# Newborn hearing screening programme: Technical guidance for maintaining business continuity in screening and the management of audiology referrals during the COVID-19 pandemic

**December 2020**

## Contents

## 1. Background

It is paramount that antenatal and newborn screening continues during the COVID-19 pandemic as specified in the NHS England Service Specification for each programme. Antenatal and newborn screening programmes are time critical and early detection and intervention for some of these medical conditions screened for is important and can have significant mortality and morbidity.

It is important the parents of babies with screen positive results are given the information they need to make the right choices for them and are safely referred onto the correct care pathway. This can be a highly anxious time for parents and they must be adequately supported by health professional advice and information.

This technical guidance is specific to the **newborn hearing screening programme** (NHSP) pathway to support business continuity for providers who may experience disruption to services, during the COVID-19 pandemic owing to any local restrictions. This document provides recommendations on the continuity of the screening pathway, and additional technical guidance on how best to deliver the screening programme and manage referrals to audiology when staffing and capacity may become more challenging.

It is acknowledged that maintaining the current service during these times may be difficult. However, normal screening and referral pathways and NHSP protocols, should be followed where possible, maintaining business as usual.

**All services should consider the impact that disruption at any point of the pathway may have on the whole screening and diagnostic pathway, and how this may cause delayed identification of a hearing impairment.**

Services should undertake an assessment of the risks associated with bringing babies into their service for screening / diagnostic testing with the overarching principle that the service is safe. Services should comply with trust guidelines to minimise any potential risks to staff and patients.

## 2. Newborn hearing screening

All babies should be offered the screen and complete the usual screening pathway following national protocols. Screening should be completed by 3 months (corrected) age unless for an exceptional reason. The NHSP national IT system SMaRT4Hearing (S4H) must be used to track babies through the screening pathway.

Babies should undergo the newborn hearing screen whilst on the maternity unit although provider organisations should try to maintain an outpatient screening provision to complete the screen wherever this is possible.

The S4H screening outcome 'incomplete – lack of service capacity' should only be used in **exceptional circumstances**, if the local service has exhausted all opportunities to offer the screen.

Parents should be made aware that the hearing screen and any further audiology assessments are **time critical** because the tests are difficult to perform on older babies. The 'parent information from NHSP' within S4H can be used to emphasise the importance. Ideally the screen should be completed by 3 months (12 weeks) of age, with audiology assessment, if required, being undertaken within 4 weeks of screen completion.

Babies born to COVID-19 positive women, or babies who are themselves COVID-19 positive should be managed in adherence with the current local NHS guidelines on the date of the proposed screening/audiology assessment

**NICU babies**:

Continue to screen as many NICU babies as possible before discharge from hospital using the current pathway. If necessary NHSP teams should liaise with paediatric/neonatology teams to maximise opportunities for screen completion as an outpatient combined with NICU follow ups for any baby discharged unscreened

**Well babies:**

Continue to screen using the normal screening pathway and protocols where possible.

**If services are disrupted**:

- commence the screening pathway with AOAE1 for as many babies as possible close to their discharge from hospital
- if bilateral **clear response** baby can be discharged from the screening pathway
- if **no clear response** at AOAE1 and there is time to proceed to second stage test (AOAE2) before discharge, this can be carried out (even if less than a 5-hour interval) if it is not possible to offer this as an outpatient
- if **no clear response** after AOAE1 or AOAE2 the following options can be considered according to local service provision
    - if there is capacity and opportunity arrange outpatient screening within expected timescales to complete screening

    - if there is no capacity to offer outpatient screening proceed to AABR in the same session, before discharge, accepting there may be an increased subsequent referral rate due to those cases of temporary conductive loss
    - if there is no capacity to offer outpatient screening or the AABR is unlikely to achieve a valid result (due to very young age of baby/test conditions) inform parents that an appointment will be arranged by the NHSP team to complete the screen at a later date. Parents should be made aware of the importance of attending this appointment
- It is essential that maternity services and NHSP teams work together to maximise opportunities to complete the screen either as an inpatient or outpatient such as at newborn blood spot screening/postnatal clinics or in community family centres
- To maximise coverage, consider changes to working hours to provide more screening cover over the course of the day/week (eg 7am-7pm, 7 days per week)
- Babies who have not been screened, such as early discharges, home births or those who move into the area, should be offered appointments for screening if possible. A routine follow-up appointment in audiology at 8 months in lieu of a screen is not indicated unless it is established a baby in this group has any risk factors to allow future consideration in their follow-up: congenital infection, cranio-facial anomaly, syndrome associated with a hearing loss
- Letter templates and information for parents, for use during the COVID-19 outbreak are available within the S4H resource tile;
    - Parent information from the NHSP (screening) v2
    - Parent information from the NHSP (audiology) v2
    - COVID-19 Not screened or incomplete letter template v1.0
    - COVID-19 No clear response bilateral referral letter template v1.0
    - COVID-19 No clear response unilateral screen referral template v1.0
    - COVID-19 Audiology letter template v1.0

**Premises**

Screening and audiology services should explore flexible models such as holding clinics in alternative locations, possibly away from acute settings and where no COVID-19 patients are being treated. This may help to provide parents with some extra reassurance to encourage their attendance.

If the usual premises become unavailable, alternative suitable options should be looked at whilst maintaining a safe service. Services should comply with trust guidelines to minimise any potential risks to staff and patients.

## Screening Staff

In cases where staff shortage/availability is an issue, the redeployment of audiologists or paediatric audiology assistant/associates to undertake newborn hearing screening can be considered.

An **audiologist** can train in the same way as a new screener and as long as they hold a current professional healthcare registration (RCCP, HCPC and AHCS) they do not need to register for the health screener diploma.

During the COVID-19 incident, an **audiologist**, carrying out newborn hearing screening in England must:

- be registered on the screening device(s) and S4H
- complete training to enable them to use the NHSP national IT system to provide a failsafe mechanism and to upload test data
- complete NHSP e-learning
- learn the communication skills to inform parents and gain consent
- complete practical training in the use of the equipment and to perform a minimum of five supervised automated otoacoustic emission (AOAE) and five supervised automated auditory brainstem response (AABR) – including equipment protocols
- have been locally assessed by the local manager using the performance observation checklists as competent to carry out the screen
- be supervised screening at all times until the local manager is satisfied that they are competent to screen
- in normal circumstances they should:
    - complete an NHSP ECA if performing AABR. This can be at the NHSP local manager's discretion during the COVID-19 incident
    - not screen without the on-site/accessible support from the local manager or experienced screener until an ECA has been successfully completed. This can be at the NHSP local manager's discretion during the COVID-19 incident

During the COVID-19 incident, a **paediatric audiology assistant/associate**, who does not hold a current professional health care registration, carrying out newborn hearing screening in England must:

- be registered on the screening device(s) and S4H
- complete training to enable them to use the NHSP national IT system to provide a failsafe mechanism and to upload test data
- complete NHSP e-learning
- learn the communication skills to inform parents and gain consent
- complete practical training in the use of the equipment and to perform a minimum of five supervised automated otoacoustic emission (AOAE) and five

supervised automated auditory brainstem response (AABR) – including equipment protocols

- have been locally assessed by the local manager using the performance observation checklists as competent to carry out the screen
- be supervised screening at all times until the local manager is satisfied that they are competent to screen
- complete an NHSP ECA and not screen without the on-site/accessible support from the local manager or experienced screener until the ECA has been successfully completed. Contact PHE.NHSPTraining@phe.gov.uk for further information
- if they are still working as a newborn hearing screener after 6 months continually, register for the health screener diploma (HSD)

## 3. Setting screening outcomes in S4H

The outcome on S4H should be set appropriately as described in the **S4H generic guide v1** found on the resource tile in S4H.

**Incomplete outcomes** should only be set when all screening options have been exhausted.

- local services should offer appointments to babies less than 3 months of age, giving parents the opportunity to attend. If they decide not to bring their baby for screening, services must explain to parents that babies should be screened by 3 months of age and offer one more appointment before this age is reached. Services should use the 'Parent information from the newborn hearing screening programme (screening)' to provide parents with written information about the importance of attending their appointment
- if the family do not attend this final appointment, services can take a decline screening or withdrew consent from the parents by telephone and refer them to the checklists included in their baby's Personal Child Health Record ('red book'). Set the record in the NHSP national IT system (S4H) as 'incomplete – declined screen' or 'incomplete withdrew consent'
    - a routine follow-up appointment in audiology at 8 months is **not indicated** unless the baby has one of the risk factors that are an indication for targeted follow up or there is parental or professional concern. If the parents cannot be contacted, the S4H outcome can be set as 'incomplete – appointments missed'. Use the outcome reason in S4H to record the appointment history
    - the usual decline or appointment missed process should be followed
- if local services are unable to offer a screen before the baby reaches 3 months of age (corrected) due to lack of service provision, they can offer screening up to 6 months only in exceptional circumstances

- if in **exceptional circumstances** local services are unable to offer an appointment before a baby reaches 6 months of age, the S4H outcome can be set at 'Incomplete – lack of service capacity'. These babies should be offered appointments in Audiology, see section 6 and 8.6.

## 4. Babies referred to audiology from the screen

- Babies with a no clear response at AABR (unilateral and bilateral) must have an immediate referral to audiology diagnostic services as usual.
- In exceptional circumstances, where non-urgent outpatient activity has been reduced, the referral should be retained by audiology for future management – see guidance in section 6. A 'COVID-19 Audiology letter template v1.0' from S4H, should be given to the parents explaining that the audiology appointment is being deferred due to the COVID-19 incident
- Services should use the 'Parent information from the newborn hearing screening programme (audiology)' to provide parents with written information about the importance of attending their appointment
- Babies with screening contra-indications should be referred immediately to the audiology diagnostic service and the outcome on S4H set to 'Incomplete - screening contraindicated'. These are 'urgent referrals' in the current context, see section 7.
- The audiology service should manage prioritisation for babies using patient and waiting list management systems

## 5. Managing records in the NHSP national IT system (S4H)

### Identifying babies for screening and audiology

It is important that screening and audiology services can identify all babies who have not completed their newborn hearing screen or audiology assessment, to make sure that babies complete the screening pathway. Accurately identifying records for screening and audiology is important, to assure commissioners and screening quality assurance (SQAS) that no babies have been missed. This should also include new births not screened, as they need to be factored into capacity planning.

The number of babies in each category is shared with NHS England in national data reports.

Local services can use the **NHSP modelling tool** to identify and review their records for local monitoring purposes, following the NHSP modelling tool technical guidance. Both can be found within the **resources** tile on S4H.

## 6. Management of babies who have not completed the screen

It is important that every effort is made to screen babies with incomplete screening caused by any service restrictions.

The following information is provided for services that have babies with incomplete screening and how to prioritise each group within each cohort.

### 6.1 Prioritisation for unscreened or incomplete screen babies

NICU and well babies ≤ 3 months (12 weeks) (corrected age) should be screened as per usual protocols, enter the results in S4H and refer to audiology if required.

Screening teams should identify all babies with an incomplete screen, for whom they are responsible, from the NHSP national IT system (S4H).

Before contact is made with any families, a check must be undertaken with relevant stakeholders (such as NHS Spine, Child Health, GP, HV) to ensure that the baby is not deceased.

Three advanced searches have been set up in S4H to enable local services to create lists of records that need review for screen offer or referral to audiology. Local services who have completed the NHSP modelling tool can identify these records from there.

If a baby has not been screened by the expected timescale they should be prioritised in the following order:

1) NICU babies
2) Well babies

#### 6.1.1. NICU babies

- **NICU babies >3 months (12 weeks) and ≤ 6 months (corrected age)**

Screen as per usual NICU protocol, enter the results in S4H and refer to audiology if required. If the baby is too active or unsettled and the AABR cannot be completed set the screening outcome to 'incomplete – baby unsettled' with the reason 'COVID-19' and refer to audiology. See section 8.6 for details on how to manage this referral.

- **NICU babies > 6 months (corrected age)**

Only in **exceptional circumstances**, if the local service is unable to offer screening before the baby reaches 6 months of age, the S4H screening outcome should be set to 'incomplete – lack of service capacity' with the reason COVID-19 and baby referred to audiology. See section 8.6 for details on how to manage this referral.

### 6.1.2. Well babies

- **Well babies > 3 months and ≤ 6 months (corrected age)**

Where **no offer of screening could be made before the baby reached 3 months of age** (corrected) due to lack of service provision, then dependent on service capacity one of the two following options can be considered:

1. Baby seen by screening team. Screen as per usual protocol, enter the results in S4H and refer to audiology if required. However, if the baby is too active or unsettled and the screen cannot be completed set the screening outcome to 'incomplete – baby unsettled' with the reason COVID-19 and refer to audiology. See section 8.6 for details on how to manage this referral.

or

2. Baby seen by audiology team for hearing assessment. If using diagnostic equipment, the presence of a bilateral TEOAE that meets the NHSP pass criteria (i.e. ≥6dB for 2 out of 4 half octave bands centred at 1.5,2,3,4 kHz with a minimum response 0dB rms SPL) is sufficient for discharge. Otherwise the baby should be seen for further diagnostic assessment. The S4H screening outcome should be set as 'incomplete – lack of service capacity' with the reason COVID-19. The audiologist should enter the test results in the diagnostic section of S4H. See section 9.

- **Well babies > 6 months (corrected age)**

Only in **exceptional circumstances**, if the local service has exhausted all opportunities to offer screening, audiology may assess a baby's hearing. The S4H screening outcome of the record should be set to 'incomplete-lack of service capacity', follow up status is 'in process', or 'not applicable' and patient status is 'inactive other' and the baby referred to audiology.

Since these are well baby referrals, the presence of a bilateral TEOAE in audiology that meets the NHSP pass criteria is acceptable for discharge.

Local audiology services may decide to set up dedicated OAE clinic (which would allow a greater throughput) with further assessment if TEOAE is not present or to set up clinics that would allow for immediate visual reinforcement audiometry (VRA) if the TEOAE is not completed or is not present.

When an audiology appointment is offered to a baby with incomplete screening, the local screening services should set the patient status to 'Active – Follow up (immediate)'. If this is not done, then please follow the steps in Appendix 1.

If the parents want to defer the offer of assessment, the usual audiology missed appointment process should be followed, and the baby managed by audiology teams. See section 8.6.

## 7. Audiology management of babies referred from the screen

Normal NHSP protocols and referral pathways, should be followed where possible maintaining business as usual. Where there is significant disruption to audiology services referrals should be managed in 3 groups:

1. Babies with a screening contra-indication
2. Babies referred from AABR screening
3. Targeted follow-up

Where screening has been undertaken and immediate referral is required, there is a responsibility to undertake audiological assessment, wherever possible, within the expected timeframes. The parental anxiety caused by a screen positive result must be considered. A referral should be identified as 'clinically urgent' if this enables local services to prioritise these referrals appropriately.

If outpatient services have been restricted and only clinically urgent cases are being seen, then priority must be given to those cases where immediate diagnostic assessment is required for medical purposes or where delayed identification of the presence of a hearing impairment will have a severe life-long change to management i.e. confirmed or suspected bacterial meningitis where late identification may preclude the insertion of a cochlear implant due to ossification or cCMV where the urgency is related to the short window of opportunity for anti-viral treatment.

If restrictions are in place, audiology should provide an explanation to the parents and a letter / telephone contact should be given to explain the current situation and that further follow up will be arranged in due course.

Management for these babies will depend on their age at the time of services being restored. Dependent on the length of any service disruption, various options will need to be considered. If the time is short (i.e. less than 12 weeks) these babies could be seen for ABR testing under natural sleep and it would therefore be appropriate for them to be offered a standard diagnostic appointment at that time. If the time of service disruption is significantly longer, and possibility of successful ABR assessment under natural sleep is deemed unlikely, it may be necessary to include parental concern as a factor in the sub-prioritisation of those within each group. For further guidance see section 8.

### Babies with a screening contra-indication

The following groups of babies must be referred directly to audiology as current practice:

Group 1. Microtia and external ear canal atresia.
Group 2. Neonatal bacterial meningitis or meningococcal septicaemia
Group 3. Babies with a PVP shunt
Group 4. Confirmed congenital cytomegalovirus (cCMV)

Babies in these groups should be seen for a diagnostic appointment within the usual time frame where possible, as these should be considered clinically urgent, local restrictions allowing. This is due to the high risk of hearing loss in this cohort.

It is important that every effort is made to assess babies with incomplete diagnostic testing caused by service restrictions.

## 8. Prioritisation of screen referrals for diagnostic audiological assessment

Audiology services should determine the total number of babies referred from the screen that require diagnostic testing. Capacity should be planned to manage new and existing referrals according to clinical priority. The NHSP modelling tool can be used to help identify babies awaiting audiological assessment.

Clinical priority is based on the risk of a hearing loss.

Cases should be prioritised as follows:

1. cCMV positive babies and any other priority referrals from the medical team
2. Babies with a screening outcome of 'Incomplete - screening contraindicated'
3. NICU babies - bilateral referrals
4. Well babies - bilateral referrals
5. Unilateral referrals
6. Incomplete – lack of service capacity/baby unsettled
7. Targeted follow-up

Services should estimate the age profile of those on a referral list as to when they will be tested. A judgement should be made as to whether it will be better to see the youngest babies first or the oldest within each clinical category. Seeing the youngest babies first may enable more babies to be seen within expected timeframes and the waiting list may be reduced more effectively. The older babies may reach an age where behavioural testing is more appropriate. Services should judge how best to avoid the most difficult age of testing (3 months – 7 months) and where testing gives the maximum chance of success.

Both parental anxiety and concern for their child's hearing should be considered and services will need mechanisms to manage this. Where parents express concern about their child's hearing or report observing lack of response to sound, early assessment should be prioritised.

All babies should be offered an appointment in order of clinical priority.

## Prioritisation Groups

### 8.1 cCMV positive babies and any other priority referrals from the medical team

These should be seen as soon as possible for diagnostic ABR testing as per usual protocol.

### 8.2 Babies with a screening outcome of 'Incomplete - screening contraindicated'

These should be seen for diagnostic ABR testing as per usual protocol. Where testing is taking place on babies more than 12 weeks corrected age or where limited / no testing is possible due to the age of the child, see section 10.

### 8.3 NICU babies - bilateral referrals

These should be seen for diagnostic ABR / OAE testing as per usual.

Where testing is taking place on babies more than 12 weeks corrected age or where limited / no testing is possible due to the age of the child, see section 10.

### 8.4 Well babies - bilateral referrals

These should be seen for diagnostic OAE / ABR testing as per usual.

Services may decide to discharge babies who show a bilateral TEOAE that meets the NHSP pass criteria (i.e ≥ 6dB for 2 out of 4 half octave bands centred at 1.5, 2, 3, 4 kHz with a minimum response 0dB rms SPL) without any ABR testing.

Services may decide to run diagnostic testing in the same session as the TEOAE testing or bring the baby back for further testing at a later date to allow a greater throughput.

Where testing is taking place on babies more than 12 weeks corrected age or where limited / no testing is possible due to the age of the child, see section 10.

### 8.5 Unilateral Referrals

Where ABR service capacity allows, this cohort should be seen for diagnostic OAE / ABR testing as usual.

If there is limited ABR service capacity services may consider the following:

- a separate OAE clinic with behavioural testing for those who have an absent OAE
- behavioural testing at 8 months. This is considered the best option when demands for ABR service capacity is high although this should be considered on a case by case basis, particularly in NICU babies

Unilateral referrals cannot be assumed to have satisfactory hearing in the non-referred ear owing to the possibility of false negative screening results. Therefore, audiological assessment must include ear specific results. For well babies a bilateral TEOAE that meets the NHSP screening pass criteria is sufficient. For NICU babies the possibility of ANSD must be also be considered. These babies should have ear specific behavioural testing. However, ANSD may also present with normal behavioural thresholds and therefore if there is a serious suspicion of ANSD, further audiology assessment should be considered

Where testing is taking place on babies more than 12 weeks corrected age or where limited / no testing is possible due to the age of the child, see section 10.

This should not be seen as a long-term solution and services should carefully consider the implications of an increased referral rate for the behavioural part of the audiology service. Every effort must be made to reach a point where the standard pathways for unilateral referrals are resumed.

### 8.6 Referral - incomplete screens (eg lack of service capacity/baby unsettled)

Where services have been unable to complete the screen before a baby reaches 6 months of age and the decision is made to defer the baby for behavioural testing, babies should be seen as close to 7-9 months corrected age as possible

When a baby who **has not been screened** is seen by audiology and the S4H screening outcome is set to 'incomplete- lack of service capacity', **before audiology assessment data is added**, the patient status must be set to 'Active – Follow up (immediate)'.

### 8.7 Targeted follow up

Services should still attempt to see these babies as close to 8 months corrected age as possible however it is recognised that this may be delayed. Services should assess the reason for targeted behavioural follow up and prioritise these cases based on clinical need.

## 9. Managing audiology records in S4H for screen referrals

The audiology team should manage referrals in S4H as follows:

- when the baby attends the offered appointment, change the status to '**attended**' and add the assessment data in the usual way
- if agreed with the family to see the baby at 7-9 months, reset the patient status from **'active – follow up (immediate)' to 'active – follow up (targeted)'**
- if agreed with the family to see the baby sooner, add an **'offered'** appointment of the date agreed to see the baby
- document any telephone consultations in case notes

- do not add an ‘attended audiology’ appointment where only a telephone consultation has been held with the parents to help prioritise referral assessment appointments. As the baby has never actually attended audiology on this date there is a risk the referral will not be identified subsequently.
- if the family withdraw the decision to attend an audiology appointment, change the ‘offered’ appointment to ‘cancelled’ and reset the patient status to ‘active – follow up (targeted)’. The usual decline or appointment missed process should be followed

To identify referrals from the screen, records can be searched by patient status of ‘**active - follow up (immediate)’** or ‘**active – follow up (targeted)**’ to show the offered appointment and its date. The follow up status will remain ‘**pending’** to track the records/babies.

## 10. Considerations on audiological testing

1. For all cases audiology services should record on the NHSP national IT system (S4H) the audiology follow-up data on babies that refer from the screen as well as any children with later identified PCHI.

2. Babies under 12 weeks corrected age should be capable of testing under prolonged natural sleep as per usual clinical pathways and every effort should be made with this age group to complete OAE / ABR testing to usual NHSP / BSA standards.

3. Care should be taken when performing bone conduction ABR on babies aged over 12 weeks. At this age, both the eHL correction and cross hearing thresholds change rapidly and sites must bear this in mind to accurately assess this age group.

4. Where the baby is restless, services may wish to change the high pass (low filter) from 30 to 100Hz.This may be helpful in some cases but must not become standard practice. Services should be aware that this can impact on the V-SN10 amplitude and thus may make threshold determination more difficult.

5. Any change to the artefact rejection beyond that recommended in the BSA procedure is to be avoided as the number of sweeps required to achieve good signal to noise ratio is likely to be self-defeating.

6. ABR responses must be judged and peer reviewed on the same criteria as in the BSA Procedures. No relaxation of the 3:1 criteria for clear response or minimal noise levels for response absent is envisaged.

7. Services are encouraged to use their own clinical judgment on the ABR test order on a case by case basis. A small amount of good quality ABR data should be considered preferable to a large amount of poor-quality data.

8. Every effort should be made to assess NICU babies by the usual NHSP pathway standards, including re-appointing as necessary. However, in babies too developmentally old for ABR testing under natural sleep, babies which have clear response to bilateral OAE testing, no parental concern and no risk factors may, in discussion with the parents, be referred for behavioural testing without the need for ABR.

9. In cases where ABR data is incomplete or impossible to obtain, clinicians are strongly encouraged to use clinical judgment on each individual case as to the care plan, taking into account the results obtained up until that point, screening results, parental concern, medical history and risk factors for hearing loss. Suitable management may include but not be limited to: reappointing for further testing, referring for management based on incomplete data, sedation / general anaesthetic for ABR testing, waiting for behavioural testing. This decision should be taken in conjunction with the parents and fully documented in S4H and audiology systems.

10. Services should continue to send ABR cases for peer review to their local network, however ABR peer review groups should come to a local decision and it may be preferable to limit the number sent to just PCHI identified cases and the first discharge case of the month on a per tester basis.

## 11. Other considerations

### Information for parents

It is important that parents understand the time critical nature of the NHSP screening and diagnostic pathway. The 'information for parents' guidance and the letter templates, with parental checklists, are available within S4H for use during the COVID-19 outbreak. Guidance on these can be found on the resource tile in S4H. Local NHSP providers should direct parents to the accessible digital version of the audiology referral leaflet when referring babies from screening to audiology.

### Screening safety incidents

As far as possible, the principles in the national guidance should be followed. Incidents or potential incidents should be reported to the screening quality assurance service (SQAS) and commissioners so that they know about problems occurring. SQAS will continue to give advice whilst recognising the intense pressure that many providers staff will be under.

### Documenting changes as they happen

We anticipate that there will be a need to evaluate the impact of the pandemic in the future, so we advise providers document dates and changes made to the delivery of screening for audit purposes.

**For further queries**

If you have any comments or queries relating to this document, please contact PHE.screeninghelpdesk@nhs.net

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**Abbreviations**

| | |
|---|---|
| AABR | Automated Auditory Brainstem Response |
| ABR | Auditory Brainstem Response |
| ANSD | Auditory Neuropathy Spectrum Disorder |
| AOAE | Automated Otoacoustic Emissions |
| BSA | British Society of Audiology |
| cCMV | Congenital Cytomegalovirus |
| ECA | External competency assessment |
| eHL | Estimated Hearing Level |
| NICU | Neonatal intensive care unit |
| OAE | Otoacoustic Emissions |
| PCHI | Permanent Childhood Hearing Impairment |
| TEOAE | Transient Evoked Otoacoustic Emissions |

**APPENDIX 1**

**S4H steps for babies with incomplete screen and inactive patient status seen by audiology**

There are four ways to make sure the **follow up** and **patient status** are recalculated correctly by S4H following the audiology **attended appointment** data entry. Otherwise S4H will display the incorrect **patient** and/or **follow up status** and records may not be identified correctly in searches. Local managers should liaise with their audiology colleagues to make sure these records are corrected using one of the four steps below, but remembering:

- when the baby has been seen in audiology but **not discharged** following the first assessment, the record should have:
    - **follow up status** of 'in process'
    - **patient status** of either 'active - follow up (immediate)' or 'active – follow-up – (targeted)'
- when the baby has been seen in audiology and **discharged** following the first assessment, the record should have:
    - **follow up status** of 'complete - hearing satisfactory'
    - **patient status** of 'inactive- no confirmed hearing loss'

1. The type of hearing loss is **satisfactory**, and baby **discharged**
    a. Add **attended appointment** data as normal
    b. Set the **type of hearing loss** as 'Satisfactory
    c. The **follow up status** will be recalculated to 'complete - hearing satisfactory
    d. The **patient status** is still incorrectly set as 'inactive – other' unset and reset the **screen outcome** on the demographics page using the reason COVID-19 each time and S4H will recalculate the **patient status** to 'inactive – no confirmed hearing loss'

2. The type of hearing loss is **not satisfactory**, and baby will be **seen again** (including PCHI cases)
    a. Reactivate the **patient status** to 'active - follow up (immediate)', or 'active – follow up (targeted)', using the reason COVID-19
    b. Add **attended appointment** data as normal, setting the **type of hearing loss** as anything apart from satisfactory
    c. The **follow up status** will be recalculated to 'in process'
    d. The **patient status** will be set correctly 'active - follow up (immediate)'or active – follow up (targeted)'

3. Audiology have already added **attended appointment data**, without the patient status being reactivated and the type of **hearing loss was set** to any

option apart from satisfactory. The baby will be seen again (including PCHI cases)

The **follow up status** was recalculated to 'in process', but the **patient status** is still incorrectly set to 'inactive – other'.

a. Reactivate the **patient status** to 'active - follow up (immediate)', or 'active - follow up (targeted)', using the **reason** COVID-19

4. Audiology have already added **attended appointment** data, without the patient status being reactivated and the type of **hearing loss was set to satisfactory**. The baby was discharged but the follow up status is still incorrectly set to either 'in process' or 'not applicable' and patient status is incorrectly set 'inactive other'.
    a. Unset and reset the screen outcome on the demographics page giving a reason of COVID-19 each time and S4H will recalculate the follow up status and set to 'complete - hearing satisfactory' and set the patient status to 'inactive – no confirmed hearing loss'