



Newborn Hearing Screening Wales
Sgrinio Clyw Babanod Cymru

Report of the Associate Director
2009

Produced by
Sally Minchom, Associate Director
Jacqui Evans, All Wales Development Officer
Amanda Roberts, Divisional Coordinator South East Wales
Elaine English, Divisional Coordinator Mid and West Wales
Meg Shepherd, Divisional Coordinator North Wales
Helen Beer and Kate Gregory, Information Team

Address for correspondence

Dr Sally Minchom
Newborn Hearing Screening Wales
Wrexham Child Health Centre
PO Box 2073
Croesnewydd Road
Wrexham LL13 7ZA

Contents

- 1.0 Summary
 - 2.0 Introduction
 - 3.0 Results of screening
 - 3.1 Standards
 - 3.2 Birth rate
 - 3.3 Meeting the standards
 - 4.0 Screening report
 - 4.1 Birth Notification
 - 4.2 Screening equipment
 - 4.3 Information Technology
 - 4.4 Training
 - 4.5 Staffing
 - 5.0 All Wales audit of permanent hearing loss
 - 5.1 Habilitation: 1st April 2008 to 31st March 2009
 - 5.2 Habilitation and follow up of hearing impaired babies since the start of screening
 - 5.3 Age of identification and hearing aid fitting
 - 5.4 Prevalence of hearing loss in Wales
 - 5.5 Accuracy of assessment
 - 5.6 Programme statistics
 - 6.0 Quality Assurance
 - 7.0 Professional training
 - 8.0 Audit, presentations and publications
- Appendix 1. NBHSW All Wales screening results
- Appendix 2. Incremental yield plots by site

1.0 Summary

This fifth report from Newborn Hearing Screening Wales shows that the screening programme continues to perform to the highest standards. There is an improvement in almost all reported activity figures.

The screening results and results of assessment are reported for babies born in the financial year 2008 – 2009.

Results of the all Wales audit of permanent hearing loss are presented. The hearing status of babies diagnosed from the screen and achieved standards of habilitation for the period 1st April 2008 to 31st March 2009 and from the start of screening to 31st March 2009 are discussed.

Screening

The coverage rates are excellent with screening being offered to 99.9% of eligible babies and 99.6% tested, with very few parents declining the screen. The majority of sites located in the NHS Health Boards throughout Wales perform the initial test within 7 days of birth, 78.8% of babies being screened within this time period, exceeding the target of 75%.

100% of high risk babies are completing the screening programme and 98.6% of well babies are completing screening within 4 weeks.

Assessment

An expected number of babies are being referred for assessment (1.3%) and the percentage of babies referred for assessment who are found to have normal hearing as a proportion of all babies screened is 0.6%, well within the 3% target. 90.5% of babies referred for assessment are completing the assessment process by three months of age.

The time taken to start the assessment process is within the allocated time for 90.6% of well babies and 98.8% of high risk babies. 95.2% of babies referred receive an assessment.

All Wales audit of permanent hearing loss

For the period 1st April 2008 until 31st March 2009, 1.3 per 1000 babies, eligible and suitable for screening, have been diagnosed as having permanent significant bilateral hearing loss (defined as greater than 40 dBnHL). The mean age of hearing aid fitting where appropriate was 12 weeks (allowing for prematurity) with 76% of babies fitted with hearing aids within 4 weeks of confirmation of the hearing loss. Audiological confirmation was achieved in 96% of babies by the age of 6 months. Babies are both diagnosed and fitted with hearing aids at a younger age than in previous years, showing the high standard of care given to babies diagnosed by NBHSW.

Since the introduction of universal newborn hearing screening, the prevalence of permanent significant bilateral hearing loss (defined as greater than 40 dBnHL) has been found to be 1.4 per 1000 babies. The actual numbers are 229 diagnosed from the screening programme, 8 acquired hearing losses and 19 babies whose hearing loss was not identified by the screen. The mean age of hearing aid fitting to appropriate cases diagnosed from the screening programme was 34 weeks (median 16 weeks). This figure includes babies where the original decision not to fit hearing aids was altered after further information was gained about the hearing loss, or parents reviewed their initial decision. Hearing aids were fitted within 4 weeks of confirmation of hearing loss in 69% of cases. Audiological confirmation by 6 months of age was achieved in 82%.

Yield, Sensitivity, Specificity and Predictive Value

Provisional figures regarding the yield from the programme indicate that the number of cases detected related to the total number of babies screened is 1:75. The sensitivity of the programme is 92.5% with a specificity of 98.8%. The predictive value of the screen is 9.7%.

2.0 Introduction

This report produced in January 2010 provides information on the performance of the newborn hearing screening programme over the financial year 2008 – 2009 and therefore reports on babies born between 1st April 2008 and 31st March 2009. The activity reports have been redesigned to reflect screening and assessment in the merged trusts which then became Health Boards in October 2009. The revised standards reported in the previous annual report have been adopted, but the data has not been collected for all of these. Where this is the case, a note appears next to the standard.

The report is only available electronically from the screening programme and will be available on the website www.screeningservices.org/nbhsw.

3.0 Results of screening

3.1 Standards

Table 1 below outlines the standards set by the screening programme to monitor performance. As in previous years most of the standards have been met, some with slight improvement in the values achieved. Appendix 1 reports on results by Health Board.

Table 1

NBHSW Standards – Screening Programme						
Number	Objective	Criteria	Minimum Standard	Actual Value	Met	Variance From Previous Reporting Period
1	To maximise the number of babies who are offered screening	The percentage of eligible babies who are offered screening	>= 99% of all babies	99.9%	Yes	=
2	To maximise the number of babies who enter the screening programme	The percentage of eligible babies who enter the screening programme	>=95% of all babies tested	99.6%	Yes	+0.3%
3	To screen most babies within the first week of life.	The percentage of babies receiving the first screening test within the first week of life	>75% of those well babies screened	78.8%	Yes	-1.4%
4	To maximise the number of babies who complete the screening programme within the allocated time periods	Well babies - the percentage of babies who complete the screening programme within 4 weeks	>=90% of all babies entering the screening programme	98.6%	Yes	+1.1%
		High Risk babies in SCBU > 48 hours - the percentage of babies who complete the screening programme	>=95% of all High Risk babies entering the screening programme	100%	Yes	=
		All babies - the percentage of babies who complete the screening programme	>=95% of all babies entering the screening programme	100%	Yes	=
5	To minimise the number of babies requiring a diagnostic ABR who have normal hearing	Those babies who are referred for diagnostic ABR with normal hearing	<3% of all those who complete assessment and are found to have normal hearing as a proportion of all babies screened	0.6%	Yes	-0.1%

Number	Objective	Criteria	Minimum Standard	Actual Value	Met	Variance From Previous Reporting Period
6	To start the assessment procedure (diagnostic ABR) in appropriate cases within the allocated time	Well babies: Those babies that start assessment procedure within 4 weeks of the second screening episode	>=90% of those requiring assessment	90.6%	Yes	+0.3%
		High risk babies: Those babies that start assessment procedure within 8 weeks of AABR		98.8%	Yes	+2.6%
7	To complete the assessment procedure within the allocated time	Those babies that complete the assessment procedure by 3 months of age (in appropriate cases)	>=80% of those requiring assessment	90.5%	Yes	+3.1%
8	To minimise the number of babies who do not receive screening	The percentage of offered screening appointments which are not attended (well babies)	<=4% (<u>includes all DNA and cancelled appointments</u>)	5.1%	No	-0.7%
9	To minimise the number of babies who do not receive screening	The percentage of offered screening appointments which are declined (well babies)	< 1% of well babies	0.1%	Yes	=
10	To refer an appropriate number of babies for assessment	The percentage of screened babies referred for assessment	Between 1-2%	1.3%	Yes	-0.2%
11	To minimise the number of babies who do not receive an assessment	The percentage of offered assessment appointments which are not attended	< 10% (DNA appointments only)	13.1%	No	-1.7%
12	To minimise the number of babies who do not receive an assessment	The percentage of babies who are referred for assessment and not seen	< 5%	4.8%	Yes	-3.6%
13	To refer an appropriate number of babies for a repeat screen from audiology (one ear clear response, well babies)	The percentage of all babies screened	< 1%	1.4%	No	+0.2%

Number	Objective	Criteria	Minimum Standard	Actual Value	Met	Variance From Previous Reporting Period
14	To refer an appropriate number of babies for targeted behavioural test	The percentage of all babies screened	< 1%	0.5%	Yes	=
15	To provide a written report following the assessment procedure within the allocated time	Those babies that complete the assessment procedure or reach 3 months of age that have a written report provided to primary care within 14 days of completing the assessment. This is measured from the date of final assessment plan to date on report/letter sent to primary care.	>= 95% of cases requiring assessment	Not Collected		
16	To provide information to promote informed choice	The percentage of mothers who report receiving written information in the antenatal period. The criteria for inclusion in the survey may be selected to compare the experiences of mothers. The percentage of mothers who provide positive responses on the information subscale of a user survey. The criteria for inclusion in the survey may be selected to compare the experiences of families.	100% of mothers > 90% positive responses from mothers completing the user survey	Not Collected 86%	No	=
17	To evaluate mothers' satisfaction with the screening programme	The percentage of mothers who provide positive responses on a general satisfaction subscale of a user survey. The criteria for inclusion in the survey may be selected to compare the experiences of families.	>= 95% of mothers completing user survey questionnaire	97%	Yes	=

3.2 Birth rate

It is worth noting that the birth rate has continued to increase year on year since the start of screening. The number of births in 2008 - 2009 is 5,000 greater than the number of births in 2003 – 2004.

3.3 Meeting the standards

Overall, the screening programme meets and exceeds the standards set. Very few eligible babies are not screened, however the attendance rate for screening continues to fall short of the standard. The number of parents of well babies who request a further screening test following a one ear clear response also remains greater than the standard. It is possible that standards 8 and 13 are unachievable.

The standard associated with attendance of babies for assessment has been met for the first time with 95.2% being seen. Audiologists continue to ensure that the appointment times are suitable for parents by contacting them directly. When a baby is identified as needing referral, care is taken to provide parents with written and verbal information regarding the assessment process. The numbers of appointments not attended (13.1%) and the number of assessments not completed (3.5% of those started) indicate that there are still some issues. Standard 16 and 17 are reported for the first time, collated from a satisfaction survey completed in 2009. A previous survey had been completed in 2007 and a comparison is made with this survey.

4.0 Screening report

4.1 Birth notification

NBHSW receives notification of births through a central registration. It is the responsibility of the midwife delivering the baby to complete the birth notification. Errors in this birth registration are a continuing problem for the screening programme and include such serious errors as registering deceased or stillborn babies as live. We are working with Heads of Midwifery to try and improve the quality of the data entry.

4.2 Screening equipment

The Echoport replacement programme was completed early in 2009 and the new Otoport devices have been welcomed by the screeners in relation to usability and portability. Firmware upgrades were required following roll out, the latest one being implemented in September 2009. Another major benefit of the Otoports is that when the data has been uploaded at the end of each screening session, the data is deleted from the Otoport which enables a higher level of data security for the programme.

4.3 Information Technology

The NBHSW information system has been developed to allow automatic loading of results from the Automatic Auditory Brainstem Response (AABR) test equipment. This has now been fully tested and rolled out in Mid and West and North Divisions and is due to be completed in South East Division in the early part of 2010.

Work has commenced on the specification of a new all Wales NBHSW information system to replace the separate modules which are currently linked to the Child Health Systems across Wales. It is envisaged the system will still rely on demographic updates from the child health data but in all other respects will operate independently. NBHSW will however continue to provide details of changes or inaccuracies that they identify around the time of birth to the various child health departments in order to keep data as accurate as possible.

In order to move to a paperless future, a further potential development is to effect the electronic transfer of screening results to GPs plus a link back to the core child health systems of the final screening outcomes. This can then be accessed directly by health visitors and community paediatricians.

4.4 Training

The accredited learning programme developed for the screeners has now been formally recognised as the BTEC in Screening (Newborn Hearing). Two cohorts of existing screeners were able to undertake an accelerated programme to complete the qualification in six months, the second cohort completing their final assessment in September 2009. The learning package will now be run on an annual basis with the next cohort commencing study in January 2010. From this date the Programme Managers will take over mentoring and assessing of all three units of the qualification thereby relieving the Divisional Coordinators of this task.

The English screener e-learning which was adapted for use in Wales has now been fully implemented and incorporated into new screener training. It will also be used to provide refresher training for existing screeners.

A Training Advisory Group has been established and is working to further develop a fully co-ordinated training programme to meet the needs of the service across Wales.

4.5 Staffing

The first screener I posts were appointed during the year and the service now has 14 screener I posts across Wales. The screener I is a higher level screener post with additional responsibilities in relation to training and promotion of Newborn Hearing Screening. Existing screeners become eligible to apply for vacant screener I posts following completion of the BTEC in Screening (Newborn Hearing).

It is envisaged that the creation of the screener I posts will improve the training given to new screeners as well as assist the programme to achieve a better balance between in house training and other service developments. It is hoped that the new structure will also help with staff retention as it provides a career path and training opportunities for existing screeners.

The provision of screening in Powys changed in March 2009. Screeners across Wales took over the screening of babies in Powys from community midwives. North East Powys is now served by North Wales Division and South and West Powys is split between Mid and West and South East Divisions. This decision was taken in order to ensure provision of a more easily managed service in Powys and ensure a uniform service throughout Wales.

5.0 All Wales audit of permanent hearing loss

5.1 Habilitation: 1st April 2008 to 31st March 2009

Table 2

NBHSW Standards – Habilitation: Babies born between 1st April 2008 and 31st March 2009						
No	Objective	Criteria	Minimum Standard	Actual	Met	2007 – 2008
1	To confirm hearing loss within the allocated time	The percentage of babies who have audiological confirmation by the age of 6 months (not allowing for prematurity)	80% of those babies diagnosed by the screening programme as significantly hearing impaired.	96%	YES	90%
2	To offer hearing aids to appropriate cases within the allocated time	The percentage of those babies diagnosed as significantly hearing impaired who have hearing aids offered by the age of six months (allowing for prematurity).	90% of those offered hearing aids diagnosed from the screening programme.	97%	YES	81%
3	To fit hearing aids to appropriate cases within the allocated time	The percentage of appropriate cases fitted with hearing aids within 4 weeks of audiological certainty (diagnosis)	>=99% of those appropriate cases diagnosed from the screening programme.	76%	NO	94%
		The percentage of those babies diagnosed as significantly hearing impaired who have hearing aids fitted by the age of six months (allowing for prematurity)	75% of those fitted with hearing aids diagnosed from the screening programme.	92%	YES	71%

The percentage of those babies who have audiological confirmation by 6 months has increased, with a very high percentage having hearing aids offered by 6 months. The reason for the percentage offered hearing aids being higher than the percentage diagnosed is because the former allows for prematurity of the baby. In our population of hearing impaired babies, 30% are born premature (born before 36 weeks) with half of these being born before 30 weeks. This is taken into account when calculating age of hearing aid fitting as those sites which have a high number of very premature babies, for example Cardiff and Newport, would have many babies appearing to have late hearing aid fitting.

The number of babies having hearing aid fitting within 4 weeks has fallen. The following table (table 3) shows the age of confirmation and age of hearing aid fitting by division. There are improvements in the age of diagnosis and age of hearing aid fitting showing the high standard of care given to babies diagnosed by NBHSW.

Table 3

Division	Average age of confirmation of hearing loss 2008 - 2009	Average age of confirmation of hearing loss 2007-2008	Average age of hearing aid fitting (allowing for prematurity) 2008 - 2009	Average age of hearing aid fitting (allowing for prematurity) 2007 - 2008
North Wales	8.7 weeks	12.3 weeks	13.9 weeks	13.7 weeks
Mid and West Wales	8.1 weeks	9.1 weeks	9.6 weeks	17.5 weeks
South Wales	11.1 weeks	13.8 weeks	13.2 weeks	22.4 weeks
Wales	9.9 weeks	12.2 weeks	12.4 weeks	19.1 weeks

5.2 Habilitation and follow up of hearing impaired babies since the start of screening

Table 4

NBHSW Standards – Habilitation over 5 years				
No	Objective	Criteria	Minimum Standard	Actual
1	To confirm hearing loss within the allocated time	The percentage of babies who have audiological confirmation by the age of 6 months (not allowing for prematurity)	80% of those babies diagnosed by the screening programme as significantly hearing impaired 80% of those babies diagnosed as significantly hearing impaired in the first 5 years of life.	82% 73%
2	To offer hearing aids to appropriate cases within the allocated time	The percentage of those babies diagnosed as significantly hearing impaired who have hearing aids offered by the age of six months (allowing for prematurity).	90% of those offered hearing aids diagnosed from the screening programme 60% of those offered hearing aids diagnosed as significantly hearing impaired in the first 5 years of life	70% 61%
3	To fit hearing aids to appropriate cases within the allocated time	The percentage of appropriate cases fitted with hearing aids within 4 weeks of audiological certainty (diagnosis). The percentage of those babies diagnosed as significantly hearing impaired who have hearing aids fitted by the age of six months (allowing for prematurity)	>=99% of those appropriate cases diagnosed from the screening programme. >=99% of those appropriate cases diagnosed as significantly hearing impaired in the first 5 years of life 75% of those fitted with hearing aids diagnosed from the screening programme. 60% of those fitted with hearing aids diagnosed as significantly hearing impaired in the first 5 years of life	69% 71% 63% 55%

4	To ensure families have information on the full range of support available both locally and on a national basis	The percentage of cases referred to a Teacher of the Deaf/professional knowledgeable about early support within 24 hours of diagnosis of hearing loss. This is measured from the date of final assessment plan to a documented date recorded by local service.	100% of those appropriate	Not reported
5	To ensure that appropriate habilitation services are in place	<p>The establishment and regular meetings of a multidisciplinary group monitoring services in each area. (Children's Hearing Services Working Group). This group should regularly review the services provided to hearing impaired children and their families to ensure a coordinated and appropriate provision.</p> <p>Self assessment rating of services verified at NBHSW quality assurance site visits should achieve a scale of 4 or 5 thereby meeting most or all of the standards outlined in the NBHSW site document. Where there are different community and hospital services these need to be identified and scored separately.</p> <p>The Paediatric audiology and early support services for families should undertake audit of all services using self assessment audit tools where available. Parent satisfaction surveys with early years services should also be undertaken.</p>	<p>100%</p> <p>100% of hospital sites should achieve an overall rating of above 80%</p> <p>100% of community sites should achieve an overall rating of above 80%</p> <p>100%</p>	<p>100%</p> <p>89%</p> <p>40%</p> <p>Not reported</p>
6	To offer audiological follow up for those babies requiring further hearing tests referred from the screening programme	The percentage of babies who are offered an appointment for a targeted behavioural test at a developmentally appropriate time (sample collected by professional leads)	100%	95%
7	To complete audiological follow up of those babies requiring further hearing tests referred from the screening programme	<p>The percentage of babies who complete targeted behavioural test as per protocol.</p> <p>The percentage of notification to Primary Health Care Team of non attendance</p>	<p>100%</p> <p>100%</p>	<p>50%</p> <p>Not reported</p>

8	To complete audiological follow up of those babies requiring further hearing tests from assessment.	The percentage of babies who complete hearing tests to audiological certainty (excluding those who fit the criteria of screen positive). Management plans are agreed by peer review.	> 90%	Not Reported
---	---	--	-------	--------------

The table above reports results from the screening programme and results from data collected for all children diagnosed as hearing impaired under the age of 5 years in Wales. The figures include those children diagnosed outside the programme and those with acquired hearing loss and progressive hearing loss. The figures do not include children who have moved in after 1 year old. These figures are a true reflection of the benefit of the screening programme. More information about Standard 5, 6 and 7 can be found in the Quality Assurance Report on the website.

5.3 Age of identification and hearing aid fitting

Since the start of screening, 1.3 per 1000 babies screened (numbering 229) have been identified as having permanent significant bilateral hearing loss (defined as greater than 40 dBnHL). The mean age of identification of hearing loss was 22 weeks. Prior to the introduction of screening, the mean age of identification was 22 months in Trusts where figures were recorded.

The mean age of hearing aid fitting to appropriate cases was 34 weeks (median 16 weeks). This figure includes babies where the original decision not to fit hearing aids was altered after further information was gained about the hearing loss, or parents reviewed their initial decision. Audiological confirmation was achieved by 6 months in 82%, and 63% had hearing aids fitted by 6 months. 69% had hearing aids fitted within 4 weeks of audiological certainty.

These figures are similar to those achieved in the previous report but with a slight improvement in all reported activity. Year to year variation is expected but this report demonstrates the positive trend hoped for in the last report. It should be noted that the targets are set to a very high standard.

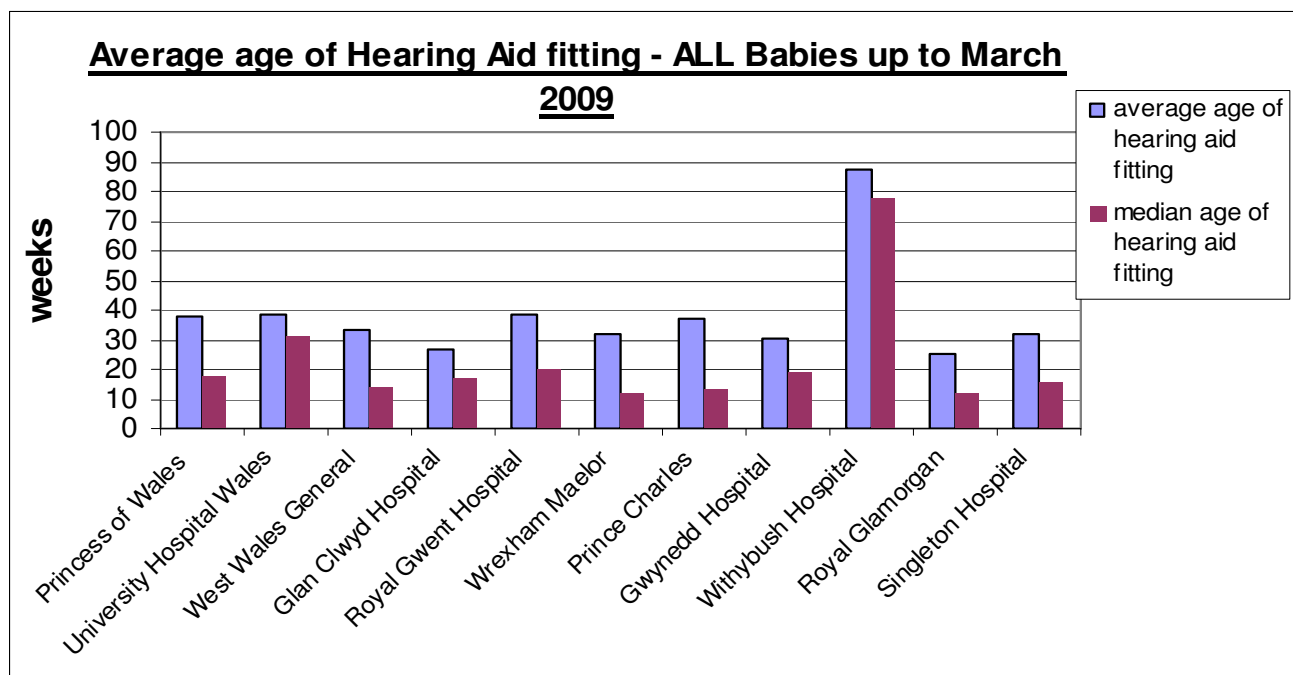
The following table 5 shows the age of confirmation and age of hearing aid fitting by division. These figures are similar to those obtained in the last annual report. Within NBHSW, babies are deemed to have been diagnosed by the screening programme if they have been followed up by the audiology department since diagnostic testing. Hearing aid fitting may be shortly after birth or months later, as further audiological information is obtained or parents change their minds about hearing aid fitting.

Table 5

Division	Average age of confirmation of hearing loss over 5 years	Average age of hearing aid fitting (allowing for prematurity) over 5 years
North Wales	14.4 weeks	21.2 weeks
Mid and West Wales	31.5 weeks	41.8 weeks
South Wales	18.1 weeks	33.7 weeks
Wales	22.1 weeks	34.2 weeks

The following table 6 shows a breakdown of age of hearing aid fitting by site of assessment. Withybush Hospital can be seen to be providing hearing aids at a later time than other sites. Measures have been undertaken in Hywel Dda Health Board to address this following the quality assurance site visit.

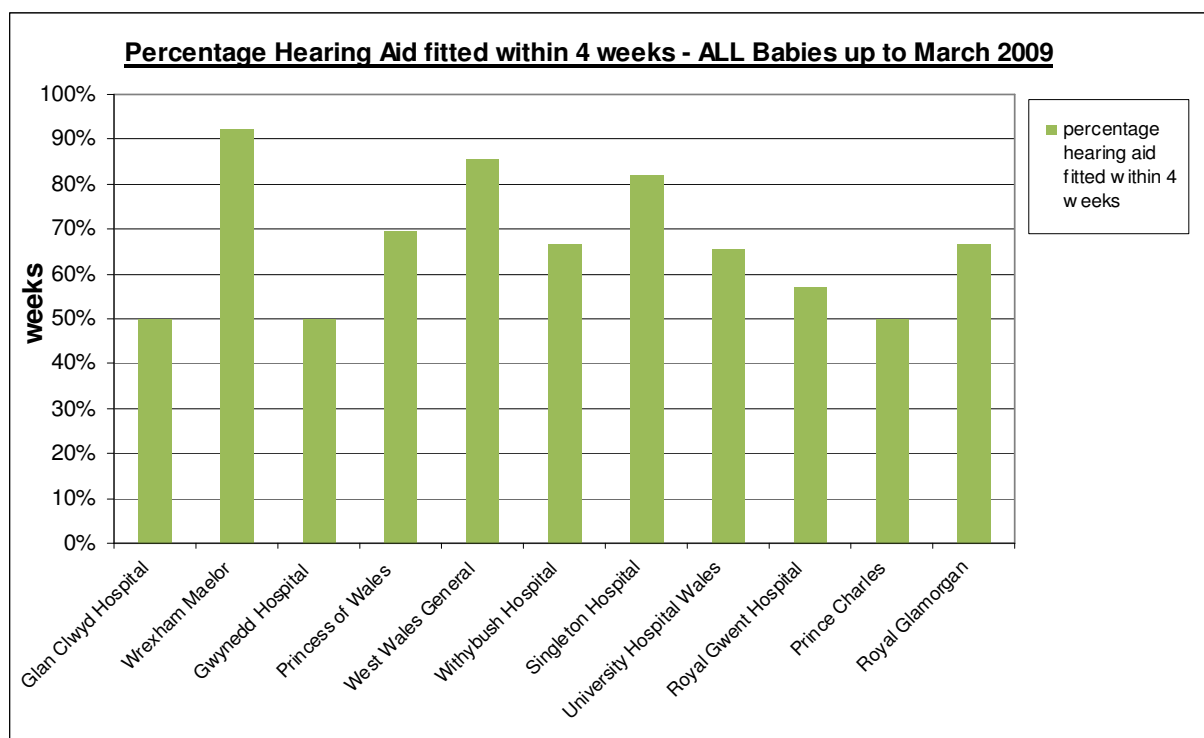
Table 6



Incremental yield plots have been used to illustrate the age of diagnosis and the age of hearing aid fitting. The graphs in appendix 2 show the performance of each site.

A standard which has consistently not been met is hearing aid fitting within 4 weeks. A further discussion with audiologists and parents is needed to discover the reasons why provision of hearing aids is later than expected and whether this reflects parental preference. Balanced against this are the known benefits of early aiding. Further work is required. The graph (Table 7) shows the percentage of hearing aids fitted within 4 weeks of confirmed diagnosis.

Table 7



5.4 Prevalence of hearing loss in Wales

Since the start of screening, records have been kept on all babies diagnosed as hearing impaired under the age of 5 years. From this data, it appears that the prevalence of permanent bilateral hearing loss in children under 5 years is 1.4 per 1000. As the information held on our database has now been collected over a 5 year period, it should provide further information regarding hearing loss in Wales, such as aetiology. For example, and not surprisingly, the commonest cause for acquired hearing loss is meningitis with 7 children diagnosed with hearing loss after the neonatal period.

5.5 Accuracy of assessment

Detailed records kept by the audiologists and professional leads allow the programme to look at the effectiveness of the diagnostic assessment. Diagnostic assessment, in the majority of cases, provides reliable information to inform the next steps for the baby and family. It is worth noting that there are 8 babies where a significant hearing impairment diagnosed at assessment was later found not to be present. There were 6 babies where a hearing impairment was not identified by assessment or the assessment was incomplete or not attended. Review of the accuracy of assessment is difficult but the database allows hearing category (mild, moderate, severe, profound) found at assessment to be compared with results found when the child is older and can complete behavioural testing (audiological certainty). See table 8 below.

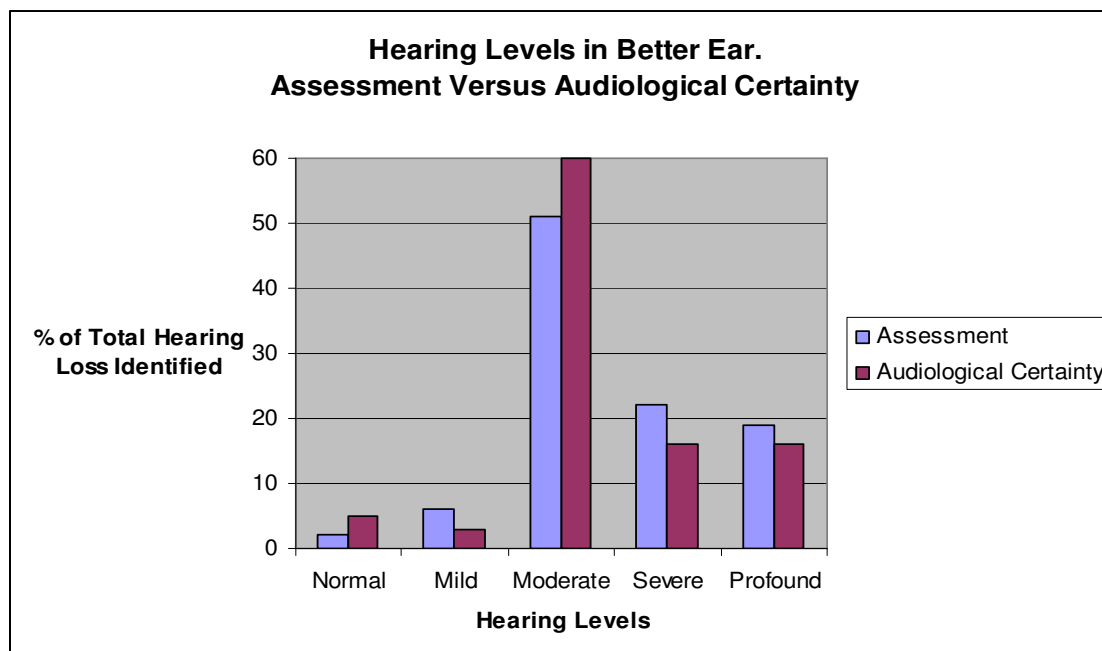
Table 8

	Hearing level remained in the same category	Greater hearing loss at audiological certainty	Lesser hearing loss at audiological certainty	Total
Left ear	65%	15%	20%	100%
Right ear	65%	16%	19%	100%
Both ears	Cannot be paired	7%	5% *	

- excludes 8 babies where hearing loss was incorrectly diagnosed and those babies with ANSD where hearing levels are expected to be less severe on conventional audiometry.

Conventionally the level of hearing loss is graded on the better ear across four frequencies and categorised as normal, mild, moderate, severe or profound. Table 9 compares the category of hearing loss found at assessment with that found when the audiologist is confident that audiological testing has defined the hearing loss (audiological certainty).

Table 9



5.6 Programme statistics

The programme has also reviewed the cases of those babies whose hearing loss was not identified by the screen, excluding those with known acquired loss. See table 10.

Table 10

Number of children	Reason for delay in identifying hearing loss
7	High risk babies screened in SCBU. Passed AABR screen using equipment which was replaced in 2006 due to concern about performance
1	High risk baby passed AABR (since 2006)
3	Well babies passed screen in one ear using AOA
4	Well baby passed screen in both ears
1	Well baby passed screen in both ears since diagnosed with auditory neuropathy spectrum disorder
1	Known progressive loss
1	Screener error in recording results
1	Communication failure, not reappointed for repeat screen following meningitis under 6 weeks

Provisional figures regarding the yield from the programme indicate that the number of cases detected related to the total number of babies screened is 1:75. The sensitivity of the programme is 92.5% with a specificity of 98.8%. The predictive value of the screen is 9.7%.

6.0 Quality Assurance report for year 2009.

The quality assurance site visits completed in 2008 were reported in June 2009. A full report is available on www.screeningservices.org/nbhsw in the professionals section. The Quality Manual was reviewed in 2009 and is available on the website.

Quality management is integral to the management structure of the programme. The Quality Advisory Group gives direction and advice to the screening programme regarding matters of quality. The board meets twice a year. Over the last year the advisory group has:

- Received the report entitled “Quality Assurance Report June 2009”. The group continues to monitor service development.
- Received an audit of babies diagnosed with Auditory Neuropathy Spectrum Disorder.
- Received an audit of Targeted Behavioural Testing.
- Continued efforts to flag up concerns around services in South Powys.
- Received a report entitled “Task and Finish Group on Outcome Measures in Language and Communication for early identified Children.” The group continues to review progress following the introduction of a language test at age 30 months.
- Received a report on a third user satisfaction survey. This report can be viewed on www.screeningservices.org/nbhsw. A further survey on views of families whose babies have been in Special or Intensive Care is being undertaken.
- Supported the collection of information from families who have not attended an assessment following referral from the screen.
- Continued to work with audiologists to improve the quality of assessments by supporting production of further guidelines and future audit.
- Received information about a Welsh Assembly Government funded project to develop paediatric audiology standards. NBHSW will work to avoid unnecessary duplication in benchmarking data.

7.0 Professional training

NBHSW arranged three training days in 2009. The Ear Foundation led training on counselling skills to be used around the time of initial diagnosis. This was attended by Audiologists and Professional Leads. A second audiology training day focussed on the changes to the protocol for assessment led by Guy Lightfoot from Royal Liverpool University Hospital. Other presentations and discussion took place around peer review - the Divisional Audit Facilitators taking the lead on this topic - early hearing aid fitting and the audits completed by NBHSW. The professional leads also attended a divisional training session which included discussion on the audits and an update on NBHSW developments.

8.0 Audit, presentations and publications

The two main audits undertaken have led to recommendations. The audit of Auditory Neuropathy Spectrum Disorder (see Annual Report 2008 for a description of this condition) recommended areas for improvement and development in initial diagnostic assessment. It also outlined the need for sharing good practice to improve the variable support and medical evaluation offered to babies and their families.

The audit of the targeted behavioural test offered to some babies in their first year of life showed that one group targeted have very poor attendance at the appointments offered.

This group includes those families who do not attend or decline screening and it was recommended that these families are sent a letter asking if they would like an appointment for a hearing assessment with the babies appointed when the parents accept this offer. The recommendations also included a change in the age at appointment which led to changes in information provided in letters and leaflets. This audit was published in *Audiens*, The Newsletter of the British Association of Paediatricians in Audiology, Issue No. 44, October 2009.

The audiologists undertake peer review on each NBHSW assessment and an audit is being undertaken to ensure that all peer reviews are completed and are done so within specified time limits.

Presentations were given at the annual screening conference in London and at Audiology Cymru.

Appendix 1

NBHSW ALL WALES RESULTS BY Period: April 1st 2008 to March 31st 2009

Total live births by Health Board where baby resident Babies eligible and suitable for screening, consenting and tested

Standards:

>=95% of eligible babies who enter the screening programme (i.e. consenting and tested)

>=99% of eligible babies to be offered screening

Health Board where resident	Births	Eligible & Suitable	Consenting & Tested	% Tested of Eligible & Suitable	Total Offered Screening	% Offered of Eligible and Suitable
ABM Health Board	5867	5751	5734	99.7%	5745	99.9%
Aneurin Bevin Health Board	7059	6930	6912	99.7%	6926	99.9%
BCU Health Board	8096	7925	7909	99.8%	7924	100.0%
Cardiff and Vale Health Board	6244	5981	5920	99.0%	5975	99.9%
Cwm Taf Health Board	3741	3680	3668	99.7%	3677	99.9%
Hywel Dda Health Board	3807	3721	3697	99.4%	3715	99.8%
Powys Health Board	1365	1329	1324	99.6%	1329	100.0%
All Wales Total	36179	35317	35164	99.6%	35291	99.9%

Referrals for assessment

Standards:

Between 1-2% of screened babies referred for assessment

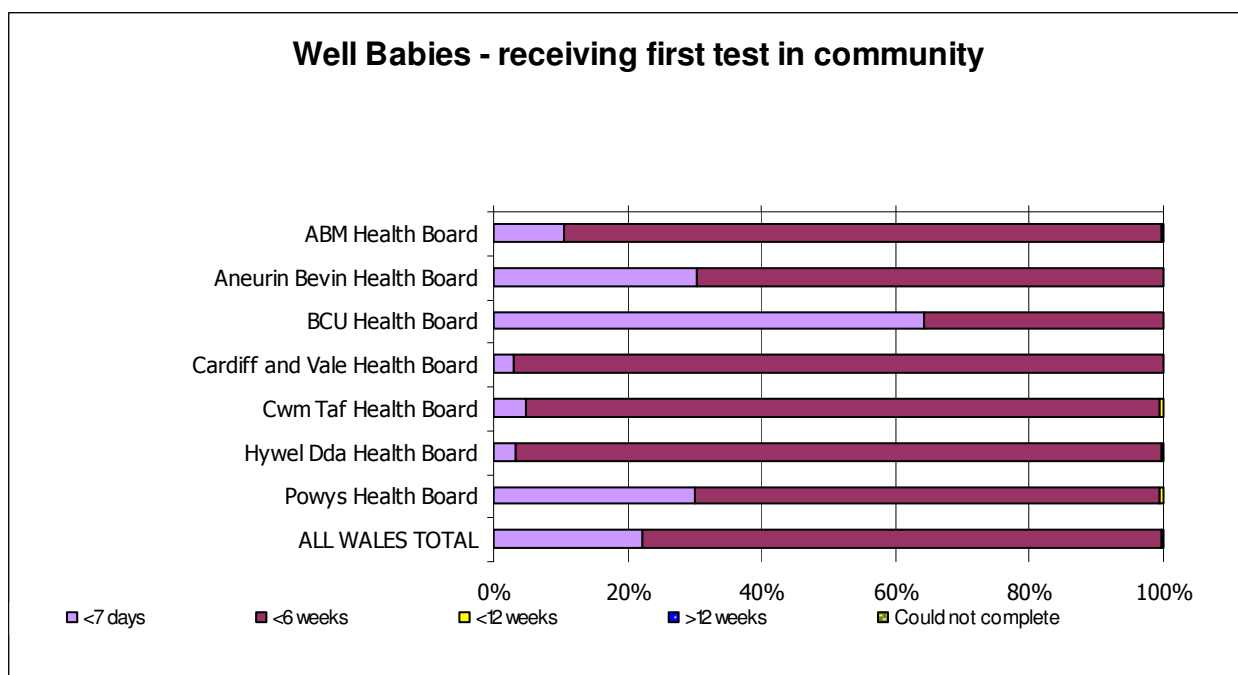
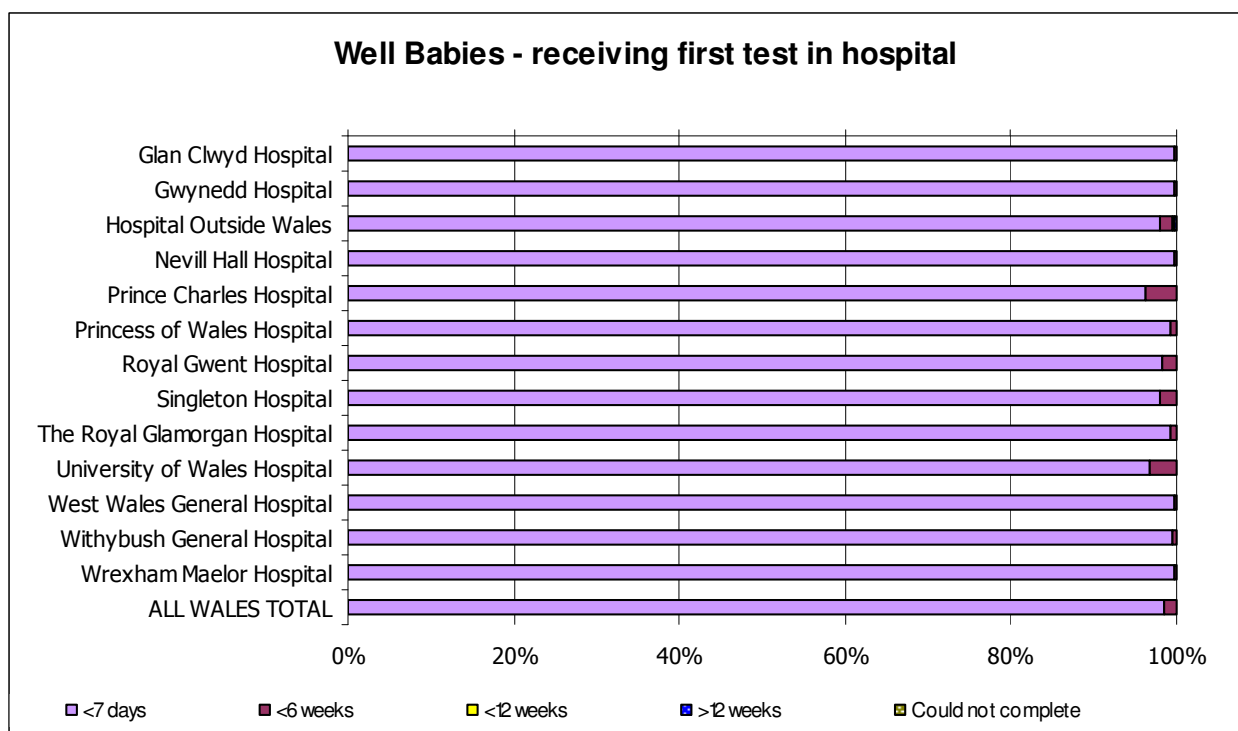
< 3% of babies complete assessment with normal hearing as proportion of all babies screened

Screening Location	Total Babies Screened	Referred for Assessment	% of Screened Babies Referred for Assessment	Discharged from Assessment Normal Hearing	% Discharged from Assessment as Proportion of Babies Screened
ABM Health Board	5734	75	1.3%	35	0.6%
Aneurin Bevin Health Board	6912	91	1.3%	50	0.7%
BCU Health Board	7909	74	0.9%	19	0.2%
Cardiff and Vale Health Board	5920	90	1.5%	33	0.6%
Cwm Taf Health Board	3668	60	1.6%	29	0.8%
Hywel Dda Health Board	3697	41	1.1%	24	0.6%
Powys Health Board	1324	23	1.7%	10	0.8%
All Wales Total	35164	454	1.3%	200	0.6%

Well babies receiving first test within seven days of birth

Standard:

To screen > 75% of well babies within the first seven days

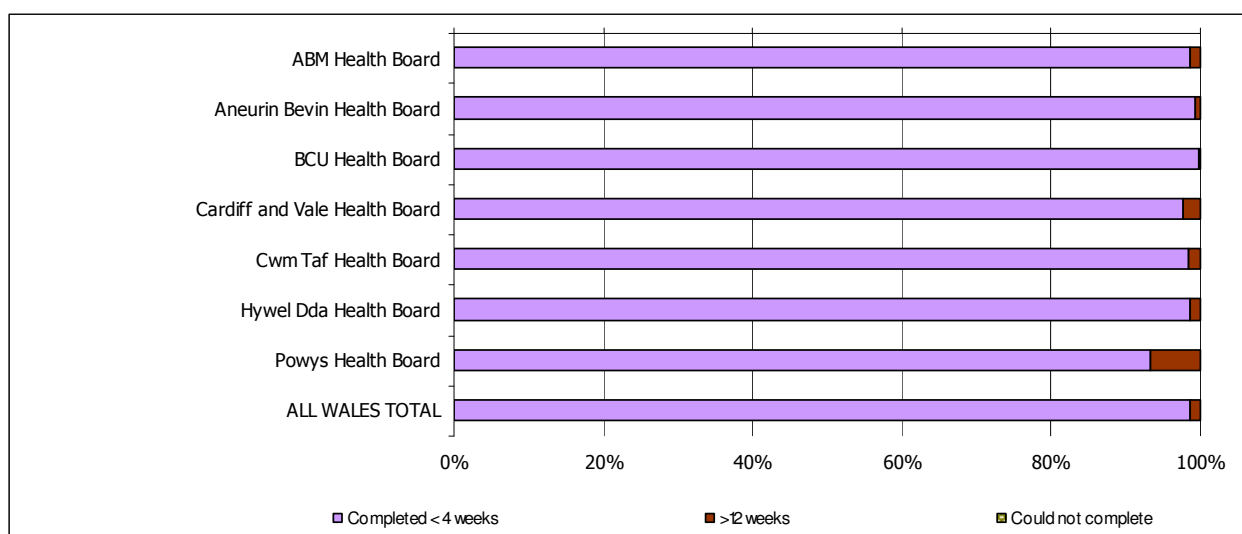


NB: The all Wales average for well babies having an initial test within seven days of birth is 78.8%. In some areas it is not possible to perform an initial screen in hospital and community clinics are run in these areas which has an impact on this standard. Home births and early discharges from hospital also affect this figure as there is no hospital screening opportunity. However, it can be seen from the graph above that efforts are made to screen within seven days even if the test has to be performed in the community.

Well babies completing screening within 4 weeks

Standard:

>= 90% of well babies to complete screening within 4 weeks



NB: Across Wales, 98.6% of babies completed screening within four weeks. The lowest figure reported is Powys at 93.4%, whilst this is still above the performance standard, it is hoped that the change in the way the service is delivered in Powys which came into effect in March 2009 will bring it into line with other Health Boards in future reports.

High risk babies completing screening

Standard:

>= 95% high risk babies (in SCBU > 48 hours) to complete screening

Community Location	<7 days	<6 weeks	<12 weeks	>12 weeks	Could not complete	Total Completed
Unknown	0	1	0	0	0	1
ABM Health Board	1	13	1	0	0	15
Aneurin Bevin Health Board	0	67	8	0	0	75
BCU Health Board	1	33	5	0	0	39
Cardiff and Vale Health Board	0	24	13	0	0	37
Cwm Taf Health Board	0	2	10	1	0	13
Hywel Dda Health Board	0	21	6	0	0	27
Powys Health Board	0	3	1	0	0	4
Total	2	164	44	1	0	211
%	0.9%	77.7%	20.9%	0.5%	0.0	100%

Hospital Location	<7 days	<6 weeks	<12 weeks	>12 weeks	Could not complete	Total Completed
Glan Clwyd Hospital	22	78	19	4	0	123
Gwynedd Hospital	42	70	8	1	0	121
Hospital Outside Wales	25	61	5	2	0	93
Nevill Hall Hospital	84	87	12	1	0	184
Prince Charles Hospital	37	66	10	4	0	117
Princess of Wales Hospital	84	84	7	3	0	178
Royal Gwent Hospital	62	108	8	3	0	181
Singleton Hospital	84	92	17	8	0	201
The Royal Glamorgan Hospital	34	93	13	5	0	145
University of Wales Hospital	80	161	24	7	0	272
West Wales General Hospital	55	45	6	0	0	106
Withybush General Hospital	39	28	5	0	0	72
Wrexham Maelor Hospital	26	92	17	1	0	136
Total	674	1065	151	39	0	1929
%	34.9%	55.2%	7.8%	2.0%	0.0	100%

Attendance rates for screening appointments

Standard:

<=4% not attended (includes all DNA and Cancelled appointments)

<1% of offered screening appointments which are declined

Screening Location	Numbers			Percentages			
	Attended	DNA or Cancelled	Parent Declined	Total	Attended	DNA or Cancelled	Parent Declined
ABM Health Board	5995	315	3	6313	95.0%	5.0%	0.0%
Aneurin Bevan Health Board	7469	380	6	7855	95.1%	4.8%	0.1%
BCU Health Board	8310	179	5	8494	97.8%	2.1%	0.1%
Cardiff and Vale Health Board	6599	665	4	7268	90.8%	9.1%	0.1%
Cwm Taf Health Board	3968	150	2	4120	96.3%	3.6%	0.0%
Hywel Dda Health Board	3854	233	14	4101	94.0%	5.7%	0.3%
Powys Health Board	1333	78	1	1412	94.4%	5.5%	0.1%
All Wales Total	37528	2000	35	39563	94.9%	5.1%	0.1%

NB: The 5.1% above is made up of 2.4% where parents DNA appointments and 2.7% cancellations (0.9% cancelled by NBHSW and 1.8% cancelled by parent).

Attendance rates for assessment appointments

Standards:

<10 % of offered assessment appointments not attended (DNA appointments only)

Assessment Location	Attended	Cancelled	Parent Declined	DNA	Total	% DNA
Glan Clwyd Hospital	28	6	0	15	49	30.6%
Gwynedd Hospital	17	6	0	5	28	17.9%
Prince Charles Hospital	27	5	1	1	34	2.9%
Princess of Wales Clinic	48	6	0	5	59	8.5%
Royal Gwent Hospital	118	18	0	20	156	12.8%
Singleton Hospital	40	6	0	9	55	16.4%
The Royal Glamorgan Hospital	55	11	1	7	74	9.5%
University of Wales Hospital	118	10	2	22	152	14.5%
Unknown	0	2	0	0	2	0.0%
West Wales General Hospital	33	6	1	4	44	9.1%
Withybush General Hospital	15	0	0	5	20	25.0%
Wrexham Maelor Hospital	59	10	1	5	75	6.7%
All Wales Total	558	86	6	98	748	
%	74.6%	11.5%	0.8%	13.1%	100.0%	

Time taken to start assessment

Standard

>= 95% of those requiring assessment start procedure in appropriate timescales i.e.

well babies = within 4 weeks of second screening test

high risk babies = within 8 weeks of AABR

Assessment Location	Within timescales		Outside Timescales		% Starting within Set Timescales	
	Well	High Risk	Well	High Risk	Well	High Risk
Glan Clwyd Hospital	13	8	0	0	100.0%	100.0%
Gwynedd Hospital	5	7	1	0	83.3%	100.0%
Prince Charles Hospital	14	7	1	0	93.3%	100.0%
Princess of Wales Hospital	12	22	7	0	63.2%	100.0%
Royal Gwent Hospital	53	36	9	0	85.5%	100.0%
Singleton Hospital	22	12	2	0	91.7%	100.0%
The Royal Glamorgan Hospital	25	13	1	0	96.2%	100.0%
University of Wales Hospital	56	29	4	0	93.3%	100.0%
West Wales General Hospital	23	5	0	0	100.0%	100.0%
Withybush General Hospital	7	5	1	0	87.5%	100.0%
Wrexham Maelor Hospital	31	18	1	2	96.9%	90.0%
Unknown	0	2	0	0	0.0%	100.0%
All Wales Total	261	164	27	2		
%	90.6%	98.8%	9.4%	1.2%		

NB: It should be noted that over 69% of high risk babies start the assessment procedure within 4 weeks of referral.

Time taken to complete assessment

Standards:

Of those requiring assessment

>= 80% complete procedure by 3 months of age

< 5% referred for assessment and not seen

Assessment Location	Never Attended	Attended then DNA'd final test	Not Yet Complete	Completed < 3 Months	Completed 3+ Months
Glan Clwyd Hospital	17.4	0.0	0.0	82.6	0.0
Gwynedd Hospital	8.3	16.7	0.0	75.0	0.0
Prince Charles Hospital	0.0	0.0	0.0	100.0	0.0
Princess of Wales Hospital	4.9	0.0	0.0	95.1	0.0
Royal Gwent Hospital	4.1	2.0	0.0	91.8	2.0
Singleton Hospital	2.7	8.1	0.0	89.2	0.0
The Royal Glamorgan Hospital	7.5	5.0	0.0	82.5	5.0
University of Wales Hospital	4.4	5.5	0.0	90.1	0.0
West Wales General Hospital	3.7	3.7	0.0	92.6	0.0
Withybush General Hospital	7.7	7.7	0.0	76.9	7.7
Wrexham Maelor Hospital	2.0	0.0	0.0	98.0	0.0
All Wales Total	4.8%	3.5%	0.0%	90.5%	1.1%

NB: Whilst those never attending for assessment has decreased by 3.6% on the previous year the proportion of those failing to attend for the final test has risen this year by 0.8% and therefore needs to be closely monitored.

Referrals

Standards:

Between 1-2% of screened babies referred for assessment

<1% of screened babies referred to Audiology at parental request following one ear clear response

<1% of all babies referred to targeted behavioural test

Screening Location (Health Board locations listed represent home visits and clinics carried out in that area)	Discharged	Repeat Test Needed	Referred for Assessment	Referred to Audiology	Referred For Behavioural Test
Glan Clwyd Hospital	98.4%	0.0%	0.6%	0.6%	0.3%
Gwynedd Hospital	98.8%	0.0%	0.3%	0.4%	0.5%
Hospital Outside Wales	97.8%	0.1%	0.8%	0.2%	1.1%
Nevill Hall Hospital	96.4%	0.0%	0.9%	2.4%	0.3%
Prince Charles Hospital	97.6%	0.0%	1.4%	0.7%	0.3%
Princess of Wales Hospital	97.8%	0.0%	1.3%	0.7%	0.2%
Royal Gwent Hospital	94.7%	0.0%	0.9%	3.9%	0.5%
Singleton Hospital	96.0%	0.0%	1.0%	2.4%	0.6%
The Royal Glamorgan Hospital	97.7%	0.0%	0.9%	1.0%	0.4%
University of Wales Hospital	95.9%	0.0%	1.6%	2.1%	0.5%
West Wales General Hospital	97.1%	0.0%	0.6%	1.8%	0.5%
Withybush General Hospital	96.9%	0.0%	0.8%	1.5%	0.7%
Wrexham Maelor Hospital	97.2%	0.0%	0.9%	1.4%	0.5%
ABM Health Board	97.6%	0.0%	1.5%	0.6%	0.2%
Aneurin Bevin Health Board	95.9%	0.0%	2.3%	1.1%	0.7%
BCU Health Board	97.2%	0.0%	2.0%	0.5%	0.3%
Cardiff and Vale Health Board	96.3%	0.0%	1.7%	0.6%	1.4%
Cwm Taf Health Board	94.4%	0.0%	4.0%	0.5%	1.1%
Hywel Dda Health Board	97.3%	0.0%	1.8%	0.4%	0.5%
Powys Health Board	96.2%	0.0%	2.0%	0.8%	1.0%
All Wales Total	96.8%	0.0%	1.3%	1.4%	0.5%

NB: The percentage of **well** babies referred to audiology at parental request following one ear clear response is 1.5%. It is evident from the above figures that parental requests for referral are significantly higher in some sites and the reasons for this need to be explored.

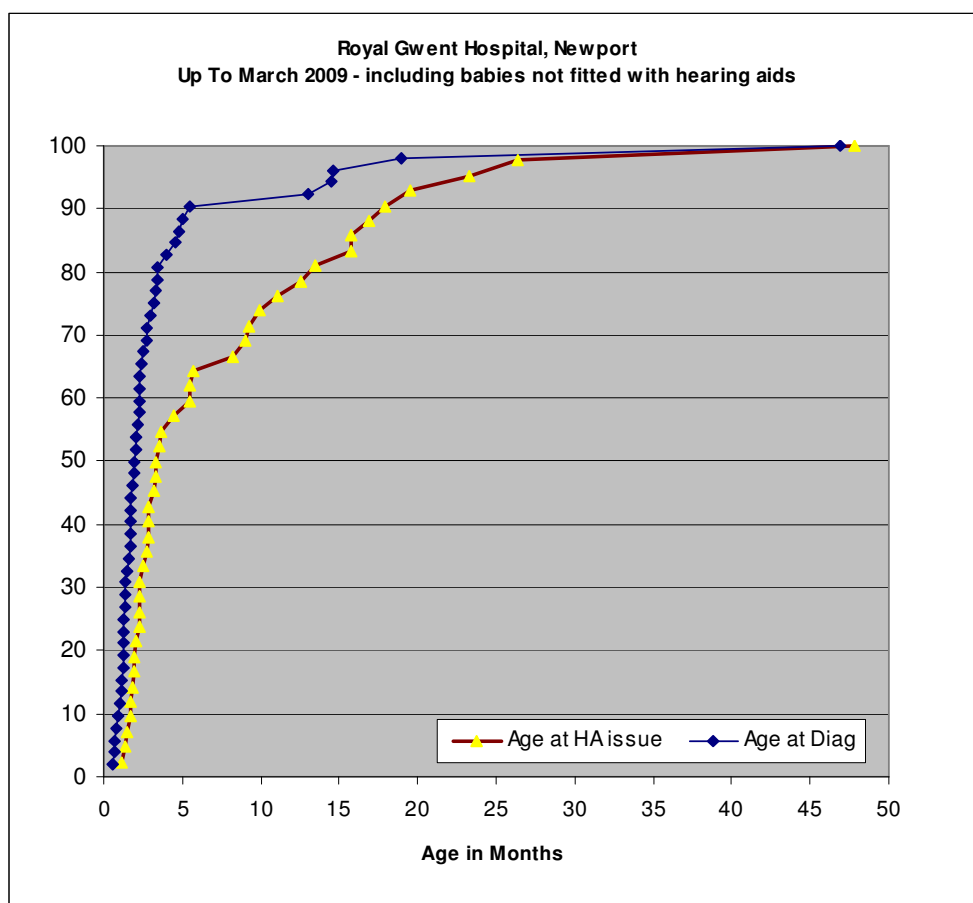
Appendix 2 Incremental Yield plots by site

The 50th centile on the vertical axis marks the median age of hearing aid fitting which can be read off the horizontal axis in months. The graphs demonstrate the spread of age of diagnosis and hearing aid fitting, allowance having been made for prematurity.

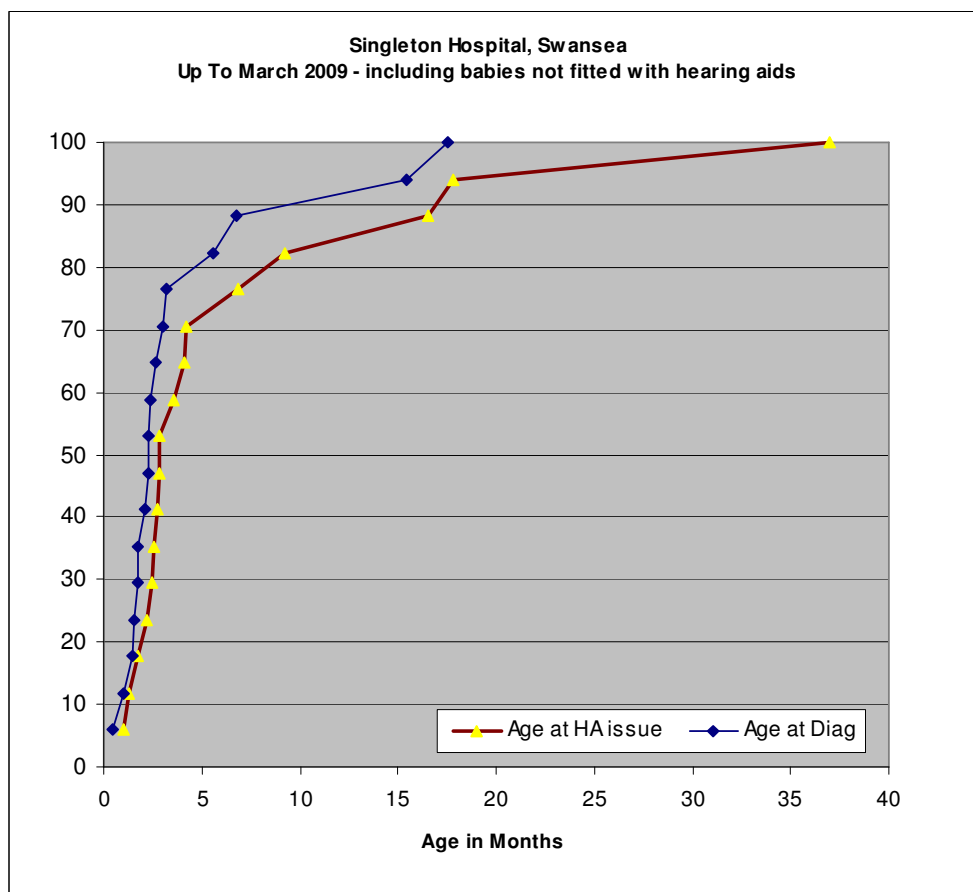
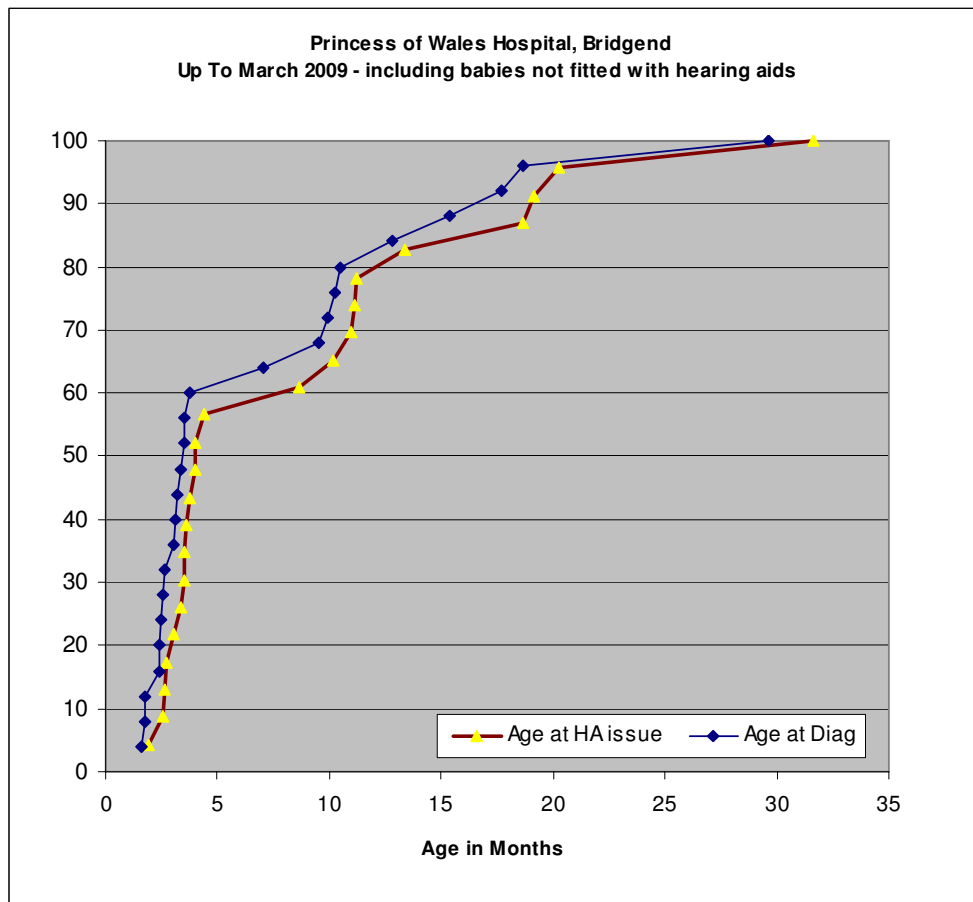
The plot of age of diagnosis includes all babies whether or not hearing aids are fitted.

There are differences between the incremental yield plots of the different sites. The age of diagnosis and hearing aid fitting were discussed at site visits undertaken in 2008 and reported in the Quality Assurance Report 2009. Actions plans for each site are being implemented and will be reported in 2010.

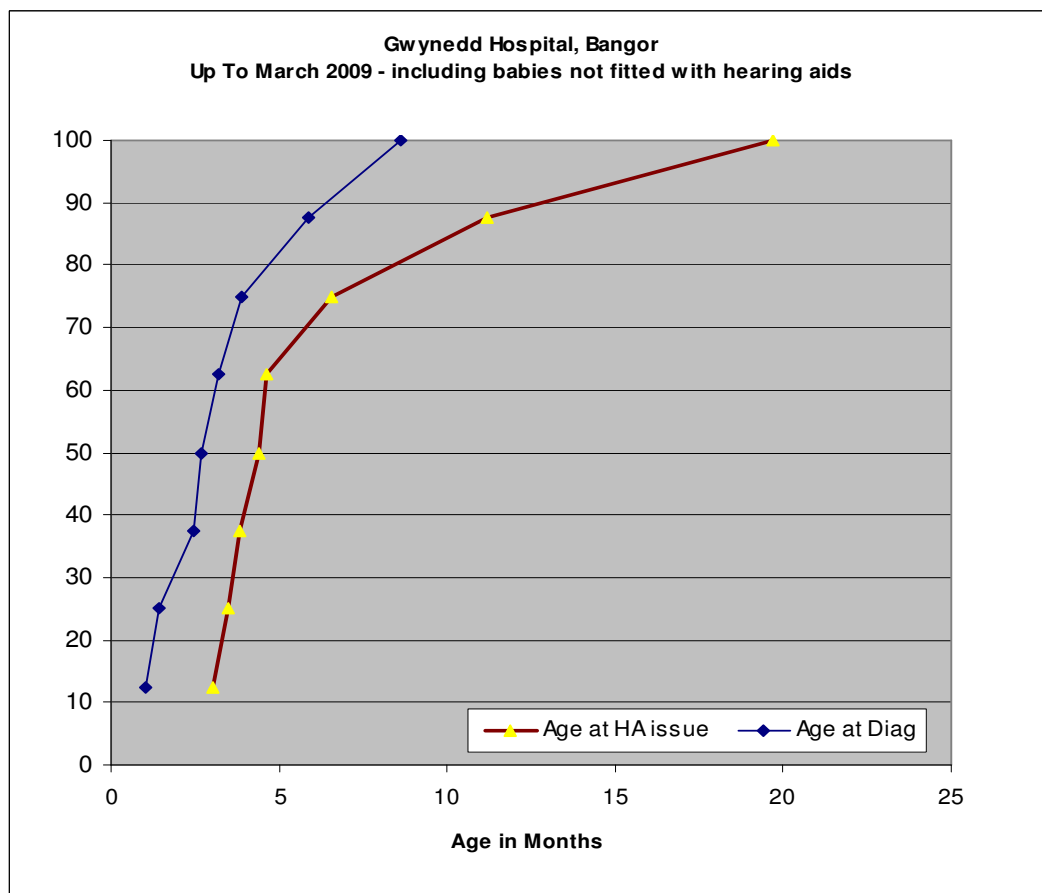
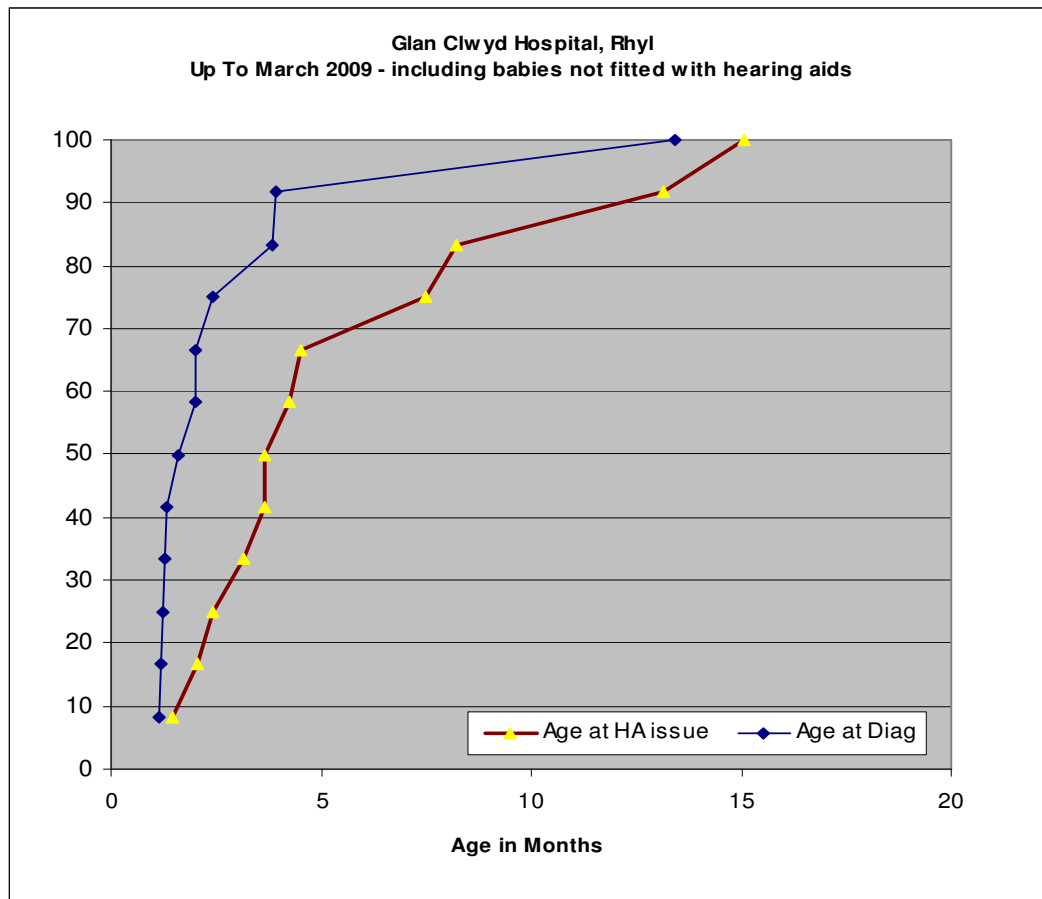
Aneurin Bevin Health Board

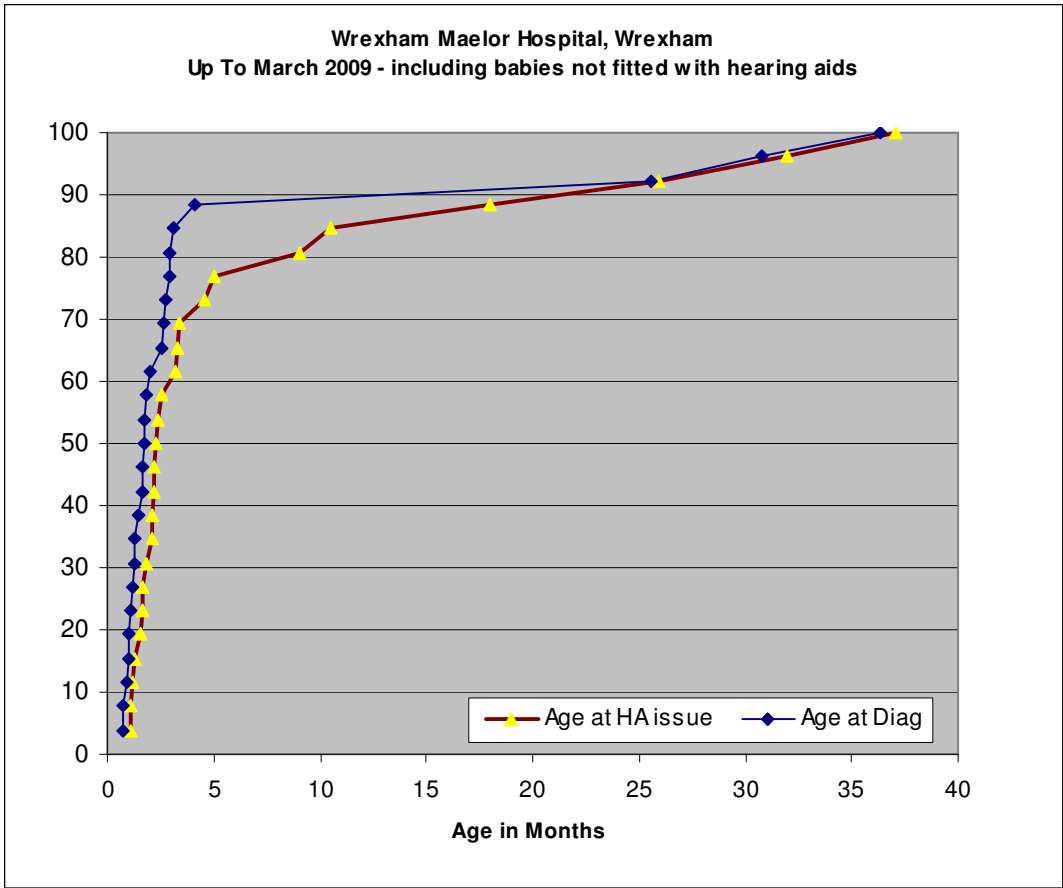


Abertawe Bro Morgannwg University Health Board

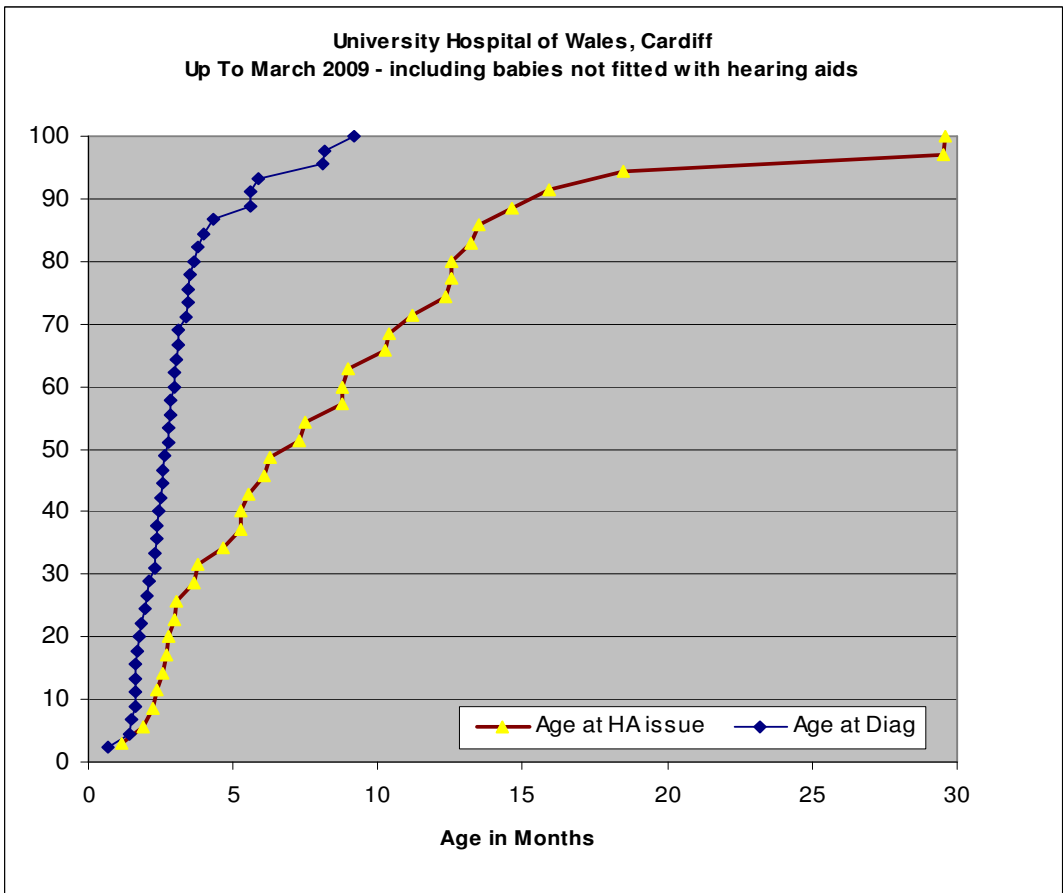


Betsi Cadwaladr University Health Board

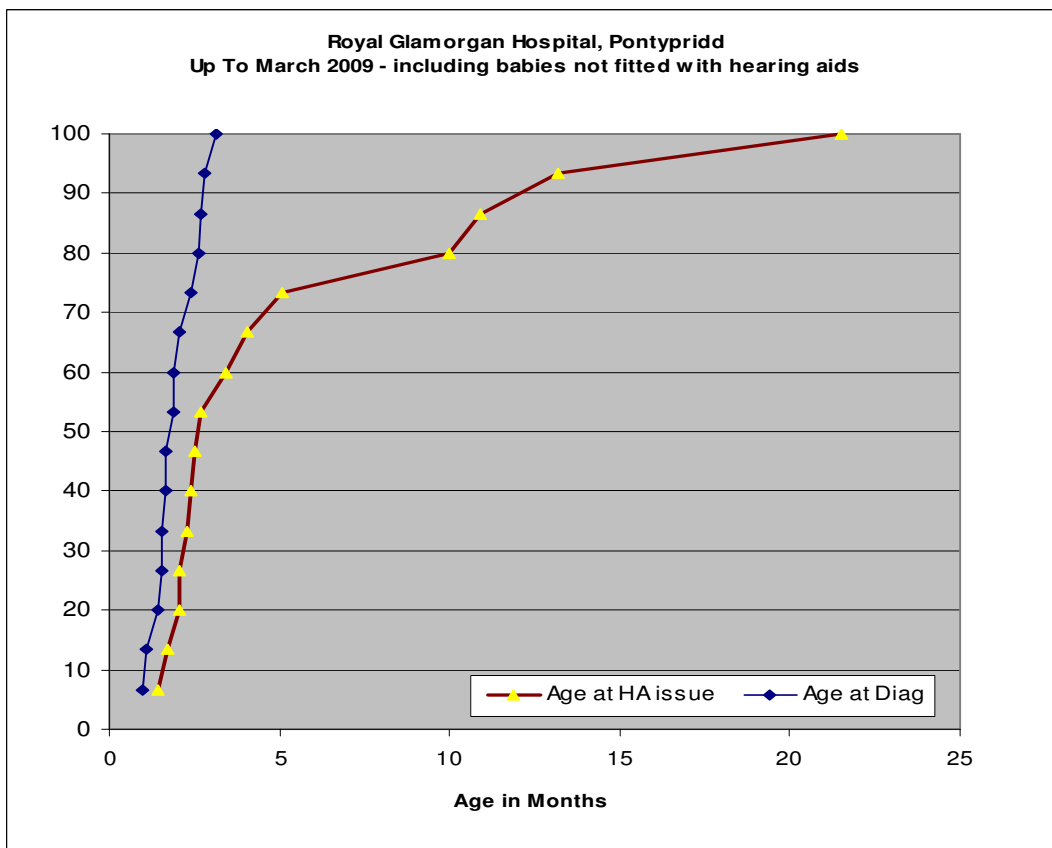
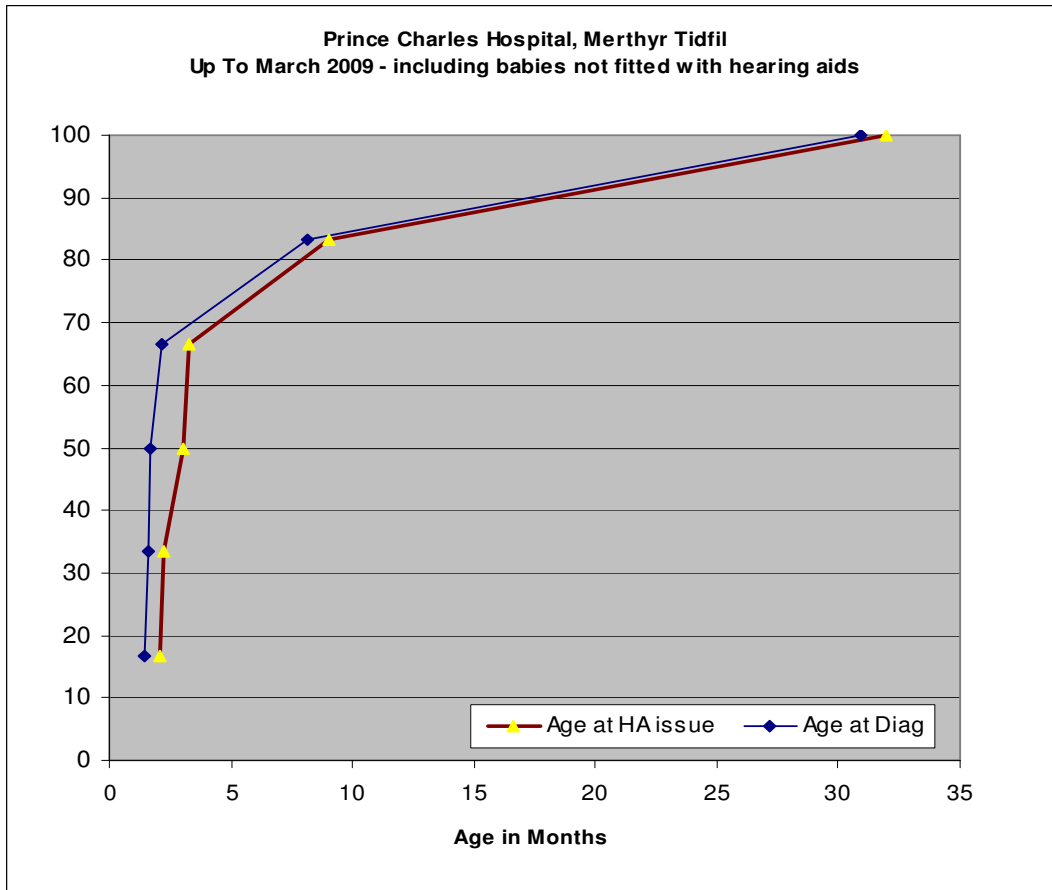




Cardiff and Vale University Health Board



Cwm Taf Health Board



Hywel Dda Health Board

