-Groups and Reference Group meeting regularly between the Review Group meetings.

Sub-Group chairs provided regular updates at each Review Group meeting. Further details of methodology and the findings and recommendations from the individual Sub-Groups are described later in this report.

Recommendations, which were time sensitive, were produced as the Review progressed. Any concerns identified in terms of performance issues were escalated to for appropriate intervention with Health Boards.

Throughout the Review, we grappled with its scope and with the level of detail of enquiry. There were so many areas worthy of exploration and examination. The Review considered current models of service provision, investigating the structures, resources and quality assurance to deliver them. It has not explored or commented upon new models of service. While this is not an exhaustive review the approach we have taken is proportionate to the time and resources available to us.

We heard from all quarters of the importance of ensuring that systems and structures are put in place to ensure continuing improvement of services.

It is vital to emphasise that the Review report is absolutely not an end in itself; it is merely the first step of a process of change that will take time, resources and leadership to deliver.

The Review is not a needs assessment for audiology services in Scotland, nor is it a workforce plan, though there are references throughout the report to the importance of having sufficient staff with the requisite competencies and skills to provide safe, high-quality services. The independent sector was also felt to be beyond our scope and our focus is very much on current NHS provision.

People at the centre

People at the centre

Central to the Review was understanding the lived experience of patients, parents and carers, and the experience of other stakeholders using audiology services. The Reference Group, chaired by Angela Bonomy, Chief Executive Officer, Sense Scotland, was established to ensure that this experience was captured and fully represented at every stage. The membership of the Reference Group and its terms of reference can be found on the Review website (1).

The role of the Reference Group was to:

- provide advice and guidance to the Review Group on consultation methods;
- support, encourage and facilitate the participation of stakeholders in engaging with the Review;
- ensure the views of those who use audiology services are understood and taken into account by the Review Group;
- assist in the dissemination of information and communications to support the review processes.

Public engagement exercise

Public engagement exercise – survey of service users

The Reference Group's role in the Review was to provide the lived-experience perspective of those who use audiology services, as opposed to those who deliver them.

The Scottish Government CNOD commissioned the ALLIANCE to conduct the public and professional engagement work (2). Views were sought from patients, parents/carers, families, colleagues in health, education and social care, and third-sector organisations.

Many of the insights and asks of respondents flow through the work of the Quality Assurance, Education and Training, and Structure, Governance and Leadership Sub-Groups, and are addressed in the various recommendations included in this report. However, the Reference Group wished to highlight and emphasise the following points to ensure they are at the forefront of any future work;

- A patient-centred approach is crucial in audiology; audiology requires more than just clinical understanding.
- The "customer service" aspect of audiology manifests itself in: good communication skills; strong deaf awareness; empowering patients; encouraging self-management; quickly addressing and responding to needs; considering the social impact of hearing loss.
- When dealing with babies and children, it is crucial that parents/carers are believed in the first instance; i.e. assume a child has some form of hearing loss until proven otherwise. The same is true of young people and adults who can represent themselves.
- Collaboration and multidisciplinary working is key to good audiological outcomes. This collaboration may be with colleagues from education, social care, other healthcare professions or third-sector organisations.
- Audiology cannot and should not work in isolation. There are many policies, legislative requirements and pieces of work already underway which can apply to audiology or with which audiology can integrate.

Engagement with audiologists

Engagement with audiologists

Key points

A survey was conducted to gather the views of NHS Scotland audiologists on a number of key areas, including training, leadership and quality of care.

- Respondents felt training opportunities were limited by lack of funding, workplace pressure and staff shortages.
- Lack of national leadership was a key concern.
- Audiologists' views on the quality of services varied widely, with most commenting on a need for more staff.
- High-quality training and work-based learning were seen as priorities.
- A workshop for service leads revealed particular concerns about increasing workload and complexity of patients.

The Review was keen to hear the views of audiologists working in NHS Scotland. The BAA conducted engagement work with audiologists by means of an anonymous online survey (7) and a number of focus groups. We felt it was important that this work was undertaken independently, by a professional organisation for audiologists, to encourage them to speak openly.

While audiologists have been key members of the Review and its Sub-Groups, we were keen to seek the views and experiences of as wide a range of NHS audiology professionals as possible. It was important for the Review to receive their feedback and suggestions. The Review is grateful to the BAA for conducting this work.

The BAA survey, approved by the Review Group, included questions on training, leadership, career opportunities, raising concerns and quality of care. Workshops were also conducted to explore questions in more depth.

The response rate was approximately 25% of those currently working in bands 3 to 8 and the majority of respondents had been working in audiology for more than 10 years.

In terms of training and education, respondents reported that opportunities were mainly internal, with very limited external training due to lack of study-leave funding, service pressures and workforce shortages.

Audiologists felt that a lack of leadership nationally in the specialty, and within their own departments, was a key issue and that more effective succession planning was required.

Most respondents reported having very limited career development opportunities, and again those available were mainly in-house. Forty per cent of those who participated had never had an appraisal and those who had reported that it was largely a “tick-box exercise”.

There was a range of responses to questions about audiologists’ perceptions of the quality of their service, from “excellent” to “awful”, though respondents typically commented that staff were very caring and dedicated. In terms of suggested improvements, most respondents commented on the need for more staff, better training and, in some cases, better facilities and equipment.

The workshops delved more deeply into some of the themes outlined above. Participants reported that there had been significant changes in audiology service provision in the last decade. They voiced concerns about the withdrawal of undergraduate training programmes, lack of access to specialist training, increasing workload and complexity of patients, and little investment in service development.

They viewed the provision of high-quality training programmes and work-based learning options as a priority. In addition, they were keen to see the development of communication networks between professionals to build connections and share learning. Improved access to external training and funded study leave were viewed as important, along with opportunities for appropriate career development.

Similar themes were explored in a workshop for service leads to determine the experience of those in leadership roles. They were particularly concerned about increasing workload, increasing complexity of patients and widening of the scope of practice of audiologists without proportional increases in workforce or resourcing. They reported that the composition of the audiology workforce has changed, with fewer having BSc or master’s level qualifications. The withdrawal of BSc audiology programmes and lack of specialist training in broader healthcare science degrees were viewed as important issues. Services are struggling to recruit and retain qualified staff, and in paediatric audiology this is compounded by workforce shortages within speech and language therapy and teachers of the deaf.

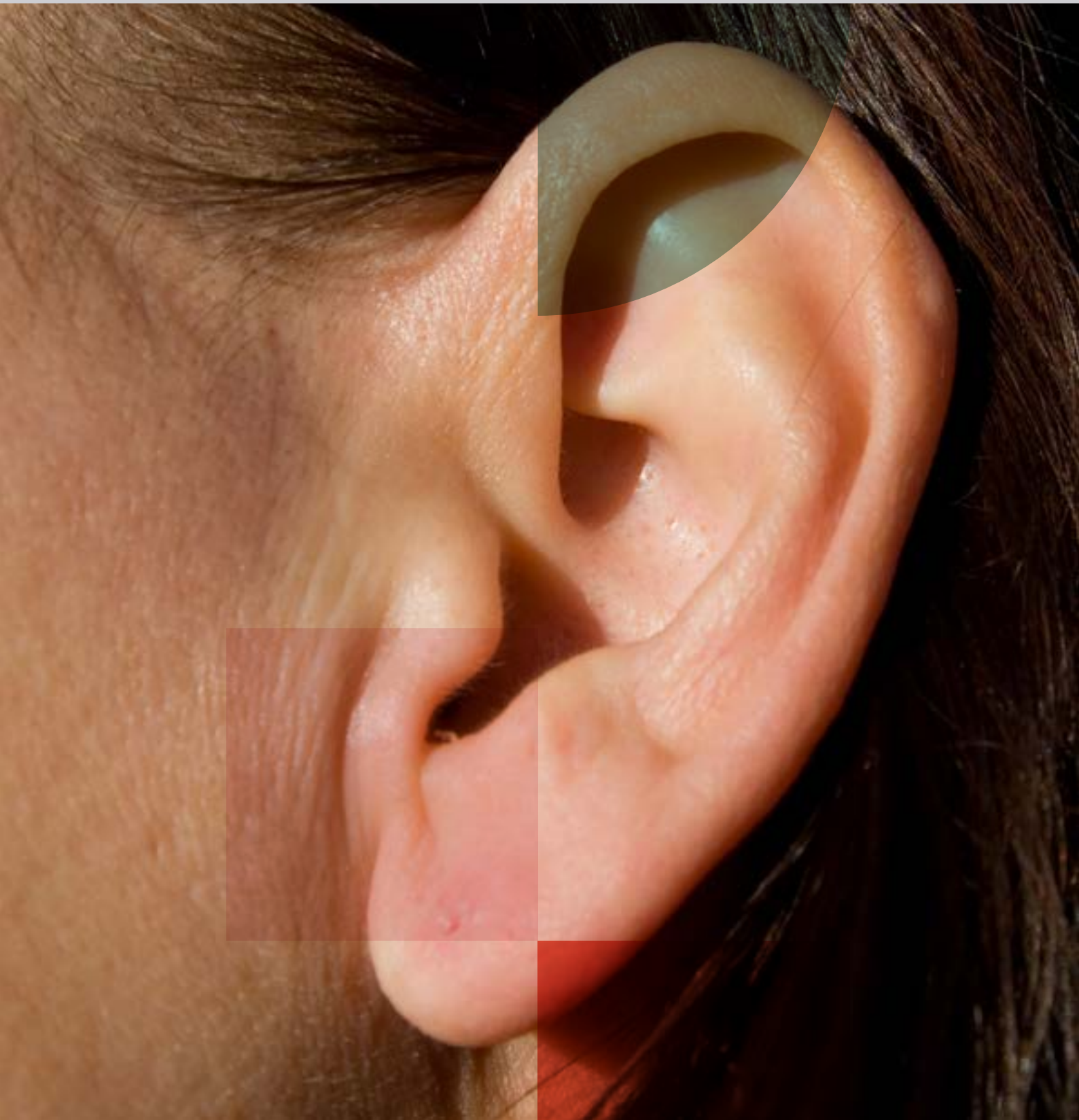
There was a general perception that Health Boards lacked interest in audiology services and that there was a lack of support for service development. Service leads also identified the lack of national oversight by a national advisory structure as a key factor and one which should be rectified.

The views and suggestions of audiologists have been carefully considered in the development of our recommendations.

This quote from one audiologist is particularly poignant.

> **“Much of audiology in Scotland is currently paralysed by an abject lack of vision, funding and leadership from the highest levels of government and health service management over the last decade. It is my assertion it has not been a favoured valued or prioritised profession. Lack of training of new audiologists, lack of promotion of our profession, and lack of planning for staffing levels has seriously impacted on succession and staffing levels. Budgetary limitations, both nationally and locally, have resulted in some services being run to breaking point. The number of highly skilled and qualified audiologists leaving the sector completely in the last few years represents a waste of talent, and an abject failure of vision and leadership from the highest levels of health service governance. Morale is at an all-time low, and unless positive change is forthcoming soon the ‘walk away’ will continue. The heads of service will have expressed their concerns over the years. But leadership from above is essential.”**

History of audiology services in Scotland



History of audiology services in Scotland

Key points

- The landscape of audiology services in Scotland is complex.
- Audiologists have been at the forefront of developing national standards for both adult and paediatric services.
- Despite a number of initiatives over the past 20 years, there has been a gradual loss of focus, leadership and organisational structure in audiology services.
- Audit with external peer review of standards has been uncommon.

The landscape of audiology services in Scotland is complex. To understand the current position, it is important to be aware of the history of the evolution of services over the last 20 years.

In January 2003, the then Public Health Institute of Scotland published a Needs Assessment Report on NHS Audiology Services in Scotland (8,9). Recommendations included the need to develop quality standards for audiology services and the means to assess each service's ability to meet these standards.

A modernisation project was established to address the key recommendations, with supporting investment over four years to help provide quality digital hearing aid services to patients across Scotland. As part of this work a Scottish Government Audiology Services Advisory Group (ASAG) was established to monitor development of NHS audiology services in Scotland.

An audit of the modernisation process in Scotland using draft standards was commissioned in 2007 and conducted by the Medical Research Council Hearing and Communication Group, University of Manchester. About half of all Health Boards were delivering high-quality adult hearing services, while the remainder were struggling to meet the demands of a modernised service (10).

Although paediatric services, newborn hearing screening, assessment, diagnosis and hearing aid provision were provided, mostly in a joined-up, family-friendly manner in all the Scottish services, there was a concern that the current arrangements for paediatric services lacked sufficient medical, technical and scientific expertise in all areas, and a networked approach was suggested.

Audiologists in Scotland were at the forefront of developing standards. A multidisciplinary sub-group of ASAG developed Quality Standards for Adult Hearing Rehabilitation Services using the then NHS Quality Improvement Scotland standards development methodology (8). A multidisciplinary paediatric subgroup of ASAG then developed Quality Standards for Paediatric Audiology Services (9). The Quality Standards for Adult and Paediatric Audiology Services were formally launched in 2009.

To ensure the standards became embedded in operational practice, an audiology quality improvement Sub-Group of the ASAG was established to monitor trends and improvements across audiology services. The ASAG fully supported ongoing quality improvement across both adult and paediatric audiology services in NHS Scotland.

In December 2011, following a review of all Scottish Government groups and committees, the then Cabinet Secretary for Health and Sport decided that the ASAG would not continue to be Scottish Government-sponsored. It was subsequently agreed that the group should continue as an NHS operational group under the leadership of a chair and audiology modernisation project manager. However, the project manager post was suspended. The ASAG's disbandment and the loss of the project manager resource undoubtedly led to a loss of focus, leadership and national organisational structure for audiology services.

In 2015, the Scottish Government commissioned a scoping project to explore the current position in relation to paediatric audiology services and to consider and make recommendations for addressing ongoing issues of access and quality.

The project recommended a national managed clinical network for paediatric audiology, which would provide the required level of national leadership, structure, governance and accountability to achieve the necessary improvements, ensuring that every child was identified as soon as possible and had access to services that met NHS Scotland's Paediatric Audiology Quality Standards.

It was also recognised as an opportunity to maintain the benefits of the previous modernisation project.

The HINCYP was established in 2019 and launched in 2020. Its aim was to support services and families to achieve the best possible outcomes for children and young people in Scotland with bilateral, severe or profound hearing loss, through better access to high-quality specialist care and support. No similar network or body exists for adults.

It is clear that over the last 20 years there have been a number of initiatives that have attempted to improve audiology services for children and adults. They have been both intermittent and piecemeal. A sustained, sustainable and coordinated improvement programme has been lacking and is necessary.

Clinicians in Scotland played a pivotal role in the development of quality standards for audiology services, which have been adopted by NHS Wales.

It is both surprising and disappointing that although Scotland has been at the forefront of these developments, audit of services against these standards has never been mandated in Scotland and that external peer review of quality standards is extremely rare.

The next sections of this report describe the specific work conducted by the Review's Reference Group and three Sub-Groups and the recommendations which we believe will result in the necessary improvements to audiology services in Scotland. Information from the engagement exercises with the public and with audiologists has been carefully woven into our recommendations.

The recommendations are wide-ranging and cover: the structure, governance and leadership of services at Health Board and national level; education, training and professional development of audiology staff; and quality assurance of services. In addition, there are some very specific patient-focused and patient-driven recommendations.

Impact of the COVID-19 pandemic

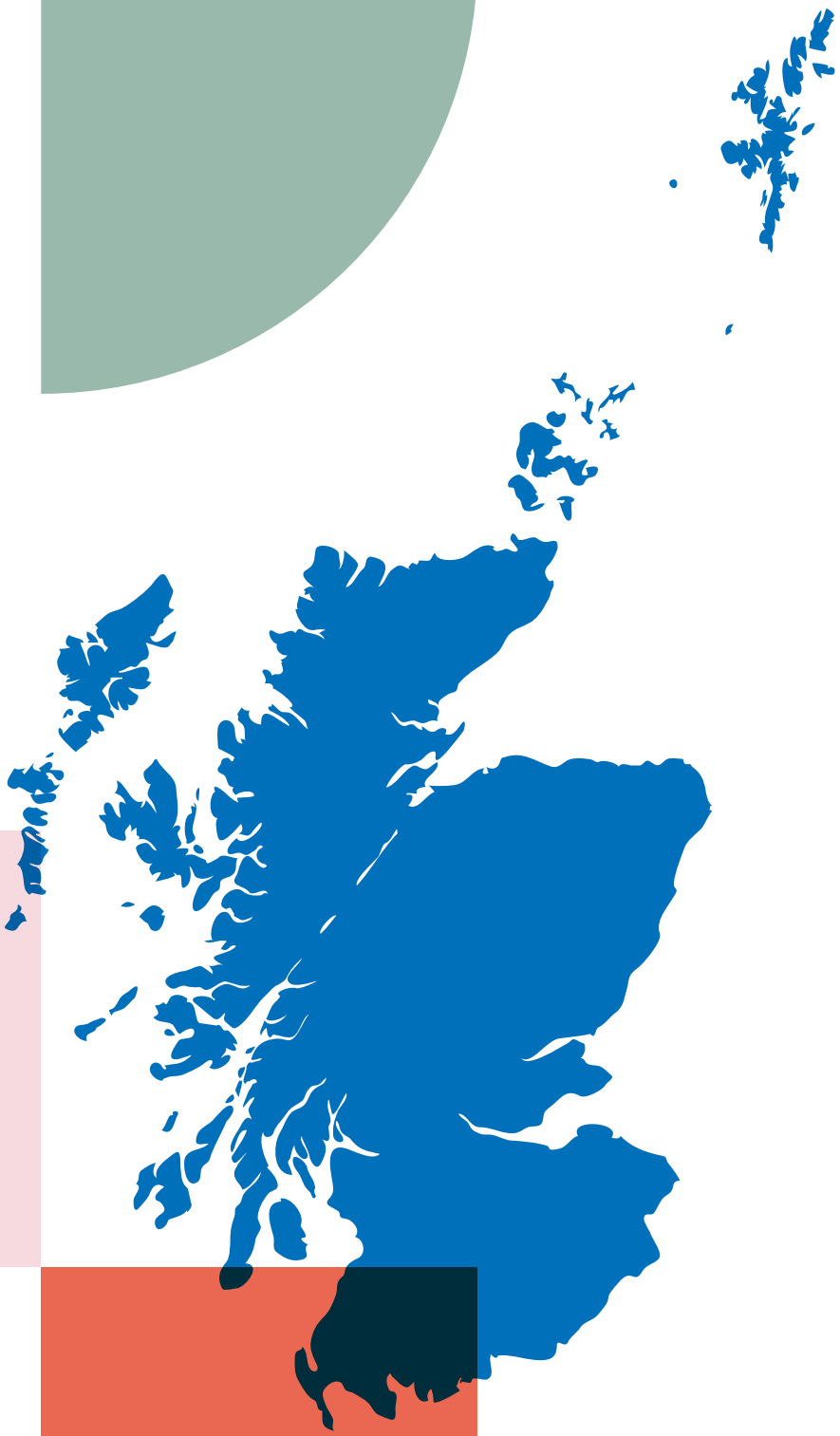
Impact of the COVID-19 pandemic

As with the wider NHS in Scotland the COVID 19 pandemic undoubtedly had an impact on audiology services, though quantifying the effect is not straight forward. Audiology service performance is measured as part of the 18 weeks Referral To Treatment standard.

Data from Public Health Scotland records only new outpatient appointments for consultant-led specialties and is difficult to interpret. It does not reflect the totality of activity within audiology services. We therefore have a limited view of the overall position.

More detailed information on waiting times is described in the quality assurance section as one of the KPIs measured.

National structure of audiology services



National structure of audiology services

Key points

- No single body has oversight of and responsibility for paediatric and adult audiology services in Scotland.
- Organisations involved in delivering audiology care have varying governance structures and different lines of reporting.
- Complex systems can have a detrimental effect on the quality of care.
- The Scottish Government Chief Scientific Officer provides professional leadership to more than 50 Healthcare Science specialties, including audiology.

As outlined in the Introduction, the approach taken and the structure of the Review were mirrored by the Sub-Group that looked at structure, governance and leadership. The findings from this Sub-Group are summarised in a separate section of this report.

The organisation of audiology services in Scotland is complex, but can be described as follows:

- a combination of those provided locally by territorial Health Boards and those commissioned nationally (by the National Services Division (NSD) of NHS National Services Scotland) but provided by one Health Board for Scotland (SCIP);
- a national Universal Newborn Screening Programme (UNHS), also delivered by Health Boards;
- a managed clinical network responsible for children and young people with hearing loss (there is currently no equivalent network for adults).

These elements have varying governance structures and different lines of reporting. In Scotland, there is no single body which either has an overview of all paediatric and adult audiology services, or responsibility for them. Complex systems like this can result in fragmentation of care, poor integration and coordination of services, and suboptimal transitions of care. As highlighted earlier, children and adults require patient pathways that are timely, effective and coordinated to achieve the best possible outcomes.

Adult audiology services are delivered by 14 territorial Health Boards, and paediatric audiology services by 11.

Universal Newborn Hearing Screening (UNHS) programme

The UNHS programme was rolled out in Scotland in 2005. Though a national screening programme, it is not commissioned nationally and delivery is the responsibility of each of the 14 Health Boards.

Pregnancy and newborn screening public health consultants are responsible for each Board's delivery of UNHS. Governance and quality assurance are provided by the lead clinician and senior programme manager (a role performed by NSD).

The national UNHS KPIs are reported quarterly and annually, and an annual national UNHS report covering all statistical data is reported via the National Screening Oversight Board, Scottish Screening Committee and, ultimately, to the Scottish Government.

There are clinical standards for pregnancy and newborn screening, which apply to all screening programmes. Healthcare Improvement Scotland has a mandatory role in external quality assurance of screening programmes, though to date UNHS standards have never been externally assessed.

In 2021 the Scottish Government requested that a national UNHS short life working group (SLWG) be established to explore the challenges facing the UNHS programme and make recommendations to ensure its ongoing delivery.

The SLWG reported in February 2021 (11), making a range of recommendations on screening protocols, equipment, workforce, training and CPD, quality assurance and clinical governance, and patient management systems.

Many of these themes are also reflected in the main Review findings. We fully endorse and recommend implementation of all the recommendations from the SLWG.

Scottish Cochlear Implant Programme (SCIP)

The SCIP, based at University Hospital Crosshouse, provides a national cochlear implant service for severe to profoundly deaf children and adults in Scotland.

NHS Ayrshire and Arran is commissioned by NSD to deliver this nationally designated service.

The requirements of the service are specified in a service-level agreement covering all aspects of service delivery including: inclusion criteria and activity levels; performance and clinical outcomes; quality and service improvements; governance and regulation; audit and clinical research; finance; workforce and forward-planning.

The service is required to submit data and reports to NSD at specified time intervals throughout the year. This includes submitting data on a monthly basis via the specialist services dashboard and submitting a comprehensive annual report. The annual report is extensive and covers a wide range of measures, including measures for giving assurance of service quality, effectiveness and performance.

NSD monitors these measures and reserves the right to request improvement plans where appropriate.

An annual performance review is also undertaken each year by NSD based on ongoing discussions and the service's annual report.

Hearing Impairment Network for Children and Young People (HINCYP)

HINCYP is a national managed clinical network (MCN) (12). Funding was approved in 2019 and the network was launched in 2020. A scoping project commissioned by the Scottish Government in 2015 concluded that "a national MCN would provide the level of national leadership, structure, governance and accountability to achieve improvements for approximately 700 children with permanent, severe childhood deafness, ensuring that every child is identified as soon as possible and has access to services that meet NHS Scotland Paediatric Audiology Quality Standards (2009)" . A copy of the report can be found on the Review webpage (1).

As a national MCN, HINCYP does not have delegated authority and is not empowered to direct NHS Boards to adopt improvements or developments identified through its work. Instead, it must achieve its aims through influence. Accountability for the quality of service provision remains the responsibility of the NHS Board where the service is delivered.

National MCNs deliver improvements through four main areas of work:

- clinical pathway development to reduce variation and ensure care is evidence based;
- education to improve capability and capacity;
- communication and engagement to involve and ensure stakeholder views inform service delivery;
- continuous quality improvement, including data gathering and reporting to assess service quality and inform service planning and delivery.

Since its launch, HINCYP has (13):

- developed a stakeholder communications and engagement strategy involving health, social care, education, the third sector and service users;
- established a mechanism whereby Local Record for Deaf Children data from two existing systems are extracted and submitted to the network on a quarterly basis (via NHS Health Boards), although standardisation of the collation of this data is a work in progress;
- progressed a learning needs analysis for professionals involved in the care of deaf children;
- begun conducting a service-mapping exercise for paediatric audiology;
- initiated a review of the nine paediatric audiology clinical standards that it plans to implement.

HINCYP has a clinical lead, a core group and a multidisciplinary stakeholder group. A diagram of the governance structure is shown in Figure 1.

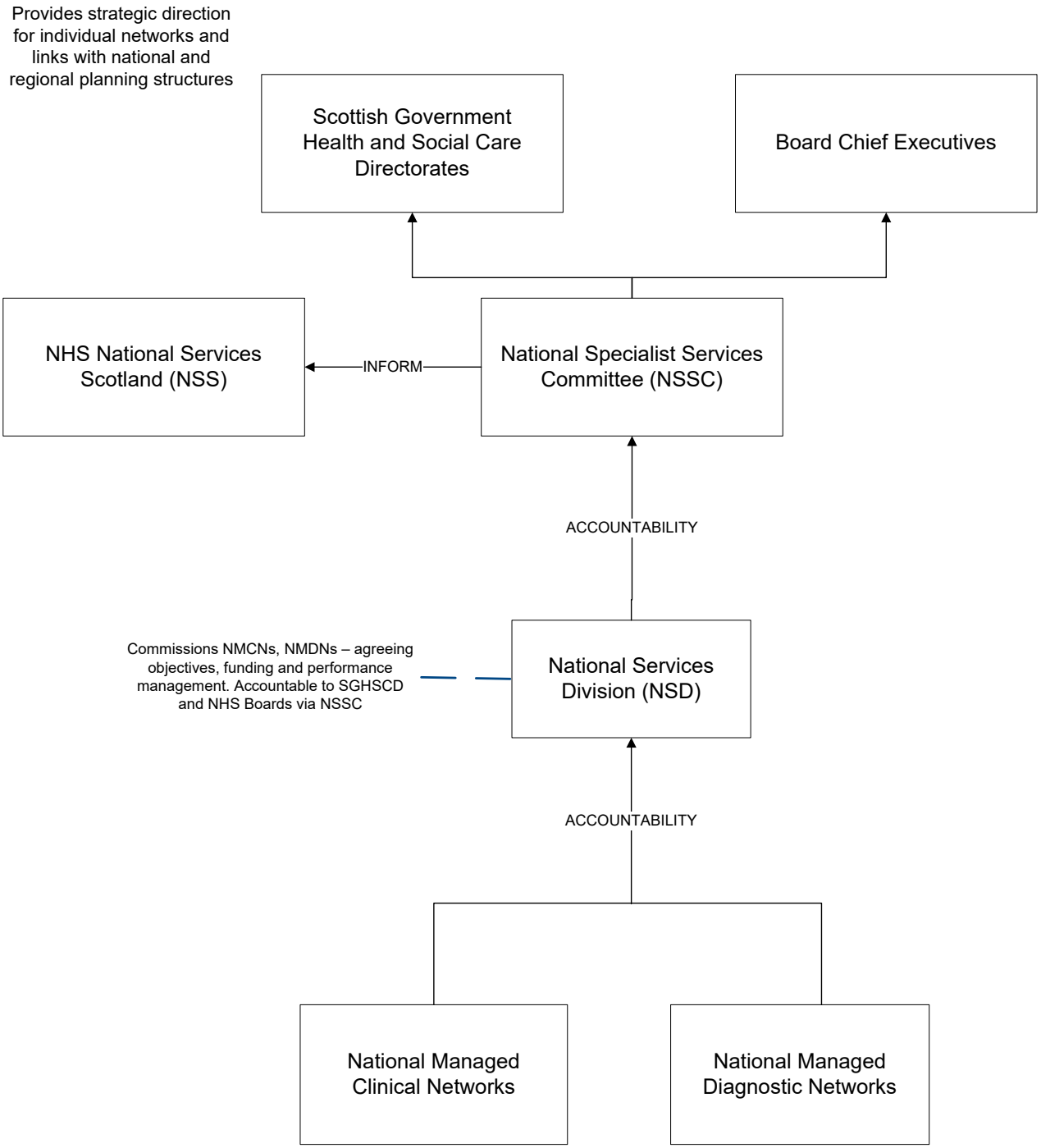
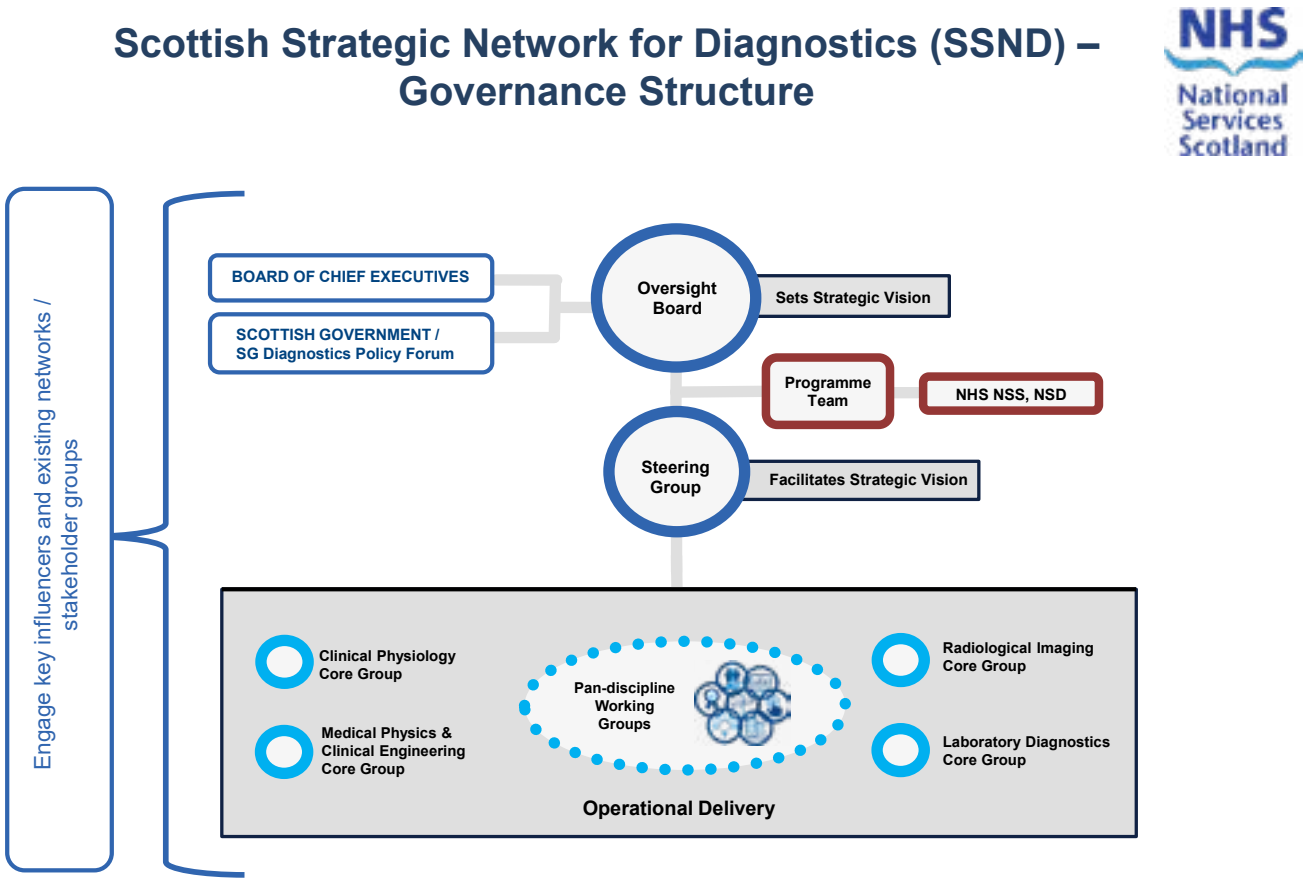


Figure 1: HINCYP governance structure

Source: NHS National Services Scotland - August 2023 (13)

Scottish Strategic Network for Diagnostics (SSND)

Audiology provides diagnostic, therapeutic and rehabilitative services. In the past few years strategic oversight for diagnostic services in Scotland (of which audiology is one) was provided by the Diagnostics in Scotland Strategic Group (DiSSG). After extensive stakeholder engagement, the Board of Chief Executives approved the establishment of the SSND to replace the DiSSG. As with all national strategic networks, the SSND works with partners to support a "Once for Scotland" approach to the planning, design, and delivery of integrated, holistic, person-centred diagnostics in Scotland (15). The structure covers imaging, laboratories, clinical physiology (including audiology), medical physics and clinical engineering. Figure 2 shows the SSND structure.



Last updated: July 2023

Figure 2: Scottish Strategic Network for Diagnostics (SSND) structure

Source: NHS National Services Scotland

Clinical Physiology Core Group

This is one of four core groups within the SSND and includes audiology. The core groups will support and monitor the delivery and progress of the workstream aims and objectives and will include workforce and education mapping. The visibility of audiology in a core group that has seven other physiology specialties gives the Review cause for concern.

The above section highlights the great complexity of “national” structures for components of the paediatric and adult audiology patient pathway. Such complexity results in lack of clarity, uncertainty about responsibilities, fragmentation of services and an absence of overall responsibility. This creates risk.

Health Board governance structures for audiology services are described later in this section.

HINCYP has brought together the key elements for children and young adults with hearing loss to provide a more joined-up approach. It has the potential to play a key role in implementing Review recommendations. Its main disadvantage is that it has no delegated authority. The new SSND is also likely to play a major role in implementation of recommendations.

NSD monitors the performance of UNHS, SCIP and HINCYP. Other important steps in the infant, paediatric and adult pathways are only monitored at Health Board level. There is no mandated audit of services against paediatric or adult quality standards and quality assurance processes, as detailed in the relevant section of this report, are poor.

Professional leadership for audiology is provided by the Scottish Government Chief Scientific Officer, who is responsible for more than 50 specialties. There is currently no professional advisory structure for audiology; nor is there any single body which has oversight of and responsibility for both paediatric and adult audiology services.

Sadly, until the NHS Lothian review, the visibility of audiology services both nationally and within Health Boards, was poor.

The next sections go into the detail of the work of the Review, exploring each of its key themes. There is a report from each of the three Sub-Groups that details their methodology and findings and lays out their conclusions.

Structure, Governance and Leadership Sub-Group

Structure, Governance and Leadership Sub-Group

Key points

- A survey gathered views of heads of service on the structure, governance and leadership of services.
- Services were generally traditional and hierarchical in structure.
- Some services were staffed by a single audiologist.
- There was considerable variation in staffing levels between services.
- The range of services provided was generally consistent.
- Concern was expressed about service visibility.
- Audiology appears to lack clear and established governance locally.
- Most heads of service maintain a clinical role, which is likely to impact on the time they have available to lead and manage.
- Some Boards have little knowledge of what their audiology service does but events in NHS Lothian have increased awareness of the need for oversight.

Introduction

Audiology services are delivered by all of NHS Scotland's 14 territorial Boards. In two Boards paediatric and adult services are separated. In addition, and due to a historical arrangement associated with the management of the service, Argyll and the Isles has been included as a separate service delivering audiology services in that geographical region, although it is formally part of NHS Highland.

Methodology

At the end of 2022, the Structure, Governance and Leadership Sub-Group sent the heads of service of Health Boards a questionnaire to gather information on those three themes. The questions can be found in Appendix A. The first section of the questionnaire focused on structure and the key findings are set out below.

Findings – structure

The structure of the service was, in the main, found to be fairly traditional and hierarchical. There was usually an identified head of service or, in some cases, a clinical lead as the most senior position, followed by deputy, departmental leads/chiefs and audiologists (practitioners), associate practitioners and assistant technical officers.

The use of the term "clinical lead" in some instances indicates that there is a lead clinician who also manages the service to an extent, with "head of service" reserved for a non-clinician/non-audiologist role occupying a senior management position. Heads of service are typically recognised as both lead clinician and operational manager of the service.

Figure 3 provides a typical example of the structure in a larger service. It is relevant to note that three of the services in Scotland are staffed by a single audiologist who is also the head of service and has few or no staff working with or for them.

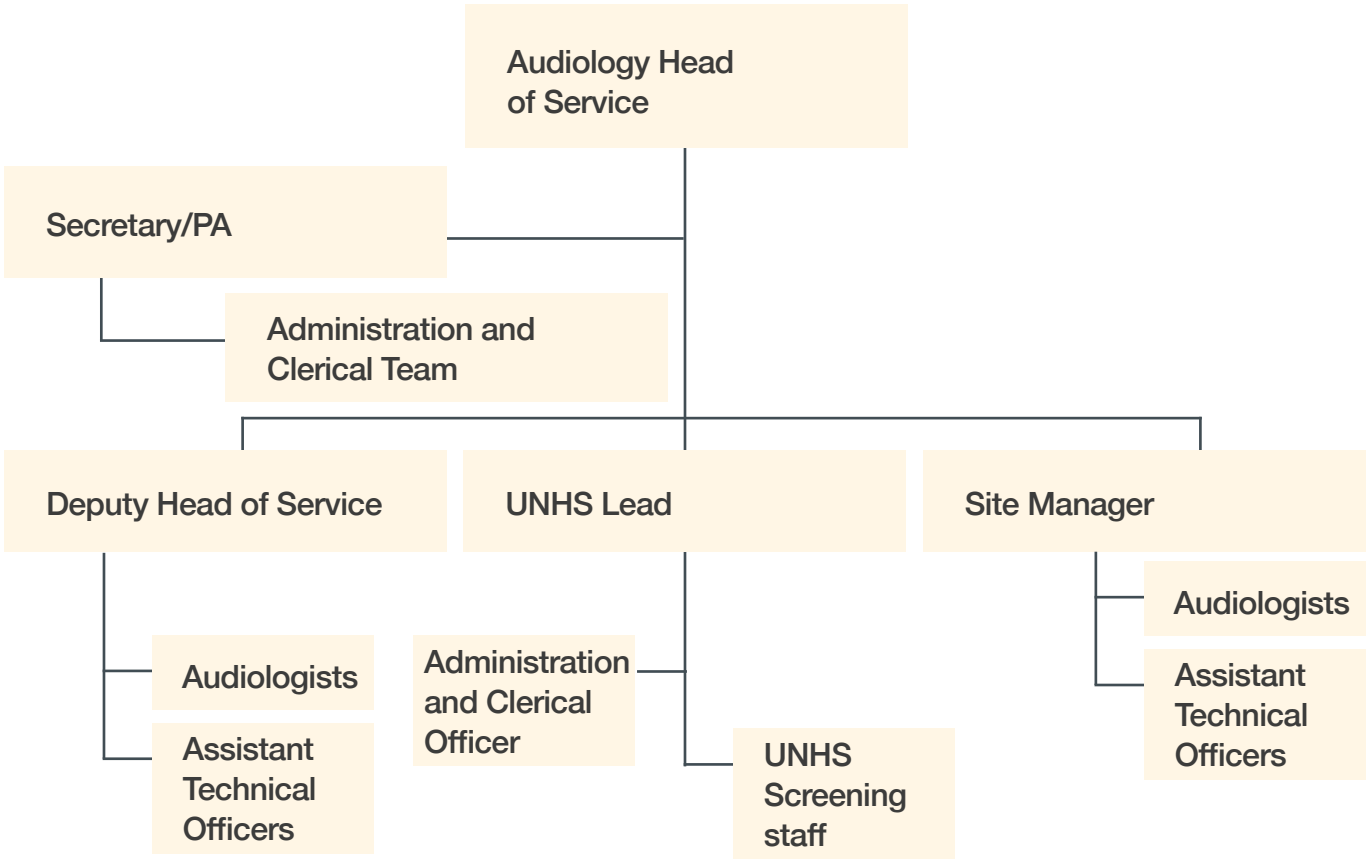


Figure 3: A typical structure for an audiology service within Health Boards

Responses to the questionnaire also provided a summary of the current workforce, including vacancies – the national vacancy rate for the service runs at about 10%. Appendix B summarises the workforce across Scotland. The appendix also includes a high-level workforce plan based on work from 2002 by the professional body for audio-vestibular physicians and updated by heads of service to reflect both the current status of professionals working in audiology (an amalgamation of technicians, therapists and scientists) and the grading system for NHS terms and conditions (Agenda for Change). Based on this model, the plan suggests that the workforce is currently at about 65% of that required for a safe and effective service.

There is considerable variation in staffing levels between services when a simple ratio of staff to patients is applied, which is illustrated at Appendix C. Currently the national ratio for patients to clinical and technical staff is 20,500 patients per whole-time equivalent (WTE) member of staff. With improved staffing to the level predicted by the workforce tool, this reduces to 13,200 patients per WTE member of staff.

Generally, there is consistency in the range of services provided. A notable variation is in the grade of staff carrying out some of the listed activities. This is particularly true for hearing-aid repairs, which range from band 3 assistant technical officers to band 8 practitioner staff.

Local staffing issues are the main reason for this; however, based on findings from the questionnaire, there would appear to be situations where workforce issues mean that staff at higher grades carry out the tasks of a lower grade. This results in a “skills waste” and can affect staff morale. Ensuring that staff work to their grade will also help in establishing a more accurate picture of the workforce required in terms of skill mix. This skill mix would use assistants and associates, as well as practitioner-level audiologists, potentially in greater numbers, subject to availability/ supply.

Responses to the questionnaire provided a picture of how services were organised at local level (Figure 4). The questionnaire asked for detail about where the service sits within the internal structure and, from a governance perspective, within the Health Board (Figure 5). At present, all services sit within the acute setting in each Health Board, although audiology can be found under a range of different directorates within acute services.

Several responses indicated that work was underway to look at the local structure and where audiology sat and that this was a direct response to the findings from the NHS Lothian BAA report on paediatric audiology. The review of structure was also directly linked to a concern that the clinical governance route for the service may not be clear and robust and that this should be properly established.

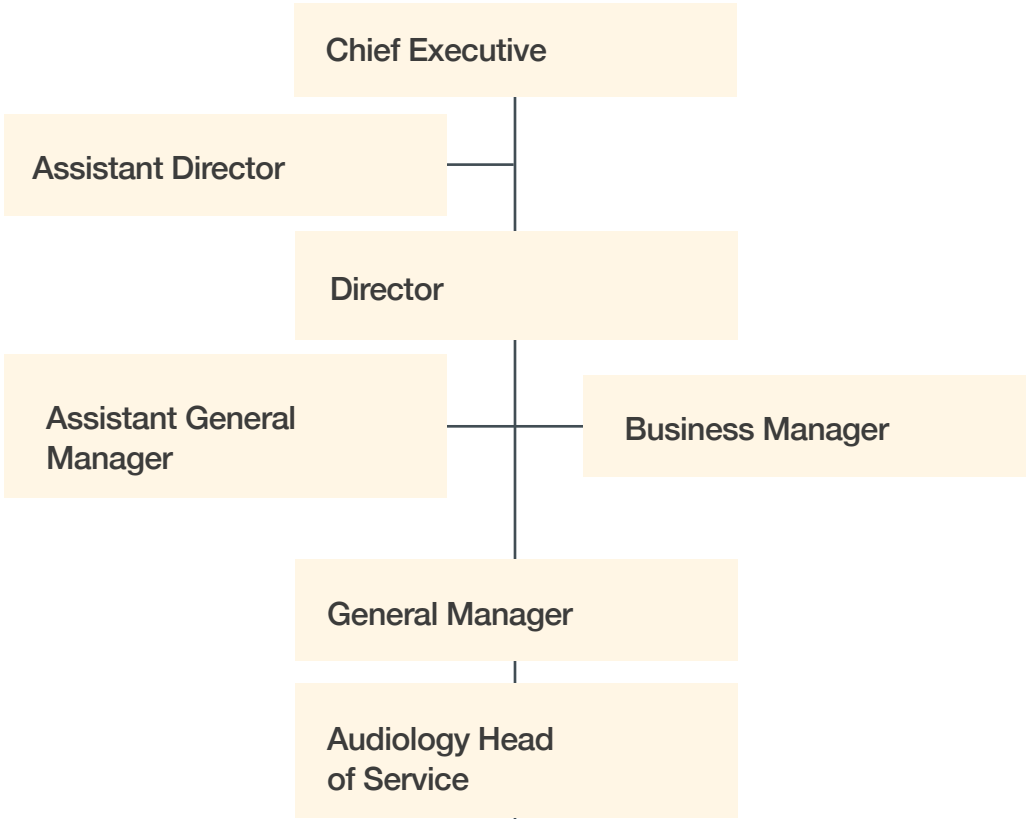


Figure 4: Internal governance structure for audiology services within Health Boards

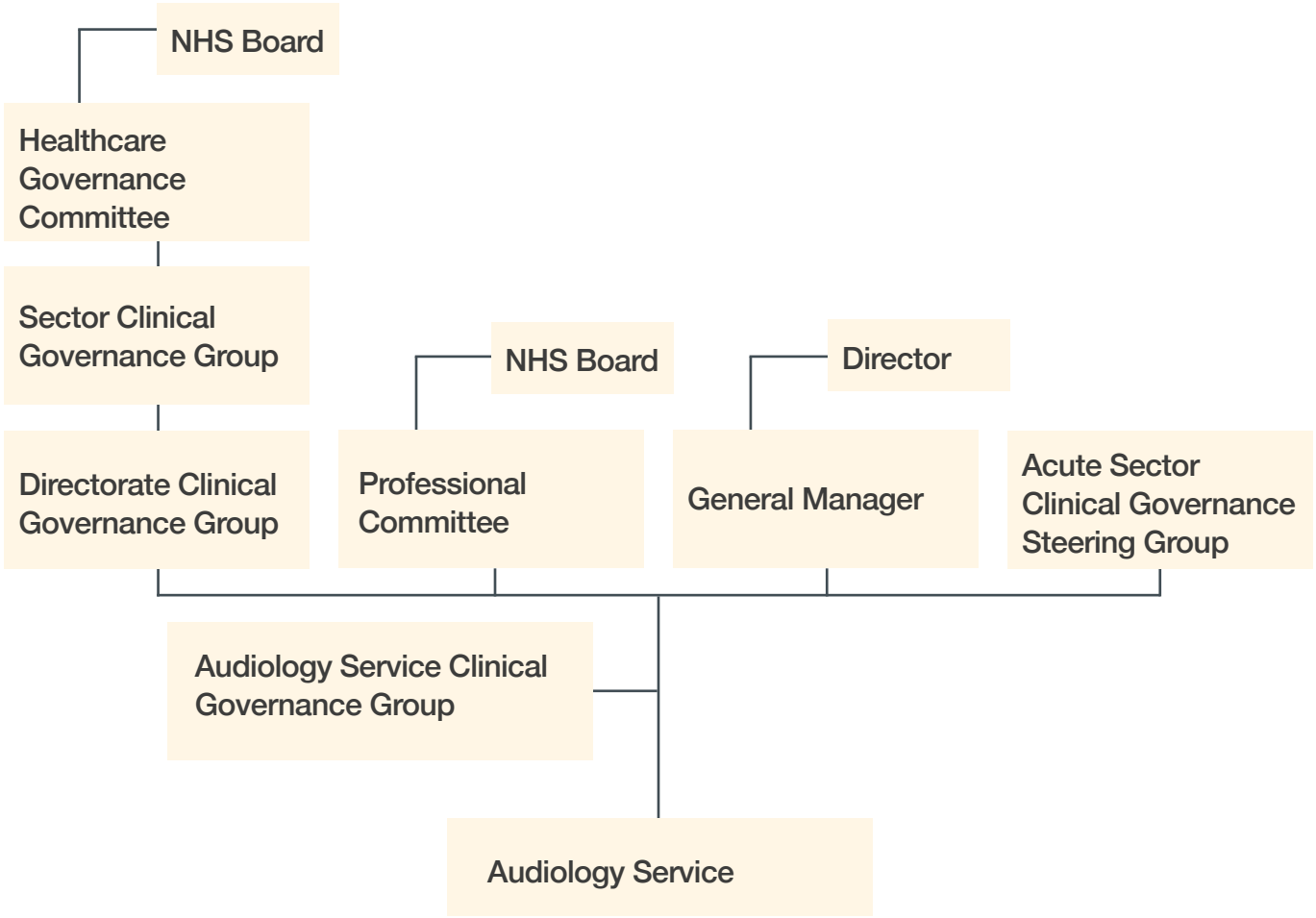


Figure 5: Audiology services reporting structure within Health Boards

Findings – governance

This section looks at the key findings from the survey responses to the questions about governance.

Responses show that heads of service are consistent in their concern around service visibility and where audiology sits within the Health Board. This in turn leaves a degree of uncertainty regarding the governance position of the service and how it fits with the governance structure of the Board. There is a clear lack of understanding of what good governance is and means, and a strong feeling that audiology has, to a degree, operated within its own bubble. It has not truly been accountable in the sense that it has not been properly connected to the formal governance structures within each Board.

Governance structure: Responses showed that governance as a whole is not clearly understood within the service itself; and while the heads of service have some understanding of its concept, it does not appear that the service currently benefits from clear and established governance within its local organisation. As a result, it should be expected that the governance processes of the organisation may not be adhered to. This is not due to a deliberate lack of compliance or effort on the part of the service. Rather, it appears to be related to the service growing and developing in isolation and not being part of the governance system. Nor is it being held to account by any form of regular assurance reports or measures, except when things go wrong.

Audiology has not traditionally presented as a high-risk area. This may explain the general lack of understanding and focus, and the less-than-clear processes that some services describe with regard to where they fit locally.

The national structures and their governance must also be considered and these are described earlier in the report.

Although not part of the scope of the Review, the service itself has been engaged in conversation with policy colleagues in the Scottish Government regarding an earlier government commitment to move audiology from the acute sector to the primary care sector. This should be borne in mind when considering implementation of the Review recommendations.

Budgetary and human resources issues: In most cases, budgetary and human resource management sit with the head of service with support from human resources and finance teams, and senior management where appropriate and necessary.

The breadth of people-management roles is wide and in most cases includes performance and capability management of staff, recruitment and attendance management, as well as personal development planning and reviewing.

Heads of service will be guided by local policy, which is aligning increasingly with national policy, due to the implementation and ongoing development of “Once for Scotland” (14) human resource policies. Personal development of staff, their training requirements related to role and the needs of the service were noted to be “variable”. Possible reasons for this could be limited or an absence of training budgets, and lack of insight from the head of service regarding the need for specific training.

Waiting times reporting, service performance: Responses to the questionnaire indicated that the monitoring and reporting of waiting times and the performance in general of the service were variable. Some of this was linked to how information is or may be accessed and where the systems with this information are situated. In some cases, the head of service is responsible for developing and running reports and presenting data on waiting times, while elsewhere these tasks are carried out by other parties. Consistency in what and how data is recorded, as well as how it is reported, have been longstanding concerns within the profession. At times, this has made it very difficult to determine what services are doing and to compare them.

Governance links and responsibilities between service and government: These are not clear or well understood, and work to develop a clear pathway and understanding is required. The Welsh model for external governance arrangements for audiology services, along with the development of an Audiology Services Advisory Group in Wales, is described in Appendix D and should be considered as one option for clarifying links and responsibilities.

Multi-agency working arrangements: There were many examples of formal and informal working arrangements between services and other agencies. In many cases, these were undertaken on the basis that either the parties have been working in that manner for many years or that the arrangement is understood and governed by "common sense". Equally, services reported that in some situations there are formal service-level agreements in place, particularly where some element of work has been commissioned and where there is an exchange of goods, services or payment for those goods or services. These service-level agreements appear to be a mix of local or more formal. Formal, documented arrangements seem to be in place to help mitigate risk. Where arrangements are informal, it is likely that in some instances there is the possibility of significant risk, depending on the nature of the agreement.

There is good evidence of staff within most services taking on positions and roles external to their organisation. These include teaching and training roles and chairing national groups.

Information governance and data management: The use of patient management systems in audiology has highlighted that within the next year all services in NHS Scotland will be using the same main audiology IT system. This offers the potential for standardisation of data definitions and of ways data is collected and used. There is concern, however, that standardisation could still be problematic given that not all services are currently on the same version of the system.

Accurate reporting will require that the same or very similar versions of the system are in use across Scotland. In addition to the main audiology system, there are currently two different systems in use for collecting data from newborn hearing screening, so similar issues and concerns are likely. It is also significant that while the main audiology IT system has the capability for running a standalone audiology service, integration with larger hospital systems is often required due to local working practices. In some instances, this has been done with reasonable success but at the other extreme there is no integration. At times this leads to double data entry, which can lead to errors and difficulties.

Record keeping: Formal documentation is another area where variation in processes and procedures has been identified. The service has experience of developing documentation to support the delivery of a quality assurance programme. In many cases, however, this requires updating and should be carried out as part of a general programme of work, to ensure that the service and its operation is suitably supported.

Findings – leadership

The survey asked about leadership, leadership development and formal qualifications in this area. Below is a summary of key findings relating to these areas.

Responses showed that the majority of heads of service can demonstrate external leadership training and development, with some holding a qualification. However, it is acknowledged that this is not a measure of the effectiveness of either the training or the individual. In Health Boards where services do not have a strategic lead and where the head of service role is focused on being a senior clinician, there is little or no development in this area, nor is there access to leadership training programmes. It is noted that most heads of service retain a significant clinical role (often 50% or more), which is likely to impact on the time they have available to lead and manage the service.

This also applies more generally to the lack of opportunities for staff at band 6 and band 7 levels to undertake formal leadership development. Few of the responses highlighted leadership training for those at band 6 and below. The implication of this is that leadership is not recognised as an important part of a professional's development until they are in a senior role and that before they reach this level, they are not required to undertake activities that could be seen as requiring leadership skills.

Staff at band 6 level and sometimes lower often have responsibility for an area of clinical service, the review of junior staff, and the supervision and training of junior staff and students. Leadership is part of a suite of skills that individuals working in this capacity should be developing and they should have ongoing support and encouragement to do so.

Responses to the theme of opportunities and processes for staff and others to contribute ideas and suggestions, as well as raising concerns about the operation of the service, were varied. Use of staff meetings, one-to-one conversations (typically performance development reviews), "open door" approaches and even the potential to use the national whistleblowing policy were highlighted as methods of input and influence. Similar approaches were provided for raising ideas and concerns regarding clinical practice. Services where there was no strategic lead were more concerned with professional issues than operational issues.

There is evidence of networks and other resources being used to develop and improve services. For example, staff participate, or have participated in the past, in a national tinnitus group for NHS professionals, a balance group and a paediatric group – sub-groups of the Scottish Audiology Heads of Service Group, which set these up several years ago. Unfortunately, the groups were paused during the pandemic and, with the exception of the tinnitus group, are yet to restart. There has been an increase in the use of webinars and meetings, often industry or professional body-driven, that encourage discussion and sharing of ideas and practice across a wide area – often beyond the boundaries of NHS Scotland. Use of these approaches has, to a degree, become the norm, but it is difficult to gauge their impact in terms of the development and improvement of services.

Summary

Formally, there is a clear understanding of the structure of the service, reporting lines and responsibilities, as highlighted within the findings from the "structure" section of the questionnaire. But there is serious concern that this misses the point that governance, and ultimately accountability, is less well understood; more worryingly, that systems are not in place to ensure and assure the service, Board and beyond, that there is ongoing review and audit of practice and care to provide a solid and robust picture of how well the service is running.

After the events in NHS Lothian, awareness of the need for oversight has increased and this is now better understood within the service. However, there is also a lack of clarity regarding external oversight and where responsibility for it lies.

Use of standardised approaches such as quality standards, adherence to national/professional standards for practice and other referenceable methods of working are not in place within NHS Scotland's audiology service – and they need to be. There is a very strong message from the service itself that better national oversight and measurement, and in particular service quality, are required. These must be led from the front and not left to chance. Such leadership would be welcome at Board level, where responses to the questionnaire show that in some cases Boards have little knowledge of what their audiology service does.

Recommendations 5 to 18 are especially relevant to the work of this Sub-Group.

Education and Training Sub-Group

Education and Training Sub-Group

Key points

- Four priorities were identified by the Sub-Group: CPD; foundation education; advanced practice; and leadership.
- A CPD champion or training officer in every department, as well as a national project role, would help define responsibility and accountability.
- An accountable training lead and core training register would help in the continuous process of checking competency.
- There are currently three potential training providers of audiologist professional status.
- A disconnect between supply from these programmes and demand from the audiology service may account for staff shortages but the intermittency of the programmes is also a factor.
- The diversity of pathways to access audiology training is a positive feature and must be properly managed.
- Leadership preparation is mixed.
- Leaders need to be comfortable with external scrutiny.

Introduction

Of 36 recommendations in the BAA's Lothian report, 11 related to training – particularly in CPD, assurance of competency and specific leadership skills relating to assurance of standards. Recommendations were deemed urgent (i.e. immediate action) in relation to training for visual reinforcement audiometry (VRA) and auditory brainstem response (ABR), and leadership skills for key staff. Other recommendations deemed of high importance (i.e. within 12 weeks) included training in new and existing protocols such as real ear coupler difference measurement, child protection awareness, peer review networks, clinical audit training and critical appraisal for senior staff including root cause analysis.

The BAA's recommendations did not reference workforce supply in Scotland and impact on capacity. Nor did they reference the healthcare science workforce's profile in a Board. The Sub-Group's view is that the limited oversight by Boards amplifies the solitary nature of the service, with a risk to training and service quality.

Shortly before publication of this report, the BAA conducted a further survey (7) of the audiology workforce in Scotland covering:

- training and career development;
- governance and leadership;
- raising concerns;
- quality of service;
- strengths, improvements and demonstrating value to stakeholders.

The survey is entirely consistent with the findings of the Education and Training Sub-Group.

Methodology

The Education and Training Sub-Group was convened on 11 August 2022. Membership was drawn from across the profession and included practitioners, trainees, heads of service and senior staff from around the UK, NHS workforce planning, and higher educationalists from the Scottish universities. Draft recommendations were formulated for each aspect of the Sub-Group's work and reported to the National Review Group for comment and feedback. The Review website lists the Sub-Group participants (1).

The first meeting of the Sub-Group identified priorities for consideration:

- CPD;
- foundation education;
- advanced practice;
- leadership.

Speakers from the group presented an expert view on the topic and there was a corresponding overview paper from the Sub-Group Chair that outlined the key issues. Emerging recommendations were debated and feedback taken from the Review Group as the recommendations developed. The Sub-Group's fifth meeting considered all the recommendations in the round.

Ahead of publication of this report, two early recommendations have been made through the Review Chair to the Cabinet Secretary for Health and Wellbeing. This encouraged availability of BSc foundation training provided by Queen Margaret University and Glasgow Caledonian University. The recommendations were made early to the Scottish Government in the light of academic planning cycles and the urgency of securing undergraduate training in audiology.

Also, ahead of publication of this report, NES Healthcare Science offered fee support for eligible experienced audiology staff to sit the BAA Higher Training Scheme (HTS) exam, Paediatric Assessment 6 months+. BAA closed this exam-only pathway at the end of March 2023. By early March, 14 staff from Scotland had applied for fee support.

In parallel with this National Review, the team from the Scottish Government CNOD, led by the Chief Scientific Officer, commenced a high-level review of the education and training landscape for healthcare science in which audiology sits. Any future changes to education and training are not yet identified by that Review.

In framing these recommendations, the scope of the Sub-Group's work has been the immediate audiology profession. It is acknowledged that other groups play a pivotal role in the patient pathway, most notably the newborn-hearing screener. The recommendations are equally applicable to these wider groups. Any implementation of these recommendations must include consideration of the screener workforce.

Findings – CPD

Why does CPD matter? The Sub-Group framed its response in terms of the safety-critical nature of the services audiologists provide. An observation of the NHS Lothian situation by the BAA was of no internal or external oversight of local competences. There was no challenge in the system or routine inspection of team members' essential skills. There was no clear idea of how those skills were kept up to date.

CPD applies to all levels in the team. To that end, a CPD champion/training officer in every department would help address the risk of training in isolation to give:

- defined responsibility and accountability;
- point-of-contact for all – the status of training as a team activity is elevated, thereby enhancing patient safety;
- strengthening of mutual support between larger and smaller departments, reinforcing the professional network. This would be particularly important for small/single-handed units where the obligate support of a larger neighbouring department could be established.

A fixed-term national project role to coordinate and drive all aspects of the recommendations is also recommended.

A departmental core training register of safety-critical diagnostic investigations by the team should be established to clearly define a department's capacity to conduct tests and individuals' capacity and competence. It would record:

- who is rated/competent to do what test;
- how that individual is qualified to do such tests;
- the validity period of an individual's competence before revalidation;
- the recurrence interval for competency to conduct a test;
- a schedule of reapproval of competence for each member of the team.

Improving the wider system

Checking an individual's competency and annual appraisals should include inspection of the core training register.

An accountable training lead and core training register could help address the competency issues identified in the Lothian report. They could intercept any unknown yet similar risks in other departments. A core training register, as a professional norm, would emphasise the safety-critical nature of the department's work and, importantly, lay the groundwork for further safety-related development of the system. This is the intersection between the Education and Training Sub-Group's work and that of the Structure, Governance and Leadership and Quality Assurance Sub-Groups.

In other branches of healthcare science, external audit/inspection of service is well-established. For example, hospital laboratory services are subject to inspections by the United Kingdom Accreditation Service (UKAS) (15) as a necessary part of their licence to operate. UKAS accreditation inspections include examination of staff training records and, effectively, a cross-check of who is competent to do what.

Accountability and system oversight were implicated in NHS Lothian. Medical and nursing oversight, at executive director level, are statutory components of NHS Scotland's Health Boards. Despite the complexity of the healthcare science workforce, its central role to the patient pathway and the safety-criticality of its activities, there is no lead healthcare scientist or authority to drive the above improvements. A similar sized commercial organisation could not operate without a director of science or engineering. NHS Wales (16) has executive directors of therapy and healthcare science; NHS England (17) has a network of scientific directors in the regions. The NHS Lothian incident is a microcosm of a wider systemic organisational shortcoming.

An accountable scientific lead should be a healthcare scientist empowered to support and oblige all healthcare science departments, including audiology, in a Health Board to engage with appropriate quality systems to give credible assurance. The post should be line-managed directly by a Board executive director, but it should be promoted as the senior responsible officer to direct robust systems of CPD/skills tracking and – by extension – any associated quality auditing of service. Lead posts have been piloted by Greater Glasgow and Lothian. There is a strong case for a nationally evaluated job description at a harmonised and senior Agenda for Change band.

Findings – foundation education

What is needed to secure the workforce now? While the NHS Lothian review did not highlight audiologist training pathways as a cause of failings in the service, the shortage of staff is perennial. The supply of trained audiologists is detached from the actual workforce shortages: service is left to hope that a qualified person can be found or that local Board decision-making will permit departmental training posts if an in-house traineeship is chosen.

What are the demand and supply numbers?

Scottish Government workforce estimates (18) indicate there are 260 NHS audiology professionals in Scotland. Of these, the service reported, in late 2022, 26 WTE vacancies, or just over 9% of its workforce. The concentration of roles across the service is in band 6, senior practitioner, followed by band 3, assistant.

For a small workforce such as audiology, a single vacancy can have a catastrophic impact on patient flow and service know-how, both potentially leading to delays, burnout and error. Patient safety lurks behind the vacancy situation. This is the connection with the National Review.

At present there are three potential training providers of audiologist professional status in Scotland. These pathways will be explored next, but to summarise the prospective supply side:

- Glasgow Caledonian University (GCU) has 12 audiologists on its BSc programme. These are NHS employees and will graduate between 2023 and 2025;
- Queen Margaret University (QMU) expects a total of 14 graduates between 2023 and 2024 from its pre-registration MSc programme and 66 from its hearing aid dispenser programme between 2022 and 2024. The likelihood for NHS Scotland employment is lower as these are unattached self-funded postgraduate students;
- there is one clinical scientist known to be in training via the Scientist Training Programme (STP)-equivalence pathway.

What are the current training pathways?

QMU offers a DipHE for hearing aid dispenser (Health and Care Professions Council-accredited) and a pre-registration MSc that is accredited by the Registration Council for Clinical Physiologists (RCCP)/Academy for Healthcare Science (AHCS). The MSc is self-funded. The university also has an RCCP/AHCS-accredited BSc undergraduate audiology programme, but it is not listed on the University and College Admissions Service (UCAS) (19) system as it has not been offered since about 2006. The hearing aid dispenser programme is an important supplier of the retail sector (out of the scope of this Review) and of the bands 3 and 4 component of the NHS workforce. As a blended learning programme, it allows NHS staff to access this level of training while remaining in post, provided the service can release the individual for the academic component. The department has close links with speech and language therapy academic provision.

GCU offers a BSc in clinical physiology that combines generic academic elements with learning for specialisms in audiology, neurophysiology, cardiac physiology and respiratory physiology. The programme runs every second year for NHS staff only. It is not listed on the UCAS system. Delivery is at the institution and in the workplace. Essentially it is, in all but name, an undergraduate apprenticeship model. Crucially, the programme offers a “year 0” starter phase at a partner further education college to allow access to the degree programme for candidates without Higher/A-Level qualifications. The uncertainty as to whether it will run in 2023 has been overcome since the Review commenced.

The STP is for able science graduates to join the NHS and acquire Health and Care Professions Council (HCPC) clinical scientist registration in a specialty such as audiology. Except for the nationally commissioned cochlear implant service, the wider audiology service in Scotland has not requested clinical scientist trainees in over a decade. Demand for NES-funded supernumerary clinical scientist training posts from service is around one third higher than resources allow for all healthcare science disciplines. There is an urgent need for clinical scientist training post investment, particularly if the audiology community also adopts this pathway.

“Equivalence” pathways exist to allow alternative routes to registration, largely via in-house development, to RCCP/AHCS (practitioner) registration or HCPC (clinical scientist) registration. Audiology services have avoided this pathway. For other specialties, the driver for training via “equivalence” has been workforce shortages.

What needs to happen to stabilise supply?

The intermittency and disconnect between audiologist supply from these programmes and the demand from the audiology service explains the workforce shortages.

The GCU programme is wholly dependent on service creating or converting establishment posts to training posts: the programme has no control over the intake. Service tends to recruit existing science graduates into what should be school-leaver (non-graduate) candidate posts. Service is probably driven to recruit graduates who, in theory, are faster learners, more mature and who will probably yield lower attrition than a school-leaver cohort. Prediction of the intake every second year is guesswork.

The QMU pre-registration MSc programme is entirely dependent on individual ability to self-fund. There is no deeper contractual attachment to a department beyond the programme placement; there is no obligation or incentive to seek NHS employment in Scotland after graduating. Similarly, NHS Board willingness to release staff onto the dispenser programme is beyond the university's control.

Diversity of training pathways to secure supply

A positive feature of the Scottish training landscape for audiology is more accidental than by design. Properly managed, it could reinforce multiple pathways into audiology and help secure the workforce. Diversity reinforces access and inclusion, so by its nature is desirable.

Effectively, the GCU model is an undergraduate apprenticeship that combines the four principal clinical physiology disciplines for employers if an in-house apprentice-type trainee is wanted. Emphasis should be on non-degree-holding entrants, such as school-leavers, as other (quicker) postgraduate pathways like STP are available: it makes no sense to expect degree-holders to repeat undergraduate training which is both time-consuming and a disincentive to retention. Incentivising service to recruit would be helpful.

The QMU pre-registration MSc is a route into audiology for able science graduates. It could be the springboard for completers to go on to acquire HCPC clinical scientist registration via equivalence. Improvement in the connection to Scottish service of such postgraduates could enhance retention; for example, selective sponsorship could be a route to achieving this. A restart of the BSc programme is highly desirable; it would boost the supply of audiologists both for the NHS and retail sector. The DipHE could be further enhanced by an articulation with the undergraduate programme to give a clear career pathway for these staff. The export opportunity for Scotland of training such undergraduates and from all programmes should not be overlooked and placements not confined to Scottish centres.

Placements and connection with service

Regardless of the academic models, some form of agreement relating to placement could be an improvement. This goes beyond audiology to the wider healthcare science sector. NES has experience in formalising such memoranda of understanding. Indeed, current healthcare science trainees, including NHS audiology staff, are assigned a national training number and tracked throughout training as part of NES's quality assurance of training function (20). This function includes recognition of NHS training centres via an assessment process traceable to HCPC Standards of Education and Training.

Leadership and training in quality systems

Awareness of leadership principles, quality systems and regimes of external inspection should become the norm as early as practicable in the training cycle. This awareness will be the foundation on which effective advanced practice and leadership can be developed.

Findings – advanced practice and leadership

The Sub-Group's final themes propose responses to the specialist skills and leadership challenges exposed in the Lothian review. The discussion took account of a parallel discussion in the Quality Assurance Sub-Group, which identified considerable variation in the application of accredited higher learning and current best practice in the profession.

The impact of specialist skills preparation

The BAA highlighted concerns around understanding and application of specialist audiological test protocols, the external oversight of those competencies, and the leadership underpinning maintenance and development of skills. The guiding principle in our deliberations was "no-blame/ learn from error": the deficiencies observed were clearly systemic rather than individually malign.

The impact of deficient specialist skills on a patient can be for life, which places added importance on the correct understanding and application of those skills. This need is accentuated when the practitioner is independent or with sole responsibility in the clinic. What specific competencies must be faultless? How should training in them be delivered? Who oversees that training?

Understanding and application of specialist protocols

The BAA report cites an urgent need to improve ABR testing both in newborn and older children and in VRA testing. Specialist skills in audiology such as these are developed after initial registration. The BAA's HTS addresses these and has been available for 15 years. The training is in-house under an accredited supervisor, with compulsory secondments, external assessment prior to examination and external assessment at the exam undertaken in the workplace and supported by accredited local trainers. Verified completion of the module results in a BAA HTS certificate. The current suite of HTS modules includes (21):

- adult assessment and rehabilitation with additional needs;
- advanced adult assessment and rehabilitation;
- balance assessment;
- balance rehabilitation;
- paediatric assessment (6 months+);
- paediatric assessment (newborn);
- paediatric habilitation;
- therapeutic skills;
- tinnitus and hyperacusis;
- cochlear implants.

In advance of publication of this National Review, NES Healthcare Science offered direct sponsorship of assessment fees for able staff wishing to sit the HTS paediatric specialty exams. The BAA pathway for this equivalence recognition was open until March 2023.

The BSA provides a comprehensive suite (22) of evidenced practice guidance documents, including specific protocols recommended for neonate and child examination. The caveat, of course, is that obtaining such information is not the same as showing understanding and then correctly applying it.

The Review's Quality Assurance Sub-Group conducted a survey of service in October 2022 that included questions about the state of higher training/master's-level specialisation. To date, BAA colleagues on this Sub-Group report that Scottish service engagement with the HTS is very limited, with time, cost and trainer availability the limiting factors.

Clearly, quality assured specialist learning resources are available to develop competencies. Accessing such material would be the logical next step. It is recognised that the capacity of the BAA to operate the HTS is limited; a Scottish solution, perhaps involving the NHS Scotland Academy, may help but with the short-term inconvenience of diverting staff away from the frontline. Notwithstanding service pressures, there is a clear contradiction that the system faces with the potential reluctance of staff (who deliver specialist tests) to undergo an assessment that could reveal competence shortcomings. It is a bullet that must be bitten. Transition and supportive environments are essential.

A final observation on postgraduate training is the distinction between the clinical STP and the advanced practice specialist training listed above. Pre-registration clinical scientist training is a postgraduate pathway for able science graduates to join service on a three-year programme. However, it is not immediate preparation for those specialist skills, but rather it is the foundation on which they can be acquired.

Trainers and verifiers: external oversight of competencies

Safety-critical specialist practice cannot be self-taught and enabled. Not only is evidence of attainment important, but so is independent verification of that attainment. The role of trainers and verifiers of such practice is paramount if there is to be uniformity and consistency across service of the safe and effective standards needed. If priority areas are ABR testing both in newborn and older children and VRA testing, then we need to ensure that competent trainers and verifiers of ABR and VRA are available.

In recommending system-wide improvements to the CPD of audiology staff, we suggested a local training champion with oversight from a national project officer. Such a role could extend to ensuring consistency of verifier standards.

NES Healthcare Science gives system-wide assurance of the state of training for healthcare science, including which training centres are recognised as compliant with its standards. The self-assessment process is well established and designed to be light-touch. The NES Healthcare Science core team is ready to assist with compliance.

Audiology leadership underpinning the maintenance and development of specialist skills

There are leadership preparation programmes at Board and national level that audiology leaders can undertake such as Leading to Change (*23*) in Scotland. Continuous improvement depends on an engaged leader to drive change and challenge norms. Appreciation of the critical role of external scrutiny is the hallmark of a high-functioning system; a leader needs to be comfortable with this and embrace the improvement opportunities that follow.

External scrutiny – the connect with quality systems and audit

Specialist skills are well-defined and are available through the BAA and BSA. Confirming those skills are in place and are open to external monitoring is the necessary assurance that was absent in Lothian.

The wider enquiry into service standards and quality systems is about assurance-building. The UKAS Improving Quality in Physiological Service Standard Awareness course (24) is an example of a quality management training programme specifically for clinical physiology services including audiology services. Engagement with it or similar would seem timely.

Summary

Investigation of the four priorities that the Sub-Group identified – CPD, foundation education, advanced practice and leadership – revealed a number of challenges that services need to address if service quality is to be upheld.

CPD needs champions at local and national levels and a core register of training will help ensure that competencies are being maintained.

Supply and demand in terms of audiology professionals are currently mismatched but the diversity of access to training is a benefit and should be managed to the advantage of the service and patients.

Finally, greater focus on the acquisition and regular testing of specialist and leadership skills is important in the context of ensuring safe and effective services.

Recommendations 19 to 41 are especially relevant to the work of this Sub-Group.

Quality Assurance Sub-Group

Quality Assurance Sub-Group

Key points

- Quality assurance is the process of checking standards of good practice are met and encouraging continuous improvement.
- The Lothian report prompted scrutiny of quality assurance of audiology services across the UK.
- KPIs were selected to provide a sample view of the quality of service provision and revealed widespread shortfalls in performance against recognised service quality measures.
- A peer review-based sampling audit of clinical skills in two key areas of the paediatric hearing loss pathway identified the need for urgent remedial measures to improve skills and establish ongoing assurance arrangements.
- Survey results indicated limited senior oversight or interest in quality assurance of audiology services by Health Boards. At service level there was, in most cases, no evidence of regular or recent clinical audit activity.
- Overall, findings point to the need for a suite of measures to assure service quality on an ongoing basis.
- There is little evidence of collaboration relating to quality assurance at a national level across Scotland between health boards, SCIP or UNHS, or with other UK countries.
- Establishment of effective and nationally coordinated quality assurance systems for audiology is achievable, as evidenced elsewhere in the UK.
- There needs to be one nationally recognised body with a remit to oversee quality assurance across audiology pathways.

Introduction

The BAA Lothian review identified a series of serious, significant issues, particularly within the early years (under 5) age groups of the paediatric audiology service. It was recommended that a comprehensive quality assurance programme should be established for the clinical aspects of the service – to include peer review and a reporting/oversight mechanism to director level, with arrangements for a suitable peer reviewer to be identified.

Informed by these findings, and within the wider scope of the National Review, the remit of the Quality Assurance Sub-Group was to:

- provide a quality assurance appraisal of audiology services (all ages), surveying key elements of existing service provision, with a particular focus on issues impacting on patient outcomes;
- review existing quality assurance arrangements, making recommendations necessary to establish robust quality assurance processes, while progressing service quality, improvement and outcomes for patients on a permanent basis.

Quality assurance is the process of checking that standards are met and encouraging continuous improvement. Assuring and driving up the quality of services is essential if audiology is to achieve the intended benefits to population health, while minimising unintended harms to those receiving services. Further information and definitions are provided on the Review website (1).

The Sub-Group was aware of previous national recommendations and arrangements for quality assurance organised on a national basis, although not the current provision across Scotland. It was agreed that a variety of types of information should be obtained to determine the current position, addressing the second bullet point above.

In context, many other areas of the UK currently have no robust systematic external quality assurance against evidence-based national service quality standards, although a nationally coordinated approach is well-established in Wales. The findings of the Lothian report have generated activity in many parts of the UK, leading to scrutiny of care and with the goal of improving quality assurance to those commissioning and responsible for audiology services.

The Sub-Group also received the findings of the Reference Group's stakeholder engagement exercises conducted as part of this Review and the survey of audiologists in Scotland carried out by the BAA. These provided information pertinent to the remit of the Sub-Group and recommendations.

It is important to note that while all Health Board audiology services were within scope of the Review, services delivered by the SCIP are subject to quality assurance scrutiny by NSS. For UNHS, the NSS provides collation of primary screening data and performance against KPIs, while the Health Boards are responsible for delivery against the related targets.

Methodology

Survey of KPIs

The Sub-Group devised a set of KPIs selected to provide a sample view of quality of service provision across adult and children's audiology services, with reference to national service quality standards (*8*, *9*). Each NHS Board was asked to complete a questionnaire survey (Appendix E) based on the KPIs, via heads of audiology services. The SCIP and the UNHS programme were also surveyed, the latter in relation to performance against existing KPIs.

It is important to note the limitations of this survey. Data were gathered through a one-off desk-based exercise. There was no onsite verification of submitted responses; and the depth and range of investigation of service quality would not match that of a robust external audit process against a wider range of criteria based around the patient pathway. There was no direct observation of practice; use of a site-visit-based approach, with briefing of all stakeholders and interactive scrutiny of local practice, would be expected to improve the accuracy and scope of outcomes reported from the limited desktop audit exercise conducted here.

Peer-review exercise of audiology skills

The Sub-Group devised two peer-review exercises of clinical skills for two key elements of the paediatric hearing loss pathway: ABR assessment following referral from UNHS; and technical aspects of hearing aid management.

ABR assessment is used to diagnose hearing loss. It provides information on the level and type of hearing loss and is used to guide decisions on clinical management – for example, fitting of hearing aids where indicated. Subsequently, hearing aids need to be fitted accurately, with measurements made to confirm this, in order to ensure optimum amplification, with best access to speech sounds in particular. Such audiological procedures are complex and require application of high-level skills while adhering to evidence-based professional guidelines.

Audiologists who perform such procedures were requested to submit materials for peer review. The exercise performed was to audit existing practice against BSA professional good practice guidance (25). Although of limited scale, this audit exercise and analysis report (Appendix F) provided useful insight into the training needs of audiologists based on care of individual patients.

A case sampling approach was adopted reflecting limitations of time and resources. Outcomes relating to individual cases were reported to audiologists and the Scottish Government to an agreed process. The exercise also had the benefit of providing familiarity with external peer-review practices for participants. However, the exercise did not explore audiologists' perception of their skills or levels of training/knowledge, or the adequacy of resourcing and organisational support for these demanding and complex activities.

Survey of quality assurance arrangements at Health Board level

The Sub-Group devised questions to survey heads of service on the current arrangements for quality assurance at Health Boards and their collaboration with other services, including ear, nose and throat (ENT) and specialist services (SCIP and UNHS). The questions were informed by established good practice in services in other UK countries and a definition of clinical audit provided by the National Institute of Health and Care Excellence. Health Board audiology services were then surveyed, via heads of services.

Limitations on scrutiny of quality assurance through the Review

Due to limitations of time and resources, peer-review exercises and cases-level audits were not performed for other key elements of audiology pathways, notably behavioural assessment of pre-school-age children and adult pathways (including balance, tinnitus and implantation). Lack of close scrutiny of case-level practice for such pathways means they cannot be reported upon here.

Findings

Survey of KPIs

The limitations of the approach taken to gather information on performance against KPIs should be noted (see above). However from a detailed analysis of a limited number of KPIs sampled, it is evident that there were shortfalls across all Health Board audiology services. As the KPIs were derived as a sample from across existing evidence-based Scottish Government children's hearing services and adult rehabilitation service quality standards, it is reasonable to conclude that Health Boards might currently fall short of acceptable levels of compliance against these national standards if a more extensive site-based external audit were to be conducted. The outcomes of this survey point towards the need for robust external audit of services against existing service quality standards. A list of the surveyed KPIs can be found at Appendix G.

Peer-review exercise of audiology skills

The peer-review exercise to explore audiology skills identified shortfalls across those Health Boards delivering these services.

There was a general lack of adherence to professional best practice guidance to provide assurance of competence in diagnostic ABR assessment and hearing-aid fitting, which may reflect current specialist skills and previous training. It should be noted that there is no existing external peer-review scheme in place for these key elements of the patient pathway. When introducing a robust external peer review exercise of this type, it is likely that issues/concerns at different levels will be revealed. This has been the case: there were at least minor shortfalls against good practice guidance identified at all Health Boards offering ABR assessment and/or hearing-aid fitting.

Given the scale and significance of audit findings for the ABR audit (shortfalls in practice against guidance) it was decided to expedite development and submission of three recommendations from the Sub-Group (see recommendations 52-54). The hearing-aid peer-review exercise revealed reports of equipment shortfalls and lack of training to provide for fitting of hearing aids to best practice standards. Specific recommendations were escalated to respective Health Boards. For further detailed outcomes of analysis of both exercises, see Appendix F.

Survey of quality assurance arrangements in Health Boards

For the majority of services there is no evidence that regular or recent clinical audit has been undertaken. Some measures of performance (for example, waiting times, referral rates) were reported and there were some examples of service evaluation to inform or assess service change.

There is minimal evidence of joint clinical audit with ENT. There was no evidence of joint clinical audit with other Health Boards, SCIP or UNHS services.

There is no evidence of external audit or review of services in recent years, save for paediatric audiology services in NHS Lothian in 2021.

There is no evidence from the majority of Health Boards of inter-Health Board quality-related performance benchmarking activity.

There is no evidence of non-ABR-related peer review for the majority of Health Boards and no evidence of external peer review of clinical practice.

The majority of Health Board audiology services submit regular (monthly) reports within their Board related to referral to treatment (RTT) and clinical activity performance. This is often limited to specific pathways and it is unclear where this data is ultimately reviewed. There were also limited reports of submission of any quality-related data other than that related to RTT access times.

No Health Boards report having an audiology service quality policy/manual/system. There was some reference to continued use of service quality standards. There is little evidence of collaboration relating to quality assurance at a national level across Scotland between health boards, SCIP or UNHS, or with other UK countries.

For a list of questions used for the survey of Quality Assurance Arrangements, see Appendix H.

Views from heads of service on measures required to improve quality assurance and services

There was a clear recognition from heads of service about the existing gaps and variation in quality assurance and they were able to identify a range of mechanisms to address these. However, they also identified a lack of resources as a significant barrier to making progress.

More specifically, there was support for:

- implementation of a formal process for quality assurance using Scottish service quality standards and peer review. To include an external audit element, and requiring a national coordinated approach and Scottish Government support;
- additional (human) resources to enable service managers to have sufficient and protected time to review and improve services. Training in clinical audit within an audiology context;
- development of resources (materials) to support quality assurance activity across Scotland and ensure alignment – for example, report templates, guidance documents;
- a coordinated and collaborative approach across audiology in Scotland – for example, establishment of a national audiology quality assurance team; audiology quality leads identified within each Health Board working together across Boards and linking with the Scottish Government; regular heads of service quality assurance meetings; heads of service working together in an agreed way;
- improved patient management system and tools for improved data collection and extraction;
- re-establishment of audiology patient reference groups;
- improved audiology accommodation;
- improved profile of audiology – recognition of audiologists as independent professionals to enable service improvement, including through role extension and raised profile aligned to the importance of audiology services;
- quality standards that are patient-centred;
- increased collaboration with other services (for example, speech and language therapy, education, audiology outside Scotland).

Summary

While there were areas of good practice, shortfalls in quality and quality assurance were identified in each of the surveyed approaches and were evident across Health Boards. Although the root causes were not explored systematically, there is reference to resourcing, lack of coordination, lack of collaboration, poor profile of services and absence of organisational focus on quality (other than access times). There is acknowledgement among those leading and others delivering services that there is a need for improvement and an appetite to do so.

The Sub-Group is keen to emphasise that shortfalls reported do not reflect adversely on the commitment of individuals aspiring to deliver high-quality care.

Going forward, quality assurance should be pursued using a variety of approaches, since each has different strengths and weaknesses. Evidence-based service quality standards, even if audited robustly, are not sufficient in isolation to assure quality. It is recognised, for example, that audit against standards needs to be augmented with reporting against KPIs at a health board and national level. This will provide ready availability of data to benchmark against service standards compliance and KPIs to drive forward quality improvement systematically, across the country.

Collaboration in pursuit of quality assurance and supportive activity is highly desirable. Priority should be given to recommendations that feature collaboration to help realise the benefits: namely, to provide efficiencies, encourage sharing of good practices with respect to quality assurance; to encourage a culture of openness; to ensure wider engagement in quality assurance activity (within and across audiology teams); and to contribute towards a unified national identity/ profile for audiology.

The Quality Assurance Sub-Group recognises the inter-relationships and interdependencies with the remits of the other Sub-Groups. Indeed, provision of high-quality and quality-assured services is reliant on effective leadership operating within governance structures that are fit for purpose and on the availability of staff with appropriate skills.

It is considered critically important that structures and dedicated resources are available to oversee:

- the development of service quality standards;
- robust external audit process;
- escalation where indicated;
- national planning for service quality improvement;
- national reporting.

There is a need for openness with respect to reporting on service quality and performance of services. It is by doing so that remedial steps can be taken to address shortfalls in service quality as and when they occur, or, more positively, to demonstrate improvement to services.

Recommendations 42 to 55 are especially relevant to the work of this Sub-Group.

Conclusion

Conclusion

This Independent Review has identified a range of concerns in all the areas we have scrutinised. A combination of factors is responsible, but in particular there has been a lack of strategic and workforce planning, poor quality assurance of services and staff training, and an absence of national oversight and responsibility.

The ALLIANCE engagement work (2) has given us crucial insights from patients, parents and other professions that use audiology services. We have learned that from the patient and parent perspective, there is considerable variation in the patient experience and perceptions of quality of service. The following comments from patients and parents quoted in the ALLIANCE report demonstrate this variation.

> **"I feel they should listen more to parents. We know our children best and hopefully they will pick up on hearing loss quicker so no more children have to wait 10 years for help."**

> **"Audiology services should have a holistic approach to their patients. They should recognise that hearing aids (while they work very well for many and I would not be without mine) are not the final and total answer. Every individual should be treated as such – how they manage their hearing loss is unique to them and this should be acknowledged and supported."**

> **"We even had a follow-up call from the consultant a week or two later to make sure we had digested the diagnosis and to check if we had any more questions."**

> **"Once I received my hearing aids I have had no more communication with the audiology department. Perhaps I am supposed to contact them again but I have had no reminders or info. As there was a great deal to take in at my fitting appointment I think that there should be some follow-up info."**

Patients and parents are concerned about the “customer service” aspects of audiology services and in particular poor communication. They would like to see services that are patient-centred, understand the patient voice, promote self-management, empower patients, and quickly address and respond to needs. It is crucial that patients and parents feel they are listened to and believed – i.e. that hearing loss is present until proven otherwise. Patients and professional groups using audiology services have highlighted the vital role that co-ordinated multi-agency working plays in patient care. This must become the norm.

The Structure, Governance and Leadership Sub-Group identified significant problems with the current audiology workforce, both in terms of numbers of vacancies and skill mix. The national organisation of structures is complex, with varying lines of reporting, no national oversight and poor visibility of the specialty. Similarly, in Health Boards audiology lacks visibility and governance arrangements lack clarity. There is a need to raise the profile of audiology services, in particular to promote their impact on health and for resourcing to reflect the benefits of interventions. The establishment of a Audiology Specialist Advisory Group and appointment of healthcare science leads in each Health Board are central tenets of our recommendations. Healthcare science leads would benefit not just audiology, but the wider healthcare science community.

The Education and Training Sub-Group highlighted the current mismatch between supply of and demand for audiology professionals. Current routes into audiology training are intermittent and lack coordination, and the specialty would benefit from a wider range of training routes. The Sub-Group identified that core training registers, overseen by departmental training officers are essential for effective CPD and maintenance and development of knowledge and skills. The Sub-Group also confirmed the need for registration of trainees, recognition of trainers and accreditation of training centres. Leadership development and clear descriptors of leadership skills in audiology posts were also identified as being of crucial importance.

Quality assurance activities within audiology departments are extremely limited. The only information routinely collected relates to performance against 18-week referral-to-treatment access targets, but it is unclear who monitors this data in Health Boards. Little regular clinical audit is conducted either within departments or between specialties. In particular, joint audit with UNHS or SCIP does not occur. In terms of KPIs sampled, there were shortfalls across all Health Board audiology services. This indicates a need for robust, external audit of services against existing national quality standards through which quality of care can be assured and improvements achieved. This will require an openness in approach, recognising the benefit of external scrutiny of practice.

Patient sampling audits of diagnostic ABR tests and hearing-aid fitting highlighted the need for urgent additional education and training of audiologists, for further audit and establishment of an external peer review process.

Audiologists felt that training and career development opportunities were limited by lack of funding, workplace pressure and staff shortages. High-quality training and work-based learning were seen as priorities. They recognised that workload and patient complexity are increasing, but that staffing levels and skill mix have failed to keep pace. There was a perception of lack of support by Health Boards for service development, and lack of national leadership and visibility of the specialty were viewed as key issues. It is a concern that audiologists, and other stakeholders involved in the Review, have noted that morale in the specialty of audiology is low. This may have an impact on retention of staff in the workforce and buy-in from the audiology community which will be of such vital importance in implementing change.

An opportunity to build services for the future

There are multiple, systemic problems within audiology services in NHS Scotland. Resolving these requires a whole-system approach. This is a once-in-a-generation opportunity to aim not just for safe, acceptable services, but for excellence, and to develop the services patients deserve.

The wide-ranging recommendations in this report provide the foundation for improvements which will ensure high-quality, joined-up, patient-centred services. It is stating the obvious to say that the recommendations can only have this effect if they are implemented. A fundamental requirement of this report is the urgent establishment of an Implementation Group, with stakeholders that include patients and the third sector, and with the necessary project management support, resources and delegated authority, reporting directly to the Scottish Government.

This is not the time for a half-hearted response or for a sticking-plaster approach. This is a time to acknowledge the systemic issues and to use this report as the catalyst for a transformation process, which will require vision, national leadership and accountability. It will require planned investment in the education and training of our audiology professionals to ensure the right numbers are available with the required skills. In parallel, it will require the establishment of robust, quality assurance processes for services to affirm the delivery of high-quality care.

The right to effective language and communication is enshrined in Article 19 of the United Nations (UN) Universal Declaration on Human Rights. Furthermore, the UN Convention on the Rights of the Child recognises the right of every child to “the highest attainable standard of health” and to the development of “mental and physical abilities to their fullest potential”. We will do patients a great disservice if there is a failure to implement the recommendations from this Review. Consigning it to the “too difficult” box is not an option. There is a need for improvement and a huge appetite for change within the audiology community. In particular, there is recognition from stakeholders of the need to work more collaboratively to achieve common goals.

If we return full circle to the catalyst for this Independent Review, it was the identification of serious failings in the care of 155 children. We must learn from the situation in Lothian and from the extensive work of this Review. Implementing the recommendations in this report, and in particular establishing the suggested structures and governance, will help to ensure that such failings in care are not repeated.

Recommendations

Recommendations

Introduction

The Reference Group engagement report, engagement with NHS audiology staff and thematic reviews across 1) structure, governance and leadership, 2) education and training and 3) quality assurance informed and supported the development of the final recommendations.

The findings from the work of the Review and its Sub-Groups point to a number of important issues that require urgent action to deliver change and improved outcomes for the people of Scotland. Fundamental to service improvement is cultural change that focuses on patient-centred care and which listens to patients, empowers them and places them at the heart of their coordinated, multidisciplinary care.

The overarching aims across the findings and recommendations are:

- to reduce variation and ensure the delivery of safe, high-quality, patient-centred care across Scotland, with clear accountability;
- to build a sustainable pipeline of talent and ensure that patients are cared for by professionals with the right knowledge and specialist skills, within services with effective, skilled leadership;
- to ensure a culture of continuous improvement of quality and outcomes of care across the patient journey, with external assurance of patient safety, clinical effectiveness and patient experience;
- to ensure that national structures are in place to provide strategic oversight and assurance of audiology services.

Timescales have been described as:

- short term – within three months;
- medium term – within six months;
- long term – within 12–24 months.

Implementation and continued oversight of NHS audiology services

The absence of continued oversight and leadership of audiology has been a major feature of the Review's varied deliberations; left unresolved, this is a potential future failure point in both the sustained change required within audiology services and the governance of the healthcare science workforce.

1. Establish a time-limited National Implementation Group with a Project Lead to provide the necessary project management leadership to produce and monitor a plan to implement the Review's recommendations. It is advised that Group membership is multidisciplinary, including patients and third-sector representatives, reporting directly to the Scottish Government.

   While it will be for the Scottish Government to set the Group's terms of reference, appoint its members and determine specifically how the recommendations should be taken forward, it is advised that this Group should play a vital role in:

   - defining national audit and peer review processes;
   - supporting the establishment of local working groups;
   - ensuring all relevant stakeholders are represented in the national and local groups' structures and activities;
   - coordinating any actions nationally, regionally and locally;
   - ensuring the recommendations are applied consistently across Scotland in line with the "Once for Scotland" approach (14), but also supporting adaptation of the recommendations as necessary to reflect local needs.

   It would be prudent to ensure that opportunities are taken during the implementation phase to share learning through collaborative effort at Governmental and professional levels.

   Responsibility: Scottish Government
   Timescale: Short term

2. Establish an Audiology Specialist Advisory Group, a single body with oversight of paediatric and adult audiology services which reports to the Scottish Government.

   An indicative description of responsibilities for this Group is below;

   - To provide scientific and technological advice on NHS audiology matters to the Scottish Government.
   - To advise on policy matters relating to the provision of safe, cost-effective, high-quality NHS audiology services.
   - To ensure national oversight of quality assurance and review audit and performance data across the clinical pathway.
   - To advise on matters relating to workforce planning, education and training of those involved in the provision of NHS audiology services.
   - To enhance the reputation and profile of NHS audiology.
   - To enhance the identity, culture and morale of NHS audiology services.
   - To advise on strategic planning and development of NHS audiology services.

- To encourage a collaborative approach, with representation from NHS audiology services, medical audiology, specialist services, higher education institutions and the Scottish Government.

Responsibility: Scottish Government
Timescale: Short to medium term

3. Establish a single policy home for audiology within the Scottish Government.

   Responsibility: Scottish Government
   Timescale: Medium term

4. Appoint a Healthcare Science (HCS) Lead in each Health Board. While we are specifically interested in Board-level oversight of audiology, director-level leadership, as currently applies to other major clinical groupings, would also benefit audiology and the wider HCS community. The absence of such HCS leadership has been a major feature of the Review's varied deliberations; left unresolved it is a potential future failure point in the governance of the wider HCS workforce.

   The following remit for an HCS leader would benefit audiology, helping to assure safe care and outcomes for the population served by this and other specialist HCS disciplines;

   - Support and monitor education, training and registration of clinical staff, including oversight of core training registers.
   - Responsibility and accountability for clinical governance issues – alerting the Health Board Chief Executive to service issues that may impact on safety and the reputation or performance of the organisation.
   - Ensure quality assurance programmes are in place and that the organisation complies with specific quality requirements and accreditation schemes.
   - Receive external audit reports/reviews on behalf of the organisation, providing challenge and support for the delivery of quality assured HCS services.
   - Encourage organisational support for service improvement informed by patient feedback, outcomes of audit/review and technological innovation.
   - Ensure organisational support for implementation of national strategies and policies.
   - Promote and provide high-level support for the needs of the service within the organisation, as a healthcare discipline.
   - Encourage an identity and a culture of collaboration across HCS services in the organisation.
   - Support HCS leadership development.
   - Participate in national strategic and collaborative efforts, with counterparts in other Health Boards.

   Ideally, to have authority to achieve the above, a Healthcare Science Lead should hold an executive level position and responsibility at each Health Board. This may be more viable in association with a wider professional partnership grouping, but always with a post-holder who has clear responsibility for and knowledge of HCS.

   Responsibility: Scottish Government
   Timescale: Medium term

Structure

Enabling delivery of high-quality audiology services wherever you are in Scotland

The foundation of safe, effective and timely audiology service delivery is having the right number of appropriately trained and skilled staff in place to meet the needs of patients. These staff should be able to record all patient interaction to ensure seamless delivery of care and outcomes.

5. Conduct a comprehensive workforce review with a particular focus on skill mix with reference to professional best practice guidance and linking in with professional bodies.

   Responsibility: Health Boards
   Timescale: Short term

6. Develop a robust workforce plan to ensure appropriate safe-staffing levels and equitable patient-staff ratios.

   Responsibility: Scottish Government
   Timescale: Short-medium term

7. Develop a suite of national job descriptions to improve consistency across all job descriptions particularly of those at band 7–8, Head of Service and Deputy Head of Service level. This work should link with professional best practice guidance and be informed by the Academy for Healthcare Science (AHCS) Good Scientific Practice document (26) and for Heads of Service posts to the AHCS Standards of Proficiency for Higher Specialist Scientists document (27).

   Responsibility: The Scottish Terms and Conditions Committee and Health Boards
   Timescale: Medium term

8. Review and formalise collaborative arrangements with neighbouring Health Boards to ensure sustainable service delivery for specialist audiology services.

   Responsibility: Health Boards
   Timescale: Medium term

9. Use the most updated version of the Audiology Patient Management System to enable consistent data recording and reporting and ensure delivery of effective, high-quality patient care across all Boards.

   Responsibility: Health Boards
   Timescale: Medium term

Service design

Audiology services should be accessed and delivered by, and involve, multidisciplinary agencies consistently across Scotland.

10. Define and ensure adoption of a consistent patient pathway for adult and paediatric audiology, with reference to best practice guidance and national service quality standards, which is responsive to innovations over time. This will enable consistency of care, comparative audit and reporting of performance between Health Boards.

    Responsibility: Health Boards, National Services Scotland National Services Division and the Scottish Government
    *Timescale: Short to medium te*rm

11. Design services based on demographics, geography and local needs ensuring that stakeholders are a key contributor to the process as per the Scottish Government's Scottish Approach to Service Design (28).

    Responsibility: Health Boards
    Timescale: Medium term

Governance

Accountability for safety and improving standards of care

Audiology, like other NHS disciplines, should sit within tried and tested policy and corporate, clinical and care governance structures at both Health Board and Scottish Government level.

12. Undertake a review of NHS Board internal governance arrangements to ensure strong accountability links for audiology reporting within NHS corporate and clinical and care governance structures.

    Responsibility: Health Boards
    Timescale: Short term

13. Review the Audiology Heads of Service Group's terms of reference to ensure alignment with local and national guidance around NHS Scotland good governance (29).

    Responsibility: Health Boards
    Timescale: Short term

14. Review and define professional accountability for the audiology service within Scottish Government and NHS Board governance structures.

    Responsibility: Scottish Government
    Timescale: Medium term

Leadership

The foundations for better leaders and better care

Strong leadership for audiology in Scotland will encourage cultural change and drive improvements in services. The right leaders will balance the clinical demands of the service with those of patient-centredness; they will promote and value collaborative working with the whole multidisciplinary team and will understand and exploit audiology's position in the policy and wider health service landscape.

15. Clearly specify the need for healthcare science leadership skills development in job descriptions for all posts, proportional to the level of seniority. If candidates are less developed formally on appointment, then an unequivocal commitment must be given to engage with a programme suitable for the role. Health Boards may offer such support through organisational development and learning.

    Responsibility: Scottish Government and the Heads of Service Group
    Timescale: Medium term

16. Ensure recruitment panels for NHS leadership posts for audiology, as a healthcare science service, include external senior audiology and local healthcare science professionals.

    Responsibility: Health Boards
    Timescale: Medium term

17. Ensure that advanced and ongoing leadership development of those in senior positions (healthcare science band 7 and above) is understood to be the norm and recorded as part of an individual's ongoing personal development utilising national programmes such as Leading to Change with the option to develop bespoke leadership development programmes if required.

    Responsibility: Health Boards
    Timescale: Medium term

18. In line with the Health and Care (Staffing) (Scotland) Act 2019, ensure all individuals with lead clinical professional responsibility for a team of staff receive sufficient time and resources to discharge that responsibility, along with their other professional duties. They should have opportunity to engage and contribute with healthcare scientists in other disciplines to foster mutual support on matters related to the delivery of healthcare science services.

    Responsibility: Health Boards
    Timescale: Medium term

Education and training

Ensuring patients are cared for by professionals with the right skills and knowledge now and in the future

We want to maximise the supply of audiology staff and ensure a flexible approach, offering a range of access routes to entry and training.

The workforce must be grown at pace; workforce shortages jeopardise current service delivery and will impact on the ability of services to implement the Review recommendations. Given the urgency of the need for workforce supply, the quickest, most logical approach is to use current and previously designed courses in Scotland.

The export potential of programmes rests on the expectation that they can cater for learners employed outside NHS Scotland. Programme viability is enhanced and should also be recognised as a key export opportunity that draws, where it can, on the placement, wisdom and experience of the Scottish service.

19. Posts requiring specialist skills must only be open to candidates formally qualified to the agreed national standard. Examples of such include existing specific UK-level healthcare science routes available such as the Scientist Training Programme and Higher Scientist Training Scheme. The BAA's Higher Training Scheme (HTS) modules are an industry-standard that could be adopted in Scotland with eligible staff registering to do HTS within 18 months and complete three years thereafter.

    Responsibility: Health Boards
    Timescale: Medium term

20. Staff in post should gain a qualification or equivalent recognition to demonstrate clinical competence in a specialty area. For example, the BAA's HTS modules currently provide a scheme to develop competency and allow for competency assessment. It is recommended that the Scottish Government works with that professional body on capacity to throughput candidates and to develop local examiners in Scotland to assess competency.

    Responsibility: Health Boards
    Timescale: Medium term

21. In readiness for promotion opportunities and to build workforce capability, the Scottish Government should encourage Health Boards to pursue equivalency to secure Clinical Scientist Registration and Higher Specialist Scientific Registration for consultant level leadership.

    Responsibility: Scottish Government and Health Boards
    Timescale: Medium term

22. Define minimum education and training needs and minimum ongoing continued professional development and reaccreditation arrangements to maintain competencies for those:

    - performing auditory brainstem response assessment of children, including peer review;
    - leading two-person assessment of pre-school-age children;
    - fitting hearing aids to children;
    - performing tinnitus assessment of adults;
    - leading vestibular assessment of adults;
    - undertaking adult assessment and rehabilitation.

    Responsibility: Health Boards and Scottish Government
    Timescale: Short-medium term

23. Establish a Core Training Register for safety-critical diagnostic testing performed by the team.

    Responsibility: Health Boards
    Timescale: Medium term

24. Establish a Continuing Professional Development Champion or Training Officer in every department offering audiology services. The individual must practise evidence-based training and include external training as well as internal. It is advised that this is reflected in the relevant job description.

    Responsibility: Health Boards
    Timescale: Short term

25. Ensure annual appraisals include regular review of an individual's competency and training record.

    Responsibility: Health Boards
    Timescale: Medium term

26. Ensure all services are connected to a network of trainers and verifiers to ensure uniformity of high standards of specialist skills and to provide evidence of training assurance to external auditors, thereby cementing a quality culture.

    Responsibility: Health Boards
    Timescale: Medium term

BSc programmes

27. Current undergraduate BSc programmes should run annually, and previously run courses should be restarted. They should prioritise school-leaver/non-degree-holding entrants.

    Responsibility: Scottish Government and Health Boards
    Timescale: Short to medium term

28. Urgent consideration should be given to the sustainable funding of programmes.

    Responsibility: Scottish Government and Health Boards
    Timescale: Short to medium term

29. Consideration should be given as to how programmes could be formalised, if desired by service, into degree apprenticeships, and how Boards could be assisted to embrace the model.

    Responsibility: Health Boards
    Timescale: Medium term

MSc programmes

A two-year MSc generates a qualified practitioner able to join the accredited register. An additional benefit is that the M-level qualification is a useful springboard to clinical scientist equivalence and fulfils part of the BAA higher training scheme requirements.

30. There should be direct sponsorship of selected students to undertake the pre-registration MSc as it stands. NHS Scotland placements should be prioritised for students who are directly sponsored.

31. Consideration should be given as to how to recruit and retain such sponsored trainees.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Medium term

Dip HE

A Dip HE in Hearing Aid Audiology is a two-year work-based diploma currently available in Scotland for staff employed in service. It provides education and training to support a role as Associate Audiologist (band 4), providing a foundation for further education and training.

32. The existing programme should run an intake as planned in 2023.

33. Promote and support access to the Dip HE in Hearing Aid Audiology as an element within the NHS career pathway, also ensuring that the course offered reflects the evolving needs of the NHS.

34. Consideration should be given as to how NHS departments can be incentivised to place staff on the Dip HE in Hearing Aid Audiology course and retain them.

35. Articulation is required between the DipHE and BSc top-up modules to allow Boards to accelerate workforce supply, both in Scotland and beyond.

    Responsibility: Health Boards
    Timescale: Medium term

Enhancing care through skills development, registration and recognition

36. All NHS trainees regardless of programme pathway should be mandated to acquire a National Training Number from NHS Education for Scotland which would ensure monitoring of training progress.

    Responsibility: Health Boards
    Timescale: Short term

37. All trainees entering NHS Scotland employment must, on completion of their training, be eligible for registration either with Health and Care Professions Council or Registration Council for Clinical Physiologists – Academy for Healthcare Science (AHCS) registers.

    Responsibility: Health Boards
    Timescale: Long term

38. All NHS training departments should be registered as a training centre with NHS Education for Scotland.

    Responsibility: Health Boards
    Timescale: Medium term

39. Boards should ensure that all audiology staff eligible for registration are professionally registered either with the Health and Care Professions Council or Registration Council for Clinical Physiologists – Academy for Healthcare Science to demonstrate professionalism and public protection.

    Responsibility: Health Boards
    Timescale: Medium term

40. All audiology staff involved in delivery of training must be trained by the university provider, professional bodies and encouraged to engage with the wider healthcare science training community via NHS Education for Scotland trainer courses.

    Responsibility: Health Boards
    Timescale: Medium term

41. Trainers should be formally trained and recognised to deliver and verify training across all levels. This should be harmonised across Scotland with training formally incorporated into job descriptions. Consideration should also be given to developing a cadre of key trainer-verifiers for specialist skills in Scotland who can cover multiple Health Boards. A collaborative approach to training should be encouraged to share training capacity across Health Boards through a training consortium approach.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Medium term

Quality assurance

Quality standards, audit and external assurance

Audiology service delivery requires the right balance of clinical competence and "customer service" to ensure a patient-centred experience and good outcome measures. Good communication skills, strong deaf awareness, the ability to empower patients, encouraging self-management, and an understanding of the social impact of hearing loss all contribute to the experience and outcomes.

Effective quality assurance and improvement of audiology services requires all of the following elements to be in place: development of nationally recognised service standards and performance measures that are fit for purpose; robust and regular external audit against such standards; reporting of outcomes of audit; escalation of outlier performance and pursuit of action plans to improve performance where shortfalls are identified. This approach requires a culture of openness from those responsible for service delivery, to accept challenge of performance and presentation of outcomes in the public domain.

To help improve outcomes, collaboration and benchmarking with professional counterparts in other countries should be built upon and encouraged.

42. Develop, implement and report on a mandatory basis against an agreed set of robust national key performance indicators (KPIs) for annual audit, with suitable governance arrangements. These should be informed by the outcomes of the KPIs survey conducted as a part of this Review.

    It is advised that the Audiology Specialist Advisory Group (see earlier) should oversee the review and development of this list of KPIs to reflect changes to practice and any national shortfalls or elements of service quality in need of improvement.

    Wherever possible, there should be collaboration with professional counterparts across the four nations to support country comparison of common KPIs.

    The following KPIs are suggested as priority for regular benchmarking:

    - patient reported experience measures (PREMs);
    - patient reported outcome measures (PROMs);
    - bone anchored hearing aid (BAHA) provision/head population/year;
    - continuing professional development/head population/year;
    - paediatric pathway indicators (for significant milestones in the diagnosis and management pathway);
    - positive predictive value (PPV) measurement;
    - multidisciplinary team working;
    - aetiological investigation of children with permanent hearing loss.

Responsibility: National Services Scotland National Services Division and Health Boards
Timescale: Short-medium term

43. Establish KPIs for routine monthly, discrete (non-aggregated) referral to treatment waiting times performance reporting through Health Boards. This should include:

    - waiting times for all adult audiology procedures (aggregated);
    - waiting times for first assessment of hearing for children (other than those referred from the Universal Newborn Hearing Screening Programme).

    Responsibility: Scottish Government
    Timescale: Short-medium term

44. Develop evidence-based national service quality standards for NHS audiology services in partnership with third-sector organisations, service users, professional counterparts in the other UK countries, professional bodies and Healthcare Improvement Scotland. Review and update them on a regular basis.

    Development should reflect the multidisciplinary nature of services, include views of those with lived experience identified through the work of the Reference Group and any further lived experience engagement, with appropriate governance arrangements in place.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Short-Medium term

45. Establish a local service-level quality assurance and improvement plan which describes roles and responsibilities, resourcing and reporting outputs. The plan should be updated regularly, reflecting outcomes of audit and performance against KPIs.

    Responsibility: Health Boards
    Timescale: Short term

46. Introduce an accountable post-holder in the audiology service to oversee and drive local quality improvement initiatives and ensure senior staff develop quality systems thinking awareness for themselves and their teams.

    Responsibility: Health Boards
    Timescale: Medium term

47. Define and adopt a robust external audit process for the service quality standards, in partnership with professional bodies, third sector partners, service users and professional counterparts in other UK countries. This should feature site visits and observation of clinical practice.

    Explore partnership working opportunities with other UK countries to establish a reciprocal audit process for scrutiny external to Scotland. The Scottish Government should mandate Health Board participation in the audit process, ensuring the release of clinical staff to participate as assessors. Outputs should include audit reports to be sent to Health Board Chief Executives and a collective national audit report to be provided to the Advisory Group (see earlier).

    Responsibility: Scottish Government
    Timescale: Short-medium term

48. Explore opportunities and identify the best approach to achieve external accreditation of NHS audiology services with external agencies such as the United Kingdom Accreditation Service and counterparts in other UK countries. Thereafter, Health Boards should pursue external national accreditation of audiology services as indicated and collectively agreed.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Short-medium term

49. Develop and deliver an annual reporting and escalation process for audit against service quality standards, with agreed governance arrangements in place. Outcomes should be presented in the public domain. Annual publication should develop a better public understanding of local and national outcomes to encourage contribution to any national solutions where required. To deliver on this work, it is crucial all Boards have robust data and digital infrastructure.

    Responsibility: Health Boards and Scottish Government
    Timescale: Short-medium term

Improving care through collaborative working across the patient journey

Collaboration and multidisciplinary working are key within audiology, and the KPIs and quality standards referred to above will reflect that, through effective collaborative engagement with other stakeholders such as education, the third sector and other professionals.

Specifically, the relationship between audiology and the Scottish Cochlear Implant Programme (SCIP) and audiology and the Universal Newborn Hearing Screening Programme should be addressed.

50. Ensure recommendations from the most recent review report around the Universal Newborn Hearing Screening Programme in Scotland are addressed at pace.

    Responsibility: National Services Scotland National Services Division, Health Boards and the Scottish Government
    Timescale: Short-medium term

51. As commissioners of the SCIP, National Services Scotland National Services Division and Health Boards should establish a collaborative working group, working to defined terms of reference and with appropriate governance arrangements.

    This group should be tasked with conducting an annual joint audit/benchmarking coordination event to review audit outcomes across all partners.

    This should routinely explore whether cases meeting criteria are referred in a timely way and the appropriateness of referrals. The group should consider variations in implantation (by Health Board area) as a high-level indicator of combined (Health Board and SCIP) performance. It is advised this group should explore introduction of measures to reduce variation and optimise onward referral, such as Cochlear Implant Champions.

    Responsibility: National Services Scotland National Services Division and Health Boards
    Timescale: Short to medium term

Specific quality assurance areas for action identified by the Review

The following recommendations (52-54) were submitted in advance of final reporting in February 2023, in recognition that they needed to be expedited given the findings of the peer review-based audit exercise of current practice.

52. Commission national-level training for ABR assessment of infants. This training should be mandated for all audiologists performing such work. The format should include one-to-one assessed sessions and face-to-face training sessions. Content for this training should be guided by the learning from the case sampling audit exercise.

    Responsibility: Scottish Government
    Timescale: Short term

53. Support the establishment of a national external peer review scheme for ABR assessments with mandated participation across NHS Scotland for all audiologists performing ABR assessments. It is recommended this could be taken forward as a mini project with consideration of best practice across the UK.

    Responsibility: Scottish Government
    Timescale: Short term

54. Conduct a wider audit of ABR cases referred from the Universal Newborn Hearing Screening Programme, with defined scope: i) review of cases to identify where management can and does need to be revised; ii) further identification of training needs at individual audiologist level; and iii) obtain information to guide changes to service delivery model for the ABR assessment.

    It is advised that the Implementation Group should determine the scope of the audit and if there is a period of time before this is established, the Heads of Service Group for Audiology should be tasked with this.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Short term

55. Ensure implementation of local action plans to mitigate and minimise risk to patients against the KPIs surveyed as a part of the work of the Review. This will support readiness for formal external audit.

    Responsibility: Health Boards and the Scottish Government
    Timescale: Short term

References

1 National Audiology Review Group

2 ALLIANCE report

3 Joint Committee on Infant Hearing (2029) Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs

4 Scottish Government (2014) See Hear: A Strategic Framework for Meeting the Needs of People with Sensory Impairment in Scotland

5 Royal National Institute Deaf - Hearing Matters Scotland 2020

6 Scottish Public Services Ombudsman (2021) Lothian NHS Board – Acute Division

7 Audiology professionals in NHS SCOTLAND: perspectives on service provision (baaudiology.org).

8 NHS Scotland (2009) Quality Standards for Paediatric Audiology Services

9 NHS Scotland (2009) Quality Standards for Adult Hearing Rehabilitation Services

10 Davis, A, Evans, M, Martin, M & Orton, L 2007, *CLINICAL AUDIT OF NHS AUDIOLOGY SERVICES IN SCOTLAND*. Audiology Modernisation Clinical Audit , The Scottish Government, Edinburgh.

11. Universal Newborn Hearing Screening in Scotland – NHS National Services Scotland Internal Review Report, Feb 2021: Pregnancy and Newborn Screening Programmes.

12. Hearing Impairment Network for Children & Young People (HINCYP) – National Managed Clinical Network (scot.nhs.uk)

13 Hearing Impairment Network for Scotland (2020) Annual Report 2019/2020 and Hearing Impairment Network for Scotland (2020) Annual Report 2020/2021

14 NHS Scotland (undated) “Once for Scotland” Workforce Policies

15 United Kingdom Accreditation Service

16 Healthcare Science Cymru

17 NHS England Healthcare Science Leads

18 NHS NSS Workforce Report for Clinical Physiology 2022

19 University and College Admissions Service (UCAS) Healthcare Science and Audiology courses

20 NES Healthcare Science assurance of training

21 British Academy of Audiology (undated) Higher Training Scheme (HTS)

22 British Society of Audiology - Resources page

23 NHS Education for Scotland (2023) Leading to Change

24 UKAS Improving Quality in Physiological Service Standard Awareness – IQIPS:2023 course

25 BSA professional good practice guidance: Recommended Procedure for ABR Testing in Babies

BSA professional good practice guidance: Recommended Procedure Assessment and Management of ANSD in Young Infants

BSA professional good practice guidance: Early Assessment Management

BSA professional good practice guidance: Real Ear Measurements (REMS)

26 Academy for Healthcare Science (2021) AHCS Good Scientific Practice 2021

27 Academy for Healthcare Science (2015) Standards of Proficiency for Higher Specialist Sciences

28 Scottish Government (2019) The Scottish Approach to Service Design (SAtSD)

29 Scottish Government (2022) NHS Scotland – Blueprint for Good Governance: Second Edition

Review report – Appendices, Figures

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