

Manchester Centre for Audiology and Deafness



The University of Manchester

WEBINAR: REMOTE WORKING PAEDIATRIC FOCUS (BAHDs and in-situ audiometry)

Sharing experiences, pathways, ideas, survey results, information on tools and apps....

Thanks to: Dawn Bramham, Ed Brown, Sarah Hodgson, Kelly Hugill, Veronica Kennedy, Sam Lear, Amber Roughly, Bhavisha Parmar, Anisa Visram.



Sharing experiences

Sam Lear, Sheffield Children's NHS foundation trust Kelly Hugill, East Kent Children's Hearing Service (EKCHS) Ed Brown, South Tyneside and Sunderland NHS foundation trust Veronica Kennedy, Bolton NHS foundation trust





Hearing Services, Sheffield Children's Hospital: Experiences with remote working

Paediatric only service 0-16 years, hospital-based; do not host NHSP

Immediate response to Covid-19:

- March 20th- closed to all but "urgent" patients (e.g. ABR post meningitic; fitting of babies ref from NHSP with moderate HL or worse
- Publicised a statement to reassure families of children with HAs that we were still there for support inc ensuring they had most appropriate contact details for repairs and earmoulds, and links to support material, eg info sheets re tubing, NDCS links, etc.
- Skeleton staff in department only & telephone clinics issues to all audiologists WFH
- Telephone clinics inc new referrals, and existing patients due for review or where new concerns have been raised



Hearing aid patients:

- For new referrals from ENT for HAs, most given counselling and reassurance and listening tactics (and placed on review list for a face-to-face appt or further telephone call if still in pandemic)
- Several new fittings of significant SNHL both in clinic and "remotely" where child shielding- 1 fitting
 appt in clinic demonstrating to parent with telephone follow up; for a second, posted out HAs for the
 family to fit as experienced with siblings with HAS, then close monitoring with phone calls, TOD input
 etc
- For existing HA users, phone calls inc full history and review of HA use, needs etc, doing a questionnaire (LittlEARS, PEACH, LSQ, transition) and addressing any issues that arise.
- Earmoulds reordered from scans of previous moulds and requested 2-3% increase in size or own mould sent to lab for remaking with increased size. Impressions taken in clinic where "urgent"
- Posted home bc aids (Contact mini) to a few children seen by ENT with significant CHL- phone call to instruct, etc
- 1 post-meningitic baby with profound HL diagnosed & implanted with CI by YCAIS at SCH within 4 weeks at beginning of lockdown
- Close working with Ed Aud liaising with TODs; CIP; ENT colleagues, IT, Infection Control, etc
- In clinic, **PPE** as advised by trust- surgical masks, visor, gloves and apron if within 2m



What has worked well:

Prioritizing waiting list/ new referrals:

- All new referrals & patients due for appointments phoned
- Identified those who need to be seen as a priority and added to a priority list
- Several unnecessary referrals identified where we could discharge

Listening difficulties (APD) & Tinnitus:

- Phone appointments offered (no one refused). Families asked to use speakerphone so child and parent could talk and listen – need to spend a while getting the child confident enough to speak if possible
- Full history, look for "red flags",
- Most already had ear exam, PTA, tymp
- For listening difficulties, CHAPs questionnaire sent out, full counselling about listening difficulties, tactics to help and how we cannot fully diagnose APD anyway. Letter with advice for school. Some reassured and happy to be discharged
- For tinnitus, used Tinnitus rating scale, gave reassurance about tinnitus, counselling about how to manage it, sound enrichments, relaxation etc, follow up will be by telephone
- Very successful with excellent feedback
- Plan to continue these remotely with AttendAnywhere video software/App



Next steps: Recovery

- Trust "restarting" activity from 15th June- have made it clear that not safe to return to normal activity levels- significant reduction in clinical capacity, so we will be seeing patients from priority list first.
- Clinics will be carefully managed so patients arrive at different times. Staff working staggered hours and WFH on a rota basis
- Buddy system where member of staff WFH phones for a "remote" appt prior to face to face- and takes history, instructs child and parent/carer what will happen in clinic appt, etc. Staff in a face-to-face clinic then concentrating on testing only. If lengthy discussion required, will do after appointment remotely.
- Plan to continue to do as much as possible remotely with telephone and use of AttendAnywhere video software/App

East Kent Children's Hearing Service (EKCHS) Kelly Hugill

NHS Foundation Trust



Currently Providing

- Hearing aid repairs and consumables via post
- Urgent hearing tests for Meningitis, Oncology and sudden changes of hearing
- New earmoulds made from their old ones via post
- Emergency Impressions (case by case criteria)
- PCHI telephone consultations
- Referral Telephone Triage
- NHSP diagnostics provided by our acute colleagues when deafness identified managed by EKCHS – Therefore currently we have offered redeployment to this service to help with capacity and redeployment to NHSP screening service.

Referral Telephone Triage

Triaging: Questionnaire responses 0-4



Questionnaires in Ages groups

If child is between 4 years and 16 years old	Yes	No	Describe
Does your child have any physical symptoms such as:			
Ear pain?			
Signs of discharge/ unusual wax colour (green,			
whitish yellow/resembling pussy discharge, blood).			
Tinnitus (any noises in the ears)?			
Dizziness?			
Hearing Difficulty?			
Parent observation:			
Have you noticed your child mishearing or mispronouncing words?			
Has your child shown difficulty hearing what's going on in the presence of background noise?			
Does your child respond when they are called most of the time?			
Does your child need the volume of the television/tablet increased to a level that is higher than most of the other family members?			
Education: (Only move onto this section of questions if appropriate)			
Has your child's class teacher commented on hearing concerns?			
Does your child have difficulty with reading or learning?			
Does your child have difficulty with concentrating, tiredness or frustration which affects their behaviour.			
	Priority	Routine	Routine/ Discharge

If child is ages between 8months and 1 year:	Never	Sometimes	Always
Does your child respond to a familiar voice? (Smiles; looks towards source; talks animatedly.)			
Does your child listen to somebody speaking?			
(Listens; waits and listens; looks at the speaker for a longer time.)			
When somebody is speaking, does your child turn his/her head towards the speaker?			
Is your child interested in toys producing sounds or music? (Rattle, squeezing toy.)			
Does your child look for a speaker he/she cannot see?			
Does your child listen when the radio/CD/tape player is turned on?			
Listening: turns towards the sound, is attentive, laughs or sings/talks "along."			
If 9-12 months: Has your child started to make sounds to communicate happiness or annoyance. Babbles (eg. 'da da da,' 'ma ma ma,' 'ba ba ba,').			
Do they try to imitate other sounds like coughing or lip smacking?			
If 12 months: Does your child babble loudly in a conversation like rhythm. Are they using any single words yet?			
	Priority	Routine	Routine/ Discharge

If child is ages between 1 year and 2 years	Never	Sometimes	Always
Does your child respond to a familiar voice? (Smiles; looks towards source; talks animatedly.)			
Does your child listen to somebody speaking? (Listens; waits and listens; looks at the speaker for a longer time.)			
When somebody is speaking, does your child turn his/her head towards the speaker?			
Is your child interested in toys producing sounds or music? (Rattle, squeezing toy.)			
Does your child look for a speaker he/she cannot see?			
Does your child listen when the radio/CD/tape player is turned on?			
Listening: turns towards the sound, is attentive, laughs or sings/talks "along."			
If child is approximately 15 months: Do they make lots of speech-like sounds. Uses 2-6 recognisable words meaningfully (eg: 'teddy' when seeing or wanting the teddy bear).			
If child is approximately 18 months old: Do they make speech-like sounds with conversational-type rhythm when playing. Uses 6-20 recognisable words. Tries to join in nursery rhymes and songs.			
If child is approximately 2 years old: Does your child use 50 or more recognisable words appropriately? Do they put 2 or more words together to make simple sentences (for example: more milk). Joins in nursery rhymes and songs. Do they talk to self during play (may be incomprehensible to others).			
	Priority	Routine	Routine/ Discharge

If child is aged between 2years and 3 years old Does your child have a large vocabulary intelligible to everyone?	Never	Sometimes	Always
Can your child talk to you in small sentences?			
Can your chid follow simple instructions with no visual cues, for example, Ask your child where there nose is (without pointing to your nose, in normal voice and no lip reading clues) or for example, If you ask them to get their shoes (no pointing or clues).			
If you were to say for example, bath time (without clues) would your child no to go to the bathroom or in the house with one parent or grandparents in another room and say 'where's Daddy?' would they go to find them?			
If your child was in a different room and the T.V was on in the other at a normal volume and they heard their favourite T.V programme theme tune, for example, Pepper Pig would they run to it?			
Does the child spontaneously recognise auditory signals that are part of his/her everyday routines?			
Does the child spontaneously respond to his/her name in quiet with auditory cues only (i.e., no visual cues) when not expecting to hear it?			
Does the child spontaneously respond to his/her name in the presence of background noise with auditory cues only (i.e., no visual cues)?			
Does the child spontaneously alert to environmental sounds (dog, toys) in the home without being told or prompted to do so?			
	Priority	Routine	Routine/ Discharge

Emergency Imp Criteria

 Have a bilateral moderate or greater hearing loss that have lost a current ear mould requiring a new impression to enable a new ear mould to be made or for those that have had a remade ear mould out of a current ear mould that has been unsuccessful thus requiring a new impression to enable a new ear mould

Other Clinics moving Forward

- Hearing test Headphones (through ear moulds if reasonable fit)
- Aided thresholds Optimal responses
- Re-program using previous RECD measures
- Those on surveillance pathways with good BC use temp BCHA if required
- Transition (ready, steady, go program questionnaires)/Counselling



Audiology Covid-19 Working

Ed Brown Consultant Clinical Scientist South Tyneside and Sunderland NHS Trust

Head of Audiology

Local Director Sunderland, South Tyneside and Gateshead NHSP

Trust Rapid Clinical Advisory Group (RCAG)

- All routine activity cancelled from 23 March 2020
- Departmental Decision taken on 20 March 2020 (ca 400 patients required cancellation/contact)
- Authorisation from Trust Rapid Clinical Advisory Group (RCAG) to continue to see NHSP Screen contraindicated, bilateral referrals, post meningitic, sudden hearing loss on 1 April 2020.
- Authorisation from RCAG to see NHSP Unilateral referrals and NHSP Recall clinics 7 May 2020.
- RCAG (or equivalent) approvals may take time and effort !
- Through March/April most staff home-based 75% of time
 - remote access with PN synced laptops
- Now operating with staff home-based 50% of time
- No staff were redeployed but supported the Trust assembling visor kits

NHSP Screen Backlog (Service Not Available)

- NHSP covers 6,800 births, 3 maternity facilities, 2 Trusts
- NHSP Manager LTS, 1 Screener LTS, 1 Screener 12 week shielding
- 2 Audiology staff completed training to screen (not required)
- Hospital-based screening continued as normal
- PHE Community Services letter 2 April 2020 indicated community recall clinics should be suspended
- Authorisation to restart recall clinic services obtained from RCAG 7 May 2020
- Peak 182 cases
- Additional recall clinics run at additional off-site facilities
- Telephone liaison/Escort direct from car
- Currently reduced to 64
- Expected to be cleared (except declines) by June 30

NHSP Diagnostic Referrals (SRH)



NHSP Diagnostic Backlog

- The peak backlog was 27 cases
- NHSP Diagnostics seen with reduced throughput (1 per session)/PPE
- Authorisation to see unilateral referrals obtained from RCAG 7 May 2020
- Combined Diagnostic TEOAE / ABR clinics (4 per session) for well baby unilaterals
- Backlog cleared by 30 May 2020 (except 6 cases declined x 2/deferred 8 month followup)
- New cases being seen with KPI NH2 framework
- Estimated that NH2 performance will be ca 55% for Q1 (previously >=95%)

Face-to-Face Arrangements

- Escort from patient car/reception straight to room
- Wherever possible 1 parent only
- PPE not worn when collecting patient
- Patient/parent offered mask on arrival
- Social distancing maintained One Way system set up in Audiology
 - Required "negotiation" with ECG colleagues next door
- Large rooms used facilitate Social Distancing
- History/briefing conducted without mask to enable lip reading, etc
- Appropriate PPE then donned gives patient/parent confidence that PPE is not being used inappropriately between patients

Face-to-Face Arrangements

- Appropriate decontamination between patients
 - Focus on hard surfaces, equipment, etc
 - Less IPC concern regarding fabric/carpets (sensible precautions taken)
 - No adjustments to air conditioning system (Trust wide in any case)
- Only the essential procedures undertaken
 - Don't do anything that isn't going to add diagnostic value
- Minimise the use of toys where possible (e.g. video/iPad alternatives)
- Use of Insert Phones (has been the default in department for 20 years)
 - Avoids the issue of headphone covers/decontamination
- Urgent hearing assessment offered as normal (sudden, post meningitis, etc)
- Pre School Hearing Aid Provision / Reviews offered as normal

Remote Provision

- AttendAnywhere used for video consultations
- Screen sharing to run LittlEars, PEACH, LSQ-P, LIFE as appropriate
- Telephone consultations also employed
- Triage questionnaire set up on Patient Management System (PN)
- Making increased use of hearing aids with remote assist technology
 - GN Ambio / Oticon OPN Play
 - DPIA forms
 - Be nice to IT/IG staff
- Stored RECDs gives ability to rebuild prescription from scratch/coupler setup if change in provision considered
 - We use RECD approach for all children and don't switch to In Situ REAR at a particular age

Triage Questionnaire on PMS

South Tyneside and Sunderland

Paediatric Triage

Patient Name	Paediatric	TEST				
Date of Birth	23/10/2012	Age 7				
Date	01/05/2020					
History Birth Gestation (If not ETN)	D >=37 wooks)			N/A		
Admission to NICU(S	SCBU) at birth ?			N/A		
Outcome of NHSP ?				N/A		
History of early onset PCHI in Parents or Siblings ?			N/A			
History of any seriou	s infections ?			N/A		
Any other health con	ditions identified	?		N/A		
Normal development	al milestones ?			N/A		
Under the care of a paediatrician ?			N/A			
Hearing / Commu	nication					
Any concern regardir	ng hearing at pre	sent ?		Significant - Some - Variable - No - Not Sure		
Any change in hearin	ig since last asse	essment (if appropr	ate) ?	Same - Better - Worse - Variable - Not Sure - N/A		
Are hearing levels stable and fully defined (if PCHI/Appropriate) ?			Yes - No - N/A - Not Sure			
If YES has hearing b appropriate)?	een assessed wi	thin last 12 months	(if	Yes - No - N/A - Not Sure		
Any concern about speech understanding/comprehension ?			Yes - No - N/A - Not Sure			
Any concern about expressive speech ?			Yes - No - N/A - Not Sure			
Have they been referred to speech and language ?		Yes - No - N/A - Not Sure				
Any concern about wider communication/social interaction ?		n?	Yes - No - N/A - Not Sure			
If we wanted them to respond when they heard a sound what would work best ? Comments			what would	Head Turn - Performance - Play - Uncoop - Not Sure		

- ----

Triage Questionnaire on PMS

Hearing Aids Reason for hearing aids/amplification? Bilateral - Unilateral - Glue Ear - Other Is use still made of hearing aids ? Yes - No - N/A - Not Sure How many hours use each day ? None - < 2 - 2-4 - 4-8 - > 8 - N/A Do you think they are providing useful benefit ? Significant - Some - Little - None - Not Sure Are the earmoulds a comfortable fit ? Yes - No - N/A - Not Sure Any issues with acoustic feedback ? Significant - Occasional - None - Not Sure Do hearing aids appear to be working normally ? Yes - No - N/A - Not Sure Any issue with the controls (volume, programme, battery on/off)? Yes - No - N/A - Not Sure Any evidence of loudness discomfort ? Yes - No - N/A - Not Sure Do you need batteries or any other consumables ? Yes - No - N/A - Not Sure Comments

Outcome

Appointment required

Priority Test Method Ear Specific Required Comments Urgent F2F - F2F - Defer 3 month - Defer 6 month Urgent - Priority - Routine Performance Test (2T) Essential - Desirable - Not Required - N/A



Covid-19 Working – Key Messages

- Follow the science (!)
- Stay focused on the important issues
 - Social Distancing / Sensible use of PPE / Sensible IPC arrangements around booths
- Some things are going to be outside the control of Audiology
 - E.g. Waiting area capacity
- Dependent on Trust Strategy/RCAG
- Don't get disheartened Services may be moving at different speeds
- Target are Targets
 - I am likely to be reporting around ### Paediatric DM01 breaches for May 2020
- Don't take shortcuts
 - E.g. Audiology stopping NH2 clock with telephone consultation

Thanks !

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Sharing experiences Paediatric Audiology Post Covid 19

Veronica Kennedy Bolton NHS Foundation Trust

VISION OPENNESS INTEGRITY COMPASSION EXCELLENCE

Issues



- BACKLOG of children due review continuing to build up
- Continuing new referrals
- 18 week pathway





VISION OPENNESS INTEGRITY COMPASSION EXCELLENCE

Managing clinic load



- Reduce (Need failsafe)
 - New: Tighten referral criteria
 - School referral 0.5/1KHz fails
 - Paediatrician referrals
 - Reviews : discharge minimal/no parental concerns
- Defer
 - Stable hearing losses
 - >4yo Hearing aided children managing well
- F2F

Covid 19 Recovery Plan



Triage a/c priority

- Contact families, assess need
 - ?Parental perceptions
 - ?Outcome measures eg PEACH
 - ?Language barrier
- Allocate mode of appointment
 - Telephone/ Virtual (triage, advice, counselling)
 - >Attend anywhere, WebEx, MS Teams etc

• F2F

VISION OPENNESS INTEGRITY COMPASSION EXCELLENCE

Virtual



- Advantages:
 - Can see others Child/Family or MDT
 - Hearing /Distance/Time Friendly
 - 'connect' better with parents than over telephone
- Disadvantages
 - Need to have Tech and IT connections
 - Socio-economic issues
 - Systems need to work
 - May have parent perspective only
 - Interpreting

VISION

– Engaging with child ?camera shy

F2F



- <u>Prioritise</u>: <4yo HA users, ABR, Urgent, Concerns
- Reduced number of F2F appointments
 - Increased clinic appointment time to enable
 - PPE doning and doffing
 - engage with child
 - Intervals between appointments
 - Increased cleaning of room surfaces, equipment and toys used (Fabric walls/flooring/chairs?)
 - Reduced likelihood of overlap of patients in waiting room





VISION OPENNESS INTEGRITY COMPASSION EXCELLENCE





Sharing pathways: BAHDs

Jane Beavan & Sarah Hodgson, Countess of Chester NHS foundation trust

Friday 5th June 2020

Remote working webinar



• See webinar from 22.05.2020



Remote Working



Adult Rehab

- Postal fittings for new HA patients and tinnitus SG fittings with virtual follow-up via AccuRx or phone.
- Hearing aid fittings can be simulated from home so reduced number of staff in the Department.
- DRs history taken over the phone
- Reassessments history taken over the phone with upgrade of HA by post if appropriate and virtual FU. Will have PTA/fine tune F2F when possible.

Vestibular Assessment

 Taking history remotely ready for F2F appointment when possible.

Paediatrics



- Less remote working so far but lots of recovery planning
- Some BC aids/BTEs programmed and posted out with virtual FU via AccurRx or phone.
 - Looking at possible process to prioritise and offer BC aids to some patients with glue ear waiting for ENT management

remotely.




- New assessments
- Post home trial reviews
- Initial fittings
- Follow ups
- Repairs













BAHA remote working

- Work has reduced some appointment lengths when open to patients
- Has eliminated some F2F appointments depending on patient and not delayed patient journey
- More scope with product development, for example remote programming will result in more remote working being integrated in BAHA service delivery
- Easier for patients who are some distance from department
- For more information on the work we have done please email me <u>sarah.hodgson3@nhs.net</u>





Sharing ideas

Dawn Bramham, Basildon Thurrock NHS trust

Friday 5th June 2020



Remote working – Basildon Hospital (MSE)

Dawn Bramham

- Planning, planning, planning
- Testing, testing, testing
- A work in progress.
- What is right for one team/area isn't always right for another
- We are still assuming a majority of patients (adult and paediatric) will require a F2F at some point in their pathway



In situ audiometry

- GN Ambio resound assist live (June/July 2020)
 - Major adjustment of hearing aid
 - Inc. Gain, data logging, device controls, directionality adjustments, noise reduction, wind management etc.
 - Remote enablement
 - The ability to enable remote adjustment without needing a "hard" connection
 - Feedback management
 - Ability to run feedback manager remotely
 - In situ audiometry
 - AC 500Hz 4 kHz



Remote working/in situ audiometry

- Not a replacement for formal diagnostic PTA
- One of the tools we now have at our disposal
 - Check major changes in hearing levels (N.B 1-4kHz only)
 - Screening for decision making for F2F
 - Reassurance for clients
 - Ability to offer some level of assessment/fitting for those shielding?
 - ? Use of lower frequency variance to be indicator of occlusion/leakage?



Understanding current practice

Amber Roughly, ManCAD (ladies in a van) Bhavisha Parmar, UCL



Changes in audiology practices during Covid-19

Paediatric remote care Amber Roughly & Gaby Saunders, ManCAD

The survey

https://www.redcap.rss.mhs.man.ac.uk/surveys/?s=CJJPX XA7M9

- Changes in adult, vestibular and paediatric practice during Covid-19 restrictions
- Focus on remote care/teleaudiology
- 101 completed so far thanks.
- This includes 82 audiologists who provide paediatric care

Paediatric appointments during Covid-19

What proportion of children did you offer a remote care appointment?



27 paediatric audiologists who responded to this question said they had offered a remote care appointment to at least some children

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Paediatric appointments during Covid-19

What proportion of patients accepted the remote care appointment?



The majority of respondents said all of their patients accepted the remote care appointment

MANCHESTER 1824

Paediatric appointments during Covid-19

How many remote care appointments have you completed since restrictions began?





- Type of appointment
 - Hearing test
 - Review appointment
 - History only
- Depending on patient
 - age

- stability of hearing loss
- parental preference for remote/f2f
- complex needs

"any clinical activity that doesn't require a diagnostic test or ear impression can be done remotely"

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Factors influencing decision to offer remote care

- Availability of equipment/technology
 - in clinic
 - hearing aids capabilities
 - patient's access to computer
 - online hearing tests
- Risk of decision to patient
 - Urgency of need/level of concern
 - Risk of coming to clinic
 - safeguarding concerns

"Compatible hearing aids for remote care in-situ measurements (audio and REM)"

Factors influencing decision not to offer remote care

- Language barrier
 - difficulty having interpreter
- Procedure requiring f2f contact
 - impressions
 - HA adjustment/REM
 - hearing test
- Babies referred from newborn screen

"Inability to do a hearing test or otoscopy!"



Factors influencing decision not to offer remote care

- Families who need more support
 - child not wearing aids
 - those who may need onward referrals
 - safeguarding concerns
 - newly diagnosed
- Urgent need for f2f appointment
- Parent's not wanting remote appointment

"Newly diagnosed ones where verification and more support is required"



The past

Did you use remote care appointments before Covid-19 restrictions?



Total number that said yes was 17

What type of patients did you remote care appointments for?

...which means 2 respondents said they used remote care for paediatric appointments



0.00% 10.00% 20.00% 30.00% 40.00% 50.00% 60.00% 70.00%



The future

Do you think you will continue to use remote care after Covid-19 restrictions are lifted?





- The majority of paediatric audiologists who responded have offered
 a remote care appointment to at least some children
- Most patients/parents accepted the remote care appointment invitation
- Most audiologists say they will continue to use remote care in the future
- Some barriers to remote care include
- access to technology/equipment to be able to carry out all appointment types
- o patient/parent preference
- The ability of the patient/parent to access remote care

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What next?

- We are still accepting more responses to the survey <u>https://www.redcap.rss.mhs.man.ac.uk/surveys/?s=CJJPXXA7M9</u>
- We will look at how appointments have been managed for adults, vestibular and paediatrics
- We want to understand how remote care has been used during Covid-19 restrictions and what some of the barriers to remote care might be for adults, vestibular and paediatric appointments going forwards

Parental survey / Interviews

INFORMATION ON CHILDREN

- Age of children
 - Under 2 2-4 Primary School Secondary school
- Since the covid-19 pandemic, are your children
 - More anxious just the same less anxious
- Have they struggled to access schoolwork? **INFORMATION ON SUPPORT SERVICES**
- What additional advice and support would you find useful at this time?
- Which other support groups/professionals have you contacted? **AUDIOLOGY APPOINTMENTS**
- Have you had an appointment cancelled?
- Would you be anxious or worried about attending the audiology department?
- Have you been offered a remote access appointment?
- How did you feel about the remote access appointment?
 For example, what did you find that worked well, what did you find that didn't work well and how might it have been improved?

FACEMASKS

 Do you have concerns that wearing a face mask may make understanding conversations more difficult?







@BhavishaJParmar@RajasingamSaima@Eldre7

Survey of UK hearing care professionals' attitudes towards telehealth following Covid-19

Bhavisha Parmar, Eldre Beukes & Saima Rajasingam Link to survey: <u>https://aruspsych.eu.qualtrics.com/jfe/form/SV_e4eOcrohBoIgN8N</u> **Progress Update**

Objective

This survey will measure

- 1. current attitudes towards telehealth
- 2. current provision of telehealth services
- 3. perceived barriers towards telehealth provision.



Why?

- Understanding how telehealth has been adopted in response to COVID-19 is required to assess barriers to treating hearing loss in vulnerable populations, including children
- This includes understanding:
 - Current telehealth tools available for particular audiology activities
 - Whether telehealth is more popular for **certain patients** (e.g patient age or distance from clinic)
 - Whether telehealth is more popular for **certain clinical activities** (e.g remote fine tuning/rehab)
 - Differences between private and public sector telehealth provision



Potential applications of this work

- Development of tools and information provision to support hearing care professionals in adopting telehealth where it provides increased patient benefit.
- Relevant in the context of COVID-19, but also when considering limited mobility/ rural settings.



Current progress...



209 respondents from the UK

Areas requiring more representation.







Areas requiring more representation.





Primary patient/client base

90

Areas requiring more representation.





@BhavishaJParmar@RajasingamSaima@Eldre7

aru

To participate

Link to survey:

https://aruspsych.eu.qualtrics.com/jfe/form/SV_e4eOcr0hBolgN8N

Thanks for listening!













Tools and Apps

Anisa Visram, ManCAD (ladies in a van)

Friday 5th June 2020



Manchester Centre for Audiology and Deafness



Remote assessment apps in paediatric audiology

BAA remote working webinar 5 June 2020

Anisa Visram anisa.visram@manchester.ac.uk
Challenges of remote testing

- **CALIBRATION**: Makes it difficult to do absolute threshold testing no means of meaningfully calibrating level output. Possible solutions:
 - Test in background noise (poorly sensitive to conductive loss)
 - Deliver calibrated equipment temporarily
 - Perform a biological calibration before testing (assumes normal hearing of person calibrating)
- **BACKGROUND NOISE:** Uncontrolled, can affect results
 - Instruct parents on need for quiet test room
 - Test in background noise
- ATTENTION, INSTRUCTION, UNDERSTANDING, SUPERVISION:
 - Important parents understand test, explain to child, supervise and minimise distractions
- UNEXPECTED TECHNICAL/OTHER ISSUES
 - E.g. volume controls on headphones, left/right getting swapped, effective troubleshooting of spurious results



- Suitable for children age 5 or older
- Sensitive to SNHL and conductive losses
- Online, game-based tests for smart phone/tablet including:
 - Speech in quiet
 - Speech in noise
 - Tones in noise (1.5 kHz)
- Result: Pass/borderline/fail





- Requires an adult with normal hearing to calibrate (by performing speech in quiet test)
- Has cost per test of £1.99 (or less if buying bundles)
- Online tutorial available which can help parents
- https://www.youtube.com/watch?v=Q5uVe6Z_st0



Has been validated in children 5-14 years (Dillon, H.,

Mee, C., Moreno, J. C., & Seymour, J. (2018). Hearing tests are just child's play: the sound scouts game for children entering school. *International Journal of Audiology*.)

- 98% of children with normal hearing pass (specificity)
- 85% of children with any hearing loss fail (sensitivity)
 - Discounting inconclusive/ incomplete results
 - Inconclusive result if standard error of SRT exceeds 2.5 dB (advised to repeat)
- For detecting <u>hearing loss in worse ear of >30 dB H</u>L, test was <u>100% sensitive</u> (and 98% specific)
- Presently the most complete, accessible and validated option for remote hearing assessment in children

Digits-in-noise (DIN) testing in adults and children

• DIN is a validated screening tool for adults, suited to online testing



- Listen for three digits presented in adaptive noise
- Children from age c. 5 can perform DIN testing (e.g. Moore et al., 2019; Koopmans et al., 2019):
 - Adult supervision important
 - Adjustments needed to normative SNR:
 - Up to around 7 dB between age 4-12; Further 2 dB between 12 and 15 (for a given configuration)
- Available **online DIN apps not currently validated for children** (<15 years)
- If used for children, use <u>with caution</u>:
 - Success is reassuring, but failure could be due to child-adult differences
 - Potentially helpful in conjunction with other assessment tools, e.g. parental questionnaires
- As with other speech in noise tests, they are NOT RELIABLY sensitive to conductive loss

Moore, D. R., Whiston, H., Lough, M., Marsden, A., Dillon, H., Munro, K. J., & Stone, M. A. (2019). FreeHear: A New Sound-Field Speech-in-Babble Hearing Assessment Tool. Trends in Hearing.

Koopmans, W. J. A., Theo Goverts, S., & Smits, C. (2018). Speech recognition abilities in normal-hearing children 4 to 12 years of age in stationary and interrupted noise. Ear and Hearing.



- Free digits-in-noise app for smart phone/tablet, developed by HearX, endorsed by the World Health Organisation
- Requires initial calibration to set speech to an audible listening level
 - Appears to be some level effect here, with lower scores obtained if setting to a very low level – so advise to set to a <u>comfortable</u> level.
- Gives an output score (0-100, adult norms):
 - >75 Good hearing
 - 50-75 Advised to monitor hearing
 - <50 indicates hearing loss: advise to see professional
- Not reliably sensitive to conductive loss

Hear Glue Ear

- NICE recommended app, mostly a rehabilitation and information tool for children with glue ear and their families.
- Has 'ORCHA' quality mark badge (re objective evaluation of medical apps)
- Also has a hearing screening tool, but calibration is limited
 - Has an ambient noise monitor in my experience was affected by electrical headphone noise, registering noisy even in a very quiet room
 - Calibration adjusts tone to be 'clearly audible' >> could results in a wide range of absolute levels presented
 - If used with consistent device/headphones/calibration setting, could be helpful for monitoring





hearglueear.wordpress.com

Twitter: @hearglueear

Kids Hearing Game

- Child-friendly audiometry app 'catching fireflies using Grandfather's flute'
- Validated in a controlled setting with calibrated headphones (Xiao et al., 2019), but:
 - Validity unknown for biological calibration, at-home testing
- Calibration options: <u>https://www.hearing.games/proper-calibration</u>
 - Set device volume to a comfortable, but not loud, volume (for a user with no hearing loss)
 - Use preset volume controls for several commonly available devices paired with specific recommended headphones
 - Perform calibration by subjective matching to calibrated audiometer

Xiao, L., Zou, B., Gao, L., Weng, M., Lando, M., Smith, A. E., Barber, W., & Yao, H. (2019). A novel tablet-based approach for hearing screening of the pediatric population, 516-patient study. Laryngoscope. https://doi.org/10.1002/lary.28329

Screening audiometry (calibrated equipment)

- Easy-to-use screening tools testing pure tone frequencies, needing minimal training.
- Requires kit (licensed tablet/phone and calibrated headphones)
- Potential applications if:
 - Non-audiologist screeners employed to visit family homes
 - But, still requires contact
 - ?Potential for parents to be trained to use apps
 - But, still requires training, and safe delivery and collection of equipment

HearScreen

• can be used on children from age c. 5

Shoebox (iPad play audiometry)

 >90% sensitivity and specificity in children from 3 years old





Manchester Centre for Audiology and Deafness



Acknowledgements

<u>Thanks for contributions from:</u> **N**icole DaRocha, The paediatric audiology WhatsApp group

VRA

- In the US, VRA IS commonly performed with a single tester. This would help reduce contact.
- Reduction to a single tester can be aided by:
- Using a screen to centre baby's attention.
 - This could be integrated to a rewards system, (e.g. Flex VRA). Or you can set up a separate monitor choosing appropriate stimuli
 - (<u>http://www.videovra.com/</u> has open source software for controlling remote video presentations)
 - Centring image needs to be attention-grabbing, but not too much (the actual 'reward' should be more appealing!). A variety of images/videos would be helpful. Simple geometric black and white grids have often been used: Grids of increasing complexity (more squares) will hold the attention of older children better

VRA

- Other options to centre baby's attention:
 - Projection screen, or other light emitting toys, bubble machine, mobile, disco ball. These could be adapted for remote operation. Dimming lights may help if using lighted toys or screens.
 - However, it's VERY IMPORTANT for the toys to be as silent as possible. If they make any noise (which most moving objects will, including projectors and possibly monitors) a SLM check should be done at the test position to check background noise levels are within standards
- In some cases a parent may act as distractor. Toys such as mirrors and books can be helpful for the parent to hold. Ensure toys such as mirrors are never held in between the infant and sound source
- Some systems (e.g. Intelligent Hearing Systems) reduce the need for two testers by automating stimulus presentation (though this does not help reduce the need for a distractor who is the one close to the family)
- 'Remote' VRA testing has been successful in finding hearing thresholds for infant CI users (Hughes et al., 2018a) But this still required the distractor to be with the family.

Hughes, M. L., Sevier, J. D., & Choi, S. (2018). Techniques for Remotely Programming Children With Cochlear Implants Using Pediatric Audiological Methods via Telepractice. American Journal of Audiology. https://doi.org/10.1044/2018_AJA-IMIA3-18-0002

Help children stay safe/prevent spread during covid-19



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Launch of DEAFKIDZ vs COVID-19 online games

DeafKidz International is delighted to announce the launch of our brand new DEAFKIDZ vs COVID-19 online games!

Click here to play DEAFKIDZ vs COVID-19 games!

In these strange and challenging times of COVID-19, we are all concerned about how to stay safe. Although there are resources available explaining COVID-19, how it affects us, and how to minimise the spread of the virus, none have been developed in consultation with Deaf children and with their specific communication and information needs central. Yet, Deaf children, like all children, should be empowered to stay safe and to reduce their risk to infection and transmission, based on informed choice and safe behaviours.

https://www.deafkidzinternational.org/deafkidz-vs-covid-19



BRITISH ACADEMY OF AUDIOLOGY

Thanks to all the speakers for preparing and delivering their ideas. Thanks all those that attended for being part of the project. **Next step: review and update the remote working documents.**