Public Health Screening Programmes

Annual Report

1 April 2011 to 31 March 2012

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Public Health Screening Unit

CONTENTS

INTRODUCTION

This annual report presents information about the following screening programmes offered to residents across NHS Greater Glasgow and Clyde (NHSGGC) for the period 2011/12:

1. Cervical Screening
2. Breast Screening
3. Bowel Screening
4. Pregnancy Screening:
    - Communicable Diseases in Pregnancy
    - Haemoglobinopathies screening
    - Down's syndrome and other congenital anomalies
5. Newborn Screening:
    - Newborn Bloodspot
    - Universal Newborn Hearing
6. Diabetic Retinopathy Screening
7. Pre-School Vision Screening

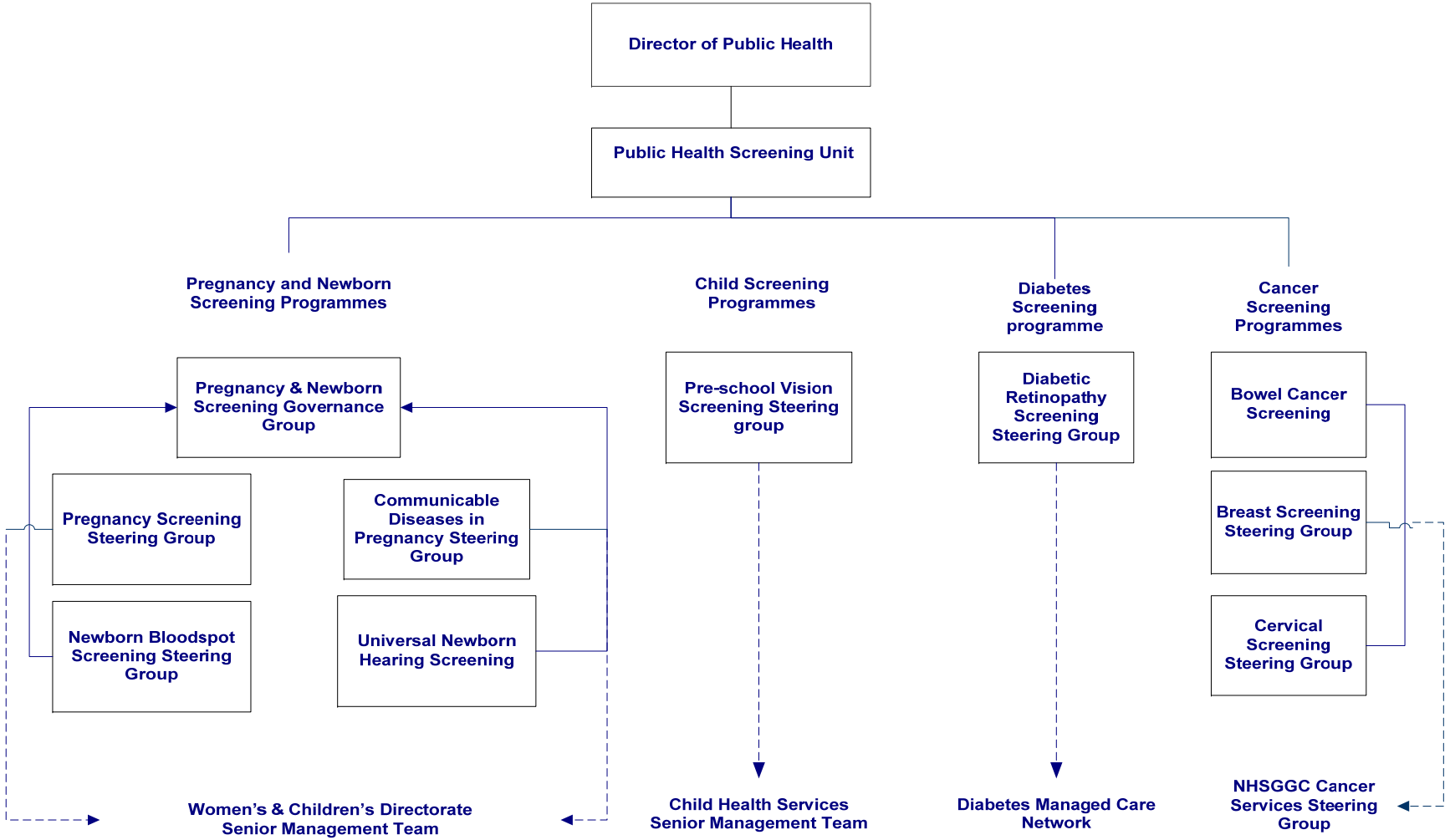
The report also describes the plans for implementing Abdominal Aortic Aneurysm screening in February 2013 that will be offered to all men aged 65 who are residents in NHS Greater Glasgow and Clyde.

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 governance arrangements for the public health screening programmes.

Figure A: Governance arrangements for the public health screening programmes



As the screening programmes stretch across the whole organisation, 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 which we strive to meet.

NHS Greater Glasgow and Clyde Public Health Screening Unit is committed to working in partnership with voluntary and statutory services to identify innovative ways to tackle inequalities in health and encourage uptake of screening programmes.

For the first year, this report will also include analysis on uptake among people with learning disabilities.

We cannot provide screening activity by ethnicity as the data is not available.

Table A shows the number of people eligible in NHS Greater Glasgow and Clyde in 2011/12 who were offered screening tests, the number of people who had taken up the offer of screening and the uptake rates for each of the screening programmes.

Table A: NHSGGC screening programmes uptake rates for the period 1 April 2011 to 31 March 2012

Screening programme	Total eligible population	Total number Screened	HIS Target	2011/12 % Uptake
Cervical screening	340,559	260,042	80%	76.4%
Breast screening[1]	105,220	73,444	70%	69.8%
Bowel screening[2]	365,180	185,515	60%	49.7%
Pregnancy screening: • Communicable diseases in pregnancy [3]	15,086		No target	98%
• Down's syndrome	15,086	10,844	No target	71.6%
• Haemoglobinopathies	15,086	12477	No target	82.7%
Newborn bloodspot Screening	14,126	13,856	No target	98.1%
Universal newborn hearing screening	14,227	13,980	No target	98.3%
Pre-school vision screening	14,425	11,191	No target	77.5%
Diabetic retinopathy Screening	51,185	45,703	80%	89.3%

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 1 year
2. Target population – number of people screened within 2 years
3. Percentage uptake of each of the tests has been calculated by dividing the number requesting tests by the total number of samples.

SUMMARY

CHAPTER 1: CERVICAL SCREENING

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

- 340,559 women were eligible to be invited to participate in the programme over three years.

- The 5.5 year uptake calculated for NHS Greater Glasgow and Clyde residents for 2011/12 was 76%. This was below the Scotland wide rate of 78.2% reported by ISD (2012) and the NHS HIS target of 80%.

- This represents an overall 1.5% increase in uptake since 2010/2011. The lowest uptake of 67.5% was achieved in Glasgow North West sector. East Dunbartonshire, East Renfrewshire, South Lanarkshire and North Lanarkshire achieved or exceeded the minimum standard of 80%.

- 65,066 (19.1%) 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 2011/12 was among the 21 to 24 year olds at 59.8% when only no cervix exclusion was applied.

- The lowest 5.5 year uptake rate in 2011/12 was among women resident in the most deprived neighbourhoods at 74.4% when the no cervix exclusion was applied. Among women residents in the least deprived areas, uptake was higher at 81.1%.

- The uptake of cervical screening among women residents in the most deprived areas has increased by 2.3% compared to 2010/11 while the uptake for women resident in the most affluent areas has increased by 1.2% over the same period.

- Local media presence, Eastenders storyline and smear taker training may have attributed to the increase in uptake.

- 95,779 smear tests were processed and reported in laboratories in NHS Glasgow and Clyde. This represents a decrease of 9,779 (6%) from the 99,874 smears processed in 2011/12.

- The overall percentage of unsatisfactory smears was 2.8% and above the Scottish average of 2.4%.

- 10.8% of smears were reported as abnormal after excluding unsatisfactory smears in 2011/12.

- 89.2% of smears processed were reported to be negative; 7.2% were borderline squamous; 2.2% mild dyskaryosis and 0.7% to have moderate to severe dyskaryosis.

- Of the 5,224 patients referred to colposcopy for treatment, 4,827 (92.4%) were seen within 8 weeks.

- The performance of colposcopy units against benchmarking standards is now reviewed annually at the NHSGGC Colposcopy User Group. Where standards are not within the interquartile range measures are identified and introduced to improve performance.

- In 2011, we reviewed the case notes of 60 women who developed invasive cervical cancer.

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

- 18 cases of the 60 cases were screen detected.

- Over the four years audited, 43 (16.3%) women out of the 263 that developed cancer had never had a smear; 103 (39.1%) had complete smear histories and 116 (44.1) of women had incomplete smear histories.

- In 2010, 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 89. This gives a standardised incidence rate of 13.1 per 100,000 per population which is higher than that for Scotland (11.2).

- In 2011, 22 women with a diagnosis of cervical cancer died in NHS Greater Glasgow and Clyde. This gives a standardised rate of 2.9 per 100,000 population. The age standardised death rate for NHS Greater Glasgow and Clyde is slightly lower than the Scotland rate of 3.1 per 100,000.

- Since 2008, all girls aged 12 to 13 years in their second year of secondary school are routinely offered vaccinations to protect them against the Human Papilloma Virus (HPV).

- Overall uptake across NHSGGC for the 1st dose of the HPV vaccination was 94.4% and 93.1% for the second dose. This was above the Scottish averages of 93.1% and 91.7% respectively. Uptake for the third dose was 81.6% which was slightly below the Scottish average of 82.6%.

CHAPTER 1: CERVICAL SCREENING

Background

Systematic cervical screening began in 1989 as part of the National Scottish Cervical Screening Programme (SCSP).

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.

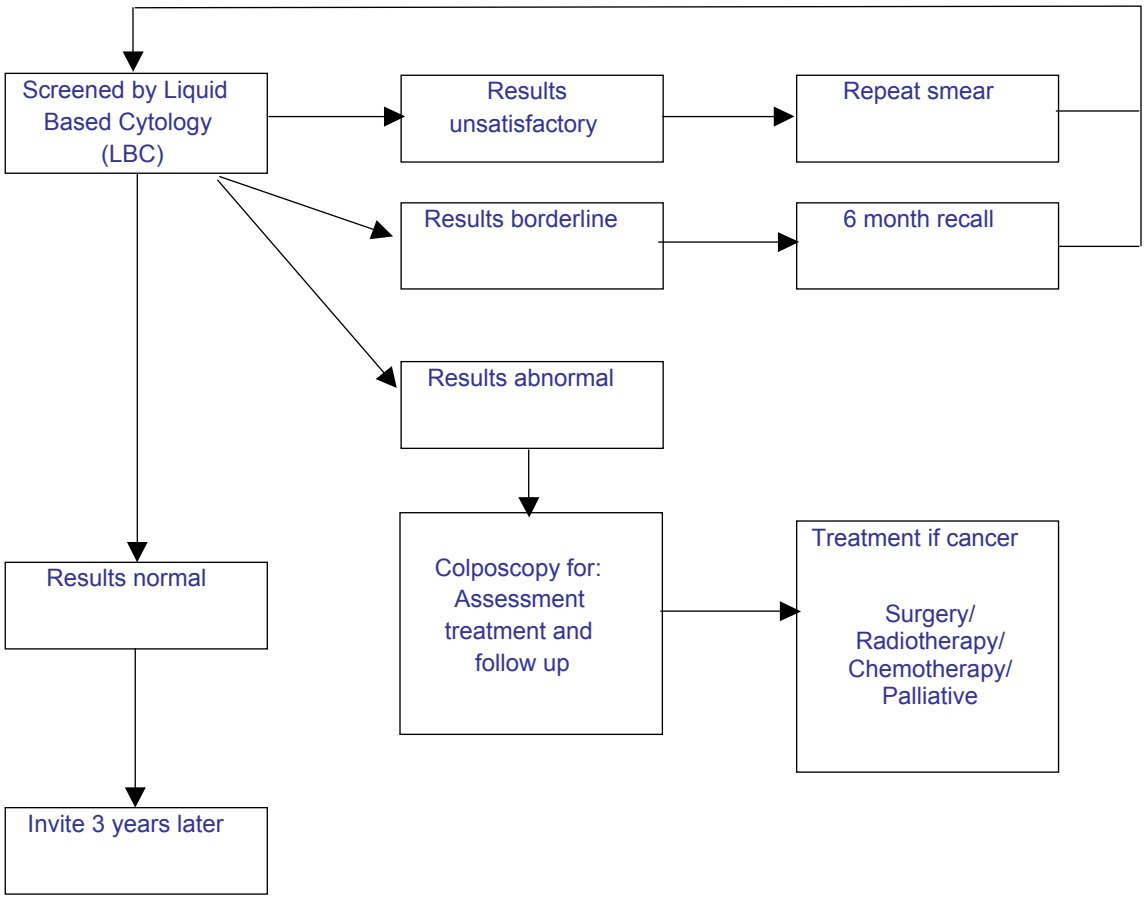
Liquid based cytology (LBC) is a way of preparing cervical samples for examination in the laboratory. The sample is collected using a special device which brushes cells from the neck of the womb. The head of the brush, where the cells are lodged, is broken off into a small glass vial containing preservative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

Figure 1.1 Cervical Screening Pathway



Colposcopy Referral Pathway

Referral to colposcopy services is principally via the direct referral route whereby women with abnormal smears are appointed to the closest colposcopy department according to postcode of residence. Patients with a suspicious cervix, suspicious symptoms or other clinical reasons are referred to colposcopy through standard referral routes from primary or secondary care.

Colposcopy

Colposcopy services in Greater Glasgow and Clyde (NHSGGC) are provided over six sites; Stobhill ACH, Victoria ACH, Sandyford Initiative, Royal Alexandra Hospital, Inverclyde Royal Hospital and the Vale of Leven Hospital.

Colposcopy services on each site have a lead colposcopist and all sites participate in the NHSGGC Colposcopy User Group to address quality assurance issues within the NHSGGC colposcopy service. The NHSGGC colposcopy user group is represented on the national colposcopy Quality Assurance group and the National Colposcopy Clinical Information and Audit System (NCCIAS) user group. Scottish wide benchmarking standards are available having been developed from The British Society for Colposcopy and Cervical Pathology (BSCCP) standards.

Delivery of Cervical Screening programme

Table 1.1 shows the numbers of women in the target and eligible populations for the cervical screening programme. There were 355,579 women aged 21 to 60 resident in NHS Greater Glasgow and Clyde in the target population. Following the exclusion of those with no cervix, 340,559 women were eligible to be invited to participate in the programme over three years. Approximately 113,000 women were sent an invitation to attend.

Table 1.1 NHSGGC Cervical Screening population

Year	Target Population[1]	Eligible Population[2]			
		All eligible women minus no cervix (N)	Target population excluded as no cervix (%)	All eligible women based on GMS Target[4] (N)	Target population excluded as per GMS contract[4] (%)
2000/01	360,361	338,068	*6.19*		
2001/02	360,170	337,919	*6.18*		
2002/03	360,069	338,184	*6.08*		
2003/04	360,644	339,460	*5.87*	292,652	*18.85*
2004/05	358,617	338,291	*5.67*	273,106	*23.84*
2005/06	364,919	345,408	*5.35*	272,447	*25.34*
2006/07	359,436	340,446	*5.28*	272,104	*24.30*
2007/08[5]	362,828	344,252	*5.12*	268,484	*26.00*
2008/09[5]	362,845	344,882	*4.95*	251,844	*30.59*
2009/10[5]	361,918	344,589	*4.79*	245,742	*32.10*
2010/11[5]	366,275	349,492	*4.58*	278,943	*23.84*
2011/12[5]	355,579	340,559	*4.22*	268,512	*24.49*

Sources: 2000/01-2006/07 - CHI via Cervical Cytology system
2007/08 - 2010/11 - Scottish Cervical Call Recall System

Notes:

1 Women aged 21 to 60 years

2 Women aged 21 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

The table also shows the numbers of women that were considered as eligible for cervical screening after applying the exclusions allowed by the General Medial Services contract.

The 5.5 year uptake rate calculated for NHS Greater Glasgow and Clyde residents for 2011/12 was 76% **(see Table 1.2)**. This was below the Scotland wide rate of 78.2% reported by ISD (2012) and the NHS HIS target of 80%.

This represents an overall 1.5% increase in uptake since 2010/2011. The lowest uptake of 67.5% was achieved in Glasgow North West sector. East Dunbartonshire, East Renfrewshire, South Lanarkshire and North Lanarkshire achieved or exceeded the minimum standard of 80%.

Table 1.2 NHSGGC Comparative uptake rates of cervical screening by CH(C)P

CHP/ CHCP[1]	% Uptake - All Eligible Women (excluding women with No Cervix)		% Uptake - All Eligible Women (based on Target GMS Payments)[3]	
	2010/11	2011/12	2010/11[3]	2011/12
Glasgow North East	70.4%	72.3%	78.2%	81.7%
Glasgow North West	66.0%	67.5%	74.0%	78.4%
Glasgow South	73.6%	75.1%	80.0%	83.8%
North Lanarkshire[2]	83.4%	83.9%	88.2%	90.7%
South Lanarkshire[2]	80.5%	81.5%	86.2%	88.1%
East Dunbartonshire	81.9%	82.6%	86.5%	89.4%
East Renfrewshire	81.4%	82.2%	86.4%	89.5%
Inverclyde	77.2%	78.0%	82.3%	85.7%
Renfrewshire	78.5%	79.8%	84.2%	87.1%
West Dunbartonshire	77.7%	78.6%	83.5%	86.4%
NHS GGC[4]	**74.5%**	**76.0%**	**81.1%**	**84.0%**

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

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 340,559 eligible women (excluding women with no cervix), 65,066 (18.3%) did not take up the invite to have a smear despite a prompt letter and two reminders being sent and were classified as defaulters **(see Table 1.3).**

Table 1.3 shows the numbers and proportions of women excluded under the different exclusion categories. 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 1.2**).

Table 1.3 Number of women excluded from cervical screening programme by exclusion category

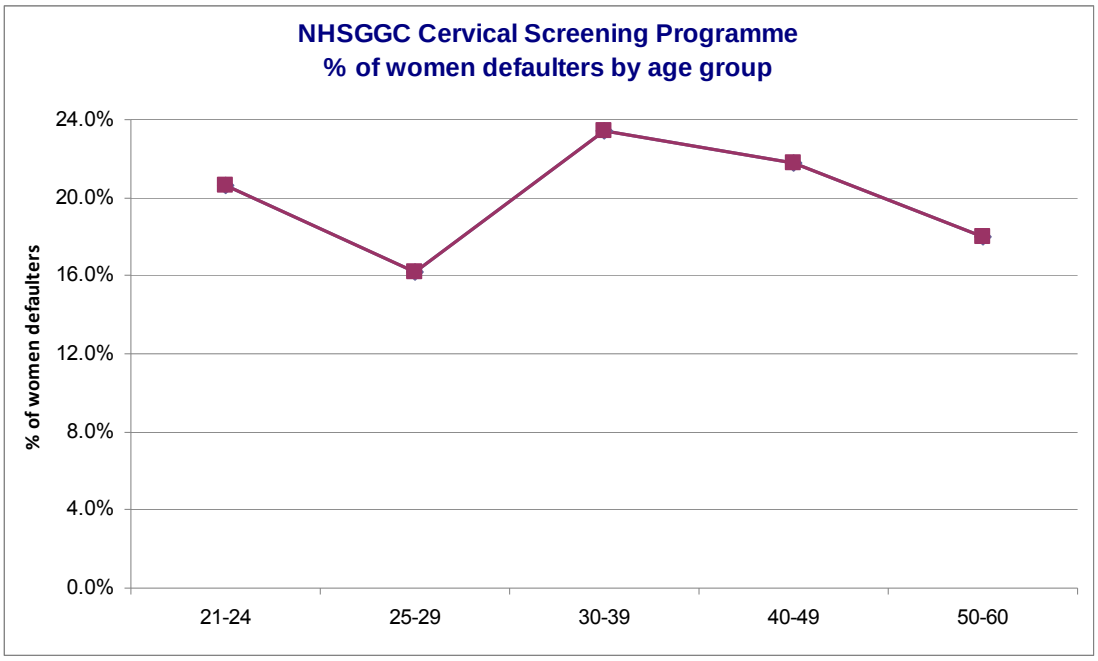
Reason for exclusion	No of Women Excluded[1]	% of total eligible population
Pregnancy	1,171	0.33%
Co-morbidity	264	0.07%
Opted out	4,323	1.22%
Not clinically appropriate	2,054	0.58%
Terminally ill	17	0.005%
Anatomically impossible	62	0.02%
No cervix	15,020	4.22%
No further recall	139	0.04%
Suspended	0	0.00%
Defaulter	65,066	18.30%
Transferred out by SCCRs	14	0.004%
Total	**88,130**	**24.78%**

Source: 2011/12 - Scottish Cervical Call Recall System

Note:

1 Some women had more than 1 exclusion reason applied.

Figure 1.2 Percentage of women excluded as defaulters by age



Source: 2011/12 – Scottish Cervical Call Recall System

Table 1.4 shows that the cervical screening uptake varied across different age groups. The lowest 5.5 year uptake in 2011/12 was among the 21 to 24 year olds at 59.8% when only no cervix exclusion was applied. This represents a 2.1% increase on previous year's uptake of 57.7%. When exclusions allowed for the purpose of GMS target payments were made, uptake was 79.4% representing an increase of 1.3%.

Table 1.4 NHSGGC Cervical screening uptake by age group

Age Group	All eligible women (excluding women with no cervix)[1]					All eligible women (based on Target GMS Payments)[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	39,688	22,904	57.7	23,750	59.8	25,191	19,669	78.1	19,996	79.4
25-29	49,146	32,107	65.3	35,398	72.0	37,249	28,884	77.5	30,066	80.7
30-39	85,146	61,265	72.0	67,215	78.9	68,212	56,155	82.3	58,203	85.3
40-49	92,036	69,193	75.2	75,157	81.7	76,612	65,221	85.1	67,156	87.7
50-60	74,543	53,446	71.7	58,522	78.5	61,248	51,249	83.7	52,652	86.0
Total	**340,559**	**238,915**	**70.2**	**260,042**	**76.4**	**268,512**	**221,178**	**82.4**	**228,073**	**84.9**

Source:- Scottish Cervical Call Recall System (2011/12)

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

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

Table 1.5 shows that the cervical screening uptake rate varied across deprivation categories. The lowest 5.5 year uptake rate in 2011/12 was among women resident in the most deprived neighbourhoods at 74.4% when the no cervix exclusion was applied. Among women residents in the least deprived areas, uptake was higher at 81.1%.

The uptake of cervical screening among women residents in the most deprived areas has increased by 2.3% compared to 2010/11 while the uptake for women resident in the most affluent areas has increased by 1.2% over the same period. It is encouraging that uptake increased across all deprivation categories. Local media presence, Eastenders storyline and smear taker training may have attributed to the increase in uptake.

Table 1.5 NHSGGC Cervical screening uptake by age and deprivation categories

		All Eligible Women (exluding women with No Cervix)[1]					All Eligible Women (based on Target GMS Payments)[2]				
		Eligible	3.5 yr uptake		5.5 yrs uptake		Eligible	3.5 yr uptake		5.5 yrs uptake	
SIMD[3]		Women	Total	%	Total	%	Women	Total	%	Total	%
Most Deprived	1	121,245	81,836	67.5	90,194	74.4	93,556	74,774	79.9	77,460	82.8
	2	59,215	40,987	69.2	44,719	75.5	46,282	37,853	81.8	39,084	84.4
	3	50,407	35,530	70.5	38,547	76.5	39,848	32,954	82.7	33,951	85.2
	4	48,141	34,095	70.8	36,812	76.5	38,092	31,826	83.6	32,713	85.9
Least Deprived	5	59,634	45,189	75.8	48,370	81.1	49,235	42,605	86.5	43,651	88.7
New/Incomplete postcodes[4]		1,917	1,278	66.7	1,400	73.0	1,499	1,166	77.8	1,214	81.0
Total		**340,559**	**238,915**	**70.2**	**260,042**	**76.4**	**268,512**	**221,178**	**82.4**	**228,073**	**84.9**

Source: Scottish Cervical Call Recall System

Notes:

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

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

3 SIMD Quintles 2006

4 Although incomplete these postcodes clearly fall within Greater Glasgow & Clyde boundaries

When calculations were made for the purpose of General Medical Services target payments, the uptake among women living in the most deprived neighbourhoods was 82.8% representing an increase of 4.1% from previous year. Highest uptake of 88.7% was among residents living in least deprived areas and represents an increase of 3.2%.

The comparative cervical screening uptake for women with learning disabilities by age group is shown in **Table 1.6.** The 5.5 years uptake for women with no cervix is 24% which is lower than the general population. The 5.5 years uptake based on the GMS contract was also low at 49.1%. A health needs assessment undertaken in 2010 highlighted that people with learning disabilities often suffer from health inequalities and that there were inconsistencies in relation to uptake of cancer screening programmes with this population group.

A multidisciplinary approach has been taken to increase awareness and uptake of cervical screening, resulting in a work plan that involves action at an individual, local service and organisational level.

Table 1.6 NHSGGC Cervical Screening uptake of women with learning disability by age group

Age Group	All Eligible Women (excluding women with No Cervix)[1]					All Eligible Women (based on Target GMS Payments)[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	124	27	21.8	28	22.6	49	22	44.9	22	44.9
25-29	224	55	24.6	59	26.3	92	48	52.2	50	54.3
30-39	363	76	20.9	89	24.5	151	67	44.4	71	47.0
40-49	517	118	22.8	133	25.7	210	111	52.9	112	53.3
50-60	432	78	18.1	90	20.8	172	74	43.0	76	44.2
Total	**1660**	**354**	**21.3**	**399**	**24.0**	**674**	**322**	**47.8**	**331**	**49.1**

Sources: Scottish Cervical Call Recall System; NHS Greater Glasgow and Clyde Learning Disability LES (extracted 21 November 2012)

NHSGGC Cytopathology Laboratories Workload

Table 1.7 shows the number of tests performed in Cytopathology laboratories in the NHS Greater Glasgow and Clyde area. An essential criterion of the NHS HIS standards requires the laboratories to process a minimum of 15,000 smears annually and this has been achieved throughout the area.

These included repeat smears and smears taken at colposcopy as one woman can have more than one smear test. This represents a decrease of 9,779 (6%) from the 99,874 smears processed in 2011/12.

Table 1.7 Number of smear tests performed in NHS Greater Glasgow and Clyde laboratories

	Number of Smear Tests							
Year	IRH*	VOL*	SGH	GRI	STOB	VIC	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
2011/12	31,120	n/a	23,460	41,199	n/a	n/a	**95,779**	408,838

Source 2000-2007 Cervical Cytology System (CCS); 2007/12 - Labs : Telepath & SCCRs

Scotland figures from ISD Website

Notes:

*IRH/VOL includes smears tests for Argyll and Bute area

VOL stopped reporting smears taken as at quarter ending 30th September 2004

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

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

Table 1.8 shows the proportion of the total cervical samples sent to each of the cytology laboratories that were reported as unsatisfactory smears in 2011/12. The overall percentage of unsatisfactory smears was 2.8% and above the Scottish average of 2.4%.

Table 1.8 Percentage of unsatisfactory smears reported in NHS Greater Glasgow and Clyde laboratories

	Percentage of unsatisfactory smears of total number of smears							
Year	**IRH***	**VOL***	**SGH**	**GRI**	**STOB**	**VIC**	**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%
2011/12	2.6%	n/a	2.9%	2.9%	n/a	n/a	**2.8%**	2.4%

Source 2000-2007 Cervical Cytology System (CCS); 2007/10. - Labs (SCCRs)

Scotland figures from ISD Website

Notes:

*IRH/VOL - includes unsatisfactory smears repored for Argyll and Bute area

VOL stopped reporting smears taken as at quarter ending 30th September 2004

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

VIC 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 smear taker skills training programme in May 2010. A robust protocol to monitor smear takers' performance and support was implemented in 2012.

Table 1.9 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 2011/12. 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 2011/12.

Table 1.9 Percentage of abnormal smears reported in NHS Greater Glasgow and Clyde laboratories

	Percentage of Abnormal smear results of total satisfactory smears							
Year	IRH*	VOL*	SGH	GRI	STOB	VIC	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%
2011/12	8.8%	n/a	8.2%	13.8%	n/a	n/a	**10.8%**	9.1%

*IRH/VOL includes unsatisfactory smears reported for Argyll and Bute area

VOL stopped reporting smears taken as at quarter ending 30th September 2004

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

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

Source 2000-2007 Cervical Cytology System (CCS); 2007 - 12 - Labs (SCCRs)

Scotland figures from ISD Website

Table 1.10 shows the detailed breakdown of smear results profile reported by NHSGGC laboratories.

Of the 95,779 smears tests received by the laboratories, 93,116 (97%) were processed. 89.2% of smears processed were reported to be negative; 7.2% were borderline squamous; 2.2% mild dyskaryosis and 0.7% to have moderate to severe dyskaryosis. Appendix 1.1 shows the management and follow up advice for cytology results.

Table 1.10 Result profiles by age band: 1 April 2011 to 31 March 2012 (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 All Ages	% Satisfactory	Cumulative %	Total Ages 20-59	% Satisfactory	Cumulative %
Unsatisfactory	17	303	302	312	278	317	364	362	324	81	3	2,663			2,562		
% Unsatisfactory	2	2	2	3	3	3	3	4	4	5	2	3			3		
Negative	575	11,014	11,205	10,431	9,903	11,202	11,129	9,171	6,799	1,516	119	83,064	89.2	89.2	80,854	89.2	89.2
Borderline Squamous	148	2,238	1,269	846	595	572	496	305	140	51	7	6,667	7.2	96.4	6,461	7.1	96.3
Borderline Glandular	0	5	17	9	10	9	10	6	0	0	0	66	0.1	96.4	66	0.1	96.4
Mild Dyskaryosis	29	726	480	298	156	144	113	73	52	15	4	2,090	2.2	98.7	2,042	2.3	98.7
Moderate Dyskaryosis	9	199	194	103	81	42	18	18	5	1	1	671	0.7	99.4	660	0.7	99.4
Severe Dyskaryosis	3	103	131	99	63	55	27	13	12	5	2	513	0.6	100	503	0.6	100
Severe Dyskaryosis/Invasion	0	1	1	2	2	1	2	0	3	0	0	12	0.0	100	12	0.0	100
Glandular Abnormality	0	1	6	1	5	4	3	7	0	0	0	27	0.0	100	27	0.0	100
Endocervical Adenocarcinoma	0	0	0	0	0	0	0	0	0	0	0	0	0.0	100	0	0.0	100
Other Malignancy	0	0	0	0	0	1	0	2	1	2	0	6	0.0	100	4	0.0	100
Total including unsatisfactory results	781	14,590	13,605	12,101	11,093	12,347	12,162	9,957	7,336	1,671	136	95,779			93,191		
Total excluding unsatisfactory results	764	14,287	13,303	11,789	10,815	12,030	11,798	9,595	7,012	1,590	133	93,116			90,629		

	All Ages	20-59
Abnormal	10,052	9,775
% abnormal	10.8	10.8

Source: Scottish Cervical Call Receall System (SCCRs)

Report Definitions:

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

2 Smear counts for the orginating 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.

Table 1.11 shows the activity data across NHSGGC colposcopy service. In 2011/12, there were 14,356 patient episodes. New outpatient episodes include all patients attending colposcopy services; return episodes will include treatment visits following the diagnosis of cervical intra-epithelial neoplasia (CIN) in addition to standard follow up visits for colposcopy based indications.

Table 1.11 NHSGGC Colposcopy Service workload 1 April 2011 to 31 March 2012

	Type of episode			
Attendance Status	**New outpatients**	**Return/ follow up uutpatients**	**Admissions**	**Total episodes**
Patient was seen (Attended)	4711	5171	68	9950
Cancelled by patient	378	905	0	1283
Cancelled by clinic or hospital	44	325	0	369
Patient attended but left before being seen	9	10	0	19
Patient did not attend	804	1930	1	2735
Total	**5946**	**8341**	**69**	**14356**

Source: National Colposcopy Clinical Audit System (extracted November 2012)

British Society for Colposcopy and Cervical Pathology (BSCCP) standards suggest that all patients should be seen within 8 weeks of referrals and that high grade cases should be seen within 4 weeks of referral. In NHSGGC, colposcopy service aim to see all high grade cases within 2 weeks of referral and low grade cases within 8 weeks of referral.

Table 1.12 illustrates that 92.4% of patients are seen within 8 weeks. Delays in referral to first appointment may also include patient induced delays.

Table 1.12 NHSGGC waiting times from referral to colposcopy appointment

Total Number of New Referrals	Number and % of referrals seen <=4 weeks (a)		Number and % of referrals seen >4 weeks and <= 8 weeks (b)		Number and % of referrals >8 weeks (c)	
5224	2672	51.1%	2155	41.3%	397	14.9%

Source: National Colposcopy Clinical Audit System (extracted November 2012)

Benchmarking standards have been derived and are reviewed by the national colposcopy Quality Assurance group to allow comparison between colposcopists, colposcopy units, and health boards.

The benchmarking standards for NHSGGC colposcopy units are shown in **Table 1.13.** The performance of colposcopy units against benchmarking standards is now reviewed annually at the NHSGGC Colposcopy User Group. Where standards are not within the interquartile range measures are identified and introduced to improve performance.

Table 1.13 NHSGGC Colposcopy benchmarking standards for 2011/2012

	Total New Out-patient Attendances	New outpatient attendances after abnormal screening smear	Cyto-reversion rates at 4 - 12 months after treatment if a smear is taken	Confirmed histological treatment failures at 12 months	Adequacy of cervix biopsy for histology	Proportion of women, referred with abnormal cytology, where SCJ is visualised, treated at 1st visit with CIN on histology	New referral for moderate or severe dyskaryosis having biopsy	% Recommended for treatment as Inpatient
SCOTLAND	13597	10533	90.4	2.4	98.5	83.2	92.5	7.7
Greater Glasgow & Clyde	4711	3383	87.3	2.5	97.8	83.6	92.1	9.7
Inverclyde Royal Hospital	240	162	81.0	0.0	100.0	93.1	78.4	30.5
New Victoria	1512	857	82.5	1.6	96.2	88.4	94.0	7.4
Royal Alexandra Hospital	413	369	88.8	1.3	99.3	85.7	93.7	9.6
Sandyford Initiative	333	178	87.7	0.9	98.6	90.0	94.6	5.8
Stobhill	2072	1698	91.9	1.3	97.9	79.8	92.7	9.3
Vale of Leven	139	118	94.4	30.6	99.5	0.0	81.8	6.5
TARGET	None	>= 50 (per annum)	> 90%	<= 5%	> 97%	>= 90%	> 90%	< 20%

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 2011, we reviewed the notes of 60 women who developed invasive cervical cancer and had a pathology diagnosis made in NHS Greater Glasgow and Clyde laboratories.

Table 1.14 shows numbers and the distribution of women's age at diagnosis for years 2008 to 2011. The largest number of cervical cancers occurred in women aged between 30 and 49 years.

Table 1.14 Number of NHSGGC residents with invasive cervical cancers by age at diagnosis and year of diagnosis

Age at Diagnosis	Year of Diagnosis			
	2008	2009	2010	2011
20-29	8	7	10	7
30-39	19	15	24	17
40-49	11	23	21	9
50-59	10	8	7	11
60-69	3	8	3	7
70-79	2	6	8	7
80+	2	4	3	2
Unknown		0	0	0
Total	**55**	**72**	**76**	**60**

Source: NHSGGC Invasive Cancer Audit Database

Table 1.15 shows the distribution of clinical stage at diagnosis over a five year period from 2008 to 2011.

Table 1.15 Number of women with invasive cervical cancers by year of diagnosis

Clinical stage of diagnosis	2008	2009	2010	2011	Total
1a1, 1a2 or 1b	29	41	36	29	135
2 or greater (spread outwith cervix)	26	28	38	31	123
No Details		3	2		5
Total	**55**	**72**	**76**	**60**	**263**

Source: NHSGGC Invasive Cancer Audit Database

Table 1.16 shows that, in 2011, 18 cases of the 60 cases were screen detected. 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 1.16 Number of women with invasive cancers split by modality of presentation and year of diagnosis

Modality of Presentation	Year of diagnosis			
	2008	2009	2010	2011
Screen Detected	26	25	24	18
Symptomatic, last smear date <5 yrs	14	10	13	10
Symptomatic, last smear date >5 yrs	10	18	23	19
Symptomatic, No previous smear	5	19	14	13
No Details			2	
Total	**55**	**72**	**76**	**60**

Source: NHSGGC Invasive Cancer Audit Database

Note:

1. Moved out of Board area

Table 1.17 hows that, in 2011, 25 women of 60 women had a complete smear history compared to 24 women who had incomplete smear histories.

Over the four years audited, 43 (16.3%) women out of the 263 that developed cancer had never had a smear; 103 (39.1%) had complete smear histories and 116 (44.1) of women had incomplete smear histories

Table 1.17 Smear histories of women with invasive cervical cancer

Smear History	Year of diagnosis				Total
	2008	2009	2010	2011	
Complete	26	27	25	25	103
Incomplete	24	29	39	24	116
No previous smears	5	16	11	11	43
Unknown			1		1
Grand Total	**55**	**72**	**76**	**60**	**263**

Source: NHSGGC Invasive Cancer Audit Database

* Apart from index smear ie the abnormal smear causing referral

Table 1.18 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 1.18 Follow up status of the women with invasive cervical cancer

Status	Year diagnosis			
	2008	2009	2010	2011
Death	2	0	2	6
Lost to colposcopy service	1	0	1	0
On follow up at colposcopy	14	20	21	8
On follow up at oncology/Beatson	37	48	48	38
Unknown	1	4	4	8
Total	**55**	**72**	**76**	**60**

Source: NHSGGC Invasive Cancer Audit database

Note:
1. Moved out of the Board area/data not available at time of audit

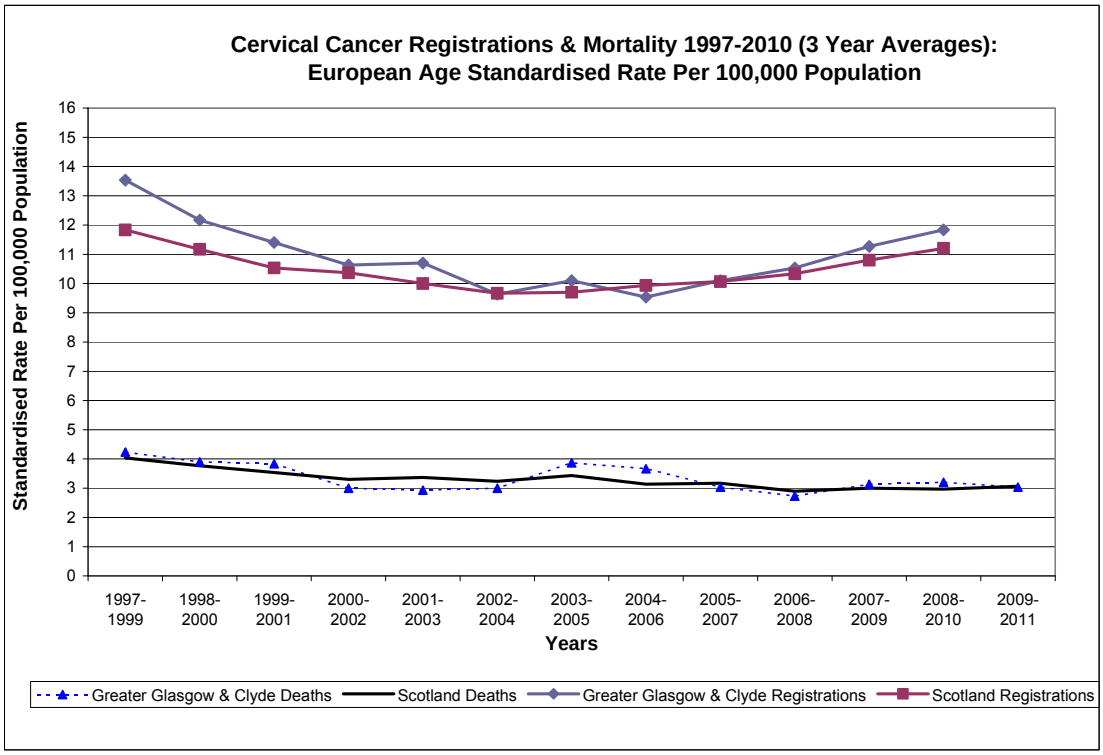
Morbidity and mortality from cervical cancer in NHS Greater Glasgow and Clyde and Scotland

In 2010, 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 89 (see **table 1.19)**. This gives a standardised incidence rate of 13.1 per 100,000 per population which is higher than that for Scotland at 11.3

Figure 1.3 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 2011, 22 women with a diagnosis of cervical cancer died in NHS Greater Glasgow and Clyde. This gives a standardised rate of 2.9 per 100,000 population. The age standardised death rate for NHS Greater Glasgow and Clyde is slightly lower than the Scotland rate of 3.1 per 100,000. **Figure 1.3** illustrates a reducing death rate between 1997 and 2010/11 from 4.3 per 100,000 to 3.1 per 100,000 population.

Figure: 1.3 Cervical cancer registrations and deaths for NHS Greater Glasgow and Clyde and Scotland



(Source: Scottish Cancer Registry, March 2012; National Records Scotland, September 2012)

Table 1.19: Cervical Cancer Registrations and Deaths for period 1997 -2011

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Greater Glasgow & Clyde															
Deaths															
Number	32	37	33	23	30	14	22	33	36	17	19	27	26	20	22
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	2.9
Lower 95% Confidence Interval	*2.7*	*3.0*	*2.8*	*1.9*	*2.8*	*x*	*1.8*	*2.9*	*3.0*	*x*	*x*	2.2	2.2	1.6	1.8
Upper 95% Confidence Interval	*5.8*	*6.0*	*5.9*	*4.5*	*5.9*	*x*	*4.3*	*6.1*	*5.9*	*x*	*x*	4.9	5	4	4.3
Registrations															
Number	96	110	80	71	88	63	71	68	70	62	76	77	75	89	
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	13.1	
Lower 95% Confidence Interval	*11.4*	*12.4*	*8.8*	*7.9*	*10.3*	*6.8*	*8.0*	*7.5*	*8.0*	6.5	8.9	9.1	8.5	10.5	
Upper 95% Confidence Interval	*17.3*	*18.3*	*13.8*	*12.7*	*15.7*	*11.2*	*12.9*	*12.3*	*13.0*	10.9	14.1	14.4	13.5	16.1	
Scotland															
Deaths															
Number	144	145	122	117	113	100	120	102	127	92	105	102	107	99	108
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	3.1
Lower 95% Confidence Interval	*3.6*	*3.4*	*3.1*	*2.8*	*2.8*	*2.4*	*3.0*	*2.4*	*3.0*	*2.2*	2.5	2.3	2.5	2.4	2.5
Upper 95% Confidence Interval	*5.1*	*4.9*	*4.5*	*4.2*	*4.1*	*3.7*	*4.4*	*3.6*	*4.3*	*3.4*	3.8	3.5	3.8	3.6	3.7
Registrations															
Number	359	370	314	302	309	292	267	284	298	292	293	313	328	327	
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	11.3	11.3	
Lower 95% Confidence Interval	*11.0*	*11.3*	*9.5*	*9.1*	*9.5*	*8.9*	*8.1*	*8.6*	*9.1*	8.7	8.9	9.8	10.1	10.1	
Upper 95% Confidence Interval	*13.6*	*13.9*	*11.9*	*11.5*	*11.9*	*11.3*	*10.4*	*10.9*	*11.5*	11.1	11.3	12.2	12.6	12.6	

Notes:

Cancer of the cervix uteri (ICD-10 C53)

Mortality — Source: National Records of Scotland (NRS); Data extracted: September 2012

Registrations — Source: Scottish Cancer Registry, ISD; Data extracted: March 2012

'-' = 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.

HPV Vaccination

Since 2008, all girls aged 12 to 13 years in their second year of secondary school are routinely offered vaccinations to protect them against the Human Papilloma Virus (HPV). There are two types of HPV that cause 70% of cases of cervical cancers. The HPV vaccine does not protect against all cervical cancers so regular cervical screening is still important (ISD, 2011).

Table 1.20 shows the interim uptake rates for S2 routine cohort by the end of the school year by CHP for school year 2011/12.

Overall uptake across NHSGGC for the 1st dose of the HPV vaccination was 94.4% and 93.1% for the second dose. This was above the Scottish averages of 93.1% and 91.7% respectively. Uptake for the third dose was 81.6% which was slightly below the Scottish average of 82.6%.

Table 1.20: Interim annual HPV immunisation uptake rates for the S2 routine cohort by the end of the school year, by CHP; school year 2011/12[1]

Community Health Partnership[3]	Number of girls in cohort[2]	Number 1st dose	% uptake of 1st dose	Number 2nd dose	% uptake of 2nd dose	Number 3rd dose	% uptake of 3rd dose
East Dunbartonshire CHP	621	588	94.7	582	93.7	543	87.4
East Renfrewshire CH&CP	573	548	95.6	544	94.9	503	87.8
Glasgow City CHP[4]	2856	2661	93.2	2610	91.4	2230	78.1
Inverclyde CHP	425	410	96.5	407	95.8	404	95.1
Renfrewshire CHP	941	894	95.0	880	93.5	766	81.4
West Dunbartonshire CHP	505	491	97.2	482	95.4	386	76.4
NHSGGC Total	**5921**	**5 592**	**94.4**	**5505**	**93.0**	**4832**	**81.6**
Scotland[3]	**28140**	**26 194**	**93.1**	**25809**	**91.7**	**23312**	**82.8**
Glasgow City CHP sectors [5]:							
Glasgow North East	883	841	95.2	824	93.3	697	78.9
Glasgow North West	807	746	92.4	737	91.3	627	77.7
Glasgow South	1166	1 074	92.1	1049	90.0	906	77.7

Source: ISD, CHSP School (May 2012)/SIRS (August 2012)

1. Uptake rates are based on immunisations recorded on the CHSP School system and SIRS as at 13 August 2012. Final uptake rates for these girls one year later will be published in September 2013.

2. Girls recorded on CHSP-School as being in class year S2 as at 14 May 2012. These girls were in the second year of secondary school (during school year 2011/12) and were around 12 to 13 years of age.

3. CHP is derived from the child's postcode. There are a small number of records which do not have a postcode recorded or where there is no mapping to CHP. These records are included in the Scotland cohort and uptake rates and therefore the sum of the cohorts for all CHPs does not equate to the total cohort for Scotland.Does not include GGC residents in cambuslang and rutherglen areas

4. 'New' Glasgow City CHP, as reconfigured from 22 March 2011.

5. 'New' Glasgow City CHP sectors, as reconfigured from 22 March 2011.

Health Improvement

To improve uptake of cervical screening in more deprived communities, cervical cancer awareness training sessions were held for the health improvement workforce in NHS GGC. The objectives for this training were to increase knowledge in the cervical screening programme as well as to develop skills in overcoming barriers when talking to women about cervical screening. This included a session for outreach workers who work with the Roma community in south Glasgow as they are recognised as being a minority ethnic group that has a low uptake of cervical screening.

Future developments

From May 2012, NHSGGC will implement "test of cure" for women treated at Colposcopy for high grade cervical disease (CIN 1, CIN2 and CIN 3). This involves testing follow up smear samples for HPV in addition to cytological examination. The combined algorithm allows the return to normal 3 yearly recall for approximately 1300 women per annum whose HPV and ctytological result is normal.

Previously women with one mild dyskaryosis smear result were referred to colposcopy. From October 2012, women will be referred to colposcopy after two mild dyskaryosis smear results.

Challenges and future priorities

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

- Continue providing smear taker skills update training programme to further reduce the number of unsatisfactory smears.

- To implement changes to screening pathway follow up and management for abnormal smears reported.

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 first
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

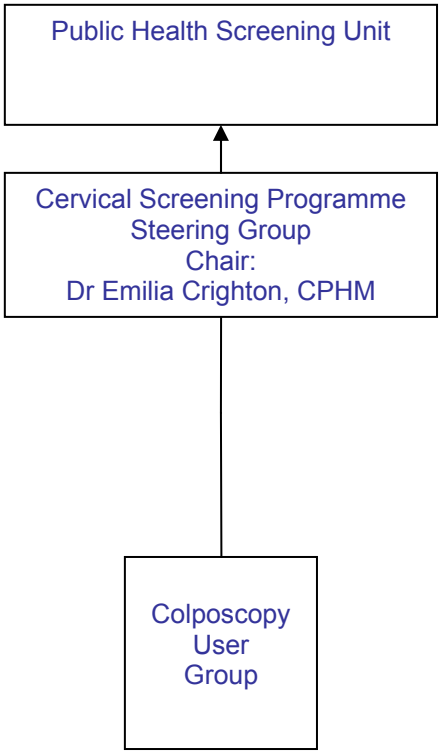
Appendix 1.2

Members of Cervical Screening Steering Group (As at March 2012)

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
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 2011 to March 2012.
- 105,220 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 as data cannot be excluded from analysis.
- 73,444 women attended breast screening during the reported period. This represents an overall uptake of 69.8% which is below the minimum standard of 70%.
- There were 519 (0.7%) women who were diagnosed with breast cancer following screening.
- In 2010, the number of new breast cancers registered in NHS Greater Glasgow and Clyde was 1,024. This gives a standardised incidence rate of 132.8 per 100,000 per population which is slightly higher than that for Scotland (128.6).
- In 2011, there were 219 deaths from breast cancer, giving a standardised rate of 24.4 per 100,000 population.
- Cancer Health Improvement work plan developed to increase public awareness and encourage uptake of the three cancer screening programmes, including breast. The plan also includes workforce development outcomes such as increasing staff awareness of early cancer symptoms, cancer risks and impact of lifestyle choices; increased attendance at screening amongst NHS staff and increased staff participation in mainstream health improvement activities, especially among low paid staff groups.

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 2011 to March 2012.

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 consists of two mammographic views.
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.

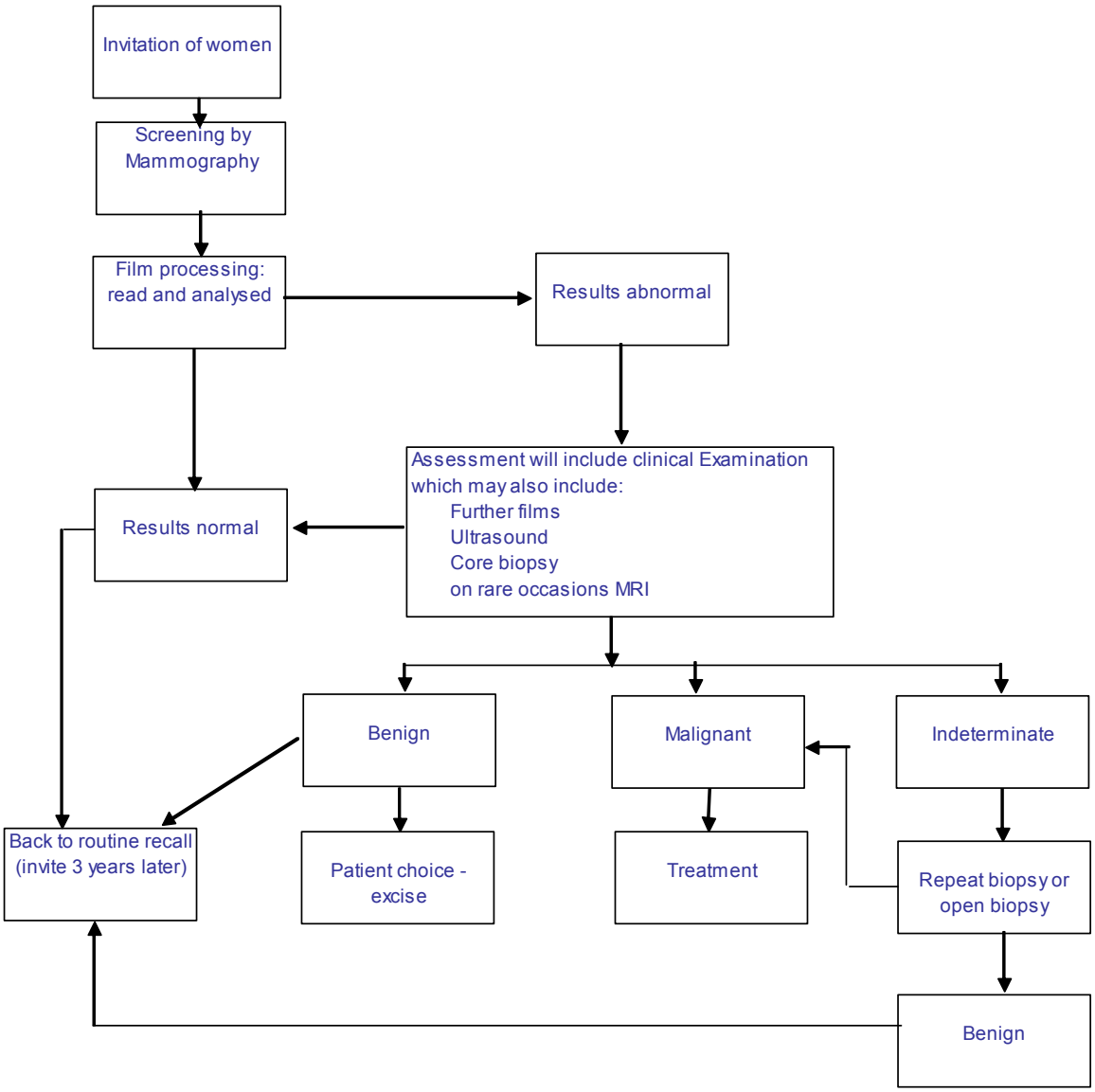
The mammograms taken during the screening visit are examined and the results sent to the woman and her GP. A proportion of women attending for screening will be recalled if the mammogram was technically inadequate or will be asked to go to an assessment clinic for further tests if a potential abnormality 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 NHSGGC Breast Screening Programme

In 2011/12, there were 50,110 women eligible for breast screening across the area of Greater Glasgow and Clyde **(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

CHP	Total Screening population - 3 year round					Screening Population per year[2]
	50-54	55-59	60-64	65-70	50-70	
East Dunbartonshire	4534	3762	3759	3659	15714	5238
East Renfrewshire	3600	3013	2890	2816	12319	4106
Glasgow North East	6241	4939	4463	4449	20092	6697
Glasgow North West	6214	5075	4360	4167	19816	6605
Glasgow South	7933	6438	5306	5030	24707	8236
Inverclyde	3160	2657	2752	2669	11238	3746
North Lanarkshire [1]	723	638	638	580	2579	860
Renfrewshire	6749	5589	5663	5393	23394	7798
South Lanarkshire [1]	2335	2064	1839	1693	7931	2644
West Dunbartonshire	3548	3148	3007	2836	12539	4180
NHSGG&C	**45037**	**37323**	**34677**	**33292**	**150329**	**50110**

Source: SAPE 2011

Note:

[1] NHS Greater Glasgow and Clyde only

[2] Screening population is the Total Population aged 50-70 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. 105,220 women registered with a practice in NHS Greater Glasgow and Clyde area were invited to attend breast screening. These include women resident in other NHS board areas as data cannot be excluded from analysis.

73,444 women attended breast screening during the reported period. This represents an overall uptake of 69.8% which is below the minimum standard of 70%. There were 519 (0.7%) women who were diagnosed with breast cancer following screening.

Table 2.2 NHSGGC Breast Screening programme interim activity data for 2011/12 by CH(C)P area

CH(C)P	Number invited[1]	Number attended[1]	% Uptake	Number Cancers Detected[1]	% Cancers of those Attended	% Cancers of those Invited
East Dunbartonshire CHP	6,139	4,786	78.0%	49	1.0%	0.8%
East Renfrewshire CHCP	5,164	4,017	77.8%	11	0.3%	0.2%
Glasgow North East	15,799	10,134	64.1%	75	0.7%	0.5%
Glasgow North West	14,779	9,496	64.3%	86	0.9%	0.6%
Glasgow South	15,943	10,830	67.9%	73	0.7%	0.5%
North Lanarkshire CHP	2,417	1,769	73.2%	30	1.7%	1.2%
South Lanarkshire CHP	4,524	3,185	70.4%	30	0.9%	0.7%
Inverclyde CHP	11,065	7,655	69.2%	47	0.6%	0.4%
Renfrewshire CHP	22,873	16,844	73.6%	73	0.4%	0.3%
West Dunbartonshire CHP	6,517	4,728	72.5%	45	1.0%	0.7%
NHS GGC	**105,220**	**73,444**	**69.8%**	**519**	**0.7%**	**0.5%**

Source: West of Scotland Breast Screening Data

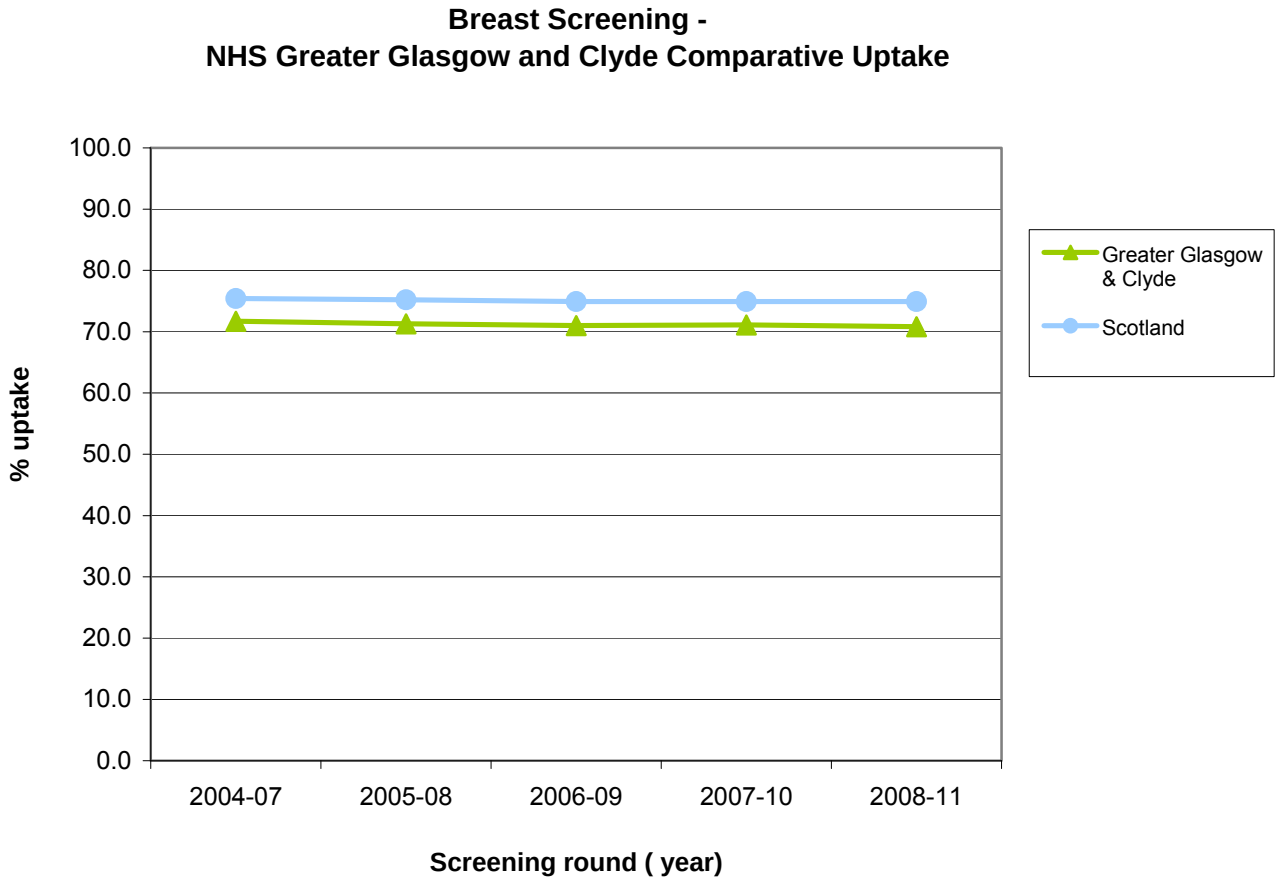
Note: Completion Details

Greater Glasgow: Round commenced January 2010; expected to complete December 2013
Inverclyde, Renfrewshire, West Dunbartonshire, Argyll & Bute (Formerly Argyll & Clyde): Round commenced April 2009; completed March 2012

[1] NHS GGC and Total Screening numbers will be 1 out: this is due to a practice that does not sit within a particular CHP.

Figure 2.2 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 2008/11 has remained slightly above the minimum standard of 70% at 71%, compared to the Scottish average of 74%. Interim data for the period 2011 – 2012 shows that uptake is 69.8%% which is below that of the minimum national standard.

Figure 2.2 Comparative trends in uptake in Breast Screening between NHS Greater Glasgow and Clyde and Scotland



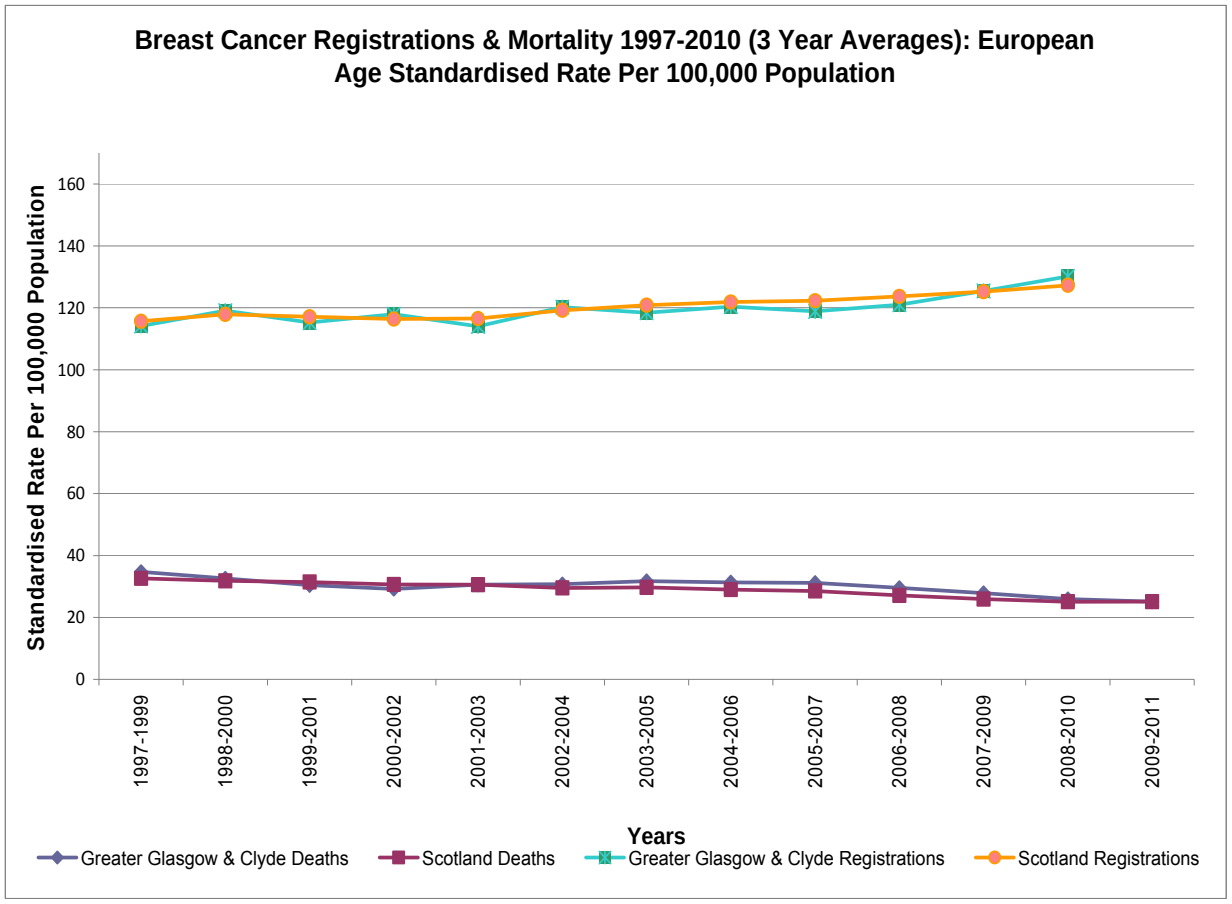
Source: Scottish Breast Screening Programme (SBSP) Information System - KC62 Returns; ISD Scotland

Breast Cancer morbidity and mortality

In 2010, the number of new breast cancers registered in NHS Greater Glasgow and Clyde was 1,024 (**see Table 2.3**). This gives a standardised incidence rate of 132.8 per 100,000 per population which is slightly higher than that for Scotland (128.6)

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

Figure 2.3 Breast Cancer registrations for period 1997 – 2011



(Source: Scottish Cancer Registry, ISD, July 2012)

Table 2.3 shows that the number of deaths from breast cancer in NHS Greater Glasgow and Clyde and Scotland. In 2011, there were 219 deaths from breast cancer, giving a standardised rate of 24.4 per 100,000 population.

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Table 2.3: Breast cancer registrations and deaths across NHS Greater Glasgow and Clyde for period 1997 - 2011

Scotland

Registration

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number	3467	3625	3688	3732	3622	3722	3903	3971	4058	4142	4126	4302	4401	4457	1036
EASR	112.9	115.6	118.5	119.6	113.3	116.3	120.1	121.3	121.2	123.2	122.5	125.4	127.9	128.6	38.3
- Lower 95% CI	109.0	111.7	114.5	115.7	109.4	112.4	116.2	117.4	117.4	119.4	118.6	121.6	124.0	124.7	36
- Upper 95% CI	116.9	119.6	122.5	123.7	117.1	120.2	124.0	125.2	125.1	127.2	126.4	129.3	131.9	132.5	40.6

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)

Source: Scottish Cancer Registry, ISD - Data extracted: March 2012

Deaths

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number	1154	1142	1129	1116	1143	1105	1138	1082	1144	1108	1062	1043	1002	1022	1036
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	25.9
- Lower 95% CI	31.3	30.7	29.9	29.0	29.7	27.8	28.8	26.7	28.2	26.7	25.4	24.2	23.4	23.0	24.2
- Upper 95% CI	35.4	34.7	33.9	32.9	33.6	31.5	32.6	30.3	31.9	30.3	28.9	27.5	26.7	26.2	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 2012

Greater Glasgow & Clyde

Registration

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number	841	875	843	942	788	900	880	930	875	938	895	934	1043	1024
EASR	113.6	116.2	112.6	128.5	104.7	120.6	116.8	123.3	115.2	122.7	118.8	121.6	136.1	132.8
- Lower 95% CI	105.7	108.3	104.7	120.0	97.1	112.5	108.8	115.2	107.3	114.7	110.8	113.6	127.7	124.5
- Upper 95% CI	121.9	124.5	120.8	137.3	112.5	129.1	125.0	131.8	123.3	131.1	127.0	129.9	144.8	141.4

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)

Source: Scottish Cancer Registry, ISD - Data extracted: March 2012

Deaths

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number	288	297	279	240	252	258	284	266	284	285	259	247	237	220	219
EASR	35.3	36.6	32.4	28.9	30.1	28.7	33.1	30.5	31.7	31.9	30.0	26.9	26.8	24.2	24.4
- Lower 95% CI	31.1	32.3	28.5	25.1	26.3	25.1	29.1	26.7	27.9	28.1	26.2	23.4	23.3	20.9	21.1
- Upper 95% CI	39.8	41.1	36.6	32.9	34.2	32.7	37.3	34.6	35.8	35.9	34.0	30.6	30.5	27.7	28

EASR: age-standardised incidence rate per 100,000 person-years at risk (European standard population)

Source: National Records of Scotland (NRS) - Date extracted: September 2012

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. 1000 women will be recruited by the West of Scotland Breast Screening Centre to take part in the tomography trial.
The trial will last two years.

Health Improvement

The newly established Cancer and Health Improvement Working Group is developing an action plan, in line with the Cancer and Health Improvement Strategy, to increase public awareness and encourage uptake of the three cancer screening programmes, including breast. This group has representation from all local NHSGGC Health Improvement teams and the voluntary sector. The group uses a variety of awareness raising, targeted promotion and education to fulfil the action plan and meets bi-monthly to report on progress.

The workplan includes workforce development outcomes such as increasing staff awareness of early cancer symptoms, cancer risks and impact of lifestyle choices; increased attendance at screening amongst NHS staff and increased staff participation in mainstream health improvement activities, especially among low paid staff groups.

During the national “Detect Cancer Early” breast campaign, local activity was undertaken to raise awareness of the key messages. Local health improvement teams supported the roadshows across NHS GGC, as well as targeting activity to local businesses, schools, primary care and hospital settings.

To maximise health improvement opportunities when women attend breast screening appointments, and in line with the evidence that 42% of breast cancers are avoidable through modifiable behaviours, all West of Scotland Breast Screening staff have undertaken training in health behaviour change and raising the issue of health behaviour change. The knowledge and skills gained from these courses will enable staff 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.

Establish performance measures for the promotion of breast screening that are aligned to the NHSGGC Cancer Health Improvement Strategy

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.

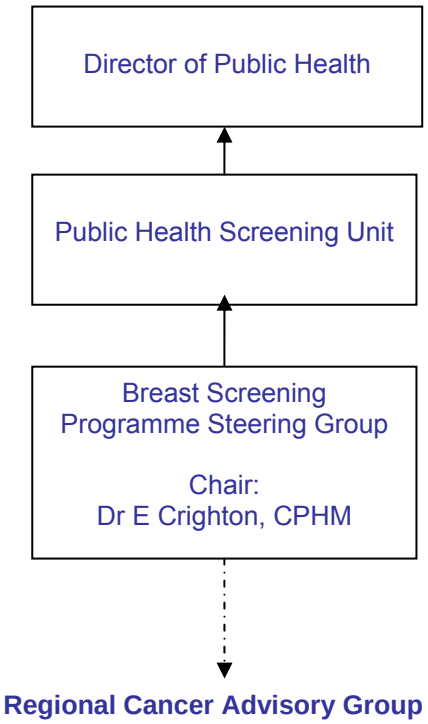
Appendix 2.1

Members of Breast Screening Steering Group (As at March 2012)

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
Mrs Eildhi O'Neill	Health Visitor, West Dunbartonshire CHP
Mrs Elizabeth Rennie	Programmes Manager, Screening Dept
Ms Claire Scott	Senior Health Improvement Officer

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 every two years. This chapter presents the full two year screening round report.

- 365,180 residents in NHS Greater Glasgow and Clyde were invited to participate in the Bowel Screening programme over two years between April 2010 and March 2012.

- 181,515 screening kits were completed and returned to the Bowel Screening laboratory for analysis. This gives an estimated uptake of 49.7%, representing a decrease of 1.3% reported in 2010/2011 when uptake was 51%.

- Overall, the lowest uptake was among the most deprived areas at 40.7%. The lowest uptake for bowel screening was among residents living in Glasgow CHP sectors North East (39.3%); North West (39.6%) and South (39.6%). Highest uptake was among residents living in the more affluent areas of West Dunbartonshire; East Dunbartonshire; East Renfrewshire and Renfrewshire where uptake exceeded 60%.

- The percentage uptake among females at 50.9% was higher than the male population at 45.1%. The lowest uptake of 37.6% was among the 50-54 year old male population group.

- Of the 6,230 patients screened positive, 5,694 patients were pre-assessed prior to colonoscopy. 257 patients did not respond to the offer of a colonoscopy pre-assessment.

- A letter is sent to patients and their GP that refuse or do not turn up for colonoscopy asking them to get in touch within 6 months if they change their mind, otherwise they will be removed from the waiting list. We also inform the Bowel Screening Centre so that the patient is invited to take part in bowel screening in two years.

- The overall positivity rate was higher among men at 4.2% compared to women at 2.8%. Compared to all other groups, the male population age group of 70 to 74 had the highest positivity rate of 6.3%.

- 4,844 (85.7%) patients completed colonoscopy investigations by 31 March 2012. 48 patients refused to take up the offer of a colonoscopy.

- Research by Mansouri et al (2011) confirmed that lower uptake of screening was seen in males, those that were younger and those who

were more deprived (all p<0.001). Only deprivation was associated with failure to proceed to colonoscopy following a positive test (p<0.001). Despite higher positivity rates being seen in those that were more deprived (p<0.001) the likelihood of detecting cancer in those attending for colonoscopy was lower (8% most deprived vs 10% least deprived, p=0.003).

- The results from another study by Mansouri, D et al., 2011 suggest that, compared with symptomatic tumours, screen detected tumours, in addition to being of an earlier stage, have more favourable tumour pathological features.

- Of the 1,939 people with learning disability that were invited to take part in the bowel screening programme, 28% (542) completed the bowel screening test. There were 21 patients who received positive results representing a positivity rate of 3.9%.

- Of the total eligible population invited to take part in bowel screening, 294 cancers were detected.

- In 2010, the most recent year for which completed data is available, the number of new colorectal cancers registered in NHS Greater Glasgow and Clyde was 446 for men and 408 for females. This gives a standardised incidence rate of 66.5 and 44.6 respectively per 100,000 populations.

- In 2011, the number of deaths from colorectal cancer in NHS Greater Glasgow and Clyde was 179 for male population and 127 in the female population. This gives a standardised rate of 25.8 and 12.5 respectively per 100,000 populations.

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, 854 people were diagnosed with bowel cancer in 2010 (Table 3.5)

The Scottish Bowel Screening Programme was fully implemented across Scotland in 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

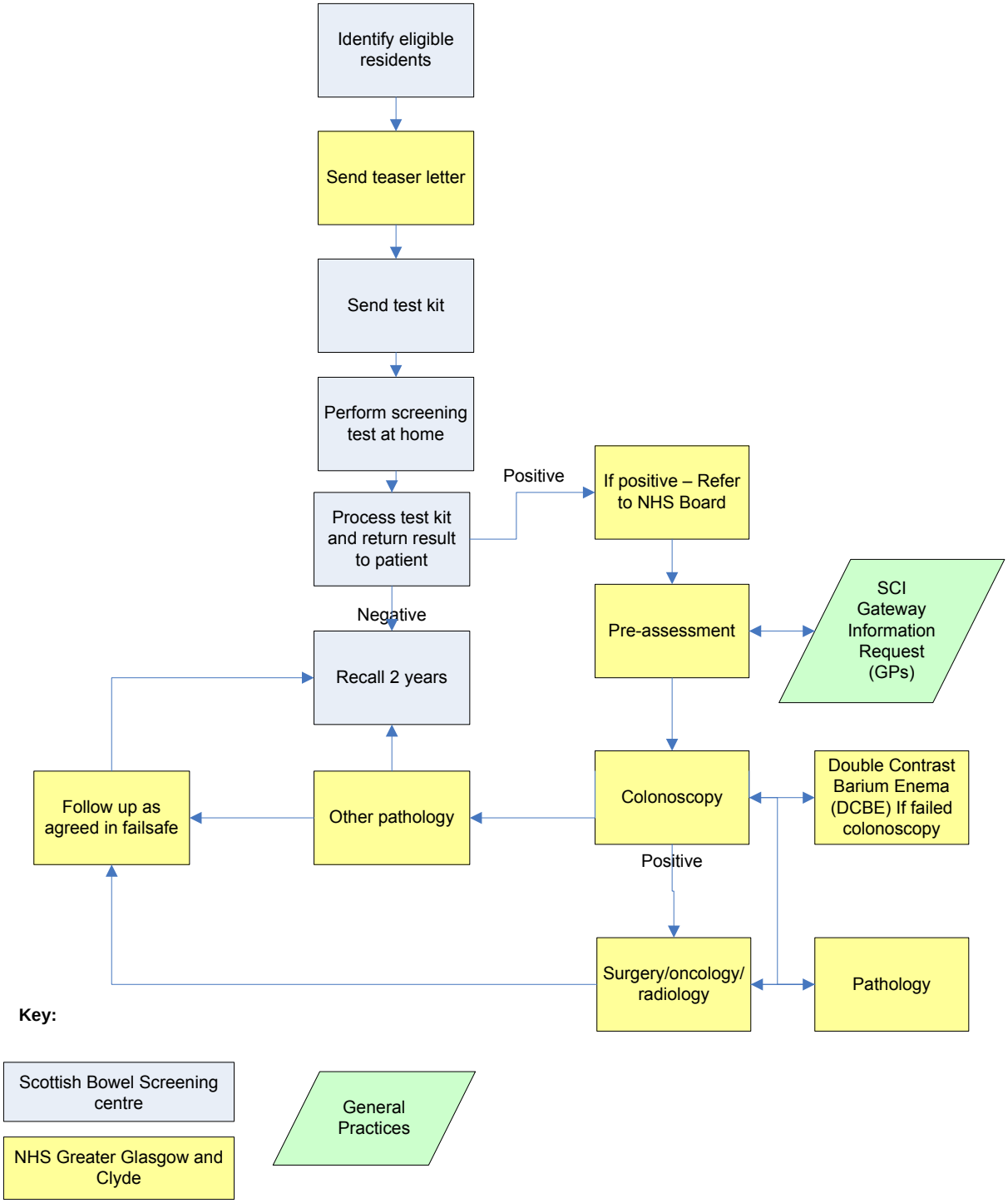
Eligible NHS Greater Glasgow and Clyde residents that are due to be invited to take part in the bowel screening programme are sent a “teaser” letter before they are sent an invitation letter and screening kit. The letter explains the programme and encourages participants to take the test.

The National Bowel Screening Centre in Dundee issue screening kits to all eligible residents of NHS Greater Glasgow and Clyde to carry out the screening test 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



Delivery of NHSGGC bowel screening programme

From 1 April 2010 to 31 March 2012, 365,180 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, 123,279 (33.8%) lived in the most deprived areas.

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

	Most Deprived				Least Deprived		
Uptake	**1**	**2**	**3**	**4**	**5**	**Unasssigned[2]**	**Total**
East Dunbartonshire	1411	4113	3524	7117	20978	13	37156
East Renfrewshire	1653	2164	3044	3150	19131	8	29150
Glasgow North East	33119	5582	4241	5245	1751	131	50069
Glasgow North West	21409	8548	6066	5089	8317	42	49471
Glasgow South	26651	13484	9474	7309	4409	73	61400
Inverclyde	11131	3949	4097	5067	2686	32	26962
North Lanarkshire [1]	717	405	2076	2303	338	2	5841
Renfrewshire	12371	10034	9163	9276	15032	56	55932
South Lanarkshire [1]	6149	3972	2073	3600	2950	3	18747
West Dunbartonshire	8668	9490	6169	3662	1508	34	29531
Unassigned[2]						919	919
Total NHS GGC	**123279**	**61741**	**49927**	**51820**	**77100**	**1313**	**365180**

Source: Bowel Screening IT system (data extracted December 2012)

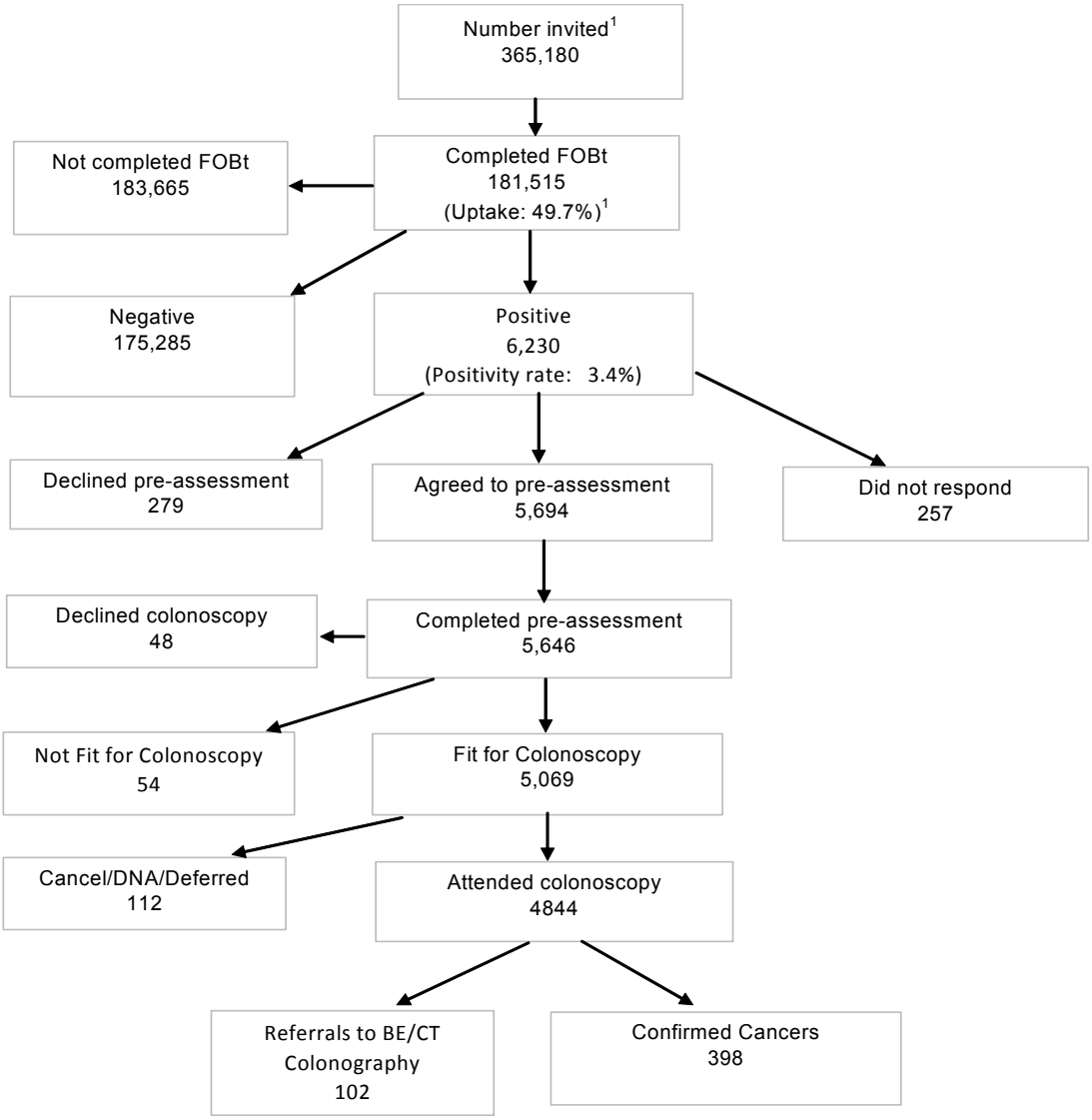
Notes:

1 NHSGGC residents only

2 Unable to assign CHP or SIMD due to incomplete/incorrect postcode

Figure 3.2 illustrates the bowel screening activity. 181,515 screening kits were completed and returned to the Bowel Screening laboratory for analysis. This gives an estimated uptake of 49.7%, representing a decrease of 1.3% reported in 2010/2011 when uptake was 51%.

Figure 3.2 NHSGGC Bowel Screening activity 1 April 2010 to 31 March 2012



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

Note:

1. Number invited is based on number of teaser letters issued. 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 2011 – 31 March 2012 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 40.7%. The lowest uptake for bowel screening was among the most deprived residents living in Glasgow CHP sectors North East (39.3%); North West (39.6%) and South (39.6%). Highest uptake was among residents living in the more affluent areas of West Dunbartonshire; East Dunbartonshire; East Renfrewshire and Renfrewshire where uptake exceeded 60%.

Table 3.2 NHSGGC Bowel Screening uptake by CH(C)P and deprivation category

	Most Deprived			Least Deprived			
Uptake	**1**	**2**	**3**	**4**	**5**	**Unasssigned[1]**	**Total**
East Dunbartonshire	44.2%	48.7%	53.5%	59.7%	62.3%	38.5%	58.8%
East Renfrewshire	41.0%	49.3%	54.1%	56.2%	61.6%	25.0%	58.1%
Glasgow North East	39.3%	43.9%	49.5%	54.1%	55.0%	27.5%	42.7%
Glasgow North West	39.6%	45.0%	45.5%	49.3%	57.2%	26.2%	45.2%
Glasgow South	39.6%	44.3%	48.7%	54.4%	57.7%	28.8%	45.1%
Inverclyde	43.3%	50.7%	53.2%	58.0%	59.9%	46.9%	50.3%
North Lanarkshire[2]	45.9%	49.1%	52.2%	56.5%	57.4%	0.0%	53.2%
Renfrewshire	42.4%	49.9%	53.0%	58.1%	61.7%	37.5%	53.3%
South Lanarkshire[2]	45.4%	49.2%	56.1%	57.9%	60.2%	100.0%	52.1%
West Dunbartonshire	42.3%	49.9%	53.5%	56.6%	63.5%	35.3%	49.9%
NHS GGC Total	**40.7%**	**47.4%**	**51.2%**	**56.2%**	**60.9%**	**32.0%**	**49.7%**

Source: Bowel Screening IT system (data extracted August 2012)

Notes:

1. Unable to assign to CHCP due to incomplete/missing postcodes
2. NHS GGC residents only

Table 3.3 shows that the percentage uptake among females at 50.9% was higher than the male population at 45.1%. The lowest uptake of 37.6% was among the 50-54 year old male population group.

Table 3.3 NHSGGC Bowel screening uptake and positivity rate by age and gender

	Uptake			% Positivity		
Age Group	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
50-54	45.0%	37.6%	41.3%	2.3%	3.1%	2.6%
55-59	51.0%	44.4%	47.7%	2.2%	3.7%	2.9%
60-64	53.5%	48.4%	51.0%	2.5%	4.1%	3.3%
65-69	57.8%	53.0%	55.5%	3.1%	4.8%	3.9%
70-74	52.9%	49.6%	51.4%	3.9%	6.3%	4.9%
75+	45.5%	46.8%	46.0%	4.9%	5.7%	5.3%
Total	**50.9%**	**45.1%**	**48.0%**	**2.8%**	**4.2%**	**3.4%**

Source: Bowel Screening IT system (data extracted August 2012)

The overall positivity rate was higher among men at 4.2% compared to women at 2.8%. Compared to all other groups, the male population age group of 70 to 74 had the highest positivity rate of 6.3%. This was higher than the national average 2.5% reported in the Scottish Bowel Screening Programme Statistics (ISD, 2011). There is a gradient in the positivity rate across deprivation categories. The positivity rate for residents living in the most deprived areas was 4.8% compared to 2.2% for residents living in least deprived areas (**Table 3.4**).

Table 3.4 FOBt Positivity rates by CHCP and deprivation category

	Most Deprived			Least Deprived			
Uptake	**1**	**2**	**3**	**4**	**5**	**Unasssigned[1]**	**Total**
East Dunbartonshire	6.1%	3.0%	3.3%	2.2%	2.3%	0.0%	2.5%
East Renfrewshire	3.8%	4.2%	3.9%	2.2%	2.1%	0.0%	2.5%
Glasgow North East	5.4%	5.0%	3.5%	3.6%	2.9%	0.0%	4.8%
Glasgow North West	5.0%	3.9%	3.5%	2.6%	1.8%	0.0%	3.7%
Glasgow South	4.8%	3.6%	3.1%	2.3%	2.2%	4.8%	3.7%
Inverclyde	4.7%	3.7%	3.4%	3.0%	2.5%	6.7%	3.7%
North Lanarkshire[2]	4.9%	4.0%	3.5%	2.5%	2.1%	0.0%	3.2%
Renfrewshire	3.8%	3.7%	3.4%	2.9%	2.2%	4.8%	3.0%
South Lanarkshire[2]	5.1%	3.5%	3.8%	3.0%	2.6%	0.0%	3.7%
West Dunbartonshire	3.9%	3.8%	3.6%	2.3%	1.4%	0.0%	3.4%
NHS GGC Total	4.8%	3.8%	3.4%	2.7%	2.2%	2.4%	3.4%

Of the 6,230 patients screened positive, 5,694 patients were pre-assessed prior to colonoscopy. 257 patients did not respond to the offer of a colonoscopy pre-assessment.

4,844 (85.7%) patients completed colonoscopy investigations by 31 March 2012. 48 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, 294 cancers were detected.

A letter is sent to patients and their GP that refuse or do not turn up for colonoscopy asking them to get in touch within 6 months if they change their mind, otherwise they will be removed from the waiting list. We also inform the Bowel Screening Centre so that the patient is invited to take part in bowel screening in two years.

Of the 1,939 people with learning disability that were invited to take part in the bowel screening programme, 28% (542) completed the bowel screening test (**Table 3.5**). There were 21 patients received positive results representing a positivity rate of 3.9%.

Table 3.5 NHSGGC Bowel Screening activity among people with learning disability

	Female	Male	Total
Invitied to participate	870	1069	1939
Completed Kits	247	295	542
Positive Result	11	10	21
Uptake (%)	28.4	27.6	28.0
Positivity Rate	4.5	3.4	3.9

Source: Bowel Screening IT system (data extracted December 2012)

Morbidity and mortality from colorectal cancer

In 2010, the most recent year for which completed data is available, the number of new colorectal cancers registered in NHS Greater Glasgow and Clyde was 446 for men and 408 for females **(see Table 3.6).** This gives a standardised incidence rate of 66.5 and 44.6 respectively per 100,000 populations.

Figure 3.3 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 2011, the number of deaths from colorectal cancer in NHS Greater Glasgow and Clyde was 179 for male population and 127 in the female population **(see Table 3.6)**. This gives a standardised rate of 25.8 and 12.5 respectively per 100,000 populations.

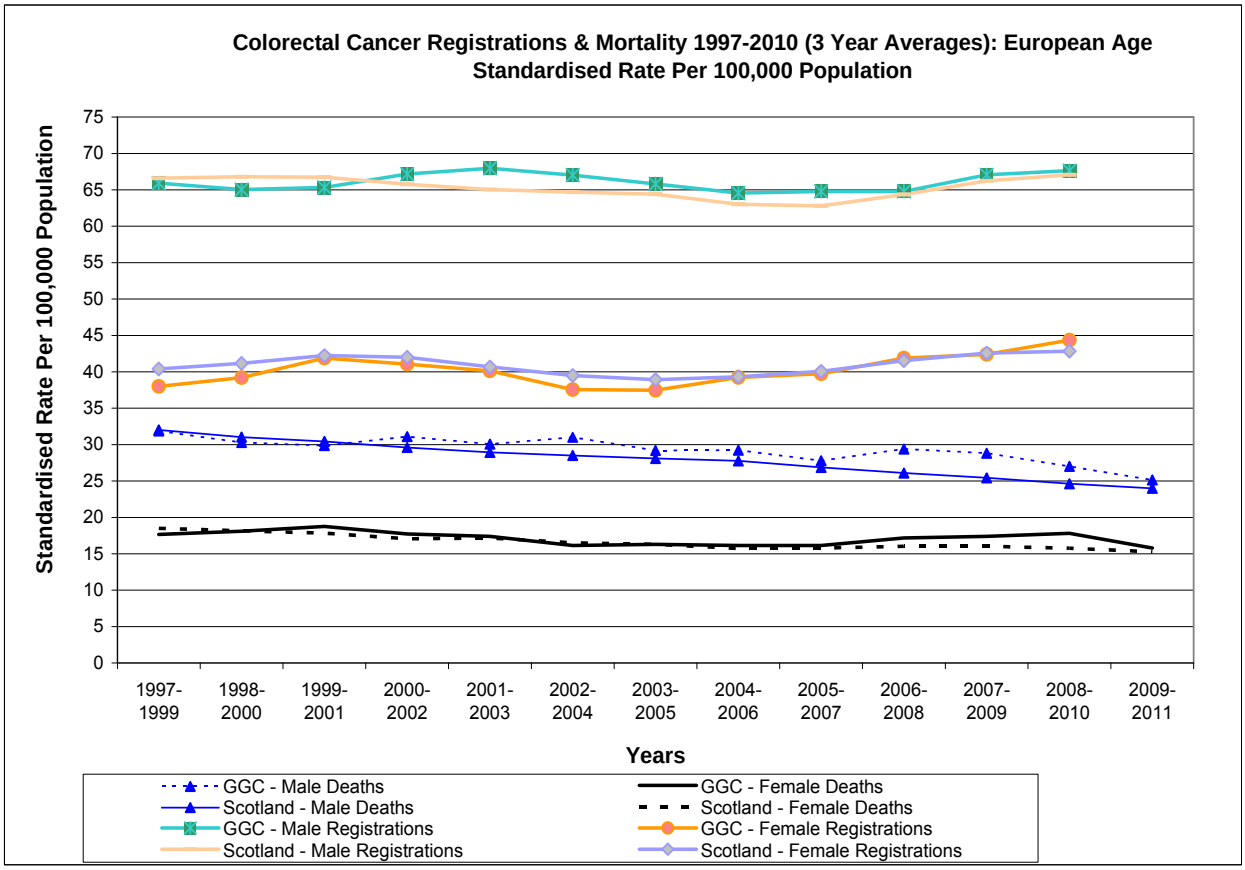
Figure 3.3 shows that the rate of deaths has remained consistent since 2004/06.

Table 3.6 Colorectal cancer incidence rates for 1997 to 2010 and mortality rates for 1997 to 2011 for NHS Greater Glasgow and Clyde and Scotland

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Greater Glasgow & Clyde															
MALES															
Deaths															
Number	219	194	175	197	184	203	183	213	172	182	186	203	183	159	179
Standardised rate per 100,000 pop	36.0	31.3	28.3	31.3	30.0	32.0	28.2	32.8	26.6	28.3	28.5	31.4	26.6	23	25.8
Lower 95% Confidence Interval	*31.3*	*27.0*	*24.2*	*27.0*	*25.7*	*27.7*	*24.2*	*28.5*	*22.8*	*24.3*	24.5	27.2	22.9	19.5	22.1
Upper 95% Confidence Interval	*41.0*	*35.9*	*32.7*	*35.9*	*34.5*	*36.6*	*32.5*	*37.4*	*30.8*	*32.6*	32.8	35.9	30.7	26.7	29.8
Registrations															
Number	428	408	387	412	415	428	438	408	410	424	424	419	478	446	
Standardised rate per 100,000 pop	69.6	66.0	62.2	66.9	66.9	67.7	69.3	64.1	64.1	65.5	64.8	64.1	72.3	66.5	
Lower 95% Confidence Interval	*63.1*	*59.7*	*56.1*	*60.5*	*60.5*	*61.4*	*62.9*	*57.9*	*58.0*	59.4	58.7	58.0	65.9	60.4	
Upper 95% Confidence Interval	*76.4*	*72.7*	*68.7*	*73.6*	*73.5*	*74.3*	*76.1*	*70.6*	*70.6*	72.0	71.2	70.4	79.0	72.9	
FEMALES															
Deaths															
Number	185	181	177	192	204	156	166	165	156	168	165	178	175	177	127
Standardised rate per 100,000 pop	17.2	17.8	18	18.5	19.8	14.9	17.5	16.0	15.4	17.0	16	18.5	17.7	17.2	12.5
Lower 95% Confidence Interval	*14.7*	*15.1*	*15.3*	*15.9*	*17*	*12.5*	*14.7*	*13.5*	*12.9*	*14.4*	13.5	15.7	15	14.6	10.3
Upper 95% Confidence Interval	*20*	*20.6*	*21*	*21.5*	*22.9*	*17.5*	*20.4*	*18.8*	*18.1*	*19.8*	18.7	21.5	20.6	20.1	15
Registrations															
Number	366	346	386	366	414	361	344	351	361	390	357	419	408	408	
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	43.9	44.6	
Lower 95% Confidence Interval	*32.4*	*32.8*	*36.6*	*35.6*	*40.4*	*34.3*	*33.0*	33.1	*34.0*	38.0	34.6	40.1	39.5	40.2	
Upper 95% Confidence Interval	*40.4*	*41.1*	*45.4*	*44.4*	*49.7*	*42.8*	*41.4*	*41.5*	*42.4*	47.0	43.1	49.2	48.6	49.4	
Scotland															
MALES															
Deaths															
Number	889	848	870	839	835	842	830	844	855	835	812	829	825	782	824
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	23.1	23.9
Lower 95% Confidence Interval	*30.9*	*29.2*	*29.7*	*28.0*	*27.6*	*27.3*	*26.1*	*26.3*	*26.2*	*25.2*	23.7	24	23.3	21.4	22.2
Upper 95% Confidence Interval	*35.2*	*33.4*	*34.0*	*32.1*	*31.6*	*31.3*	*30.0*	*30.2*	*30.0*	*28.9*	27.3	27.6	26.8	24.7	25.6
Registrations															
Number	1803	1788	1819	1886	1848	1818	1903	1913	1894	1889	2009	2134	2161	2177	
Standardised rate per 100,000 pop	67.4	66	66.4	68	65.8	63.5	65.8	64.8	62.6	61.7	64.1	67.3	67.3	66.6	
Lower 95% Confidence Interval	*64.3*	*62.9*	*63.4*	*64.9*	*62.8*	*60.6*	*62.8*	*61.9*	*59.8*	58.9	61.3	64.4	64.5	63.8	
Upper 95% Confidence Interval	*70.6*	*69.1*	*69.5*	*71.1*	*68.9*	*66.5*	*68.8*	*67.8*	*65.5*	64.6	67.0	70.2	70.2	69.5	
FEMALES															
Deaths															
Number	781	791	792	757	780	713	752	706	695	715	727	736	730	719	702
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	15.1	14.9
Lower 95% Confidence Interval	*16.9*	*17.3*	*17.2*	*15.9*	*16.4*	*15.1*	*16.2*	*14.5*	*14.5*	*14.6*	14.7	15.1	14.6	14	13.7
Upper 95% Confidence Interval	*19.6*	*20.1*	*20.0*	*18.5*	*19.1*	*17.7*	*18.9*	*16.9*	*17.0*	*17.1*	17.2	17.6	17.1	16.3	16.1
Registrations															
Number	1,609	1,535	1,626	1,690	1,688	1,602	1,552	1,613	1,594	1631	1706	1770	1802	1790	
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	43.2	43.0	42.3	
Lower 95% Confidence Interval	*38.3*	*37.6*	*39.1*	*40.6*	*40.7*	*38.4*	*36.7*	*37.3*	*36.8*	37.8	39.5	41.1	40.9	40.3	
Upper 95% Confidence Interval	*42.6*	*41.8*	*43.4*	*44.9*	*45.0*	*42.7*	*40.8*	*41.4*	40.8	42.0	43.7	45.4	45.1	44.4	

Notes:
Colorectal Cancer (ICD10: C18-C20)
Mortality Source: National Records of Scotland (NRS); Data extracted: September 2012
Registrations Source: Scottish Cancer Registry, ISD Data extracted: March 2012

Figure 3.3 Colorectal cancer incidence rates for 1997/98 to 2009/10 and mortality rates for 1997/98 to 2010/11 for NHS Greater Glasgow and Clyde and Scotland



(Source: Scottish Cancer Registry, July 2012; National Records Scotland, September 2012)

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.

Health improvement

NHSGGC is failing to achieve the 60% target for uptake of the bowel screening programme. The current overall uptake is 48%, which needs to be improved upon. When the figures are broken down further, there are great variations in uptake. Particular communities require targeted interventions to help tackle inequalities in uptake. The particular groups that need to have resources focussed on are men, people in areas of social deprivation, and people with learning disabilities.

A number of interventions have been introduced to address the inequalities in uptake. GP practices that are included in The Keep Well programme incorporate advice and encourage eligible participants to take part in the bowel screening programme during the Keep Well health check appointment.

The Cancer and Health Improvement Working Group is developing an action plan, progress of which is reported to the Cancer and Health Improvement Strategy, to increase public awareness and encourage uptake of the three cancer screening programmes, including bowel. This group has representation from all local NHS GGC Health Improvement teams, and the voluntary sector. The group uses a variety of awareness raising, targeted promotion and education approaches to fulfil the action plan and meets bimonthly to report on progress. In addition, another subgroup of the Cancer and Health Improvement Strategy is being established to progress workforce development outcomes such as increasing staff awareness of early cancer symptoms, cancer risks and impact of lifestyle choices; increased attendance at screening amongst NHS staff and increased staff participation in mainstream health improvement activities. The subgroup will be developing an action plan to progress towards the aforementioned outcomes and part of that work will be to target interventions and promotion of screening to our low paid staff groups.

The need to address low uptake of screening with people with Learning Disabilities (Table 3.4) led to a partnership project between NHS GGC and Bowel Cancer UK. The output from this partnership is the “Bowel Health and Screening” resource, a resource for people with Learning Disabilities and their carers. Alongside the resource, the project created a training day to help those who care for people with learning disabilities to maximise the benefits of the resource and gain more knowledge about good bowel health.

Research

In collaboration with the University of Glasgow, a number of research projects have been undertaken examining the results from the first round of screening in NHSGGC (April 2009 to April 2011 – see Appendix 3.1). Further work is ongoing.

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

Research Projects

- **The impact of age, sex and deprivation on outcomes throughout the screening process**

  From April 2009 to March 2011, 395 096 individuals were invited, 204 139 (52%) participated and 6 079 (3.0%) tested positive. Of the positive tests, 4 625 (76%) attended for colonoscopy and cancer was detected in 398 individuals (9%). Lower uptake of screening was seen in males, those that were younger and those who were more deprived (all $p<0.001$). Only deprivation was associated with failure to proceed to colonoscopy following a positive test ($p<0.001$). Despite higher positivity rates being seen in those that were more deprived ($p<0.001$) the likelihood of detecting cancer in those attending for colonoscopy was lower (8% most deprived vs 10% least deprived, $p=0.003$). This appeared to be due to a higher number of normal colonoscopies in the deprived patients and was not due to increased detection of adenomas or non-neoplastic colorectal pathology. Individuals who are deprived are less likely to participate in screening, less likely to undergo colonoscopy and less likely to have cancer identified as a result of a positive test. Strategies aimed at improving participation of deprived individuals in colorectal cancer screening should be directed at all stages of the screening process.

- **The importance of adequate bowel preparation for colonoscopy within a screening programme**

  From April 2009-April 2010, 1,584 patients underwent colonoscopy as a result of a positive FOBt via the Scottish Bowel Screening programme in NHS GG&C. Full details on adequacy of bowel preparation (BP) were available for 1,074 patients and these were included for analysis. BP was satisfactory in 87% (933) of patients and poor in 13% (141). Poor BP was not associated with gender, age, type of bowel preparation taken, or socio-economic deprivation. Those with poor BP were less likely to have a complete examination (84% vs 94%, $p<0.001$). Both the presence of any neoplasia (45% vs 58%, $p<0.05$) and the number of adenomata detected ($p<0.05$) was significantly lower in those with poor BP. Fewer T1/T2 cancers were detected in those with poor BP (31% vs 51%).Poor BP compromises screening due to missed adenomata. Small cancers may also be overlooked. This suggests that screened patients with poor BP require further risk assessment and may require earlier surveillance colonoscopy than current guidelines suggest.

- **Flexible sigmoidoscopy following a positive FOBt within a bowel screening programme may reduce the detection of neoplasia**

  This study examined the theoretical impact on neoplasia detection rates if a sigmoidoscopy-first protocol were to be used in those testing positive and presenting for colonoscopy within the SBoSP. Between April 2009-April 2011, 4,631 patients underwent colonoscopy as a result of a positive FOBt via the SBoSP. Complete datasets were available for 4,223 pts. Cancer was detected in 398 (9%) and adenomas in 1985 (47%) of which 1,323 (67%) were deemed significant enough to require follow-up as per British Society of Gastroenterology (BSG) guidelines. When the flexible sigmoidoscopy-first model was applied, cancer would be detected in 329 (8%) cases and adenomas in 1,640 (39%) of which 1,140 (70%) would prompt subsequent follow-up. 1,546 (37%) patients would have required colonoscopy [>3 polyps/1 polyp>1cm / villous/tubulovillous components or high grade dysplasia] of which only 9 of 85 with non-significant polyps, as per BSG guidelines, would have been upstaged as a result. The PPV of detecting any neoplasia (47% vs 57%), significant neoplasia (35% vs 41%) and cancer (8% vs 9%) were all significantly lower in the sigmoidoscopy-first model ($p<0.001$).

- **Incidental findings through the use of CT colonography within the Scottish Bowel Screning Programme**

  The aim of this study was to assess the prevalence and sequelae of incidental extra-colonic findings on CT colonography via the Scottish Bowel Screening programme. From April 2009 to April 2011, 4,631 individuals underwent colonic investigation following a positive FOBt via the SBoSP. Complete results were available for 4,223 (91%) which were included for analysis. Of these, 105 (3%) pts underwent CT colonography as either a first line investigation (5 pts) or as a follow up of an incomplete colonoscopy (100 pts). Colorectal cancer was detected in 1 (1%) patient, polyps in 22 (21%) patients, and non-neoplastic colorectal pathology in 16 (15%) patients. 25 significant extra-colonic findings that required subsequent investigation or referral for further tests were detected in 20 (19%) patients. These included but were not limited to urological pathology (6pts), gynaecological pathology (5pts) and chest pathology (4pts).Of the 20 pts with extra-colonic pathology, 8 (40%) pts required subsequent invasive procedures (lobectomy for lung tumour (1pt), cystectomy for bladder tumour (1pt), OGD (2pts), flexible cystoscopy (2pts), blood tests (3pts)). Incidental extra-colonic findings through the use of CT colonography are not uncommon, however the majority require non-invasive investigations only.

- **A comparison of tumour and host prognostic factors in screened detected versus non-screen detected colorectal cancer; a contemporaneous study**

  The aim of this study was to compare the prevalence of tumour and host prognostic factors in patients with screen detected (SD) and non-screen detected (NSD) colorectal cancer in a contemporaneous group. A total of 394 (288 SD, 106 NSD) patients were identified. Compared with the NSD patients, SD patients were more likely to be younger ($p<0.001$) and have tumours that were colonic ($p=0.001$), left sided ($p<0.001$) and of an earlier stage (50% Dukes A vs 17% Dukes A, $p<0.001$). When high risk tumour features were examined, vascular invasion ($p=0.023$), margin involvement ($p=0.009$), poor differentiation ($p=0.009$) and tumour perforation ($p=0.093$) were all less likely to be present in SD tumours. The systemic inflammatory response, as measured by both the modified Glasgow Prognostic Score (mGPS) and the Neutrophil to Lymphocyte Ratio (NLR), was elevated in significantly less SD patients than NSD patients (mGPS>1 in 17% vs 26%, $p=0.037$: NLR>5 in 7% vs 24%, $p<0.001$). In addition, less SD patients were anaemic (22% vs 50%, $p<0.001$).The results from this study suggest that, compared with NSD tumours, SD tumours, in addition to being of an earlier stage, have more favourable tumour pathological features. Furthermore, adverse host prognostic factors such as the presence of anaemia and an elevated systemic inflammatory response are also less likely to be present in patients with SD tumours.

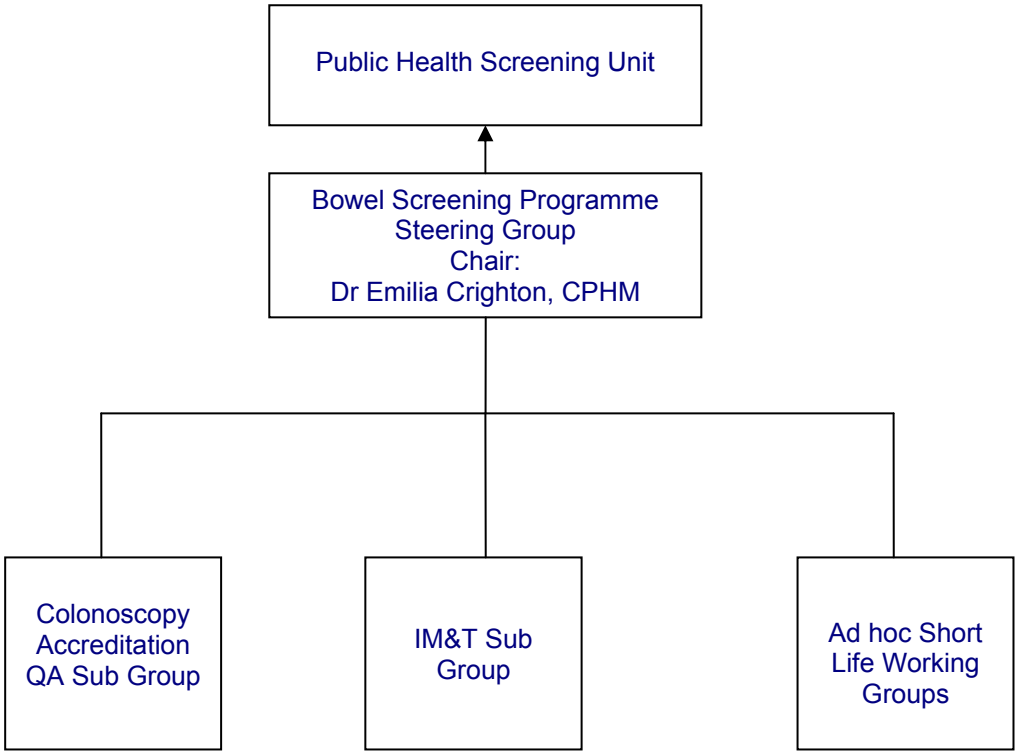
Appendix 3.2

Members of Bowel Screening Steering Group (As at March 2012)

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	Assist Programmes Manager, Screening Dept
Dr Derek Gillen	Lead Clinician for Endoscopy
Dr Rachel Green	Associate Medical Director, Laboratories & Diagnostics
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 3.3

Reporting Structure:
Bowel Screening Programme



SUMMARY

CHAPTER 4: PREGNANCY SCREENING

- There were 16,516 women booked to attend antenatal clinics across NHS Greater Glasgow and Clyde. 15,086 women were from NHS Greater Glasgow and Clyde residents and 1,430 women lived outwith the Board area. The pregnancy screening activity is recorded in the PNBS IT application. Pregnancy screening records were available for 14,052 (85.1%) women.

- 51.6% (7,253) of first antenatal booking appointments were offered within 12 weeks gestational age and 31.6% (4,445) between 13 to 16 weeks gestational age.

- 15,086 women booked for their first antenatal screening, 12,472 (82.7%) had taken up haemoglobinopathies screening.

- Data on the number of carriers and fetuses at risk of sickle cell disease and thalassaemia through screening is not available for 2011/12.

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

- Uptake across NHS Greater Glasgow and Clyde is greater than 98% for all four of the screening tests (HIV, Hepatitis B, Rubella and Syphillis).

- In 2011/12, the overall uptake for Down's syndrome and other congenital anomalies was 71.6%. 10,844 samples were tested for Down's syndrome. 2,143 samples were taken from women in their first trimester, and 8,485 samples were taken from women in the second trimester. 218 women chose to test only for other fetal anomalies.

- 13,130 (87%) of pregnant women gave consent for congenital anomalies screening. Records for the scanning outcome was available for 9,956 (75.8%) of those who gave consent, giving an uptake of 66%.

- 2.3% of women who had first trimester Down's syndrome screening and 5.1% of women who had second trimester Down's syndrome screening were assigned to the 'higher chance' of Down's syndrome group. 2.2% of women with an elevated AFP giving a 'higher chance' of a neural tube defect.

- 9,956 fetal anomaly scans performed, 140 anonomalies were detected and of that number 71 were confirmed.

- 407 amniocentesis samples were analysed by the Cytogenetics Laboratory. 28 abnormalities were detected (6.9% of samples) and 24 of those (5.9% of total tests) had a diagnosis of trisomy (Down's syndrome).

- 93 chorionic villus biopsies were analysed by the Cytogenetics Laboratory in 2011/12. 18 abnormalities were detected (19% of tests) and 12 of those (12.9% of tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

- A review of congenital anomalies detected, identified 316 fetuses affected between 1 April 2011 and 31 March 2012. The highest proportion of abnormalities detected were chromosomal (74) and cardiac/circulatory system (42).

CHAPTER 4: PREGNANCY SCREENING

Aims of pregnancy screening programmes

Antenatal haemoglobinopathies screening **for sickle cell and thalassaemia** aims to identify couples who are at risk of having an affected child and thereby offer them information on which to base reproductive choices.

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 pregnancy screening programmes are 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

Appendix 4.1 illustratrates the gestational age when pregnancy tests are carried out.

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 testing. The full screening pathway is shown in Appendix 4.2.

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: 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. The full screening pathway is shown in Appendices 4.3 – 4.7.

Screening for ***Down's syndrome*** can be carried out using two different screening methods depending on gestational age. 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. The full screening pathway is shown in Appendix 4.8. Ultrasound scanning is used to look for other **congenital anomalies**.

Delivery of NHSGGC pregnancy screening programmes

Each NHS Board has a statutory requirement to submit data on antenatal activity. According to SMR 00 returns submitted by NHS Greater Glasgow and Clyde, there were 16,516 women booked to attend antenatal clinics across NHS Greater Glasgow and Clyde (**Table 4.1)**.

The pregnancy screening activity is recorded in the PNBS IT application. Pregnancy screening records were available for 14,052 (85.1%) women.

Table 4.1 Number of women booked for their first antenatal appointments in NHS Greater Glasgow and Clyde 1 April 2011 to 31 March 2012

Maternity Unit	Bookers[1]	NHS GCC Residents[1]	Non NHS GGC Residents[1]	PNBS Clinical Data Available[2,3]
Princess Royal Maternity Hospital	5953	5143	810	4634
Royal Alexandra Hospital	7039	3146	378	3294
Southern General Hospital	3524	6797	242	5877
Total	**16516**	**15086**	**1430**	**14052**

1 Source: SMR00 return based on Board of residence, December 2012

2 Source: PNBS - based on Board of residence, December 2012

3 Includes 247 records unassigned to Maternity Unit

Table 4.2 shows that 51.6% (7,253) of first antenatal booking appointments were offered within 12 weeks gestational age and 31.6% (4,445) between 13 to 16 weeks gestational age.

Table 4.2 Gestational age at first antenatal booking appointment by maternity unit for period 1 April 2011 to 31 March 2012[1,2]

Maternity Unit	<=12Wks 6Days	13Wks 0Days - 16Wks	17Wks 0Days - 20Wks	21Wks 0Days - 24Wks	25Wks 0Days - 30Wks	>=31Wks 0Days	Not Known	Total
Princess Royal Maternity	2458	1389	218	63	20	36	450	4634
Royal Alexandra Hospital	2665	240	37	15	23	25	289	3294
Southern General Hospital	2027	2769	296	83	56	70	576	5877
Not Known[3]	103	47	11	1	3	0	82	247
Total	**7253**	**4445**	**562**	**162**	**102**	**131**	**1397**	**14052**
% Total	**51.6%**	**31.6%**	**4.0%**	**1.2%**	**0.7%**	**0.9%**	**9.9%**	

Source: Pregnancy & Newborn Screening System, December 2012

Notes:

1 NHS Greater Glasgow and Clyde residents only

2 Excludes known pregnancy losses

3 Incomplete data in PNBS

NHSGGC Antenatal Haemoglobinopathies Screening Programme

Haemoglobinopathy screening was implemented in October 2010. **Table 4.3** shows that, of the 15,086 women booked for their first antenatal screening, 82.7% (12,472) had taken up haemoglobinopathies screening.

Table 4.3 NHSGGC haemoglobinopathies screening activity for the period 1 April 2011 to 31 March 2012

Maternity Unit	Bookers[1]	FOQ[3] Completed[4]	% Uptake
Princess Royal Maternity	5143	3593	69.9
Royal Alexandra Hospital	3146	3132	99.6
Southern General Hospital	6797	5579	82.1
Total	**15086**	**12477**	**82.7**

Sources: SMR00; Pregnancy & Newborn Screening, December 2012

Notes:

1. First antenatal appointment
2. Includes 183 consents maternity unit unknown
3. FOQ - family origin questionnaire
4. Includes 173 completed FOQs maternity unit unknown

Data on the number of carriers and fetuses at risk of sickle cell disease and thalassaemia through screening is not available for 2011/12.

NHSGGC Communicable Diseases in Pregnancy Screening Programme

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

Table 4.4 NHSGGC Communicable diseases tests and results

1st April 2011 - 31st March 2012					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 not tested [5]	
	(N)	(N)	(N)	%	(N)	%	(N)	%	(N)	%
HIV	16249	16048	201	98.76	20	0.12	16002	99.71	26	0.16
HBV	16249	16092	157	99.03	72	0.44	15995	99.40	25	0.16
Rubella	16249	16199	50	99.69	15428	95.24	747	4.61	24	0.14
Syphilis	16249	16103	146	99.10	7	0.04	16072	99.81	24	0.15

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

Notes:

1 13 of the 20 HIV infections were previously known about
2 38 of the 72 HBV infections were previously known about
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, e.g. sample volume too small, the test could not be carried out. A repeat sample will be needed.

NHSGGC Down's syndrome and other congenital anomalies screening programme

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.

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.

In 2011/12, the overall uptake for Down's syndrome and other congenital anomalies was 71.6%.

Table 4.5 shows that 10,844 samples were tested for Down's syndrome. 2,143 samples were taken from women in their first trimester, and 8,485 samples were taken from women in the second trimester. 218 women chose to test only for other fetal anomalies.

Table 4.5: Uptake rate of Down's syndrome tests, and type of screening test for the period 2011/2012

Area	First Trimester screening [1]		Second Trimester screening		Number women booked[2]	Overall
	N	%	N	%	N	%
Clyde	2,144	83.0	439	17.0	3,153	81.9%
Greater Glasgow	184	2.2	8,046	97.8	11,945	68.8%
Total	**2,328**	**21.5**	**8,485**	**78.5**	**15,098**	**71.6%**

Source: West of Scotland Regional Prenatal Screening Service; SMR00

Notes

1 Combined ultrasound biochemical Screening

2 Number of women booked for maternity care

Table 4.6 indicates that 87% of pregnant women gave consent for congenital anomalies screening. Records for the scanning outcome was available for 75.8% of those who gave consent, giving an uptake of 66%.

Table 4.6 Uptake rate for other congenital anomalies (fetal anomaly scan)

Maternity Unit	Bookers[1]	Fetal anomaly scan consented[2,3]	% Fetal anomaly scan consented	anomaly scan performed[4]	% Fetal anomaly scan performed	% Uptake
Princess Royal Maternity Hospital	5143	4269	83.0	3344	78.3	65.0
Royal Alexandra Hospital	3146	3165	100.6	2465	77.9	78.4
Southern General Hospital	6797	5491	80.8	3992	72.7	58.7
Total	**15086**	**13130**	**87.0**	**9956**	**75.8**	**66.0**

1 Source: SMR00, December 2012

2 Source: Pregnancy & Newborn Screening System, December 2012

3 Includes 205 Consents maternity unit unknown

4 Includes 155 fetal anomaly scans maternity unit unknown

Table 4.7 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, 2.3% of women were assigned to the 'higher chance' of Down's syndrome group.

Following the second trimester Down's syndrome screening, 5.1% of women were assigned to the 'higher chance' of Down's syndrome group, and 2.2% of women had an elevated AFP giving a 'higher chance' of a neural tube defect.

Table 4.7 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	54	2.3
2nd Trimester Down's syndrome screening		
	N	%
- Higher Chance' of Down's syndrome	430	5.1
- NTD risk (AFP≥ 2.0 MOM)	186	2.2

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 4.8 shows that of the 9,956 fetal anomaly scans performed, 140 anonomalies were detected and of that number 71 were confirmed. The outcomes for 41 anomalies are not known.

Table 4.8 Outcome of fetal anomaly scans performed for the period 1 April 2011 to 31 March 2012

Maternity Unit	Fetal anomaly scan performed	Fetal anomaly detected	% Fetal anomaly detected	Anomaly confirmed	No anomaly detected (Further Scans)	No anomaly detected postnatally	Outcome Not Known
Princess Royal Maternity Hospital	3344	32	1.0	15	3	8	6
Royal Alexandra Hospital	2465	51	2.1	22	0	0	29
Southern General Hospital	3992	55	1.4	33	13	4	5
Unknown	155	2	1.3	1	0	0	1
Total	**9956**	**140**	**1.4**	**71**	**16**	**12**	**41**

Source: Pregnancy & Newborn Screening System, December 2012

Table 4.9 shows that 407 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.

28 abnormalities were detected (6.9% of samples) and 24 of those (5.9% of total tests) had a diagnosis of trisomy (Down’s syndrome).

Table 4.9 Cytogenetics analysis of amniocentesis outcomes of samples by indication type for the period 1 April 2011 - 31 March 2012

	Biochemical Screening	Maternal Age	Abnormalities on Scan	Other	Total
Number of women (= number of tests)	257	77	56	17	407
% total referral reasons	63.1%	18.9%	13.8%	4.2%	100%
Number with normal results	247	74	43	15	379
Number with diagnostic trisomy	7	3	13	1	24
% number with diagnostic trisomy	2.7%	3.9%	23.2%	5.9%	5.9%
Number of other non trisomy abnormalities	3	0	0	1	4
Total number of abnormalities	**10**	**3**	**13**	**2**	**28**
% total number of abnormalities	**3.9%**	**3.9%**	**23.2%**	**11.8%**	**6.9%**

source: Cytogenetics Laboratory

Table 4.10 shows that 93 chorionic villus biopsies were analysed by the Cytogenetics Laboratory in 2011/12. 18 abnormalities were detected (19% of tests) and 12 of those (12.9% of tests) had a diagnosis of trisomy (Down's syndrome/Trisomy 18).

Table 4.10 Cytogenetics analysis outcomes of chorionic Villus Biopsy samples by indication for the period 1 April 2011 to 31 March 2012

	Referral Type				
	Biochemical Screening	**Maternal Age**	**Abnormalities on Scan**	**Other**	**Total**
Number of women (= number of tests)	9	11	36	37	93
% total referral reasons	9.7%	11.8%	38.7%	39.8%	100%
Number with normal results	9	11	20	35	75
Number with diagnostic trisomy	0	0	11	1	12
% total with diagnostic trisomy	0.0%	0.0%	30.6%	2.7%	12.9%
Number of other non trisomy abnormalities	0	0	5	1	6
Total number of abnormalities	**0**	**0**	**16**	**2**	**18**
% total number of abnormalities	**0.0%**	**0.0%**	**44.4%**	**5.4%**	**19.4%**

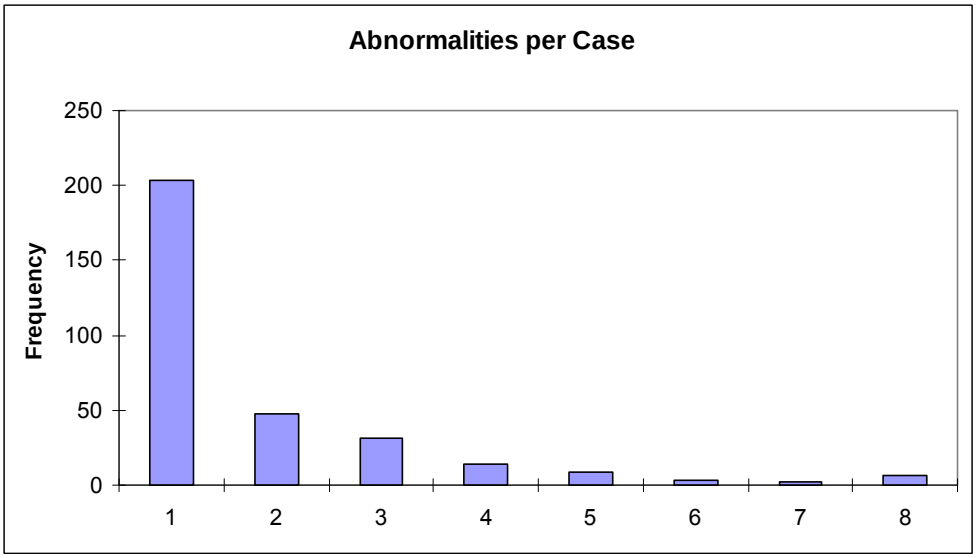
source: Cytogenetics Laboratory

Congenital anomalies

A review of congenital abnormalities detected was carried out in 2012 (Robins, J., 2013). Considering all live-births, stillbirths and terminations between 1 April 2011 and 31 March 2012, there were 316 individual records on the database, listed and ranked by primary abnormality (Robins, J., 2013).

Figure 4.3 shows that of the 316 cases identified, most had a single anomaly present.

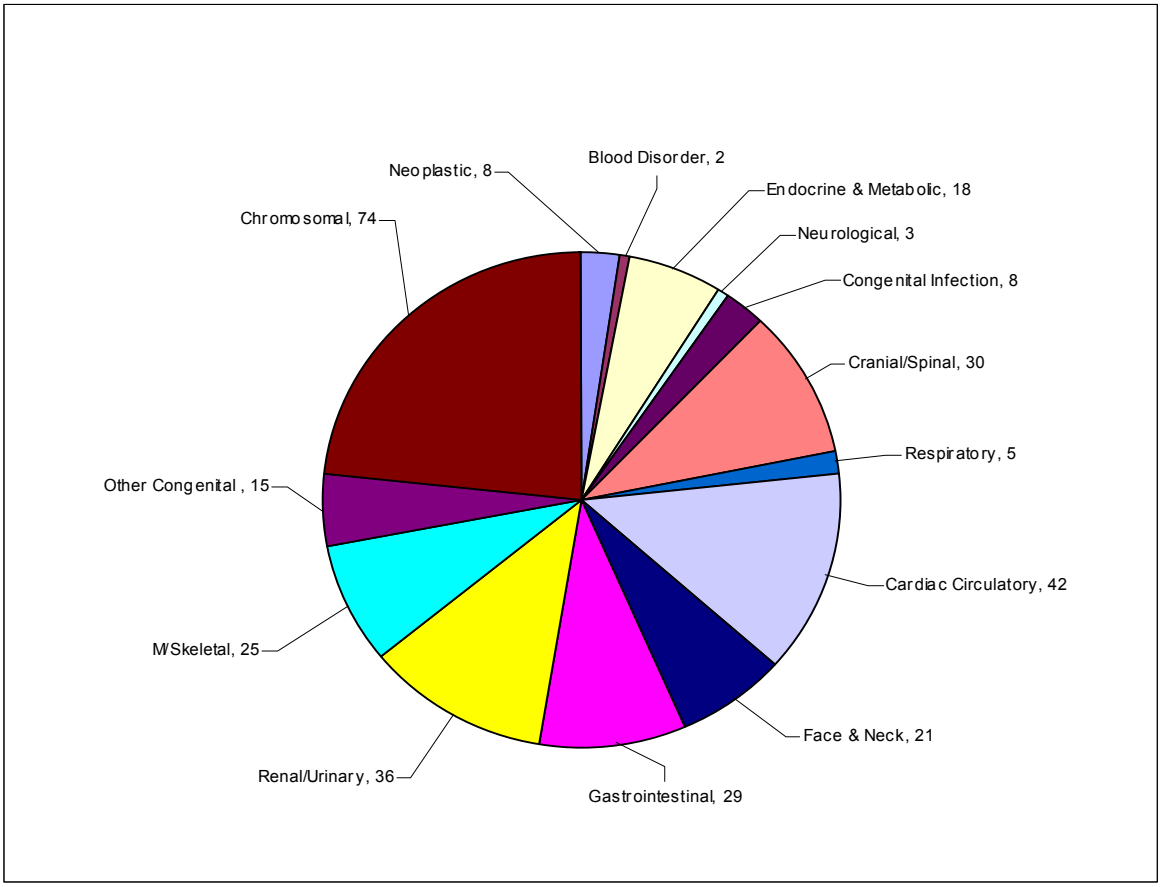
Figure 4.3



Source: Robins J. 2013
Note: includes live, stillbirths or terminations

Figure 4.4 gives a breakdown of the abnormalities found. The highest number of abnormalities detected were chromosomal (74) and cardiac/ circulatory system (42).

Figure 4.4: Fetal anomalies detected during the prenatal period



Source: Robins, J., 2013

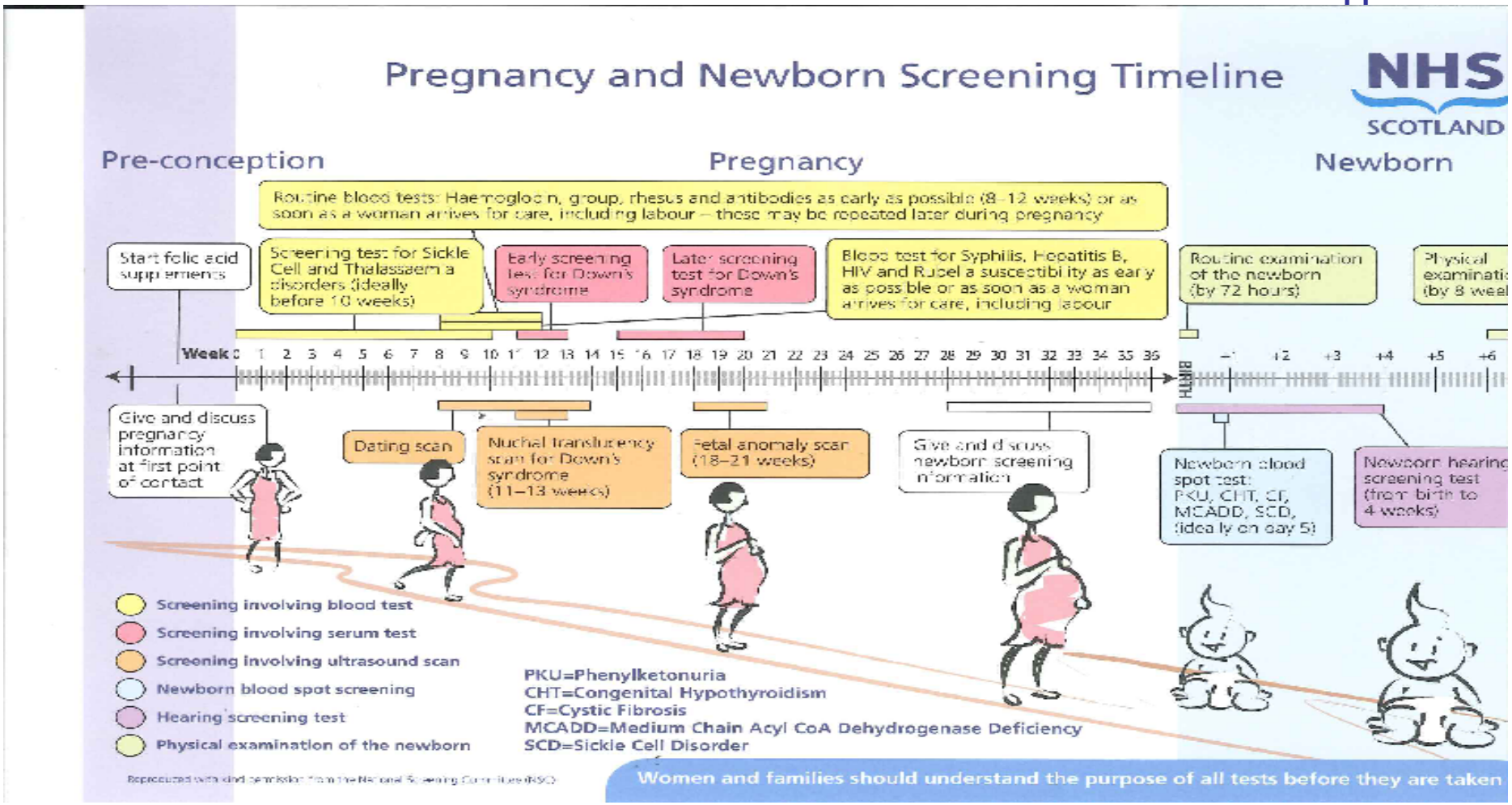
Information systems

PNBS IT application is used to support all pregnancy and newborn screening programmes. The application brought improvements in both the reporting and management of cases identified through the programme. It introduced additional failsafe mechanisms into the screening programme.

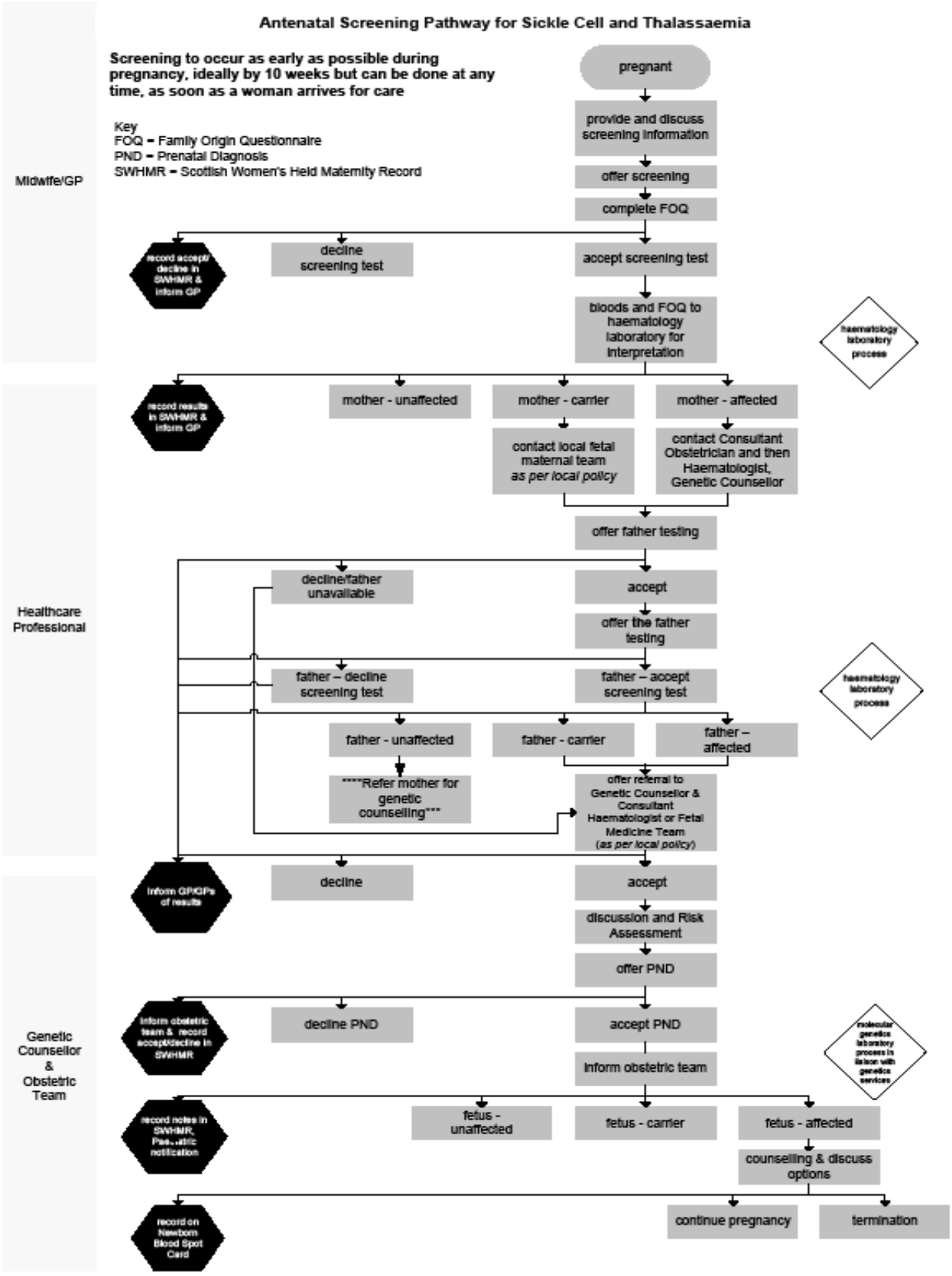
Challenges and Priorities

- Improving data completeness
- First trimester Down's syndrome screening for all Glasgow residents

Appendix 4.1


Pregnancy and Newborn Screening Timeline
NHS SCOTLAND
Pre-conception
Pregnancy
Newborn
Routine blood tests: Haemoglobin, group, rhesus and antibodies as early as possible (8–12 weeks) or as soon as a woman arrives for care, including labour – these may be repeated later during pregnancy
Start folic acid supplements
Screening test for Sickle Cell and Thalassaemia disorders (ideally before 10 weeks)
Early screening test for Down's syndrome
Later screening test for Down's syndrome
Blood test for Syphilis, Hepatitis B, HIV and Rubella susceptibility as early as possible or as soon as a woman arrives for care, including labour
Routine examination of the newborn (by 72 hours)
Physical examination (by 8 weeks)
Week 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
BIRTH
+1 +2 +3 +4 +5 +6
Give and discuss pregnancy information at first point of contact
Dating scan
Nuchal translucency scan for Down's syndrome (11–13 weeks)
Fetal anomaly scan (18–21 weeks)
Give and discuss newborn screening information
Newborn blood spot test: PKU, CHT, CF, MCADD, SCD, (ideally on day 5)
Newborn hearing screening test (from birth to 4 weeks)
Screening involving blood test
Screening involving serum test
Screening involving ultrasound scan
Newborn blood spot screening
Hearing screening test
Physical examination of the newborn
PKU=Phenylketonuria
CHT=Congenital Hypothyroidism
CF=Cystic Fibrosis
MCADD=Medium Chain Acyl CoA Dehydrogenase Deficiency
SCD=Sickle Cell Disorder
Reproduced with kind permission from the National Screening Committee (NSC)
Women and families should understand the purpose of all tests before they are taken

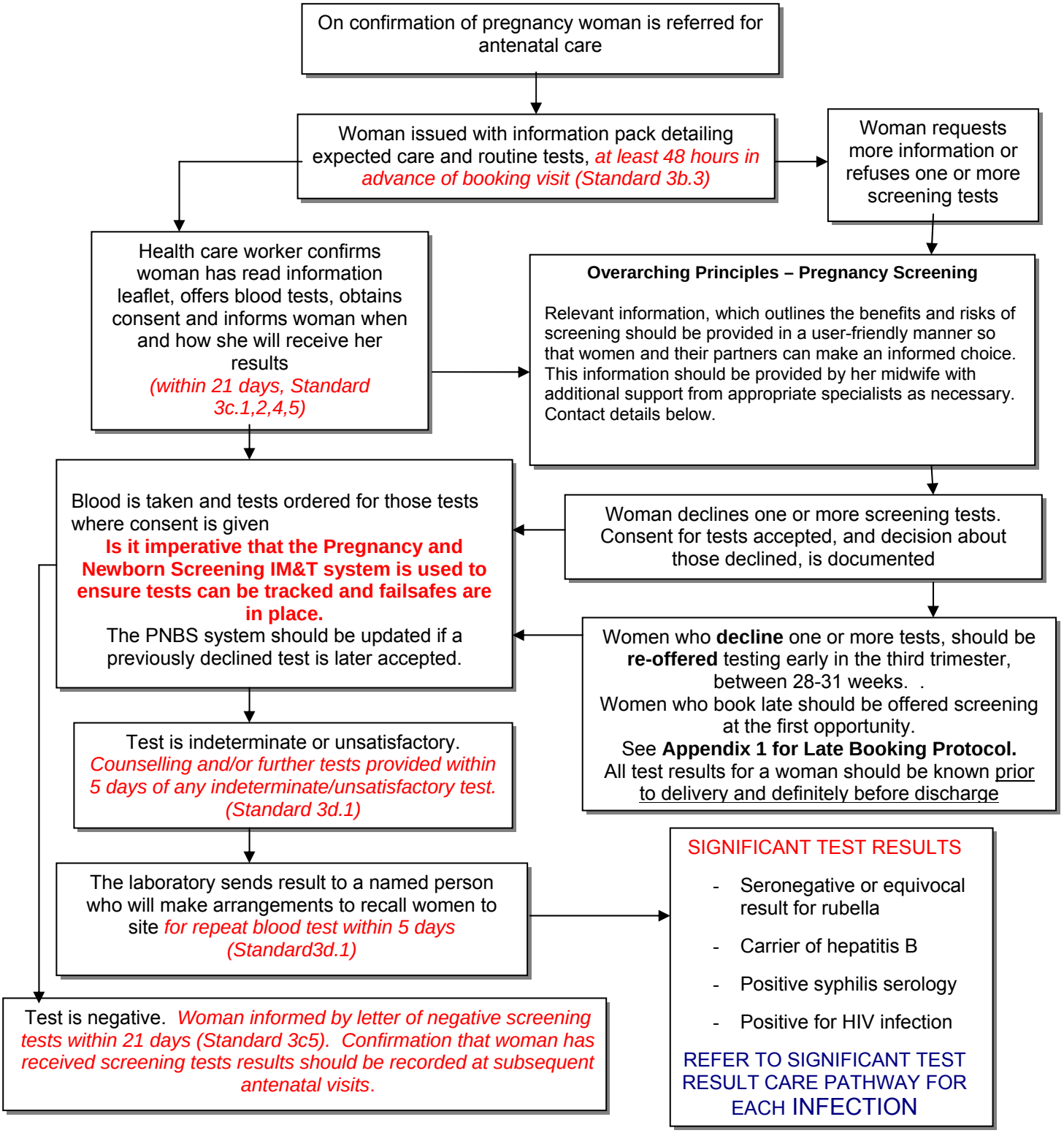
Appendix 4.2


Antenatal Screening Pathway for Sickle Cell and Thalassaemia
Screening to occur as early as possible during pregnancy, ideally by 10 weeks but can be done at any time, as soon as a woman arrives for care
Key
FOQ = Family Origin Questionnaire
PND = Prenatal Diagnosis
SWHMR = Scottish Women's Held Maternity Record
Midwife/GP
Healthcare Professional
Genetic Counsellor & Obstetric Team
pregnant
provide and discuss screening information
offer screening
complete FOQ
decline screening test
record accept/decline in SWHMR & inform GP
accept screening test
bloods and FOQ to haematology laboratory for interpretation
haematology laboratory process
record results in SWHMR & inform GP
mother - unaffected
mother - carrier
mother - affected
contact local fetal maternal team as per local policy
contact Consultant Obstetrician and then Haematologist, Genetic Counsellor
offer father testing
decline/father unavailable
accept
offer the father testing
father – decline screening test
father – accept screening test
haematology laboratory process
father - unaffected
father - carrier
father – affected
****Refer mother for genetic counselling***
offer referral to Genetic Counsellor & Consultant Haematologist or Fetal Medicine Team (as per local policy)
inform GP/GPs of results
decline
accept
discussion and Risk Assessment
offer PND
inform obstetric team & record accept/decline in SWHMR
decline PND
accept PND
inform obstetric team
molecular genetics laboratory process in liaise with genetics services
record notes in SWHMR, Pae..atric notification
fetus - unaffected
fetus - carrier
fetus - affected
counselling & discuss options
record on Newborn Blood Spot Card
continue pregnancy
termination

Appendix 4.3

Offering Routine Antenatal Communicable Disease Screening Tests

"The primary aim of screening women for these conditions is to ensure a plan for treatment and management for affected individuals and their babies".

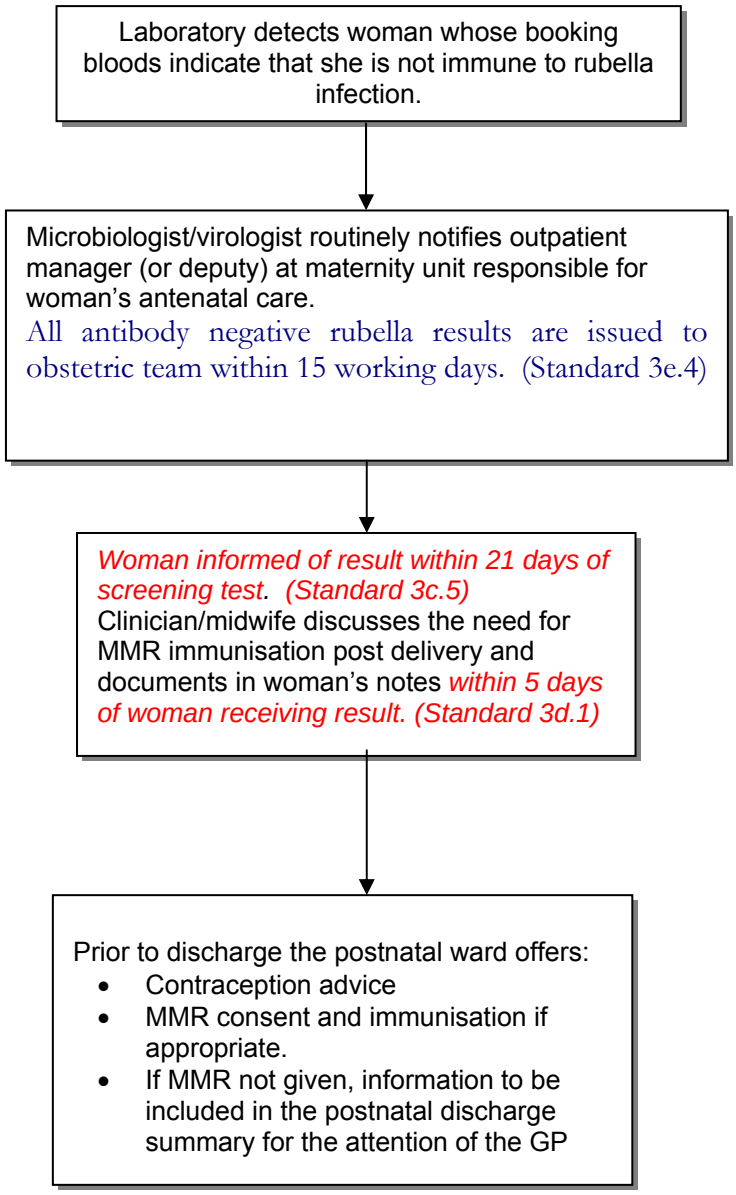


N.B. If a woman feels she has been/continues to be at risk of exposure to HIV, she should be offered re-testing 3 monthly in pregnancy. If a woman develops symptoms of hepatitis or an STI she should be referred to the relevant professional (hepatologist/SHA) for appropriate assessment.

Appendix 4.3

Protocol for Significant Laboratory Results

NOT IMMUNE TO RUBELLA INFECTION



Appendix 4.4

Protocol for Significant Laboratory Results

HEPATITIS B

Woman is found to be hepatitis B surface antigen positive

↓

Virologist sends a letter and copy of report to:

- the named outpatient manager, or deputy, at the maternity unit responsible for woman's antenatal care
- the nominated hepatitis B Obstetrician at the maternity unit
- cc'd to CAST - Counselling and Support Team at Brownlee
- the GP (if patient registered)

The Public Health Protection Unit (PHPU) is notified electronically on a weekly basis.

All screen positive samples are confirmed and issued to the named clinician within 15 days of the screening test. (Standard 3e.2)

↓

The nominated obstetricians for hepatitis B will ensure that the woman's named obstetrician carries out the following:

The woman is recalled and repeat blood tests to confirm identity are carried out

The woman is *informed of the result within 21 days of screening test (Standard 3c.4)* and understands the meaning of the result and need for immunisation of baby.

The woman is immediately referred to the local hepatitis service for clinical review and advice

The woman is offered referral to CAST team for further advice, counselling and support *within 5 days of woman being informed of significant result. (Standard 3d.1)*

The woman is given an appointment to attend for review at 26 weeks.

The hepatitis B status and management plan is clearly documented in the Neonatal section of the Yellow Alert Sheet which starts every inpatient maternity record

Refer to the NHS GGC Obstetric Guidelines – 'Hepatitis B positive Management of women identified through antenatal screening' (January 2012)

↓

Healthcare worker ensures appropriate instructions received from the laboratory for follow up of baby are documented in relevant place in mother's notes.

↓

Maternity staff inform the paediatric team to ensure appropriate treatment is given within 24 hours of birth. Immunisation form completed and faxed or emailed (GG-UHB.HepatitisB@nhs.net) to Community Screening Department within 48 hours of immunisation.

→ Before discharge from the maternity unit, a check should be made that the woman has already attended the hepatitis service and if not, a further appointment at 2 months is made.

↓

Community Screening Department records immunisation and recalls child for all subsequent immunisations. GP refers child at 12 months to appropriate paediatrician, for blood test to check immunity

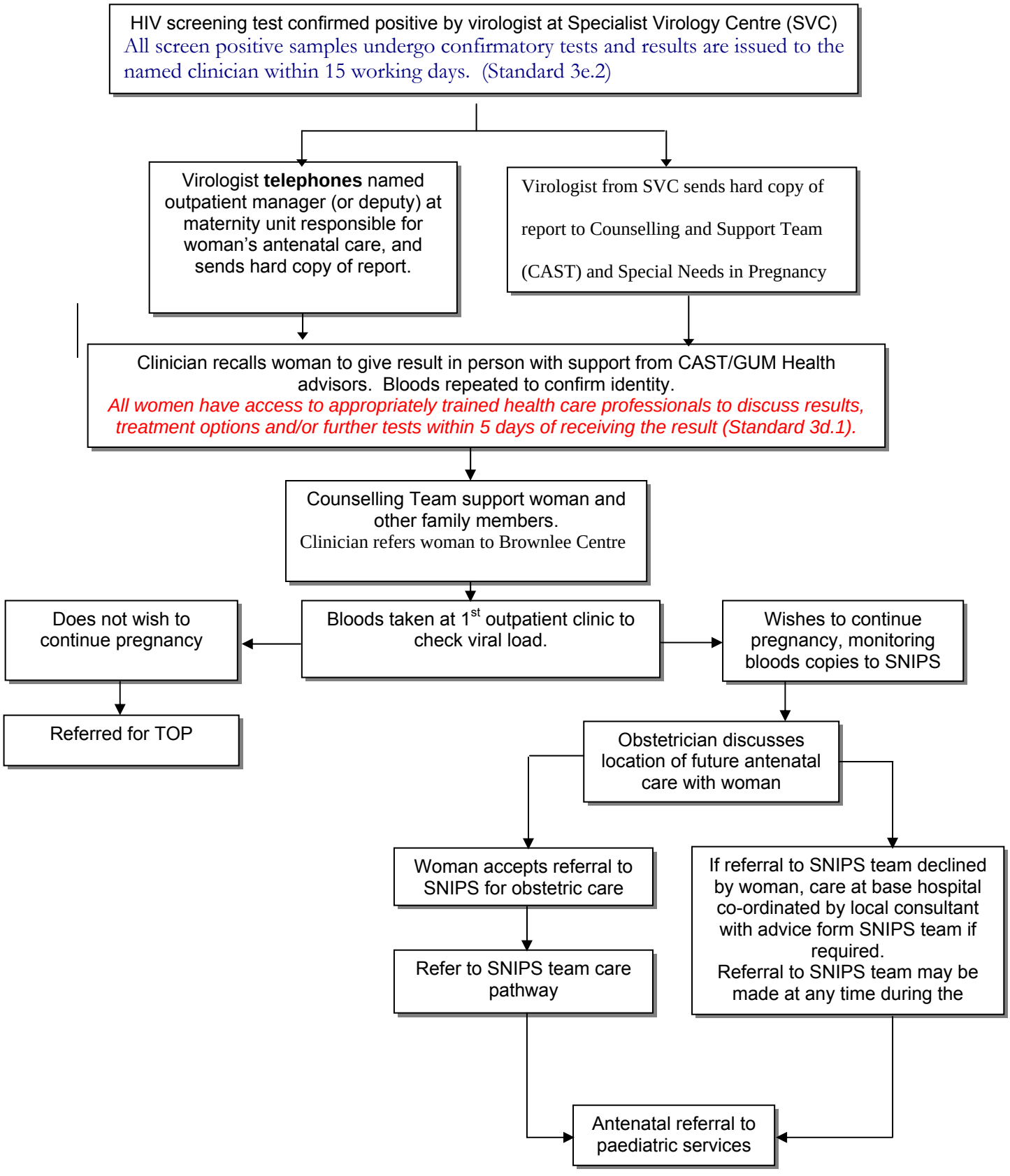
↓

Paediatrician checks blood test and informs Community Screening department of result.

Appendix 4.5

Protocol for Significant Laboratory Results

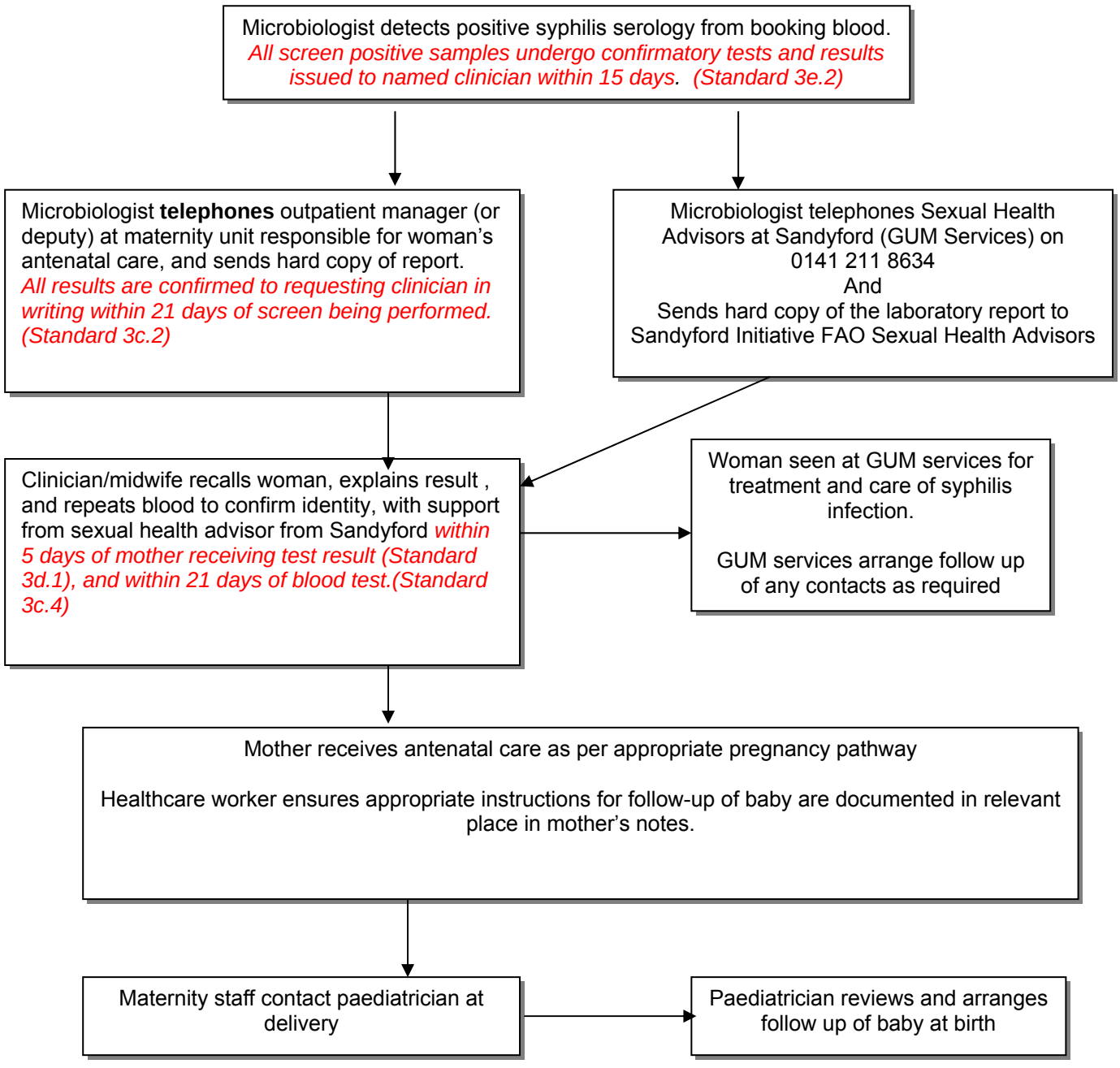
HIV



Appendix 4.6

Protocol for Significant Laboratory Results

SYPHILLIS



Appendix 4.7

Late Bookers –Communicable Diseases Screening Tests

Offering Tests to Late Bookers

Late bookers are women who present for the first time on or after 24 weeks pregnancy. This is the stage at which the baby is potentially viable if early labour occurred.

The results of the communicable disease screening tests could affect the management at or after delivery, therefore all test results for a woman should be known prior to delivery and certainly before discharge.

Women who present on ≥ 24 weeks should have 'fast track' tests and results ordered.

The process for women who are NOT in labour arriving at maternity services, including maternity assessment or elsewhere
Seek informed consent for screening

- Take 9ml EDTA blood, confirm correct identification with patient
- Ensure tests are managed through PNBS at first available clinic
- It is essential that you phone the laboratory when the sample is taken or if this is after 5pm, phone on the next day (Tel: 0141 211 0080). Explain that the sample is being sent to the laboratory and that the sample is marked 'URGENT'. It is important to discuss the travel arrangements and to arrange when and to whom the results will be communicated.
- If the timing of the local transport systems is unsuitable it will be necessary to use alternative transport e.g. follow the NHS GGC Amended Protocol Ordering and Use of Taxis and Couriers (October 2011.) http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/Communications/Briefs/Documents/amended%20taxi%20protocol%20-%20phase%201_acute%20services.pdf
- In normal hours the lab is able to process and produce results within 1-2 hours of receipt. Note that reactive samples will need to be confirmed on the next day.
- Maternity services must provide the laboratory with adequate contact details to include the name and preferably two contact numbers of the main results recipient and a deputy.
- Note that provided a CHI number is supplied, the results will also be available on the Clinical Portal.

The process for women arriving in labour:

In those rare cases that a women presents for the first time **in labour**, contact the laboratory as early as possible (Tel: 0141 211 0080) to arrange **emergency testing for communicable diseases.** Even intrapartum diagnosis can significantly, positively modify neonatal outcome therefore it is important to ensure women are offered screening tests.

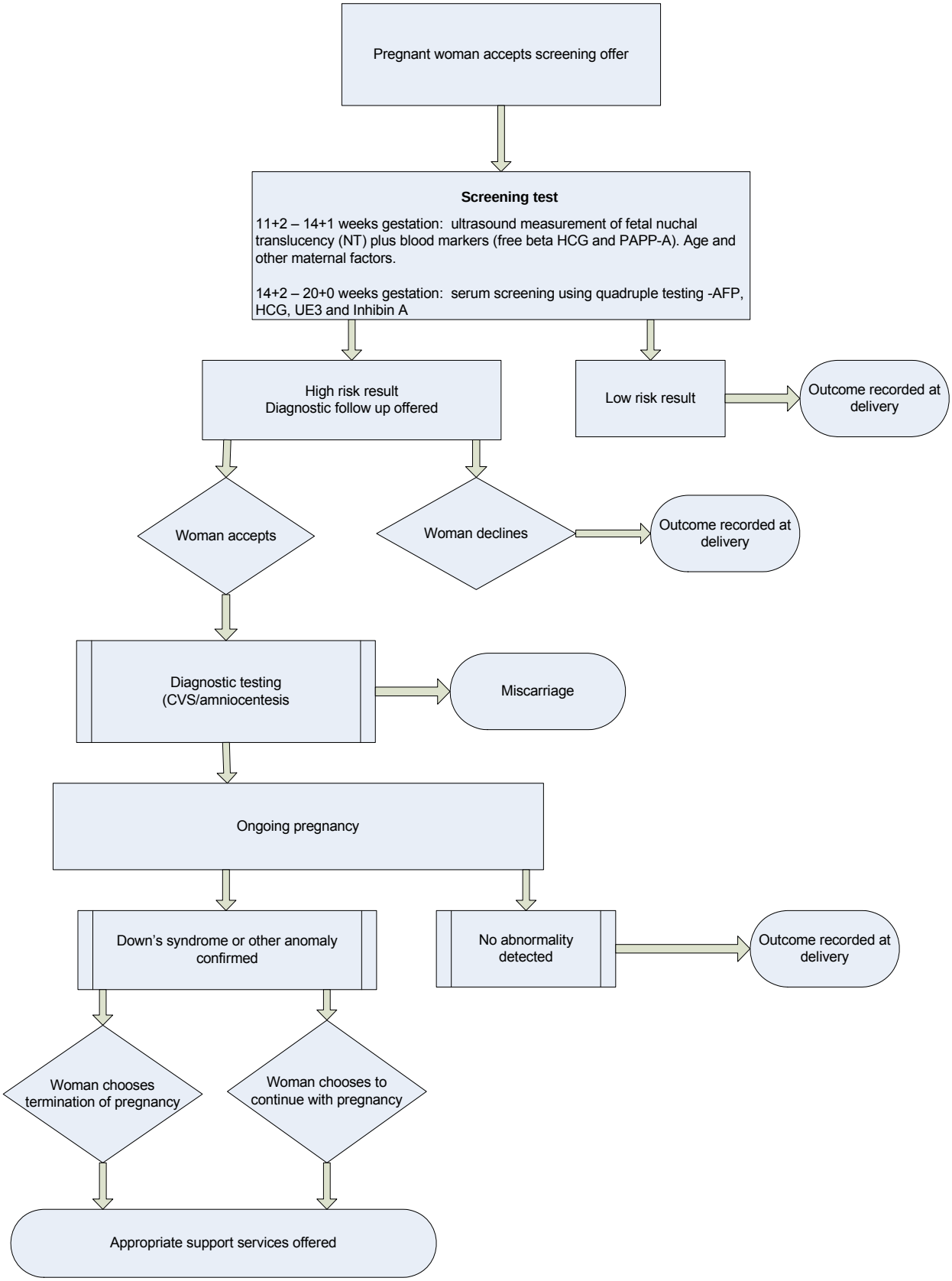
Out of hours the on-call virologist should be contacted through the Gartnavel Switchboard Tel: 0141 211 3000 (NB In Clyde, obstetricians should contact their local laboratory).

The process if an unbooked woman arrives in labour and/or is likely to deliver before clinics (e.g. Friday nights, weekends or public holidays) and the normal PNBS system cannot be used:

- Seek informed consent to test for HIV, Rubella, Syphilis and hepatitis B.
- Contact the laboratory as above
- Fill one 9ml purple topped EDTA bottle and send this with a virology request form, clearly indicating which tests (HIV, Rubella, Syphilis hepatitis B) are to be carried out, to the Virus Laboratory, Gartnavel General Hospital. Even if a woman does not consent to all four tests, please fill one 9ml purple topped EDTA bottle. Do not send two 5ml bottles, or other combinations to make up to 9 ml, the machines in the lab won't accept them and the sample will not be processed.
- Explain that the sample is being sent to the laboratory and that the sample is marked 'URGENT'. It is important to discuss the travel arrangements and to arrange when and to whom the results will be communicated.
- Maternity services must provide the laboratory with adequate contact details to include the name and preferably two contact numbers of the main results recipient and a deputy plus the location of the patient.
- If the timing of the local transport systems is unsuitable it will be necessary to use alternative transport e.g. follow the NHS GGC Amended Protocol Ordering and use of taxis and couriers (October 2011.) http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/Communications/Briefs/Documents/amended%20taxi%20protocol%20-%20phase%201_acute%20services.pdf
- As with ALL emergency blood tests ensure results are followed up immediately they are available
- Communication with paediatricians is essential as their management may be significantly altered by these results.

Appendix 4.8

Down's syndrome screening pathway



Appendix 4.9

Members of Pregnancy Screening Steering Group

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
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 4.10

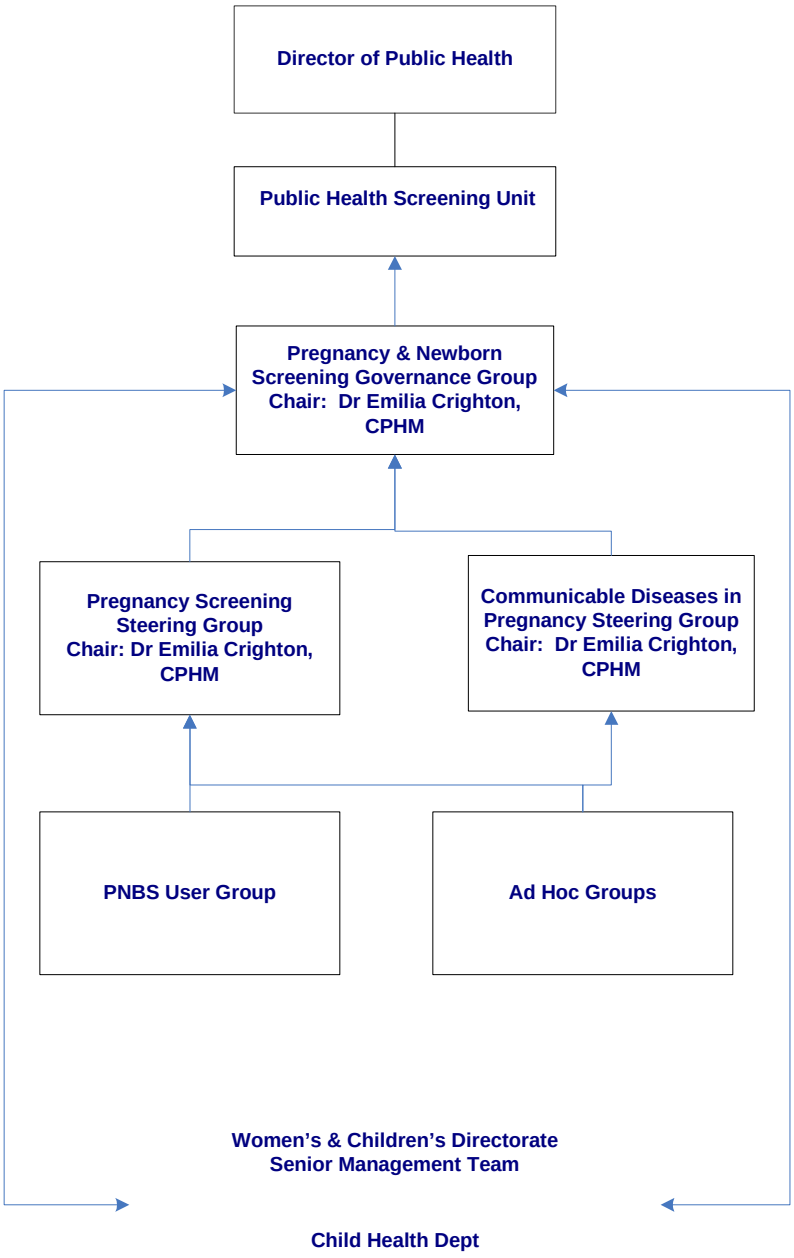
Members of Communicable Diseases Steering Sub Group (As at March 2012)

Dr Gillian Penrice	Public Health Protection Unit (Chair)
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

Appendix 4.11

REPORTING STRUCTURE

PREGNANCY SCREENING PROGRAMMES



SUMMARY

CHAPTER 5: NEWBORN SCREENING

- 14,126 babies were eligible for newborn bloodspot screening in NHS Greater Glasgow and Clyde. 13,856 were screened, that is 96.2% of the total eligible population.
- Results were not available for the 265 (1.9%) babies that moved into the NHSGGC Board area.
- In 2011/12, of the 14,656 bloodspot samples received, 14,534 were normal. 65 (0.4%) bloodspot specimens could not be analysed due to insufficient amounts of blood on the bloodspot card and had to be repeated.
- There was one positive case of phenylketonuria detected, nine babies with congenital hypothyroidism, eight babies with cystic fibrosis and one case of medium chain acyl-CoA dehydrogenase deficiency. There was one positive case of sickle cell and 88 babies identified as potential carriers for haemoglobinopathies.
- Uptake of the newborn bloodspot screening programme has remained high at an average of 98.1%.
- 73.45% of babies had white UK ancestry, 6.91% had South Asian ancestry and 3.88% had mixed background ancestry.
- 72 (0.5%) samples received had taken more than seven days to arrive at the laboratory.
- 97.3% of cards received with a CHI number in 2011/12 compared to 24% in 2007/08.
- 14,227 babies were eligible for newborn hearing screening. 13,980 babies in NHS Greater Glasgow and Clyde were screened for hearing loss giving an uptake of 98.3%.
- 247 (1.7%) babies did not complete the screening programme. These included babies who did not attend for screening or moved away from their current home address or transferred to another Board area.
- 1,373 (9.8%) babies required a second stage follow up and, of these, 183 (1.3%) babies were referred to audiology.
- 43 babies were confirmed with a hearing loss (0.3% of the screened population).

CHAPTER 5: NEWBORN SCREENING

Newborn Bloodspot screening aims 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; congenital hypothyroidism; cystic fibrosis; sickle cell haemoglobinopathy and medium chain acyl-CoA dehydrogenase deficiency.

Universal Newborn Hearing screening aims to detect early permanent congenital hearing impairment. In addition, babies with mild and unilateral losses are also being identified and receive ongoing review.

Eligible population

Newborn Bloodspot and Universal Newborn Hearing screening programmes are offered to all newborns.

The screening tests

Newborn bloodspot screening: 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.

Detailed pathway is shown in Appendix 5.1.

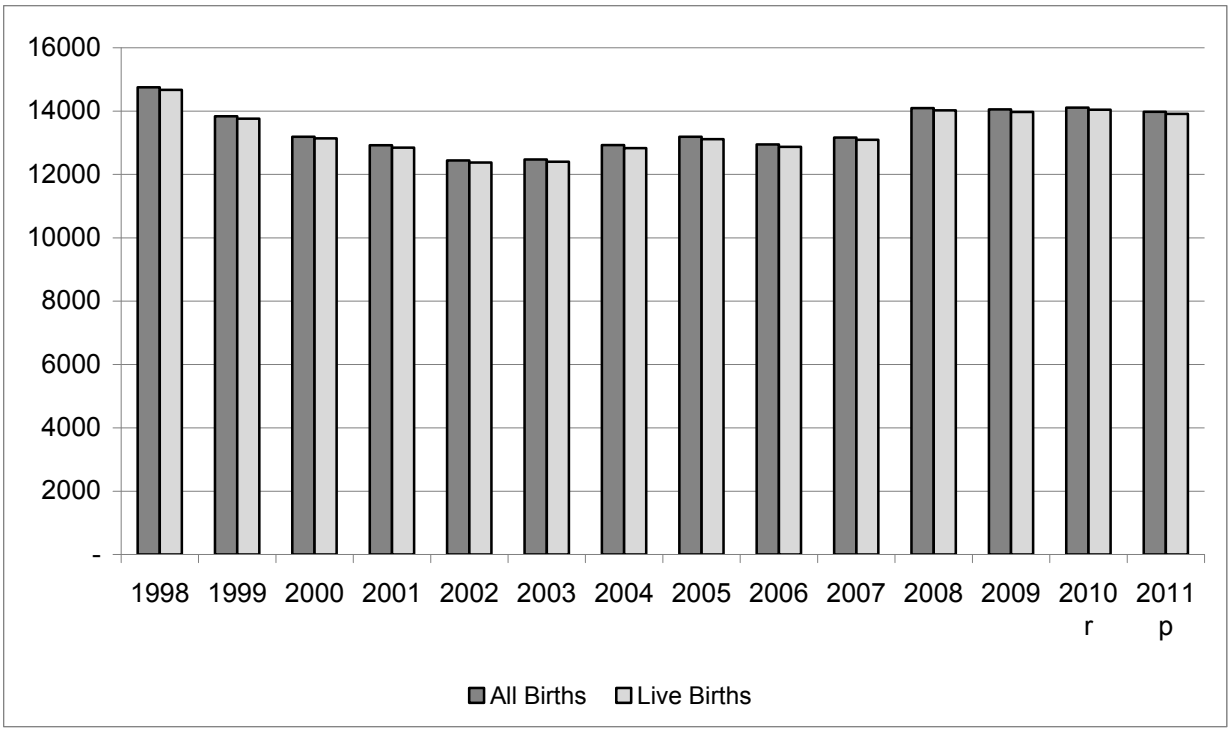
Universal Newborn Hearing screening: There are two types of equipment used to screen babies' hearing in the Greater Glasgow and Clyde area. Automated Auditory Brainstem Response (AABR) is used in the hospital setting and Otoacoustic Emissions (OAE) are used in the community setting. In the hospital setting 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.

Detailed screening pathway is shown in Appendix 5.2

Delivery of NHSGGC Newborn Bloodspot Screening programmes

Figure 5.1 shows that the number of live births has gradually increased year on year from 12,375 in 2002 to 13,909 in 2011. (The number of births in 2011 is provisional.) This represents an increase of 11%, compared to 2002.

Figure 5.1 Number of live and still births across NHS Greater Glasgow and Clyde over a 10 year period from 1998 to 2011



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.

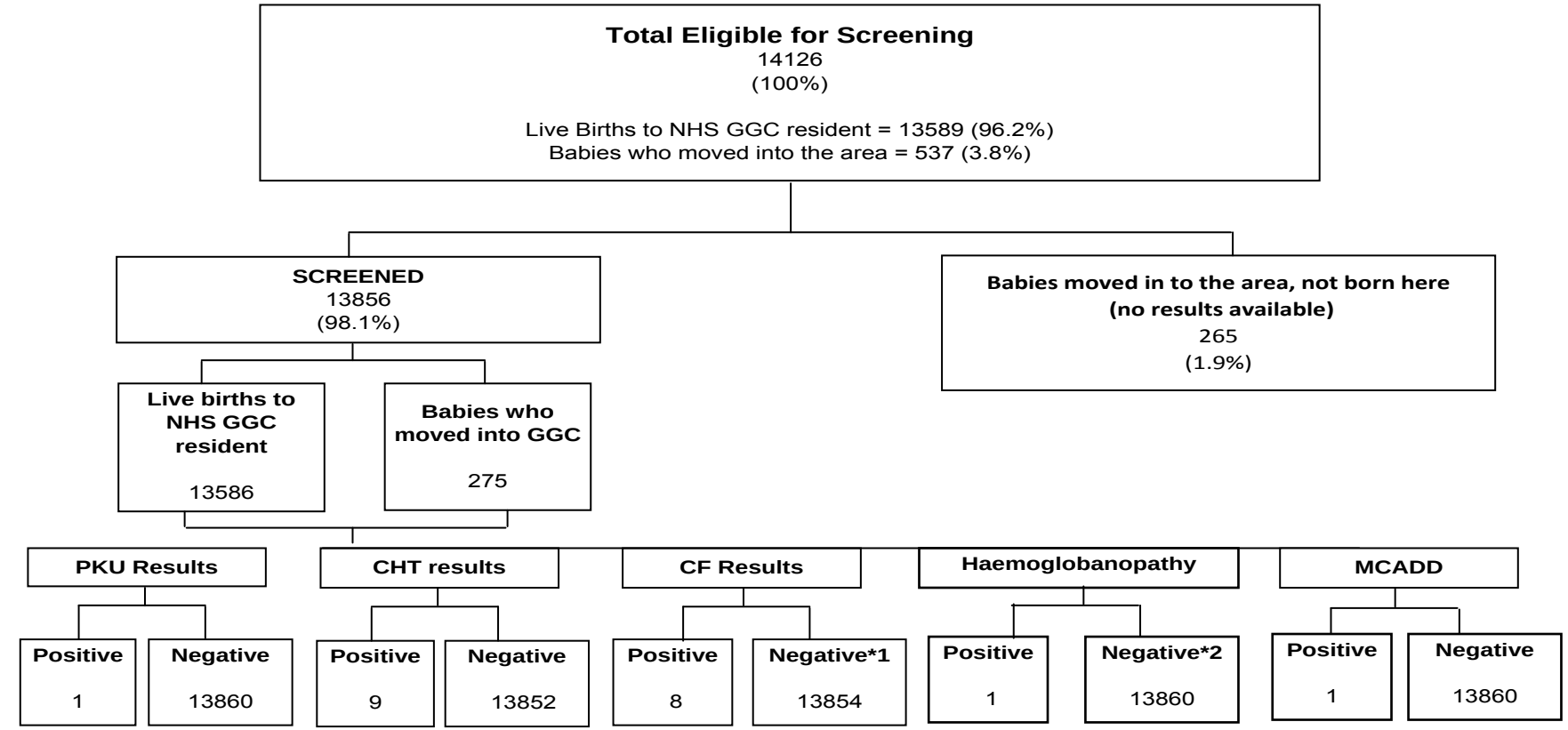
r revised

Figure 5.2 illustrates newborn bloodspot uptake rates and the results of the screening programme from 1 April 2011 to 31 March 2012.

13,856 babies resident in NHS Greater Glasgow and Clyde were screened, that is 96.2% of the total eligible population of 14,126.

Results were not available for the 265 (1.9%) babies that moved into the NHSGGC Board area.

Figure 5.2: Summary of NHSGGC Newborn Bloodspot Screening activity 1 April 2011 to 31 March 2012



Source: Child Health (CH2008); Date extracted: 19th July 2012

*1 Total includes 6 carriers; 6 late tests.

*2 Total includes 88 carriers

There was one positive case of phenylketonuria detected, nine babies with congenital hypothyroidism, eight babies with cystic fibrosis and one case of medium chain acyl-CoA dehydrogenase deficiency. There was one positive case of sickle cell and 88 babies identified as potential carriers for haemoglobinopathies. 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.

Table 5.1: Percentage uptake of NHSGGC Newborn Bloodspot Screening by CH(C)P and deprivation category

	Most Deprived				SIMD				Least Deprived			
	1		2		3		4		5		Total	
CHP	No. Screened	% uptake	No. Screened	% uptake	No. Screened	% uptake	No. Screened	% uptake	No. Screened	% uptake	No. Screened	% uptake
East Dunbartonshire	63	100.0	144	99.3	121	99.2	153	98.1	414	98.3	907	98.7
East Renfrewshire	66	98.5	74	100.0	117	99.2	102	97.1	492	98.8	857	98.6
Glasgow North East	1573	98.4	201	95.7	188	96.9	136	97.1	51	98.1	2166	98.0
Glasgow North West	1075	98.3	323	98.8	231	93.9	260	93.9	319	97.0	2216	97.2
Glasgow South	1333	96.8	670	97.1	514	98.1	307	99.0	156	98.7	2994	97.4
Inverclyde	361	98.1	114	99.1	110	98.2	115	99.1	73	98.6	776	98.5
North Lanarkshire	40	100.0	14	100.0	68	97.1	124	100.0	6	100.0	252	99.2
Renfrewshire	541	98.4	411	99.3	322	99.1	275	99.6	296	98.0	1849	98.8
South Lanarkshire	240	99.6	156	98.1	83	100.0	204	100.0	66	98.5	754	99.3
West Dunbartonshire	434	99.5	314	98.1	191	100.0	88	98.9	32	100.0	1073	99.2
Grand Total	**5726**	**98.1**	**2421**	**98.1**	**1945**	**98.0**	**1764**	**98.2**	**1905**	**98.2**	**13861**	**98.1**

Source: Child Health (CH2008); Date extracted: 19th July 2012
SIMD=Scottish Index of Multiple Deprivation 2009

Note: 100 patients could not be assigned CH(C)P/SIMD due to incomplete/incorrect postcodes but have been included in the overall total.

Table 5.2 shows the breakdown of the ancestry group for babies tested. Data includes babies born in Argyll and Bute. 73.45% of babies had white UK ancestry, 6.91% had South Asian ancestry and 3.88% had mixed background ancestry.

Table 5.2 NHSGGC Newborn Bloodspot screening – ancestry of the babies tested 2011 - 2012

	Agyll & Clyde[1]		Glasgow		Total	
Ancestry Group	**N**	**%**	**N**	**%**	**N**	**%**
A African or African-Caribbean	57	1.64%	392	3.62%	449	3.14%
B South Asian (Asian)	53	1.53%	935	8.63%	988	6.91%
C South East Asian (Asian)	21	0.61%	262	2.42%	283	1.98%
D Other non-European (other)	7	0.20%	136	1.26%	143	1.00%
E Southern & Other European (White)	82	2.36%	355	3.28%	437	3.06%
F United Kingdom (White)	2,928	84.43%	7,576	69.93%	10,504	73.45%
G North Europe (White)	27	0.78%	119	1.10%	146	1.02%
H Don't Know	2	0.06%	25	0.23%	27	0.19%
I Decline to Answer	0	0.00%	4	0.04%	4	0.03%
J Any Mixed Background	93	2.68%	462	4.26%	555	3.88%
Z Not Stated	198	5.71%	567	5.23%	765	5.35%
Total	**3,468**		**10,833**		**14,301**	

Source: National Newborn Screening Laboratory

Note:

1 Argyll and Bute data could not be separated from Clyde and will include non NHSGGC residents.

Table 5.3 illustrates the laboratory outcomes of blood spot tests (data could not be separated for Clyde and Argyll and Bute). In 2011/12, of the 14,656 bloodspot samples received, 14,534 were normal. 65 (0.4%) 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. 72 (0.5%) samples received had taken more than seven days to arrive at the laboratory.

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 5.3: Specimen test outcomes for Greater Glasgow and Argyll and Clyde for period 1 April 2011 and 31 March 2012

Specimen Test - Outcomes	Argyll & Clyde[1]	Glasgow	Total
Parental decline for all tests	0	3	3
Parental decline for selected tests	3	1	4
Insufficient blood to perform all tests	18	47	65
Unsatisfactory >14 days in transit	0	3	3
Unsatisfactory Other	1	6	7
Updated info	37	130	167
IRT tested late (total)	1	3	4
IRT tested late (Born in Scotland)	1	3	4
>7 days in transit	16	56	72
Ref PKU	0	1	1
Ref CHT	2	8	10
Ref CF	1	8	9
Ref CF Carrier	1	5	6
Ref MCADD	0	1	1
Ref SCD	0	1	1
Ref SCD Carrier	4	60	64
Ref HbV	0	2	2
Ref HbV Carrier	3	25	28
Normal	3551	10983	14534
Total Specimens received	**3562**	**11094**	**14656**

Insufficent as % of Total	0.5	0.4	0.4
Unsatisfactory as % of Total	0.03	0.08	0.07
IRT tested late as % of Total	0.03	0.03	0.03
IRT tested last (born in Scotland) as % of Total	0.03	0.03	0.03
>7 days in transit as % of Total	0.4	0.5	0.5

Source: National Newborn Screening Laboratory

Notes

1 Argyll & Bute data could not be separated from Clyde and will include non NHSGGC residents

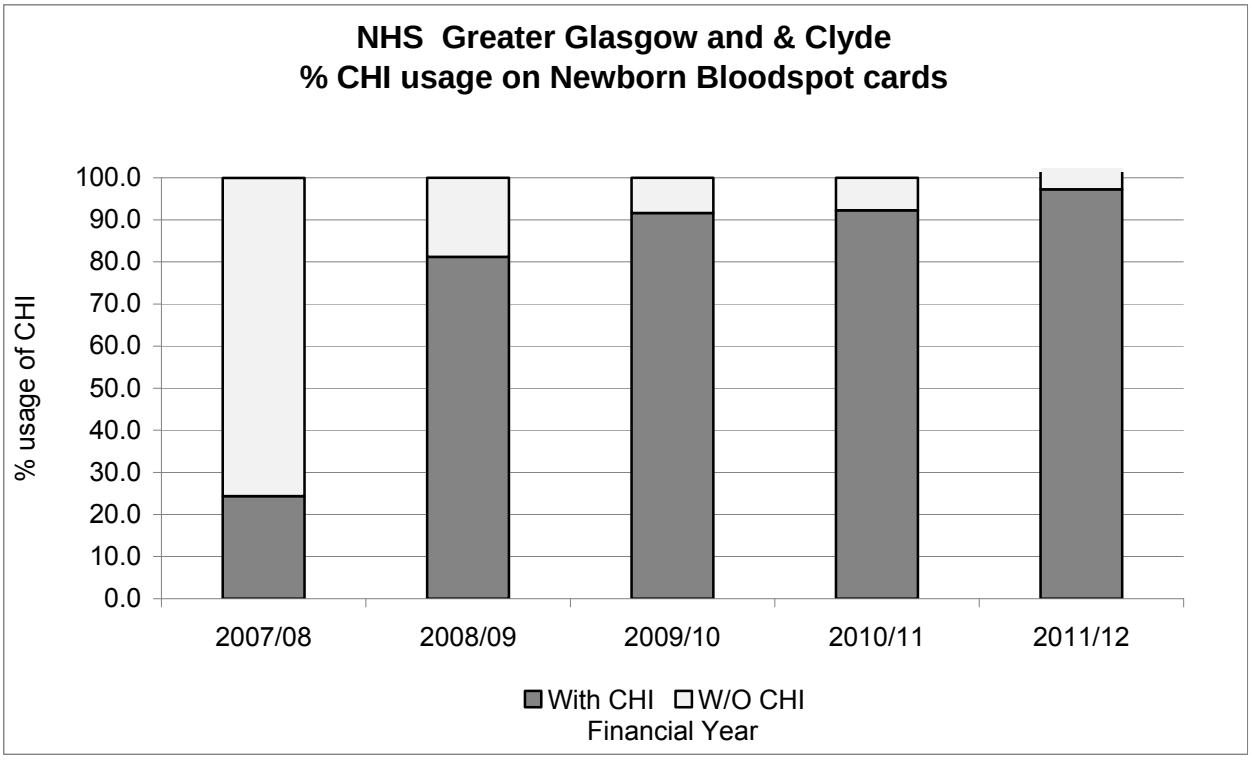
Unsatisfactory = specimen damaged or of poor quality
Updated information = cards that were received with incorrect or missing details. Results are not issued until the relevant information is received
IRT Tested Late = baby was more than 6 weeks of age when specimen was taken. The test for Cystic Fibrosis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

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 and without a CHI number received by the National Newborn Screening Laboratory for babies tested in Greater Glasgow and Argyll and Clyde. Figure 5.4 shows a year on year improvement with 97.3% of cards received with a CHI number in 2011/12 compared to 24% in 2007/08.

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



Source: National Newborn Screening Laboratory

Delivery of the NHSGGC Universal Newborn Hearing Screening programme

Universal Newborn Hearing Screening programme is delivered in hospitals in Greater Glasgow and in the community in Clyde. There are plans to integrate the programme in January 2013 that will provide a hospital based service to all babies born in NHSGGC.

Table 5.4 shows that the percentage uptake rate for the newborn hearing screening is high for all CH(C)P areas and deprivation categories.

Figure 5.5 illustrates the hearing screening activity. Of the 14,227 eligible babies, 13,980 were screened for hearing loss giving an uptake of 98.3% **(Figure 5.5 and Table 5.4)**.

1,373 (9.8%) babies required a second stage follow up.and, of these, 183 (1.3%) babies were referred to audiology. 43 babies were confirmed with a hearing loss (0.3% of the screened population).

247 (1.7%) babies did not complete the screening programme. These included babies who did not attend for screening, are deceased or have moved away from their current home address or transferred to another Board area.

Table 5.4 Uptake of NHSGGC Universal Newborn Hearing Screening programme by CH(C)P and deprivation categories

	Most Deprived				SIMD				Least Deprived					
	1		2		3		4		5		Unassigned[2]		Total	
CH(C)P	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)	Screened (N)	Uptake (%)
East Dunbartonshire	65	97.0	147	97.4	130	99.2	148	98.0	432	97.7	15	100	937	97.9
East Renfrewshire	66	97.1	72	100.0	116	99.1	101	99.0	503	99.4	12	100	870	99.2
Glasgow North East	1553	98.0	209	97.7	208	99.0	149	98.7	54	100.0	24	100	2197	98.2
Glasgow North West	1074	97.7	339	98.0	239	95.6	262	96.0	333	97.9	9	100	2256	97.4
Glasgow South	1353	97.3	674	96.8	506	96.2	314	99.1	157	98.1	17	100	3021	97.2
Inverclyde	366	99.7	109	100.0	105	100.0	118	100.0	74	100.0	3	100	775	99.9
North Lanarkshire[1]	39	92.9	14	100.0	70	98.6	125	98.4	5	100.0	0	0	253	97.7
Renfrewshire	536	99.8	406	99.5	316	100.0	268	100.0	305	100.0	7	100	1838	99.8
South Lanarkshire [1]	241	98.8	157	98.1	83	97.6	207	99.0	68	100.0	6	100	762	98.7
West Dunbartonshire	431	99.1	308	99.0	188	98.9	86	97.7	31	96.9	14	100	1058	98.9
Unassigned[2]	0		0		0		0		0		13	100	13	100.0
Total	**5724**	**98.1**	**2435**	**98.1**	**1961**	**98.0**	**1778**	**98.6**	**1962**	**98.8**	**120**	**100**	**13980**	**98.3**

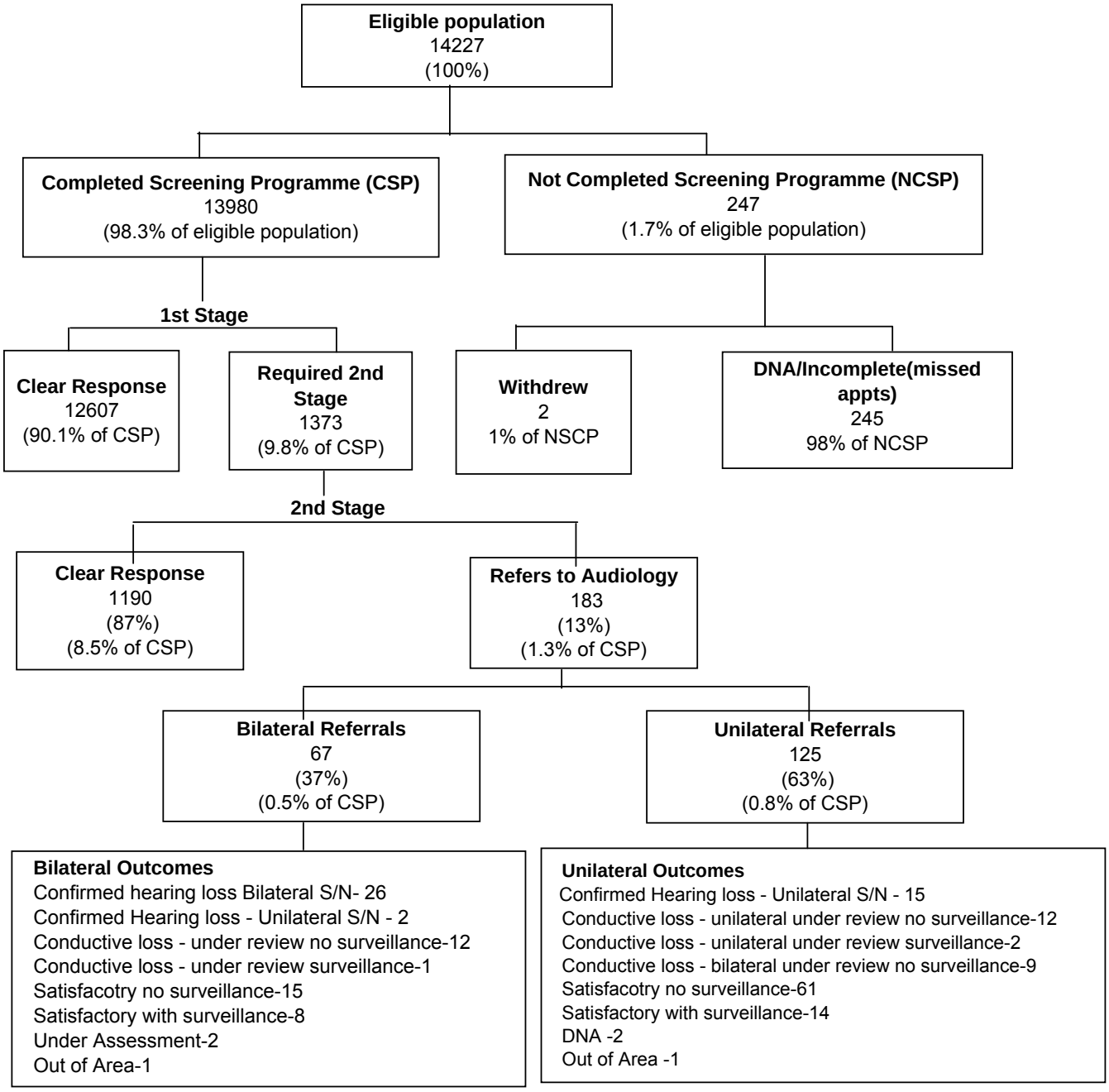
Source: Child Health, extracted October 2012

Notes

[1] NHS Greater Glasgow and Clyde residents only

[2] Unable to assign CH(C)P or SIMD due to incompete/incorrect postcodes

Figure 5.5 Summary of NHSGGC Universal Newborn Hearing Screening activity for period 1 April 2011 to 31 March 2012



Source: Child Health, extracted October 2012

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 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

- Pregnancy and Newborn Bloodspot screening tests are 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) and also in PNBS IT application that supports the failsafe processes for newborn bloodspot screening.

- The Universal Newborn Hearing Screening programme is supported eScreener Plus (eSP) Northgate Newborn Hearing Screening into which all screening results and demographic data are entered. Following a 'value for money' exercise of current IT provision, the Scottish Birth Record (SBR) was further developed to include a screen to record hearing screening result and will replace eSP in April 2012.

- 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.

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 newborns are offered appropriate treatment and care following screening.

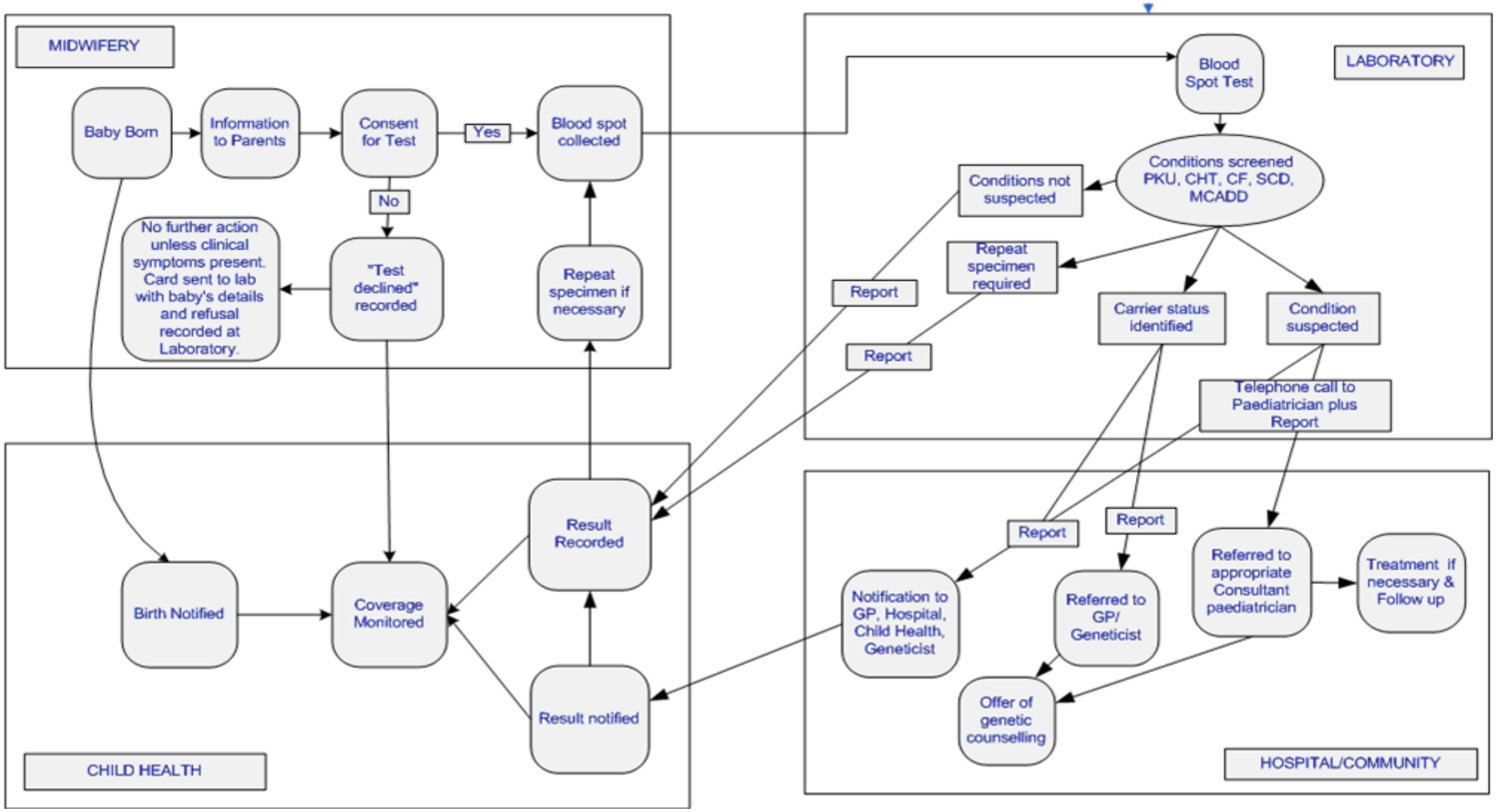
Challenges and future priorities

- Maintain service performance and ensure that all babies are offered a newborn bloodspot test and hearing test within the targets set by national standards.

- To implement a single management structure for the NHS Greater Glasgow and Clyde Universal Newborn Hearing Screening services by 2013.

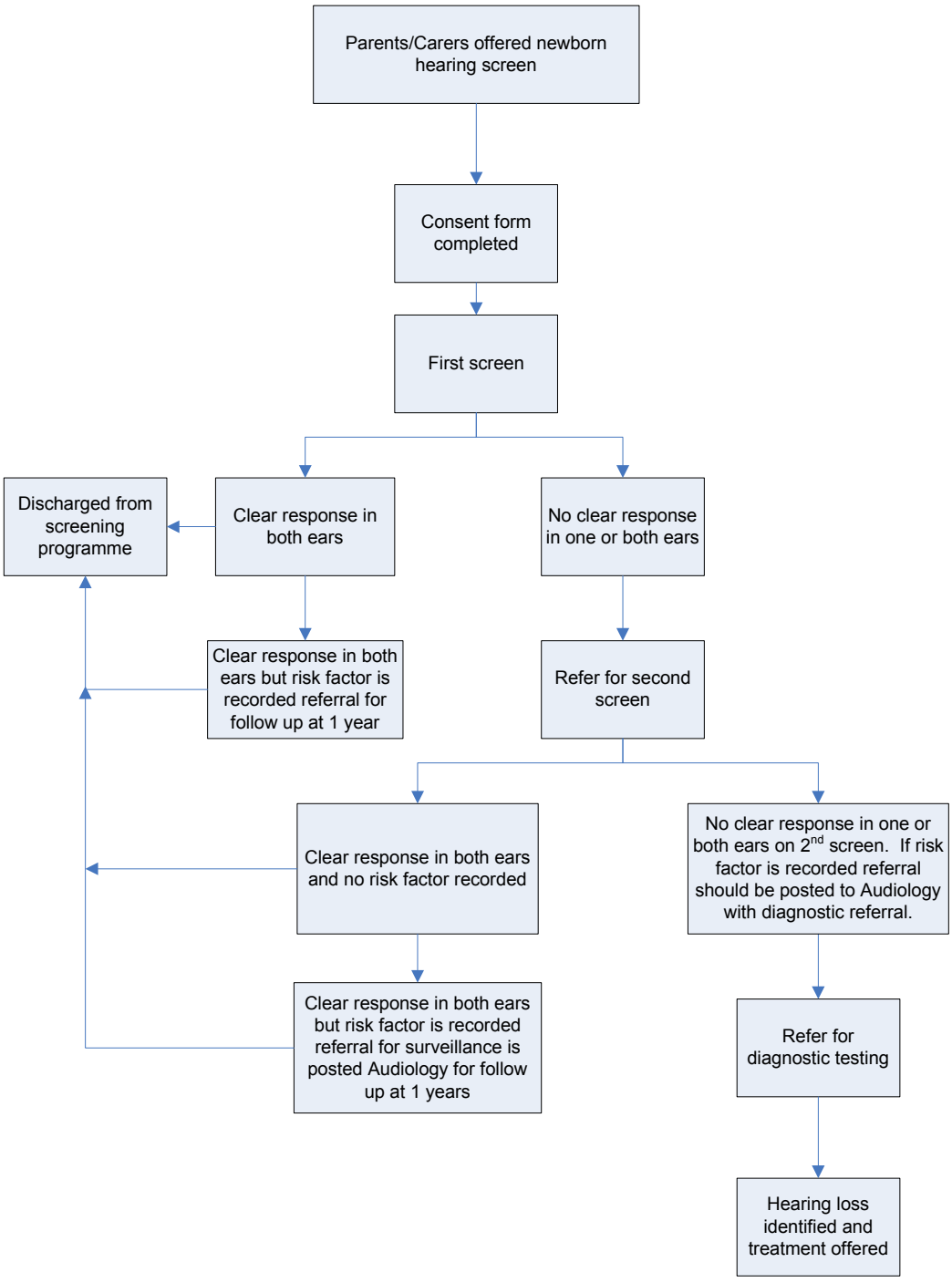
NHSGGC Newborn Bloodspot Screening Pathway

APPENDIX 5.1



APPENDIX 5.2

NHSGGC Universal Newborn Hearing Screening Pathway



APPENDIX 5.3

Members of Newborn Bloodspot Screening Steering Group As at March 2012

Dr Emilia Crighton	Consultant in Public Health Medicine (chair)
Mrs Betty Adair	Clinical Lead Midwife
Ms Elizabeth Callander	Lead Midwife
Dr Rosemary Davidson	Consultant Clinical Geneticist
Dr Anne Devenny	Consultant Paediatrician
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Mrs Annie Hair	CHP Children's Services Lead
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
Dr Helen McTier	Consultant Neonatologist
Ms Liz Terrace	Lead Midwife

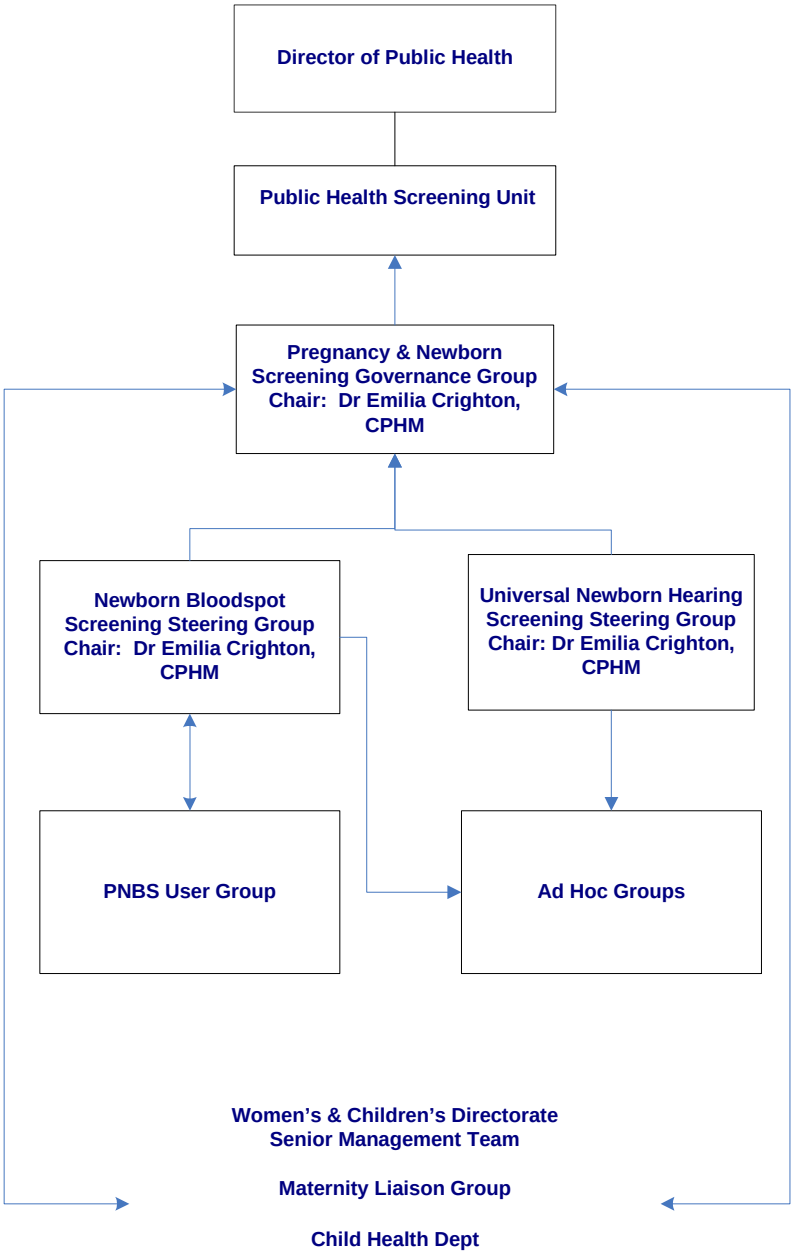
APPENDIX 5.4

Universal Newborn Hearing Screening Programme Steering Group (As at March 2012)

Dr Emilia Crighton	Consultant in Public Health Medicine (Chair)
Ms Elizabeth Callander	Lead Midwife
Mrs Patricia Carmichael	Paediatric Audiology Services Manager
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
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
Mrs Debbie Murray	Senior Support Officer/Secretary
Dr Andrew Powls	Consultant Neonatologist
Mrs Jacqueline Truss	Audiologist Team Leader
Dr Madeline White	Consultant Neonatologist
Ms Heather Young	Family Support

APPENDIX 5.5

Reporting Structure:
NHSGGC Newborn Bloodspot Screening Steering Group
NHSGGC Universal Newborn Hearing Screening Steering Group



SUMMARY

CHAPTER 6: PRE-SCHOOL VISION SCREENING

- In 2011/12, 14,425 children aged between four to five years old were identified using the Community Health Index System as being eligible for pre-school vision screening. This represents a 9% increase from previous year 2010/11.

- 36.6% (5,286) of children live in the most deprived areas, with the largest proportion living in the Glasgow North East and Glasgow South areas.

- 85.3% (12,308) of children were registered with a nursery. Of the 2,117 (14.7%) children not registered with a nursery, 1,294 (8.9%) were from Glasgow City CHP sectors**.**

- Of the 14,425 eligible children, 11,191 were screened for a visual abnormality, giving an overall uptake of 77.5%. 2,733 were referred for further assessment.

- 11,191 children screened, 8,458 (75.6%) had a normal result. Of the 2,733 (24.3%) children referred for further assessment, 1,126 (10.1%)were from the most deprived areas.

- Uptake rate for the programme varied across the CH(C)P areas from 69% in Glasgow East to 86.1% in East Dunbartonshire and East Renfrewshire.

- The highest proportion of children screened that were referred for further investigation was in Glasgow North West (33.4%) and Glasgow North East and West Dunbartonshire (27.7%) and the lowest was 17.3% in Renfrewshire and 16.3% in East Renfrewshire.

CHAPTER 6: 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 between four and five years of age are invited to attend screening for visual impairment.

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 dates of birth between 1 March 2009 and 28 February 2008 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 Pre-School Vision Screening Programme 2011/12

In 2011/12, 14,425 children aged between four to five years old were identified using the Community Health Index System as being eligible for pre-school vision screening. This represents a 9% increase from previous year 2010/11.

Table 6.1 shows that 36.6% (5,286) of children live in the most deprived areas, with the largest proportion living in the Glasgow North East and Glasgow South areas.

Table 6.1 Total number of eligible NHSGGC child residents 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	64	127	121	174	527	5	1,018
East Renfrewshire	73	73	99	117	549	1	912
Glasgow North East	1,322	181	159	126	57	15	1,860
Glasgow North West	992	247	217	181	252	6	1,895
Glasgow South	1,187	549	432	251	146	14	2,579
Inverclyde	371	142	117	126	92	15	863
North Lanarkshire[1]	29	14	56	114	10		223
Renfrewshire	557	360	340	287	368	15	1,927
South Lanarkshire[1]	233	155	73	167	79	3	710
West Dunbartonshire	458	307	195	90	44	18	1,112
Unassigned[2]						1,326	1,326
Total	**5,286**	**2,155**	**1,809**	**1,633**	**2,124**	**1,418**	**14,425**
% of Total	**36.6%**	**14.9%**	**12.5%**	**11.3%**	**14.7%**	**9.8%**	

Source: Visionworks Date Extracted: September 2012

Notes:

1 NHSGGC residents only

2 Unable to assign SIMD due to incomplete or incorrect postcode

Table 6.2 shows that 85.3% (12,308) of children were registered with a nursery. Of the 2,117 (14.7%) children not registered with a nursery, 1,294 (8.9%) were from Glasgow City CHP sectors. With the introduction of the 30 month assessment in 2013, Health visitors will be asked to identify the reasons for children not attending nursery.

Table 6.2 The number of children eligible for screening, number and percentage registered and not registered with a nursery by CH(C)P

CH(C)P	Children eligible for screening	Registered with nursery	% Registered	Not registered with nursery	% Not Registered
East Dunbartonshire	1018	945	92.8	73	7.2
East Renfrewshire	912	799	87.6	113	12.4
Glasgow North East	1860	1391	74.8	469	25.2
Glasgow North West	1895	1549	81.7	346	18.3
Glasgow South	2579	2100	81.4	479	18.6
Inverclyde	863	817	94.7	46	5.3
North Lanarkshire[1]	223	203	91.0	20	9.0
Renfrewshire	1927	1808	93.8	119	6.2
South Lanarkshire[1]	710	624	87.9	86	12.1
West Dunbartonshire	1112	1080	97.1	32	2.9
Unassigned[2]	1326	992	74.8	334	25.2
Total	**14425**	**12308**	**85.3**	**2117**	**14.7**

Source: Visionworks

Date Extracted: September 2012

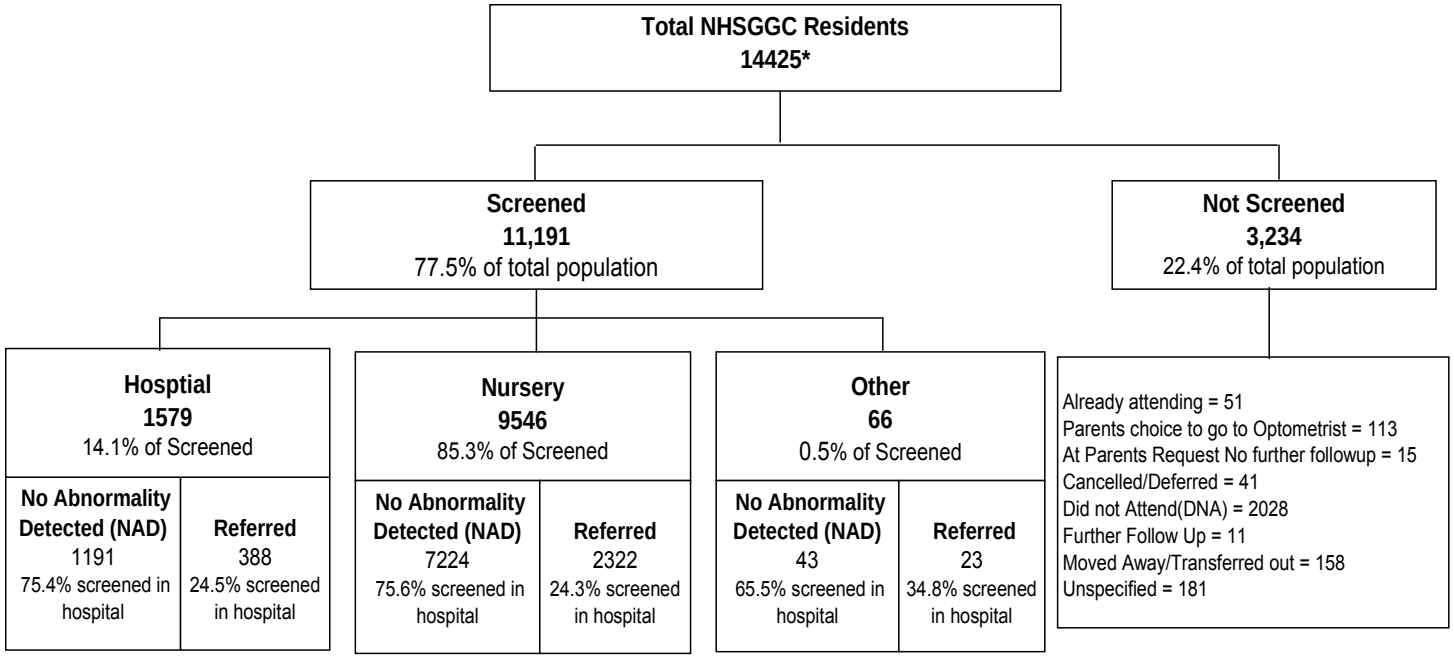
1 NHSGGC residents only

2 Incomplete/incorrect postcode OR split postcode: unable to assign CHP

Of the 14,425 eligible children, 11,191 were screened for a visual abnormality, giving an overall uptake of 77.5%. 2,733 were referred for further assessment (figure 6.1).

Figure 6.1 illustrates the activity for the service in NHS Greater Glasgow and Clyde for the school year 2011.

Figure 6.1 Summary of NHSGGC Pre-school Vision Screening Activity



Source: Visualworks - extracted September 2012

* 61 patients are NHSGGC Residents but have been seen in NHS Lanarkshire (Orthoptist)

Table 6.3 shows that, of the 11,191 children screened, 8,458 (75.6%) had a normal result. Of the 2,733 (24.3%) children referred for further assessment, 1,126 (29.2%) were from the most deprived areas.

Table 6.3 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	3,856	2,730	71%	1,126	29.2%
2	1,664	1,247	75%	417	25.1%
3	1,461	1,134	78%	327	22.4%
4	1,342	1,071	80%	271	20.2%
5	1,816	1,499	83%	317	17.5%
Unassigned[1]	1,052	777	74%	275	26.1%
Total	**11,191**	**8,458**	**76%**	**2,733**	**24.4%**

Source: Visionworks; Date Extracted: September 2012

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

Table 6.4 shows the uptake rate for the programme varied across the CH(C)P areas from 69% in Glasgow East to 86.1% in East Dunbartonshire and East Renfrewshire.

The highest proportion of children screened that were referred for further investigation was in Glasgow North West (33.4%) and Glasgow North East and West Dunbartonshire (27.7%) and the lowest was 17.3% in Renfrewshire and 16.3% in East Renfrewshire.

Table 6.4 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	1,018	877	141	86.1%	74.6%	25.4%
East Renfrewshire	912	780	132	85.5%	83.7%	16.3%
Glasgow North East	1,860	1,284	576	69.0%	72.0%	28.0%
Glasgow North West	1,895	1,385	510	73.1%	66.6%	33.4%
Glasgow South	2,579	1,922	657	74.5%	75.0%	25.0%
Inverclyde	863	716	147	83.0%	80.3%	19.7%
North Lanarkshire[1]	223	183	40	82.1%	74.9%	25.1%
Renfrewshire	1,927	1,576	351	81.8%	82.7%	17.3%
South Lanarkshire[1]	710	582	128	82.0%	80.6%	19.4%
West Dunbartonshire	1,112	900	212	80.9%	72.3%	27.7%
Unassigned[2]	1,326	986	340	74.4%	73.6%	26.4%
Total	**14,425**	**11,191**	**3,234**	**77.6%**	**75.6%**	**24.4%**

Source: Visionworks Date Extracted: September 2012

Notes:

[1] NHSGGC residents only

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

The application of different referral protocols explained the reasons for the marked variations in referral rates across CHCPs. As a result, a standardised referral guideline was implemented in January 2012.

Information systems

VisionWorks system currently supports the delivery of the programme across NHS Greater Glasgow and Clyde. With effect from April 2012, the application will be replaced with the CHS-P (Child Health Surveillance System).

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

- Consent to screen children was difficult to obtain for a large proportion of children attending Govanhill nursery due to language barriers. To address this, all Govanhill nursery children are screened in Victoria ACAD with parents and carers in attendance.

Challenges and future priorities

- To implement the CHSP IT system that will replace the current application.

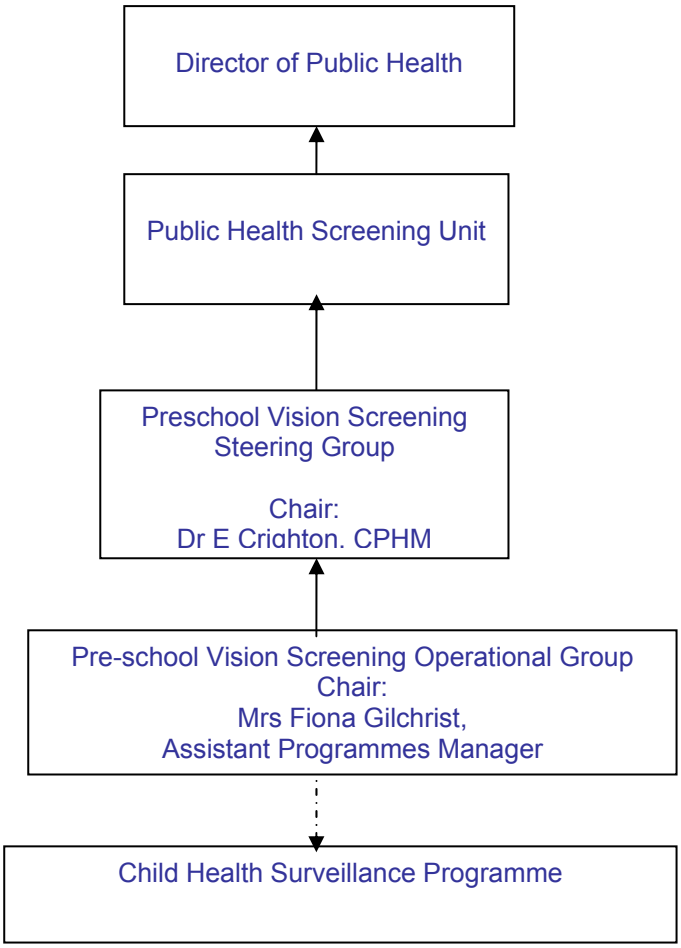
Appendix 8.1

Members of Pre-school Vision Screening Steering Group (As at March 2012)

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 McElvanney	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



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SUMMARY

CHAPTER 7: DIABETIC RETINOPATHY SCREENING

- There were 60,578 NHS Greater Glasgow and Clyde residents with a diagnosis of diabetes in 2011/2012**,** representing an increase of 5% from 2010/11.

- Over the period 2007/08 to 2011/12, the prevalence of diabetes among NHS Greater Glasgow and Clyde adult residents has gradually increased from 4.31% in 2007/08 to 5.22% in 2011/12.

- 51,185 (84.4%) were eligible for screening. Of those, 89.3% (45,702) were screened. This means that 75.4% of total diabetic population in NHS GGC were screened in 2011/12.

- Of the total number of residents screened (45,702), 1,041 were referred to Ophthalmology for further investigation.

- 24,636 (40.7%) are known to be resident in the most deprived areas compared to 8,576 (14.1%) who live in the least deprived areas. The largest proportion of people with diabetes was among the 50 – 79 year olds. This represents 69.2% (41,925) of the total population with diabetes.

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

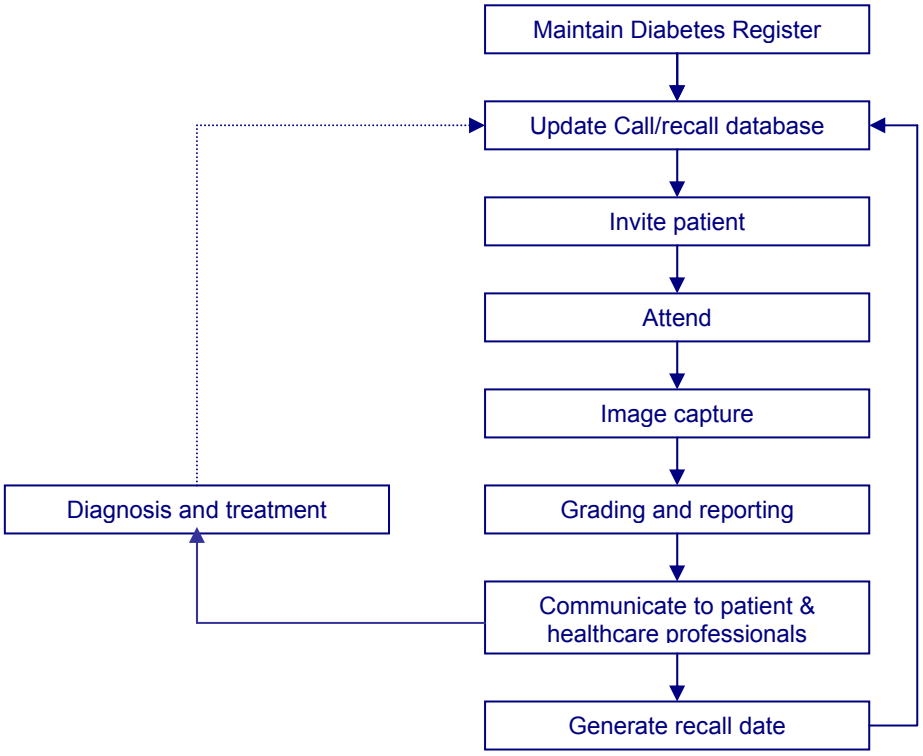
The screening programme takes place in a variety of settings. This can either be at a fixed site or within a mobile screening unit, which visits health centres and other locations around the area. Across Greater Glasgow and Clyde there were six fixed site locations and four mobile screening units.

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 NHSGGC Diabetic Retinopathy Screening Programme

Table 7.1 shows the year on year increase in the number of people diagnosed with diabetes over a five year period from 2007/08 to 2011/2012. There were 60,578 NHS Greater Glasgow and Clyde residents with a diagnosis of diabetes in 2011/2012**,** representing an increase of 5% from 2010/11. The table also shows that over the period 2007/08 to 2011/12, the prevalence of diabetes among NHS Greater Glasgow and Clyde adult residents has gradually increased from 4.31% in 2007/08 to 5.22% in 2011/12.

Table 7.1 Number of NHSGGC residents with diabetes, type of diabetes and prevalence from 2007/2008 to 2011/2012

Year	Estimated Total Population[1]	Type 1 Diabetes Mellitus	Type 2 Diabetes Mellitus	Other Diabetes Mellitus	Unspecified[2]	Total Diabetic Population	Prevalance %
2007/2008	1,123,080	5,630	41,622	616	492	48,360	**4.31**
2008/2009	1,140,434	5,924	45,222	993	422	52,561	**4.61**
2009/2010	1,146,795	6,417	47,916	679	820	55,832	**4.87**
2010/2011	1,147,994	6,205	49,725	697	1,088	57,715	**5.03**
2011/2012	1,161,195	6,333	52,349	820	1,016	60,578	**5.22**

Source: SOARIAN

Notes:

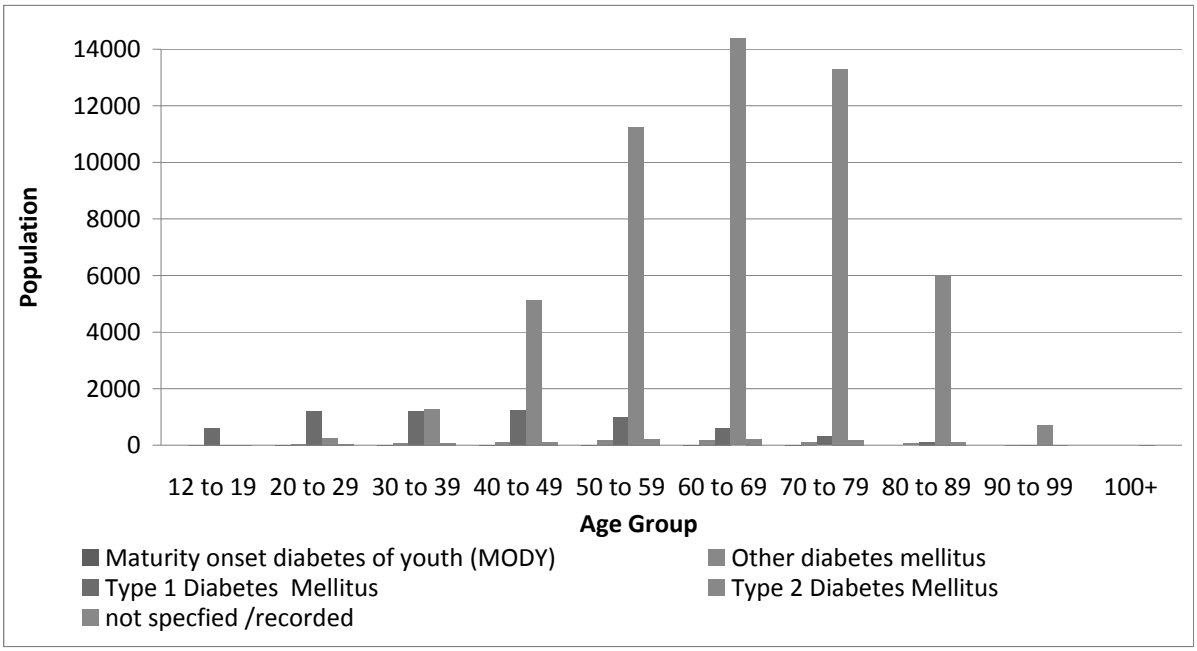
[1] Total Population aged over 12 years old (Source CHI - Jan08, Jan09, Jan10, Jan11 and Jun12). Figures may be inflated by approximately 4.5% due to duplicate records

[2] Unspecified: No type of Diabetes recorded

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

Figure 7.2 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.

Figure 7.2 Classification of diabetes for the total NHSGGC diabetic population by age group



Source: Soarian, extracted August 2012

Table 7.2 shows the prevalence and type of diabetes by CH(C)P.

Table 7.2 Number of patients with diabetes in NHS Greater Glasgow and Clyde by type of diabetes and CH(C)P

CHP	Total Population[1]	Type 1 Diabetes Mellitus	Type 2 Diabetes Mellitus	Other Diabetes Mellitus	Unspecified[2]	Total Diabetic Population	% Prevalance
East Dunbartonshire	91,377	543	4,018	51	108	4,725	5.2%
East Renfrewshire	75,285	470	3,364	53	48	3,942	5.2%
Glasgow North East	156,548	915	8,214	157	171	9,469	6.0%
Glasgow North West	171,121	974	7,441	131	197	8,747	5.1%
Glasgow South	191,236	1,150	10,471	144	181	11,969	6.3%
Inverclyde	69,713	426	3,691	84	81	4,283	6.1%
North Lanarkshire[3]	16,628	98	788	15	15	916	5.5%
Renfrewshire	147,840	925	7,718	78	96	8,821	6.0%
South Lanarkshire[3]	50,301	301	2,490	31	30	2,853	5.7%
West Dunbartonshire	78,586	516	4,101	64	76	4,760	6.1%
Unassigned[4]		15	53	12	13	93	
NHSGGC Total	**1,048,635**	**6,333**	**52,349**	**820**	**1,016**	**60,578**	**5.8%**

Source: DRS, Soarian Date Extracted: September 2012

Notes:

1 Total population over 12 years old

2 Unspecified: No type of Diabetes recorded

3 NHSGGC residents only

4 Unassigned: Incomplete or incorrect postcodes - unable to assign CHP

Table 7.3 shows the distribution of the population with diabetes across deprivation categories and by age group. Of the total population with diabetes in NHS GGC, 24,636 (40.7%) are known to be resident in the most deprived areas compared to 8,576 (14.1%) who live in the least deprived areas. The largest proportion of people with diabetes was among the 50 – 79 year olds. This represents 69.2% (41,925) of the total population with diabetes.

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

Age Group[1]	1	2	3	4	5	Unassigned[2]	Total	Most Deprived (SIMD=1)
12 to 19	236	106	101	101	118	5	667	35.4%
20 to 29	606	272	263	217	222	12	1,592	38.1%
30 to 39	1,206	512	364	281	280	23	2,666	45.2%
40 to 49	3,023	1,263	914	697	695	45	6,637	45.5%
50 to 59	5,277	2,297	1,759	1,558	1,698	66	12,655	41.7%
60 to 69	6,074	2,882	2,108	1,901	2,338	67	15,370	39.5%
70 to 79	5,651	2,788	1,859	1,575	1,992	35	13,900	40.7%
80 to 89	2,298	1,273	881	755	1,087	20	6,314	36.4%
90 to 99	262	151	116	90	142	2	763	34.3%
100+	3	1	3	2	4	1	14	21.4%
Total	**24,636**	**11,545**	**8,368**	**7,177**	**8,576**	**276**	**60,578**	**40.7%**

Source: DRS, Sorian Date Extracted: August 2012

Notes:

1 Age calculated as at financial year end (ie 31/03/2012)

2 Unassigned SIMD: Postcode incompleted or only partially recorded - unable to assign SIMD

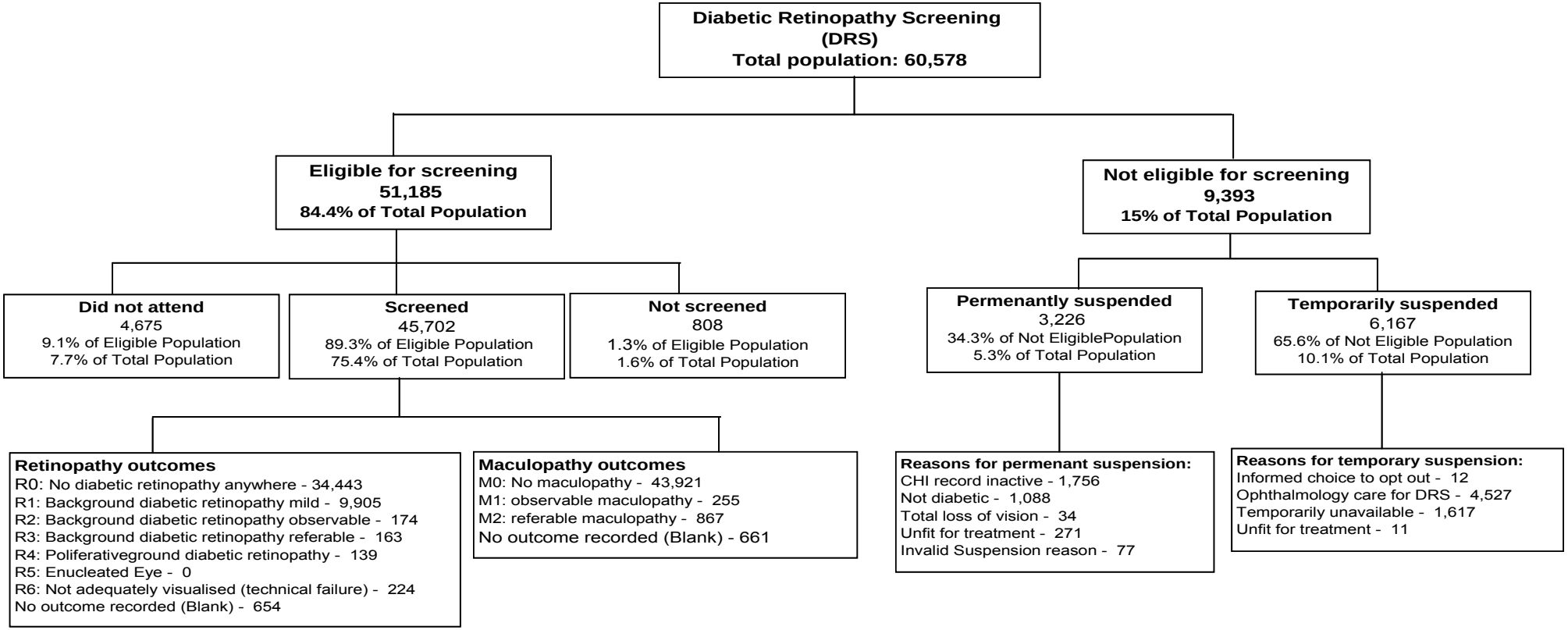
Figure 7.3 illustrates the summary of the NHS Greater Glasgow and Clyde Diabetic Retinopathy Screening programme for the period 1 April 2011 to 31 March 2012.

Of the 60,758 patients with diabetes, 51,185 (84.4%) were eligible for screening. Of those, 89.3% (45,702) were screened. This means that 75.4% of total diabetic population in NHS GGC were screened in 2011/12.

9,393 (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 (45,702), 1,041 were referred to Ophthalmology for further investigation.

Figure 7.3 Summary uptake and results of NHS Greater Glasgow and Clyde Diabetic Retinopathy Screening Programme for period 1 April 2010 to 31 March 2011



Source: DRS, Soarian Date Extracted: August 2012

Notes:

Screened assumptions: It has been assumed that patients who had dates outwith the current screening financial year (ie 2011/12) were screened within the financial year being reported on.

The minimum national standard for uptake for diabetic retinopathy screening is 80%. **Table 7.4** shows the uptake rates of diabetic retinopathy screening programme by Community Health (and Care) Partnership areas and that all areas exceeded the minimum standard.

Table 7.4 NHSGGC Diabetic Retinopathy Screening programme uptake for NHSGGC residents by CH(C)P area

CHP	Total Population	Eligible Population	Screened	Uptake
East Dunbartonshire	4,725	3,953	3,696	93.5%
East Renfrewshire	3,942	3,306	3,081	93.2%
Glasgow North East	9,469	8,148	7,139	87.6%
Glasgow North West	8,747	7,297	6,431	88.1%
Glasgow South	11,969	10,008	8,869	88.6%
Inverclyde	4,283	3,538	3,196	90.3%
North Lanarkshire[1]	916	794	725	91.3%
Renfrewshire	8,821	7,490	6,652	88.8%
South Lanarkshire[1]	2,853	2,455	2,208	89.9%
West Dunbartonshire	4,760	4,152	3,669	88.4%
Unassigned[2]	93	44	36	81.8%
NHSGGC Total	**60,578**	**51,185**	**45,702**	**89.3%**

Source: DRS, Sorian Data Extracted: August 2012

Notes:

1 NHSGGC residents only

2 Unassigned: Incomplete or incorrect postcodes - unable to assign CHP

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 Pollokshields took place Pollokshields Community Health Shop in September 2010 (and has been repeated annually since then) Approximately 120 patients were invited, of which 70 attended for screening.

A new screening clinic was established in November 2010 at Pollock Health Centre to screen people with diabetes living in Pollock, Newton Mearns and Thornliebank. Previously people with diabetes would have had to travel to the screening clinics at the Southern General or the Victoria.

Service issues

An additional screener/grader was appointed in January 2011 to cope with the increase in grading resulting from the rising number of people with diabetes.

Staff 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.

Future Development

Diabetic Retinopathy Screening Optical Coherence Tomography Pilot

A pilot Optical Coherence Tomography clinic was established in South Glasgow in January 2011 to examine patients with maculopathy who would normally be referred into ophthalmology but usually do not need any ohthalmological intervention. The purpose of the pilot is to reduce the number of unnecessary referrals to ophthalmology.

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 adult residents is 6%.

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

- Locally we have supported the implementation of the autograder and have recommended to the Director of Finance that the continued use of the autograder is funded. No decision has yet been made by the Directors of Finance nationally.

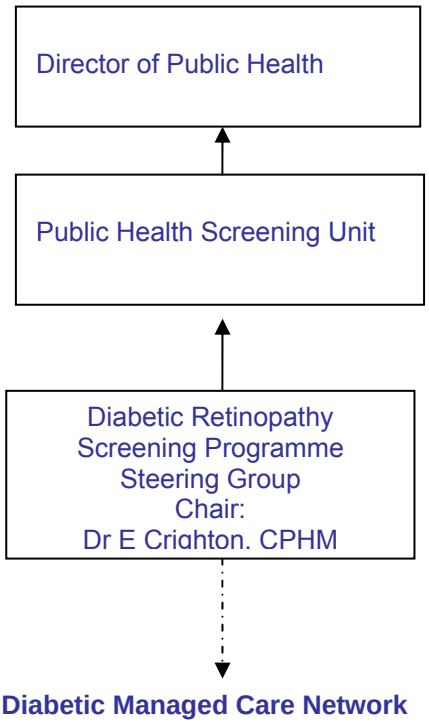
Appendix 7.1

Members of Diabetic Retinopathy Screening Steering Group (As at March 2012)

Dr Emilia Crighton	Consultant in Public Health Medicine (chair)
Mrs Donna Athanasopolous	PERL Resources Co-ordinator
Mrs Eileen Ferguson	Lay Member
Mr James Ferguson	Lay Member
Mrs Fiona Gilchrist	Assistant Programme Manager, Screening Dept
Mr Carsten Mandt	Co-ordinator for MCN for Diabetes
Mrs Fiona Heggie	Clinical Nurse Co-ordinator, Retinal Screening
Mrs Annette Little	Information Analyst
Miss Denise Lyden	Project Officer
Mrs Eleanor McColl	Screening Service Delivery Manager
Mrs 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



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CHAPTER 8: FUTURE DEVELOPMENTS ABDOMINAL AORTIC ANEURYSM SCREENING

From February 2013, abdominal aortic aneurysm (AAA) screening will be implemented across NHS greater Glasgow and Clyde.

Background

An abdominal aortic aneurysm is a dilatation of the aorta within the abdomen, where the aortic diameter is 3.0 cm or more. Aneuryms are strongly linked to increasing age, hypertension, smoking, other vascular disease and a positive family history AAA (Vadulkari, 2000).

Studies found that approximately 7% of men aged 65 were found to have an aneurysm and was less common in men and women under aged 65 years (Vadulkari et al., 2000; Ashton et al., 2000).

When an aneurysm ruptures less than half of patients will reach hospital alive and when an operation is possible mortality is as high as 85%.

Aim of the screening programme

The aim of AAA screening is the early detection and elective repair of asymptomatic AAA in order to prevent spontaneous rupture. AAA screening is associated with a 40% reduction in mortality in men.

Eligible population and screening test

All men aged 65 years who are resident in NHS Greater Glasgow and Clyde will be invited to attend for a single abdominal ultrasound scan. Men aged over 65 years of age will be able to self-refer to the programme. Screening will take place in Victoria ACAD, Stobhill ACAD, Royal Alexandra Hospital, Inverclyde Royal Hospital and Vale of Leven Hospital.

Table 8.1 shows the estimated eligible screening population from 2013 to 2021.

Table 8.1 Eligible 65 year old male population

2013	2014	2015	2016	2017	2018	2019	2020	2021
6110	5815	5691	5671	5570	5907	5858	6191	6398

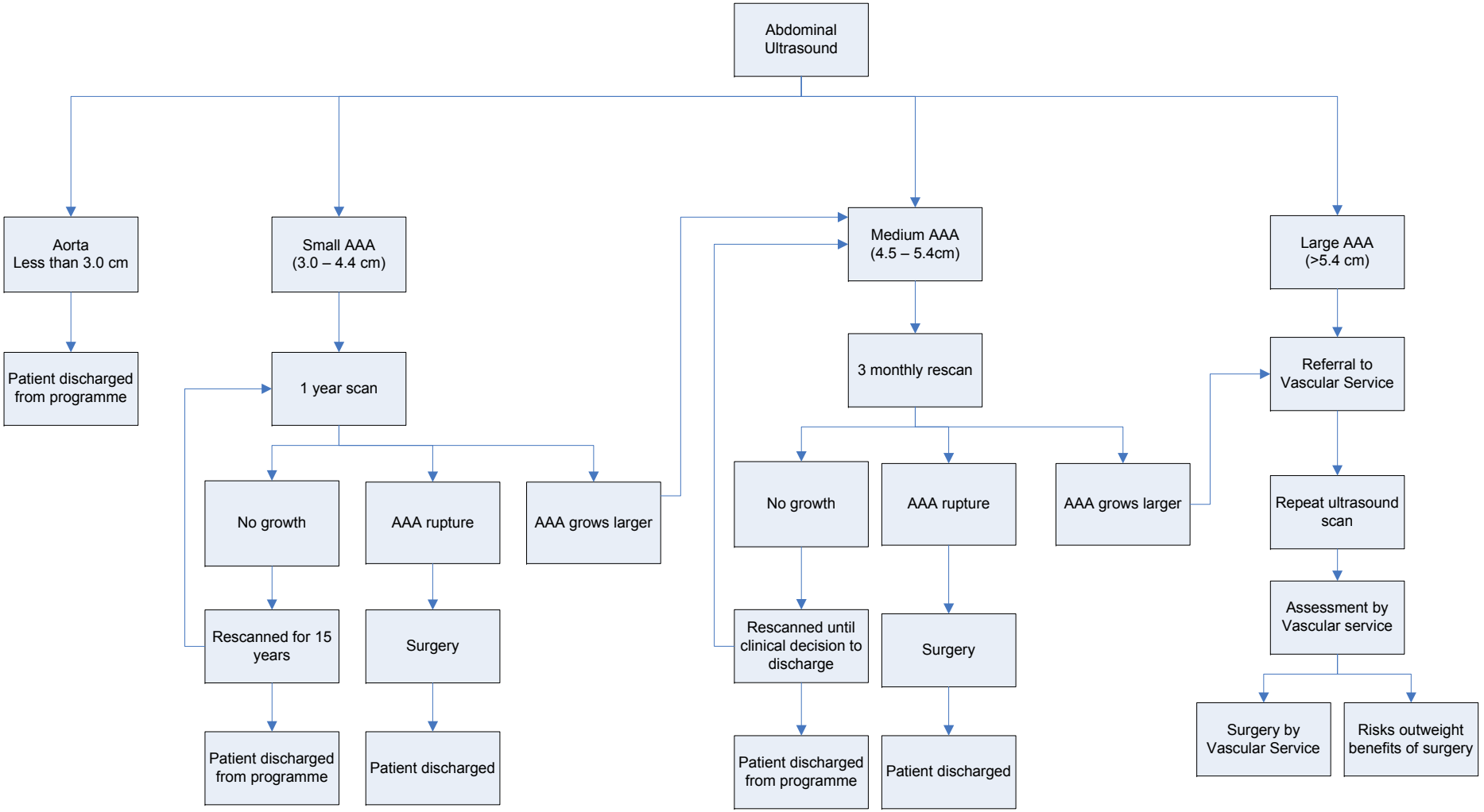
Source: National Services Division business case (2008)

Screening pathway

Individuals whose aortic diameter is less than 3.0 cm are discharged. Patients with a positive result from screening (AAA dimensions between 3.0 and 5.4 cm) will be offered interval surveillance scanning and treatment. Men with clinically significant AAA (over 5.5 cm) will be referred to secondary care for assessment **(Figure 8.2).**

Patients with an abdominal aortic aneurysm over 5.4 cm will be assessed in vascular surgical outpatient clinics to assess willingness and fitness for either surgery or for referral to interventional radiological services for assessment for endovascular aneurysm repair (EVAR). There will be a dedicated multidisciplinary team for aneurysm patients (both screened and unscreened). Some patients will not go on to have an intervention, mainly due to fitness for surgery or a preference for no intervention after consultation and assessment.

Figure 8.2 Positive Abdominal Aortic Aneurysm Screen - Treatment and follow up



APPENDIX 8.1

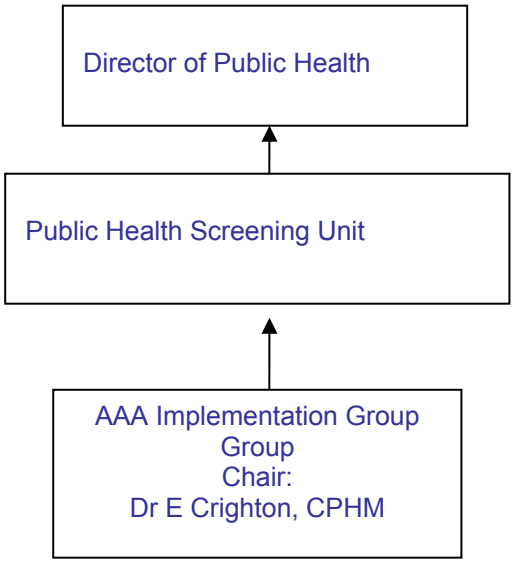
Members of Abdominal Aortic Aneurysm Screening Implementation Group (as at March 2012)

Dr Emilia Crighton, Consultant in Public Health Medicine (Chair)
Mrs Jacquie Campbell, General Manager, Theatres, Anaesthetics & Critical Care
Dr Richard Edwards, Consultant Radiologist
Dr Sandy Binning, Clinical Director, Critical Care
Dr Nick Pace, Clinical Director, Theatres and Anaesthesia
Ms Marilyn Horne, Acting Health Records Services Manager
Ms Denise Lyden, Project Officer
Mrs Eleanor McColl, HI&T Screening Service Delivery Manager
Ms Aileen MacLennan, Director, Diagnostics
Mrs Janette Fraser, NHS Forth Valley
Mrs Karen McClure, NHS Forth Valley
Mrs Frith Noble, Sonographer, Diagnostics
Mrs Elizabeth Rennie, Programme Manager, Screening Department
Mrs Lynn Ross, General Manager, Diagnostics
Mr Wesley Stuart, Consultant Vascular Surgeon
Mr George Welch, Lead Clinician
Mrs Ann Wilson, General Manager, General Surgery, Urology, Endoscopy

APPENDIX 8.2

REPORTING STRUCTURE

ABDOMINAL AORTIC ANEURYSM SCREENING IMPLEMENTATION GROUP



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