

# **Universal Newborn Hearing Screening and Early Intervention Programme**

Second progress report on  
the implementation of  
quality improvements

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# 1 Introduction

The Universal Newborn Hearing Screening and Early Intervention Programme (UNHSEIP) began implementation in 2007 and was fully implemented across all DHBs by 2010. From July 2012 it was identified that some screeners were not following national protocols and as a consequence some babies had not been screened correctly. An investigation was carried out and a report with 21 recommendations for a number of quality improvements was published (Ministry of Health, 2013). The implementation of these recommendations is monitored by the UNHSEIP Advisory Group.

The purpose of this report is to update progress on implementing the 21 recommendations of the quality improvement review.

## Background to UNHSEIP

Universal newborn hearing screening is an international standard of care. The early detection of hearing loss and initiation of early medical and educational interventions have been demonstrated to significantly improve a child's long-term language skills and cognitive ability, thereby having a positive impact on children with hearing loss and their families and whānau.

The UNHSEIP is jointly overseen by the Ministries of Health and Education. The Ministry of Health, through the National Screening Unit (NSU), has responsibility for screening, diagnosis of hearing loss and medical interventions, and the Ministry of Education has responsibility for early intervention services. Approximately 94% of parents/guardians are now offered this screening for their newborns and approximately 89% of babies complete newborn hearing screening (Ministry of Health, 2014).

The programme's aim is: *early identification of newborns with hearing loss so that they can access timely and appropriate interventions, inequalities are reduced and the outcomes for these children, their families and whānau, communities and society are improved.*

The UNHSEIP is not designed to identify babies with mild hearing loss. Babies with milder hearing loss may not require assistive hearing technologies or intensive intervention.

The core goals of the programme are to identify all children with moderate or above hearing loss early in life and offer timely intervention. These are described as '1-3-6' goals, which are based on international best practice:

1 = Babies to be screened by one month of age

3 = Audiology assessment completed by three months of age

6 = Initiation of appropriate medical and audiological services, and early intervention education services, by six months of age<sup>1</sup>.

Around 60,000 babies are screened through the hearing programme each year. There are approximately 100 hearing screeners across the 20 DHBs.

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<sup>1</sup> Note that ages are based on 'corrected age' that is, age adjusted for premature birth.

# The quality improvement review of the screening incident

During July and August 2012 the NSU was notified of two screeners in two DHBs that were not screening according to national programme protocols, potentially leading to missed detection of hearing loss for these babies. An audit of individual screener data was subsequently undertaken by all 20 DHBs.

Over the following months, it was identified that a total of 14 screeners over 10 DHBs had not followed the programme protocols from March 2008 through to October 2012. Approximately 200,000 babies were screened over this time period, and 6990 were offered rescreening, of which 2459 were rescreened.

Twelve rescreened babies have been identified with some form of permanent hearing loss. More detail, including the outcomes for each DHB, is presented in the appendix.

Moderate or more severe hearing loss affects approximately one baby per 1000, therefore the number of babies who had missed or delayed diagnosis of hearing issues as a result of the incident was relatively low.

Following the identification of the screening incident, the NSU led a review of screening in the UNHSEIP. The report *Quality Improvement Review of a screening event in the Universal Newborn Hearing Screening and Early Intervention Programme*, December 2012 was released publicly in February 2013 and outlines 21 recommendations which the Ministry is working with DHBs and expert advisors to implement.

## Release of supporting information

In May 2014, the NSU released the *Review of newborn hearing screening regimes and associated screening devices for the National Screening Unit*, written by independent experts. This report fulfilled the first of the 21 recommendations of the quality improvement review – to reassess the screening test with a view to changing to a single screening test.

An update of progress against all 21 recommendations was also released at this time, along with a statement from the NSU.

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## 2 Progress on implementing recommendations

Responsibility for progressing implementation of these recommendations is shared between the NSU and DHBs.

To date, 15 recommendations have been completed. The remainder are either substantially completed or under way, or have been superseded or, in the case of the final recommendation, are reliant on all other recommendations being completed/superseded. Details follow below.

The activities generated by the recommendations are in many cases now business as usual within standard NSU and DHB operations. These activities are monitored through routine audits, annual service delivery planning, human resource processes and contractual reporting for DHBs and through screener performance monitoring.

### Recommendations completed

1. *The NSU must reassess the screening protocol with a view to changing to an aABR-only protocol.*
2. *The NSU must operationalise the data monitoring requirements in the updated UNHSEIP NPQS within the next three months and monitor their effectiveness.*
3. *The NSU must continue to provide resources and regular training to ensure programme coordinators are skilled in the monitoring of screening data downloads.*
4. *DHBs must make screeners aware they are being monitored through openness about the routine monitoring processes.*
5. *The NSU should lead an assessment of residual risk to the programme from screener performance.*
6. *The NSU should develop a guide for recruitment of newborn hearing screeners.*
7. *DHBs should be proactive in providing training opportunities for screeners and reducing stress that may impact on screeners' ability to do their work.*
9. *The NSU must implement the Newborn Hearing Screener Competency Framework for all screeners within the next six months.*
10. *NSU must review the material in screener training and continuing professional development with a view to including more about ethics and theory of screening.*
14. *New UNHSEIP coordinators must be provided with a coordinator manual and be required to do components of the screener training. The NSU should facilitate regular practical training and opportunities for coordinators to communicate.*

15. *The NSU and DHBs must review processes for information dissemination to ensure coordinators are aware of all developments in the programme.*
16. *DHBs should promote the engagement of audiologists with the UNHSEIP and a supportive working relationship with screeners.*
17. *DHBs must have clearly defined lines of management and accountability for UNHSEIP services, as per the UNHSEIP National Policy and Quality Standards.*
18. *DHBs need to support the programme by facilitating strong links with relevant teams within the DHB, for example quality and maternity.*
19. *DHBs must establish a clear multi-disciplinary clinical governance framework for the UNHSEIP within the DHB.*

## **Update on recommendations still open**

8. *DHBs should consider the remuneration framework for screeners in relation to comparable roles and level of responsibility and skill, looking at opportunities for consistency in screener pay scales nationally as well as options for a career path for screeners who are keen to further develop their skills.*

The current National Certificate in Health, Disability and Aged Support (Newborn Health Screening) (Level 3) is being reviewed as part of a New Zealand Qualifications Authority review. The revised qualification for screeners will be a strand of the New Zealand Certificate in Health and Wellbeing, which is expected to improve career choices for screeners.

13. *The NSU and DHBs need to ensure that coordination of the UNHSEIP is adequately resourced.*

A survey of DHB newborn hearing screening coordinators was undertaken April 2014 and 11 of the 16 respondents mentioned time to do their role as a major challenge. This was often associated with time consuming auditing /monitoring and reporting. The change to an automated auditory brainstem response (aABR) only protocol and the implementation of the newborn hearing screening component of the Maternity Clinical Information System (MCIS) national database is anticipated by the NSU to assist the auditing /monitoring and reporting component for coordinators. To allow for all DHBs to fully implement the aABR only protocol and complete the rollout of the newborn hearing screening component of the MCIS national information system, the timeframe for this recommendation is completion by December 2016.

This recommendation will be completed by December 2016.

20. *A national centralised database that is accessible to DHBs would facilitate streamlined and accurate quality monitoring and should be fast-tracked.*

The NSU is working with the developers of the Maternity Clinical Information System (MCIS) and the DHBs to develop a module for the capture of newborn hearing screening and audiology events. All DHBs will have the opportunity to input into the requirements. The module will be developed in the first half of 2015 and is anticipated to be available for DHBs from July 2015.

Recommendation has commenced and will be completed by July 2015.

21. *The NSU must develop an implementation plan in consultation with the UNHSEIP Advisory Group, who should monitor and review implementation of the recommendations.*

Progress on implementing the 21 recommendations is provided to the UNHSEIP Advisory Group. They are requested to make specific recommendations to the NSU on any activities, prioritisation, or other matters arising from the update. Regular updates are provided to DHB hearing screening coordinators and service managers. Monthly meetings are held to inform the NSU Clinical Director and when required progress reports are provided to Ministers.

Recommendation is ongoing until the UNHSEIP Advisory Group agrees all recommendations have been completed or superseded.

## **Recommendations superseded by the review**

The following recommendations were superseded by the review of the screening regime and implemented as part of this process.

11. *The NSU should reconsider operational policies for daily checking of screening equipment and provision of results of the screen to parents.*
12. *The NSU must lead the updating of the screener scripts to be more concise, clear and in plain English, and/or investigate other modes of delivering information about the programme to families.*

## **Future updates**

The NSU will continue to release further updates on progress as required.

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# 3 References

The following reports are available at [www.nsu.govt.nz](http://www.nsu.govt.nz)

Ministry of Health, 2014. Universal Newborn Hearing Screening and Early Intervention Programme (UNHSEIP): Monitoring report on newborn hearing screening provision January to June 2013: May 2014

Ministry of Health, 2013. Quality improvement review of a screening event in the Universal Newborn Hearing Screening and Early Intervention Programme: December 2012

National Screening Unit, 2014. National Screening Unit and District Health Boards' Progress on Implementing the 21 Recommendations: April 2014

Young Futures, 2014. Review of newborn hearing screening regimes and associated screening devices for the National Screening Unit. Ministry of Health, New Zealand: March 2014



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# Appendix: summary report on DHBs' rescreening

In addition to contributing to the implementation of the quality improvement review recommendations, DHBs, with NSU support, were responsible for following up with babies who had not been screened correctly. This appendix outlines the steps taken and provides data by DHB. This information was previously only available in summary form.

## Management and follow-up activities

The NSU and DHBs jointly developed detailed procedures for offering and undertaking rescreening for babies who had not been screened correctly as part of the screening incident.

The process varied between DHBs depending on the extent of the incident, the age of babies/children to be recalled and the process and services linkages within each DHB. The first two DHBs to identify the incident offered rescreening to all babies that had ever been screened by the screener. A more refined process was developed over time based on detailed information – so other DHBs offered rescreening for babies who were not screened correctly, rather than inviting all babies screened by a screener.

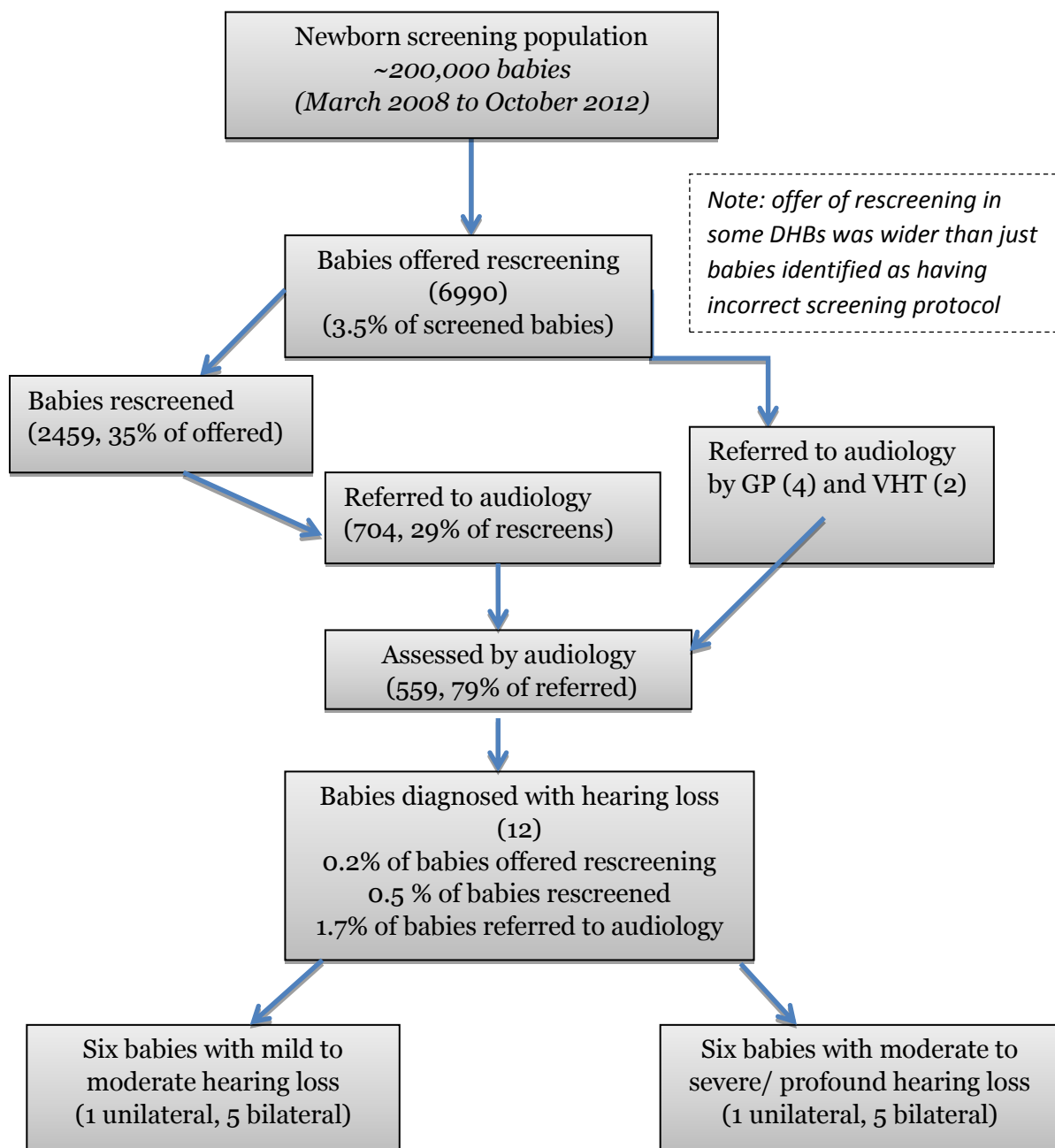
Ensuring as many babies as possible that were offered rescreening took up the offer was a challenge for DHBs. For some babies a significant amount of time had passed and therefore families may have been confident their babies' hearing was not compromised. There were also some challenges contacting families if they had moved, did not respond to the offer letters or did not attend appointments. Screening older children also posed some difficulties.

DHBs were required to make three attempts to follow up each family, which would include a mix of letter, text and phone contact. They were also required to contact families' GPs and follow a process for informing other DHBs where a family may have moved DHBs.

A range of solutions were identified by DHBs to increase the uptake and completion of rescreening, such as:

- having parents text screeners if the baby was asleep in the car so the screener could come and do the test without disturbing the baby
- following up with GPs for any families who may have moved
- using a range of DHB-held patient databases to try and confirm the most accurate up-to-date addresses for families
- presentations on the recall process to VHTs, Well Child providers, obstetricians and midwives, and information presented at the local marae
- free hospital parking vouchers provided when attending appointments
- involving a play therapist to help screeners with older babies and children
- sending newborn hearing screening pamphlets with the recall letter both in English and the family's identified language.

The flow chart below provides a broad overview of the steps and numbers involved.



Notes:

- Approximately 28% of babies rescreened were referred to audiology. This is a much higher referral rate than in the newborn screening programme, and was mostly due to the challenges in screening older babies and children (because completed screening requires a settled baby).
- Of those referred to audiology, 79% completed an audiology assessment. Of the 21% of babies not completing audiology, the majority did not attend or declined an audiology test. Where the family did not complete audiology, the GP was advised and the information recorded on the babies electronic and/or paper hospital file to provide a flag for future events.
- Systems are in place to ensure babies who are part of the incident but have not been rescreened are picked up through routine contacts with the health system, such as at their B4 School Check.

# Rescreening data by DHB

This section provides a summary of the data for each of the 10 DHBs that were involved in the incident.

Each DHB had its own unique issues with regards to follow-up and recall, therefore making direct comparisons is likely to be problematic. The previous section also provides context for the uptake rates and further actions taken where uptake or attendance was low.

## Auckland District Health Board

Babies incorrectly screened	431	note 1
Number offered rescreening	1263	note 2
Number rescreened	299	note 3
Referred to audiology	122	
Assessed by audiology	84	
Hearing loss identified	2 mild	note 4

Notes:

1. Over the period April 2010 to July 2012.
2. A much larger number of babies were recalled than babies identified as incorrectly screened because Auckland was one of the early DHBs to be identified as having screeners not following the protocol – at this time the decision was to recall all the babies ever screened by this screener rather than just those babies identified as incorrectly screened.
3. Rescreening was offered to families through existing ADHB screening clinics.
4. Both children with a permanent hearing loss (mild bilateral high frequency sensorineural loss) were identified at 15 months of age. Both currently have age appropriate language skills. Hearing aids have not been fitted at this stage. Auckland DHB audiology is monitoring these children.

## Hutt Valley District Health Board

Babies incorrectly screened	176	note 1
Number offered rescreening	959	note 2
Number rescreened	508	note 3
Referred to audiology	169	
Assessed by audiology	144	
Hearing loss identified	1 severe to profound	note 4

Notes:

1. Over the period May 2011 to July 2012.
2. A much larger number of babies were recalled than babies incorrectly screened because Hutt Valley was one of the early DHBs to be identified as having screeners not following the protocol – at this time the decision was to recall all the babies ever screened by this screener rather than just those babies identified as incorrectly screened.

3. Rescreening for babies under three months old was carried out by newborn hearing screeners and for older babies a DPOAE screening protocol was carried out through audiology.
4. One baby was found at 10 months old to have a severe to profound sensorineural hearing loss and has had bilateral cochlea implants.

## Canterbury District Health Board

Babies incorrectly screened	596	note 1
Number offered rescreening	596	
Number rescreened	246	note 2
Referred to audiology	78	
Assessed by audiology	67	
Hearing loss identified	1 mild	note 3

### Notes:

1. Over the period September 2009 to August 2012.
2. Rescreening for babies six months and under was carried out by newborn hearing screeners and through audiology for older babies and children.
3. This child was found at two years and four months of age to have a mild bilateral hearing loss. Hearing aids have not been fitted at this stage.

## Lakes District Health Board

Babies incorrectly screened	378	note 1
Number offered rescreening	372	note 2
Number rescreened	72	note 3
Referred to audiology	31	
Assessed by audiology	28	
Hearing loss identified	2 (1 moderate, 1 mild)	note 4

### Notes:

1. Over the period March 2009 to January 2012.
2. Six babies had already become engaged with audiology prior to the recall.
3. For babies three months and under, rescreening was carried out by newborn hearing screeners, with the offer of a home visit. For older babies rescreening was carried out through audiology.
4. Both were identified at four years of age: one with a mild bilateral and one moderate bilateral hearing loss. Both children have been fitted with hearing aids.

## Bay of Plenty District Health Board

Babies incorrectly screened	542	note 1
Number offered rescreening	538	note 2
Number rescreened	96	note 3
Referred to audiology	41	

Assessed by audiology	27	
Hearing loss identified	2 (1 moderate, 1 moderate to severe)	note 4

Notes:

1. Over the period April 2009 to August 2011.
2. The remaining four babies were already known to audiology.
3. A further 77 of the incorrectly screened cohort have since been screened through B4SC, with 75 having no hearing issues detected and two referred to audiology.
4. Two children were identified with a permanent hearing loss. One was found to have a moderate bilateral hearing loss at two years and ten months and was fitted with hearing aids. A second child was recently identified with a moderate to severe bilateral hearing loss at four and half years. Hearing aids have now been fitted.

## Hawke's Bay District Health Board

Babies incorrectly screened	1648	note 1
Number offered rescreening	1500	note 2
Number rescreened	473	note 3
Referred to audiology	109	
Assessed by audiology	86	
Hearing loss identified	1 moderate	note 4

Notes:

1. Over the period August 2008 to April 2012.
2. Of the babies identified as being screened incorrectly, 148 had either been assessed through the B4SC, had already been seen by audiology through other referral mechanisms, or were lost to follow-up.
3. Rescreening was carried out through audiology.
4. One baby was found to have a moderate unilateral hearing loss at 12 months and has been fitted with a hearing aid.

## Waitemata District Health Board

Babies incorrectly screened	315	note 1
Number offered rescreening	315	
Number rescreened	96	note 2
Referred to audiology	16	
Assessed by audiology	15	note 3
Hearing loss identified	0	

Notes:

1. Over the period March 2012 to October 2012.
2. Rescreening was carried out by newborn hearing screeners and new outpatient clinics were arranged.
3. One child had moved and was referred to Counties Manukau DHB audiology.

## Waikato District Health Board

Babies incorrectly screened	377	note 1
Number offered rescreening	377	
Number rescreened	100*	note 2
Referred to audiology	n/a	note 2
Assessed by audiology	n/a	note 2
Hearing loss identified	0	

Notes:

1. Over the period March 2008 to February 2012.
2. All babies recalled were seen at audiology.

## Counties Manukau District Health Board

Babies incorrectly screened	1013	note 1
Number offered rescreening	1013	
Number rescreened	515	note 2
Referred to audiology	132	
Assessed by audiology	102	
Hearing loss identified	2 (severe to profound)	note 3

Notes:

1. Over the period June 2010 to April 2011.
2. Rescreening was carried out by newborn hearing screeners with the support of audiology, through specially arranged clinics.
3. One three year old child was found to have a bilateral sensorineural hearing loss and has had bilateral cochlea implants. The child was identified through a referral to audiology by the GP at 21 months due to parental concerns regarding speech language development. A second child aged three years and eight months was identified with a severe to profound bilateral hearing loss. The family has been referred to Early Intervention services and the child has been fitted with bilateral cochlea implants.

## Taranaki District Health Board

Babies incorrectly screened	60	note 1
Number offered rescreening	57	note 2
Number rescreened	54	note 3
Referred to audiology	6	
Assessed by audiology	6	
Hearing loss identified	1 moderate to severe	note 4

### Notes:

1. Over the period April 2009 to May 2010.
2. Two children were already under Taranaki DHB audiology services. The other child was offered audiology testing and later passed a B4SC check.
3. At the time of the recall, the children were old enough that all screening occurred through the B4SC programme and 95% of the children were rescreened by the VHTs.
4. One child was identified at 20 months with a moderately severe unilateral hearing loss and fitted with a hearing aid.