



Audiology Improvement Programme

Pushing the boundaries:

Evidence to support the delivery of good practice in audiology





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Introduction

During 2009/10 NHS Improvement worked with 18 pilot sites across England as part of the Department of Health (DH) National Audiology Programme (led by the DH Chief Scientific Officer, Professor Sue Hill), to identify and share innovative ways to improve the quality of patient experience, increase productivity and sustain improvements over the long term. The pilots covered a diverse range of clinical pathways which included tinnitus, balance and children's hearing, as well as age related hearing loss and those with more complex needs

This publication has been written to share the learning from this pilot phase of the NHS Improvement Audiology Programme. Through a series of case studies and examples, it aims to highlight areas of innovative and emerging good practice that can be used locally to deliver improvements for audiology patients and their carers. One of these successes includes working with young people and the voluntary sector to construct an effective multi-agency approach to meeting their needs by providing timely access to relevant services.

This report contains information for those professionals working in, commissioning or interfacing with, audiology services. This will include those who are:

- involved in the care of patients who require audiology services
- responsible for commissioning audiology services
- managing audiology services
- involved in the education and training of staff who will be working with patients who require audiology services.

The pilot sites were encouraged to employ a range of service improvement techniques as appropriate to their needs. These included process mapping, capacity and demand analysis, application of Lean methodology, process redesign and workforce/skill mix review. The NHS Improvement team supported the testing of new ideas and pathways through site visits and by hosting a number of learning workshops.

There are lots of practical examples within this report to support clinical teams in delivering quality and productivity benefits for our patients and a wider range of stakeholders.

Over the next 12 months, the NHS Improvement Audiology Programme will be testing the key principles for change in a small number of NHS sites, in a similar process to that which has established winning principles in transforming cardiac and cancer care. As this information emerges it will be shared with audiology services and the wider NHS.

Dr Janet Williamson
National Director, NHS Improvement

Professor Sue Hill
Chief Scientific Officer, Department of Health

Age related hearing loss projects

Introduction

Gradual deterioration of the ear means that for most people, deafness is an unwelcome feature of later life. Although the degree of disability varies greatly, and some people adjust quite well to the slow decline in their hearing, for many this form of hearing loss causes frustration, loneliness and depression.

It is estimated that the prevalence of hearing loss amongst adults in England is 20% and the vision for audiology and adult hearing services is to provide high quality, efficient services, delivered closer to home, where long waits are a thing of the past and where patients are treated as individuals with personal needs (*Transforming Adult Hearing services for Patients with Hearing Difficulties 2007*).

With the publication of the White Paper '*Our Health, Our Care, Our Say*' (Department of Health 2006) the vision for people to have greater choice, independence, control and empowerment was clearly articulated. This intentionally challenged existing practice.

Clinical leaders now need to focus on how to deliver effective care outside an acute setting and in, or near to, patient's homes.

This has focused audiology departments' attention on improving current service provision to encompass these aspirations through getting the systems and processes right, using the best technology available and planning an effective workforce to deliver these improved services.

With increasing competition from alternative providers, audiology departments need to be continually looking for ways to improve on the services provided by reducing waiting times, enhancing both the patient's experience and the quality of care and providing efficient pathways of care.

The aim of this work is to identify the factors that help or hinder progress in moving care into community locations and to share the lessons learnt with the wider NHS.

Summary

Each of the age related hearing loss pilot sites sought to move some element of care into the community, reduce the number of steps in the patient pathway and provide a more effective and efficient service for patients. They sought to improve the quality of the service provided, whilst maintaining or enhancing the patient experience.

Moving care into the community and closer to patients' homes can throw up unusual and unexpected challenges, especially for hearing services, for example, in providing suitable accommodation and meeting the required noise specifications, at a busy health centre.

The sites chosen were:

- **University Hospitals of Leicester NHS Trust (Leicester Royal Infirmary)**
- **Nottingham University Hospitals NHS Trust**
- **Trafford Healthcare NHS Trust.**

Initial findings from the pilot projects have started to indicate that locally led work, which forms part of the national priorities, can be achieved by working in partnership with all stakeholders. The key to their success stems from clear local clinical and managerial leadership and the application of robust project management.

By involving the whole team within the department and getting their agreement to the proposed change, ownership was gained and the teams actively worked together to achieve the best outcomes for their patients. The projects demonstrate a commitment to improving quality, the use of new technology and increasing productivity.

By streamlining the pathway and reducing the number of steps, time and resources have been released, without compromising on quality. Patient satisfaction with the revised pathways is high, along with staff fulfilment with the change in working practice. Extended roles have been developed and a clear commitment has been demonstrated to continue on this improvement journey.

Triage in Primary Care: a new pathway for hearing aid candidates

Leicester Royal Infirmary

Presenting Issues

The traditional way to manage patients who may need a hearing aid is to assess at one appointment and fit at another. Recent advances in technology mean that, for certain patients, the two appointments can be combined.

In order to know who would be suitable and who would need to attend both appointments, a simple triage is carried out in primary care, prior to referral. This enables patients to go into the correct appointment type for their needs.

The aim of this project was to pilot the triage in primary care practices using a small screening device (Siemens Hear Check Screeners) and a short questionnaire.

The triage is done by either the GP or the practice nurse/health care assistant, and includes wax removal, where necessary.

Pilot work has shown that locally, approximately 40% of patients are suitable for 'assess and fit' model.

What they did

- Used new technological advances to enhance the patient's pathway
- Redesigned the care pathway to improve the patient's experience
- Developed clear and consistent referral criteria for primary care practitioners
- Developed a direct referral form for primary care to record screener outcomes and highlight any concerns regarding dexterity, poor vision etc

- Initially trained four GPs to use screeners and the new referral form
- Offered 90 minute appointments to those who were appropriate for assess and fit at the same time and 60 minute assess appointments for those who did not meet the criteria, following on with a further 60 minute appointment for the fitting
- Promoted their early work/findings and recruited a further seven GPs to work with the pilot
- Recorded all the outcomes from the pilot to enable a full analysis to include a patient satisfaction questionnaire.

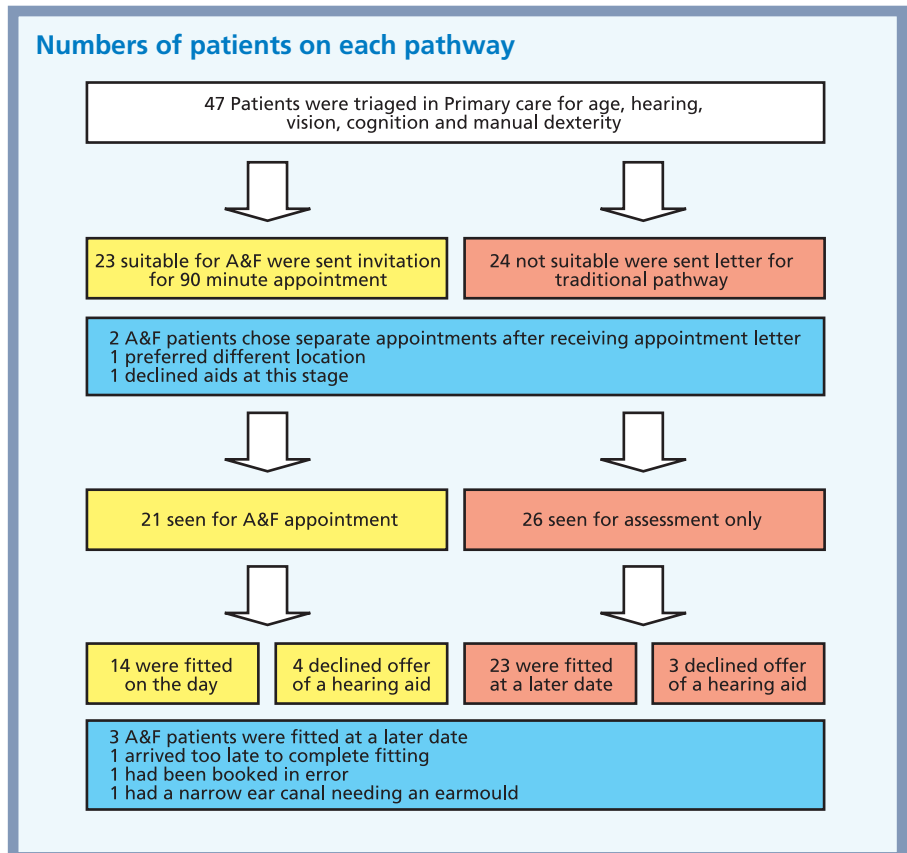
Benefits

Quality

By using two patient related outcome measures they have demonstrated that the quality of service has not been compromised by the assess and fit appointment. For the patients who only needed to attend once, this represents a real increase in quality.

Innovation

The utilisation of the screener and the use of instant fitting technologies has been an excellent example of the potential role of innovation in patient management.



Productivity

The number of patients who have completed the pathway through out the duration of the pilot is 47. Of those 47, 23 were suitable for the assess and fit appointment, two out of the 23 chose not to have the 90 minute appointment.

So 45% of referrals had a 90 minute appointment, of these 67% had aids fitted on the day. In terms of net time saved, based on these relatively small numbers, 30 minutes time can be saved in 15% of referrals.

During the last 12 months, 2,420 patients have been directly referred, even a 30 minute time saving on 15% results in 180 hours of clinical time being saved.

Identifying the appropriate referral route may save on the overall number of referrals and cut costs.

Prevention

By educating GPs patients are more likely to be referred to hearing services at their first visit. Also patients who are being triaged into the assess and fit pathway are having a reduced delay in their treatment.

Contact

Pauline Smith

Clinical Scientist - Audiology

pauline.smith15@nhs.net

Developing new pathways for patients requiring reassessment of hearing needs in Nottingham

Nottingham University Hospitals NHS Trust

Presenting Issues

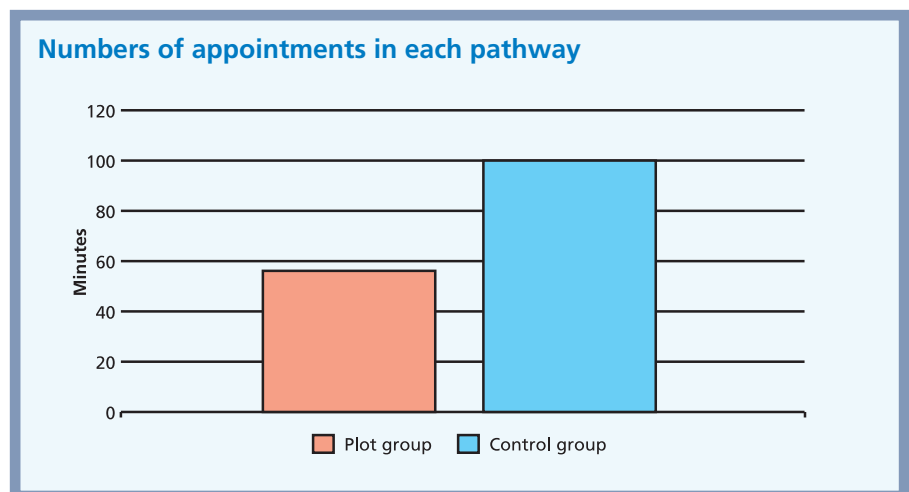
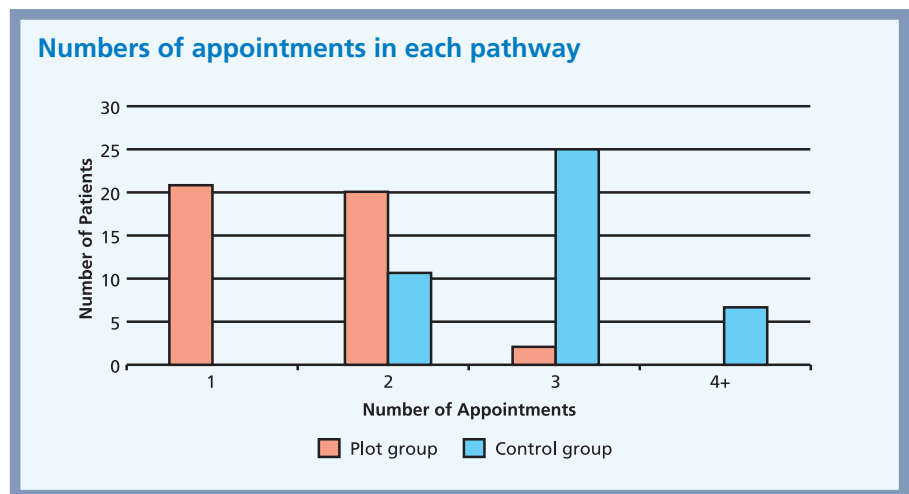
Being able to manage the ever increasing demand on local audiology services, while maintaining short waits and high quality services is becoming more difficult. It is essential that departments look at different ways of working to meet demand within the resources available.

This pilot involved redesigning the care pathways for patients who routinely require hearing aid reassessment, by developing new protocols and pathways and moving the service into a community location within a local health centre, reducing the appointment time in the clinic for the majority of patients. This was achieved with the introduction of a 'triaging' type appointment. This enabled patients to be assessed and those who had experienced no change in hearing, or only a mild deterioration requiring limited fine tuning, to be treated separately from those requiring a full audiological reassessment.

Those patients assessed as requiring the full reassessment would then be offered a further appointment, more appropriate to their need. This should improve the department's ability to manage waits by improving capacity and increasing efficiency within the service.

What they did

- Improved accessibility for patients who require reassessment of their hearing aid provision
- Provided a service that is delivered safely and effectively at a location that is closer to the patient's home
- Developed clear and consistent referral criteria
- Reduced the number of steps in the patient pathway
- Reduced the overall time spent in the clinic environment
- Achieved a 46% reduction in number of attendances each patient has to make in the new pathway and a 43% reduction in the time spent in clinic
- Managed a greater number of patients within existing resources
- Maintained clinical quality within a shortened appointment
- Conducted a comprehensive patient satisfaction survey to assess opinion on the new pathway.



Benefits

Quality

- Clinical quality is maintained.
- Patient satisfaction is increased.
- Patients satisfaction results show that 97% of patients from the pilot group would prefer a service local to them.

Innovation

- The pathway has been refined, minimising inefficiencies and creating a new model of care.
- A benefit to patients is identified by a 46% reduction in number of attendances each patient has to make in the new pathway.

Productivity

- Increased efficiency by reducing the time spent in clinic by 43% and the number of appointments required by 46%.
- A greater number of patients can be managed within existing resources which will allow recall for further reassessment in a more timely way, working towards the RNID gold standard of every three years.
- Patients are managed with the same clinical quality in a reduced overall appointment length.

Prevention

- Additional capacity has been identified to enable patients to be recalled for reassessment every three years.

Contact

William Brassington

Consultant Audiologist / Head of Audiology

William.Brassington@nuh.nhs.uk

Care in the community for those needing diagnostic assessment

Trafford Healthcare NHS Trust

Presenting Issues

To improve access to hearing assessments clinics by providing additional community based services The audiology team developed improved, streamlined pathways for adults with hearing loss and conducted a thorough review of the existing skill mix and roles within the department. The revised pathway was delivered from two community based sites.

Trafford Healthcare NHS Trust plans to become an integrated care organisation. Part of this project was to build upon this intention and to further enhance the working relationships between social care and the local primary care trust providing seamless community based care, for those in the community who have long term conditions or a long term need.

What they did

- Agreed a reduction in the age of patients who were able to be seen by the audiologist for a diagnostic assessment from 60 to 16 years of age
- Worked in partnership with ENT colleagues to enable audiologists to refer for MRI scans as part of the diagnostic assessment
- Achieved a reduction in the number of steps in the patient pathway
- Moved care closer to home and into two community clinics using test booth facilities.
- Introduced extended roles for assistant practitioners

- 120 patients have been assessed across the two new sites during the pilot phase
- Conducted a patient survey to canvas opinion on new pathway.

Former Manchester City and United legend Denis Law has recently travelled the new clinical pathway.

'I am more than happy to endorse the new piloted way of working. I couldn't have wished for a smoother journey.'

Benefits

Quality

This pilot project has reduced the need for lengthy journeys for patients to travel into the acute trust .A patient satisfaction survey was conducted with very positive outcomes and the number of steps in the pathway have now been reduced. Staff satisfaction with their role has increased significantly.

Innovation

By moving care into the community and closer to the patient's home, the Trust has responded to the wishes of patients. Trafford has the smallest audiology department in the North West and is one of the first trusts planning to become an integrated care organisation.

This means the trust will work in partnership with social care to provide seamless care in the community for a range of long-term conditions. This pilot model of care fits perfectly with this vision.

Productivity

With the additional clinics in place in the community, patients can now be seen within two weeks of a referral

Contact

Mike Philbin

Specialist Audiologist and Acting Head of Audiology

Mike.Philbin@trafford.nhs.uk



Direct access tinnitus patient pathway

Introduction

The publication of the *DH Good Practice Tinnitus Guide, Provision of Services for Adults with Tinnitus*, sets out the vision for services and commissioning pathways. It suggests that for many patients, the pathways for effective care are not always streamlined or as efficient as they could be. Tinnitus or perception of sound in either one or both ears may be reported as the only complaint or it may be a symptom of one or more underlying pathologies. In the UK, a longitudinal study, published by Davis and El Rafaie¹ suggests 10.1% of adults had experienced episodes of tinnitus lasting more than five minutes and in 5% the tinnitus was moderately or severely annoying. 0.5% of the study population were affected severely enough for it to have a serious impact on their ability to lead a normal life.

The experience of tinnitus can lead to many complex sets of complaints. Patients may experience distress, helplessness or frustration, depressive episodes, sleep disturbances, lack of concentration and, in a smaller proportion of patients, may be chronically disabling. In some

patients, tinnitus may be associated with medical or otological conditions that need investigation and surgical management. Consequently, triage and differential diagnosis at an early stage of presenting symptoms is therefore critical, to not only identify appropriate management but reduce the impact for both the patients quality of life and use of healthcare resources. Any delay in access to services can potentially impede the process of tinnitus management and lead to a greater number of follow ups by professionals.

Summary

Three pilot sites aimed to implement a direct access audiologist/hearing therapist-led clinic to enhance patient satisfaction, improve tinnitus management outcomes and reduce referral to treatment times.

The sites chosen were:

- **University Hospitals Birmingham NHS Foundation Trust – Selly Oak Hospital**
- **Sherwood Forest Hospitals NHS Foundation Trust – Kings Mill Hospital**
- **Newcastle Upon Tyne Hospitals NHS Trust – Freeman Hospital**

Baseline information from surveys and focus groups illustrated that patients often received limited advice on management of tinnitus in primary care. Lack of awareness of tinnitus management strategies and knowledge of services available in primary and secondary care was also recognised. In addition, patients experienced delays of up to 20 weeks before attending tinnitus management clinics when referred from ENT outpatients.

Early findings from pilot sites suggest that between 60 to 85% of tinnitus referrals could be managed by a direct access audiology service, provided that staff have the appropriate knowledge and skills, are deemed as competent, and work within clinical guidelines and protocols to enable access to ENT consultants, if required. A reduction in referral to treatment times from 14 weeks to less than four weeks has been achieved. This efficiency has released up to 85% of tinnitus outpatient capacity, started to reduce follow ups required, and enhanced patient satisfaction. Whilst the numbers of patients accessing the direct access service are small, due to

the project timescales, further monitoring will provide better insight into clinical advantages, improved patient experience and value for money.

Presenting issues

Traditionally within all sites the majority of referrals into tinnitus management clinics were from ENT consultant clinics with a large proportion of patients suffering from bilateral tinnitus with no underlying medical condition. Sites were convinced that many of the adults being referred to ENT consultants with tinnitus could have been managed by audiologists, healthcare scientists or hearing therapists with the appropriate level of training. This was illustrated by a retrospective patient record audit, carried out by Newcastle Upon Tyne Hospitals NHS Trust, who found that 60% of patients referred to ENT could potentially be seen in a direct access clinic. This compares with Sherwood Forest Hospitals NHS Foundation Trust who found that 73% of referrals from ENT were for bilateral tinnitus in an audit carried out in 2007. All three pilot sites were therefore interested in developing a direct access referral criteria and management pathway. The aims of the projects were to implement a direct access audiologist/hearing therapist-led clinic, to enhance patient satisfaction improve tinnitus management outcomes and reduce referral to treatment times.

Baseline information from pilot sites identified the following key issues:

- **Delay in patient access to tinnitus** management clinic of between 12 and 28 weeks in the pilot sites.
- **Increased emotional impact of tinnitus**, reported by patients who had a delay in access to service.

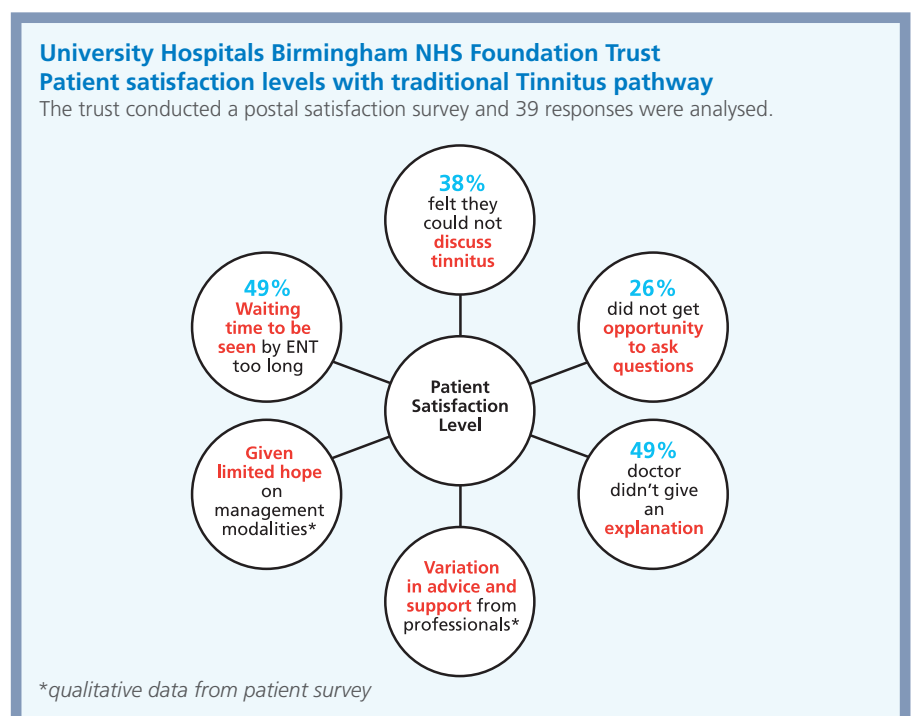
The patients’ story:

‘To try and speed the process of hospital referral up, that certainly would have helped me, I felt I was on my own and not able to cope.’

‘The emotional impact of Tinnitus can be extremely destructive, I lost my job, lost a relationship, it was tough.’

Focus Group North Tyneside Disability Forum Tinnitus Group

- **Variation in patient satisfaction levels** with speed of access to ENT outpatient clinic, explanation of tinnitus, ability to discuss condition, opportunity to ask questions and helpfulness of appointment.
- **Inconvenience for patients attending multiple hospital visits** prior to being seen by tinnitus management clinic – a potential of five visits to hospital, with contact with a variety of professionals.
- **Inconsistent information given to patients** by different professional groups can lead to patients requiring more frequent follow up visits due to delay in acceptance of condition and ability to adopt self management strategies due to anxiety and distress.



What they did

All sites set out to pilot a 'one stop' direct access tinnitus service using a strict referral criteria.

Direct access tinnitus referral criteria

Adults, over the age of 16, complaining of persistent, troublesome tinnitus should be referred directly to audiology.

Exclusion criteria

- Unilateral or asymmetrical hearing loss.
- Pulsatile tinnitus or tinnitus described as a cracking, popping or clicking noise
- Persistent otalgia or aural discharge affecting either ear
- Vertigo

A range of different approaches to setting up the service were used;

Newcastle Upon Tyne NHS

Hospitals set out to provide the evidence to support the need for change in pathway by a retrospective patient record audit and working collaboratively with the Newcastle Upon Tyne Disability Forum Tinnitus Support Group. They set up a focus group to identify the issues with the current pathway and consulted with patients regarding their views on the direct access service. They worked collaboratively with fifteen ENT consultants, to agree pathway, develop criteria for referral and protocol for care.

Contact**Tom Davison**

Senior Chief Audiologist,
tom.davison@nuth.nhs.uk

University Hospitals Birmingham

NHS Foundation Trust set out initially to triage ENT referrals, prior to publishing direct access service via Choose and Book appointment system. An additional 'one stop' clinic per week was set up to accommodate direct access referrals. The clinic was managed jointly by audiologists and hearing therapists, and in collaboration with twelve ENT consultants.

Contact**Huw Cooper**

Consultant Clinical Scientist,
Huw.Cooper@uhb.nhs.uk

Sherwood Forest Hospitals NHS

Foundation Trust set out to implement one direct access clinic per week via Choose and Book. Commissioners and users of service contributed to the steering group. Following agreement of the new pathway, public, primary and secondary care communication strategies were used to raise awareness. The clinic was managed by one audiologist, in collaboration with three ENT consultants.

Contact**Michelle Booth**

Audiologist, Chief Audiologist,
michelle.booth@sfh-tr.nhs.uk

How they did it**Pilot sites used a range of approaches to achieve goals:-**

- **Set up steering groups** and engaged/ influenced stakeholders including ENT consultants and trust management. Patient representatives attended steering group meetings.
- **Consulted with patients** to provide information about the pilot site project and obtain first hand feedback about the historical pathway.
- **Process mapped historical patient pathways** and agreed new pathway, in collaboration with all stakeholders
- **Worked collaboratively, with ENT colleagues to agree direct access referral criteria** and safe protocol for 'red flagging' those patients requiring to be seen by ENT consultant.
- **Agreed protocols for audiology led request for MRI** with ENT consultants and processing via trust clinical governance processes.
- **Reviewed methods of follow up** for patients by telephone, email or clinic attendance.
- **Calculated future demand and capacity for service.** Clinic appointments were increased from 45 to 60 minutes to allow more time.
- **Raised awareness of new pathway** by effectively engaging with the public, primary and secondary care via local community media and communication team strategies.
- **Piloted a 'one stop'** clinic for patients with tinnitus.

- **Implemented method for using individual management plans (IMP).** This defined each patient's agreed needs and records any agreed actions as they are completed. Patients are issued with a written copy of their IMP as well as information about tinnitus and local support groups.
- **Evaluated impact of service** using patient satisfaction, improvements in tinnitus handicap inventory, improvement in referral to treatment times, number of follow ups and requests for MRI scans.

Benefits

Quality

Improved patient experience - Both pilot sites have demonstrated that the direct access service improved the patients experience and satisfaction levels of the service. University Hospital Birmingham NHS Foundation Trust found that greater than 90% of patients felt that the appointment was helpful and they had to wait less time than expected.

Improved access and treatment times - Pilot sites have demonstrated significant improvements in access and treatment times for patients suffering from bilateral tinnitus. Both sites reduced their wait times to less than four weeks.

More optimum use of staff skills in the pathway has led to ENT consultants seeing the right patient at the right time. Andrew Reid, ENT Consultant, University Hospitals Birmingham NHS Foundation Trust reports.

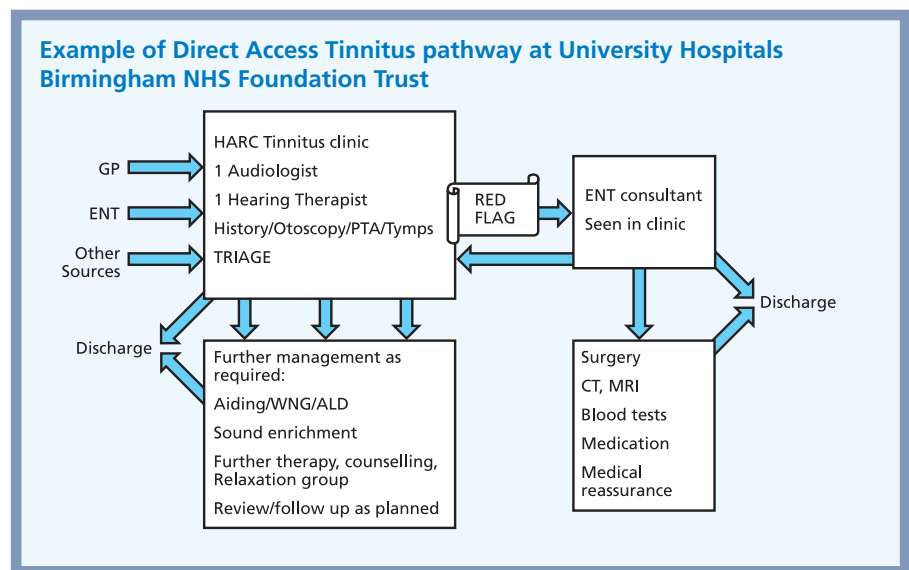
Improved patient experience; What patients said:

'I understand this is a pilot scheme, it seems really good and helpful. If at all possible, it should be continued, there is more tinnitus out there than maybe is known'.

**Sherwood Forest Hospitals NHS Foundation Trust,
Patient satisfaction postal survey**

'At the clinic they helped me; reassured me and helped me get all the information I needed. I wish I could have got there sooner. I now have hearing aids and live quite happily with my tinnitus.'

**University Hospitals Birmingham NHS Foundation Trust,
Patient satisfaction survey**



- University Hospitals Birmingham NHS Foundation Trust**
- 15% (two out of the 13 patients seen) were 'red flagged' as requiring referral to ENT (due to unilateral nature of their tinnitus). One patient requested to see an ENT consultant for reassurance.
 - Potential for 187 ENT outpatient slots released (based on annual referral demand of 220).
- Sherwood Forest Hospitals NHS Foundation Trust**
- 20% (Five out of the 25 patients seen) were 'red flagged' as requiring referral to ENT with one patient requesting to see the consultant. 48% were seen as one stop service
 - Potential for 80 ENT outpatient slots released per annum (based on annual referral demand of 120).

'This new pathway enables more effective access for other patients that require an ENT opinion. Only a small volume of patients with tinnitus need a medical opinion eg. Objective tinnitus - these are pulsatile tinnitus or complex patients, of which tinnitus is a symptom with multiple medical issues.'

Improved GP and public awareness to enable more appropriate referrals - Early findings from Sherwood Forest Hospitals NHS Foundation Trust suggest that their communication strategies raised both awareness with both GPs and the general public.

Innovation

Direct access services are common place for hearing loss, however, direct access services for tinnitus is evolving. The pilot sites demonstrate that the model of service provision should be based around matching the skills of the professionals to the patient needs.

Productivity

Release of ENT outpatient appointments - This pathway has the potential to release between approximately 60 - 85% of ENT tinnitus outpatient appointments.

Reduction in audiology/hearing therapy follow up appointments - Early findings at Sherwood Forest Hospitals NHS Foundation Trust illustrate potential reduction in new to follow up appointments.

Prevention

Improving access and management of tinnitus has the potential to improve the quality of life as patients may become less prone to sleep disturbance, anxiety, depression and may enable more effective use of therapeutic drugs or psychological support for patients. Robust clinical outcome data will need to be collected in order to validate these assumptions.

Commissioner Impact - NHS Nottinghamshire County supports extension of pilot to gain a better insight into improved patient experience and value for money of service:

'The team have been very enthusiastic and driven in making improvements to access and outcomes for adults with tinnitus. Early patient feedback is positive particularly about early access to the service and the excellent quality of care and advice given to them. As numbers of adults accessing the service has been understandably small due to the project timescales, I would be supportive of the pilot to continue a little longer to gain a better insight into the clinical advantages, improved patients experience and value for money of this service.'

Ellie Bevan-Davies, Head of Procurement and Market Management at NHS Nottinghamshire County

Reference

1. Davis A and El Rafeie. Epidemiology of tinnitus, In Tinnitus Handbook (ed RS Tyler). Singular. Thomsom Learning. San Diego, 1-23. 2000.

Balance

Introduction

Community based studies in England and Scotland have suggested that 20-25% of the population experience symptoms of dizziness/vertigo, with one quarter losing time from work.

Referral pathways can be lengthy and complex. At Heart of England NHS Foundation Trust in Birmingham, patients were taking on average just under five years to receive a diagnosis and subsequent management of their balance problem (HEFT Balance Service Audit 2007). This is typical to that found by other specialist balance services in the UK, with patients seeing on average 4.5 specialists before receiving a diagnosis.

Balance projects were undertaken by three very different services;

- The National Hospital for Neurology and Neurosurgery, Queen Square, London - a tertiary service led by audio-vestibular medicine based at the National Hospital for Neurology
- Cambridge University Hospitals NHS Foundation Trust (CUH) - a well established audio-vestibular diagnostic and rehabilitation service working in partnership with otology/neurotology in a large teaching hospital. The local catchment area is both rural and suburban

- Heart of England NHS Foundation Trust, Birmingham - A multi-disciplinary team, based in an urban area, working together providing a joint consultation.

Summary

In the balance projects, multidisciplinary teams worked with patients to agree protocols and clinical pathways, that improved access to the appropriate professionals and investigations and therefore led to earlier diagnosis and treatment. Each of the three balance sites developed a more coherent approach, providing consistent information to meet the needs of the individual. Patients with a better understanding of their condition are more likely to adopt recommended changes and agreed management plans. Early management may prevent falls and development of associated conditions, such as depression.

The projects highlighted the following emerging themes;

- Good clearly-communicated referral protocols and pathways.
- Opportunities for inter-professional learning and extended roles.
- Patient engagement events highlighted the importance of early diagnosis and intervention.

- Benefits of supporting information to meet the individual patient's needs.

Presenting issues

All three sites highlighted the need to understand the patient journey and the flow of information. Each had evidence that a large number of patients had seen several professionals before being referred to the balance clinic.

The teams wanted to develop and validate clear pathways, ensuring the patient is seen by the most appropriate professional in a timely way, removing steps that did not add value. They were keen to involve all the stakeholders and to develop a multidisciplinary service model.

All of the sites struggled to obtain robust data, as very little useful vestibular specific data had been collected by the trusts. The use of outcome measures to monitor an individual's progress was inconsistent and the aggregated departmental data was not collected. This made collection of baseline data and projection of potential benefits difficult.

What they did

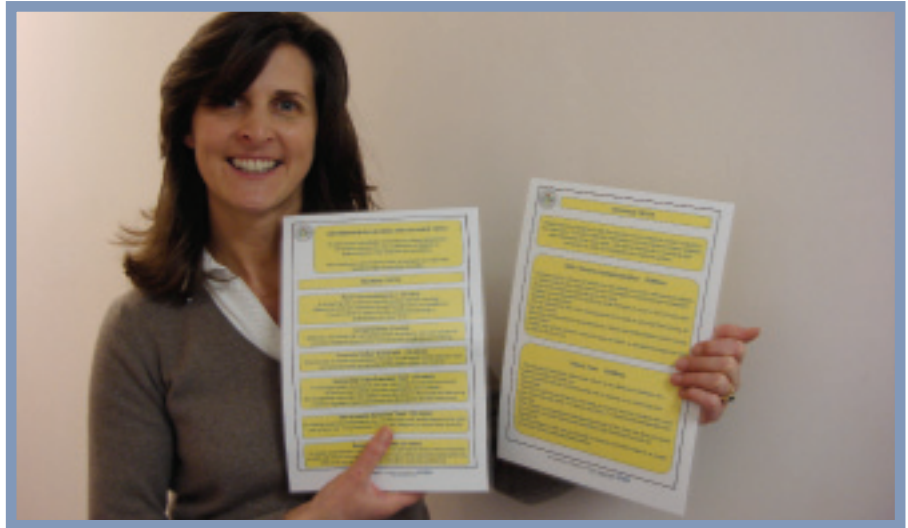
Queens Square

- Introduced a one-stop balance clinic with same day testing, diagnosis, physiotherapy and cognitive behavioural therapy (CBT)
- Implemented new patient triage into uncomplicated and complex balance patients, with experienced audiologists assessing the uncomplicated balance patients using a red flag system
- Extended the use of outcome measures and patient evaluation forms and collated the results of these to drive service improvement
- Production of patient information sheets on inner ear balance problems, benign paroxysmal positional vertigo (BPPV) and migraine associated dizziness
- Streamlining administrative processes, as a result of the process mapping session, the administration procedures were adjusted.

Contact

Dr Rosalyn Davies

Consultant in Audio-vestibular Medicine
rosalyn.davies@uclh.nhs.uk



Laminated test information sheet developed at Queens Square

Cambridge University Hospitals

- Built upon existing clinical partnerships (otology/neurotology) and consolidated a thriving multidisciplinary team
- Created a service topography dataset to be collected monthly and reported back to the team
- Produced a written patient pathway and information leaflets for the service
- Introduced written individual management plans (IMP) for patients and made them available electronically to other professionals
- Implemented a patient outcome measures protocol and established a database to collate results
- Enabled patient involvement in the service and better communication between local professionals managing balance patients.

Contact

Katy Butler

Clinical Scientist (Audiology),
katy.butler@addenbrookes.nhs.uk

Heart of England

- Developed an improved network of stakeholders by reviewing pathways and developing relationships with those who contributed to it
- Used a range of innovative ways to consult patients and involve them in service developments
- Worked in partnership with local commissioners and gained a better understanding of costing the multi-disciplinary joint consultation service model
- Changed the pathway to enable patients to access other specialist services without having to return to their GP for a new referral
- Agreed referral criteria for access to services and for onward referrals into acute or specialist balance service.

Contact

Amanda Casey

Hearing Therapist,
amanda.casey@heartofengland.nhs.uk

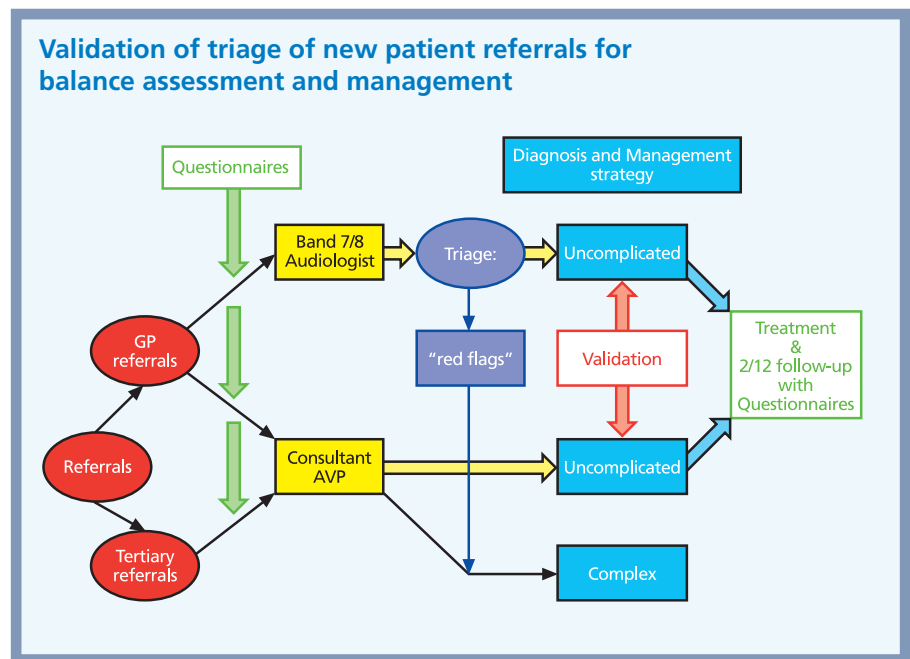
How they did it

Key stakeholders were identified and project teams established at each site, all included a physiotherapist. Each of the sites looked at demand and held process mapping sessions with stakeholders, then identified the steps in the process that were unnecessary and did not add value (value stream analysis). Heart of England included a patient representative and her husband in the session. She was able to articulate her experiences and feelings as she travelled along the pathway in a positive and constructive fashion. All the stakeholders were then able to collectively address any issues identified and develop improved processes and pathways. At Queens Square the secretarial staff highlighted duplication of work and several systems being used to book follow-up appointments, leading to additional checking.

Each of the teams developed new multidisciplinary pathways, to get the patients to see the most appropriate professionals at the right time, reducing the number of visits. This involved reviewing the skill set of the team; at Queens Square the experienced band 7/8 audiologists received additional training so they were able to see some

straightforward GP referrals in place of audio-vestibular medicine (AVM). Taking detailed medical histories, examining patients, undertaking or arranging appropriate investigations, making a diagnosis and agreeing appropriate management. This was done in parallel with AVM clinics,

thus the consultant was available to provide guidance and see patients. To ensure safe clinical practice, the consultant audited the 16 patients seen on this new pathway against a red flag questionnaire developed by the team.



Patient and Public Involvement

Each site wanted to improve the quality of information provided to patients and their families. This involved consulting with patients and GPs, developing individual management plans, new patient information leaflets and diagnostic test information cards.

The sites worked with reader panels and produced a range of balance related information leaflets. The title 'Migraine Associated Dizziness' for one leaflet was a suggestion from a member of the reader panel.

All of the teams used patient questionnaires, at Queens Square this highlighted issues with the waiting area, the audiologists are now feeding this back and working with the architects designing the new department.

Cambridge University Hospitals NHS Trust held a facilitated patient forum to probe the issues important to their users and changes made as a result of their comments will be fed back.

Heart of England had an experienced interviewer record a Discovery Interview; they were able to share the learning from this with the team and other stakeholders. The team found this very powerful, it highlighted the importance of planning and training in this technique, as the emotional impact on the patients can be profound.

'The exercises I was given helped greatly to give me confidence.'

Focus Group Patient

Benefits

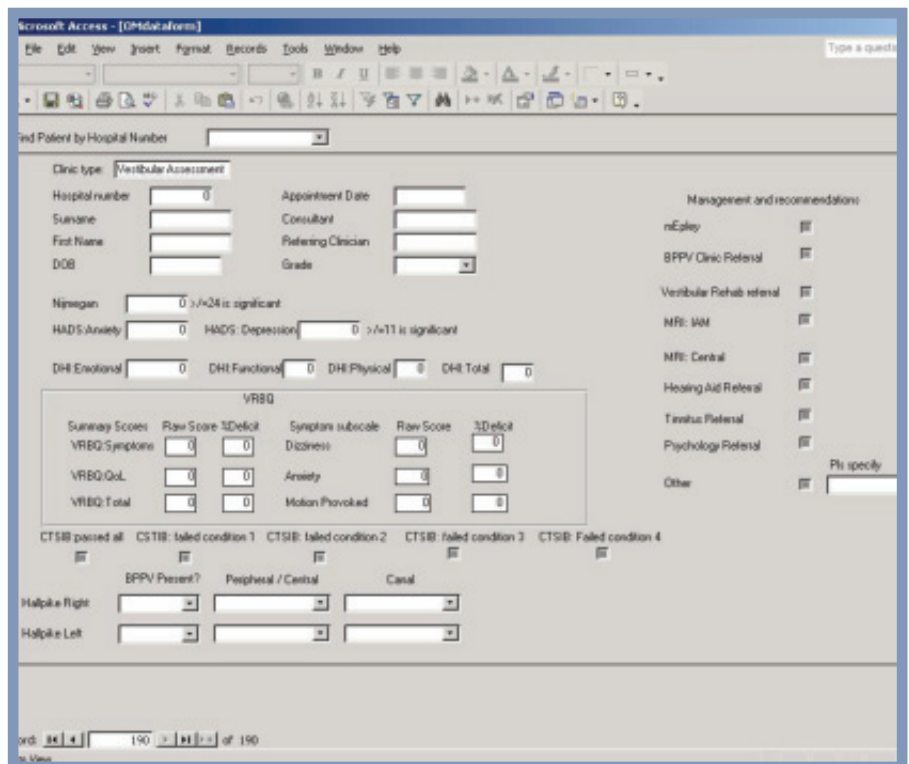
Quality

The enhanced quality is reflected in the quality enhancement tools (QET) scores, Cambridge University Hospitals NHS Trust used the relevant QET sections to assess the quality of the balance service alone, in just nine months they managed to increase the number of sections achieving level A by 19%.

MDT brings together specialists in managing balance focusing on the patients needs, providing evidence based care that delivers the desired outcomes.

Sites are now using outcome measures, although only small numbers were available at the time of writing, they are able to demonstrate improvements.

At Cambridge University Hospitals NHS Trust 80% of patients have individual management plans (IMPs) completed within 48 hours of their appointment. These are stored on the trust patient management system along with vestibular assessment reports, allowing the relevant professionals trust wide access.



An increased range of informative and up to date patient information leaflets are now available.

Innovation

Implemented joint patient consultations with MDT.

- Development of new pathways and extended roles, ensuring a clinically effective and safe pathway.
- Consulted with and involved patients in service review and development.

Productivity

The improved understanding and data collection at the sites is to be maintained and used to:

- understand and monitor demand and activity
 - facilitate service developments
 - collate patient outcome measures
 - communicate progress effectively
 - support audit and research
 - develop robust business cases
 - determine cost of service.
- Clear protocols and use of red flags resulted in more appropriate and better quality referrals to the correct professionals.
 - Reduced costs as patients seen sooner by the correct professionals leads to less duplication of work and unnecessary investigations.
 - Reduced number of appointments in the new pathways.

All sites anticipate a reduction in did not attend (DNA) rates, Heart of England has been able to demonstrate a drop in DNA rate for vestibular function testing from 50% to 5%.

Prevention

- Patients able to return to work sooner and may be less prone to falls and chronic depression, more evidence is needed to verify this.

Collaboratively working with ENT to redesign pathways

Introduction

The Royal National Throat, Nose and Ear Hospital (RNTNE), at Royal Free Hampstead NHS Trust, set out to pilot an audiologist-led triage assessment clinic for new outpatient ENT referrals. Whilst RNTNE is a tertiary centre, a large proportion of work is also for the local population. The Trust also has a well-established Audiovestibular Medical Department.

Patients referred to RNTNE may have multiple appointments from ENT, audiology, ENT follow up appointments to referral to the audiovestibular team to enable management of condition. This delay in access can lead to considerable distress for patients and impact on their quality of life.

Summary

Initial findings suggest that 75% of ENT otological referrals did not meet 'red flag criteria' and could potentially be managed by the diagnostic audiology department in a direct access service, by staff with the appropriate skills and the ability to request MRI scans. This efficiency could result in shorter waiting times for ENT. In 95% of cases, audiologists and ENT were in agreement as to the referral pathway to audiovestibular medicine or ENT.

This project demonstrates how audiologists and ENT consultants worked collaboratively to develop a robust method to validate the knowledge and skills of audiology staff. This approach may be useful for

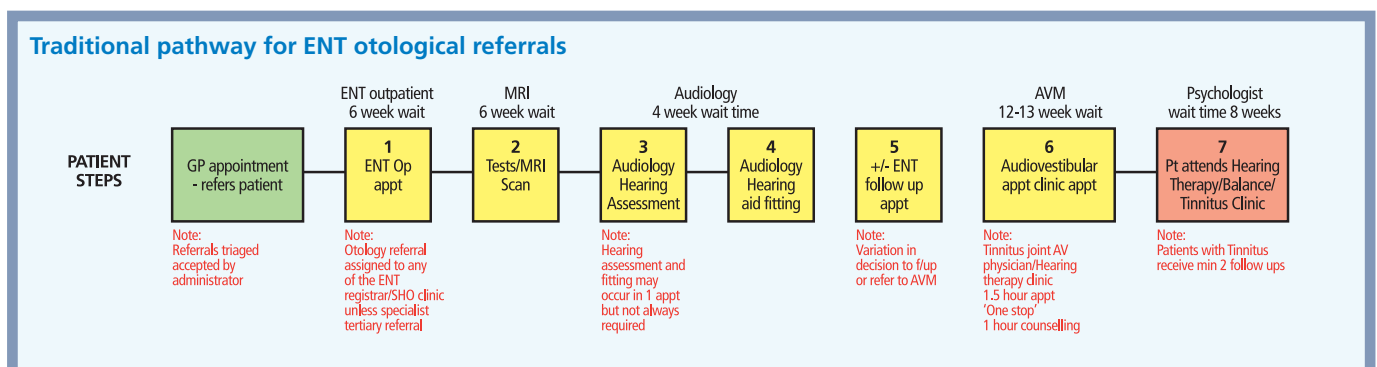
providers who may have concerns regarding the expansion of direct access audiology services.

Presenting issues

Traditionally, the majority of patients suffering from otological conditions are referred to ENT and are seen in any of the 14 consultant clinics. Patients return for a further visit for any tests and may either be followed up by ENT or referred to audiovestibular medicine (AVM). AVM is not accessible via Choose and Book.

Key issues identified with ENT audiology pathways were:-

- Delays in access to ENT and threshold for referral on to AVM



- Inconvenience for patients as multiple steps in pathway eg tests often carried out after ENT appointment
- Perception that audiologists skills not utilised to full potential.

What they did

The overall aim of the project was to streamline hearing, balance and tinnitus pathways using effective triage of ENT referrals by audiologists. The team determined the number of suitable referrals (i.e. did not meet any red flag criteria indicating referral to ENT), and to validate skills of senior audiologists to assess and make decisions regarding appropriate management.

How they did it

- **Process mapped patient pathways and agreed a new pathway**, in collaboration with all stakeholders
- **Conducted a prospective patient record** audit to determine which otological referrals met 'red flag' criteria for referral to ENT
- **Set up an audiologist-led triage assessment clinic**
- **Developed a clinical assessment proforma**
- **Developed a system for recording outcome and evaluating the assessment process**
- **Developed questionnaires to evaluate patient and staff satisfaction with service.**

Benefits

Quality

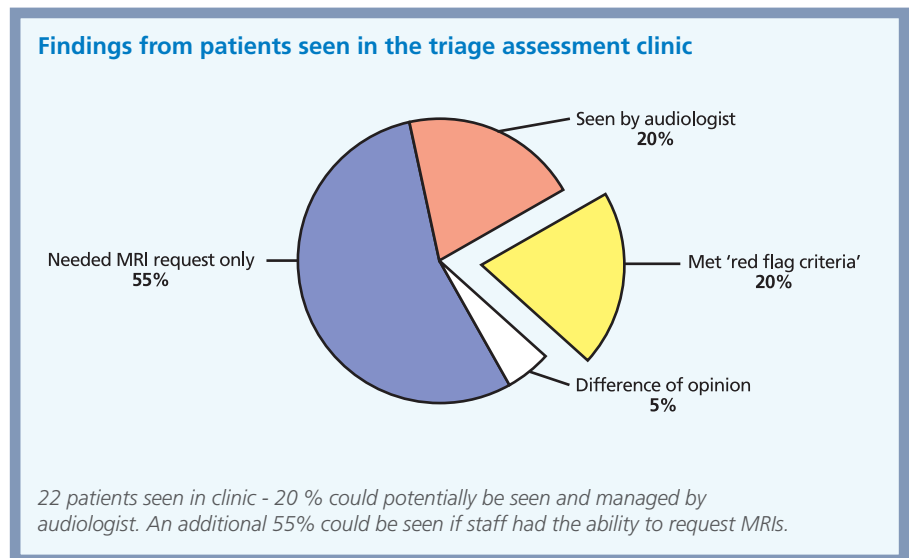
This pilot provides evidence for optimum use of staff skills to enable patients to be seen by the right person at the right time, enhancing the patient experience.

Innovation

The approach to this pilot provides a robust method to validate the knowledge and skills of audiology staff, where providers may be cautious.

Productivity

The new model would potentially release approximately 45 RNTNE outpatient appointments with ENT per week.



Adults with complex hearing needs

Introduction

Referral of adults, with complex hearing needs, from secondary care providers to specialist tertiary centres is often dependent on knowledge and skills of referring providers and resources available for testing and management. Adults with complex hearing needs may have undergone several hospital visits prior to referral to a specialist centre for a comprehensive assessment. Whilst there are many providers with designated clinics for patients with learning disabilities there is a need to ensure that other patients with complex needs receive adequate appointment time and expertise to meet their needs, in a timely manner.

It is vital that referrers are aware of specialist services to ensure patients receive prompt appropriate treatment and to minimise any delays in their pathway. Central Manchester University Hospital NHS Foundation Trust found evidence to support that there was variation in thresholds from referring providers to specialist services. For example, an audit of referrals to the Manchester cochlear implant programme indicated that patients with a severe to profound hearing loss had lived with their

symptoms for, on average, 12 years before being referred for the most appropriate treatment.

Summary

Central Manchester University Hospital NHS Foundation Trust, aimed to develop a service for adults with complex hearing needs which has flexible yet clearly defined, pathways of assessment and rehabilitation for patients referred from providers throughout the northwest region.

Initial findings from the pilot site suggests delays in referral for optimal management of patients with complex hearing needs. A key issue was the difficulty assessing demand for the service, due to varying management of patients by referring providers.

The project highlights the importance of referring providers being aware of specialist services to ensure patients receive prompt appropriate treatment and to minimise any delays in their pathway. The development of a regional complex hearing needs network enables providers to achieve this by working collaboratively to enable patients to receive the most appropriate care.

Presenting issues

Central Manchester University Hospitals NHS Foundation Trust, audiology department at Manchester Royal Infirmary, provides comprehensive secondary and tertiary services to patients. Much of the tertiary work arises from specialist referrals to the ENT department, and many of these referrals are patients with complex hearing needs.

The audiology team were interested in developing a service for adults with complex hearing needs, which has flexible, yet clearly defined, pathways of assessment and rehabilitation for patients referred from the north west region. Designated clinics for patients with auditory processing disorders (APD) and learning disabilities were well established within the department.

Definition of Complex Hearing Need

- Fluctuating hearing loss (e.g. Meniere's Disease)
- Acoustic Neuroma (diagnosed)
- NF2 (diagnosed)
- Auditory neuropathy spectrum disorder (ANSO)
- Ski-slope audiogram
 - ≥50 dB octave difference between 0.5 and 4 kHz
- Severe-profound hearing loss
 - ≥80 dB HL at 2 and 4 kHz
 - Not CI candidates
- Conductive hearing loss
 - BC ≤20 dB HL with air-bone gap of ≥50 dB
 - Not BAHA/VSBC candidates
- Mixed hearing loss
 - AC ≥60 dB HL with air-bone gap of ≥30 dB
 - Not BAHA/VSBC candidates
 - Frequent (≥3) follow up/fine tune attendees
- Suspected non-organic hearing loss

Assessment procedures set up in clinic room

- Pure Tone Audiometry (PTA)
- Aided and unaided CUNY sentences (speech discrimination with lip reading)
- Aided and unaided BKB sentences (speech discrimination in quiet and noise)
- Threshold Equalising Noise (TEN) test (for dead regions)
- Evoked potentials
- Otoacoustic Emissions (OAEs)
- Tympanometry and acoustic reflexes.

There are some important issues that need to be addressed when dealing with this patient group and staff will need advanced diagnostic and hearing technology skills and equipment.

The team identified a need for a designated regional clinic for complex hearing needs patients and a regional network to agree referral criteria and share learning from clinic.

What they did

- Defined complex hearing needs
- Piloted a Specialist Hearing and Rehabilitation Clinic (SHARC) initially with internal hospital referrals
- Conducted a survey of local providers to determine service provision for this patient group
- Developed a complex hearing need network group for professionals

How they did it

- **Set up steering group**
- **Agreed criteria for referral to clinic**
- **Process mapped historical patient pathways** and agreed new pathway, in collaboration with all stakeholders
- **Estimated demand for pathway**
- **Piloted clinic 'Specialist Hearing and Rehabilitation Clinic (SHARC)' for three months**

- **Evaluated impact of service** by patient satisfaction level, clinical outcome measures and case studies
- **Conducted an online survey of local provider departments**
- **Set up a complex hearing needs network.**

Benefits

The development of this clinic provides many benefits in terms of clinical effectiveness and the opportunity for professionals to learn from peer review case studies.

Quality

- More clearly defined pathway and continuity of care for patients.
- 66% of patients reported improved level of satisfaction compared with previous experience.

Innovation

Introduction of a designated clinic for patients with complex hearing needs. The establishment of a regional complex needs hearing network is an example of how both secondary and tertiary providers can work collaboratively.

Productivity

The development and agreement of referral guidelines for local providers, via the regional network, will potentially lead to adults with complex needs being referred more appropriately, at the right time, to the right service to receive early assessment and hearing intervention. It is anticipated that this will lead to a reduction in the number of appointments offered either in local provider or tertiary centre, with a consequential positive impact on cost efficiency and waiting times. However, more robust data would need to be collected to validate this assumption.

Contact

Martin O'Driscoll

Head of Audiology,
martin.o'driscoll@cmft.nhs.uk

Shahad Saeed

Pre-registration Clinical Scientist,
Audiology
shahad.saeed@cmft.nhs.uk

'Being able to have a designated clinic for patients who require more complex testing has allowed me as a clinician to ensure I am giving my patient the best possible care in the best environment. As we progress with our experience of non-routine testing we will be able to offer patients a level of specialism and care more appropriate to their needs. I envisage development of 'gold' standard testing and care pathways for these patients. I look forward to developing my clinical skills and shared learning with my colleagues'

'SHARC gives the audiologist the time and resources to help patients with non-routine hearing problems. The close links it has with other specialist services, such as implants, means that patients can receive the most effective treatment for them sooner and, therefore enhance the quality of their lives'

Experience of staff working in SHARC - Staff responses:

Audiology transition projects

‘Transition for young people is much more than the transference of audiology care from paediatric to adult services, it is about moving from childhood into adulthood alongside all the confusion and uncertainties of their rapidly changing world.’

Introduction

The National Service Framework for Children, Young People & Maternity Services DH (2004) sets a standard that young people should be supported to make the Transition to adulthood so that their maximum potential in terms of education, health, development and well-being can be achieved. Furthermore, it makes clear that services and staff should respond to young people in a sensitive way to encourage engagement whilst providing high quality support to enable the *Transition* from dependence to independence.

Standard 4: All young people have access to age-appropriate services which are responsive to their specific needs as they grow into adulthood.

The National Service Framework for Children, Young People & Maternity Services DH (2004), p.119

For young people with additional long-term conditions or disabilities such as deafness, the move to adult services often involves a significant cultural change in experience which needs careful thought and handling to have a successful outcome for each young person.

The National Deaf Children's Society (NDCS) has provided guidelines for professionals working with deaf young people to help them to model services, *Transition from paediatric to adult audiology services in England, Quality Standards, NDCS (2005)*.

You're Welcome, DH (2007) says that all young people are entitled to receive appropriate health care wherever they access it. *You're welcome Quality Criteria*, DH (2009) lays out the principles, including self assessment criteria, to support services in delivering a seamless quality service. *You're Welcome* was included in the 2010-11 *NHS Operating Framework and highlighted in the government child health strategy Healthy Lives, Brighter futures*, DH (2009)

Summary

Patient consultation and involvement enabled three audiology pilot sites to investigate their local service gaps in order to develop new or improved models of transition from children's to adult hearing services.

Common themes around the engagement of young people have emerged from the pilot project work resulting in some key hypotheses. Once tested these hypotheses could lead to some potentially transferable learning.

- Audiology *transition* for young people needs to integrate with other partners (such as Connexions and education) into the wider *transition* process where the central focus is the individual. This will help to ensure that the educational, social, psychological and physical health needs of the individual are best met
- Raising the awareness of the importance of getting *transition* services right will encourage services to change to give improved access to young people, delivering better long-term outcomes for audiological health into adulthood

- Incorporating flexibility by introducing the *transition* process at a much earlier age, recognizing that young people will go through the process at their own speed, according to need and individual circumstance, and allowing the young person to *transition* at the right time for them
- Access is likely to improve by consulting and involving young people in designing the pathway and continuing to involve them in any changes.
- Improving information accessibility through the use of multimedia such as written leaflets, visual information and the use of technology for example, a website such as NDCSs '*The Buzz*' and social networking websites. Providing the option to view information in British sign language or subtitles will appeal to younger audiences allowing them to access information at their own pace, in their chosen language.
- Raising deaf awareness through training of audiologists and other *transition* professionals will improve the patient experience and engagement of young people.

The pilot sites

- NHS Devon in partnership with the National Deaf Children's Society
- NHS Tower Hamlets (leading) with NHS City and Hackney
- East Lancashire NHS Trust.

Presenting issues

Common issues between the sites included:

- High DNA rates at the first adult appointment
- Many young people being 'lost to follow up' in the *transition* process
- Lack of support and training for hearing service professionals concerning effects of hearing loss on young adults
- Lack of training in the use and repair of hearing aid devices used by paediatric services, often resulting in the young person having their hearing aid changed at their first adult appointment, despite being happy with their previous device.

NHS Devon found that although their *transition* model met with the *NDCS quality standards*, the uptake of their service was poor.

NHS Tower Hamlets and NHS City and Hackney had additional issues when young people being transitioned had to leave the specially constructed children's unit to attend appointments in older style unfamiliar buildings, with professionals who did not know them, to access disparate adult audiology services.

East Lancashire felt that their service did not meet the *NDCS* quality standards and that the adult only audiologists were poorly prepared to receive newly transitioned teenagers, despite services being housed within the same building.

NHS Devon in partnership with the NDCS



Photo Courtesy of NDCS

'I need help finding work as well as with my hearing aids, no one is helping me with that.'

'One had a beard so lip reading was impossible.'

Patient quotes - Focus Group

NHS Devon and NDCS used a multidisciplinary collaborative approach, led by a steering group of a wide range of stakeholders. The team sought the views of young people through five different focus groups and opportunistic meetings of youth groups.

What they did

The views of young people has shaped thinking in the modeling of a new integrated service where audiology services will be flagged by other professionals who are also working with young people in *transition*. Learning within this project includes an awareness of the difficulties associated with engagement of young people, the recognition that *transition* must be introduced at an earlier age to facilitate expectation and involvement and that the date of *transition* should vary according to individual need. The work identifies, in addition to young people with a severe to profound hearing loss, that those with a mild to moderate hearing loss can also benefit from inclusion to support their longer-term engagement with audiology services. The model, developed but as yet not tested, will commence in September 2010 and is hoped that this model - once tested -

will provide a quality service that can be commissioned and rolled out across the South West.

Contact

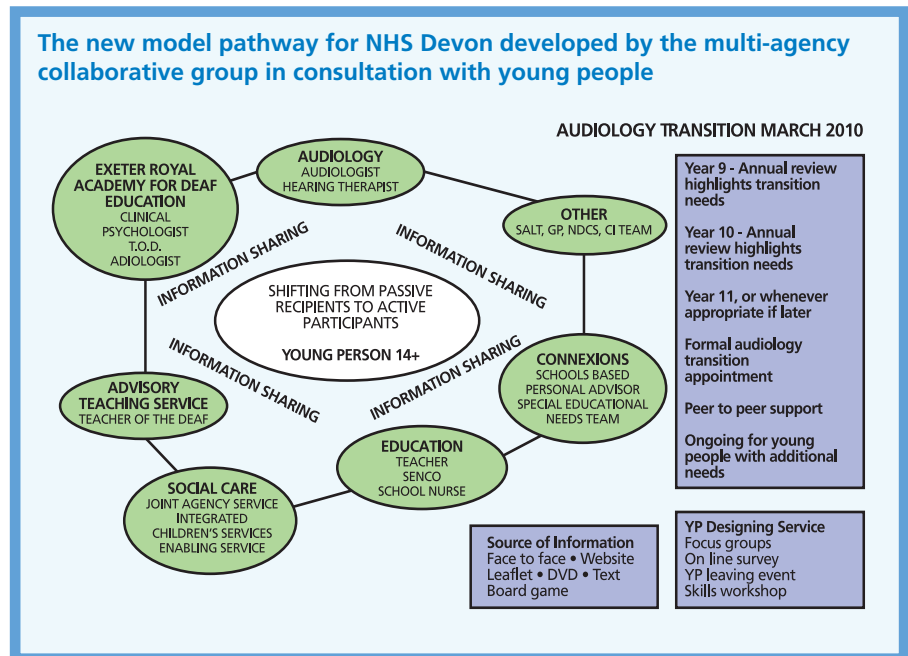
Louise Cole

NDCS Regional Director South West - louise.cole@ndcs.org.uk

or

Jonathan Parsons

Clinical Director of Audiology, NHS Devon, Royal Devon & Exeter NHS Trust jonathan.parsons@nhs.net



NHS Tower Hamlets and NHS City & Hackney



'I had less confidence in the adult service because it was my first time using this service and I didn't know how their service work because it looked so different to me compared to the children audiology department that I used before.'

Quote (unedited) patient questionnaire

The team sought the views of individuals experiencing the existing pathway and newly developed pathway using an electronic web based questionnaire.

What they did

Developed an improved pathway which decreases the length of time between the last children's service appointment and the first adult appointment, promoting the likelihood of attendance. The training of audiologists working in adult services on deaf awareness issues is helping to support young people through more appropriate communication. Technical training for audiologists in the use of an increased range of hearing aid devices. The team have produced an improved information pack in the form of two 'All you need to know' leaflets for young people, which includes contact details. Patient views will be monitored.

Key learning includes increased awareness that the *transition* process should begin at an earlier age and continue until the young person is ready to transfer to the adult service. This will be an individually negotiated

choice, with some patients choosing to transfer at an earlier age than others. Young people are much more likely to engage if there is a choice and a variety of media through which to do so. The increasing use of technology through use of websites and computers appeals to many young people so using an on-line tool to establish patient views may yield more returns.

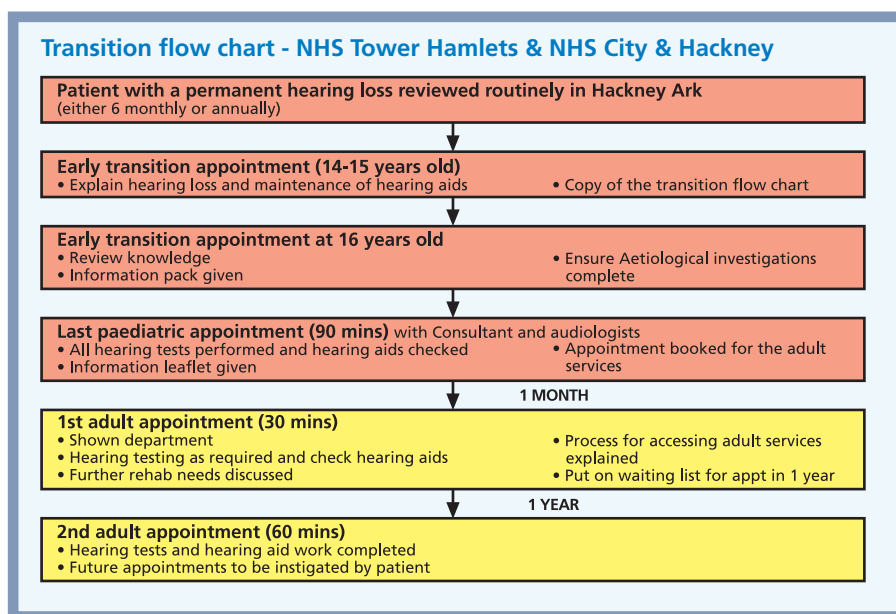
Contact

Karen Gaudoin

Lead Clinical Scientist, NHS Tower Hamlets & NHS City & Hackney
Karen.gaudoin@thpct.nhs.uk

Naomi Austin

Team Leader, Paediatric Audiology, NHS Tower Hamlets & NHS City & Hackney
Naomi.austin@thpct.nhs.uk



East Lancashire Hospitals

'At the moment, I feel that everything is already covered and continue doing as you are. The quality of the services are great.'

Patient quote

The team planned a patient forum to elicit patient views of the current service, and to shape a new improved pathway. However after efforts to recruit patients, they found there was little appetite from young people to attend a forum. Instead, the team designed and used a web based on-line survey similar to the one used by NHS Tower Hamlets and NHS City & Hackney. The questionnaire was sent to parents and carers as well as young people, as it was felt that some adolescents did not *transition* due to parental preference.

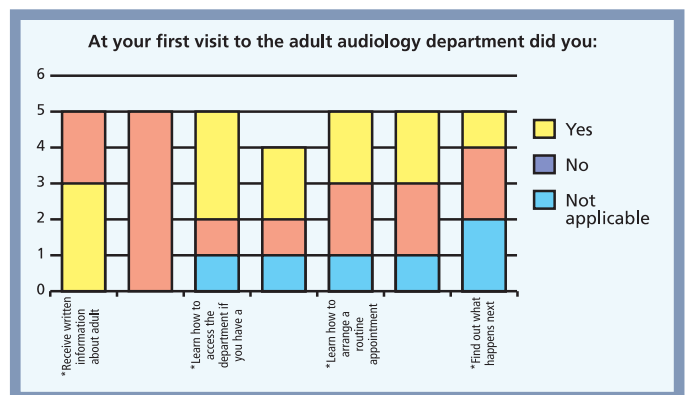
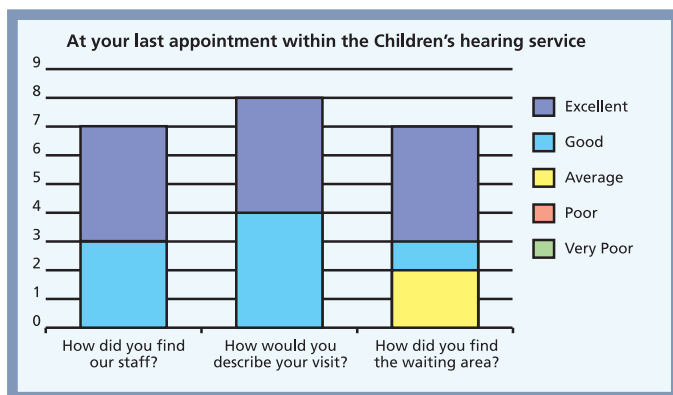
Responses to questions about children and adults hearing services:

What they did

On-line questionnaire results helped the team to shape a new pathway and to improve the quality of information leaflets, including a '*frequently asked questions*' section for young people. Four audiologists are being trained in new roles as '*transition audiologists*' to improve the patient experience through the service. It is expected that dedicated *transition* audiologists will encourage longer-term attendance in clinic. New software has been introduced providing dual access for both adult and paediatric audiologists.

Communication between departments is thus improved, benefiting ongoing care and treatment of young people through the delivery of a more seamless service.

Key learning includes the identification of a need for earlier *transition* information for patients and that *transition* is a '*stage*' rather than an '*age*' - different for every individual. Database interrogation revealed that a number of young people had never attended the adult department or were no longer wearing their hearing aids.



Therefore many young people may be living at a sub-optimal audiological level, possibly having an impact on their abilities within education or the workplace, or indeed at a psychological or social level. These potential difficulties may go on well into adulthood.

Contact

Dr Annabel Dodds

Consultant in Paediatric Audiology, East Lancashire

Annabel.dodds@elht.nhs.uk

or

Ian Whiston

Head of East Lancashire Hearing and Balance Service

ian.whiston@elht.nhs.uk

Benefits

Quality

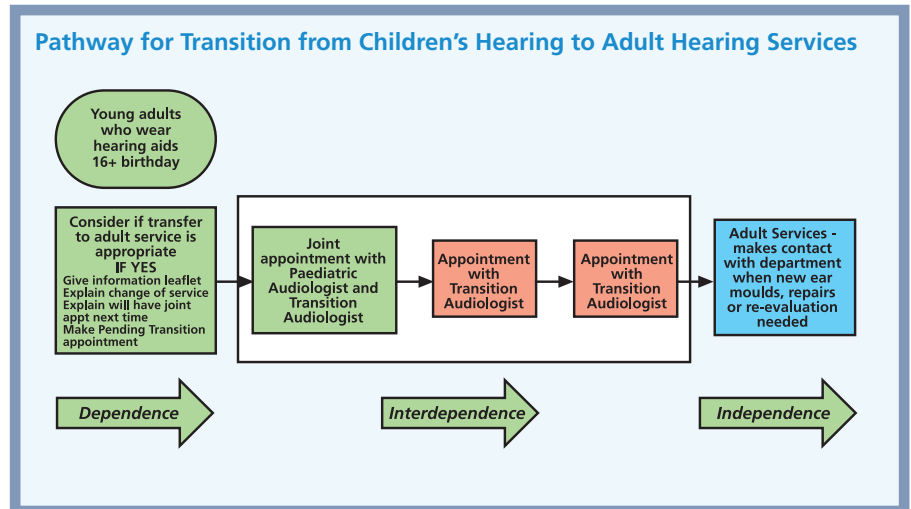
QET scores improved from 59% to 82% in 'quality of patient experience' (NHS Tower Hamlets and NHS City & Hackney).

Better preparation of patients to the concept of *transition* aiding the management of expectation and Information developed or improved - providing better support for young people.

Audiology teams have expanded their knowledge and skills and the changes made have led to more young people continuing with amplification in East Lancashire.

Innovation

Wider access to services by beginning transition at a younger (individually appropriate) age and the inclusion of young people with a lower level of hearing loss, improving the long-term outcomes.



Increased range of professionals (outside audiology) who will support the audiology *transition* service and widening of the *transition* context through integration and joint working with other *transition* services (NHS Devon).

Patient and public engagement through involving young people in the design, monitoring and improvement of audiology *transition* services, using a range of formats including technology such as websites commonly accessed by young people and on-line questionnaires.

The new role of *transition* audiologist will increase the delivery of a more focused service for young people, which will adapt through evaluation, to patient need (East Lancashire). Improved communication between adult and paediatric service through use of new software technology (East Lancashire).

Productivity

- DNA rates reduced from 33% (2008) to 14% (2010) during the project (NHS Tower Hamlets and NHS City & Hackney).
- Improved quality of *transition* services largely made within current resources.

Children's balance

Introduction

There is little epidemiological data on childhood balance disorders, but it has been suggested that 8% of 1-15 year-olds in the general population had suffered vertigo and dizziness, with over a quarter of those affected having symptoms severe enough to disrupt normal activity (Niemensivu et al, 2006). Children may present not only with symptoms of dizziness, but also with chronic instability labelled as clumsiness, or motor developmental delay.

The identification of the vestibular dysfunction, establishing the causes of dizziness, delayed motor function or balance problems allows for the appropriate medical and rehabilitative management to be applied. Balance testing and the interpretation of investigations, in young children, often involves a number of professionals, with skills and expertise in this area.

Referral to specialist tertiary children's balance clinics, overseen by specialist audio-vestibular physicians, is at best 'patchy' and dependent on geographical access to a specialist service. Children are often referred via paediatric/paediatric

audiology/neurology clinics, GPs or ENT services and may have undergone several hospital visits prior to referral for a comprehensive balance assessment.

Summary

Pilot sites sought to develop a consistent referral, triage, assessment and management pathway ensuring that the staff skills were matched to the needs of the paediatric balance patient. The aim of both projects was a more streamlined pathway leading to a speedier diagnosis, fewer patient visits and more rapid access to effective rehabilitation.

Following consultation, a DVD and information leaflet were developed to explain what to expect and alleviate both parent and child anxiety.

Presenting issues

- **St. George's Hospital, London** - had a tertiary referral process, but the growing referral stream over time, and lack of proper selection of referrals have been leading to decreasing service capacity, longer waiting times and in-efficient use of resources. It was felt that the introduction of the II tier level vestibular screening service by a

paediatrician skilled in developmental assessment as well as in audiology, and who is trained in the vestibular screening and assessment, should allow more appropriate referrals to be seen in AVP clinics. This will lead to a better use of the III tier resources (experienced staff and expensive equipment). There was additional complexity, in that the secondary care level service was managed in a community setting across a diverse range of providers. The level of training, and therefore competence to manage paediatric balance disorders, was considered to be variable.

- **Sheffield Children's Hospital** - had their previous children's balance service withdrawn by the neighbouring acute trust, due to a lack of paediatric facilities on site. They had acquired new specialised testing equipment for the Children's Hospital, via charity funding and wanted to develop a new comprehensive paediatric balance service, with a clearly-defined clinical pathway. The pathway would determine which patients required the input of an AV physician and which could be managed appropriately by a

specially trained healthcare scientist (HCS). This paediatric balance service was wholly based in a paediatric acute trust.

What the sites did

St George's Hospital

- Developed a clear triage system for referral at tier II and III.
- Developed clear screening tools to facilitate the triage and set up the tier II vestibular screening service in the community.
- Identified educational needs to improve the quality of appropriate referrals.
- Retrospective audit to identify source and appropriateness of referrals for 70 patients (see graph), to inform pathway redesign.
- Identified an internal tier III streamlined pathways for children with vestibular disorders. The simple triage of the referral letters for children below and above age seven allowed redirection of children to correct pathway.
- New pathways allowed increased numbers of patients to be seen in the consultant clinic from three to five per session. The clinic now runs more efficiently, with younger patients being assessed for vestibular tests at the time of the clinic and older children having had their vestibular tests done prior to clinic.
- Less complex follow-up appointments seen in a tier II vestibular clinic by the community paediatrician, with special interest in balance disorders, working in parallel with the AVP. This increased clinic capacity and enhanced the diagnostic skills of the paediatrician.
- Confirmation of clinic slots by the clinic co-ordinator, via a reminder service, to reduce clinic DNA rates.

- Adoption of the experience based design (EBD) tool to capture the patient experience and inform ongoing service improvement.
- Implementation of a special interest group across Wandsworth (with the aim of future wider roll out to Kingston, Richmond and Sutton and Merton).

Contact

Ewa Raglan

Consultant Audio Vestibular Physician (Clinical Project Lead)
Ewa.Raglan@stgeorges.nhs.uk
 Tel: 020 8725 1152

Sheffield Children's Hospital

- Developed guidelines for appropriate referral to the service.
- Developed care pathways for the assessment and management of balance disorders and symptomatic dizziness in children.
- Established guidelines and tested protocols for appropriate use of the extended balance testing facilities.
- Defined the roles of individual staff within the multidisciplinary team to determine which patients were suitable to be managed by the lead HCS and which required input from the AV physician.
- Explored further options for rehabilitation, including linking with other teams such as physiotherapy, occupational therapy and psychology.
- Developed a system for recording outcomes and evaluating the clinical effectiveness of the service, as an ongoing database, which will build an evidence base for vestibular testing in children.
- Developed a comments card and questionnaire to evaluate the parent's/child's experience of the service.

- Made a DVD to be used to explain the procedures to the parents/child, to aid compliance during the test and reduce anxiety prior to testing.
- Developed a funding mechanism to take 'out of area' referrals, which would fund further development of the new service locally.
- Raised awareness of the paediatric balance service to potential 'out of area' referrers within the Northern location (cochlear implant services who previously would refer to London based providers) - developing a service in a locality closer to the patient.

Contact

Dr Glynnis Parker FRCP DCH MSc,
 Consultant Audiovestibular Physician
Glynnis.parker@sch.nhs.uk

How they did it

Both sites established a core project team and tried to engage with a wider group of stakeholders e.g. physiotherapy, occupational therapy, paediatric neurology, GPs, ENT and community paediatricians. St George's were supported by the Trust's internal service improvement team, which provided essential dedicated project management time and service improvement skills. Using existing meetings and established networks helped with engagement, but both teams found that wider engagement was difficult, as children's balance services are a low volume specialty. Understanding the referral sources for an established service allowed the targeting of the highest volume referrers.

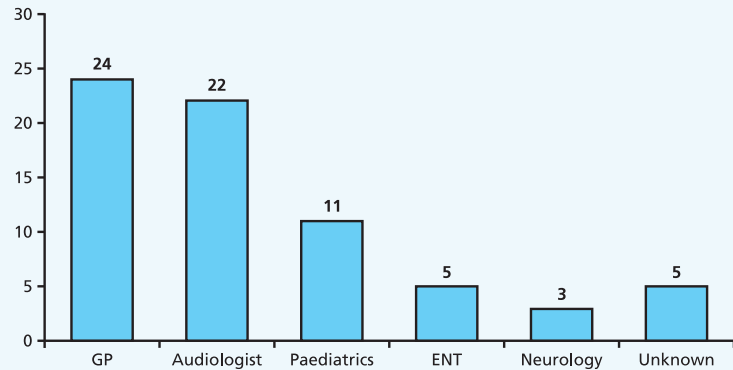
Both of the sites reviewed the existing triage criteria and agreed new criteria, which optimised the skills of key professionals.

St. George's Hospital felt that their new pathway, which triaged under sevens and over sevens to different pathways, has the following benefits:

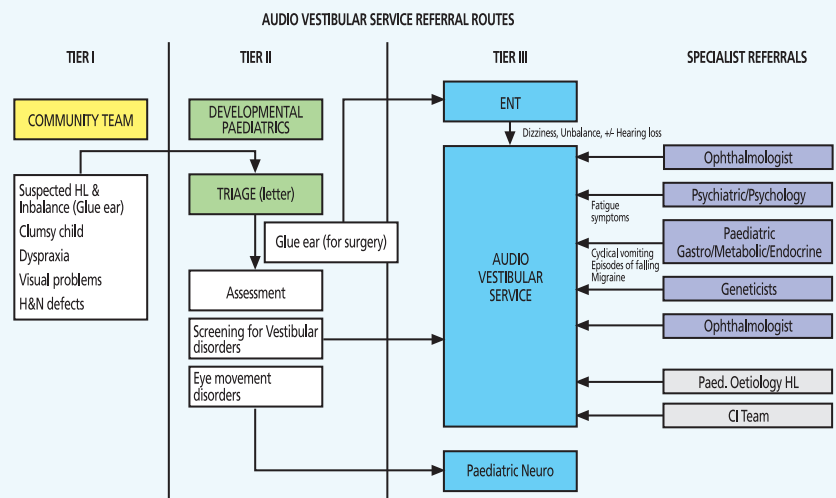
- Greater opportunities for professional development and sharing of knowledge across the team
- Clearer triage criteria to allow better, more appropriate flow of patients through the clinics
- Increased capacity for new patient appointments in the consultant clinics.

More Consultant AV physician time would be created by the community paediatrician, with special interest in audiology/vestibulometry, seeing less complex patients for follow-up in a parallel run clinic (enhancing professional development opportunities). Testing of the new template allowed the AV physician to see five patients instead of three patients per session, though clinic templates could not be redesigned in the timescales of the project.

Sources of referrals, St George's Hospital (based on a retrospective audit of 70 referrals)

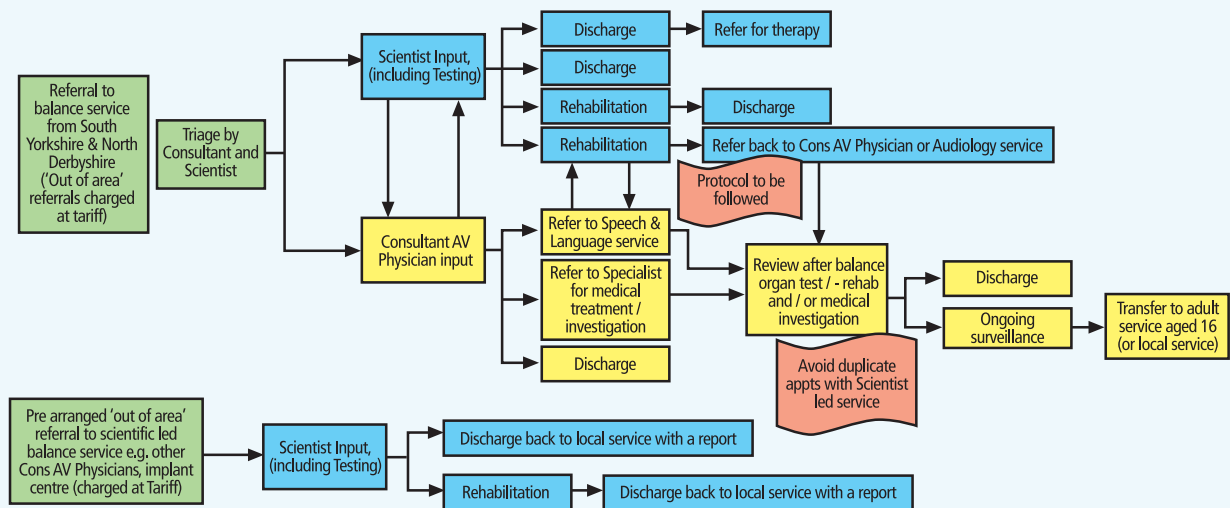


Components of the proposed network

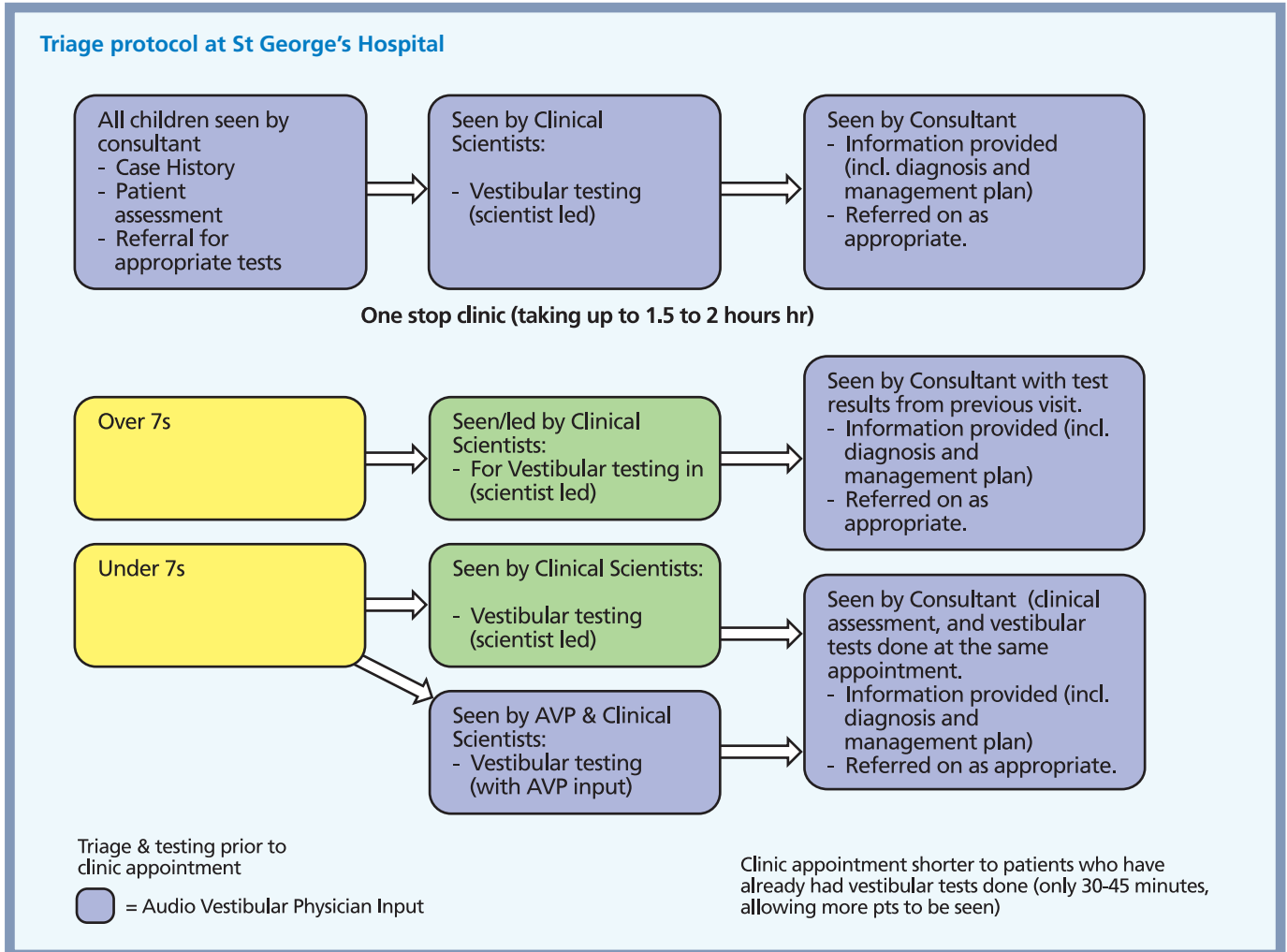


Paediatric balance network care tiers I. II. III St. George's Hospital and Wandsworth PCT

Care pathway and triage for redesigned balance pathway at Sheffield Children’s Hospital



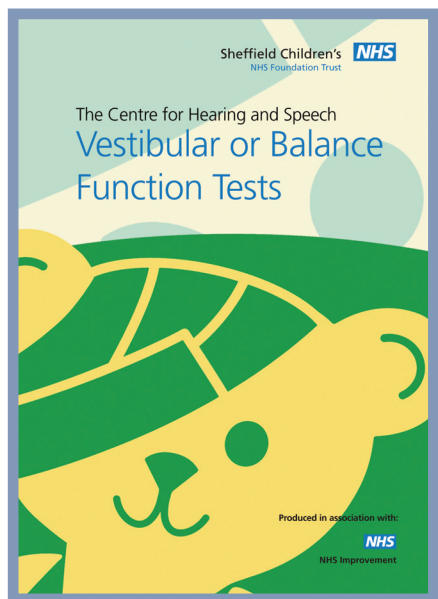
23 patients were seen for vestibular testing by end of February 2010. Of the last 12 of these patients, half were triaged into either the consultant branch or the scientist-led branch of the service. Early results demonstrate that the new pathway is effective. A database of clinical outcomes is being collated to evaluate the continued effectiveness of the pathway as the service develops.



Patient and Public Involvement

The team at Sheffield Children's Hospital was keen to design their new balance service around the needs of patients and carers. They used comments cards with targeted questions, which were given to both parents and children following their balance testing. Patient feedback revealed that patients didn't know what they were coming for and 50% were worried about testing prior to the appointment.

To address this the team designed a patient information leaflet, to be sent out before the appointment and made a DVD of the test explaining what to expect and reduce both parent and child anxiety.



DVD cover of parent / patient information DVD



St. George's Hospital wanted to make sure that their redesigned clinic template, where patients had more than one visit for their tests and clinic appointment, was not seen as a retrograde step by patients. To assess their acceptance of the pathway and shorter clinic appointment, they used the Experience Based Design (EBD) tool to capture the patient experience and inform ongoing service improvement.

They also redesigned their children's information leaflet, to describe the test in terms of 'a journey into space' to make the experience seem more fun and less daunting to a young child.

Benefits

Quality

At both hospitals there has been a more clearly defined care pathway, which aligns staff skills more appropriately to meet patient needs and provides better consistency of care. Further opportunities have been identified through the establishment of a 'Special Interest Group'. More optimum use of staff skills has led to a more robust pathway, less reliant on one individual.

The new service, with a streamlined pathway, should lead to a more accurate diagnosis and better patient experience in the clinic resulting in increased compliance with the offered treatment and a more focused intervention with improved outcomes. This will be monitored, via a patient database, over time.

There is already evidence that the new patient information leaflet has improved the parent/child experience and it is hoped that the DVD will enhance this further.

Innovation

There are only a few centres in the country that offer specialist balance testing for children. The development of triage tools, care pathways for assessment (optimizing MDT skills) and treatment options offers two models that could be adapted locally. Providers, wishing to develop such a service, would need to give careful consideration to the training and development of identified staff.

The Sheffield model would be appropriate for testing in an acute setting, whereas the St. George's approach offers a networked model where II tier screening and follow up vestibular services are delivered in the community, with the III tier service being delivered at the hospital setting.

Productivity

The development of referral guidelines from primary and secondary care will potentially guide those children presenting with balance concerns to the most appropriate service and target those most likely to benefit from vestibular assessment.

The triaging of children into physician or scientist led pathways will streamline the care pathway, which will lead to an increase in the number of patients seen in the consultant clinic. Where AV consultant physician time was the constraint, redesigning the clinic, so that the patients were seen with test results, allowed more patients to be seen in each clinic by the consultant.

Prevention

Improving diagnosis and focusing management will reduce the morbidity associated with balance disorders in children, for example preventative treatment for vestibular migraine or rehabilitation exercises. This can potentially reduce time off school, leading to improved educational progress, and/or increase physical activity and improvement of fitness. Data would need to be collected across health, education and social care in order to validate these assumptions or a literature review undertaken.

Reference

Niemensivu R, Pykkö I, Wiener-Vacher SR, Kentala E. Vertigo and balance problems in children- an epidemiological study in Finland. *Int J Pediatr Otorhinolaryngol* 2006;70:259-65

Children's hearing services

Introduction

The vision for children's hearing services is for them to be identified, assessed and to receive the most appropriate care for them close to home, as quickly as possible. The children and their families need good quality support from a range of professional groups and agencies that can meet their ever changing needs, whilst recognising the potential impact on their learning and development.

Information about communication, educational placement options and the role of health, education and social care, needs to be given, along with rapid assessment of their needs.

In England, approximately 1,000 babies are born each year with permanent childhood hearing impairment (PCHI), two thirds of whom will be affected bilaterally. In 40% of those children, the hearing loss will be severe or profound. Bilateral PCHI has a major impact on these children and their families and is often associated with a life of consistent underachievement (*Transforming services for children with hearing difficulty and their families - A good practice guide 2008*)

There have been significant technological developments which can improve the outcome for children with hearing impairment. These benefits will not be realised, unless an integrated approach is adopted to transform hearing services for children and their families. This approach tackles the various inter-related components, which includes involving children, young people and parents, improved cross sector working, systems and processes, technology and the workforce.

Summary

The aim of this work was to identify the good practice that exists and that can be developed when different organisations work together and share the learning in order to improve the current provision.

The sites chosen were:

South Tees Hospitals NHS Foundation Trust

Contact

Helen Martin MSc
Consultant Clinical Scientist (Audiology)
Helen.Martin@stees.nhs.uk

Georgie Hill

Clinical Scientist (Audiology)
Georgiana.Hill@stees.nhs.uk

Warwickshire Local Authority

Contact

Jane Carter
Service Development Manager - Integrated Disability Service
JaneCarter@warickshire.gov.uk

Both pilot sites sought to develop pathways for children's hearing services to ensure consistency of available care irrespective of where the child lives. One site particularly focused on children with a permanent hearing loss. The key to the projects success was in joint working across health, social care and education. Engaging stakeholders with different geographical boundaries and diverse organisational structures was a key challenge in order to gain agreement and advance proposed changes and developments forward. Strategic level support and a mechanism for agreeing to the outcomes and actions proved essential. There were some early benefits gained by a better understanding between the different agencies of what each other could potentially offer the children.

South Tees Hospitals NHS Foundation Trust

Presenting issues

The audiology service at South Tees covers five main PCT areas and four local authority areas. Professionals involved in delivering these services were aware of differences in provision and testing facilities, resulting in different standards, dependent on where a child lived. Professionals were also aware of differences in provision of associated services across the region, such as speech and language therapy and social care. This has resulted in a 'postcode lottery' for children with a permanent hearing loss and their families.

What they did

- Set up a multi stakeholder steering group, under the direction of the children's hearing services working group (CHSWG), to include health, education, social care and voluntary organisations such as the National Deaf Children's Society (NDCS) to direct the project.
- Held a 'stakeholder involvement day' to map and understand current service provision and identify where there were gaps in services.
- Designed the 'ideal pathway', based on best practice from within and outside the locality, gaining stakeholder views (including parents of deaf children and professionals from across health, education, social care and voluntary organisations).
- Developed the concept of a 'link worker' role to act as a single point of contact to sign post parents to appropriate local services.

- Designed and undertook a postal questionnaire to over 200 parents of hearing aid wearers across a wide geographical area and representing a wide age range of children and adolescents. Collated and analysed the responses to test ideas formulated at the 'stakeholder day'.
- Undertook an audit of existing audiology services against national quality standards for site & testing facilities, as well as a skills audit of staff.
- Developed a new local guideline and checklist to ensure standardised testing for aetiological investigations and designed an audit.
- Presented findings of the project to the CHSWG via a written report and hosted a feedback day for commissioners, professionals and parents, to formulate an 'action plan' around the results and proposed ideas.

How they did it

Under the direction of the CHSWG a project steering group was set up including stakeholders from across health, education, social care, the voluntary sector and parents. The day was designed to understand where gaps in current service provision occurred and share pockets of 'good practice'. Using this information and the views of parents, who were present, the team created the 'ideal pathway' and formulated the concept of 'link worker' role to navigate parents around local services when and where they wished to access them.

The ideas generated on the day were then tested via a postal questionnaire and responses were received from across the area and from parents covering a wide age range of children. The responses to the concept of a 'single point of contact' were well received.

Parents were also questioned about where they would like to receive services and information, as well as by whom. This allowed different options to be explored.

In parallel, the provision of audiology services were reviewed across the locality and audited against existing quality standard for testing facilities, range of tests available, skills or training of staff performing the tests, as well as how 'child friendly' the facilities were in terms of meeting the children's needs prior to testing. There was also an audit of the provision of other services across the area, such as social work and speech and language therapy and some of the services which had been suggested from the involvement day and postal questionnaire.

Results were generally good, but did provide an action plan for upgrading some facilities in terms of estate, testing equipment and staff training. This will be progressed through the CHSWG with the relevant commissioners.

'It would be good to have a named person to talk to who could point us in the right direction for whatever we needed at the time'

The results audits, patient feedback and the plans from the stakeholder involvement day were fed back to professionals, commissioners and parents at a 'feedback day' where further action plans were developed.

Benefits

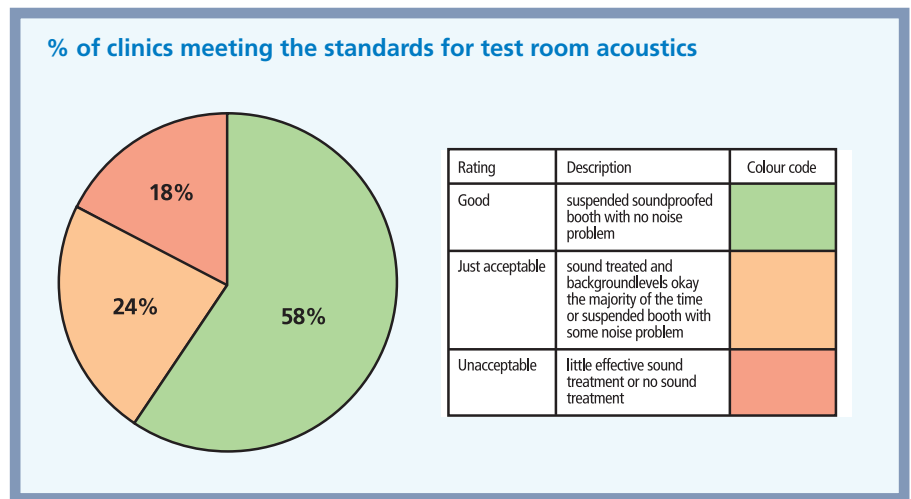
Quality

Proposal of a new pathway, following diagnosis, to include a single point of contact to access education, speech and language therapy, family and social support and the voluntary sector, developed through patient involvement. The proposed model should ensure equity of service across all areas, which should in turn improve quality and efficiency.

A clear action plan for commissioners and service heads has been developed to improve the level of audiology equipment and staff skills.

Innovation

The questionnaire identified parents who are keen to be involved in service design and development, which will be useful in this and future projects.



Professionals from across health, education, social care and voluntary organisations, involved in children with a hearing impairment, have a better understanding of the range of services that can be provided and of each others roles.

A new 'key worker' role concept, who could provide this single point of contact would better meet the needs of carers wishing to access a complex range of services, improving access.

Productivity

Improved testing facilities and training standards should improve standards, resulting in fewer tests having to be repeated in a secondary or tertiary care setting to confirm diagnosis.

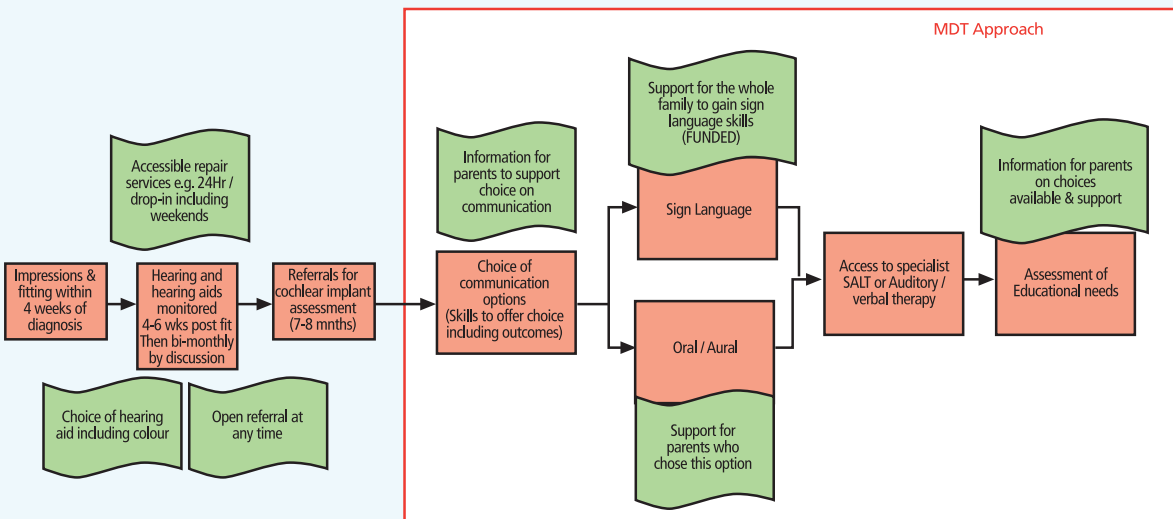
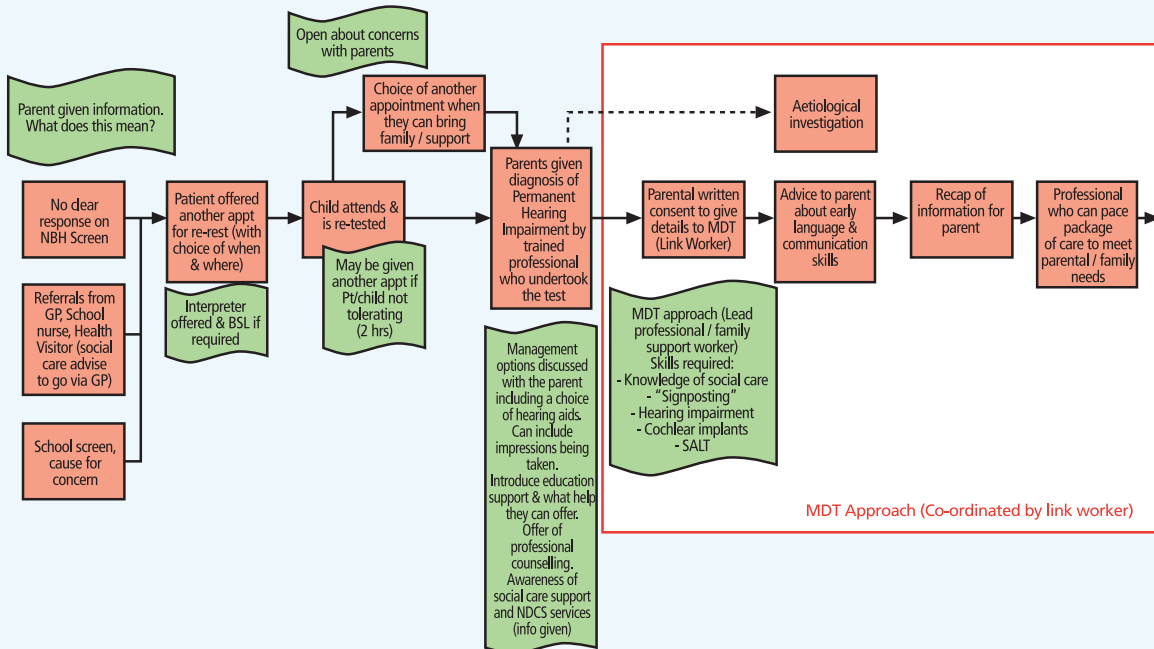
A streamlined pathway and clarity of role should lead to less duplication by different professionals, with an MDT approach supporting this further. Proposals developed will be taken forward through the CHSWG through a written report, which will be developed into a strategic plan. The CHSWG will engage with the relevant commissioners across the organisations to progress issues requiring joint commissioning arrangements.



Quality standards used and adapted for audit.

Children's permanent hearing pathway (Ideal redesigned)

Children's Permanent Hearing Impairment Pathway (Ideal Redesigned) Friday, 20th November, 2009



See detailed transcripts of ideal services for Education, SALT, Audiology, Medical input

Warwickshire Local Authority

Warwickshire's Audiology Improvement Programme

Presenting issues

The provision of community audiology services across Warwickshire is very fragmented. A review of services concluded that the three localities ran very differently with duplication of roles and a pathway that was inconsistently implemented across the three acute trusts, community services and the Local Authority. The aim of the project was to achieve consistency, streamline services, reduce duplication and identify any gaps in services, while evaluating the staff skill mix.

What they did

- Process mapped the patient pathway across Warwickshire
- Reviewed skill mix at various points
- Identified existing data and highlighted gaps in current data collection
- Agreed a detailed action plan to be taken forward to include:
 - A multi-disciplinary team approach to disclosure
 - A different approach to gaining consent from parents
 - Agreement to reduce DNA rates
 - Rolling programme of joint training for health visitors
 - Changes in the level of support given by teachers of the deaf to children in schools
 - A hearing interest space on the local authority's virtual learning platform that will offer support, advice and information to children with hearing impairment.



Benefits

Quality

Relationships/change management; there has been an impact in terms of building relationships across the five organisations, developing trust and a shared ownership of the audiology services' issues and challenges. Plans are in place to canvass parents opinion of the services provided using the 'little ears' parents group to trial the survey, acting on the feedback will enhance the quality of their experience.

Innovation

- The virtual learning platform allows children speedy access to help, information and support.

Productivity

- The revision of the educational audiologists role will reduce the number of hours spent travelling and allow more time to support those children who require specialist intervention.
- An agreed action plan to drive down the high DNA rates will ensure that the available capacity within clinics is used productively.
- A reduction in inappropriate referrals will allow speedy access to hearing assessments, resulting in more timely intervention.

Central Auditory Processing Disorder (CAPD)

Introduction

Auditory processing occurs in the brain which recognizes and interprets surrounding sounds. Central Auditory Processing Disorder (CAPD) occurs when there is a disruption to the interpretation process, despite the sounds being heard normally. The causes of CAPD are still unclear, however it is a disorder that is commonly assessed and managed world-wide.

To a skilled professional, CAPD can be recognised during childhood, sometimes as early as four years old. If, however, the auditory deficits are not identified and managed early, many of these children will have speech and language delays and academic problems. This in turn can lead to comprehension problems and poor academic performance which can continue on into adolescence and early adulthood.

CAPD – Summary

The assessment and/or treatment of CAPD is a new and emerging field in the UK and there is a lack of documented information from this country with regard to successful management. This team set out to examine the local need for a CAPD assessment and treatment service with a view to presenting a case for service development.

Due to the effects of auditory maturation and language development, CAPD can only reliably be formally assessed at around six years of age. However, an informal assessment can be made from the age of four when certain pre requisite skills are found to be under-developed to an age appropriate level e.g. phonological awareness.

Assessment and diagnosis of CAPD would involve a child undergoing a battery of tests, undertaken by a variety of professionals, predominantly including an audiologist and speech-language therapist. Treatment of CAPD is individually prescribed, depending on test findings and involves a variety of therapies, such as language building, auditory integration training and memory enhancement.

NHS Tower Hamlets and NHS City & Hackney

Presenting issues

Currently there is no service for children in the Tower Hamlets and City & Hackney boroughs for the assessment or treatment of children with suspected or diagnosed CAPD. In addition, there is no provision for staff to develop such a service with regard to time, training or equipment.

What they did and how they did it

- An audit was completed in July and August 2009 by second and third tier audiology services in Tower Hamlets and City & Hackney boroughs in order to determine the number of patients who might benefit from a CAPD service
- 11 patients were found to be suitable for further diagnostic assessment
- A literature review was carried out to provide evidence to support the case for a pilot study
- A multidisciplinary meeting was held in order to get 'buy-in' from other professionals, including speech and language therapists, a teacher of the deaf, occupational therapists, audiologists and an educational psychologist
- A case study comparing the patient experience of two sisters, one with early and the other with a late assessment, diagnosis and treatment of CAPD was presented
- Senior management support resulted in £3,000 being allocated for the team to purchase equipment to provide a CAPD assessment service.

Next steps

- Referrals will be made by the audio-vestibular physician to the audiology team
- CAPD assessments will be carried out by the senior paediatric audiologist
- Pilot to be audited and the evidence used to develop a CAPD business case for submission to the relevant trusts for consideration.

Benefits

Quality and innovation

- Provision of a new service to assess and treat CAPD in children.

Prevention

- Prevention of ongoing speech and language difficulties and learning delays in children through early assessment, diagnosis and appropriate treatment of CAPD.

Contact

Govender Nelaeni

Senior Paediatric Audiologist,
Hackney Ark

Nelaeni.Govender@thpct.nhs.uk



Acknowledgement

The Department of Health Audiology Management Group and NHS Improvement would like to thank all the pilot sites for their continuing support and commitment to transforming audiology services. The learning that has emerged from this work will prove to be exceptionally valuable to all audiology departments as they strive to improve the services they deliver. The sites have demonstrated benefits to the quality, innovation, productivity and prevention agenda with significant enhancements made to the patient and public experience. This is a credit to the sites involved and their ongoing commitment to improve services and share their learning with the wider NHS.

Glossary

ADP	Auditory Processing Disorders
AVM	Audio Vestibular Medicine
AVP	Audio Vestibular Physician
BPPV	Benign Paroxysmal Positional Vertigo
CAPD	Central Auditory Processing Disorder
CHSWG	Children's Hearing Services Working Group
DNA	Did Not Attend
EBD	Experience Based Design
ENT	Ear Nose and Throat
HCS	Health Care Scientist
IMP	Individual Management Plan
QET	Quality Enhancement Tool
MDT	Multi Disciplinary Team
NDCS	National Deaf Children's Society
SHARC	Specialist Hearing and Rehabilitation Clinic





NHS Improvement

With over ten years practical service improvement experience in cancer, diagnostics and heart, NHS Improvement aims to achieve sustainable effective pathways and systems, share improvement resources and learning, increase impact and ensure value for money to improve the efficiency and quality of NHS services.

Working with clinical networks and NHS organisations across England, NHS Improvement helps to transform, deliver and build sustainable improvements across the entire pathway of care in audiology, cancer, diagnostics, heart, lung and stroke services.

3rd Floor | St John's House | East Street | Leicester | LE1 6NB

Telephone: 0116 222 5184 | Fax: 0116 222 5101

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