Public Health Screening Programmes

Annual Report

1 April 2010 to 31 March 2011

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Public Health Screening Unit

INTRODUCTION

This annual report presents information about the following screening programmes offered to residents across NHS Greater Glasgow and Clyde for the period 2010/11:

- Cervical Screening
- Bowel Screening
- Breast Screening
- Pregnancy Screening:
  - Communicable Diseases in Pregnancy
  - Haemoglobinopathies screening
  - Down's syndrome and other congenital anomalies
- Newborn Bloodspot Screening
- Universal Newborn Hearing
- Diabetic Retinopathy Screening
- Pre-School Vision Screening

Screening is a public health service offered to specific population groups to detect potential health conditions before symptoms appear. Screening has the potential to save lives and improve quality of life through early diagnosis of serious conditions.

In NHS Greater Glasgow and Clyde, the co-ordination of all screening programmes is the responsibility of the Public Health Screening Unit led by a Consultant in Public Health Medicine. Multidisciplinary Steering Groups for the programmes are in place and their remit is to monitor performance, uptake and quality assurance.

Figure A illustrates the reporting and accountability lines.

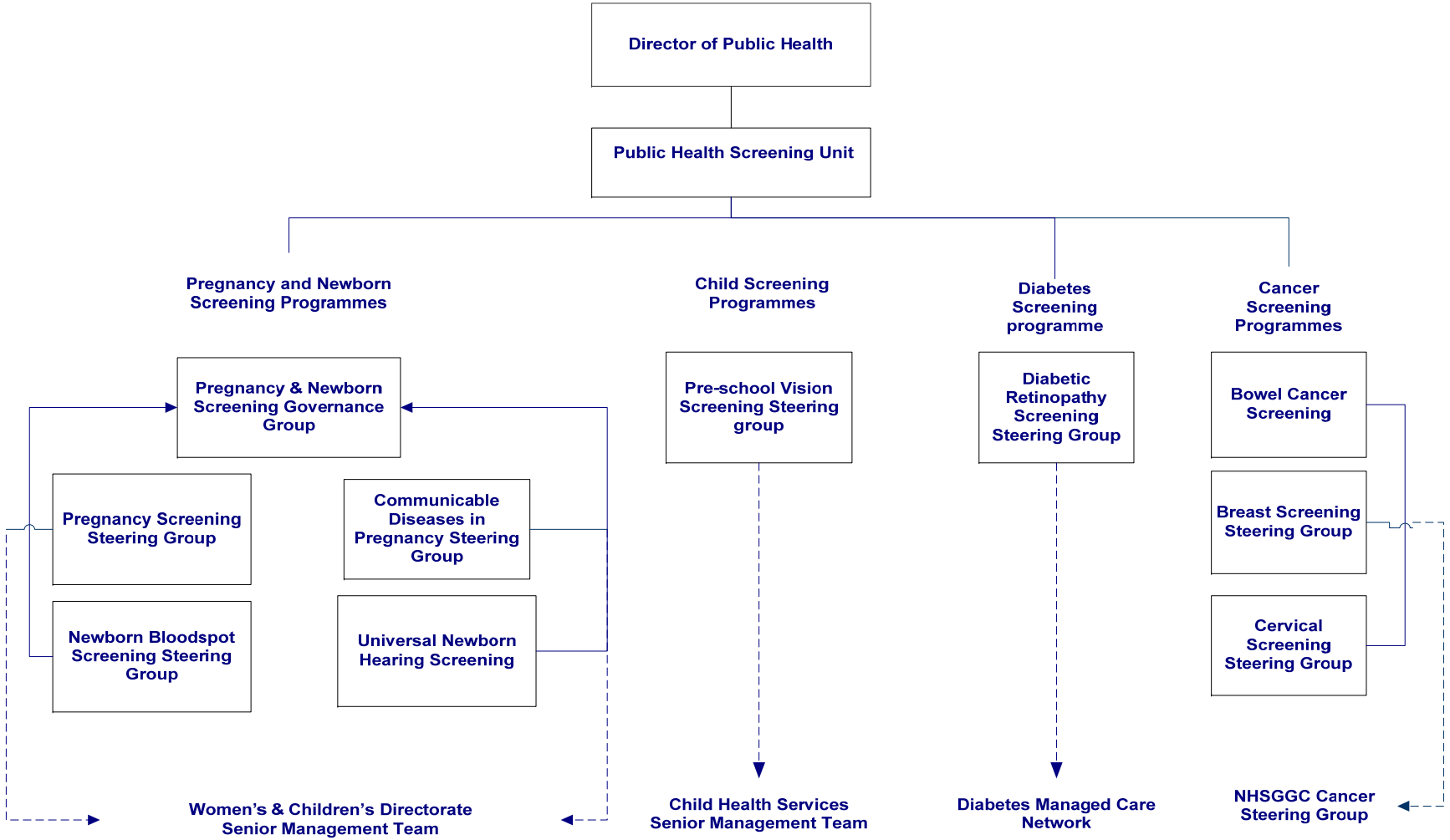


Table A gives a breakdown of eligible screening population, number screened and percentage uptake rates for each screening programme.

Screening programme	Total eligible population	Total number Screened	% Uptake
Bowel screening[1]	363,630	185,912	51.1%
Breast screening[2]	50,799	34,996	68.9%
Cervical screening	349,492	260,384	74.5%
Pregnancy screening: • Communicable diseases in pregnancy screening[3]	15,236		96.0%
• Down's syndrome screening	13,553	10,844	80.0%
Newborn bloodspot Screening	14,583	14,231	97.6%
Universal newborn hearing screening[4]	14,036	13,611	97.0%
Diabetic retinopathy Screening	57,715	49,020	89.8%
Pre-school vision screening	13,582	10,584	74.1%

Sources: NHSGGC bowel Screening IT system; West of Scotland Breast Screening; Scottish Cervical Call Recall System; PNBS; National Newborn Screening Laboratory; West of Scotland Prenatal Screening Laboratory; eSP; Visionworks

Notes:

1. Target population – number of people screened within 2 years
2. Target population – number of people screened within 1 year
3. percentage uptake of each of the tests has been calculated by dividing the number requesting tests by the total number of samples.
4. Total eligible population includes babies for other Board areas

Health Inequalities

As part of NHS Greater Glasgow and Clyde's commitment to tackle inequalities to health, the Public Health Screening Unit engaged with voluntary and statutory services to identify innovative ways to encourage and promote uptake of screening programmes.

Screening programmes stretch across the whole organisation and the successful delivery relies on a large number of individuals working in a co-ordinated manner towards common goals in a quality assured environment. It is essential that good information management systems are in place to monitor and evaluate each component and the overall performance of every screening programme offered to our residents. All the screening programmes, with the exception of Pre-school Vision Screening, have clinical standards set by Health Improvement Scotland (formerly known as NHS Quality Improvement Scotland) which we strive to meet.

Equality impact assessments for 8 of the screening programmes have been completed. The outstanding assessments for Pregnancy and Newborn Screening programmes will be completed in 2012.

The outcome of completed assessments identified areas of good examples but also areas for improvement.

SUMMARY

CHAPTER 1: CERVICAL SCREENING

- Women aged 20 to 60 resident in NHS Greater Glasgow and Clyde are invited to have a cervical smear every 3 years.
- 349,492 women were eligible to be invited to participate in the programme over three years.
- 23.8% (70, 549) of women were excluded from the target population under the GMS exception reporting.
- The 5.5 year cervical screening uptake rates for 2010/11 for Greater Glasgow and Argyll and Clyde were similar with 2009/10. Greater Glasgow had the lowest uptake across Scotland at 75.5%.
- The 5.5 year uptake calculated for NHS Greater Glasgow and Clyde residents for 2010/11 was 74.5%. This was below the Scotland wide rate at 79.1% and the NHS QIS target of 80%. Lowest uptake of 66% was in Glasgow North West. East Dunbartonshire, East Renfrewshire and South Lanarkshire achieved above the minimum standard of 80%.
- Of the 349,492 eligible women (excluding women with no cervix), 60,776 (17.4%) did not take up the invite to have a smear despite a prompt letter and two reminders being sent and were classified as defaulters.
- The lowest 5.5 year uptake in 2010/11 was among the 21 to 24 year at 56.8% when only no cervix exclusion was applied.
- Uptake rate in 2010/11 among women resident in the most deprived neighbourhoods was 72.1% when the no cervix exclusion was applied. In the least deprived areas, uptake was higher at 79.9%.
- 99,874 smear tests were processed and reported in laboratories in NHS Glasgow and Clyde. This represents a decrease of 5,455 (5%) from the 105,329 smears processed in 2009/10.
- The overall percentage of unsatisfactory smears was 2.5%. The proportion is markedly less than the 7.7% reported in 2001 prior to the introduction of Liquid Based Cytology testing in 2003.
- 10.8% of smears were reported as abnormal in 2010/11.
- 89.2% of smears processed were reported to be negative; 7.22% to be borderline squamous; 2.29% mild dyskaryosis and 1.2% to have moderate to severe dyskaryosis.

- The largest number of cervical cancers occurred in women aged between 30 and 49 years.

- 24 of 78 invasive cervical cancers were detected at screening in 2010; 25 of 73 in 2009; 31 of 65 in 2008; 25 of 67 in 2007.

- Over the six years audited, 62 (16%) women out of the 382 that developed cancer had never had a smear and 153 (40%) of women had incomplete smear histories.

- In 2010, 20 women with a diagnosis of cervical cancer died in NHS Greater Glasgow and Clyde. This gives a standardised rate of 2.7 per 100,000 population which is slightly lower than the Scotland rate of 3 per 100,000.

CHAPTER 1: CERVICAL SCREENING

Background

Systematic cervical screening began in 1989 as part of the National Scottish Cervical Screening Programme (SCSP). Women aged 20 to 60 resident in NHS Greater Glasgow and Clyde are invited to have a cervical smear every 3 years.

Cervical cancer is caused by oncogenic types of human papilloma virus (HPV), mainly types 16 and 18. HPV can evolve during a period of 10 to 20 years through precancerous lesions to invasive cancer and death.

Aim of screening programme

The aim of the Scottish Cervical Screening Programme (SCSP) is to reduce the number of women who develop invasive cancer and the number of women who die from it by detecting precancerous changes. By taking a cytological smear from the cervix, followed where necessary by a diagnostic test, it is possible to identify changes in individual cells which may mean that the woman is at risk of developing invasive cancer at a later date. Prompt treatment can result in permanent removal of affected areas of the cervix and prevent the development of cancer.

Target population

Women aged 20 to 60 who live in Greater Glasgow and Clyde areas are invited to have a smear test taken every three years.

Screening test

A “smear test” involves collecting cells from the surface of the cervix, or ‘neck of womb’. The sample is then sent to a specialist laboratory. The cells are then examined under a microscope to see if any of them appear abnormal.

Liquid based cytology (LBC) is a way of preparing cervical samples for examination in the laboratory. The sample is collected using a special device which brushes cells from the neck of the womb. The head of the brush, where the cells are lodged, is broken off into a small glass vial containing preservative fluid, or rinsed directly into the preservative fluid.

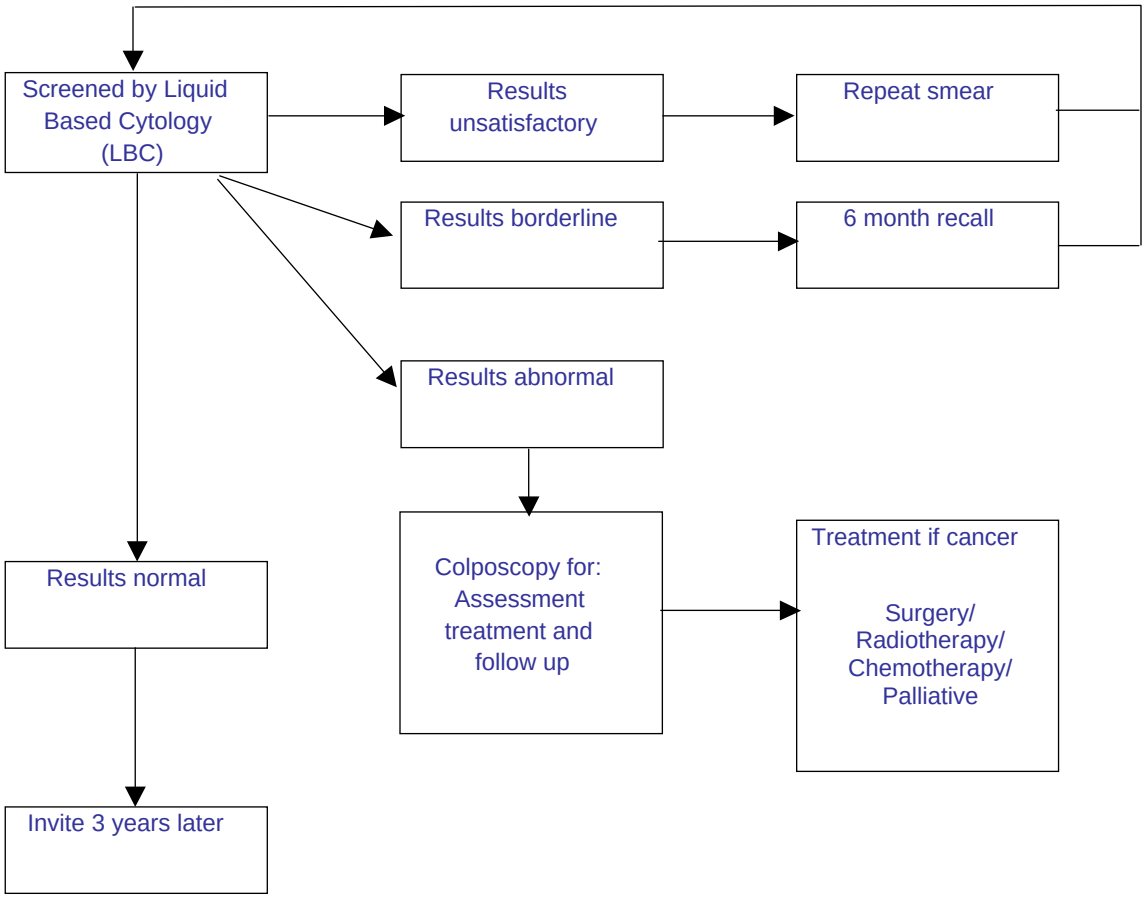
The sample is sent to the laboratory where it is spun and treated to remove obscuring material, for example mucus or pus, and a random sample of the remaining cells is taken. A thin layer of the cells is deposited onto a slide. The slide is then examined under a microscope by a cytologist.

Screening pathway

Figure 1.1 illustrates the pathway for cervical screening programme. Following the invitation being issued, a woman will attend for a test. Women can also have opportunistic smears at the time of attending medical care for another reason. Depending on the result of the test she will be recalled to attend, if eligible, in 3 years (normal result), 6 months (for a borderline result); will have a repeat smear (if result not satisfactory); or will be referred to colposcopy for diagnostic tests and treatment (Appendix 1.1). Treatment of invasive cervical cancers follows agreed cancer treatment pathways.

NHS Greater Glasgow and Clyde implemented direct referrals to colposcopy in April 2010. Since then women who require a colposcopy appointments following a positive smear are sent an appointment straight away to the nearest clinic.

Figure 1.1 Cervical Screening Pathway



Delivery of screening programme 2010/11

Table 1.1 shows the numbers of women in the target and eligible populations for the cervical screening programme. There were 366,275 women aged 21 to 60 resident in NHS Greater Glasgow and Clyde in the target population. Following the exclusion of those with no cervix, 349,492 women were eligible to be invited to participate in the programme over three years. Each year approximately 116,000 women are sent an invitation to attend.

Table 1.1 NHS Greater Glasgow and Clyde Cervical Screening population

Year	Target Population[1]	Eligible Population[2]			
		Number of eligible women excluding women with no cervix	Proportion of eligible women excluding women with no cervix	Number of eligible women based on GMS Contract[4]	Proportion eligible women based GMS Contract[4]
2000/01	360,361	338,068	*6.2*		
2001/02	360,170	337,919	*6.2*		
2002/03	360,069	338,184	*6.1*		
2003/04	360,644	339,460	*5.9*	292,652	*18.9*
2004/05	358,617	338,291	*5.7*	273,106	*23.8*
2005/06	364,919	345,408	*5.3*	272,447	*25.3*
2006/07	359,436	340,446	*5.3*	272,104	*24.3*
2007/08[5]	362,828	344,252	*5.1*	268,484	*26.0*
2008/09[5]	362,845	344,882	*5.0*	251,844	*30.6*
2009/10[5]	361,918	344,589	*4.8*	245,742	*32.1*
2010/11[5]	366,275	349,492	*4.6*	278,943	*23.8*

Sources: 2000/01-2006/07 - CHI via Cervical Cytology system

2007/08 - 2010/11 - Scottish Cervical Call Recall System

Notes

1 Women aged 20 to 60 years

2 Women aged 20 to 60 years except medically exempt women, as defined in 3 and 4

3 No Cervix excludes those women with the exclusion category "no Cervix"

4 Target payments excludes those women with the exclusion categories as defined in the GP Contract, implemented in 2004

5 Based on NHSGGC resident population and not practice population

Table 1.1 also shows the number of women that were considered to be eligible for cervical screening after the application of the exclusions allowed by the General Medial Services contract. 23.8% (70, 549) of women that were excluded from the target population under the GMS exception reporting.

Table 1.2 shows the cervical screening uptake for NHSGGC Residents. The uptake calculated after the excluding women (medically ineligible).

Data extraction issues were identified with the reporting of previous years' activity data. Screening uptake data is, therefore, based on Health Board totals reported by ISD report on Scottish Cervical Screening Programme Statistics 2010-11: Annual Update to 31st March 2011, that allocates women to Argyll and Clyde and Greater Glasgow Health Boards.

The 5.5 year cervical screening uptake rates for 2010/11 for Greater Glasgow and Argyll and Clyde were similar with 2009/10. Table 1.2 shows that Greater Glasgow had the lowest uptake across Scotland at 75.5%.

Table 1.2 Comparative uptake rates of cervical screening[1] [2] split by health boards

Health Boards	2007-08	2008-09	2009-10	2010-11
(Former) Argyll & Clyde[3]	**76.2**	**78.7**	**80.1**	**80.2**
Ayrshire & Arran	79.0	81.1	81.4	81.2
Borders	83.1	84.2	84.6	83.9
Dumfries & Galloway	82.2	83.0	82.7	81.9
Fife	79.0	79.9	78.8	78.4
Forth Valley	82.6	82.9	82.2	80.8
Grampian	79.6	81.2	81.1	80.6
Greater Glasgow[3]	**72.9**	**75.2**	**76.0**	**75.5**
Highland*	79.5	81.6	82.4	81.9
Lanarkshire	77.2	79.2	80.2	80.0
Lothian [3]	77.7	78.9	78.1	77.7
Orkney	82.6	83.6	83.4	84.2
Shetland	85.3	85.9	85.4	85.5
Tayside	80.1	80.8	79.8	79.4
Western Isles	80.3	81.6	81.5	81.2
Scotland [2]	**77.9**	**79.4**	**79.5**	**79.1**

Source: ISD (2011)
Notes:
1. Based on SCCRS population denominator (excluding medically ineligible women); SCCRS was implemented in 2007/08
2. Cervical screening runs from 1st April to 31st March.
3. These data are based on the pre-2006 Health Board configuration (former Argyll & Clyde). Figures for NHS Highland do not include the Argyll & Bute area and figures for NHS Greater Glasgow do not include the Clyde area

The 5.5 year uptake calculated for NHS Greater Glasgow and Clyde residents for 2010/11 was 74.5% **(see Table 1.3)**. This was below the Scotland wide rate of 79.1% and the NHS QIS target of 80%. Lowest uptake of 66% was in Glasgow North West. East Dunbartonshire, East Renfrewshire and South Lanarkshire achieved above the minimum standard of 80%.

Table 1.3 Comparative uptake rates of cervical screening split by CH(C)P

CHP/ CHCP[1]	Proprotion of eligible women (excluding women with no cervix)	Proportion of eligible women based on GMS Contract[3]
Glasgow North East	70.4%	78.2%
Glasgow North West	66.0%	74.0%
Glasgow South	73.6%	80.0%
North Lanarkshire[2]	83.4%	88.2%
South Lanarkshire[2]	80.5%	86.2%
East Dunbartonshire	81.9%	86.5%
East Renfrewshire	81.4%	86.4%
Inverclyde	77.2%	82.3%
Renfrewshire	78.5%	84.2%
West Dunbartonshire	77.7%	83.5%
NHS GGC[4]	**74.5%**	**81.1%**

Sources: Scottish Cervical Call Recall System

Notes:

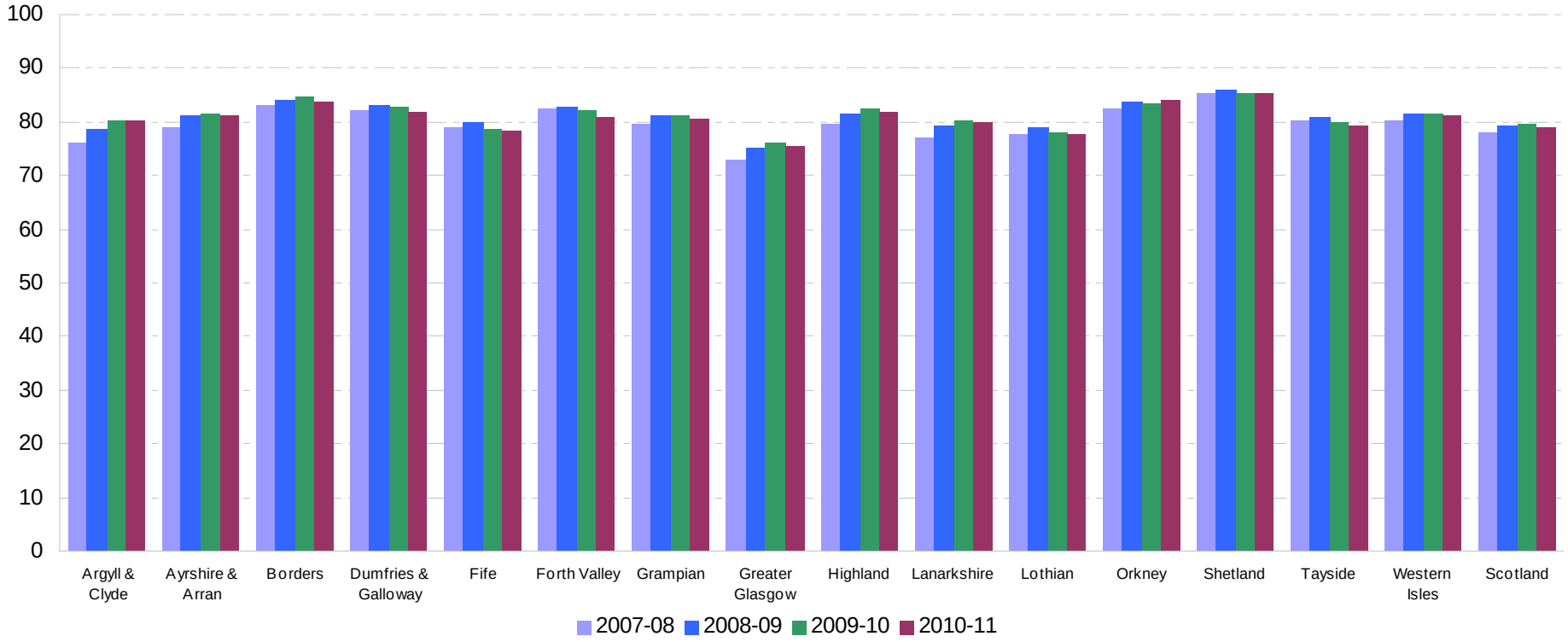
1 CHP/CH(C)P has been derived by NHSGGC resident population

2 NHS GGC residents only

3 Uptake based on GMS target Payments. Excludes women with exclusion categories as defined in the GP Contract, implemented in 2004

4 Includes invalid & missing postcodes. Missing=not entered.Invalid=NHSGGC postcode but incorrect or new postcode and unable to derive CHP/CH(C)P

Figure 1.2: Trends in uptake of women aged 20-60 with a record of a previous screening test taken within last 5.5 years by NHS Board of residence from 2007/08 to 2010/11



Source: ISD (2011)

* IMPORTANT: These data are based on the pre-2006 Health Board configuration (former Argyll & Clyde). Figures for NHS Highland do not include the Argyll & Bute area and figures for NHS Greater Glasgow do not include the Clyde area.

1. Based on adjusted Community Health Index (CHI) population denominator: 20-59 years (excluding medically ineligible women) for years 1995 to 1996 and 20-60 years (excluding medically ineligible women) for years 1997-1998 to 2006-07. Based on SCCRS population denominator (excluding medically ineligible women) for 2007-08.

2. Excludes Lothian NHS Board for 2000-01 to 2006-07 (data calculated on a different basis - calendar year). 3 For 2000-01 to 2006-07 data for Lothian NHS Board are calculated on a different basis - calendar year. From 1998, data are for year ending 31st March. Cervical screening year runs from 1st April to 31st March.

The General Medical Services (GMS) Contract introduced in 2004 includes cervical screening in the additional services domain and awards practices for providing the service under the Quality and Outcomes Framework.

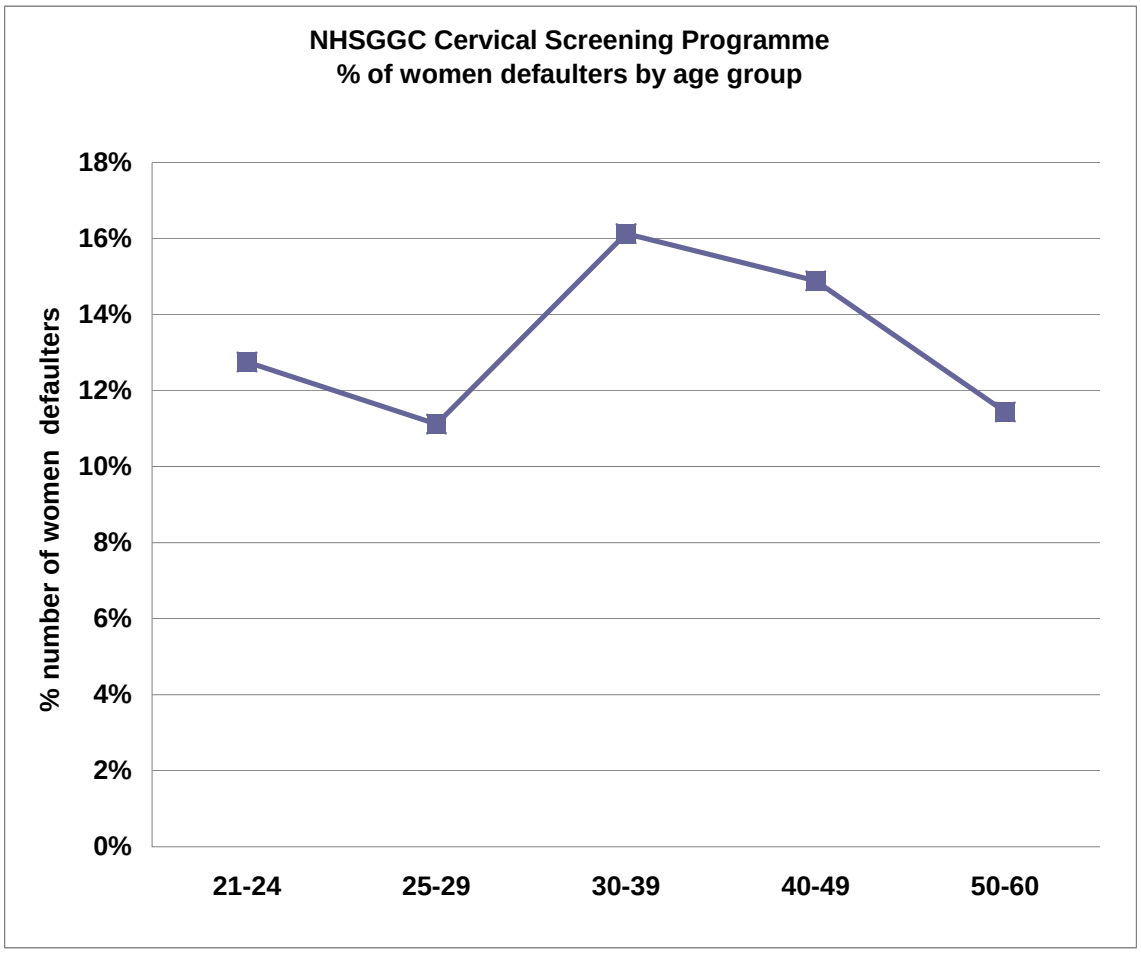
The cervical screening indicator 1 (80% of patients aged 21 to 60 whose notes record that a cervical smear has been performed in the last 5 years) reflects the previous General Medical Services Contract target payment system for cervical screening and is designed to encourage and provide an incentive to continue to achieve high levels of uptake in cervical screening.

The indicator excludes women who have had hysterectomy involving the complete removal of the cervix. In addition practices are allowed to exclude "patients who have been recorded as refusing to attend review who have been invited on at least 3 occasions during the proceeding 12 months" under the exception reporting.

Of the 349,492 eligible women (excluding women with no cervix), 60,776 (17.4%) did not take up the invite to have a smear despite a prompt letter and two reminders being sent and were classified as defaulters.

The highest proportion of women excluded under the GMS exception reporting as defaulted after three invites was among the 30 to 39 year olds (see **figure 1.3**).

Figure 1.3 shows the percentage and number of women defaulters split by age bands for 2010/11



Source: 2007/08 - 2009/10 - Scottish Cervical Call Recall System
1 Women aged 21 to 60 years

Cervical screening in uptake shown in **Table 1.3** varied across different age groups. The lowest 5.5 year uptake in 2010/11 was among the 21 to 24 year at 56.8% when only no cervix exclusion was applied. When exclusions allowed for the purpose of GMS target payments were made, uptake was 70.9%.

Table 1.4 Cervical screening uptake by age group across NHSGGC for 2010/11

Age Group	All eligible women *excluding no cervix)[1]					All eligible women based on GMS Target[2]				
	Eligible women	3.5 yrs uptake		5.5yrs uptake		Eligible women	3.5 yrs uptake		5.5yrs uptake	
		Total	%	Total	%		Total	%	Total	%
21-24	39746	22495	56.6	22588	56.8	26625	18857	70.8	18881	70.9
25-29	51162	34548	67.5	35591	69.6	38982	29568	75.9	29655	76.1
30-39	87849	65564	74.6	67666	77.0	70173	57237	81.6	57488	81.9
40-49	95045	73949	77.8	76277	80.3	79885	67500	84.5	67715	84.8
50-60	75690	56306	74.4	58262	77.0	63278	52210	82.5	52353	82.7
Total	**349492**	**252862**	**72.4**	**260384**	**74.5**	**278943**	**225372**	**80.8**	**226092**	**81.1**

Source:- Scottish Cervical Call Recall System

1 All eligible women 20 - 60 excluding women with no cervix

2 GMS Target excludes women with exclusion categories as defined in the GP Contract, implemented in 2004

Cervical screening uptake rate in **Table 1.4** varied across deprivation categories. The lowest 5.5 year uptake rate in 2010/11 among women resident in the most deprived neighbourhoods was 72.1% when the no cervix exclusion was applied. In the least deprived areas, uptake was higher at 79.9%.

When calculations were made for the purpose of General Medical Services target payments, the uptake among women living in the most deprived neighbourhoods was 78.7% which is below GMS target of 80%. Highest uptake of 85.5% was among residents living in least deprived areas.

Table 1.5 Cervical screening uptake by age and deprivation categories

SIMD[3]		All eligible women (excluding women with no cervix)[1]					All eligible women based on GMS Targets[2]				
		Eligible	3.5 yr uptake		5.5 yrs uptake		Eligible	3.5 yr uptake		5.5 yrs uptake	
		(N)	(N)	(%)	(N)	(%)	(N)	(N)	(%)	(N)	(%)
Most Deprived	1	123916	86252	69.6	89348	72.1	96234	75409	78.4	75723	78.7
	2	60860	43309	71.2	44663	73.4	48150	38540	80.0	38650	80.3
	3	51514	37467	72.7	38507	74.8	41374	33462	80.9	33561	81.1
	4	49663	36377	73.2	37277	75.1	40160	32847	81.8	32924	82.0
Least Deprived	5	61696	48207	78.1	49299	79.9	51599	44018	85.3	44132	85.5
New/Incomplete postcodes[4]		1843	1250	67.8	1290	70.0	1426	1096	76.9	1102	77.3
Total		**349492**	**252862**	**72.4%**	**260384**	**74.5%**	**278943**	**225372**	**80.8%**	**226092**	**81.1%**

Source: Scottish Cervical Call Recall System 2010/11

Notes

1 All eligible women aged 20 - 60 excluding women with no cervix

2 GMS Target Payments excludes those women with the exclusion categories as defined in the GP Contract, implemented in 2004

3 - SIMD Quintles 2009

4 - Although incomplete these postcodes clearly fall within NHSGGC boundaries

Cytopathology Laboratories Workload

Table 1.5 shows the number of tests performed in Cytopathology laboratories in the NHS Greater Glasgow and Clyde area. An essential criterion of the NHS QIS standards requires the laboratories to process a minimum of 15,000 smears annually and this has been achieved throughout the area. Approximately 99,874 smear tests were processed and reported in laboratories in NHS Glasgow and Clyde. These included repeat smears and smears taken at colposcopy as one woman can have more than one smear test. This represents a decrease of 5,455 (5%) from the 105,329 smears processed in 2009/10.

Table 1.6 Number of smear tests performed in NHS Greater Glasgow and Clyde laboratories

	Number of Smear Tests							
Year	Inverclyde*	Vale of Leven*	Southern General	Glasgow Royal Infirmary	Stobhill	Victoria	NHSGGC	Scotland
2000/01	25,453	17,486	10,266	29,667	15,907	18,959	**117,738**	457,774
2001/02	27,378	14,973	23,326	49,162	190	7,101	**122,130**	471,722
2002/03	24,627	12,384	25,953	44,713	n/a	n/a	**107,677**	439,678
2003/04	23,607	12,052	25,824	44,422	n/a	n/a	**105,905**	429,522
2004/05	28,326	5,843	25,975	43,194	n/a	n/a	**103,338**	406,305
2005/06	36,166	n/a	23,160	44,035	n/a	n/a	**103,361**	410,241
2006/07	36,137	n/a	23,141	40,732	n/a	n/a	**100,010**	401,749
2007/08	30,955	n/a	23,742	39,684	n/a	n/a	**94,381**	373,340
2008/09	38,363	n/a	28,190	49,502	n/a	n/a	**116,055**	450,522
2009/10	34,166	n/a	25,138	46,025	n/a	n/a	**105,329**	415,497
2010/11	32,254	n/a	25,325	42,295	n/a	n/a	**99,874**	390,194

Sources: 2000-2007 Cervical Cytology System (CCS); 2007/11 - Labs : Telepath & SCCRs
Scotland figures from ISD Website
*Inverclyde and Vale of Leven - includes smears tests for Argyll and Bute area
Vale of Leven (VOL) stopped reporting smears taken as at quarter ending 30th September 2004
Stobhill stopped reporting smears taken as at quarter ending 30th June 2001
Victoria stopped reporting smears taken as at quarter ending 30th September 2001

Table 1.6 shows the proportion of the total cervical samples sent to each of the cytology laboratories that were reported as unsatisfactory smears in 2010/11. The overall percentage of unsatisfactory smears was 2.5%. The proportion is markedly less than the 7.7% reported in 2001 prior to the introduction of Liquid Based Cytology testing in 2003.

Table 1.7 Percentage of unsatisfactory smears reported in NHS Greater Glasgow and Clyde laboratories

	Percentage of unsatisfactory smears of total number of smears							
Year	Inverclyde*	Vale of Leven*	Southern General	Glasgow Royal Infirmary	Stobhill	Victoria	NHSGGC	Scotland
2000/01	6.0%	7.6%	9.1%	7.2%	7.6%	10.2%	**7.7%**	8.5%
2001/02	5.5%	6.3%	7.3%	10.5%	4.2%	8.5%	**8.1%**	8.8%
2002/03	5.9%	6.8%	5.9%	3.9%	n/a	n/a	**5.2%**	7.4%
2003/04	3.4%	4.6%	6.3%	3.9%	n/a	n/a	**4.4%**	3.9%
2004/05	2.7%	2.6%	2.2%	1.9%	n/a	n/a	**2.3%**	2.2%
2005/06	2.3%	n/a	2.9%	1.6%	n/a	n/a	**2.1%**	2.2%
2006/07	2.5%	n/a	3.0%	2.1%	n/a	n/a	**2.5%**	2.4%
2007/08	1.8%	n/a	2.7%	2.8%	n/a	n/a	**2.4%**	2.8%
2008/09	2.0%	n/a	2.7%	3.1%	n/a	n/a	**2.7%**	3.0%
2009/10	2.6%	n/a	2.9%	2.9%	n/a	n/a	**2.8%**	3.0%
2010/11	2.7%	n/a	2.6%	2.2%	n/a	n/a	**2.5%**	2.8%

Sources: 2000-2007 Cervical Cytology System (CCS); 2007/11. - Labs (SCCRs); Scotland figures from ISD website

*Inverclyde and Vale of Leven includes unsatisfactory smears reported for Argyll and Bute area

Vale of Leven stopped reporting smears taken as at quarter ending 30th September 2004

Stobhill stopped reporting smears taken as at quarter ending 30th June 2001

Victoria stopped reporting smears taken as at quarter ending 30th September 2001

NHS Greater Glasgow and Clyde provided comparative performance feedback to individual smear takers based on the proportion of unsatisfactory smears reported. To improve the skills of smear takers and reduce the number of unsatisfactory smears, NHS Greater Glasgow and Clyde introduced an in-house staff cytology skills training programme in May 2010.

Table 1.7 shows the proportion of results reported as abnormal smears in each of the cytopathology laboratories in NHSGGC, after excluding the unsatisfactory tests between 2000/01 and 2010/11. Abnormal smears results include: borderline, mild, moderate and severe dyskaryosis, severe dyskaryosis/invasive, glandular abnormality and adenocarcinoma. 10.8% of smears were reported as abnormal in 2010/11.

Table 1.8 Percentage of abnormal smears reported in NHS Greater Glasgow and Clyde Laboratories

	Percentage of abnormal smear results of total satisfactory smears							
Year	Inverclyde*	Vale of Leven*	Southern General	Glasgow Royal Infirmary	Stobhill	Victoria	NHSGGC	Scotland
2000/01	7.8%	8.6%	10.2%	11.2%	10.1%	8.5%	**9.4%**	8.0%
2001/02	7.2%	7.4%	7.8%	12.4%	16.5%	8.5%	**9.5%**	8.3%
2002/03	7.0%	8.3%	5.7%	10.0%	n/a	n/a	**8.1%**	7.3%
2003/04	7.6%	10.2%	5.2%	10.3%	n/a	n/a	**8.5%**	7.2%
2004/05	7.8%	7.4%	6.0%	9.8%	n/a	n/a	**8.2%**	7.2%
2005/06	7.6%	n/a	6.7%	10.7%	n/a	n/a	**8.7%**	7.4%
2006/07	8.2%	n/a	7.6%	10.2%	n/a	n/a	**8.9%**	7.6%
2007/08	8.5%	n/a	7.1%	11.1%	n/a	n/a	**9.3%**	7.7%
2008/09	9.6%	n/a	8.5%	10.9%	n/a	n/a	**9.9%**	8.4%
2009/10	8.9%	n/a	9.3%	11.8%	n/a	n/a	**10.3%**	8.7%
2010/11	9.8%	n/a	8.1%	13.2%	n/a	n/a	**10.8%**	9.4%

Sources: 2000-2007 Cervical Cytology System (CCS); 2007/11 - Labs (SCCRs)

Scotland figures from ISD Website

*Inverclyde and Vale of Leven includes unsatisfactory smears reported for Argyll and Bute area

Vale of Leven stopped reporting smears taken as at quarter ending 30th September 2004

Stobhill stopped reporting smears taken as at quarter ending 30th June 2001

Victoria stopped reporting smears taken as at quarter ending 30th September 2001

Table 1.8 shows the detailed breakdown of smear results profile reported by NHSGGC laboratories.

Of the 99,874 smears tests received by the laboratories, 97,364 (97.4%) were processed. 89.2% of smears processed were reported to be negative; 7.22% to be borderline squamous; 2.29% mild dyskaryosis and 1.2% to have moderate to severe dyskaryosis. Appendix 1.1 shows the management and follow up advice for cytology results.

Table 1.9 Result profiles by age band: 1 April 2010 to 31 March 2011 (compiled from quarterly reports)
All NHS Greater Glasgow and Clyde Laboratories

	Under 20	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 and Over	Total age 20 - 65+	%Satisfactory	Cumulative%	Total age 20 - 60	%Satisfactory	Cumulative%
Unsatisfactory	20	314	286	276	276	308	359	297	291	73	10	2510			2407		
%Unsatisfactory total	1.9	2.1	2.0	2.2	2.3	2.4	2.8	2.9	3.9	4.1	5.9	2.5			2.5		
Negative	815	11233	11700	10756	10576	11840	11575	9446	7092	1665	148	86846	89.20	89.2	84218	89.2	89.2
Borderline Squamous	172	2464	1351	885	628	597	488	272	127	42	3	7029	7.22	96.4	6812	7.2	96.4
Borderline Glandular	0	5	9	6	7	5	8	2	0	1	1	44	0.05	96.5	42	0.0	96.4
Mild Dyskaryosis	38	794	518	288	181	186	119	73	21	6	2	2226	2.29	98.7	2180	2.3	98.7
Moderate Dyskaryosis	4	212	175	92	71	42	25	12	9	2	1	645	0.66	99.4	638	0.7	99.4
Severe Dyskaryosis	2	100	127	110	77	47	22	20	12	3	4	524	0.54	99.9	515	0.5	99.9
Severe Dyskaryosis/Invasion	0	0	2	5	2	2	4	1	0	1	0	17	0.02	100.0	16	0.0	100.0
Glandular Abnormality	0	1	7	5	6	2	2	2	2	0	0	27	0.03	100.0	27	0.0	100.0
Endocervical Adenocarcinoma	0	0	0	0	0	0	0	0	0	0	0	0	0.00	100.0	0	0.0	100.0
Other Malignancy	0	0	0	0	0	0	0	3	2	0	1	6	0.01	100.0	5	0.0	100.0
Total including unsatisfactory results	1051	15123	14175	12423	11824	13029	12602	10128	7556	1793	170	99874			96860		
Total excluding unsatisfactory results	1031	14809	13889	12147	11548	12721	12243	9831	7265	1720	160	97364			94453		

	All ages	20-60 years
N Abnormal	10518	10235
% abnormal	10.8	10.8

Source: Scottish Cervical Call Recall System (SCCRs)

Report Definitions

1 Smears are those processed at a Lab, independent of a women's area of resdience or where smeared

2 Smear counts for the originating lab

3 Date received into the lab is the qualification date- report wont run until all smears completed for reporting period. Date authorised may be at the end of reporting period.

Invasive cervical cancer audit

The aim of the cervical screening programme is to reduce the incidence of and mortality from invasive cervical cancer. It is recognised that in order to assess the effectiveness of the cervical screening programme, the audit of the screening histories of women with invasive cervical cancer is fundamental. This audit is an important process that helps to identify variations in practice, encourages examinations of the reasons for these variations, and helps to identify the changes required to improve the service.

In 2010, we reviewed the notes of women who developed invasive cervical cancer and had a pathology diagnosis made in NHS Greater Glasgow and Clyde laboratories. Seventy-eight patients were diagnosed with invasive cervical cancer in 2010. The number of patients diagnosed with invasive cervical cancer in NHSGGC was 73 in 2009; 65 in 2008; 67 in 2007.

Table 1.10 shows the distribution of the women's age at diagnosis for years 2007 to 2010. The largest number of cervical cancers occurred in women aged between 30 and 49 years.

Table 1.10 Number of NHSGGC residents with invasive cervical cancers by age at diagnosis and year of diagnosis

	Year of Diagnosis			
Age	**2007**	**2008**	**2009**	**2010**
20 - 29	7	9	8	10
30 - 39	29	21	15	24
40 - 49	20	14	23	21
50 - 59	3	11	8	8
60 - 69	5	5	8	4
70 - 79	2	2	6	8
80+	1	3	4	3
Unknown	0	0	1	0
Total	**67**	**65**	**73**	**78**

Source: NHSGGC Invasive Cancer Audit database

Table 1.11 shows the distribution of clinical stage at diagnosis over a six year period from 2007 to 2010.

Table 1.11 Number of women with invasive cervical cancers split by year of diagnosis

Clinical stage of diagnosis	2007	2008	2009	2010
1a1 (less than 3mm deep and >=7mm wide)	18	17	23	20
1a2 (3-5mm deep and <7mm wide)	4	1	1	0
1b (confined to cervix)	18	16	18	16
2 or greater (spread outwith cervix)	27	31	28	40
No Details	1	0	3	2
Total	**68**	**65**	**73**	**78**

Source: NHSGGC Invasive Cancer Audit Database

Table 1.12 shows that 24 of 78 invasive cervical cancers were detected at screening in 2010; 25 of 73 in 2009; 31 of 65 in 2008; 25 of 67 in 2007. The rest of the cases presented to the service with symptoms. Some of the screen detected cancers might have had an opportunistic smear while presenting with genital tract complaints.

Table 1.12 Number of women with invasive cancers split by modality of presentation and year of diagnosis

	Year of Diagnosis			
Modality of Presentation	**2007**	**2008**	**2009**	**2010**
Screen Detected	25	31	25	24
Symptomatic, last smear date <5 yrs	14	14	10	13
Symptomatic, last smear date >5 yrs	19	13	18	24
Symptomatic, No previous smear	9	7	20	15
No Details	0	0	0	2
Total	**67**	**65**	**73**	**78**

Source: NHSGGC Invasive Cancer Audit database

Table 1.13 shows that 34 women of 67 in 2007; 31 women of 65 in 2008; 27 women of 73 in 2009 and 25 women of 78 had a complete smear history.

Over the six years audited, 62 (16%) women out of the 382 that developed cancer had never had a smear and 153 (40%) of women had incomplete smear histories.

Table 1.13 Smear histories of women with invasive cervical cancer

Smear History	Year of diagnosis			
	2007	2008	2009	2010
Complete	34	31	27	25
Incomplete	24	27	29	40
No Previous Smear	9	7	17	12
Not Known	0	0	0	0
Total	**67**	**65**	**73**	**78**

Source: NHSGGC Invasive Cancer Audit Database

Table 1.14 shows the follow up status of the women included in the audit of invasive cancer at the time when the audit was carried out.

Table 1.14 Follow up status of the women with invasive cervical cancer

Status	Year diagnosis			
	2007	2008	2009	2010
Lost to Colposcopy service	1	1	0	1
On Follow-up at Colposcopy	19	17	21	21
On Follow-up at Oncology/Beatson	41	42	48	49
Early Recall	0	0	0	0
Death	3	4	0	3
Unknown	1	1	2	0
No Details	2	0	2	4
Total	**67**	**65**	**73**	**78**

Source: NHSGGC Invasive Cancer Audit Database

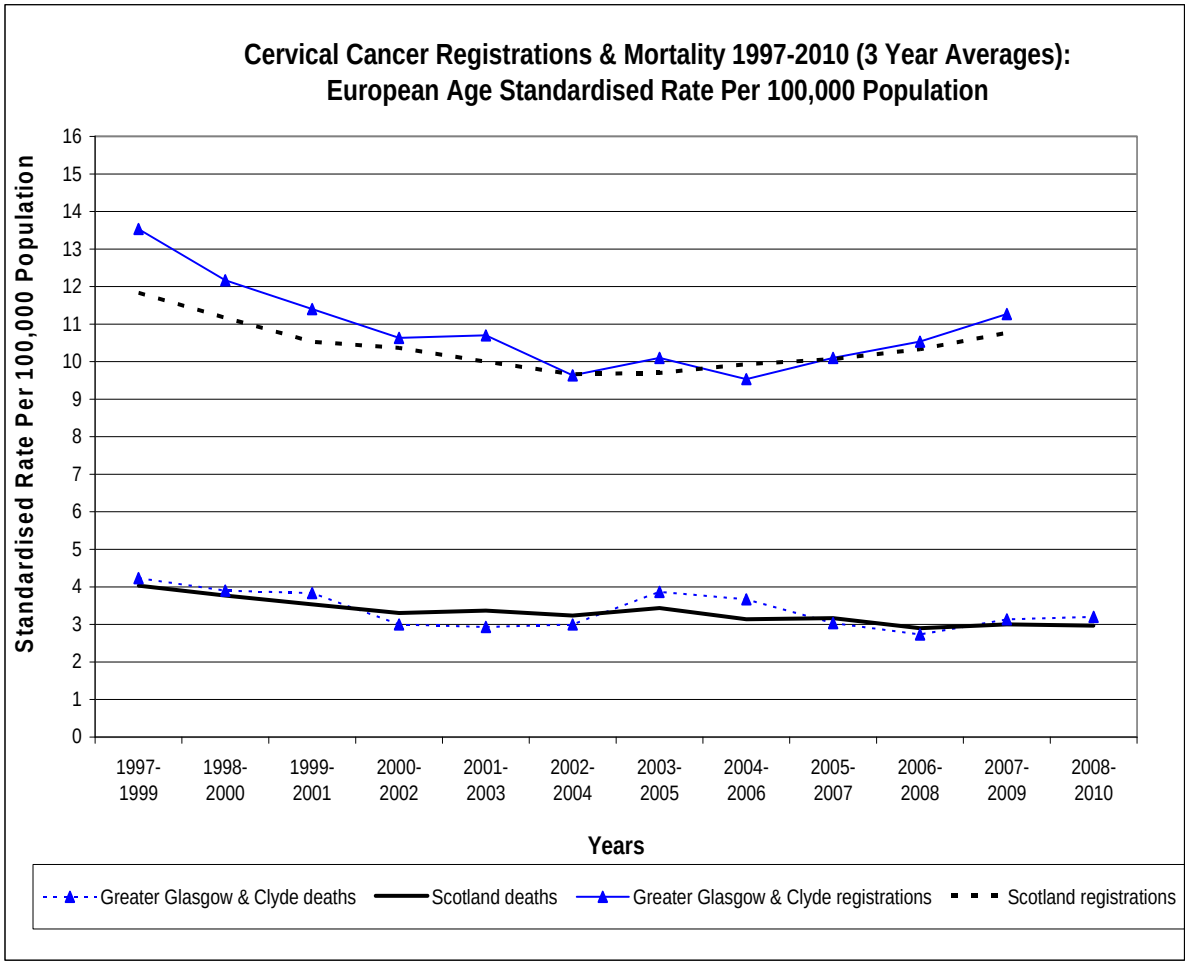
Morbidity and mortality from cervical cancer in NHS Greater Glasgow and Clyde and Scotland

In 2009, the most recent year for which completed data is available, the number of new cervical cancers registered among NHS Greater Glasgow and Clyde residents was 75 (see **table 1.15)**. This gives a standardised incidence rate of 10.8 per 100,000 per population which is slightly lower than that for Scotland (11.2)

Figure 1.4 illustrates that the incidence decreased from 1997/99 to 2004/06; since 2004/06 there has been an increase in the registration rate of cervical cancers across Scotland and NHS Greater Glasgow and Clyde is following the same trend.

In 2010, 20 women with a diagnosis of cervical cancer died in NHS Greater Glasgow and Clyde. This gives a standardised rate of 2.7 per 100,000 population. The age standardised death rate for NHS Greater Glasgow and Clyde is slightly lower than the Scotland rate of 3 per 100,000. **Figure 1.4** illustrates a reducing death rate between 1997 and 2008/10 from 4.1 per 100,000 to 2.7 per 100,000 population.

Figure: 1.4 Cervical cancer registrations and deaths for NHS Greater Glasgow and Clyde and Scotland



(Source: Scottish Cancer Registry, July 2011; National Records Scotland, September 2011)

Table 1.15: Cervical Cancer Registrations and Deaths for period 1997 -2010

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Greater Glasgow & Clyde														
Deaths														
Number	32	37	33	23	30	14	22	33	36	17	19	27	26	20
Standardised rate per 100,000 pop	4.1	4.4	4.2	3.1	4.2	1.7	2.9	4.4	4.3	2.3	2.5	3.4	3.5	2.7
Lower 95% Confidence Interval	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Upper 95% Confidence Interval	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Registrations														
Number	96	110	80	71	88	63	71	68	70	62	76	77	75	
Standardised rate per 100,000 pop	14.2	15.2	11.2	10.1	12.9	8.9	10.3	9.7	10.3	8.6	11.4	11.6	10.8	
Lower 95% Confidence Interval	11.2	12.3	8.6	7.7	10.1	6.6	7.8	7.3	7.9	6.4	8.8	9	8.3	
Upper 95% Confidence Interval	17.1	18.1	13.7	12.6	15.6	11.1	12.8	12.1	12.8	10.8	14	14.3	13.3	
Scotland														
Deaths														
Number	144	145	122	117	113	100	120	102	127	92	105	102	107	99
Standardised rate per 100,000 pop	4.3	4.1	3.7	3.5	3.4	3.0	3.7	3.0	3.6	2.8	3.1	2.8	3.1	3
Lower 95% Confidence Interval	3.6	3.4	3.0	2.8	2.8	2.4	3.0	2.4	2.9	2.2	2.5	2.3	2.5	2.4
Upper 95% Confidence Interval	5.1	4.8	4.4	4.1	4.1	3.6	4.4	3.6	4.3	3.4	3.7	3.4	3.7	3.6
Registrations														
Number	359	370	314	302	309	292	266	284	298	292	293	313	326	
Standardised rate per 100,000 pop	12.3	12.6	10.6	10.3	10.7	10.1	9.2	9.7	10.2	9.9	10.1	11	11.2	
Lower 95% Confidence Interval	11.0	11.3	9.4	9.1	9.5	8.9	8.0	8.5	9.0	8.7	8.9	9.7	10	
Upper 95% Confidence Interval	13.6	13.9	11.8	11.4	11.9	11.3	10.3	10.8	11.4	11.1	11.3	12.2	12.5	

Sources:

Cancer of the cervix uteri (ICD-10 C53)

Mortality Source: National Records of Scotland (NRS)
Data extracted: September 2011

Registrations
Source: Scottish Cancer Registry, ISD
Data extracted: July 2011

'-' = zero value.

'x' = not applicable.

Information systems

Scottish Cervical Call Recall System (SCCRS)

The Scottish Cervical Call Recall System (SCCRS) implemented in 2007 provides women with a complete e-health record detailing their whole smear history which professionals involved with the screening programme access. Since the system was implemented, the turnaround time for smears reported has reduced. This is because results are automatically available for the smear takers to view in SCCRS and patients are sent notification directly from Scottish Cervical Call Recall System. The system also produces individual, and practice performance automated reports.

National Colposcopy Clinical Information Audit System (NCCIAS)

The National Colposcopy Clinical Information Audit System (NCCIAS) is used by Colposcopy staff for the clinical management and audit of all colposcopy referrals.

Initiatives to improve uptake

In an effort to improve uptake comparative practice-based uptake figures are sent to all practices and to Directors and Clinical Directors of Community Health (and Care) Partnerships. NHS Greater Glasgow and Clyde contributed to the national research into women's attitudes for cervical screening and for development of new patient information materials that address the issues identified by research. The new materials were introduced in circulation in August 2010.

Improving Colposcopy waiting times

Direct referral to colposcopy was introduced in April 2010 to improve the referral time to colposcopy. All appointments are issued centrally by Royal Alexandra Hospital Health Records staff. Where possible, all women are appointed to a local colposcopy clinic.

Health Inequalities

An Equality Impact Assessment was carried out in October 2009 to ensure that eligible population receive equal access to screening and services.

As a result, improvements were made to communications and information materials given to women. Information resources are now being offered in different formats. Cytology Skills training programme now includes communication training for smear takers to explain in user friendly terms about the screening programme and outcome of abnormal smears.

Health improvement initiatives are in place to engage with transient groups such as travellers and homeless to promote and raise awareness about the importance of participating in the cervical screening programme.

Challenges and future priorities

- To target most deprived population group to improve uptake of cervical screening and attendance at colposcopy clinics through health improvement teams engaging with community groups.

- To reduce the number of unsatisfactory smears, a cervical skills update training programme was introduced in May 2010 and will run on an ongoing

Appendix 1.1

Management And Follow-Up Advice For Cytology Results

SMEAR REPORT	MANAGEMENT
Negative	36 month recall
Negative, after borderline	Further repeat at 6 months Return to routine recall after 2nd negative.
Negative, after mild	Further repeat at 6 & 18 months. Return to routine recall after 3rd negative
Unsatisfactory	3 month recall. Refer after third in succession.
Borderline Squamous Changes +/- HPV	6 month recall. Refer after third. ? High grade – Flag as such and Refer to Colposcopy on 1st.
Borderline Glandular Changes	6 month recall. Refer after second.
Mild dyskaryosis	Repeat in 6 months Refer after second. OR Refer to Colposcopy on 1st
Glandular abnormality	Refer to Colposcopy
Moderate Dyskaryosis	Refer to Colposcopy
Severe Dyskaryosis	Refer to Colposcopy
Severe Dyskaryosis / invasive	Refer to Colposcopy
Adenocarcinoma – Endocervical	Refer to Colposcopy
Endometrial Adenocarcinoma	Refer to Gynaecology (Early recall will not be triggered for such cases as the detected abnormality is not relevant to cervical screening)

Management and follow up for cytology results: post colposcopy following abnormal cytology)

Colposcopy outcome	Management
Normal colposcopy or benign biopsy	Smears at 6 and 18 months. If both smears are negative, return to routine recall.
CIN 1 (including untreated)	Smears at 6, 12 and 24 months. If negative, return to routine recall, if not, return to routine recall after 2nd negative.
CIN 2, CIN 3, Microinvasive or CGIN	Smears at 6 and 12 months. Then annual smears to 5 years. If negative, return to routine recall.

- Borderline changes in post-colposcopy follow up, repeat. Refer after 3rd.
- Any dyskaryosis in post-colposcopy follow up, refer back to colposcopy

Post Total Hysterectomy

No History of CIN/CGIN	No Recall
CIN or CGIN in history	No recall
CIN or CGIN within last 5 years in history - CIN/CGIN in specimen, completely excised	Smear at 12 months. If negative, no further recall.
CIN or CGIN in history - CIN/CGIN in specimen, incompletely excised	Smears at 6, 12 and 24 months. If negative, no further recall

CIN = cervical intraepithelial neoplasia
CGIN = cervical glandular intraepithelial neoplasia

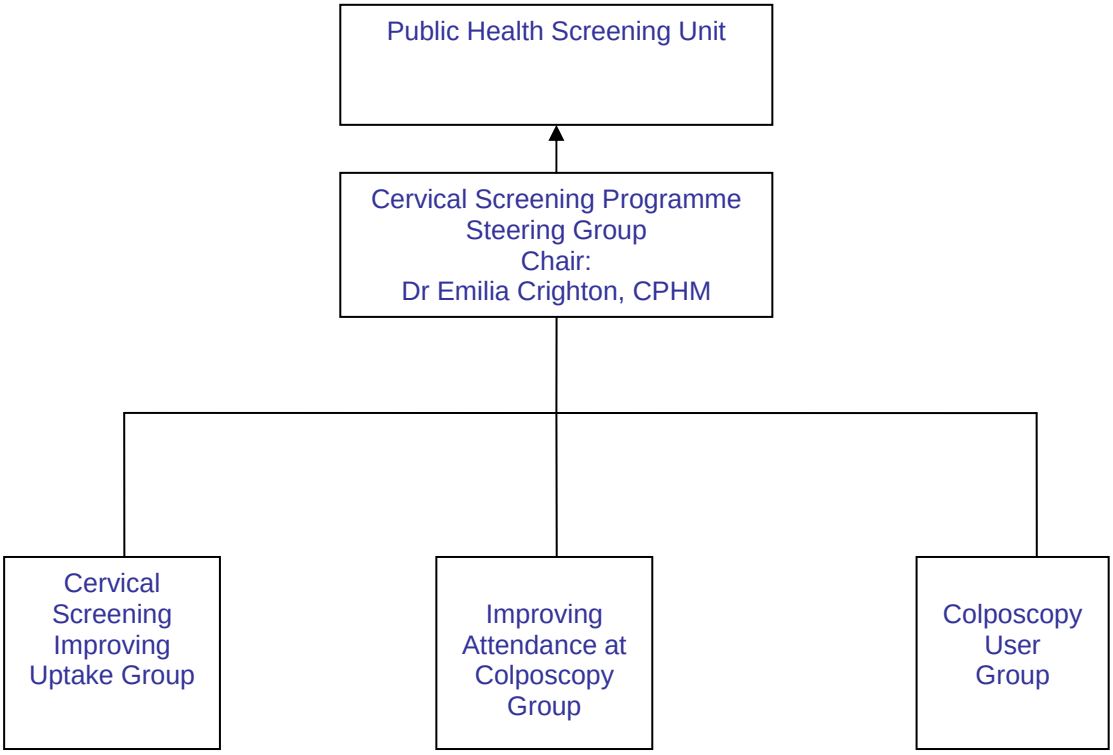
Appendix 1.2

Members of Cervical Screening Steering Group (As at March 2011)

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Dr Margaret Burgoyne	Head of Service, Pathology
Dr Kevin Burton	Consultant Gynaecologist
Mrs Elaine Garman	Public Health Specialist, NHS Highland
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Dr Tamsin Groom	Consultant in Sexual and Reproductive Health Medicine
Dr Mary Hepburn	Consultant Obstetrician/Gynaecologist
Mrs Annemarie Hollywood	Business Administration Manager
Mrs Kathy Kenmuir	Primary Care Support Nurse
Dr Margaret Laing	Staff Grade in Cytology/Colposcopy
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Ms Cynthia Mendelsohn	Lay Member
Mrs Eleanor McColl	Screening Service Delivery Manager
Ms Susan McKechnie	Clinical Operations Manager
Ms Jane McNiven	Practice Manager
Dr Alan Mitchell	Clinical Director Renfrewshire CHP
Mrs Elidhi O'Neill	Health Visitor, West Dunbartonshire CHP
Mrs Elizabeth Rennie	Programme Manager, Screening Dept
Ms Claire Donaghy	Health Improvement Senior (Cancer)
Mrs May Stevens	Business Administration Manager
Dr Millicent Thomas	Consultant Pathologist
Dr Cynthia Van der Horst	Consultant Pathologist
Ms Patricia Weir	Lay Member
Ms Jackie Wright	Practice Nurse

Appendix 1.3

Reporting Structure:
Cervical Screening Programme



SUMMARY

CHAPTER 2: BREAST SCREENING

- This report represents interim screening round data from April 2010 to March 2011.
- In April 2010, we introduced two view mammography for incident screens across NHS Greater Glasgow and Clyde for women attending for screening.
- The number of women eligible for breast screening across the area of Greater Glasgow and Clyde per screening year was 50,922.
- 50,799 women registered with a practice in NHS Greater Glasgow and Clyde area were invited to attend breast screening. These include women living in other NHS board areas.
- 34,996 women attended breast screening during the reported period, 408 of whom had supportive needs. This represents an overall uptake of 68.9% which is below the minimum standard of 70% and below the Scotland rate of 74%.
- There were 281 women who were diagnosed with breast cancer following screening.

CHAPTER 2: BREAST SCREENING

Background

Breast cancer is the most common cancer in women in Scotland. Incidence rates continue to rise with a 10% increase over the last decade. This is partly due to increased detection by the Scottish Breast Screening Programme and to changes in the prevalence of known risk factors, such as "age at birth of first child, decreases in family size, increases in post menopausal obesity and alcohol consumption" (Information Services Division, 2011).

The Scottish Breast Screening Programme was introduced in February 1987 following the publication of the Forrest Report (1986). Breast screening was implemented in 1988 in North Glasgow, 1991 in South Glasgow and in October 1990 in Argyll & Clyde.

This report represents interim screening round data from April 2010 to March 2011.

Aim of screening programme

The purpose of breast screening by mammography is to detect breast cancers at the earliest possible time so that treatment may be offered promptly. It is believed that very early detection of breast cancers in this way can result in more effective treatment, which may be more likely to reduce deaths from breast cancer.

Eligible population

Women aged 50-70 years are invited for a routine screen once every three years. Women aged over 70 years are screened on request.

The screening test

The screening method used consisted of two mammographic views at first screen (called prevalent screen) and one view at subsequent screens (called incident screens). In April 2010, two view mammography for incident screens was introduced across NHS Greater Glasgow and Clyde for women attending for screening.

The test is a straightforward procedure involving two images being taken of each breast using an X-ray machine (also known as a mammogram).

Screening setting

The West of Scotland Breast Screening Centre screens NHS Greater Glasgow and Clyde residents either in the static centre in Glasgow or in mobile units that visit pre-established sites across the NHS Greater Glasgow and Clyde area.

Screening pathway

Every woman registered with a GP receives her first invitation to attend for a mammogram at her local breast screening location sometime between her 50th and 53rd birthdays and then three yearly thereafter until her 70th birthday. A woman can request a screening appointment when she turns 50 providing her practice is not being screened in the next six months. The West of Scotland Breast Screening Centre also contacts all long-stay institutions to offer screening to eligible residents.

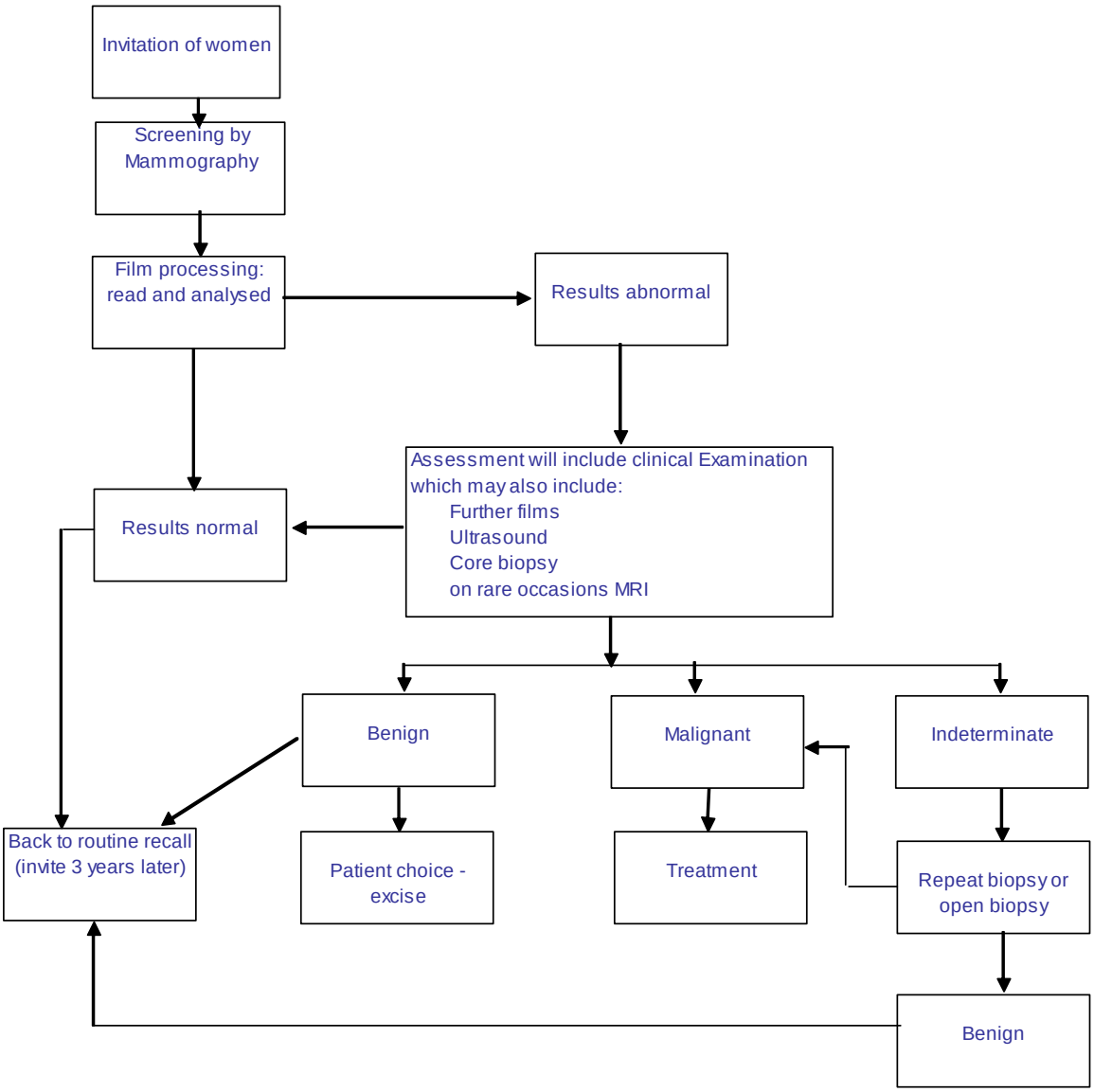
The mammograms taken during the screening visit are examined and the results sent to the woman and her GP. A proportion of women attending for screening will be recalled if the mammogram was technically inadequate or will be asked to go to an assessment clinic for further tests if a potential abnormality has been detected. The tests include ultrasound and core biopsies.

If a woman is found to have cancer, she is referred to a consultant surgeon to discuss the options available to her. This usually involves surgery: a lumpectomy where just the lump and a small amount of surrounding tissue is removed or a mastectomy where the whole breast is removed. Surgery is likely to be followed by radiotherapy, chemotherapy, hormone therapy or a mixture of these.

The exact course of treatment will depend on the type of cancer found and the woman's personal preferences.

In NHS Greater Glasgow and Clyde the assessment clinics are carried out in the West of Scotland Breast Screening Centre situated in Glasgow. The surgical treatment is carried out by designated teams in Western Infirmary, Victoria Infirmary and Royal Alexandra Hospital and a small proportion of women with palpable tumours are referred for treatment to local breast teams.

Figure 2.1 Screening pathway



Delivery of breast screening in NHS Greater Glasgow and Clyde

Eligible population

The number of women eligible for breast screening across the area of Greater Glasgow and Clyde per screening year was 50,922 **(Table 2.1).** Eligible women were identified using the Community Health Index (CHI) system.

Table 2.1 Total number of women eligible for breast screening split by age band and CH(C)P

	Total Screening Population- 3 Year Round					
CHP	50-54	55-59	60-64	65-70	50-70	Screening Population per year[2]
East Dunbartonshire	4478	3887	3815	3761	15941	5314
East Renfrewshire	3620	3112	2980	2825	12537	4179
Glasgow North East	6483	5022	4554	4464	20523	6841
Glasgow North West	6318	5171	4554	4249	20292	6764
Glasgow South	8166	6541	5472	5300	25479	8493
Inverclyde	3272	2684	2736	2640	11332	3777
North Lanarkshire[1]	700	634	643	578	2555	852
Renfrewshire	6833	5704	5719	5402	23658	7886
South Lanarkshire[1]	2311	2091	1893	1666	7961	2654
West Dunbartonshire	3607	3144	2988	2749	12488	4163
Total	**45788**	**37990**	**35354**	33634	**152766**	**50922**

Source: CHI Extract (November 2011)

Note:
1 NHS Greater Glasgow and Clyde residents only
2 Screening population is the Total population divided by 3 years

Table 2.2 shows the numbers and the proportion of the eligible population invited; numbers screened; and the uptake rate split by Community Health (and Care) Partnership (CH(C)P) area. 50,799 women registered with a practice in NHS Greater Glasgow and Clyde area were invited to attend breast screening. These include women living in other NHS board areas.

34,996 women attended breast screening during the reported period, 408 of whom had supportive needs, (eg women with physical disabilities, deaf, blind). This represents an overall uptake of 68.9% which is below the minimum standard of 70%. There were 281 women who were diagnosed with breast cancer following screening.

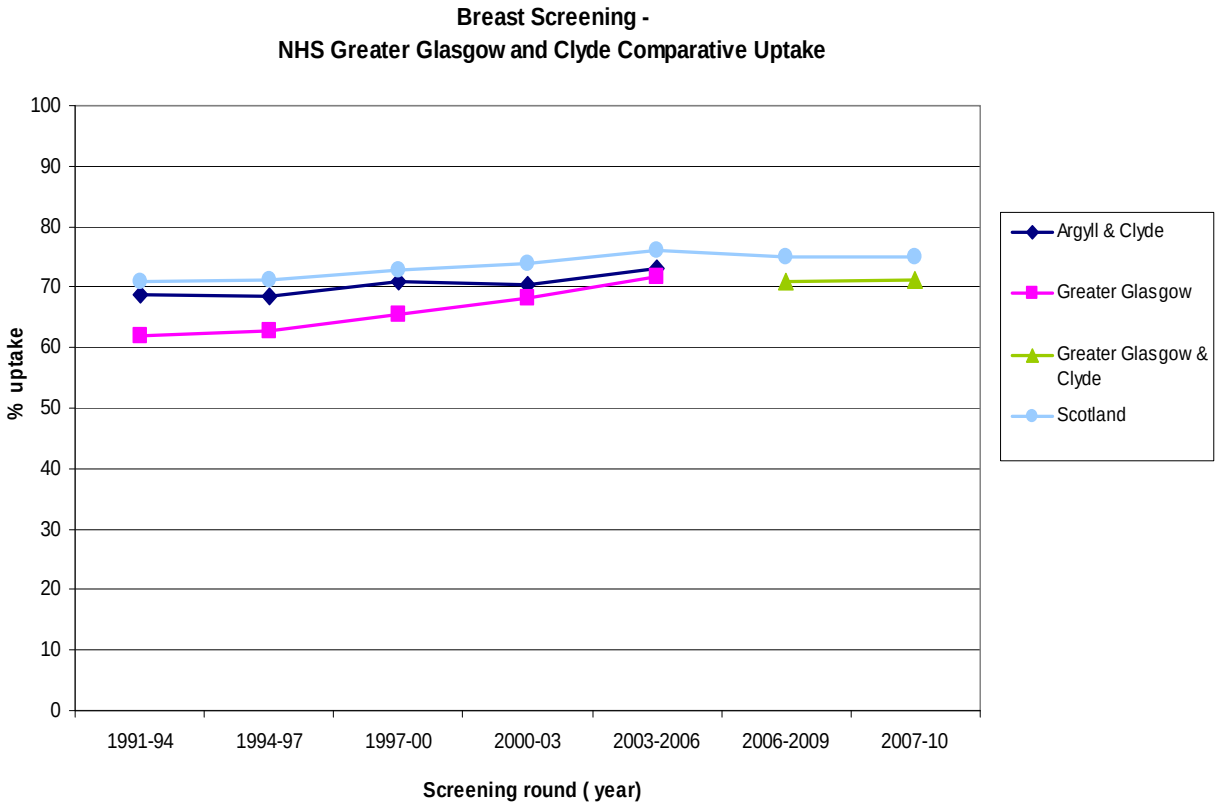
Table 2.2 Breast screening programme interim activity data for 2010/11 by CH(C)P area

CH(C)P	Number invited[1]	Number attended[1]	Number of Cancers Detected[1]	% Attend of those invited	%Cancers of those Attended	%Cancers of those Invited
Glasgow North West	7367	4610	42	62.6%	0.9%	0.6%
Glasgow North East	7775	4869	31	62.6%	0.6%	0.4%
Glasgow South	11509	7983	51	69.4%	0.6%	0.4%
East Dunbartonshire	5324	4169	46	78.3%	1.1%	0.9%
East Renfrewshire	2037	1576	9	77.4%	0.6%	0.4%
West Dunbartonshire	2987	2171	26	72.7%	1.2%	0.9%
Inverclyde	11065	7655	47	69.2%	0.6%	0.4%
North Lanarkshire	1787	1317	25	73.7%	1.9%	1.4%
South Lanarkshire	948	646	4	68.1%	0.6%	0.4%
NHS GGC	**50799**	**34996**	**281**	**68.9%**	**0.8%**	**0.6%**

Sources:
[1] West of Scotland Breast Screening Data
Notes:
Greater Glasgow: Round commenced January 2010; expected to complete December 2013
Inverclyde, Renfrewshire, West Dunbartonshire, Argyll & Bute (Formerly Argyll & Clyde): Round commenced April 2009; expected to complete March 2012

Figure 2.1 shows NHS Greater Glasgow and Clyde trends in uptake in breast screening compared to Scottish average. The uptake for the three year rounds 2004/07 to 2007/10 has consistently remained slightly above the minimum standard of 70% at 71%, compared to the Scottish average of 74%. Interim data for the period 2010 – 2011 shows that uptake is 68.9% which is below that of the minimum national standard.

Figure 2.1 Comparative trends in uptake in breast screening between NHS Greater Glasgow and Clyde and Scotland



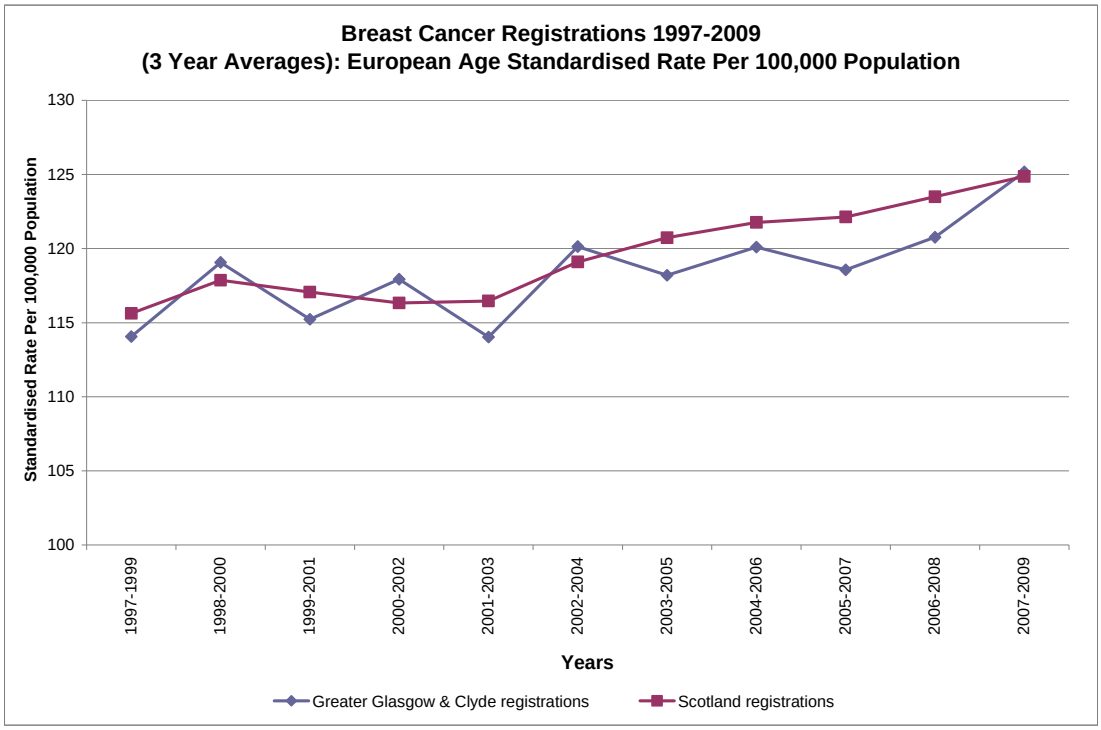
Source: Scottish Breast Screening Programme (SBSP) Information System - KC62 Returns; ISD Scotland

Breast Cancer morbidity and mortality

In 2009, the most recent year for which completed data is available, the number of new breast cancers registered in NHS Greater Glasgow and Clyde was 1038 (**see Table 2.3**). This gives a standardised incidence rate of 135.7 per 100,000 per population which is slightly higher than that for Scotland (127.2)

Figure 2.2 illustrates a steady increase in the incidence rate of breast cancers across Scotland and that NHS Greater Glasgow and Clyde is following the same trend.

Figure 2.2 Breast Cancer registrations for period 1997 - 2009

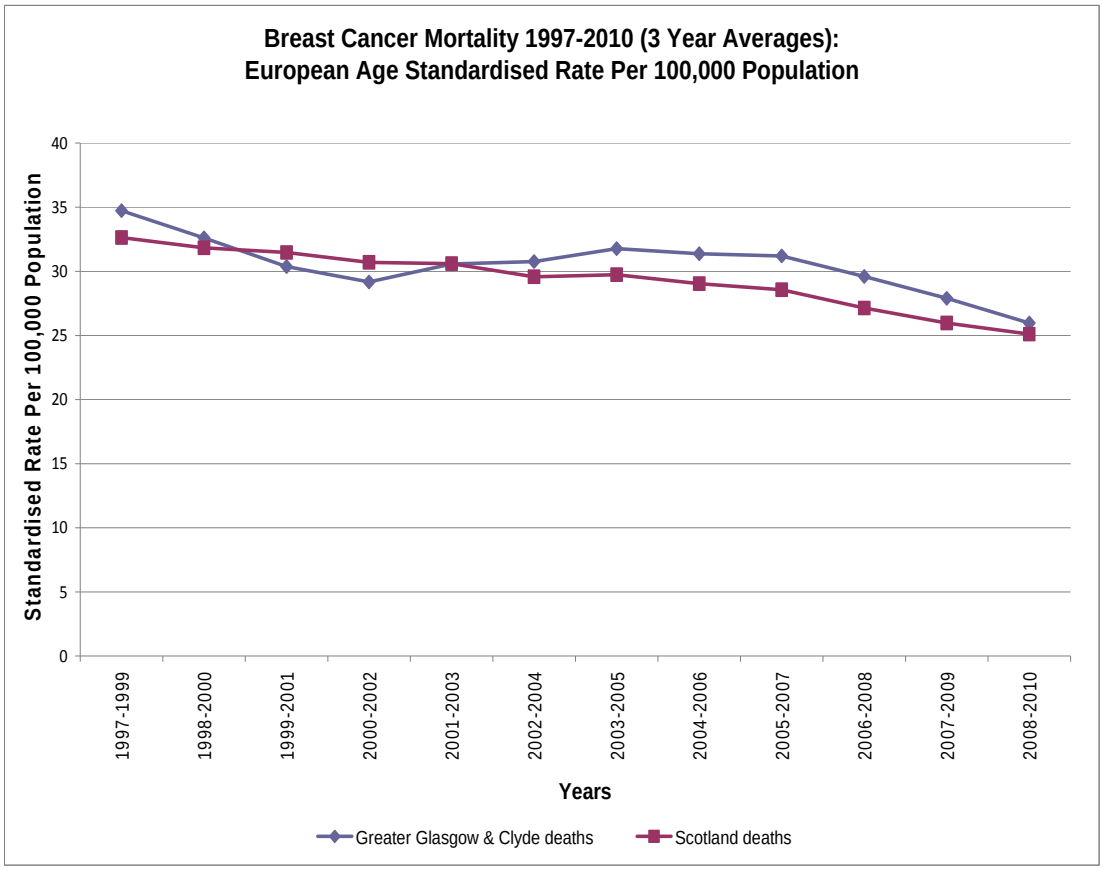


(Source: Scottish Cancer Registry, ISD, July 2011)

Table 2.3 shows the number of deaths from breast cancer in NHS Greater Glasgow and Clyde and Scotland. In 2010, there were 220 deaths from breast cancer, giving a standardised rate of 24.2 per 100,000 population.

Figure 2.3 illustrates that the age standardised death rates for NHS Greater Glasgow and Clyde and Scotland are gradually declining.

Figure 2.3 Breast cancer deaths for period 1997 to 2010



(Source: National Records Scotland, September 2011)

Table 2.3: Breast cancer registrations and deaths across NHS Greater Glasgow and Clyde for period 1997 - 2009

Scotland

Registration

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number	3466	3624	3687	3731	3621	3719	3901	3966	4053	4136	4118	4292	4368
EASR	112.9	115.6	118.4	119.6	113.2	116.2	120.0	121.1	121.1	123.1	122.2	125.2	127.2
- Lower 95% CI	109.0	111.7	114.5	115.6	109.4	112.3	116.1	117.2	117.2	119.2	118.3	121.3	123.2
- Upper 95% CI	116.8	119.6	122.4	123.6	117.1	120.1	123.9	125.0	125.0	127.0	126.1	129.1	131.1

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)
Source: Scottish Cancer Registry, ISD
Data extracted: July 2011

Deaths

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number	1154	1142	1129	1116	1143	1105	1138	1082	1144	1108	1062	1043	1002	1022
EASR	33.3	32.7	31.9	30.9	31.6	29.6	30.6	28.5	30.1	28.5	27.1	25.8	25.0	24.5
- Lower 95% CI	31.3	30.6	29.9	29.0	29.7	27.8	28.8	26.7	28.2	26.7	25.4	24.1	23.4	22.9
- Upper 95% CI	35.4	34.7	33.9	32.9	33.6	31.5	32.5	30.3	31.9	30.3	28.9	27.5	26.7	26.1

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)
Source: National Records of Scotland (NRS)
Data extracted: September 2011

Greater Glasgow & Clyde

Registration

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number	840	875	842	942	788	899	880	927	872	936	892	932	1038
EASR	113.5	116.2	112.5	128.5	104.7	120.6	116.8	123.0	114.8	122.5	118.4	121.4	135.7
- Lower 95% CI	105.4	108.1	104.5	119.9	97.0	112.3	108.7	114.7	106.8	114.3	110.3	113.2	127.1
- Upper 95% CI	121.6	124.4	120.5	137.1	112.4	128.9	124.9	131.2	122.8	130.7	126.4	129.5	144.2

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)
Source: Scottish Cancer Registry, ISD
Data extracted: July 2011

Deaths

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number	288	297	278	240	251	258	284	266	284	285	259	247	237	220
EASR	35.3	36.6	32.3	28.9	29.9	28.7	33.1	30.5	31.7	31.9	30.0	26.9	26.8	24.2
- Lower 95% CI	30.9	32.2	28.2	25.0	26.0	25.0	29.0	26.6	27.7	27.9	26.1	23.3	23.2	20.8
- Upper 95% CI	39.6	41.0	36.3	32.8	33.9	32.5	37.2	34.5	35.7	35.8	33.9	30.5	30.4	27.6

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)
Source: National Records of Scotland (NRS)
Data extracted: September 2011

Digital Mammography

Following the installation in March 2010 of a Full Field Digital Mammography Unit, the centre has continued to establish the unit into operational practice for those women attending the static centre for screening and assessment.

In September 2011, the West of Scotland Breast Screening Unit became one of six contributors to the Health Technology Assessment (HTA) funded UK trial assessing the potential benefit of the addition of tomosynthesis to the process of assessment. The trial will last two years.

Health Improvement

Health Improvement teams across NHSGGC attended breast awareness training who then went on to engage with local communities by holding a number of local awareness raising workshops.

There is evidence that health behaviour choices can increase a woman's risk of breast cancer and that healthcare staff should be informing women of this and signposting them to relevant services as required. West of Scotland Breast Screening Service will attend health behaviour change training in 2011. Once training is complete, the staff will be able to opportunistically offer support and information to any woman who requires it.

Challenges and future priorities

Continue health interventions and health improvement initiatives to raise awareness of, and encourage women to participate in the breast screening programme.

Staff to provide information to and support women on making healthier lifestyle changes.

The commissioning and delivery model for the breast screening service in Scotland is under review. The findings and recommendations of the review are expected in 2012.

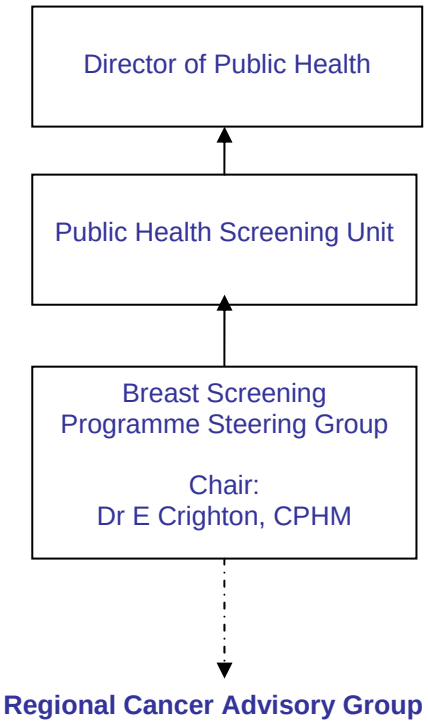
Appendix 2.1

Members of Breast Screening Steering Group (As at March 2011)

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Ms Brenda Bellando	Business Manager
Ms Claire Donaghy	Health Improvement Senior
Dr Hilary Dobson	Clinical Director
Mrs Fiona Gilchrist	Assistant Programmes Manager, Screening Dept
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Ms Janet Mair	Regional Registration Manager
Mrs Eleanor McColl	H&IT Service Delivery Manager
Ms Cynthia Mendelsohn	Lay Member
Dr Alan Mitchell	Clinical Director
Ms Ann Mumby	Superintendent Radiographer
Ms Elaine Murray	Health Improvement Assistant
Mr Martin Murray	Homeless and Addictions Nurse
Mrs Eildhi O'Neill	Health Visitor, West Dunbartonshire CHP
Mrs Elizabeth Rennie	Programmes Manager, Screening Dept
Mrs Claire Donachie	Senior Health Improvement Officer
Ms Patricia Weir	Lay Member

Appendix 2.2

Reporting Structure:
Breast Screening Steering Group



Key:
_____ Direct Reports
- - - - - - - Network Links

SUMMARY

CHAPTER 3: BOWEL SCREENING PROGRAMME

- The programme invites all men and women between the ages of 50 – 74 years registered with a General Practice.
- 363,630 residents in NHS Greater Glasgow and Clyde were invited to participate in the Bowel Screening programme.
- 185,912 screening kits were completed and were reported by the Bowel Screening laboratory. This gives an estimated uptake of 51.1%.
- Overall, the lowest uptake was among the most deprived areas at 41.9%. The lowest uptake for bowel screening was among the most deprived residents living in Glasgow CHP sectors North East (40.6%); North West (40.9% and South 40.5%. Highest uptake was among residents living in the least deprived areas of West Dunbartonshire at 66.1%; East Dunbartonshire at 64.4% and East Renfrewshire at 63.2%
- The percentage uptake among females at 54.8% was higher than the male population at 47.4%. The lowest uptake of 39.7% was among the 50-54 year old male population group.
- There were 5,641 patients that received a positive result, representing a positivity screening rate of 3%. The overall positivity rate was higher among men at 3.9% compared to women at 2.3%. Compared to all other groups, the male population age group of 70 to 74 had the highest positivity rate of 5.9%.
- Of the 5,641 patients screened positive, 5,051 patients were pre-assessed prior to colonoscopy. 320 patients did not respond to the offer of a colonoscopy pre-assessment.
- 4,967 (88%) patients completed colonoscopy investigations by 31 March 2011. 986 patients refused to take up the offer of a colonoscopy.
- Of the total eligible population invited to take part in bowel screening, 210 cancers were detected (6 in 10,000).
- The overall positivity rate was highest among men at 3.9% compared to women at 2.3%. Compared to all other groups, the male population age group of 70 to 74 had the highest positivity rate of 5.9%.

CHAPTER 3: BOWEL SCREENING PROGRAMME

Background

Colorectal (Bowel) Cancer is the third most common cancer in Scotland after prostate (for men), lung (for both men and women) and breast (women) cancers (ISD Scotland, 2010). Every year over 3,400 people are diagnosed with the disease. In NHS Greater Glasgow and Clyde, 883 people were diagnosed with bowel cancer in 2009 (Table 3.5)

The Scottish Bowel Screening Programme was launched in 2007 and was fully implemented across Scotland by the end of 2009. NHS Greater Glasgow and Clyde implemented the programme in April 2009.

Aim of the screening programme

The purpose of bowel screening by guaiac Faecal Occult Blood test (gFOBt) is to detect colorectal cancers at the earliest possible time so that treatment may be offered promptly. It is believed that very early detection of colorectal cancers in this way can result in more effective treatment which may be more likely to reduce deaths from colorectal cancer. In addition, the removal of precancerous lesions could lead to a reduction in the incidence of colorectal cancer.

Eligible population

The programme invites all men and women between the ages of 50 – 74 years registered with a General Practice. Other eligible individuals who are not registered with a General Practice such as prisoners, armed forces, homeless, and individuals in long-stay institutions are also able to participate following NHS Greater Glasgow and Clyde local agreements. Thereafter, all eligible individuals will be routinely recalled every two years.

The screening test

Guaiac Faecal Occult Blood test (gFOBt) testing kit is completed at home and returned to the National Bowel Screening Centre in Dundee for analysis.

Screening pathway

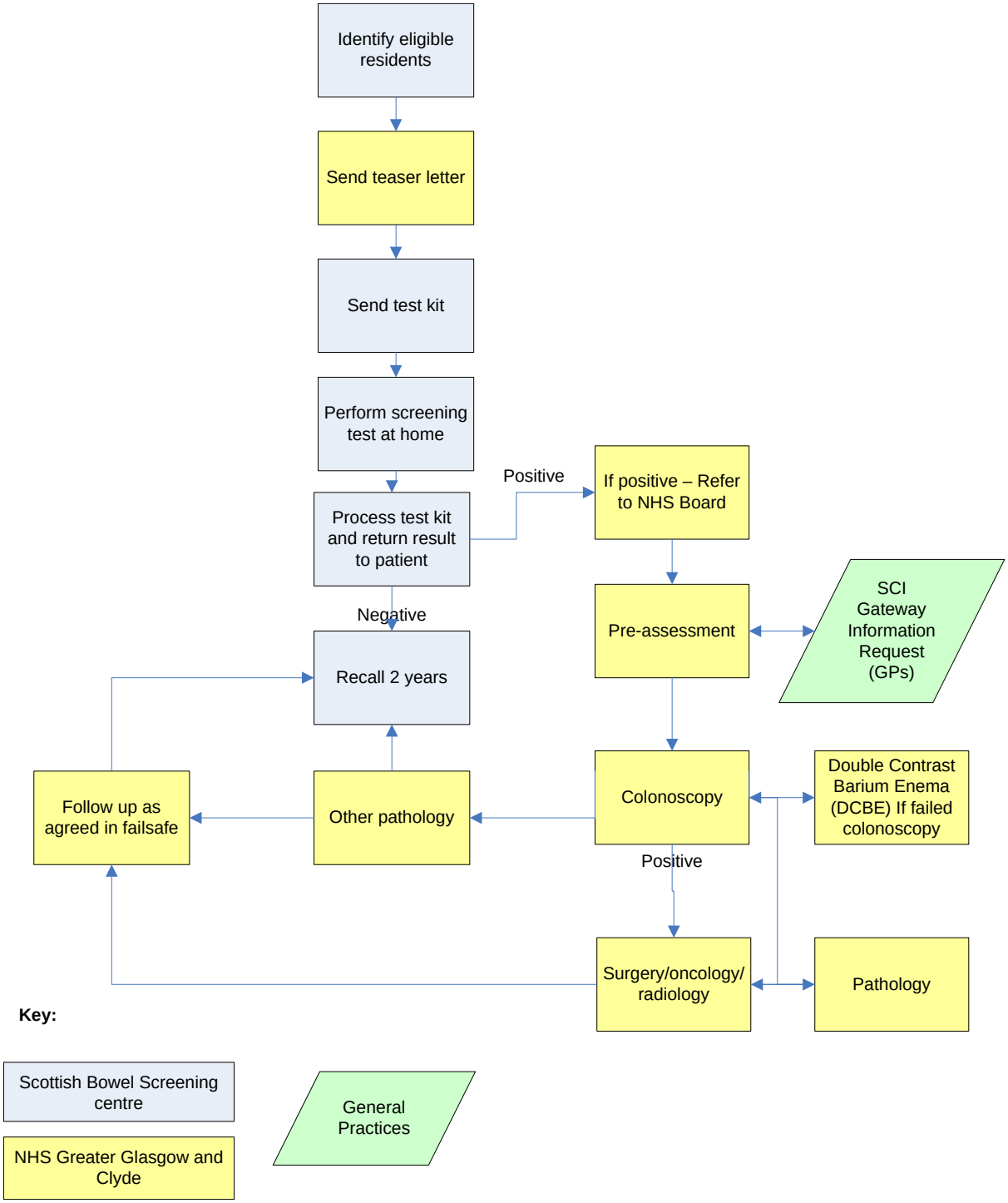
Eligible NHS Greater Glasgow and Clyde residents that are due to be invited to take part in the bowel screening programme are sent a “teaser” letter before they are sent an invitation letter and screening kit. The letter explains the programme and encourages participants to take the test.

The National Bowel Screening Centre in Dundee issue screening kits to all eligible residents of NHS Greater Glasgow and Clyde to screen at home. The kits are then posted by return to the National Laboratory for processing.

After analysis, the National Centre reports, via an IT system, results of all positive tests to the Board. The National Centre also informs the patient and the patient's general practitioner by letter.

Patients with positive screening results are invited to contact NHS Greater Glasgow and Clyde administrative staff to arrange for a telephone assessment and be offered a colonoscopy. Following colonoscopy, if required, they are then referred for further diagnostic investigations and treatment. **Figure 3.1** gives an overview of the bowel screening pathway.

Figure 3.1 Overview of bowel screening pathway



Performance on uptake and delivery of service

From 18 March 2009 to 31 March 2011, 363,630 residents in NHS Greater Glasgow and Clyde were invited to participate in the Bowel Screening programme (see Table 3.1). Of the total population invited, 123,101 (33%) lived in the most deprived areas.

Table 3.1 Number of eligible population invited to participate in the bowel screening programme.

CH(C)P	Most Deprived				Least Deprived		
	1	2	3	4	5	Unasssigned[2]	Total
East Dunbartonshire	1387	4048	3474	7053	20956	10	36928
East Renfrewshire	1631	2185	3010	3078	19141	8	29053
Glasgow North East	33159	5615	4123	5175	1696	103	49871
Glasgow North West	21344	8629	6047	5039	8227	54	49340
Glasgow South	26591	13453	9394	7303	4353	80	61174
Inverclyde	11219	3876	3971	4964	2640	28	26698
North Lanarkshire[1]	721	409	2093	2230	333		5786
Renfrewshire	12328	9946	9111	9110	14676	63	55234
South Lanarkshire[1]	6131	3927	2071	3507	2935	1	18572
West Dunbartonshire	8590	9439	6072	3879	1471	16	29467
Unasssigned[2]						**1507**	**1507**
NHSGGC Total	**123101**	**61527**	**49366**	**51338**	**76428**	**1870**	**363630**

Source: Bowel Screening IT system (data extracted 1 July 2011)

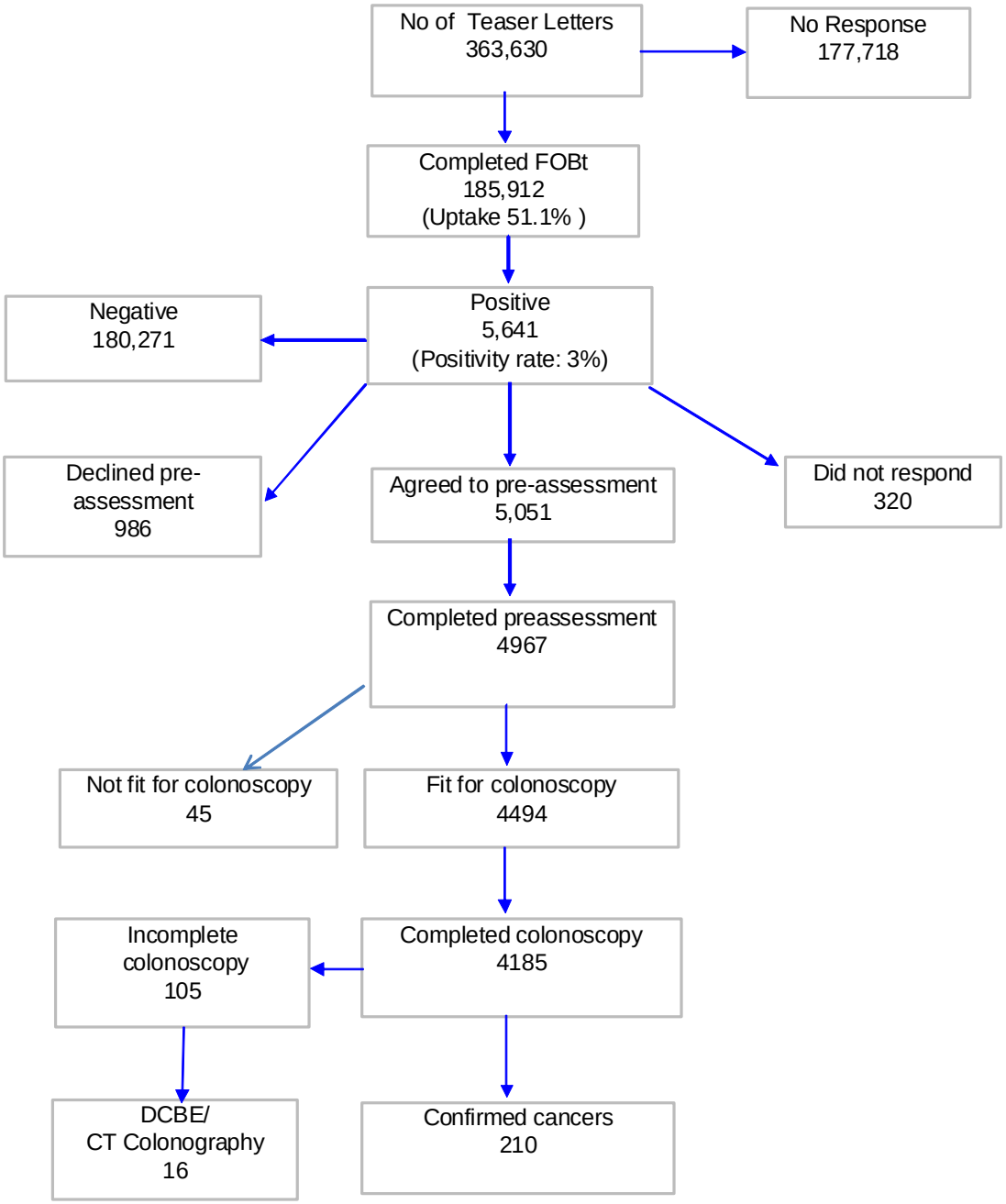
Notes:

1 NHSGGC residents only

[2] Unable to assign CHP or SIMD due to incomplete/incorrect postcode OR postcode is outwith GGC Boundaries

Figure 3.1 illustrates the bowel screening activity. 185,912 screening kits were completed and were reported by the Bowel Screening laboratory. This gives an estimated uptake of 51.1%. The uptake is encouraging as the evaluation of the bowel screening pilot in the UK demonstrated a level of uptake of 30% in deprived communities.

Figure 3.1: Breakdown of NHS Greater Glasgow and Clyde Bowel Screening Activity 1 April 2009 to 31 March 2011



Source: NHS Greater Glasgow and Clyde Bowel Screening IT System.

Note:

1. It was estimated that residents would complete the test within 6 weeks of teaser letter being issued. Therefore the approximate percentage uptake is based on total number of results from 1 April 2010 – 31 March 2011 against the number of teaser letters issued for the same period.

Table 3.2 shows the percentage bowel screening uptake by CH(C)P area and by deprivation. Overall, the lowest uptake was among the most deprived areas at 41.9%. The lowest uptake for bowel screening was among the most deprived residents living in Glasgow CHP sectors North East (40.6%); North West (40.9% and South 40.5%. Highest uptake was among residents living in the least deprived areas of West Dunbartonshire at 66.1%; East Dunbartonshire at 64.4% and East Renfrewshire at 63.2%

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Table 3.2 Percentage uptake by CH(C)P and by deprivation category

	Most Deprived				Least Deprived		
Uptake	**1**	**2**	**3**	**4**	**5**	**Unasssigned[2]**	**Total**
East Dunbartonshire	45.5%	50.7%	54.3%	60.9%	64.4%	40.0%	60.6%
East Renfrewshire	42.9%	51.4%	55.5%	57.8%	63.2%	62.5%	59.8%
Glasgow North East	40.6%	44.7%	50.3%	55.9%	56.7%	31.1%	44.0%
Glasgow North West	40.9%	45.8%	46.4%	50.8%	58.4%	24.1%	46.4%
Glasgow South	40.5%	45.1%	50.1%	56.3%	59.5%	25.0%	46.2%
Inverclyde	44.4%	51.9%	55.8%	60.7%	61.6%	39.3%	51.9%
North Lanarkshire[1]	45.6%	50.4%	54.5%	57.8%	59.5%	0.0%	54.7%
Renfrewshire	43.7%	50.9%	54.9%	60.1%	63.8%	34.9%	54.9%
South Lanarkshire[1]	46.0%	50.5%	56.8%	59.3%	60.9%	100.0%	53.1%
West Dunbartonshire	44.0%	52.0%	55.5%	58.6%	66.1%	25.0%	51.9%
NHS GGC Total	**41.9%**	**48.5%**	**52.8%**	**58.0%**	**62.7%**	**30.9%**	**51.2%**

Source: Bowel Screening IT system (data extracted 1 July 2011)

Notes:

1 NHSGGC residents only

[2] Unable to assign 121 out of 323 records to CHP or SIMD due to incomplete/incorrect postcode OR postcode is outwith GGC Boundaries

Table 3.3 shows that the percentage uptake among females at 54.8% was higher than the male population at 47.4%. The lowest uptake of 39.7% was among the 50-54 year old male population group.

Table 3.3 Percentage uptake and positivity rate by age bands and gender

Age Group	Female	Male	Total	Female	Male	Total
50-54	49.0%	39.7%	44.2%	1.6%	2.5%	2.0%
55-59	55.7%	46.3%	50.9%	1.9%	3.0%	2.4%
60-64	59.8%	51.9%	55.9%	2.0%	4.1%	3.0%
65-69	59.3%	53.7%	56.6%	2.8%	5.0%	3.8%
70-74	54.9%	53.4%	54.3%	3.5%	5.9%	4.6%
75+	46.8%	47.5%	47.1%	3.8%	5.7%	4.6%
Total	**54.8%**	**47.4%**	**51.2%**	**2.3%**	**3.9%**	**3.0%**

Source: NHS Greater Glasgow and Clyde Bowel Screening IT System

Note: 1 Transgender patient has been removed but remains in the total

There were 5,641 patients that received a positive result, representing a positivity screening rate of 3%. The overall positivity rate was higher among men at 3.9% compared to women at 2.3%. Compared to all other groups, the male population age group of 70 to 74 had the highest positivity rate of 5.9%.

This was higher than the national average range of 1.9% to 2.3% reported in the Scottish Bowel Screening Programme KPI reports (ISD, 2009). There is a gradient in the positivity rate across deprivation categories. The positivity rate for residents living in the most deprived areas was 4.3% compared to 1.9% for residents living in least deprived areas.

Table 3.4 Positivity Rates by CHCP and deprivation
1 April 2009 to 31 March 2011

	Most Deprived				Least Deprived		
CH(C)P	**1**	**2**	**3**	**4**	**5**	**Unasssigned[1]**	**Total**
East Dunbartonshire	5.2%	3.0%	2.9%	1.8%	1.9%	0.0%	2.2%
East Renfrewshire	3.1%	3.5%	3.3%	1.8%	2.0%	0.0%	2.2%
Glasgow North East	4.8%	3.8%	3.5%	3.3%	3.4%	0.0%	4.3%
Glasgow North West	4.3%	3.5%	3.0%	1.8%	1.6%	0.0%	3.2%
Glasgow South	4.3%	3.5%	2.9%	2.4%	1.9%	5.0%	3.4%
Inverclyde	4.1%	3.5%	2.6%	1.9%	1.8%	9.1%	3.0%
North Lanarkshire[2]	4.9%	1.9%	3.1%	2.6%	1.5%	0.0%	2.9%
Renfrewshire	3.5%	3.4%	3.4%	2.3%	1.9%	0.0%	2.8%
South Lanarkshire[2]	4.1%	3.7%	2.2%	2.3%	1.8%	0.0%	3.0%
West Dunbartonshire	3.7%	3.5%	2.8%	2.1%	1.6%	25.0%	3.1%
Unasssigned[1]	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.5%
NHS GGC Total	**4.3%**	**3.5%**	**3.0%**	**2.2%**	**1.9%**	**3.3%**	**3.0%**

Source: Bowel Screening IT system (data extracted 1 July 2011)

Notes:

[1] Unable to assign CHP or SIMD due to incomplete/incorrect postcode OR postcode is outwith GGC Boundaries

[2] GGC part only

Of the 5,641 patients screened positive, 5,051 patients were pre-assessed prior to colonoscopy. 320 patients did not respond to the offer of a colonoscopy pre-assessment.

4,967 (88%) patients completed colonoscopy investigations by 31 March 2011. 986 patients refused to take up the offer of a colonoscopy. If they remain eligible for bowel screening, they will be invited to participate in screening in two years. Of the total eligible population invited to take part in bowel screening, 210 cancers were detected (6 in 10,000).

Morbidity and mortality from colorectal cancer

In 2009, the most recent year for which completed data is available, the number of new colorectal cancers registered in NHS Greater Glasgow and Clyde was 476 for men and 406 for females **(see Table 3.5).** This gives a standardised incidence rate of 72 and 43.8 respective per 100,000 per population.

Figure 3.2 shows that since 2004/06 there has been a steady increase in the incidence rate of colorectal cancers in both male and female population groups across Scotland and that NHS Greater Glasgow and Clyde is following the same trend.

In 2010, the number of deaths from colorectal cancer in NHS Greater Glasgow and Clyde was 159 for male population and 177 in the female population **(see Table 3.5)**. This gives a standardised rate of 23 and 17.2 respectively per 100,000 populations.

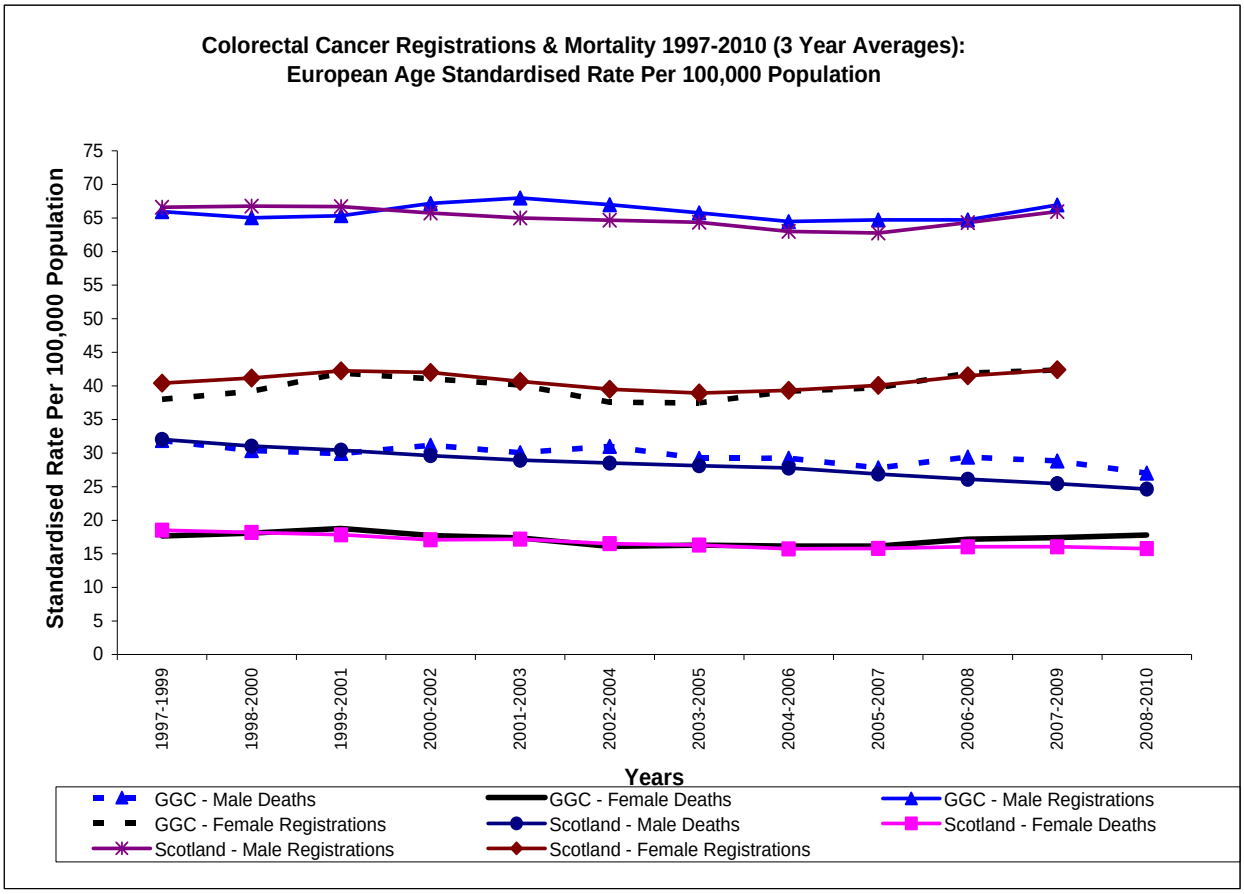
Figure 3.2 shows that the rate of deaths has remained consistent since 2004/06.

Table 3.5 Colorectal cancer incidence rates for 1997/98 to 2008/09 and mortality rates for 1997/98 to 2008/09 for NHS Greater Glasgow and Clyde and Scotland

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Greater Glasgow & Clyde													
MALES													
Deaths													
Number	219	194	175	198	184	203	183	213	172	182	186	203	183
Standardised rate per 100,000 pop	36.0	31.3	28.3	31.5	30.0	32.0	28.2	32.8	26.6	28.3	28.5	31.4	26.6
Lower 95% Confidence Interval	31.1	26.9	24.1	27.0	25.6	27.6	24.1	28.3	22.6	24.1	24.4	27	22.7
Upper 95% Confidence Interval	40.8	35.8	32.6	35.9	34.3	36.5	32.4	37.3	30.7	32.4	32.7	35.8	30.5
Registrations													
Number	428	408	387	412	415	428	438	407	410	423	423	419	476
Standardised rate per 100,000 pop	69.6	66	62.2	66.9	66.9	67.7	69.3	63.9	64.1	65.4	64.6	64.1	72.1
Lower 95% Confidence Interval	62.9	59.6	56	60.4	60.4	61.2	62.7	57.6	57.9	59.1	58.4	57.8	65.5
Upper 95% Confidence Interval	76.3	72.5	68.5	73.4	73.3	74.2	75.9	70.3	70.4	71.7	70.9	70.3	78.6
FEMALES													
Deaths													
Number	185	180	177	192	204	155	166	165	156	168	165	178	175
Standardised rate per 100,000 pop	17.2	17.7	18	18.5	19.8	14.8	17.5	16.0	15.4	17.0	16	18.5	17.7
Lower 95% Confidence Interval	14.6	14.9	15.2	15.7	16.9	12.3	14.6	13.4	12.8	14.3	13.3	15.6	14.9
Upper 95% Confidence Interval	19.9	20.5	20.9	21.4	22.8	17.3	20.3	18.7	18.0	19.7	18.6	21.4	20.5
Registrations													
Number	366	346	386	366	414	361	344	351	361	390	357	419	407
Standardised rate per 100,000 pop	36.3	36.8	40.9	39.9	44.9	38.4	37.1	37.2	38.1	42.4	38.7	44.6	43.8
Lower 95% Confidence Interval	32.3	32.7	36.5	35.5	40.3	34.2	32.9	33	33.9	37.9	34.4	40	39.3
Upper 95% Confidence Interval	40.3	40.9	45.2	44.2	49.6	42.7	41.3	41.3	42.3	46.9	43	49.1	48.3
Scotland													
MALES													
Deaths													
Number	889	848	870	839	835	842	830	844	855	835	812	829	825
Standardised rate per 100,000 pop	33.0	31.3	31.8	30.0	29.5	29.3	28.0	28.2	28.1	27.0	25.5	25.8	25
Lower 95% Confidence Interval	30.8	29.1	29.7	27.9	27.5	27.3	26.1	26.3	26.2	25.1	23.7	24	23.3
Upper 95% Confidence Interval	35.2	33.4	33.9	32.0	31.6	31.3	30.0	30.1	30.0	28.9	27.3	27.5	26.7
Registrations													
Number	1803	1788	1819	1885	1848	1818	1902	1912	1894	1884	2009	2133	2135
Standardised rate per 100,000 pop	67.4	66	66.4	67.9	65.8	63.5	65.7	64.8	62.6	61.6	64.1	67.2	66.5
Lower 95% Confidence Interval	64.2	62.9	63.3	64.8	62.8	60.6	62.7	61.8	59.8	58.8	61.3	64.3	63.7
Upper 95% Confidence Interval	70.5	69	69.5	71	68.9	66.5	68.7	67.7	65.5	64.4	66.9	70.1	69.4
FEMALES													
Deaths													
Number	781	791	792	757	780	713	752	706	695	715	727	736	730
Standardised rate per 100,000 pop	18.2	18.7	18.6	17.2	17.7	16.3	17.5	15.7	15.7	15.8	15.9	16.4	15.8
Lower 95% Confidence Interval	16.9	17.3	17.2	15.9	16.4	15.1	16.2	14.4	14.5	14.6	14.7	15.1	14.6
Upper 95% Confidence Interval	19.6	20.1	20.0	18.5	19.0	17.6	18.9	16.9	17.0	17.1	17.2	17.6	17.1
Registrations													
Number	1,609	1,535	1,625	1,690	1,688	1,602	1,552	1,612	1,594	1630	1705	1767	1781
Standardised rate per 100,000 pop	40.4	39.6	41.2	42.7	42.8	40.5	38.7	39.3	38.8	39.9	41.5	43.1	42.6
Lower 95% Confidence Interval	38.3	37.5	39	40.6	40.6	38.4	36.7	37.3	36.8	37.8	39.4	41	40.5
Upper 95% Confidence Interval	42.5	41.7	43.3	44.9	45.0	42.6	40.7	41.3	40.8	41.9	43.6	45.2	44.7

Sources:
Colorectal Cancer (ICD10: C18-C20)
Mortality Source: National Records of Scotland (NRS); Data extracted: September 2011
Registrations Source: Scottish Cancer Registry, ISD Data extracted: July 2011

Figure 3.2: Colorectal cancer incidence rates for 1997/98 to 2008/09 and mortality rates for 1997/98 to 2008/09 for NHS Greater Glasgow and Clyde and Scotland



(Source: Scottish Cancer Registry, July 2011; National Records Scotland, September 2011)

Information systems

The bowel screening programme is supported by an in-house IT application. The data collected allows staff to monitor service performance and track patients through the process from point of referral to diagnosis and treatment for colorectal cancer. The application also enables staff to monitor progress against quality assurance standards and NHS Quality Improvement Scotland Standards.

Promoting uptake

The Keep Well programme incorporates advice and encourages eligible participants to take part in the bowel screening programme during the Keep Well health check.

What works to increase uptake of screening programmes are approaches that provide information but also explore attitudes, values, and develop skills and ways of addressing barriers to uptake.

Also engagement with, and empowerment of, the target group are key to a successful screening programme.

The Health Improvement Cancer Screening Group was set up to increase public awareness and encourage uptake of the three cancer screening programmes, including bowel. This group has representation from all local NHS Greater Glasgow and Clyde Health Improvement teams as well as NHS specialist health improvement teams for disadvantaged population groups, and the voluntary sector. The group meets regularly and has developed many local action plans that are regularly updated. Each representative on the group has responsibility to identify and prioritise their most vulnerable or hard to engage group. An identified need to address low uptake of screening with people with Learning Disabilities has resulted in a multi disciplined working group being established to look at developing additional support and resources. Screening workshops for staff groups and local road show events across NHS Greater Glasgow and Clyde were also organised for the whole population.

Working with other partners, training has been developed on Bowel Awareness and Bowel Screening. This course is available to key health and care employees to increase their knowledge and skills on these topics. This enables them to talk to patients, clients and community groups with greater confidence.

Equality Impact Assessment

An equality impact assessment carried out in March 2010 identified examples of good practice as well as areas for improvement. Examples included:

Good Practice:

- Where appropriate staff work with carers and relatives to ensure that the screening can be conducted and the relative/carer can stay with the patient at all times, if preferred

- Pre-colonoscopy tour of the hospital/ward is available for patients who have a learning disability (or are overly anxious). This helps patient to build up a relationship with the staff.

- Bowel Screening data is analysed to identify areas where uptake and health outcomes are poor. Data analysed by deprivation is useful to identify areas where more targeted health improvement initiatives are needed. Data has found that uptake is lowest among population groups living in most deprived areas.

Areas for improvement:

- A text number be made available for screening patients who are deaf.
- Further health improvement initiatives needed to improve uptake among men.
- To identify ways in which to record ethnicity data which is needed to determine uptake among black, minority and ethnic communities.

Challenges and future priorities

- Continue to monitor and audit the performance of the programme
- To encourage uptake of the programme through health promotion activities

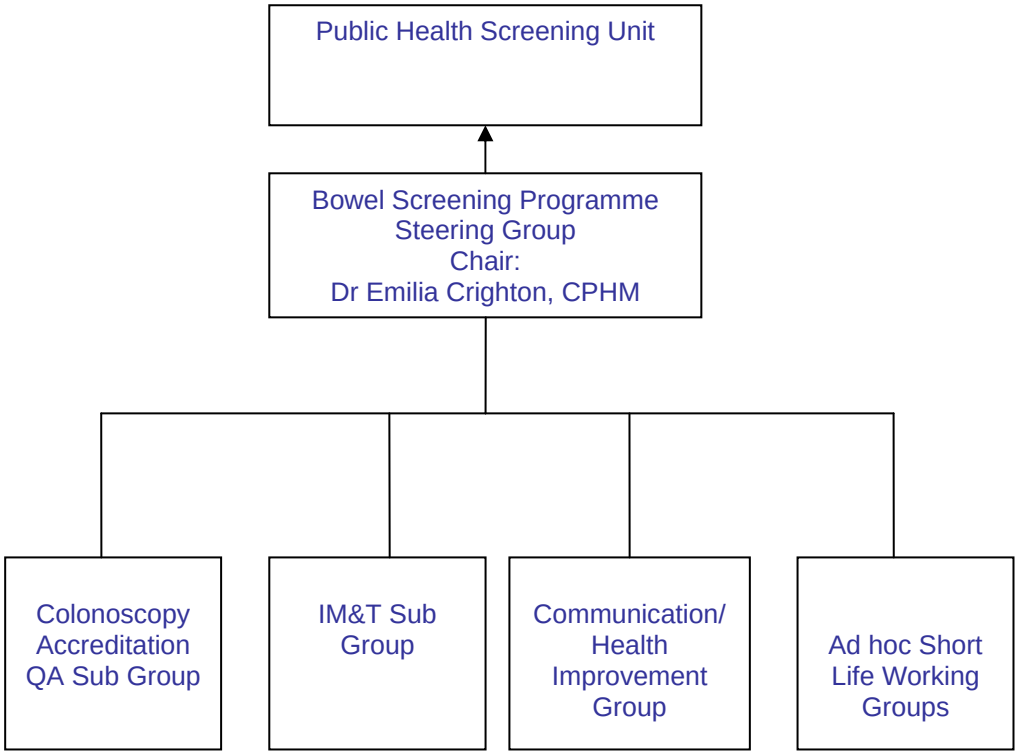
Appendix 3.1

Members of Bowel Screening Steering Group (As at March 2011)

Dr Emilia Crighton	Consultant in Public Health Medicine, Chair
Mr John Anderson	Consultant Surgeon
Mrs Margaret Anderson	Endoscopy Manager
Mrs Claire Donaghy	Health Improvement Senior
Dr Fraser Duthie	Lead Clinician for Pathology
Mr Ian Finlay	Consultant Surgeon - Bowel Screening Lead
Mr Patrick Finn	Consultant Colorectal and General Surgeon
Mrs Fiona Gilchrist	Assistant Programmes Manager, Screening Dept
Dr Derek Gillen	Lead Clinician for Endoscopy
Dr Rachel Green	Associate Medical Director, Laboratories & Diagnostics (from March 2011)
Mr Alan Hunter	General Manager
Mrs Maureen Kirkland	Lay Member
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Eleanor McColl	H&IT Service Delivery Manager
Ms Joyce McFadyen	Health Records Manager
Ms Susan McFadyen	Clinical Service Manager
Mr Nelson McFarlane	Clinical Service Manager
Mrs Tricia McKenna	Colorectal Nurse Endoscopist
Dr John Morris	Consultant Gastroenterologist
Dr Kenneth O'Neill	Clinical Director, South West CHP
Dr Fat Wui Poon	Lead Clinician for Radiology
Mrs Irene Ramsay	Lead Nurse
Mrs Rebecca Reid	Clinical Service Manager
Mrs Elizabeth Rennie	Programmes Manager, Screening Dept
Mrs Ann Wilson	General Manager – General Surgery, Urology and Endoscopy

Appendix 3.2

Reporting Structure:
Bowel Screening Programme



SUMMARY

CHAPTER 4: PREGNANCY SCREENING

- 16,603 women were booked to attend antenatal clinics across NHS Greater Glasgow and Clyde. 15,236 women were NHS Greater Glasgow and Clyde residents and 1,367 women lived outwith the Board area.

- Number of live births has gradually increased year on year from 12,375 in 2002 to 14,155 in 2010. This represents an increase of 14%, compared to 2002.

Communicable Diseases in Pregnancy Screening

- All pregnant women are offered screening for HIV, syphilis, hepatitis B and immunity to rubella as part of a national screening programme. Protocols covering each of the four communicable diseases have been developed and implemented throughout Greater Glasgow and Clyde.

- 16,603 pregnant women were referred for a first booking visit in Greater Glasgow and Clyde during 2010/11 and received information about the screening tests prior to attendance at this visit.

- Laboratory data indicates that the uptake of screening for communicable diseases in pregnancy has risen from last year and is now greater than 97% for all four communicable diseases.

- Ten women were identified as having HIV by the screening programme, only three of whom were previously known to be HIV positive. Seventy-five women were detected as having hepatitis B virus, 31 of whom were previously known to be chronic carriers of the virus. Twelve women were identified by the screening programme to be positive for syphilis and needed follow-up and treatment.

- As the majority of the women with HIV or HBV and all those with syphilis were not previously known to be infected, the detection of these women and the implications for their own health and the health of their babies are immense and illustrates the success of the screening programme. All infected women and their babies were offered appropriate treatment and care.

Down's syndrome and other congenital anomaly screening

- In 2010/11, 10,844 samples were tested for Down's syndrome. 2,143 samples were taken from women in their first trimester, and 9,483 samples were taken from women in the second trimester. 218 women chose test only for other fetal anomalies.

- Among those who had first trimester Down's syndrome screening, 4.2% of women were assigned to the 'higher chance' of Down's syndrome group and 0.1% to the 'higher chance' of trisomy 18/13 groupings.

- Following the second trimester Down's syndrome screening, 5.8% of women were assigned to the 'higher chance' of Down's syndrome group, 0.4% of women assigned to the 'higher chance' of trisomy 18 group and 2.4% of women with an elevated AFP giving a 'higher chance' of a neural tube defect.

- 457 amniocentesis samples were analysed by the Cytogenetics Laboratory.

- 41 abnormalities were detected (9% of samples) and 33 of those (7.2% of total tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

- 112 chorionic villus biopsies were analysed by the Cytogenetics Laboratory in 2010/11. 34 abnormalities were detected (30.4% of tests) and 29 of those (25.9% of tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

CHAPTER 4: PREGNANCY SCREENING

All pregnant women are sent information about the screening programmes.

Aim of screening programmes

Antenatal haemoglobinopathies screening aims to identify couples who are at risk of having an affected child and thereby offer them information on which to base reproductive choices. Screening for sickle cell disorders and thalassaemia should be offered to all women as early as possible in pregnancy, and ideally by 10 weeks.

Communicable diseases in pregnancy screening aims to ensure a plan for treatment and management for affected individuals and their babies. It allows treatment to be given, which can reduce the risk of mother to child transmission, improve the long-term outcome and development of affected children, and ensure that women, their partners and families are offered appropriate referral, testing and treatment.

Down's syndrome and other congenital anomalies screening aims to detect Down's syndrome and other congenital anomalies in the antenatal period. This provides women and their partners with informed choice regarding continuation of pregnancy. It also allows, where appropriate, management options (such as cardiac surgery or delivery in a specialist unit) to be offered in the antenatal period.

Eligible population

The programme is offered universally to all pregnant women at the first booking visit. Women are offered the tests, not because they have been at risk, but because they are pregnant.

The screening tests

Antenatal haemoglobinapthies screening: The pregnant woman and her partner are asked to complete a family origin questionnaire. The information from the questionnaire is used to assess the risk of either parent being a carrier for sickle cell and other haemoglobin variants. In addition, a blood test is taken at first antenatal booking to screen the woman for sickle cell, thalassaemia and other haemoglobin variants. Where testing shows that the woman is a carrier, the baby's father will also be offered a screening test.

Communicable diseases in pregnancy screening: Testing for infection with HIV, hepatitis B, syphilis and immunity to rubella is carried out at first antenatal booking when a blood sample is taken.

Screening for ***Down's syndrome and other congenital anomalies*** can be carried out using a number of different screening methods. The screening tests, using blood and ultrasound scans, together with maternal risk factors, are used to derive an overall risk of having a baby with Down's syndrome or a neural tube defect. Ultrasound scanning is used to look for other congenital anomalies.

Delivery of pregnancy screening programmes NHS Greater Glasgow and Clyde

16,603 women were booked to attend antenatal clinics across NHS Greater Glasgow and Clyde. **Table 4.1** shows that 15,236 women were NHS Greater Glasgow and Clyde residents and 1,367 women lived outwith the Board area.

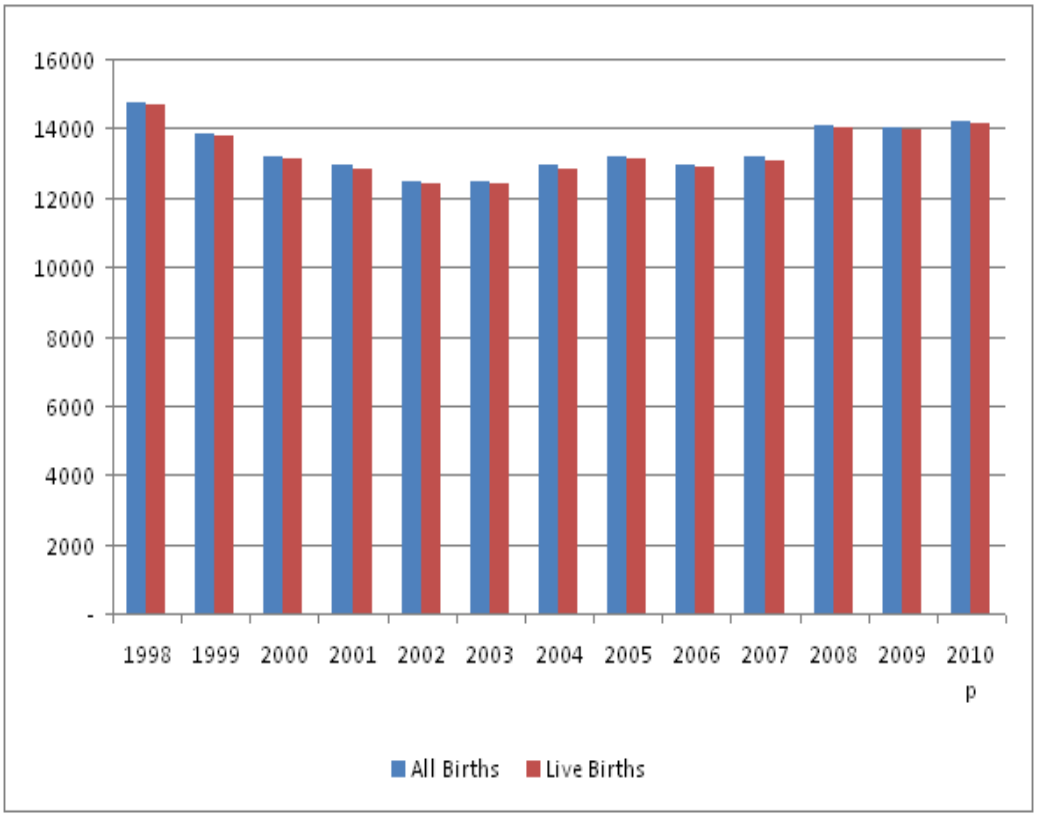
Table 4.1 Number of women booking antenatal clinics in NHS Greater Glasgow and Clyde from 1 April 2010 to 31 March 2011.

Hospital/Clinic Name	NHS GGC Residents	Non NHS GGC Residents	Total
Greater Glasgow:			
Baillieston HC	189	18	207
Bridgeton HC	355	0	355
Castlemilk HC	87	0	87
Easterhouse HC	308	2	310
Princess Royal Maternity	2734	578	3312
Gorbals HC	99	0	99
Kirkintilloch HC	218	1	219
Maryhill HC	174	1	175
Possilpark HC	8	0	8
Rutherglen HC	619	218	837
Southern General	5193	175	5368
Springburn HC	323	2	325
Stobhill Hospital	173	0	173
Victoria Infirmary	1473	35	1508
Sub Total	**11953**	**1030**	**12983**
Clyde:			
Royal Alexandra	1670	80	1750
Vale of Leven	537	194	731
Inverclyde Royal	1075	63	1138
Victoria Hospital Helensburgh	1	0	1
Sub Total	**3283**	**337**	**3620**
Total	**15236**	**1367**	**16603**

Source: SMR00

Figure 4.1 shows that the number of live births has gradually increased year on year from 12,375 in 2002 to 14,155 in 2010. (The number of births in 2010 is provisional.) This represents an increase of 14%, compared to 2002.

Figure 4.1: Number of live and still births across NHS Greater Glasgow and Clyde over a 10 year period from 1998 to 2010



Source: SMR02, ISD Scotland

1 - Excludes home births and births at non-NHS hospitals.

2 - Where four or more babies are involved in a pregnancy, birth details are recorded only for the first three babies delivered.

3 - Scotland data includes births where NHS board of residence is unknown or outside Scotland.

p - Provisional.

Delivery of antenatal haemoglobinopathies screening

Haemoglobinopathy screening was implemented in October 2010. It was not possible to provide activity data.

Delivery of Communicable Diseases in Pregnancy screening programme 2010/11

An estimate of the percentage uptake of each of the tests has been calculated by dividing the number requesting the test by the total number of samples.

The number of women referred for booking cannot be used as the denominator to calculate uptake as it is doesn't accurately represent the number of women who have been offered screening. Some women would not been offered screening because they have had an early pregnancy loss. A small number of women will transfer out of the health board area.

Table 4.2 below of results shows that uptake across NHS Greater Glasgow and Clyde is greater than 98% for all four of the screening tests.

Table 4.2 Communicable diseases tests and results for 2010/11

	Samples 2010/11				Results					
	Total number of samples	No. requesting individual test	No. not requesting individual test	Uptake	Antibody detected [1, 2, 3]		Antibody not detected [4]		Insufficient[5] or not tested	
	(N)	(N)	(N)	%	(N)	%	(N)	%	(N)	%
HIV	16416	16104	312	98.10	9	0.05	16061	97.84	33	0.20
HBV	16416	16179	237	98.56	75	0.46	5072	30.90	32	0.19
Rubella	16416	16389	27	99.84	15517	94.52	677	4.12	31	0.19
Syphillis	16416	16200	216	98.68	12	0.07	16157	98.42	31	0.19

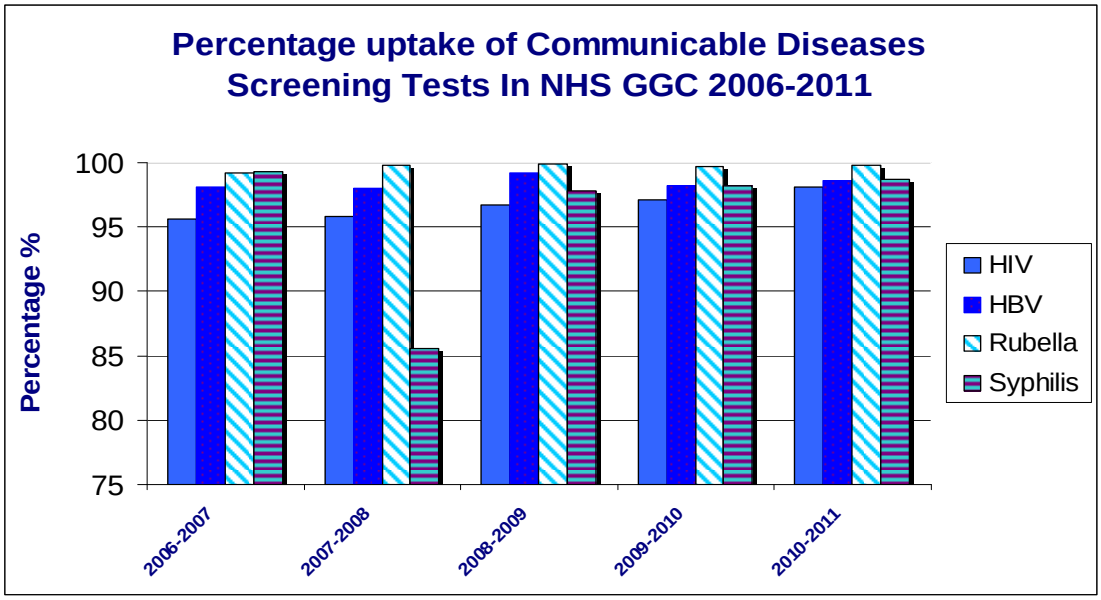
Sources: West of Scotland Regional Virus Laboratory; NHSGGC Microbiology Laboratories (Clyde)

Notes:

1. 4 of the 9 HIV infections were previously known about
2. 31 of the 75 HBV infections were previously known
3. Rubella antibody detected means that the woman is immune to rubella
4. No antibody detected means that the woman is susceptible to rubella and should be offered immunisation with MMR vaccine after delivery
5. Insufficient or not tested - although the test was requested, for various reasons, eg sample volume too small, the test could not be carried out. A repeat sample will be needed.

Figure 4.2 shows the steady improvement in uptake in screening for all infections since 2006. A problem with data retrieval from the lab systems in 2006/7 means that the low uptake of syphilis screening in that year cannot be taken as accurate. However, as the same level of positive cases were identified in that year as in other years indicates that the uptake was higher than indicated that year and that no cases of syphilis were missed.

Figure 4.2 Trends in uptake of communicable diseases tests from 2006/07 to 2010/11



Source: West of Scotland Regional Virus Laboratory and NHSGGC Clyde Microbiology Laboratories

Delivery of Down's syndrome and other congenital anomaly screening in NHS Greater Glasgow and Clyde

The decision to accept screening for Down's syndrome and other congenital anomalies raises particular moral and ethical issues for women. Uptake of Down's syndrome or other congenital anomalies screening depends on whether women would wish further investigation or management.

Table 4.4 shows that 10,844 samples were tested for Down's syndrome. 2,143 samples were taken from women in their first trimester, and 8,483 samples were taken from women in the second trimester. 218 women chose to test only for other fetal anomalies.

An estimate of the percentage uptake has been calculated by dividing the number of tests by the total number of women booked for maternity care (see **Table 4.3.**

Table 4.3: Uptake rate of Down's syndrome tests, and type of screening test for the period 2010/2011

Division	1st trimester CUBS		2nd trimester DS		2nd trimester only (with no previous CUBS)		Total number screened	Number Booked	Overall %
Clyde	1992	65.2%	446	14.6%	9	0.3%	2447	3056	80.1%
Greater Glasgow	151	1.4%	8037	76.6%	209	2.0%	8397	10497	80.0%
Total	**2143**	**15.8%**	**8483**	**62.6%**	**218**	**1.6%**	**10844**	**13553**	**80.0%**

Source: West of Scotland Regional Prenatal Screening Laboratory; SMR00

Note:

CUBS = combined ultrasound biochemical screening

DS = Down's Syndrome

In 2010/11, the overall uptake for Down's syndrome and other congenital anomalies was 80%. 1.6% of women chose to have only second trimester Down's syndrome screening.

All women are offered an anomaly scan at 18 – 20 weeks. Until April 2011, data on fetal anomaly scanning were recorded manually and, therefore, it was not possible to report on uptake.

Table 4.4 shows the number and proportion of women initially assigned to each of the 'higher chance' groups following the first trimester and second trimester screening Down's syndrome screening requiring diagnostic tests.

Among those who had first trimester Down's syndrome screening, 4.2% of women were assigned to the 'higher chance' of Down's syndrome group and 0.1% to the 'higher chance' of trisomy 18/13 groupings.

Following the second trimester Down's syndrome screening, 5.8% of women were assigned to the 'higher chance' of Down's syndrome group, 0.4% of women assigned to the 'higher chance' of trisomy 18 group and 2.4% of women with an elevated AFP giving a 'higher chance' of a neural tube defect.

Table 4.4: Number and proportion of women initially assigned to the 'higher chance' anomaly groups by type of screening tests

1st trimester Down's syndrome screening		
	N	%
- Higher Chance' of Down's syndrome	98	4.2
- Higher Chance' of Trisomy 18/13	3	0.1
2nd Trimester Down's syndrome screening		
	N	%
- Higher Chance' of Down's syndrome	466	5.8
- Higher Chance' of Trisomy 18	33	0.4
- NTD risk (AFP≥ 2.0 MOM)	194	2.4

Source: West of Scotland Regional Prenatal Screening Laboratory

NHS Quality Improvement Scotland Standards: Pregnancy and Newborn Screening 2005, recommends that less than 5-7% screening tests for Down's syndrome should be assessed as high risk tests for neural tube defects. Therefore, laboratory based screening in NHS Greater Glasgow and Clyde does achieve these standards.

Table 4.5 shows that 457 amniocentesis samples were analysed by the Cytogenetics Laboratory. Some women whose indication for amniocentesis has been recorded as "maternal age" have also been screened; however, it was not possible to separate the data.

41 abnormalities were detected (9% of samples) and 33 of those (7.2% of total tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

Table 4.5 Cytogenetics analysis of amniocentesis outcomes of samples by indication type for the period 1 April 2010 - 31 March 2011

	Biochemical Screening	Maternal Age	Abnormalities on Scan	Other	Total
Number of women (= number of tests)	303	72	51	31	457
% total referral reasons	66.3%	15.7%	11.2%	6.8%	100%
Number with normal results	282	71	34	28	415
Number with diagnostic trisomy	18	1	14	0	33
% number with diagnostic trisomy	5.9%	1.4%	27.5%	0.0%	7.2%
Number of other non trisomy abnormalities	3	0	3	2	8
Total number of abnormalities	**21**	**1**	**17**	**2**	**41**
% total number of abnormalities	**6.9%**	**1.4%**	**33.3%**	**6.5%**	**9.0%**

Source: NHSGGC Cytogenetics Laboratory

Table 4.6 shows that 112 chorionic villus biopsies were analysed by the Cytogenetics Laboratory in 2010/11. 34 abnormalities were detected (30.4% of tests) and 29 of those (25.9% of tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

Table 4.6 Cytogenetics analysis outcomes of chorionic Villus Biopsy samples by indication for the period 1 April 2010 to 31 March 2011

	Referral Type				
	Biochemical Screening	Maternal Age >35	Abnormalities on Scan	Other	Total
Number of women (= number of tests)	7	13	47	45	112
% total referral reasons	6.2%	11.6%	42.0%	40.2%	100%
Number with normal results	6	11	22	39	78
Number with diagnostic trisomy	1	2	24	2	29
% total with diagnostic trisomy	14.3%	15.4%	51.1%	4.4%	25.9%
Number of other non trisomy abnormalities	0	0	1	4	5
Total number of abnormalities	**1**	**2**	**25**	**6**	**34**
% total number of abnormalities	**14.3%**	**15.4%**	**53.2%**	**13.3%**	**30.4%**

Source: NHSGGC Cytogenetics Laboratory

Table 4.7 shows the number of cases of Down's syndrome and other congenital anomalies detected by screening in 2010/11.

Table 4.7: Number of abnormalities detected by screening[1]

Screening Test	Condition	Number
Second Trimester Down's syndrome sc	Down's Syndrome	10
	Trisomy 18	4
	Triploidy	2
Second Trimester Down's syndrome screening (AFP)	NTD	4
	Gastrochisis	1
First Trimester Down's syndrome screening	Down's Syndrome	5
	Trisomy 18	3
	Trisomy 13	2

Source: West of Scotland Regional Prenatal Screening Service

Note

1. The data is incomplete due to timescale (babies to women screened during this time are only just finished being born).

Turnaround time for laboratory results

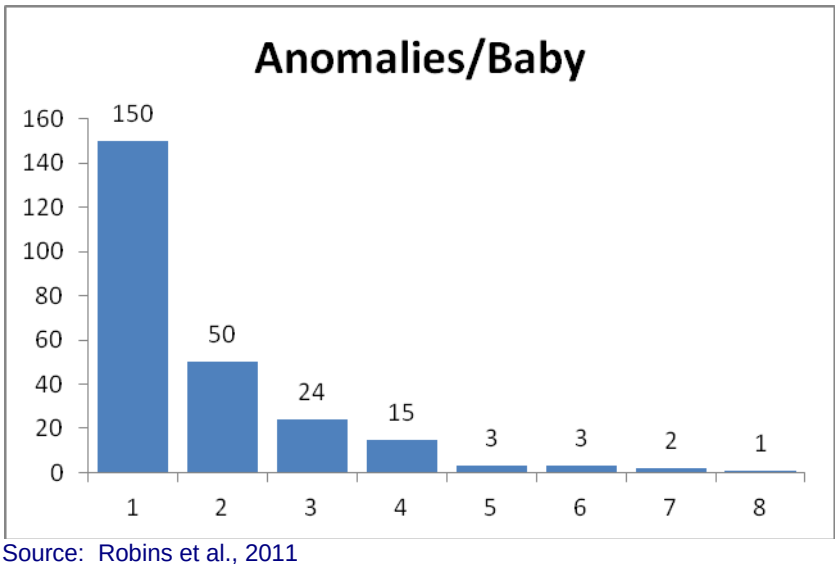
The turnaround time from a sample received in the laboratory to when a report is available is regularly monitored. The time from sample collection until a report is available is also monitored. For 2010/11, the average report time was 1.4 working days. In 97% of cases a report was available by 3 working days. Results which require follow-up testing are communicated to the requesting centre by fax or phone as soon as possible after the report has been checked and signed by a clinical scientist. Reports are available on clinical IT systems and hard copies are also sent out.

Congenital anomalies

A review of congenital abnormalities detected was carried out in 2010/11 (Robins, 2011). Considering all live-births, stillbirths and terminations between 1 April 2010 and 31 March, there were 248 individual records on the database, listed and ranked by primary abnormality (Robins et al., 2011).

Figure 4.3 shows that 371 abnormalities were detected. In 98 cases (40%), two or more abnormalities were seen. 122 primary abnormalities were detected in the prenatal period.

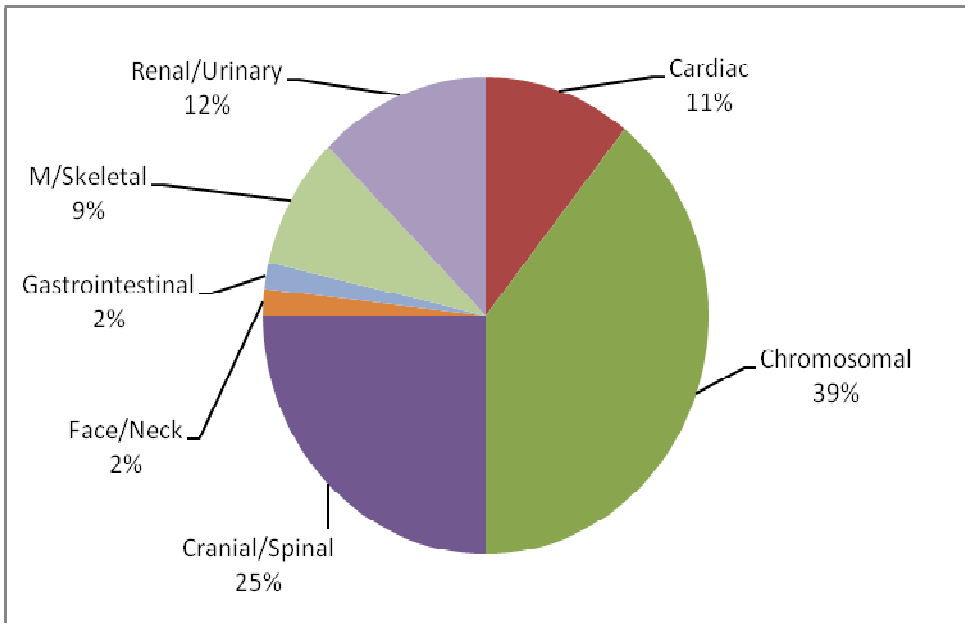
Figure 4.3 Number of babies with more or more congenital anomalies recorded



Source: Robins et al., 2011
Notes: includes live, stillbirths or terminations

Figure 4.4 gives a breakdown of the percentage of abnormalities found. The highest proportion of abnormalities detected were chromosomal (39%) and cranial/spinal (25%).

Figure 4.4: Fetal anomalies detected during the prenatal period



Source: Robins et al., 2011

Table 5.0 gives a breakdown of all live and still born birth outcomes from 1998 to 2010. Data for 2010 is provisional and shows that there were 14,155 live births and 62 stillbirths across NHS Greater Glasgow and Clyde.

Table 4.9 NHSGGC birth outcomes for period 1998 – 2010[p]

	All Births	Live Births	Still Births
2010 [p]	14220	14155	62
2009	14051	13974	76
2008	14095	14024	71
2007	13164	13093	71
2006	12944	12872	72
2005	13186	13111	75
2004	12923	12828	95
2003	12468	12401	67
2002	12442	12375	66
2001	12922	12844	77
2000	13190	13136	54
1999	13838	13761	77
1998	14749	14669	80

Source: SMR02

ISD Scotland

1 - Excludes home births and births at non-NHS hospitals.
2 - Where four or more babies are involved in a pregnancy, birth details are recorded only for the first three babies delivered.

3 - Scotland data includes births where NHS board of residence is unknown or outside Scotland.

p - Provisional.

Information systems

The IT application to support all pregnancy and newborn screening programmes, rolled out in 2009/10. The applications brought improvements in both the reporting and management of cases identified through the programme. It introduced additional failsafe mechanisms into the screening programme.

Future developments

NHS Greater Glasgow and Clyde will continue to audit activity and outcomes against the protocols to ensure that national standards are met and women identified as a result of the programme are offered appropriate treatment and care.

Challenges and future priorities

- There are well-established follow-up protocols for babies born to mothers infected with hepatitis B and regular audits are carried out to ensure effectiveness. For those mothers and their children affected by HIV, there is an annual HIV clinical audit, which reviews those HIV cases detected via the screening programme and examines where the protocol has been particularly successful or requires amendment.

- Women booking in NHS Greater Glasgow and Clyde are offered different screening tests for Down's syndrome and other congenital anomalies. The introduction of Down's syndrome screening in Glasgow has been delayed due to unsuccessful attempts to recruit to vacant sonographer posts. Six trainee sonographers are due to qualify in summer 2012 and, therefore, it is expected that Down's syndrome screening will be offered to all women by autumn 2012.

- An information management system is now in place to allow the delivery of the failsafe processes for all women working in NHS Greater Glasgow and Clyde. Usage and data quality will continually be monitored to identify and resolve the data anomalies so that ongoing audit and identification of any problems with protocol compliance are noticed and rectified in a timely manner.

- An equality impact assessment will be carried out in 2012.

Appendix 4.1

Members of Pregnancy Screening Steering Group

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Betty Adair	Lead Midwife
Louise Brown	West of Scotland Pregnancy Laboratory
Bruce Barnett	Assistant General Manager, Laboratory Medicine
Dr Margaret J Cartwright	Chief Biomedical Scientist
Dr Elizabeth Chalmers	Consultant Haematologist
Dr Rosemarie Davidson	Consultant Clinical Geneticist
Ian Fergus	Site Technical Manager, Diagnostics
Jane Gibb	Assistant General Manager, Laboratory
Elaine Gardiner	Lead Sonographer, Greater Glasgow and Clyde
Cathy Harkins	Lead Midwife
Marilyn Horne	Deputy Health Records Manager
Denise Lyden	Project Officer
Dr Alan Mathers	Clinical Director, Women's and Children's
Marie-Elaine McClair	Lead Midwife
Eleanor McColl	HI&T Screening Service Delivery Manager
Lesley McIlrath	General Service Manager,
Dr Louisa McIlwaine	Consultant Haematologist
Diane Paterson	Lead Midwife
Elizabeth Rennie	Screening Programmes Manager
Dr Jim Robins	Consultant Obstetrician, Clyde
Dr Su Stenhouse	Head of Molecular Genetics
Elizabeth Terrace	Clinical Service Manager
Joanne Thorpe	Lead Midwife (Argyll and Bute)
Margaretha Van Mourik	Consultant Genetic Counsellor
Irene Woods	Lead Midwife

Appendix 4.2

Members of Communicable Diseases Steering Sub Group (As at March 2011)

Dr Gillian Penrice	Public Health Protection Unit (Chair)
Ms Elizabeth Boyd	Clinical Effectiveness Facilitator
Dr David Bell	Consultant in Infectious Diseases
Dr Sheila Cameron	Consultant Clinical Scientist
Mrs Jacquie Campbell	General Manager
Mrs Louise Carroll	Programme Manager HIV/STIs
Ms Flora Dick	Special Needs (SNIPS) Midwife
Ms Catherine Frew	Data Analyst
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Dr Alan Mathers	Clinical Director Obstetrics and
Ms Victoria Mazzoni	Senior Community Midwife
Mrs Marie-Elaine McClair	Clinical Nurse Manager
Ms Christine McGee	Community Midwife
Mrs Diane Paterson	Lead Midwife
Ms Linda Rhodick	Medical Secretary/Data Co-ordinator
Dr James Robins	Consultant Obstetrician & Gynaecologist
Dr Andrew Thomson	Consultant Obstetrician & Gynaecologist
Mr Roger Wong	Clinical Co-ordinator

SUMMARY

CHAPTER 5: NEWBORN BLOODSPOT SCREENING PROGRAMME

- 14,231 babies resident in NHS Greater Glasgow and Clyde were screened, that is 97.6% of the total eligible population of 14,583.

- The uptake for babies born to residents in the most deprived areas was 97.9% and 97.6% for babies born to residents in the least deprived areas.

- Of the 352 (2.4%) not screened, only four refused screening, 315 moved in or out of the area and 33 babies died.

- Of the 15,326 bloodspot samples received in 2010/11, 15,280 were normal. 109 (0.7%) bloodspot specimens could not be analysed due to insufficient amounts of blood on the bloodspot card.

- There were four positive cases of phenylketonuria detected, four babies with congenital hypothyroidism, and ten babies with cystic fibrosis. One case of sickle cell and 4 other cases of sickle cell disorders were detected.

- 171 (1.1%) samples received had taken more than seven days to arrive at the laboratory due to a national postal strike.

- The number of bloodspot cards with a CHI number sent for analysis improved from 24% in 2007/08 to 92% in 2010/11.

CHAPTER 5: NEWBORN BLOODSPOT SCREENING PROGRAMME

Background

Newborn bloodspot screening for phenylketonuria (PKU) and congenital hypothyroidism (CHT) and cystic fibrosis (CF) is offered to live infants whose parents/guardians have consented. Screening for sickle cell disorders and medium chain acyl-CoA dehydrogenase deficiency (MCADD) were added to the newborn bloodspot screening programme in October 2010.

Aim of screening programme

The aim of the screening programme is to identify, as early as possible, abnormalities in newborn babies which can lead to problems with growth and development, so that they may be offered appropriate management for the condition detected. The diseases screened for are phenylketonuria which is found in around 1 in 8,000 babies born; congenital hypothyroidism which affects approximately 1 in 3,500; cystic fibrosis, an inherited condition affecting 1 in 2,500 babies born; sickle cell haemoglobinopathy, an inherited condition affecting 1.5 in 10,000 babies born and medium chain acyl-CoA dehydrogenase deficiency, a metabolic disorder affecting 1 in 10,000 babies born in Scotland.

Eligible population

All newborn babies of residents in NHS Greater Glasgow and Clyde are offered screening.

The screening test

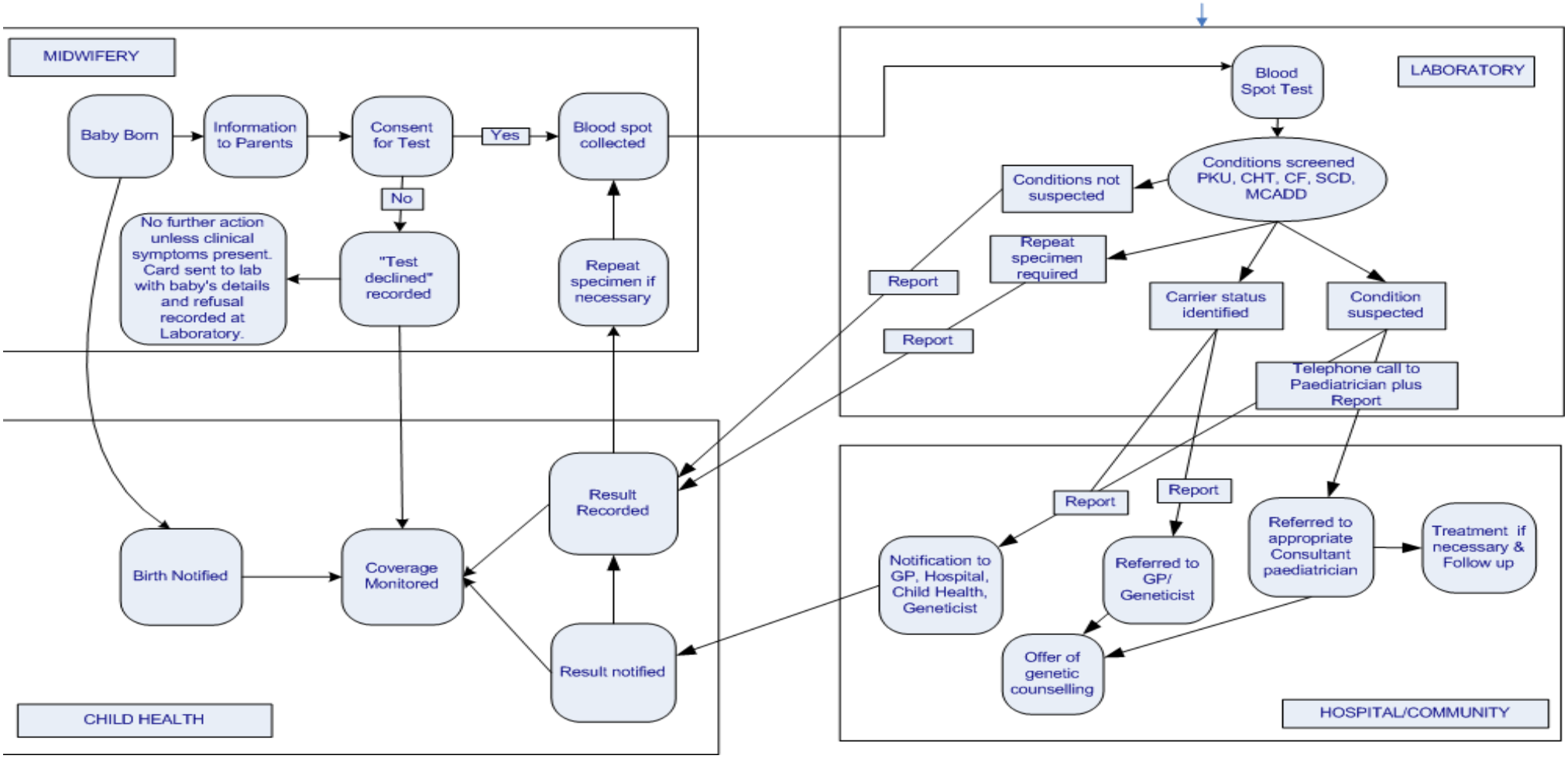
The bloodspot sample should be taken on day 5 of life whenever possible. There are separate protocols in place for screening babies who are ill, have a blood transfusion or are born prematurely and when repeat testing is required.

Blood is taken by the community midwife from the baby's heel using a blood letting device and collected on a bloodspot card consisting of special filter paper. It is then sent to the National Newborn Screening Laboratory in Yorkhill Glasgow for analysis. The blood is analysed for markers of the five conditions: phenylketonuria, congenital hypothyroidism, cystic fibrosis, sickle cell disorders and medium chain acyl-CoA dehydrogenase deficiency.

Screening pathway

The screening process requires excellent communication and co-ordination between the hospital and community midwifery service, the National Laboratory at Yorkhill, the Child Health Screening Department at Templeton and the paediatric service. The pathway is shown in **figure 5.1**.

Figure 5.1 Newborn Bloodspot Screening Pathway



Delivery of screening programme 2010/11

Figure 5.2 illustrates newborn bloodspot uptake rates and the results of the screening programme from 1 April 2010 to 31 March 2011.

14,231 babies resident in NHS Greater Glasgow and Clyde were screened, that is 97.6% of the total eligible population of 14,583.

Of the 352 (2.4%) not screened, only four refused screening, 315 moved in or out of the area and 33 babies died.

There were four positive cases of phenylketonuria detected, four babies with congenital hypothyroidism, and ten babies with cystic fibrosis. There was one positive case of sickle cell and four other cases of sickle cell disorders detected. All received appropriate management within the timescale of the set NHSQIS standards.

Table 5.1 shows that the percentage uptake rate of bloodspot screening is high across all CH(C)P areas and deprivation categories. The uptake for babies born to residents in the most deprived areas was 97.9% and 97.6% for babies born to residents in the least deprived areas.

Table 5.1: Percentage uptake of Newborn Bloodspot Screening by CH(C)P and deprivation category for the period 1 April 2010 to 31 March 2011.

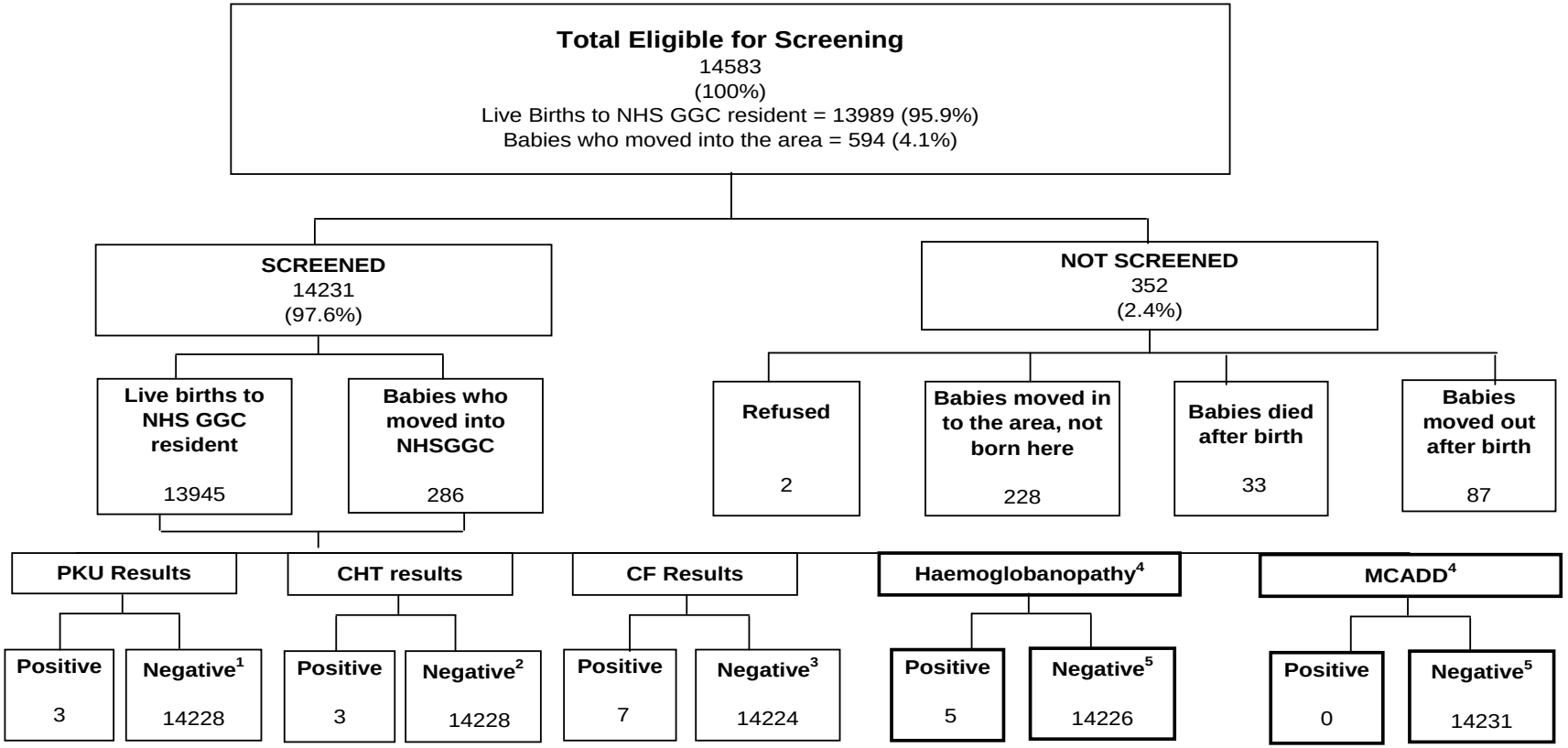
	Least Deprived		SIMD	Most Deprived		
CHP	**1**	**2**	**3**	**4**	**5**	**Total**
East Dunbartonshire	98.8	99.4	97.5	99.4	97.8	**98.3**
East Renfrewshire	100.0	98.8	97.9	96.4	98.5	**98.3**
Glasgow North East	97.7	95.5	95.3	96.8	98.1	**97.2**
Glasgow North West	98.2	97.6	94.8	94.6	95.9	**97.0**
Glasgow South	97.1	96.1	96.3	98.4	99.3	**97.0**
Inverclyde	99.0	98.2	97.1	97.3	95.9	**98.2**
North Lanarkshire[1]	92.9	100.0	100.0	97.6	100.0	**97.9**
Renfrewshire	98.0	98.1	99.1	97.6	97.6	**98.1**
South Lanarkshire[1]	96.9	98.1	93.3	99.4	100.0	**97.6**
West Dunbartonshire	99.5	99.4	97.8	100.0	100.0	**99.2**
Total	**97.9**	**97.6**	**96.6**	**97.6**	**97.6**	**97.5**

Source: Child Health; Extracted May 2011

SIMD=Scottish Index of Multiple Deprivation 2009
Note: 69 patients could not be assigned CH(C)P/SIMD due to incomplete/incorrect postcode

1. NHSGGC residents only

Figure 5.2: Summary of newborn bloodspot screening uptake for babies born on 1 April 2010 to 31 March 2011



Source: Child Health System extracted 10 May 2011; National Newborn Bloodspot Screening Laboratory[4,5]

1 Total includes 17 verifications

2 total includes 16 verifications

3 Total includes 2 carriers; 14 late tests; 16 verifications.

4 Haemoglobinopathy and MCADD - not a complete year - programme started 4 October 2010

5 Total includes 38 carriers

Figure 5.3 illustrates that uptake of the newborn bloodspot screening programme has remained high at an average of 97%.

Figure 5.3 trends in uptake of newborn bloodspot screening across NHS Greater Glasgow and Clyde from 2007 to 2011.

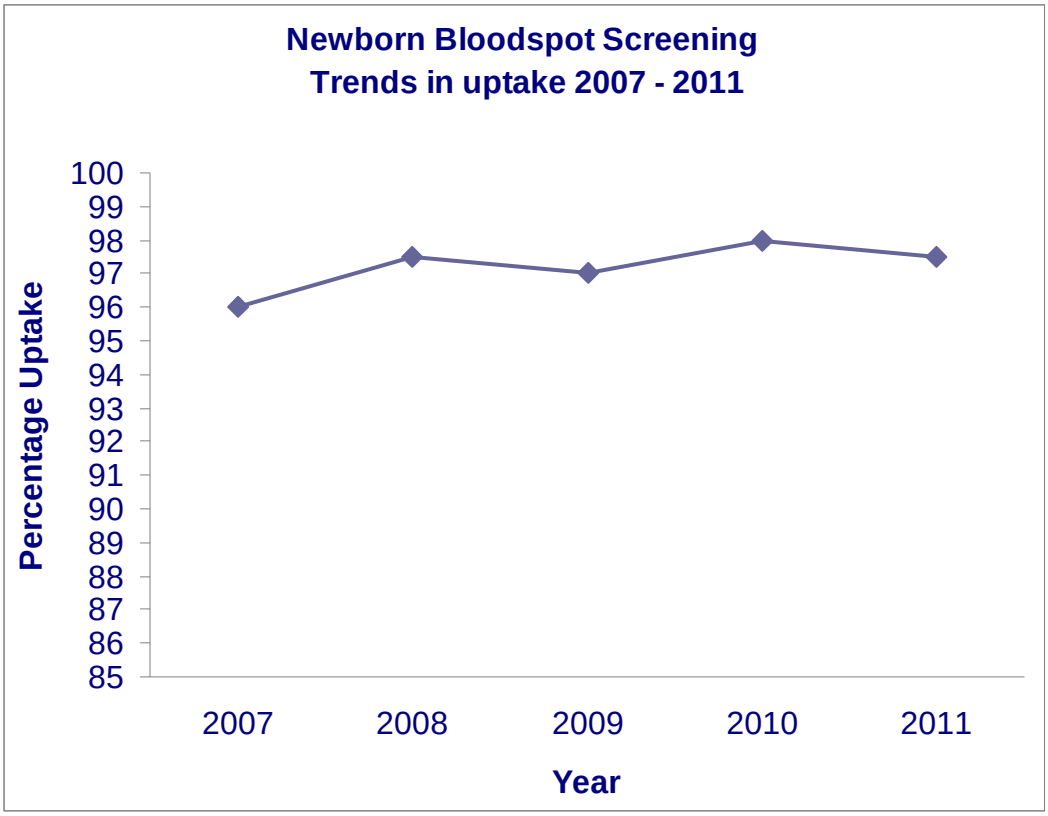


Table 5.2 illustrates the laboratory outcomes of blood spot tests (data could not be separated for Clyde and Argyle and Bute). In 2010/11, of the 15,326 bloodspot samples received, 15,280 were normal. 109 (0.7%) bloodspot specimens could not be analysed due to insufficient amounts of blood on the bloodspot card. That required repeat bloodspot screening tests to be carried out on babies. 171 (1.1%) samples received had taken more than seven days to arrive at the laboratory due to a national postal strike. Contingency plans were in place to transport samples using hospital transport or couriers during the adverse weather in December 2010.

National standards require that 95% of positive cases of congenital hypothyroidism and phenylketonuria start treatment by 14 days of age and of cystic fibrosis by 35 days of age. Therefore, the time from when a test is taken to the time of arrival at the laboratory is important.

Table 5.2: Specimen test outcomes for Greater Glasgow and Argyll and Clyde for period 1 April 2010 and 31 March 2011

Specimen tests outcomes	Argyll & Clyde	Glasgow	Total
Refused	3	2	**5**
Partial Refusal (CF)	0	14	**14**
Insufficient	20	89	**109**
Unsatisfactory:			
Expired cards	1	3	**4**
>14 days in transit	1	2	**3**
Other	0	3	**3**
Updated info	47	123	**170**
IRT Tested late (total)	6	9	**15**
IRT tested late (born in Scotland)	3	8	**11**
>7 days to reach the lab	35	136	**171**
Ref PKU	1	3	**4**
Ref CHT	0	3	**3**
Ref CF	3	7	**10**
Ref Carrier (CF)	0	1	**1**
Ref MCADD	0	0	**0**
Ref SCD	0	1	**1**
Ref SCD Carrier	1	11	**12**
Ref HbV	0	4	**4**
Ref HbV Carrier	0	11	**11**
Normal	4336	10944	**15280**
TOTAL TESTS	**4341**	**10985**	**15326**

Insufficient as % of total	0.5	0.8	0.7
Unsatisfactory as % of total	1.13	1.17	1.15
Expired cards as % of total	0.02	0.03	0.03
IRT tested late as % of total	0.14	0.08	0.10
IRT tested late (born in Scotland) as % of total	0.07	0.07	0.07
>7 days to reach lab as % of total	0.8	1.2	1.1

Notes

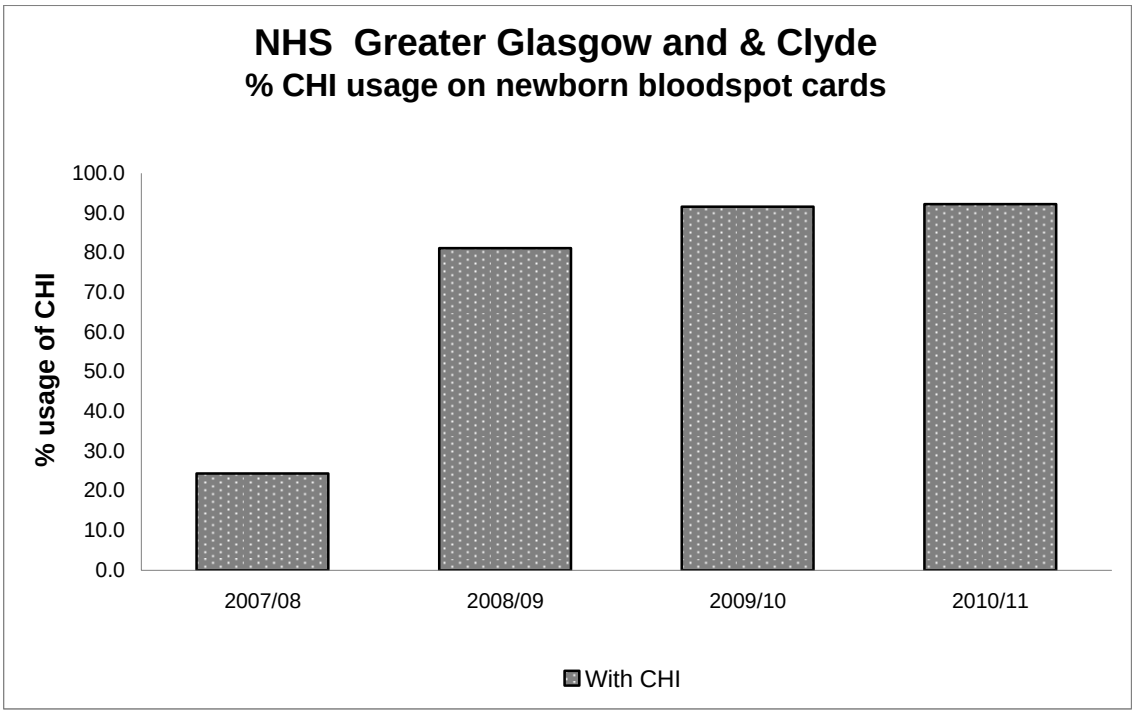
Unsatisfactory = specimen damaged or of poor quality
Updated information = cards that were received with incorrect or missing details. Results are not issued until the relevant information is received
IRT Tested Late = baby was more than 6 weeks of age when specimen was taken. The test for Cystic Fibrosis is not reliable after 6 weeks

Ref PKU = babies with high or persistently raised levels of phenylalanine that were referred to paediatricians for further investigations. Some of these may not be confirmed as cases of PKU
Ref CHT = babies with high or persistently raised levels of TSH that were referred to paediatricians for further investigations. Some of these may not be confirmed as cases of Congenital Hypothyroidism
Ref CF = babies suspected of having Cystic Fibrosis or babies referred for Sweat testing. Some of these cases may not be confirmed as cases of CF
Ref Carrier CF = babies referred as probable carriers of Cystic Fibrosis
Ref MCADD = babies with suspected MCADD referred to paediatricians for further investigations
Ref SCD = babies referred to haematologists with suspected Sickle Cell Disorder
Ref SCD Carrier = babies referred as suspected carriers of Sickle Cell Disorder
Ref HbV = babies referred to haematologists suspected of having a haemoglobinopathy disorder. These require follow-up for confirmation and some may not be confirmed as cases.
Ref HbV Carrier = babies referred as suspected carriers of a haemoglobinopathy disorder. Some of these have unidentified variants and may require follow-up for confirmation.

The use of the patient identifier number (called the Community Health Index (CHI)) on bloodspot cards has remained high.

Figure 5.4 illustrates the proportion of bloodspot cards with a CHI number received by the National Newborn Screening Laboratory for babies tested in Greater Glasgow and Argyll and Clyde. The number of bloodspot cards with a CHI number sent for analysis improved from 24% in 2007/08 to 92% in 2010/11.

Figure 5.4 Percentage of bloodspot screening sample cards received with a Community Health Index number



Source: National Newborn Screening Laboratory

Information systems

Information on Pregnancy and Newborn Bloodspot screening tests is provided by the National Laboratory's Information Management System and data are reported on the old former NHS Greater Glasgow and NHS Argyll and Clyde basis.

The results of the Bloodspot test are recorded against the individual child's record held within the Scottish Immunisation and Recall System (SIRS).

Challenges and future priorities

Maintain current levels of performance of the screening programme.

Appendix 5.1

Members of Newborn Bloodspot Screening Steering Group As at March 2011

Dr Emilia Crighton	Consultant in Public Health Medicine (chair)
Mrs Betty Adair	Clinical Lead Midwife
Ms Sarah Adam	Adult Metabolic Dietician
Mr Bruce Barnett	Assistant General Manager, Lab Medicine
Ms Elizabeth Callander	Lead Midwife
Dr Margaret J Cartwright	Chief Biomedical Scientist
Dr Elizabeth Chalmers	Consultant Haematologist
Dr Rosemarie Davidson	Consultant Clinical Geneticist
Dr Anne Devenny	Consultant Paediatrician
Ms Carolyn Dunlop	Paediatric Metabolic Dietician
Dr Peter Galloway	Consultant in Clinical Biochemistry
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Mrs Annie Hair	CHP Children's Services Lead
Mrs Cathy Harkins	Lead Midwife (Clyde)
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Joan MacKenzie	Laboratory Newborn Screening Co-ordinator
Mrs Eleanor McColl	Screening Service Delivery Manager
Mrs Julie Mullin	Assistant Programme Manager, Screening Dept
Mrs Diane Paterson	Lead Midwife
Mrs Elizabeth Rennie	Programme Manager, Screening Department
Dr Peter Robinson	Consultant Paediatrician in Metabolic Medicine
Dr Su Stenhouse	Head of Molecular Genetics
Dr Bernd Schwahn	Consultant Paediatrician in Metabolic Medicine
Dr Helen McTier	Consultant Neonatologist
Ms Maureen Taylor	Neonatology Clinical Services Manager
Ms Liz Terrace	Lead Midwife
Ms Joanne Thorpe	Lead Midwife (Argyll and Bute)
Mrs Margaretha van Mourik	Consultant Genetics Counsellor
Ms Irene Woods	Lead Midwife

SUMMARY

CHAPTER 6: UNIVERSAL NEWBORN HEARING SCREENING

- In 2010/11, 14,036 babies were born in NHS Greater Glasgow and Clyde.
- 13,611 were screened for hearing loss giving an uptake of 97%. The main reasons that 3% of babies were not screened was due to babies either moving into or out of the Board area; or did not turn up for screening.
- 1,549 babies required a second stage follow up and, of these, 200 (12.9%) babies were referred to audiology.
- 41 babies were confirmed with a hearing loss (0.3% of the screened population).

CHAPTER 6: UNIVERSAL NEWBORN HEARING SCREENING

Background

The Universal Newborn Hearing Screening (UNHS) Programme was introduced across NHS Greater Glasgow and Clyde in 2005.

The screening tests are carried out in maternity units for Greater Glasgow residents and in the community for Clyde and Argyll and Bute residents of NHS Highland.

One to two babies in every 1,000 are born with a hearing loss in one or both ears. It is not easy to identify that a young baby has a hearing loss. The objective hearing screening test allows those babies who do have a profound hearing loss to be identified early. Early identification is known to be important for the development of the child. It also means that support and information can be provided to parents at an early stage.

Aim of screening programme

The aim of the screening programme is the early detection of permanent congenital hearing impairment. In addition, babies with mild and unilateral losses are also being identified and receive ongoing review.

The screening test

There are two types of equipment used to screen babies' hearing in the Greater Glasgow and Clyde area. Automated Auditory Brainstem Response (AABR) is used in the hospital setting and Otoacoustic Emissions (OAE) are used in the community setting. In the hospital setting an AABR is used for both the first and second screening stages. In the community model OAEs are used for the first screening stage and both OAE and AABR are used for the second stage of screening.

Screening setting

There are two strands to the Greater Glasgow and Clyde screening protocol. In Greater Glasgow, the majority of screening takes place in the maternity unit at the mother's bedside. In the Clyde, most of the screening takes place in the baby's home. There are outpatient clinics at Princess Royal, Southern General and Royal Alexandra Maternity hospitals as well as Inverclyde and Vale of Level Community Midwifery Units. The units cover babies who require a second screen, babies discharged within six hours of birth, babies born at home, and babies who transfer into the area.

Benefits of programme

Evidence suggests that early identification and treatment of babies with hearing loss is beneficial and the programme is being continuously evaluated to confirm this. Prior to the introduction of the NHS Greater Glasgow and Clyde Universal Newborn Hearing Screening programme, bilateral hearing impairment was identified on average at 17 months of age. Since the programme's introduction, the age of identification has been lowered to less than three months allowing appropriate intervention to take place before the critical age of six months.

Screening pathway

In Greater Glasgow, the hearing screen is carried out by dedicated hearing screeners, based in the maternity units, when the baby is one to two days of age. If babies do not obtain clear responses in both ears at this stage they are re-screened either whilst still in the maternity unit or at an outpatient clinic. If no clear responses are obtained again then at this stage babies are referred on to the audiology department at the Royal Hospital for Sick Children (RHSC) for diagnostic testing.

In Clyde, the hearing screen is carried out by health visitors in the baby's home within six to 12 days of birth. If babies do not obtain clear responses in both ears at this stage they are referred to the UNHS hub in Royal Alexandra Hospital for further testing. If no clear responses are obtained at this stage then babies are referred on to their local Audiology Department for further testing.

There is also a pathway for risk factor identification and ongoing surveillance for the Special Care baby Units and Neonatal Intensive Care Units and this is incorporated into the clinical staff training programme.

Delivery of the screening programme 2010/11

Eligible population

The screening programme covers all babies born to Greater Glasgow and Clyde residents and any babies moving into the area who are aged less than six months. Babies who are resident from other NHS Board areas but are born in NHS Greater Glasgow and Clyde are also screened by NHSGGC screeners.

In 2010/11, 14,036 babies were born in NHS Greater Glasgow and Clyde (see **figure 6.1**).

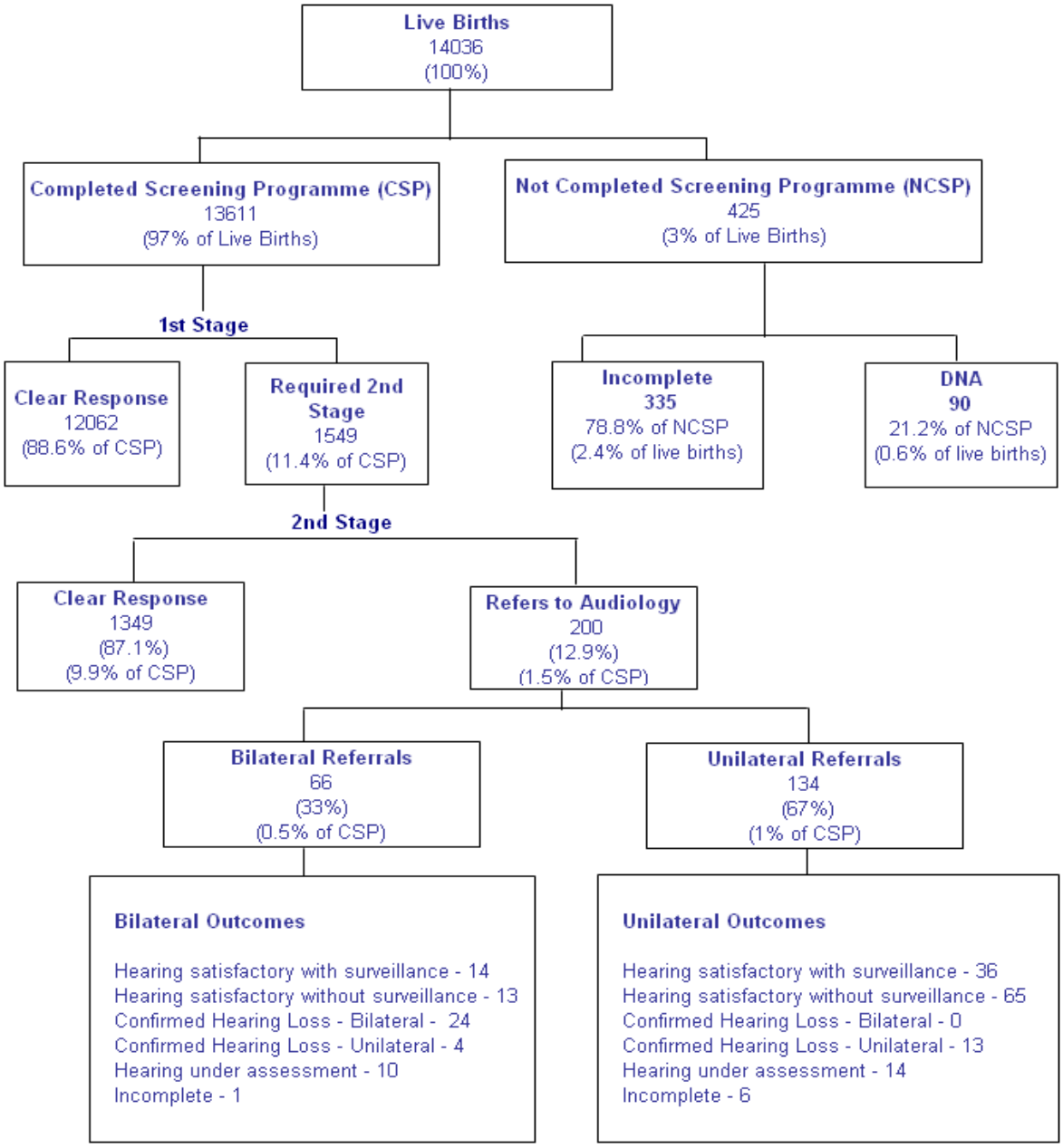
Uptake of the screening programme

Figure 6.1 illustrates the hearing screening activity. Of the 14,036 babies born, 13,611 were screened for hearing loss giving an uptake of 97%. 1,549 babies required a second stage follow up and, of these, 200 (12.9%) babies were referred to audiology. 41 babies were confirmed with a hearing loss (0.3% of the screened population). 425 (3%) babies did not complete the screening programme. These include babies who did not attend for screening, are deceased or have moved away from their current home address or transferred to another Board area.

Figure 6.2 illustrates the activity for the service in Greater Glasgow and **Figure 6.3** illustrates the activity for the service delivered in Clyde.

Data could not be extracted to analyse uptakes rates by CH(C)P or deprivation categories.

Figure 6.1: Summary of UNHS uptake and results for period 1 April 2010 to 31 March 2011: NHS Greater Glasgow and Clyde



Definitions

1st Stage - is first AABR for Glasgow and the first OAE for Clyde

2nd Stage - is the second AABR for Glasgow and the second OAE and first AABR for Clyde

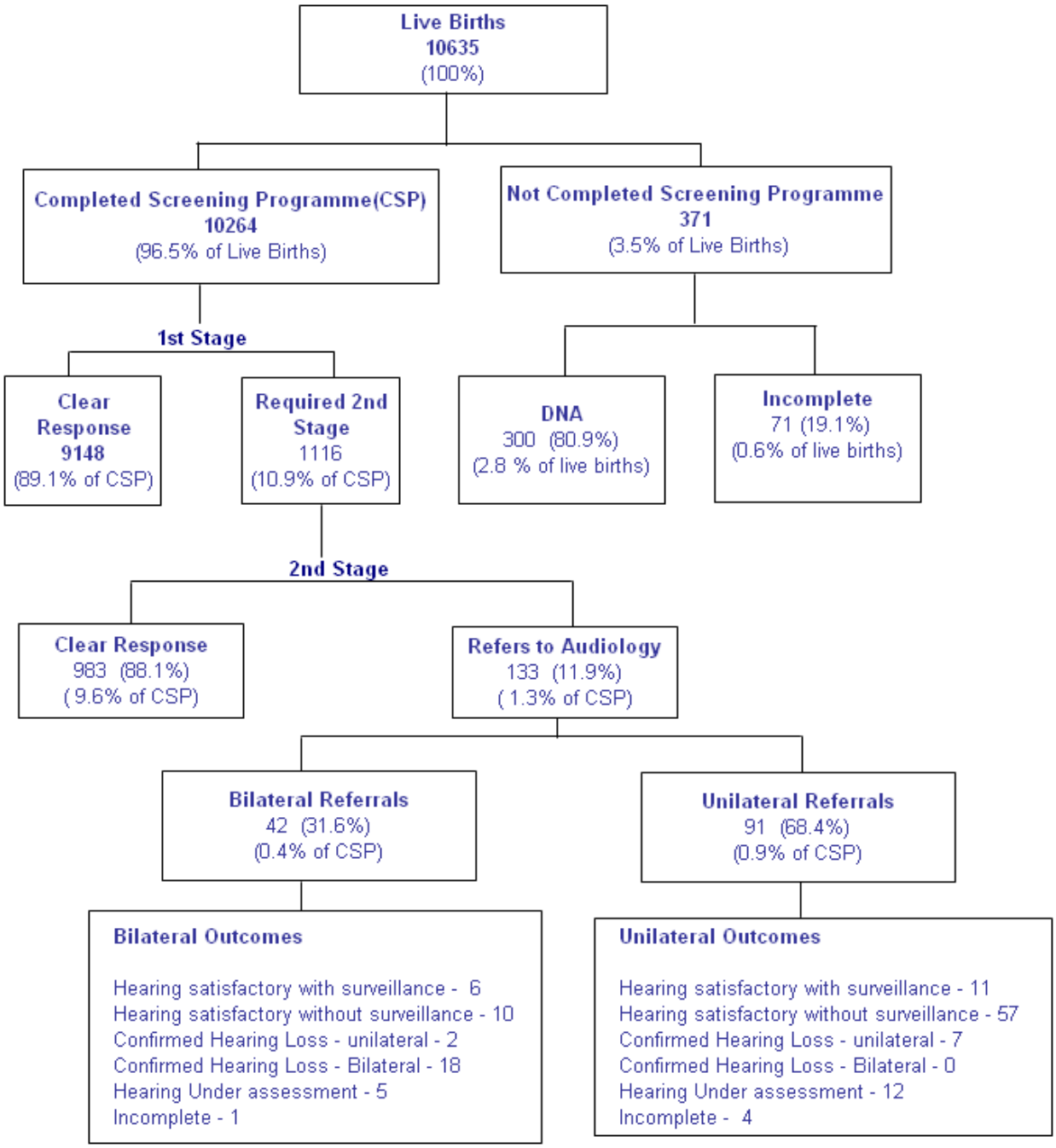
Results Pending - Includes all those babies who we are still trying to complete the screen

Incomplete/Not Completed - all all those babies we cannot complete a screen for ie DNA's, deceased, transferred out or moved away etc

Clear Response - is a pass, though some have follow up but majority don't

Outcomes - as agreed with undefined being better wording for the possible hearing loss and incompletes including DNA, deceased and pendings etc.

Figure 6.2: Summary of UNHS uptake and results for period 1 April 2010 to 31 March 2011: Greater Glasgow



Definitions

1st Stage - is first AABR for Glasgow and the first OAE for Clyde

2nd Stage - is the second AABR for Glasgow and the second OAE and first AABR for Clyde

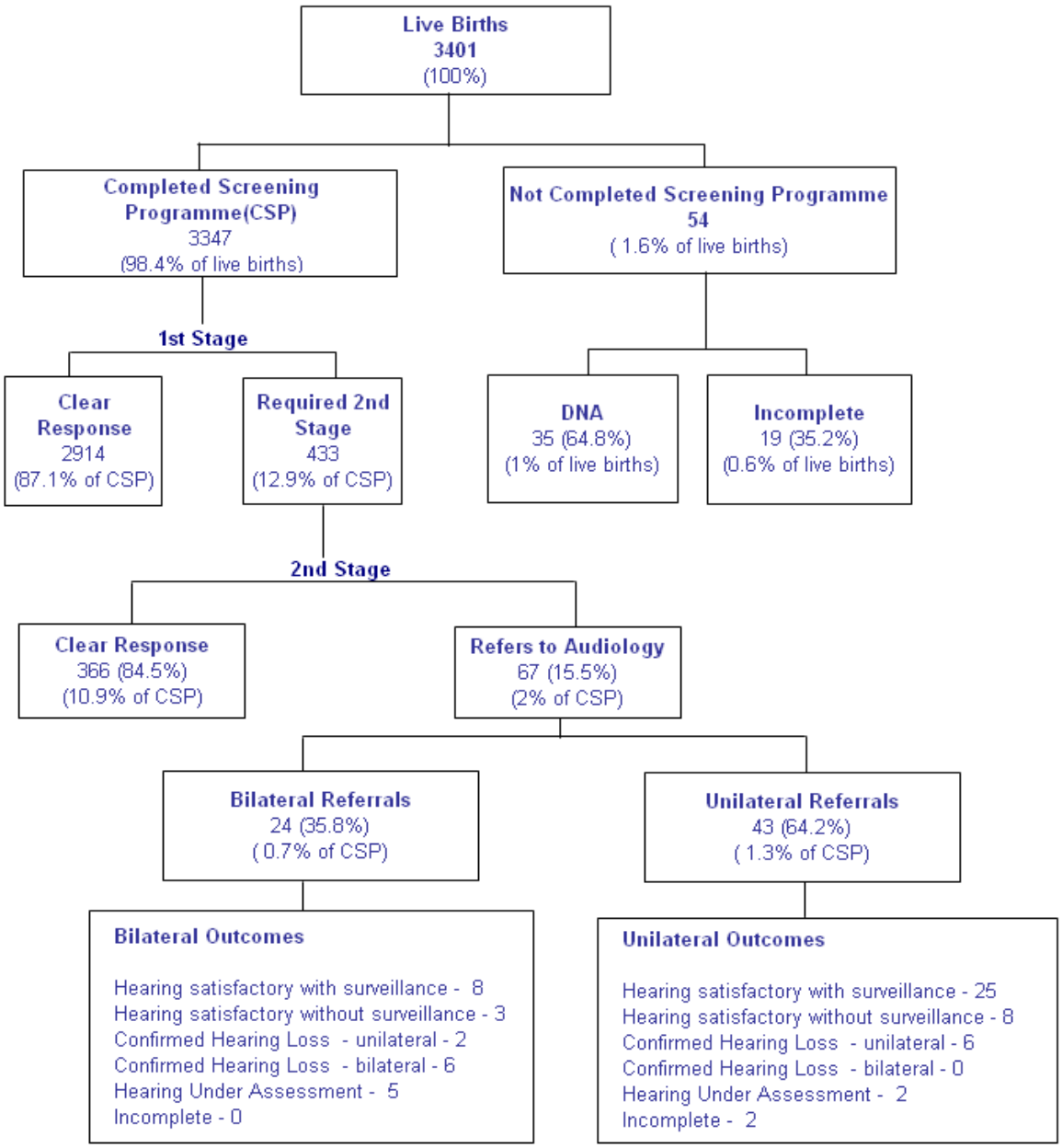
Results Pending - Includes all those babies who we are still trying to complete the screen

Incomplete/Not Completed - all all those babies we cannot complete a screen or diagnostic assessment for ie DNA's, deceased, transferred c or moved away etc

Clear Response - is a pass (though some have followed up due to risk factors)

Hearing under assessment - all babies who have referred from the screen and their diagnostic assessment is ongoing

Figure 6.3: Summary of UNHS uptake and results for period 1 April 2010 to 31 March 2011: Clyde



Definitions

1st Stage - is first AABR for Glasgow and the first OAE for Clyde

2nd Stage - is the second AABR for Glasgow and the second OAE and first AABR for Clyde

Results Pending - Includes all those babies who we are still trying to complete the screen

Incomplete - all all those babies we cannot complete a screen for ie DNA's, deceased, transferred out or moved away etc

Clear Response - is a pass, though some have follow up but majority don't

Outcomes - as agreed with undefined being better wording for the possible hearing loss and incompletes including DNA,deceased and pendings etc.

Information systems

The hearing screening programme is supported by a web based IT application – eScreener Plus (eSP) Northgate Newborn Hearing Screening - into which all screening results and demographic data are entered.

The Child Health Surveillance Programme Pre-School system (CHSP-PS) is also an important feature of the screening programme recording screening outcomes and is used as a failsafe to ensure all babies are offered hearing screening.

Following a 'value for money' exercise of current IT provision, it was agreed that a more efficient and cost effective IT solution would be to develop the existing national Scottish Birth Record (SBR) to include a screen to record hearing screening results. This would reduce the replication of data. It is planned that the new module will replace eSP by April 2012.

Challenges and future priorities

- Maintain service performance and ensure that all babies are offered a hearing screening test within the first four weeks of life, and complete screening by 10 weeks of age.
- To ensure completion of UNHS-SBR module by April 2012.
- To implement a single management structure for the NHS Greater Glasgow and Clyde Universal Newborn Hearing Screening services by spring 2012.

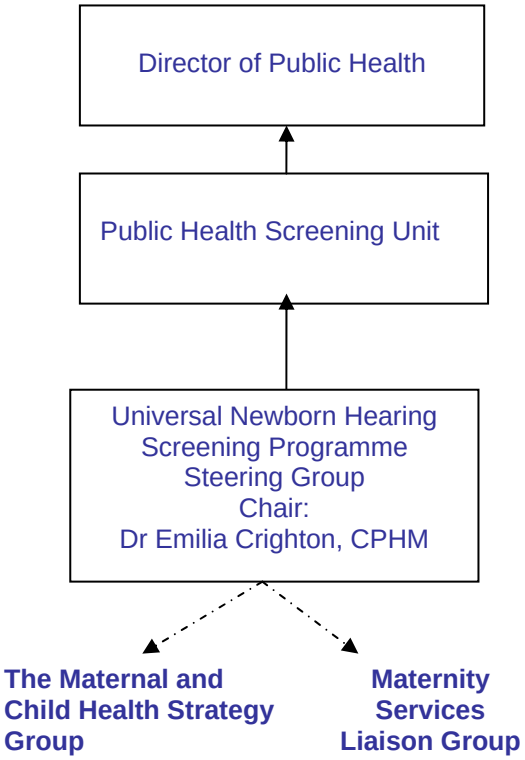
Appendix 6.1

Universal Newborn Hearing Screening Programme Steering Group (As at March 2011)

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Mrs Betty Adair	Lead Midwife
Karen Boyle	Acting Newborn Hearing Screening Manager
Jillian Brown	Health Visitor, West Dunbartonshire CHP
Ms Elizabeth Callander	Lead Midwife
Mrs Patricia Carmichael	Paediatric Audiology Services Manager
Ms Linda Clarke	Clinical Service Manager, Renfrewshire CHP
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Mrs Annie Hair	CHP Children's Services Lead
Mrs Leigh Hamilton	Newborn Hearing Screening Manager
Mr James Harrigan	Head of Audiology
Ms Anne Jamieson	Senior Nurse, Inverclyde CHCP
Mr Forbes Lauder	Head of Audiology
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Eleanor McColl	Screening Service Delivery Manager
Dr Juan Mora	Consultant Audiological Physician
Mrs Julie Mullin	Assistant Programme Manager, Screening Dept
Dr Craig Murray	ENT Consultant
Dr Andrew Powls	Consultant Neonatologist
Ms Jan Savage	National Deaf Children's Society
Ms Vivien Thorpe	Health Visitor, Argyll & Bute
Mrs Jacqueline Truss	Audiologist Team Leader
Dr Madeline White	Consultant Neonatologist
Ms Heather Young	Family Support

Appendix 6.2

Reporting Structure:
Universal Newborn Hearing Screening Steering Group



Key:

_____ Direct Reports

- - - - - - - Network Links

SUMMARY

CHAPTER 7: DIABETIC RETINOPATHY SCREENING

- There were 57,715 NHS Greater Glasgow and Clyde residents with a diagnosis of diabetes in 2010/2011. This represents an overall increase of 10% from 2009/10. The current prevalence of diabetes among NHS Greater Glasgow and Clyde residents is 5.5%.

- 49,020 (89.8%) were eligible for screening. Of those, 89.6% (44,037) were screened. This means that in total 76.3% of total diabetic population in NHS GGC were screened in 2010/11. 8,695 (15%) people were not eligible for screening because they were either permanently or temporarily suspended from the programme. The main reason for suspension from screening was ongoing ophthalmology care following attendance in diabetic retinopathy screening.

- Of the total number of residents screened (44,037), 1,494 were referred to Ophthalmology for further investigation.

- 23,492 (40.7%) of the total population with diabetes in NHS GGC are known to be resident in the most deprived areas compared to 8,237 (14.2%) who live in the least deprived areas. The largest proportion of people with diabetes was among the 50 – 79 year olds. This represents 70% (40,484) of the total population with diabetes.

- The overall uptake of 89.8% was also higher than the national average of 84.8% (Scottish Diabetic Retinopathy Screening programme Annual Report 2010-2011).

CHAPTER 7: DIABETIC RETINOPATHY SCREENING

Background

Diabetic Retinopathy is a complication of diabetes affecting blood vessels of the retina and is the biggest single cause of blindness and visual impairment amongst working age people in Scotland. Retinopathy is symptom-free until its late stages and programmes of retinal screening can reduce the risk of blindness in a diabetic population by detecting retinopathy at a stage at which it may be effectively treated. If it is detected early enough, laser treatment can prevent the progression of the disease and save sight for many years in most patients.

Aim of screening programme

The primary aim of the programme is the detection of referable (sight-threatening) retinopathy.

A secondary aim is the detection of lesser degrees of diabetic retinopathy. This can have implications for the medical management of people with diabetes.

Eligible population

All people with diabetes aged 12 and over who are resident in the NHS Greater Glasgow and Clyde area are eligible for Diabetic Retinopathy Screening.

The screening test

In the first instance a digital photograph is taken of the individual's retina. If the photograph cannot be graded then a further slit lamp examination will be performed.

Clinic Setting

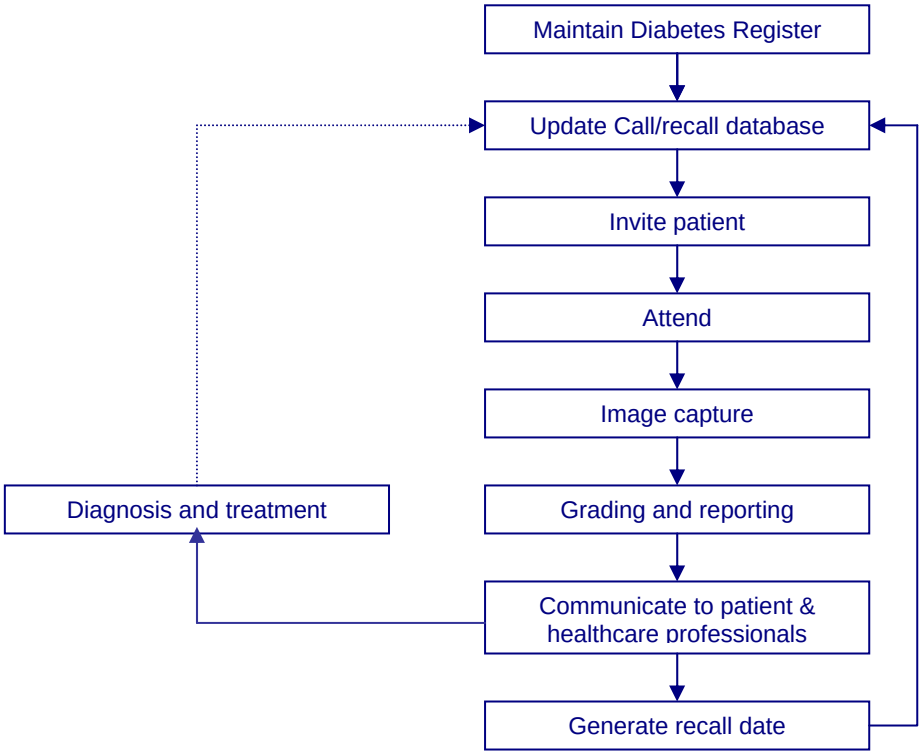
The screening programme takes place in a variety of settings. This can either be at a fixed site or within a mobile screening unit, which visits health centres and other locations around the area. Across Greater Glasgow and Clyde there were six fixed site locations and four mobile screening units.

The service also provides a slit lamp service from their fixed sites for patients who are not suitable for retinal photography.

Foreseen benefits of programme

To identify and treat sight threatening diabetic retinopathy.

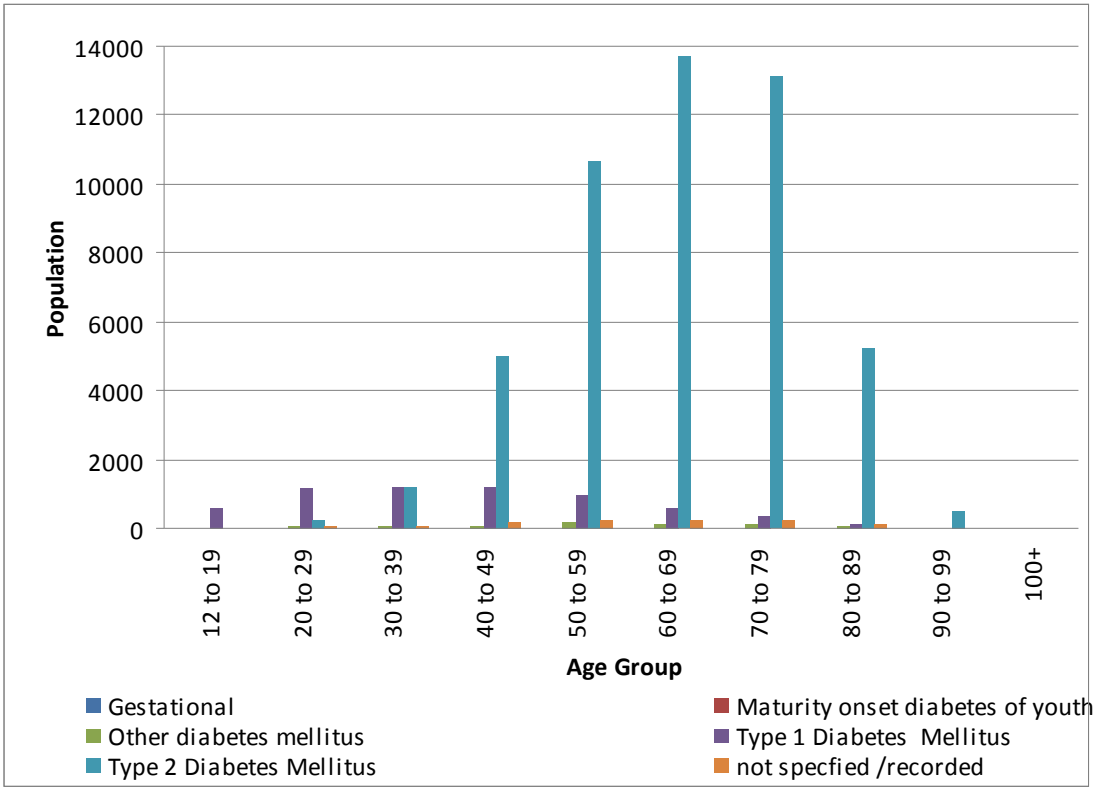
Figure 7.1 illustrates the Diabetic Retinopathy screening pathway



Delivery of Screening Programme 2010/11

There were 57,715 NHS Greater Glasgow and Clyde residents with a diagnosis of diabetes in 2010/2011 **(Figure 7.2)**. This represents an overall increase of 10% from 2009/10. The current prevalence of diabetes among NHS Greater Glasgow and Clyde residents is 5.5% **(Table 7.1).**

Figure 7.2 Classification of diabetes for the total diabetic population



Source: Soarian, extracted August 2011

The number of patients with diabetes in NHS Glasgow & Clyde increases with age and peaks between 60-69 years. With increasing age there is a shift in the classification of diabetes.

Figure 7.2 also shows that the majority of people with diabetes who are under 30 years old have Type 1 diabetes. With increasing age the burden of disease is due to Type 2 diabetes. The public health importance of this is that type 2 diabetes is largely preventable and is associated with lifestyle factors such as diet, exercise and obesity.

Table 7.1 shows the prevalence of diabetes by CH(C)P and the split by type of diabetes.

Table 7.1 Number of patients with diabetes in NHS Greater Glasgow and Clyde by type of diabetes and CH(C)P

CH(C)P	Total Population[1]	Type 1 Diabetes Mellitus	Type 2 Diabetes Mellitus	Other diabetes mellitus	Unspecified[2]	Total Diabetic Population	% Prevalence
East Dunbartonshire	91,377	529	3832	44	85	4490	4.9%
East Renfrewshire	75,285	448	3206	43	48	3745	5.0%
Glasgow North East	156,548	900	7840	135	170	9045	5.8%
Glasgow North West	171,121	925	7116	103	157	8301	4.9%
Glasgow South	191,236	1105	9742	113	310	11270	5.9%
Inverclyde	69,713	414	3453	67	56	3990	5.7%
North Lanarkshire [3]	16,628	91	755	13	9	868	5.2%
Renfrewshire	147,840	925	7233	84	124	8366	5.7%
South Lanarkshire [3]	50,301	299	2385	34	25	2743	5.5%
West Dunbartonshire	78,586	519	3931	42	83	4575	5.8%
Unassigned[4]		50	232	19	21	322	
NHSGGC Total	**1,048,635**	**6205**	**49725**	**697**	**1088**	**57715**	**5.5%**

Source: SOARIAN Date extracted: August 2011

[1] Total Population aged over 12 years old

[2] Unspecified: No type of Diabetes recorded

[3] NHSGGC residents only

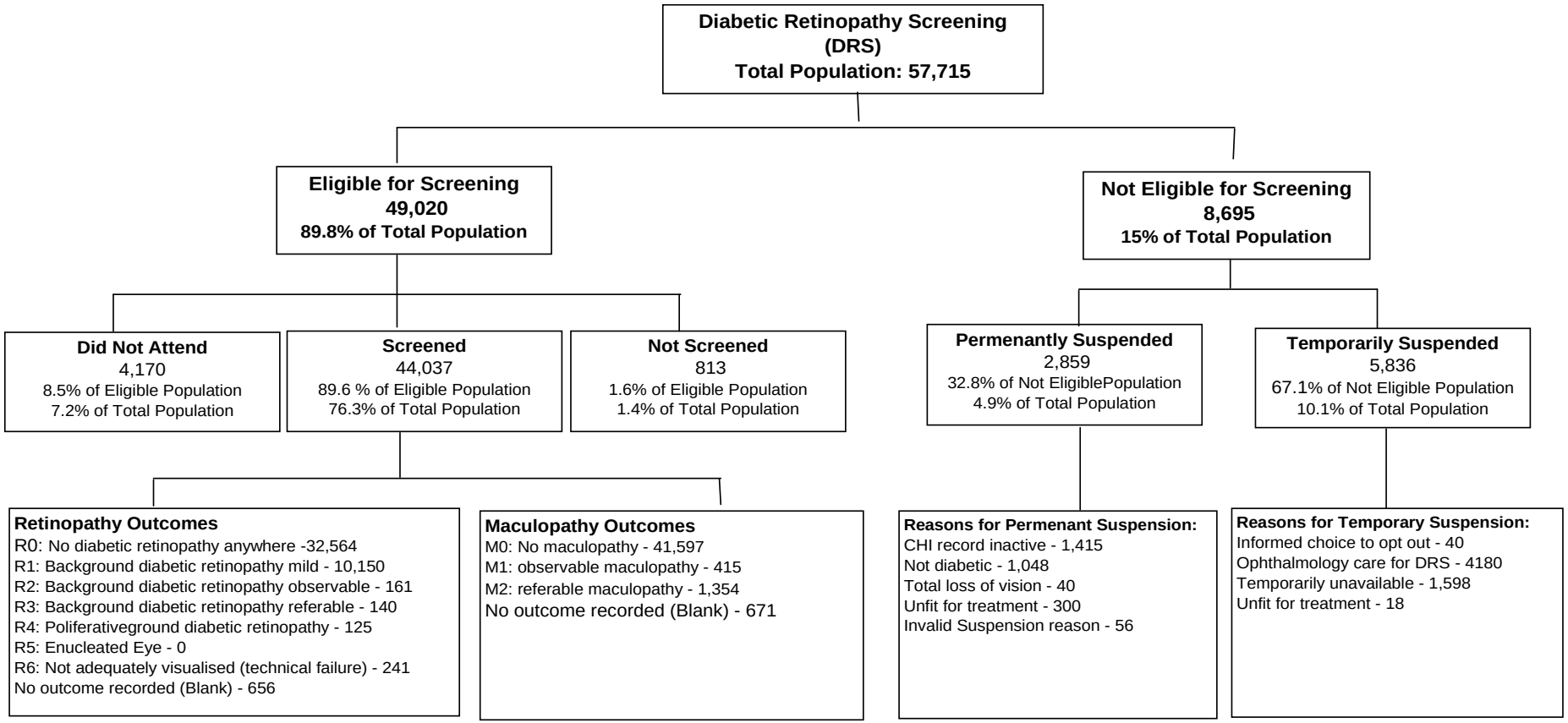
[4] Unassigned: Incomplete or incorrect postcode - unable to assing CHP

Figure 7.3 illustrates the summary of the NHS Greater Glasgow and Clyde Diabetic Retinopathy Screening programme for the period 1 April 2010 to 31 March 2011.

Of the 57,715 patients with diabetes, 49,020 (89.8%) were eligible for screening. Of those, 89.6% (44,037) were screened. This means that in total 76.3% of total diabetic population in NHS GGC were screened in 2010/11. 8,695 (15%) people were not eligible for screening because they were either permanently or temporarily suspended from the programme. The main reason for suspension from screening was ongoing ophthalmology care following attendance in diabetic retinopathy screening.

Of the total number of residents screened (44,037), 1,494 were referred to Ophthalmology for further investigation.

Figure 7.4: Summary uptake and results of NHS Greater Glasgow and Clyde Diabetic Retinopathy Screening Programme for period 1 April 2010 to 31 March 2011



Source: Soarian Data extracted: August 2011

Notes:

1. Screened assumptions: It has been assumed that patients who had dates outwith the current screening financial year (ie 2010/11) were screened within the financial year being reported on.
2. Age of patient has been calculated as 31 March 2011.

Table 7.3 shows the distribution of the population with diabetes across deprivation categories and by age group. 23,492 (40.7%) of the total population with diabetes in NHS GGC are known to be resident in the most deprived areas compared to 8,237 (14.2%) who live in the least deprived areas. The largest proportion of people with diabetes was among the 50 – 79 year olds. This represents 70% (40,484) of the total population with diabetes.

Table 7.3 Number of people with diabetes by age group and deprivation categories

	Most Deprived				Least Deprived			
Age Group	**1**	**2**	**3**	**4**	**5**	**nassigned**	**Total**	**% Most deprived (SIMD=1)**
12 to 19	234	105	97	87	118	5	646	36.2%
20 to 29	577	269	244	188	214	14	1506	38.3%
30 to 39	1163	492	350	283	279	23	2590	44.9%
40 to 49	2869	1249	892	677	707	55	6449	44.5%
50 to 59	4957	2183	1697	1490	1683	61	12071	41.1%
60 to 69	5867	2804	1998	1725	2196	75	14665	40.0%
70 to 79	5606	2725	1847	1514	2003	53	13748	40.8%
80 to 89	2014	1116	708	653	937	32	5460	36.9%
90 to 99	205	120	82	66	98	3	574	35.7%
100+			3	1	2		6	0.0%
Total	**23492**	**11063**	**7918**	**6684**	**8237**	**321**	**57715**	**40.7%**

Source: Soarian Data extracted: August 2011

Note: Unassigned SIMD: Postcode incomplete or only partial postcode recorded - unable to assign SIMD.

The minimum national standard for uptake for diabetic retinopathy screening is 80%. Table 8.2 shows the uptake rates of diabetic retinopathy screening programme by Community Health (and Care) Partnership areas and that all areas exceeded the minimum standard. The overall uptake of 89.8% was also higher than the national average of 84.8% (Scottish Diabetic Retinopathy Screening programme Annual Report 2010-2011)

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Table 7.2 Diabetic retinopathy screening programme uptake for NHSGGC residents by CH(C)P area

CH(C)P	Total Population	Eligible Population	Screened	Uptake
East Dunbartonshire	4490	3769	3549	94.2%
East Renfrewshire	3745	3181	2955	92.9%
Glasgow North East	9045	7797	6887	88.3%
Glasgow North West	8301	6915	6201	89.7%
Glasgow South	11270	9454	8447	89.3%
Inverclyde	3990	3325	2991	90.0%
North Lanarkshire[1]	868	762	688	90.3%
Renfrewshire	8366	7228	6506	90.0%
South Lanarkshire[1]	2743	2367	2111	89.2%
West Dunbartonshire	4575	3990	3501	87.7%
Unspecified[2]	322	232	201	86.6%
Total	**57715**	**49020**	**44037**	**89.8%**

Source: SOARIAN Date extracted: August 2011

Notes:

1. NHSGGC residents only

2. Unspecified: Partial or incomplete postcode recorded - unable to assign CH(C)P.

Promoting Uptake

The number of people not attending appointments was identified as an area for improvement in 2009/10. As a result of an intensive pilot, follow up was implemented. This involved sending out reminder letters and following up with a telephone calls.

A one week screening initiative targeting the local South Asian community in South West Glasgow Health Shop took place in September 2010. Approximately 120 patients were invited, of which 70 attended for screening.

A new clinic was set up in Pollock Health Centre that will service the population living in Pollock, Newton Mearns and Thornliebank.

Service issues

An additional screener/grader was appointed to address increasing capacity requirements.

Training

Fifteen screening and administrative staff have signed up to complete the City & Guilds Joint Education Work accreditation programme by June 2012. A further 11 who are registered for the qualification will complete the programme during 2013.

Information systems

There are two main information systems used in the provision of Diabetic Retinopathy Screening.

SOARIAN provides the call/recall, image capture, grading, quality assurance and result delivery.

SCI-DC is an essential component for effective Diabetic Retinopathy Screening. It provides both the diabetes population register for the DRS call/recall and feedback the results of the Diabetic Retinopathy Screening to clinical staff involved in the care of patients with diabetes.

Following a successful pilot, Public Health Portfolio Management Group approved a national business case in March 2011 to purchase and implement a national autograder across Scotland. The auto-grader software will be provided to all health boards for a 12 month period at no cost. During this period, NHSGGC will need to decide if the auto-grader provides the cost savings and performance as predicted. NHSGGC will be required to fund ongoing provision and support costs.

Challenges and future priorities

- It is anticipated that the number of people with diabetes will continue to increase that would require additional service capacity in the future. At present the current prevalence of diabetes for NHSGGC is 4%.

- Work will continue to try and increase the number of people taking up appointments.

- Staff to complete City & Guilds accreditation programme by 2012/13.

- To assess the costs and benefits of retaining the autograding software and secure funding.

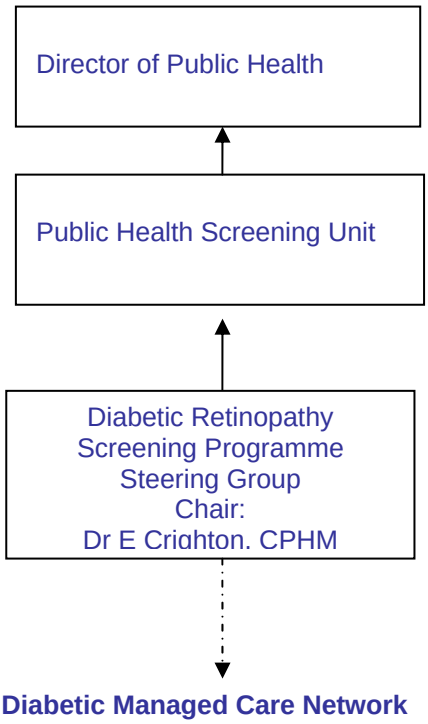
Appendix 7.1

Members of Diabetic Retinopathy Screening Steering Group (As at March 2010)

Dr Emilia Crighton	Consultant in Public Health Medicine (chair)
Mrs Donna Athanasopolous	PERL Resources Co-ordinator
Mrs Jean Blackwood	Programme Director, Clyde Condition Management Programme
Mrs Eileen Ferguson	Lay Member
Mr James Ferguson	Lay Member
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Mrs Annie Hair	Head of Children's Services
Mr Carsten Mandt	Co-ordinator for MCN for Diabetes
Mrs Fiona Heggie	Clinical Nurse Co-ordinator
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Eleanor McColl	Screening Service Delivery Manager
Nicola McElvanney	AOC Chair
Mr Eddie McVey	Optometric Advisor
Ms Patricia Morrison	DRS Manager
Mrs Elizabeth Rennie	Programme Manager, Screening Dept
Ms Karen Ross	MCN & CDM Planning Manager
Mr David Sawers	DRS Service Manager
Dr William Wykes	Consultant Ophthalmologist

Appendix 7.2

Reporting Structure:
Diabetic Retinopathy Screening Steering Group



Key:

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SUMMARY

CHAPTER 8: PRE-SCHOOL VISION SCREENING

- All children resident in the NHS Greater Glasgow and Clyde born between March 2006 and 28 February 2007 are invited to attend screening for visual impairment between four and five years of age in the pre-school year.

- 13,582 children aged between four to five years old were identified using the Community Health Index System as being eligible for pre-school vision screening, 5,390 (40%) children lived in the most deprived areas.

- Of the 13,582 eligible children, 10,584 were screened for a visual abnormality, giving an overall uptake of 77.9%. 2,736 were referred for further assessment.

- Of the 10,584 children screened, 7,848 (74.1%) had a normal result; 2,736 (25.9%) were referred for further assessment. Of the 3,918 of children living in the most deprived areas, 30.8% were referred for further assessment. 20.2% of children living in the least deprived areas were referred for further assessment.

- The highest proportion of children screened that were referred for further investigation was in Glasgow North East (31%) and Glasgow North West Glasgow (37.6%%) and the lowest was 18.5% in Renfrewshire.

CHAPTER 8: PRE-SCHOOL VISION SCREENING

Background

Orthoptic, nursery based, Vision Screening is routinely offered to all pre school age children resident in NHS Greater Glasgow and Clyde area since 2006.

Amblyopia, otherwise known as lazy eye, can be caused by either a squint (strabismus) or differences in the focussing power of each eye (refractive error) which results in the brain receiving different images from each eye**.** In an adult, receiving two images causes double vision, but a child compensates for the difficulty by suppressing one of the images. If this defect goes untreated this leads to reduced vision in one or, in some cases, both eyes. The screening programme can also detect reduced vision due to structural abnormality or disease of the media, fundi or visual pathways.

Amblyopia and strabismus affects 3-6% of children, and although obvious squints are easily detected, refractive error and subtle squints often go undetected and thus amblyopia develops. Amblyopia can be treated using spectacle lenses to correct any refractive error and occlusion therapy - mainly eye patches. These treatments can be used alone or in combination. Treatment is most effective when the brain is still developing (in young children), and when the child co-operates in wearing the patch and/or glasses.

Aim of vision screening programme

The aim of the screening programme is to detect reduced visual acuity, the commonest causes of which are amblyopia and refractive error.

There is emerging evidence that good screening and treatment result in lower incidence of significant permanent vision loss.

Eligible population

All children resident in the NHS Greater Glasgow and Clyde born between March 2006 and 28 February 2007 are invited to attend screening for visual impairment between four and five years of age in the pre-school year.

The screening test

The basic screen is a visual acuity test where children are asked to match a line of letters or pictures to a key card or to describe a line of pictures.

Screening pathway

The list of eligible children (the school intake cohort for the following year), with were downloaded from CHI and matched against the lists received from nurseries.

The vision screening clinics take place in the nursery setting. The pre-school children that do not attend nursery, or whose nursery is unknown to the screening programme and the children that miss their appointment within the nursery are invited to a hospital Orthoptic clinic to have their vision screened.

A proportion of children require further testing in secondary care following the initial screen. These children are referred for further assessment to a paediatric clinic in an ophthalmology department, though a small number may be referred to a community optometrist.

The assessment appointment involves a full eye examination, and allows operators to identify whether the screen test was a false positive and no further action is required, or if the screen test was a true positive to enable the specific disorder to be identified and treated.

Delivery of screening programme 2010/11

In 2010/11 13,582 children aged between four to five years old were identified using the Community Health Index System as being eligible for pre-school vision screening (Table 9.1). 5,390 (40%) children lived in the most deprived areas.

Table 8.1: Total number of eligible NHSGGC child residents split by CH(C)P area and by deprivation category

	Scottish Index of Multiple deprivation Most deprived				Least deprived		
CH(C)P	**1**	**2**	**3**	**4**	**5**	**Unassigned[2]**	**Total**
East Dunbartonshire	67	145	111	185	545	1	1054
East Renfrewshire	77	88	95	125	635	0	1020
Glasgow North East	1387	198	157	144	62	15	1963
Glasgow North West	983	282	221	187	285	9	1967
Glasgow South	1248	621	442	276	118	14	2719
Inverclyde	395	109	125	120	69	11	829
North Lanarkshire[1]	51	13	68	135	9	0	276
Renfrewshire	516	338	333	315	400	22	1924
South Lanarkshire[1]	243	130	63	175	88	0	699
West Dunbartonshire	423	328	168	111	39	8	1077
Unassigned[3]						54	54
Total	**5390**	**2252**	**1783**	**1773**	**2250**	**134**	**13582**
% of Total	**40%**	**17%**	**13%**	**13%**	**17%**	**1%**	

Source: Visionworks Date Extracted: September 2011

Notes:

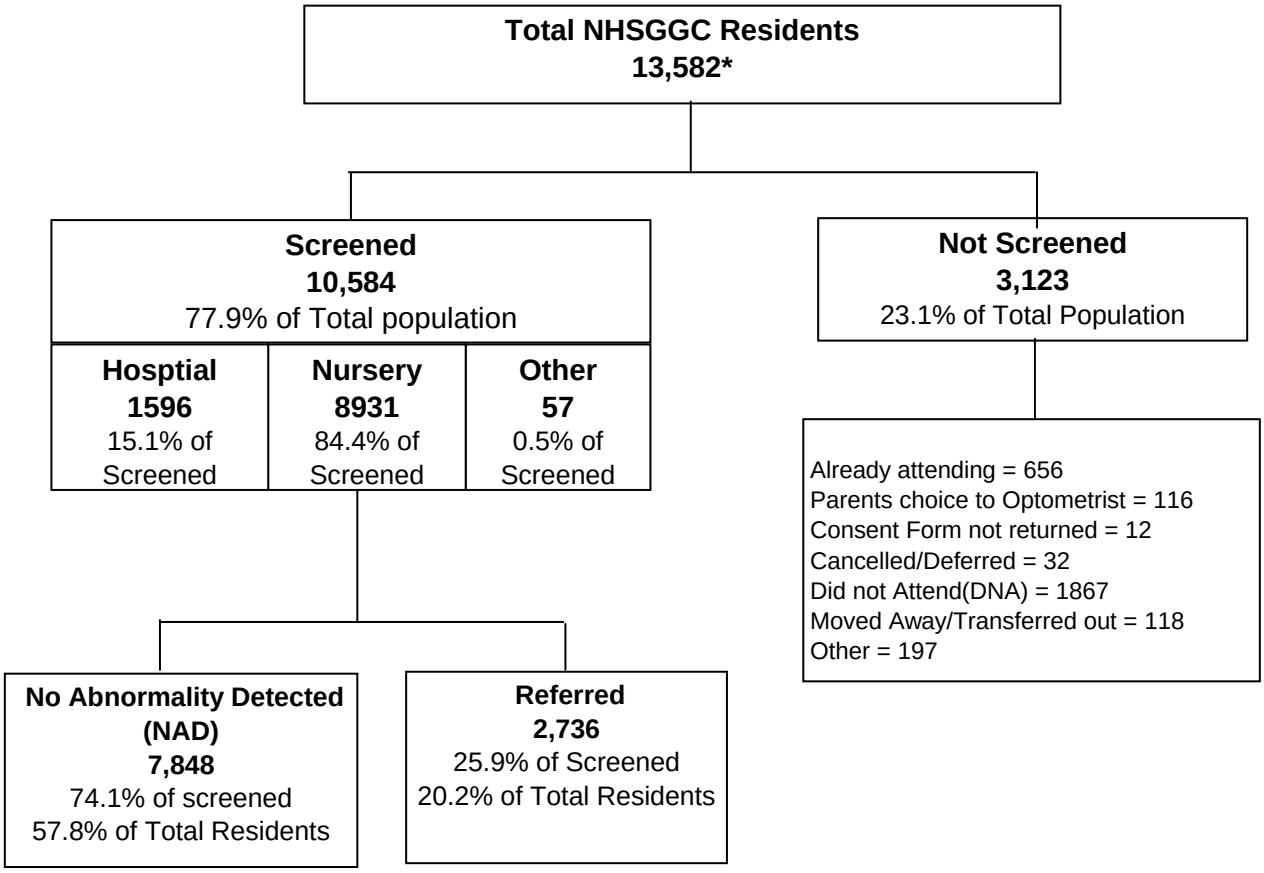
1 NHSGGC residents only

2 Unable to assign SIMD due to incomplete or incorrect postcode.

3 Unable to assign CH(C)P due to incomplete or incorrect postcode.

Of the 13,582 eligible children, 10,584 were screened for a visual abnormality, giving an overall uptake of 77.9%. 2,736 were referred for further assessment (figure 9.1)

Figure 8.1 illustrates the activity for the service in NHS Greater Glasgow and Clyde for the school year 2010.



Source: Visualworks - extracted September 2011

* 52 patients are NHSGGC Residents but have been seen by the Orthoptic Department in NHS Lanarkshire

Table 8.2 shows that, of the 10,584 children screened, 7,848 (74.1%) had a normal result; 2,736 (25.9%) were referred for further assessment. Of the 3,918 of children living in the most deprived areas, 30.8% were referred for further assessment. 20.2% of children living in the least deprived areas were referred for further assessment.

Table 8.2 Pre-school vision screening uptake and outcomes by deprivation category

SIMD	Number of Children screened	No Abnormality Detected (NAD)	% NAD	Referred for further Assessment	% Referred
1	3918	2711	69.2%	1207	30.8%
2	1720	1249	72.6%	471	27.4%
3	1442	1110	77.0%	332	23.0%
4	1459	1152	79.0%	307	21.0%
5	1941	1549	79.8%	392	20.2%
Unassigned[1]	104	77	74.0%	27	26.0%
Total	**10584**	**7848**	**74.1%**	**2736**	**25.9%**

Source: Visionworks; Date Extracted: September 2011

[1] Unable to assign SIMD due to incomplete or incorrect postcode.

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Table 8.3 shows the uptake rate for the programme varies across the CH(C)P areas from 72.9% in Glasgow East to 86.8% in East Dunbartonshire.

The highest proportion of children screened that were referred for further investigation was in Glasgow North East (31%) and Glasgow North West Glasgow (37.6%%) and the lowest was 18.5% in Renfrewshire.

Table 8.3 Uptake and outcome of Pre-school Vision Screening programme across NHS Greater Glasgow and Clyde by CH(C)P area

CH(C)P	Total Population	Total number of children screened	Total number of children not screened	Uptake	% No Abnormality Detected (NAD)	% Referred
East Dunbartonshire	1054	915	139	86.8%	72.0%	28.0%
East Renfrewshire	1020	862	158	84.5%	81.3%	18.7%
Glasgow North East	1963	1432	531	72.9%	69.0%	31.0%
Glasgow North West	1967	1453	514	73.9%	62.4%	37.6%
Glasgow South	2719	1996	723	73.4%	75.6%	24.4%
Inverclyde	829	663	166	80.0%	78.7%	21.3%
North Lanarkshire[1]	276	225	51	81.5%	74.7%	25.3%
Renfrewshire	1924	1591	333	82.7%	81.5%	18.5%
South Lanarkshire[1]	699	531	168	76.0%	80.2%	19.8%
West Dunbartonshire	1077	876	201	81.3%	73.5%	26.5%
Unassigned[2]	54	40	14	74.1%	72.5%	27.5%
Total	**13582**	**10584**	**2998**	**77.9%**	**74.1%**	**25.9%**

Source: Visionworks

Date Extracted: September 2011

Notes:

[1] NHSGGC residents only

[2] Unable to assign CH(C)P due to incomplete or incorrect postcode.

Information systems

The VisualWorks system supports the delivery of the programme across NHS Greater Glasgow and Clyde.

Equality Impact Assessment

An equality impact assessment carried out in April 2011 identified examples of good practice but also areas for improvement. These included:

Good practice:

- The dates for the screening programme are planned in conjunction with the nurseries to avoid conflicting with any religious festivals or holidays. Children who do not attend nursery are invited to attend a local hospital for screening

Areas for improvement:

- The letter to nurseries is to be reviewed to ensure that interpreter needs are identified.

- To investigate and address the high rate of non attendance of children living in deprived areas that are referred for follow up.

Workforce Issues

The vacant Orthoptist post in North East Glasgow has now been filled. 0.5 WTE post will soon become vacant due to retiral of the current postholder and is likely to be filled in February 2012.

Challenges and future priorities

- To review the letter to nurseries to ensure that interpreter needs are identified.

- To address the high rate of non attendance rates for children referred to hospital for follow up.

- Review and amend protocols for screening children in special needs nurseries to avoid duplication of screening and ensure results are recorded on the IT application.

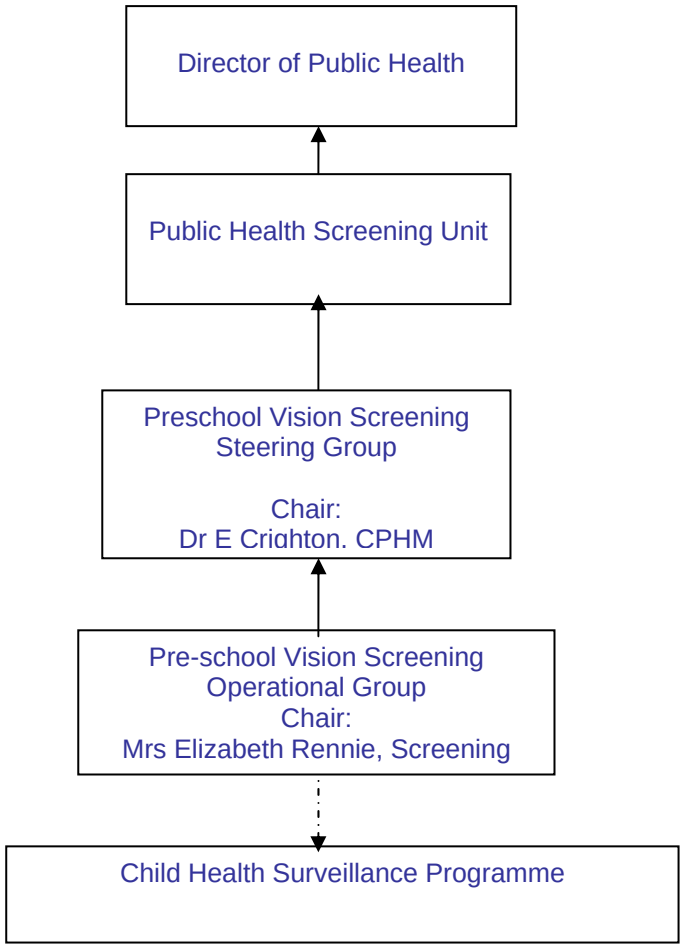
Appendix 8.1

Members of Pre-school Vision Screening Steering Group (As at March 2011)

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Mrs Joan Ballantyne	Head Orthoptist
Mrs Angela Carson	Head of Optometry
Ms Mary Cunningham	Clinical Service Manager
Mrs Maggie Darroch	Optometrist
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Ms Susan Groom	General Manager
Ms Nicola McIlvanney	Chair Area Optometry Committee
Mrs Rachel McKay	Head Orthoptist
Ms Carolyn MacLellan	Head Orthoptist
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Eleanor McColl	Screening Service Delivery Manager
Ms Linda Morris	Senior Health Promotion Officer
Mrs Diane Russell	Head Orthoptist
Mrs Elaine Salina	Principal Optometrist

Appendix 8.2

Reporting Structure:
Pre-School Vision Screening Steering Group



Key:

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REFERENCES

ISD Scotland, 2011(a). Scottish Cervical Screening Programme Statistics 2010-11. Annual Update to 31st March 2011. [online]
Available from:
http://www.isdscotland.org/Health-Topics/Cancer/Publications/2011-08-30/2011-08-30-Cervical-Screening-report.pdf?65845888854
[Accessed: 20 January 2013]

ISD Scotland, 2011(b). Cancer Incidence in Scotland 2009. [online]
Available from:
http://www.isdscotland.org/Health-Topics/Cancer/Publications/2011-08-30/2011-08-30-Cancer-Incidence-Report.pdf?30527895690
[Accessed: 24 November 2011]

ISD Scotland, 2010. Cancer in Scotland 2010

Robins, J., Crighton, E., and Jordan, H., 2011. Draft Review of data relating to congenital anomalies detected between 1st April 2010 and 31st March 2011 in NHS GG&C.

DRS Collaborative, 2011. Scottish Diabetic Retinopathy Screening programme Annual Report 2010-2011 [online] Available from:
http://www.ndrs.scot.nhs.uk/ExecGrp/Docs/DRSP%20Annual%20Report%202010-2011.pdf
[Accessed: 2 December 2011]

ACKNOWLEDGEMENTS

This annual report was prepared by the Public Health Screening Unit in collaboration with colleagues across NHS Greater Glasgow and Clyde.

Many thanks go to all the healthcare professionals, support staff and Screening Department for helping to deliver the screening services across NHS Greater Glasgow and Clyde.

The programmes have also benefited from the close links held with the Child Health Surveillance Programme (CHSP), Maternity Services Liaison Group, Regional Cancer Advisory Group and the Diabetes Managed Care Network.