

## **Patient journey: protocol for screening well babies in community sites**

### **1.0 Definitions**

**1.1** A **satisfactory** test is one that is **completed** and gives a **result (clear response or no clear response)** under good test conditions i.e.

- Probe fit/electrode impedances satisfactory
- Baby is in a suitably quiet state
- The background noise conditions are satisfactory

**1.2** A **result** is either a **clear response (CR)** or **no clear response (NCR)**.

**1.3** A test **attempt** is defined as placing, or attempting to place, a probe in the baby's ear or attaching, or attempting to attach, one or more electrodes even if the screener does not reach the point of pressing the "Start test" button.

### **2.0 Is screening appropriate?**

All babies are candidates for the screen unless there is unequivocal evidence of hearing impairment as in babies with unilateral or bilateral atresia. These babies should not be screened but referred directly for audiological assessment. The family should be offered an appointment within 4 weeks.

It is the responsibility of the local coordinator to discuss this with the parent(s) in conjunction with the paediatricians and midwives.

### **3.0 Patient journey**

#### **3.1 Initial test**

The initial test is AOAE unless this is considered inappropriate due to the presence of obvious debris or fluid in one or both ear canals. In this case the AABR may be used as the initial test.

#### **3.2 AOAE1**

- AOAE1 to be attempted in both ears. If a result is obtained in both ears AOAE1 is complete.
- If satisfactory test conditions cannot be achieved for one or both ears where possible carry out a further test attempt later in the visit.
- At the end of the visit AOAE1 is considered complete even if a result has not been obtained in both ears.

At completion of AOAE1 there are a number of possible outcomes

- result in both ears
- result in one ear only
- result in neither ear

If the result is a clear response in both ears the screen is complete. For all other results move to AOAE2 unless this is considered inappropriate, in which case move to AABR. AOAE2 may be considered to be inappropriate for the following reasons:

- technical difficulty with the test due, for example, to persistent noisy breathing
- evidence of discomfort on probe insertion

#### **3.3 AOAE 2**

- AOAE2 is required to be carried out only in ears that have not shown a clear response on AOAE1. When the ear(s) that require AOAE2 have a result AOAE2 is complete.
- If satisfactory test conditions cannot be achieved for one or both ears where possible carry out a further test attempt later in the visit.
- At the end of the visit AOAE2 is considered complete even if a result is not obtained in both ears.

At the end of AOAE2 there are a number of possible outcomes based on the combined results from AOAE1 and AOAE2.

- result in both ears
- result in one ear only
- result in neither ear

If the result is a clear response in both ears the screen is complete. For all other results move to AABR unless this is considered inappropriate. AABR may be considered inappropriate for the following reasons:-

- medically inadvisable to attach electrodes
- parental opinion

### **3.4 AABR**

- The AABR is carried out on both ears unless this is considered inappropriate. AABR may be considered inappropriate for the following reasons:
  - Medically inadvisable to attach electrodes
  - Parental opinion
- The AABR is carried out on both ears irrespective of the results obtained on AOAE1 and AOAE2.
- Once a result has been obtained in both ears AABR is complete
- The AABR should not be repeated in an ear in which a result has already been obtained.
- If satisfactory test conditions cannot be achieved for one or both ears arrange a further appointment or visit to complete the test in the ear or ears which do not have a result

### **3.5 Screening process**

**3.5.1** The screening process should be started with AOAE1 between 10 and 24 days of age. Where required AOAE2 should take place within 7 days of AOAE1. Where required the AABR (and thus the entire screening process) should be completed by 5 weeks of age.

**3.5.2** The screening process should normally be accomplished within 3 contacts with not more than 1 of these requiring attendance at a clinic.

### **3.6 Audiological assessment**

Some community based sites offer immediate progression to audiological assessment following a no clear response result on AABR. This may happen where the AABR is carried in the audiology clinic by an audiologist who is trained and experienced in threshold ABR. If this is the case the parent(s) should be forewarned (i.e. prior to attending the AABR) to enable them to prepare for a longer visit, to organise appropriate support at the appointment and should be fully informed about the diagnostic process when the AABR result is given and prior to starting the diagnostic testing.

### **4.0 Scenarios**

The following scenarios indicate how the protocol as defined above might work in practice. The appropriate further action is also indicated. The babies are all following the “Well Baby” protocol and do not have any risk factors for which a targeted follow up would be indicated.

At the end of each scenario the **Screening Outcome Status Code** used in eSP is shown.

**Scenario 1**

Stage	Day	Right	Left
AOAE1	Visit 1	CR	CR
AOAE2			
AABR			

In this scenario a result was obtained in both ears on AOAE1 at the first attempt. AOAE1 is therefore complete. The result is a clear response in both ears. The screening is complete and no follow up is required.

**Screening Outcome Status Code = Clear response**

**Scenario 2**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	NCR
AOAE2	Visit 2		CR
AABR			

In this scenario a result was obtained in both ears on AOAE1 at the first attempt. AOAE1 is therefore complete. The result for the left ear was no clear response. At visit 2 AOAE2 is carried out in the ear that did not show a clear response on AOAE1. This ear now shows a clear response and therefore AOAE2 is complete and the screening process is complete.

**Screening Outcome Status Code = Clear response**

**Scenario 3**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	Not complete CR
AOAE2			
AABR			

In this scenario a result was obtained in the right ear on AOAE1 at the first attempt but testing on the left ear was not completed as the baby woke up half way through the test and could not be settled. The screener made another attempt later in the visit. At this time the baby was in a satisfactory state to be tested and a clear response was obtained. AOAE1 is thus complete and no further testing is required.

**Screening Outcome Status Code = Clear response**

**Scenario 4**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	Not complete NCR
AOAE2	Visit 2		CR
AABR			

In this scenario a result was obtained in the right ear on AOAE1 at the first attempt but testing on the left ear was not completed as the baby woke up half way through the test and could not be settled. The screener made another test attempt later in the visit. At this time the baby was in a satisfactory state to be

tested but no clear response was obtained. AOAE1 is thus complete. Within 7 days AOAE2 is attempted in the ear that did not show a clear response on AOAE1. This ear now shows a clear response and therefore AOAE2 is complete.

**Screening Outcome Status Code = Clear response**

**Scenario 5**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	Not complete
AOAE2	Visit 2		Not complete
AABR	Visit 3	CR	CR

In this scenario a result was obtained in the right ear on AOAE1 at the first attempt but testing on the left ear was not completed as the baby woke up half way through the test and could not be settled. At this point AOAE1 is considered to be complete in spite of the fact that no result has been obtained for the left ear. Within 7 days AOAE2 is attempted in the ear that did not show a clear response on AOAE1. It is still not possible to obtain a result but AOAE2 must now be considered complete. The screener therefore arranges for AABR, with testing of both ears even though the right ear has shown a clear response on AOAE1. The AABR shows a clear response in both ears and thus screening is complete.

**Screening Outcome Status Code = Clear response**

**Scenario 6**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	Not complete
AOAE2	Visit 2		NCR
AABR	Visit 3	CR	CR

In this scenario a result was obtained in the right ear on AOAE1 at the first attempt but testing on the left ear was not completed as the baby woke up half way through the test and could not be settled. Within 7 days AOAE2 is attempted in the ear that did not show a clear response on AOAE1 and the result is no clear response. The screener therefore arranges for AABR, with testing of both ears even though the right ear has shown a clear response on AOAE1. The AABR shows a clear response in both ears and thus screening is complete.

**Screening Outcome Status Code = Clear response**

**Scenario 7**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	NCR
AOAE2	Visit 2		NCR
AABR	Visit 3	Not complete	NCR

In this scenario AOAE1 gives a clear response in the right ear and no clear response in the left. Within 7 days AOAE2 is attempted in the ear that did not show a clear response on AOAE1 and shows no clear response. The screener therefore arranges for AABR, with testing of both ears even though the right ear has shown a clear response on AOAE1. The AABR shows no clear response in the left ear but testing in the right cannot be completed as the baby wakes. It is clear that whatever the AABR result in the right ear this baby requires referral to audiology in view of the no clear response in the left ear. Further attempts to

complete the AABR screen in the right ear will probably only serve to raise parental anxiety. It is suggested that in this case no further screening attempts are made and the baby is referred to audiology.  
**Screening Outcome Status Code = Incomplete (baby or equipment reason )**

**Scenario 8**

Stage	Day/time	Right	Left
AOAE1	Visit 1	CR	NCR
AOAE2	Visit 2		NCR
AABR	Visit 3	CR	NCR

In this scenario AOAE1 gives a clear response in the right ear and no clear response in the left. Within 7 days AOAE2 is attempted in the ear that did not show a clear response on AOAE1 and shows no clear response. The screener therefore arranges for AABR, with testing of both ears even though the right ear has shown a clear response on AOAE1. The AABR shows no clear response in the left ear and a clear response in the right. The screening is complete and the baby requires referral to audiology.

**Screening Outcome Status Code = No clear response (unilateral referral)**