



Universal Offer Antenatal HIV Screening Programme:

**Quarterly Report to the National
Screening Unit, Ministry of Health**

Quarters 1-4 2006 and Quarter 1 2007

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Part 1: Introduction

The AIDS Epidemiology Group (AEG) has been contracted by the National Screening Unit (NSU) to provide monitoring and evaluation of some aspects of the Universal Offer Antenatal HIV Screening Programme, and to issue quarterly reports. The monitoring undertaken is based on AEG's March 2006 Monitoring and Evaluation Plan, as approved by the NSU. The monitoring follows the screening pathway, from the offer of HIV testing to the resulting health outcomes. The initial focus is on process, especially uptake of HIV testing and the occurrence of non-negative results. This initial report also highlights issues in data collection.

This Programme commenced in the Waikato District Health Board (WDHB) on 20 March 2006 with the aim to progressively roll it out in other District Health Boards throughout the country. Following meetings over the past year with representatives from the NSU, WDHB, New Zealand Health Information Service (NZHIS), laboratories and Hewlett Packard (HP), the AEG has devised the reporting structure below. The data requirements and reporting structure have been designed to be as straightforward as possible. For this first report we have reported on data from five quarters from 01/01/06 to 31/03/07. For future reports, only one quarter of data will be updated, and data for the current year displayed (unless otherwise specified).

Laboratory antenatal screening data were collected by WDHB, and included NHI, name, date of birth, date of testing and screening test result (negative / non-negative). 9233 lines of data were sent to NZHIS for matching to an NHI record so that ethnicity and deprivation score could be included in the line by line data. Initially for 85% of the data lines an NHI number was provided (although some might have been incorrect). Through checking these and searching for an NHI using the name and date of birth for those for whom one was not provided, it would have been possible to provide an NHI for 95% of the data lines (not done for this report). As validation was not done it is likely that some NHI matches were wrong, resulting in eight males being included in the data set, and other evidence (e.g. unlikely date of birth) of another 20 mismatches. Elimination of these errors is another reason to validate NHIs. Due to duplicate records in the data received, the total number of records for analysis was reduced from 9233 to 9193.

Part 2 of this report shows data summarized by quarter for screening uptake, and reported by age group, ethnicity and deprivation score where available. These figures show the proportion of women having antenatal blood tests who were tested for HIV. This will over-estimate true uptake of HIV testing due to the omission of women who do not have any antenatal screening tests. Retesting of the same women, based on multiple tests linked to the same NHI, was also assessed as this will add cost to the screening programme.

In Part 3 screening results were assessed by looking at the number of non-negative test results and HIV positive confirmatory results. This is important as it will determine how many women will need to be informed of their indeterminate status and be re-bled, assuming the laboratory algorithm is followed correctly.

In part 4, a summary and some recommendations are given.

Part 2: Screening Uptake

Tables 1 to 5 show screening uptake (as a proportion of all women having antenatal blood tests) by DHB, requester type, age group, ethnic group and residential area deprivation score (as measured by NZDep01). Ethnicity and deprivation data are only available for those 85% of women who could be NHI linked. Overall uptake of HIV tests among women having antenatal HIV screening is excellent.

Table 1: Screening uptake by DHB

DHB	Q1*			Q2			Q3			Q4			Total for		
	20/03 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2006		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	254	251	(98.8)	2057	2050	(99.7)	2388	2383	(99.8)	2126	2122	(99.8)	6825	6806	(99.7)
Total	254	251	(98.8)	2057	2050	(99.7)	2388	2383	(99.8)	2126	2122	(99.8)	6825	6806	(99.7)

DHB	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	2368	2362	(99.7)	0	0	-	0	0	-	0	0	-	2368	2362	(99.7)
Total	2368	2362	(99.7)	0	0	-	0	0	-	0	0	-	2368	2362	(99.7)

*The first screening test was on 20.03.2006, so the first quarter of 2006 is only a partial quarter of data. Where N is the total number of women accepting antenatal screens during the quarter, n and % are the number and percentage of antenatal screens that included an HIV screen.

As Waikato is the only DHB currently in the programme, this is the only DHB displayed in table 1. As other DHBs start the programme, their results will be compared in table 1. Table 1 shows little variation in uptake over time, with uptake consistently close to 100%.

Table 2: Screening uptake by requester type

Requester	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Midwife															
GP															
Obstetrician															
Total															

This table will not be able to be completed until there is a process for converting requester name into a requester type

To look at screening uptake trends by who ordered the antenatal screen, a method of converting requester names, which the laboratory can provide as standard, into requester types is required. Using names may be problematic due to the varying formats the same name may take; another possibility is using the requester's code. At this stage it is not known who would be most likely to have this information.

Table 3: Screening uptake by age group

Age group	Q1*			Q2			Q3			Q4			Total for		
	20/03 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2006		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
<15yrs	1	1	(100.0)	0	0	-	3	3	(100.0)	5	5	(100.0)	9	9	(100.0)
15-19	26	26	(100.0)	236	236	(100.0)	296	296	(100.0)	273	272	(99.6)	831	830	(99.9)
20-24	57	57	(100.0)	424	422	(99.5)	526	525	(99.8)	479	479	(100.0)	1486	1483	(99.8)
25-29	65	63	(96.9)	518	518	(100.0)	571	571	(100.0)	507	506	(99.8)	1661	1658	(99.8)
30-39	96	95	(99.0)	794	789	(99.4)	889	885	(99.6)	786	785	(99.9)	2565	2554	(99.6)
40yrs +	9	9	(100.0)	85	85	(100.0)	103	103	(100.0)	76	75	(98.7)	273	272	(99.6)
Total	254	251	(98.8)	2057	2050	(99.7)	2388	2383	(99.8)	2126	2122	(99.8)	6825	6806	(99.7)

Age group	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
<15yrs	1	1	(100.0)	0	0	-	0	0	-	0	0	-	1	1	(100.0)
15-19	239	238	(99.6)	0	0	-	0	0	-	0	0	-	239	238	(99.6)
20-24	496	496	(100.0)	0	0	-	0	0	-	0	0	-	496	496	(100.0)
25-29	600	598	(99.7)	0	0	-	0	0	-	0	0	-	600	598	(99.7)
30-39	906	905	(99.9)	0	0	-	0	0	-	0	0	-	906	905	(99.9)
40yrs +	126	124	(98.4)	0	0	-	0	0	-	0	0	-	126	124	(98.4)
Total	2368	2362	(99.7)	0	0	-	0	0	-	0	0	-	2368	2362	(99.7)

*The first screening test was on 20.03.2006, so the first quarter of 2006 is only a partial quarter of data. Where N, n and % are as above.

Table 3 shows little variation in uptake by age group, with uptake consistently close to 100%. These data are easily obtainable from laboratory data and will highlight any uptake issues between different age groups should any arise.

Table 4: Screening uptake by ethnic group

Ethnic group	Q1*			Q2			Q3			Q4			Year to date		
	20/03 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2006		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
NZ European	114	112	(98.2)	843	838	(99.4)	1071	1068	(99.7)	942	939	(99.7)	2970	2957	(99.6)
Maori	51	50	(98.0)	492	492	(100.0)	602	601	(99.8)	532	531	(99.8)	1677	1674	(99.8)
Other European	19	19	(100.0)	123	122	(99.2)	119	118	(99.2)	131	131	(100.0)	392	390	(99.5)
Asian	11	11	(100.0)	71	71	(100.0)	89	89	(100.0)	99	99	(100.0)	270	270	(100.0)
Pacific peoples	2	2	(100.0)	36	36	(100.0)	30	30	(100.0)	43	43	(100.0)	111	111	(100.0)
African	1	1	(100.0)	11	11	(100.0)	14	14	(100.0)	13	13	(100.0)	39	39	(100.0)
other/un-specified	9	9	(100.0)	66	65	(98.5)	84	84	(100.0)	132	132	(100.0)	291	290	(99.7)
Total	207	204	(98.6)	1642	1635	(99.6)	2009	2004	(99.8)	1892	1888	(99.8)	5750	5731	(99.7)

Ethnic group	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
NZ European	992	991	(99.9)	0	0	-	0	0	-	0	0	-	992	991	(99.9)
Maori	623	621	(99.7)	0	0	-	0	0	-	0	0	-	623	621	(99.7)
Other European	141	140	(99.3)	0	0	-	0	0	-	0	0	-	141	140	(99.3)
Asian	113	113	(100.0)	0	0	-	0	0	-	0	0	-	113	113	(100.0)
Pacific peoples	44	44	(100.0)	0	0	-	0	0	-	0	0	-	44	44	(100.0)
African	24	24	(100.0)	0	0	-	0	0	-	0	0	-	24	24	(100.0)
other/un-specified	167	166	(99.4)	0	0	-	0	0	-	0	0	-	167	166	(99.4)
Total	2104	2099	(99.8)	0	0	-	0	0	-	0	0	-	2104	2099	(99.8)

*The first screening test was on 20.03.2006, so the first quarter of 2006 is only a partial quarter of data. Where N, n and % are as above.

Table 4 shows little variation in uptake by ethnic group, with uptake consistently close to 100%. These data are only available where laboratory data could be matched with an NHI record, and that NHI record had completed ethnicity data. This table will highlight any uptake issues between different ethnic groups should any arise.

Table 5: Screening uptake by NZDep01 Score

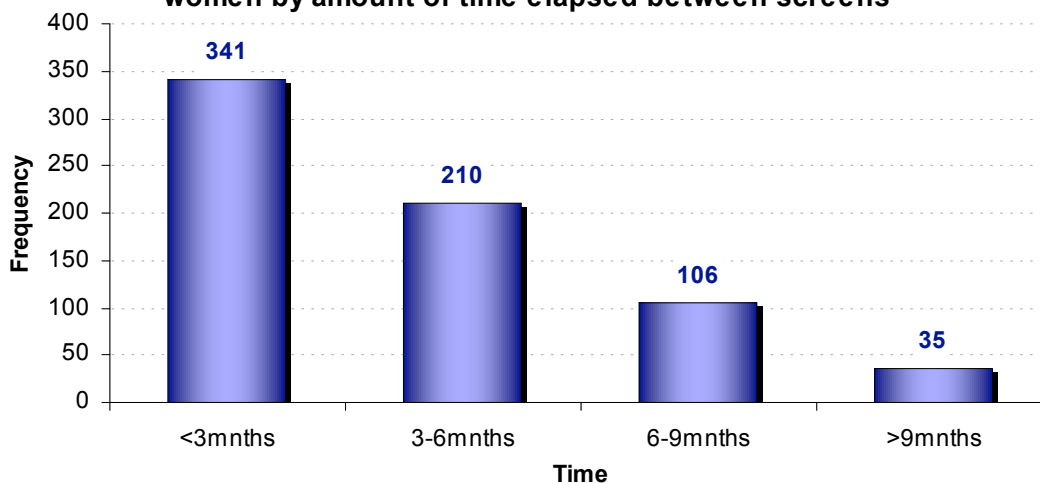
NZdep01	Q1*			Q2			Q3			Q4			Total for		
	20/03 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2006		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
1-2	21	21	(100.0)	161	160	(99.4)	199	199	(100.0)	183	183	(100.0)	564	563	(99.8)
3-4	26	25	(96.2)	233	233	(100.0)	275	274	(99.6)	251	251	(100.0)	785	783	(99.7)
5-6	37	36	(97.3)	319	318	(99.7)	378	378	(100.0)	380	379	(99.7)	1114	1111	(99.7)
7-8	39	39	(100.0)	330	327	(99.1)	424	422	(99.5)	410	407	(99.3)	1203	1195	(99.3)
9-10	84	83	(98.8)	597	595	(99.7)	733	731	(99.7)	664	664	(100.0)	2078	2073	(99.8)
Total	207	204	(98.6)	1640	1633	(99.6)	2009	2004	(99.8)	1888	1884	(99.8)	5744	5725	(99.7)

NZdep01	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
1-2	196	195	(99.5)	0	0	-	0	0	-	0	0	-	196	195	(99.5)
3-4	262	262	(100.0)	0	0	-	0	0	-	0	0	-	262	262	(100.0)
5-6	374	374	(100.0)	0	0	-	0	0	-	0	0	-	374	374	(100.0)
7-8	443	442	(99.8)	0	0	-	0	0	-	0	0	-	443	442	(99.8)
9-10	826	823	(99.6)	0	0	-	0	0	-	0	0	-	826	823	(99.6)
Total	2101	2096	(99.8)	0	0	-	0	0	-	0	0	-	2101	2096	(99.8)

*The first screening test was on 20.03.2006, so the first quarter of 2006 is only a partial quarter of data. Where N, n and % are as above

Table 5 shows little variation in uptake by deprivation score, with uptake consistently close to 100%. These data are only available where laboratory data could be matched with an NHI record, and that NHI record had residency data. This table will highlight any uptake issues by deprivation score should any arise.

Figure 1: Frequency of repeat HIV screens on the same women by amount of time elapsed between screens



The interval between HIV tests for women with more than one during the screening programme period to date (20.03.2006 – 31/02/2007) is shown in Figure 1. This is only available for women with a valid NHI number, and excludes repeat testing where one of the screens was non-negative. It not possible to know whether these screens are in the same pregnancy, although it is extremely likely to be the case where the interval was less than 3 months, and impossible where this was greater than 9 months.

At least 341 of the 7104 (4.8%) women appear to have had a repeat HIV screen during the same pregnancy (<3 months between screens), and very probably higher as for many of the 210 women with repeat HIV screens where the interval was between three and six months, the repeat testing was probably during the same pregnancy. There might, or might not, have been a clinical indication for retesting. When information on provider number and type are available it will be possible to investigate how often the repeat testing is undertaken by different providers.

The total of 692 of the 7104 (9.7%) women with a valid NHI being tested more than once does not match the numbers presented by the WDHB's presentation on May 7 2007; this will need further investigation.

Part 3: Screening results

Table 6: Women retested following non-negative results (by DHB)

DHB	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-

This table will not be able to be completed until there is a process for collecting antenatal HIV confirmatory testing data from the confirmatory laboratories

Information for Table 6 will in the future be provided by the two laboratories carrying out confirmatory testing; ESR, Porirua and LabPlus, Auckland. The AEG has been working with ESR (the confirmatory laboratory for WDHB) to develop a system of reporting however, to date, no information has been received. The main difficulty expressed by ESR is not knowing which patients are tested as part of the antenatal screening programme. To clarify this, a copy of the original laboratory request form, on which “antenatal screen” is stated, needs to be attached to the request that is sent to ESR.

Data on non-negatives were received directly from WDHB as part of their laboratory data set; between 20.03.2006 and 31.03.2007 there were a total of 41 non-negative results from 9168 HIV screens (0.4%). The expected rate is 0.1% requiring confirmatory tests¹. The higher rate may be because of the use of a 3rd generation EIA as a screening test by one of the laboratories. Two of the 41 non-negatives were confirmed positive. A total of 39 are presumed negative; no data have been received from ESR to confirm this. It is unknown how many women were re-bled. This information is required, ideally from the laboratory performing the confirmatory test.

Table 7: Confirmed HIV positive results (by DHB)

Requester	Q1*			Q2			Q3			Q4			Year to date		
	20/03 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2006		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	251	0	-	2050	0	-	2383	1	(0.04)	2122	0	-	6806	1	(0.01)
Total	251	0	-	2050	0	-	2383	1	(0.04)	2122	0	-	6806	1	(0.01)

Requester	Q1			Q2			Q3			Q4			Year to date		
	01/01 - 31/03			01/04 - 30/06			01/07 - 30/09			01/10 - 31/12			2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	2362	1	(0.04)	0	0	-	0	0	-	0	0	-	2362	1	(0.04)
Total	2362	1	(0.04)	0	0	-	0	0	-	0	0	-	2362	1	(0.04)

**The first screening test was on 20.03.2006, so the first quarter of 2006 is only a partial quarter of data. Where N is the total number of women screened for HIV during the quarter, n and % are the number and percentage of HIV screens that were confirmed HIV positive.*

Data for table 7 was received from the confirmatory laboratories as part of the AEG’s routine HIV surveillance.

¹ From the AEG’s Monitoring and Evaluation Plan, March 2006.

Part 4: Recommendations

The production of this report has shown that there is much valuable information for assessing the screening programme available through laboratory reported data that can be easily accessed and analysed. An extra step of matching NHI records is required to assess screening uptake by ethnicity and NZDep score. This can be done through NZHIS, however, completion and validity of NHI matching would be greatly improved should NZHIS be contracted to validate NHI matching. A method of collecting requester types needs to be devised. It should be noted that the single most important disadvantage of assessing screening uptake in this manner is the lack of a denominator that accounts for all pregnant women; women undergoing antenatal screening (with or without HIV) is currently our best proxy. The data could be linked with other datasets (e.g. all women giving birth via the NMDS and MIS datasets) and reassessed retrospectively in the future.

Assessment of the non-negative screening results is incomplete because of identification problems at ESR. The problems that ESR is having identifying HIV confirmatory tests from an antenatal screen can be easily resolved by the laboratories attaching a copy of the original request form. Once this issue is resolved this would be the best source of information on non-negative screens and confirmatory test results.

To improve quality, reliability and efficiency, the AEG suggests the following short-term goals:

1. Contract NZHIS to validate NHIs
2. DHB co-ordinator to explore possibilities for ascertaining requester type
3. Laboratories to attach original request forms when asking for a confirmatory test, so that ESR can ascertain if the test is antenatal and if it is a re-bleed.
4. Amendments to the reporting structure to be agreed and confirmed before further roll-out of the screening programme
5. Have the quarterly report disseminated within the DHB and laboratories as appropriate.
6. Solicit feedback from stakeholders on the report and recommendations.

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