



Universal Routine Offer HIV Antenatal Screening Programme:

Quarterly Report to the National Screening Unit, Ministry of Health

Quarters 1-4 2007

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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 Routine Offer HIV Antenatal Screening Programme (referred to in this report as the 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 Programme commenced in the Waikato District Health Board (WDHB) on 20/03/2006 with the aim to progressively roll it out in other District Health Boards (DHB) throughout the country. Following meetings during 2007 with representatives from the NSU, WDHB, New Zealand Health Information Service (NZHIS), laboratories and Hewlett Packard, the AEG has devised a reporting structure. The data requirements and reporting structure have been designed to be as straightforward as possible. In this third report we analyse the data from Quarters 1-4 of 2007.

Laboratory antenatal screening data were collected by WDHB, and include National Health Index Number (NHI), name, date of birth and date of testing. For 2007, 9078 lines of data were sent to NZHIS for matching to an NHI record so that ethnicity and residential area deprivation score could be included in the line-by-line data. After validation, 91% of the data lines could be matched to an NHI record. Although NHI validity checking was conducted by NZHIS, gender data from the NHI record indicated that seven males were included in the data set. This may be due to data entry for either the NHI record - meaning that they are in fact females - or it could be that the NHI number was wrongly entered for the patient. These individuals were not removed for these analyses. There were also five incidences where the date of birth supplied by the laboratory and by the NHI record did not match, and both could be valid, in this case the laboratory data was used to calculate age. There were no other validity issues.

Part 1 of this report shows data summarized by quarter for screening uptake, and shows the proportion of women having antenatal blood tests who were tested for HIV. This will over-estimate true uptake of HIV testing among all pregnant women due to the omission of women who do not have any antenatal screening tests. For some women the pregnancy will have ended as a termination or miscarriage. Repeat testing of the same women was also assessed. If this is during the same pregnancy, and there was no clinical indication, this will add cost to the screening programme. We have determined the time between tests to gain some insight into whether these were likely to have been repeat testing during the same pregnancy.

Part 2 provides information on pregnant women newly diagnosed with HIV in the DHBs engaged in the Programme (currently just the WDHB), and on those who had an initial non-negative test and were subsequently found to be uninfected.

Part 3 is a summary and recommendations.

Part 1: Screening Uptake

HIV screening uptake

Tables 1.1 to 1.5 show HIV screening uptake, calculated 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 91% of women who could be NHI linked, and where these fields were completed in their NHI record.

Overall uptake of HIV tests among women having antenatal HIV screening is excellent with between 99.7% and 99.9% of all antenatal screening tests including HIV in all quarters of 2007 (Table 1.1).

Waikato is the only DHB currently in the programme. As other DHBs start the programme, their results will be included in Table 1.1. Information on the type of requester – general practitioner, midwife, obstetrician/gynaecologist or other, is newly available (Table 1.2). Tables 1.3, 1.4 and 1.5 show little variation in uptake by age group, ethnic group and deprivation score respectively, with uptake consistently close to 100%.

Table 1.1: Screening uptake by DHB

DHB	Q1 01/01 - 31/03			Q2 01/04 - 30/06			Q3 01/07 - 30/09			Q4 01/10 - 31/12			Total for 2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2167	2165	(99.9)	9078	9062	(99.8)
Total	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2167	2165	(99.9)	9078	9062	(99.8)

Table 1.2: Screening uptake by requester type

Requester	Q1 01/01 - 31/03			Q2 01/04 - 30/06			Q3 01/07 - 30/09			Q4 01/10 - 31/12			Total for 2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
GP	1205	1203	(99.8)	1075	1071	(99.6)	1182	1181	(99.9)	1122	1121	(99.9)	4584	4576	(99.8)
Midwife	978	974	(99.6)	945	944	(99.9)	1026	1024	(99.8)	910	909	(99.9)	3859	3851	(99.8)
O & G	86	86	(100.0)	93	93	(100.0)	75	75	(100.0)	57	57	(100.0)	311	311	(100.0)
Other	26	26	(100.0)	35	35	(100.0)	25	24	(96.0)	26	26	(100.0)	112	111	(99.1)
Missing	74	74	(100.0)	44	44	(100.0)	42	43	(102.4)	52	52	(100.0)	212	213	(100.5)
Total	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2167	2165	(99.9)	9078	9062	(99.8)

Table 1.3: Screening uptake by age group

Age group	Q1			Q2			Q3			Q4			Total for 2007		
	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)	3	3	(100.0)	2	2	(100.0)	8	8	(100.0)	14	14	(100.0)
15-19	240	239	(99.6)	244	243	(99.6)	298	298	(100.0)	296	296	(100.0)	1078	1076	(99.8)
20-24	495	495	(100.0)	502	500	(99.6)	528	528	(100.0)	485	485	(100.0)	2010	2008	(99.9)
25-29	601	599	(99.7)	493	493	(100.0)	583	582	(99.8)	509	509	(100.0)	2186	2183	(99.9)
30-39	906	905	(99.9)	841	839	(99.8)	843	841	(99.8)	789	789	(100.0)	3379	3374	(99.9)
40yrs +	126	124	(98.4)	109	109	(100.0)	96	96	(100.0)	80	78	(97.5)	411	407	(99.0)
Missing	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2167	2165	(99.9)	9078	9062	(99.8)

Table 1.4: Screening uptake by ethnic group

Ethnic group	Q1			Q2			Q3			Q4			Total for 2007		
	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	1052	1050	(99.8)	955	952	(99.7)	1001	1000	(99.9)	994	992	(99.8)	4002	3994	(99.8)
Maori	632	630	(99.7)	575	573	(99.7)	607	607	(100.0)	612	612	(100.0)	2426	2422	(99.8)
Other European	151	150	(99.3)	134	134	(100.0)	163	162	(99.4)	155	155	(100.0)	603	601	(99.7)
Asian	136	136	(100.0)	120	120	(100.0)	124	123	(99.2)	115	115	(100.0)	495	494	(99.8)
Pacific peoples	50	50	(100.0)	38	38	(100.0)	37	37	(100.0)	55	55	(100.0)	180	180	(100.0)
African	25	25	(100.0)	16	16	(100.0)	18	18	(100.0)	18	18	(100.0)	77	77	(100.0)
other/un-specified	98	97	(99.0)	106	106	(100.0)	141	141	(100.0)	150	150	(100.0)	495	494	(99.8)
Missing*	225	225	(100.0)	248	248	(100.0)	259	259	(100.0)	68	68	(100.0)	800	800	(100.0)
Total	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2099	2097	(99.9)	9078	9062	(99.8)

Table 1.5: Screening uptake by NZDep01 score

NZdep01	Q1			Q2			Q3			Q4			Total for 2007		
	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	235	234	(99.6)	220	219	(99.5)	212	210	(99.1)	242	241	(99.6)	909	904	(99.4)
3-4	278	278	(100.0)	245	245	(100.0)	307	307	(100.0)	269	269	(100.0)	1099	1099	(100.0)
5-6	400	400	(100.0)	393	393	(100.0)	394	394	(100.0)	418	418	(100.0)	1605	1605	(100.0)
7-8	457	455	(99.6)	394	392	(99.5)	428	428	(100.0)	393	392	(99.7)	1672	1667	(99.7)
9-10	773	770	(99.6)	688	686	(99.7)	747	746	(99.9)	776	776	(100.0)	2984	2978	(99.8)
Missing*	226	226	(100.0)	252	252	(100.0)	262	262	(100.0)	69	69	(100.0)	809	809	(100.0)
Total	2369	2363	(99.7)	2192	2187	(99.8)	2350	2347	(99.9)	2167	2165	(99.9)	9078	9062	(99.8)

For tables 1-5: 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.

* These data were "missing" as no NHI number were provided or the NHI record was not completed

Repeat testing

For women with a valid NHI, it is possible to know the number who had repeat antenatal screening tests and the interval between these. The interval for women with more than one during 2007 is shown in Figure 1.1, and that for the whole period we have data on (20/03/2006 – 31/12/2007) in Figure 1.2. These are only repeat tests where all tests included an HIV screen, and were negative. It is 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 three months and not possible where greater than nine months.

During 2007, of the 654 women with repeat HIV screens, 620 had one repeat, and 34 had two or more repeat screens. At least 341 are very likely to have had repeat testing during the same pregnancy (less than three months between screens), and this was also likely to have been the case for many of the 220 women with repeat HIV screens where the interval was between three and six months (Figure 1.1).

When looking at data for the full period a similar pattern emerges (Figure 1.2), although many more women have repeat tests with an interval of greater than nine months, therefore not for the same pregnancy. Over the period 20/03/2006 – 31/12/2007 repeat testing was likely to have been undertaken for 9.3% of pregnant women. This was calculated with a numerator of the 1124 women with repeat testing within a six month period and a denominator of 12130 individual women with an NHI having been tested during the period. There might, for a small number of women, have been a clinical indication for retesting.

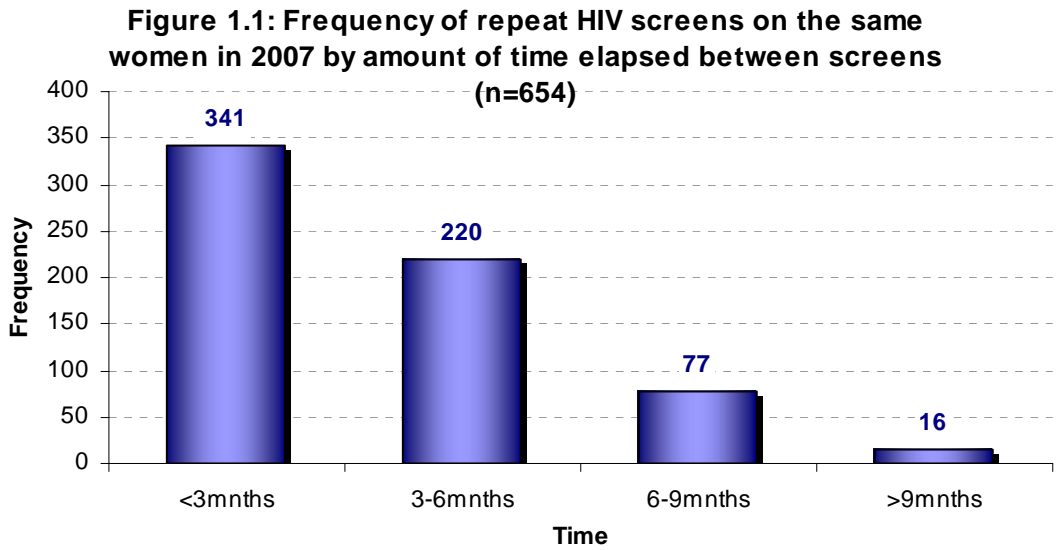
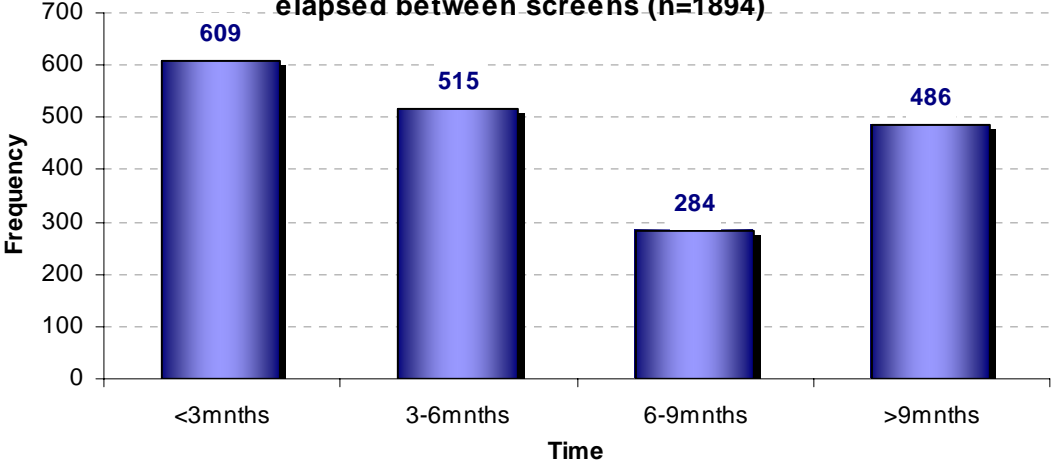


Figure 1.2: Frequency of repeat HIV screens on the same women between 20/03/06 and 31/12/07 by amount of time elapsed between screens (n=1894)



Part 2: Screening results in DHBs engaged in HIV screening programme

(a) Confirmed newly diagnosed HIV positive pregnant women

Table 2.1 shows the number of screened pregnant women newly diagnosed with HIV in each quarter. This will be reported by DHB when more are engaged in the programme.

Table 2.1: Confirmed HIV positive results (by DHB)

DHB	Q1 01/01 - 31/03			Q2 01/04 - 30/06			Q3 01/07 - 30/09			Q4 01/10 - 31/12			Total for 2007		
	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)	N	n	(%)
Waikato	2363	1	(0.0)	2187	0	-	2347	0	-	2165	0	-	9062	1	(0.0)
Total	2363	1	(0.0)	2187	0	-	2347	0	-	2165	0	-	9062	1	(0.0)

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.

(b) Pregnant women with non-negative results who were not infected

In this section we report on the number of women who required to be re-tested because of an initial test that did not definitely rule out HIV infection and who subsequently were found to be uninfected.

The AEG had also initially negotiated to get this non-negative data from the laboratories carrying out confirmatory testing: Institute of Environmental Science and Research Limited (ESR), Porirua and LabPlus, Auckland. In subsequent discussions with them it transpired that it was not always clear to them which of the samples come from women tested as part of the antenatal screening programme. To clarify this it was suggested that 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. However, this process appeared not to be working, and hence we have re-negotiated the way that information about women who require retesting will be obtained.

Following discussion with the managers and staff involved in coordinating the antenatal HIV screening programme in WDHB, a system has been established whereby the DHB based HIV screening coordinator will notify the AEG, on a monthly basis, about all women who have had a non-negative result.

WDHB will start providing this information on a regular basis from the beginning of 2008 by which time they will only be dealing with one laboratory.

Hence, information for this section will be based on data from the DHB laboratory data set and from the DHB coordinator monthly report.

Results received directly from WDHB as part of their laboratory dataset showed that between 01/01/2007 and 31/12/2007 there were a total of 27 non-negative results from 9062 HIV screens. One of these women was confirmed positive. Therefore there were

26 non-negative initial tests in women who were subsequently determined as uninfected by further testing, a proportion of 3.5 per 1000 (0.35%). This is higher than the expected rate of 0.1% as would be expected from a test specificity of 99.9%¹. The higher rate appears to be because of the use of a third generation Enzyme Immunoassay (EIA) as a screening test by one of the laboratories that has a lower specificity than the more recently introduced fourth generation test now generally used. On investigating this with the WDHB HIV screening coordinator it appears that the confirmatory test was performed on the original sample, and hence none of these 26 women were re-bled. This was deduced from information provided to us by her that only two women were re-bled who subsequently proved to be HIV negative since the start of the Programme were tested in 2006.

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

Part 3: Summary and Recommendations

Summary

- Much valuable information for assessing the screening programme is available through data reported by testing laboratories via the DHBs and NZHIS and through routine surveillance to the AEG.
- Overall there was a nearly universal uptake of HIV testing among those having an antenatal screen in the WDHB area.
- Only with time, and relating these results to data on births (via the NMDS and MIS datasets) and terminations, will it be possible to get a complete idea of HIV screening coverage among pregnant women.
- An NHI was available on the dataset for just over 90% of the women being tested in the period
- For women whose NHI was supplied, NZHIS was able to derive their age, ethnicity and as an indication of their socioeconomic status the NZDep01 score of their area of residence. This revealed that for the WDHB women the very high rate of HIV testing applied to all age, ethnic groups and socioeconomic levels.
- A method for including requester types on the DHB data set has been developed, and high HIV testing was achieved by all requester types.
- A proportion of HIV tests, 9.3% for those with a valid NHI, were probably repeat antenatal screening during the same pregnancy. The reason for repeat tests is yet to be determined.
- With new DHBs planning to commence screening in 2008 it is important for the NSU and District coordinators to be familiar with the monitoring and evaluation process put in place by the AEG.

Recommendations *[and NSU Responses]*

- The AEG and NSU should consider further analyses linking requester type to patterns of repeat testing.

[The NSU will discuss with AEG further analyses linking requester type to patterns of repeat testing.]

- With new DHBs planning to commence screening in 2008 it is important for the NSU and District coordinators to be familiar with the monitoring and evaluation process put in place by the AEG.

[Part of the orientation of new coordinators and project managers for the programme includes information regarding the setting up and ongoing management of the monitoring and evaluation for each region. They are given the Template and its use is explained. They are also given Antoinette's contact details at AEG so that they and their IT people can discuss management of the data directly. They are all told that they need to develop a method of gathering the data in a safe and appropriate way and to store it safely in their local system. They have a copy of the Monitoring and Evaluation Plan though it would be useful to have this document simplified and updated.]

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