

## **CORRECTIONS AND REVISIONS**

### **Review of Newborn Hearing Screening Regimes and Associated Screening Devices for the National Screening Unit, New Zealand Ministry of Health**

In March 2014 Young Futures completed the *Review of Newborn Hearing Screening Regimes and Associated Screening Devices* for the National Screening Unit of the New Zealand Ministry of Health.

After the report's release the need to correct a number of errors and make several revisions was identified. This document details and corrects the errors and explains the revisions. It is best read alongside a revised version of the report, dated July 2014, available on the New Zealand Ministry of Health website at <http://www.nsu.govt.nz/health-professionals/4627.aspx>

#### **1. Revisions to '*Limits of this work*'**

The original section detailing the '*Limits of this work*' (page iii – March 2014) has been expanded to emphasise that the content of the report responds to the specific information needs of the New Zealand Ministry of Health and that as a result some issues and concepts receive greater emphasis than others. It has also been clarified that the report does not intend to comprehensively attend to every issue pertinent to newborn hearing screening (page iii – July 2014).

#### **2. Revisions to discussion on sensitivity and specificity standards for screening equipment**

The original report incorrectly indicates that the 2007 Position Statement from the Joint Committee on Infant Hearing (JCIH) states that sensitivity and specificity of screening equipment should be above 97% (page 6 – March 2014). This error has been corrected and replaced with the reference from the JCIH 2000 Position Statement that sensitivity and specificity should be evidence-based (page 6 – July 2014).

#### **3. Revisions to discussions on validation of the Chirp stimulus for newborn hearing screening**

In order to more clearly represent the extent of available evidence validating the Chirp stimulus for newborn hearing screening, additional references have been added to the revised report (pages xiii and 41 – July 2014).

#### **4. Revisions to discussions on identification of mild hearing impairment using click A-ABR and Chirp A-ABR**

The original report stated that given the stimulus levels of most click A-ABR devices, mild hearing impairments will not be detected (pages 34, 35, 37 and 121 – March 2014). Recognising that it is possible that a very small proportion of children with mild hearing impairment may be identified following click A-

ABR screening, references to identifying mild hearing losses following click A-ABR screening have been revised to indicate that click A-ABR stimuli typically do not identify mild hearing impairments, and that mild hearing impairments may remain undetected (pages 33, 34, 37, 39, 123 – July 2014).

Additionally, the report noted recent evidence indicating that the Chirp A-ABR stimulus has the potential to identify mild hearing impairment (pages xvi, 70 and 97 – March 2014). However, it is acknowledged that further evidence on this issue is needed. In this context, references to the possibility of the Chirp stimulus to identify children who have a mild hearing impairment have been removed (pages xvi, 71 and 99 – July 2014).

In the absence of further clinical evidence regarding the integrity and scope of different screening devices to identify mild hearing impairment, references to the capacity of individual devices to identify mild hearing impairment when default/standard stimulus settings are used (page 97 – March 2014) have been removed (page 99 – July 2014).

## **5. Revisions to discussion on stimulus levels at the tympanic membrane using click A-ABR**

The report notes that delivery of the click A-ABR stimulus may vary at the level of the tympanic membrane due to differing physical volumes of the neonate's closed ear canal, particularly where insert earphones are used (page 37 and 38 – March 2014). This statement is accurate. To further clarify this issue, additional information has been included noting that some A-ABR devices use ear cups or ear muffs to overcome the issue (page 38 – July 2014).

## **6. Corrections to attribution of data provided by international programmes to screening devices**

In *Table 2 – Programme data provided by participating international programmes* the row 'Device/s used' indicates that for the period of data reported for Programme 3 the device being used was the MAICO BERAphone, rather than the AccuScreen and in the same row, the period of data reported for Programme 4 the device being used was the MAICO MB11 Classic, rather than the ALGO 3i (pages 43 and 44 – March 2014). At the time of the review both Programme 3 and Programme 4 had recently made changes to the screening devices used. Data for the new devices was not available for either programme at the time of the review.

The row 'Device/s used' has been changed to 'Device/s used at time of interview'. The MAICO MB 11 BERAphone and MAICO MB 11 Classic have been specified for Programme 3 and Programme 4 respectively (pages 45 and 46 – July 2014).

An additional row, 'Devices used during period of data collection', has been included in the table. The AccuScreen and the ALGO 3i have been specified for Programme 3 and Programme 4 respectively (pages 45 and 45 – July 2014).

## **7. Revisions to discussion on costing analysis, incorporating variable A-ABR refer rates**

The report presents an analysis of cost comparisons for varying screening regimes (pages 81 to 87 and 129 to 147 – March 2014). A standard set of notional costs and refer rates were applied for the analysis. The analysis concluded that the lowest costs were for an A-ABR/A-ABR regime that does not use consumables. This cost advantage was evident in the context of screening alone and when both screening and audiology costs were combined.

At the time of the review, Programme 3 and Programme 4 had recently changed from using a device utilising a click A-ABR stimulus to one using a Chirp stimulus. Data on refer rates using the new devices was not available at the time of the review. Following the report's release it was suggested to Young Futures that refer rates for at least one of these programmes was substantially higher than when using the original device, thereby raising questions about the assumptions informing the cost analysis. Subsequent investigation revealed that since changing devices refer rates for both Programme 3 and Programme 4 have remained comparable to their previous refer rates and to the other programmes reviewed.

Recognising the impact that a change in refer rates can have on programme costs (for any number of reasons), additional information has been included in the revised report to demonstrate the effect of varying first and second refer rates. The cost advantage of an A-ABR/A-ABR regime that does not use consumables remains up to and beyond a combined first refer rate of 10% and second refer rate of 4% (pages 87, 88, 139, and 140 – July 2014).

## **8. Corrections to details regarding newborn hearing screening devices**

In *Table 4 – Comparison of device features* the row 'Clinical risks specific to the UNHSEIP' indicates that the ALGO 5 and ALGO 3i have 'No upgradeable software'. Similarly, the row 'Disadvantages specific to each device' indicates that the ALGO 3i has 'No upgradeable software' (pages 93 and 94 – March 2014). This is not the case and the software of both devices is upgradeable. The references to 'No upgradeable software' has been removed for both devices. The row 'Clinical benefits' now includes 'Upgradeable software' for the ALGO 5 and the ALGO 3i (pages 95 and 96 – July 2014).

For the MAICO MB11 BERAprone and MAICO MB 11 Classic, the need for an internal rechargeable battery or power source for a laptop or tablet was omitted (pages 93 and 94 – March 2014). This information has been added to the revised report (page 95 and 96 – July 2014).

The report indicates that a benefit of the MAICO MB 11 BERAprone/MAICO MB 11 Classic is 'zero consumables' (page 96 – March 2014). This is the case for the MAICO MB 11 BERAprone but does not apply to the MAICO MB 11 Classic. This has been revised to read 'zero consumables (MAICO MB 11 BERAprone only)' (page 98 – July 2014).

#### **9. Corrections to abbreviation of the term 'automated auditory brainstem response'**

Having become aware that the abbreviation 'AABR' for 'automated auditory brainstem response' is a registered trademark, it has been replaced with 'A-ABR' throughout the report.

#### **Implications**

None of these revisions or corrections influence or impact upon the report's conclusions or the recommendations made by Young Futures to the New Zealand Ministry of Health.

Young Futures sincerely regrets the need for these corrections and revisions.

July 2014