Public Health Screening Programme

Annual Report

1st April 2023 to 31st March 2024

Health Services
Public Health Directorate
February 2025

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Published by: NHSGGC Public Health Directorate
Date: 10th February 2025
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Section 1

Pregnancy & Newborn and Child Vision Screening

Chapter 1 – Pregnancy Screening

Summary

There are three screening programmes in pregnancy:

- haemoglobinopathies screening;
- infectious diseases screening**;**
- congenital anomalies screening including Down's syndrome, Edwards' syndrome and Patau's syndrome**.**

These programmes allow parents to make reproductive choices, manage illness and infection during and after the pregnancy and manage risk to the baby during pregnancy and after birth.

Pregnancy screening programmes are offered universally to all pregnant women during antenatal visits. In 2023/24, 11,593 NHSGGC residents booked to attend antenatal clinics and 9,993 (86.2%) of first antenatal booking appointments were offered by 12 weeks and 6 days gestation (first trimester). Timing of screening is crucial to ensure optimum testing and time for parents to consider next steps.

Haemoglobinopathies Screening	
Why?	Early identification of inherited blood disorders. Reduces infant morbidity and mortality. Provides time for reproductive choices and preparation for birth.
Intervention	Screening for haemoglobin variants (abnormal forms of haemoglobin such as sickle cell disease) and thalassaemias (which result in an abnormal amount of haemoglobin). Testing blood sample taken from pregnant woman ideally taken by week 10 of pregnancy, in conjunction with information about ethnic origin collected in the Family Origin Questionnaire. Rapid referral into counselling services for discussion about next steps as needed.
Activity in 2023/24	99.7% screening uptake (11,562 women screened).
Outcomes	Screening identified: • 23 foetus at risk; • 18 pregnancies where partner testing should be offered.
Planned activity	Develop activity to improve timing of testing, FOQ completion and partner testing Improve KPI reporting

Infectious Diseases Screening	
Why?	Early identification of infectious diseases that can be passed from mother to baby and cause harm. Reduces maternal and infant morbidity and mortality. Provides time for treatment and birth planning.
Intervention	Screening for hepatitis B, syphilis and HIV. Testing blood sample taken from pregnant woman ideally taken by week 10 of pregnancy. Rapid referral into services for management and birth planning as needed.
Activity in 2023/24	99.6% screening uptake (11,574 women screened).
Outcomes	13 women diagnosed with HIV (including 6 for who had not previously been diagnosed). 48 women diagnosed with hepatitis B infection (including 20 who had not previously been diagnosed). 34 women diagnosed with syphilis (not all of whom required treatment as this includes current and previously treated infections).
Planned activity	Maintain high uptake of testing

Congenital Abnormalities Screening	
Why?	Early detection of congenital abnormalities. Reduces infant morbidity and mortality. Provides time for reproductive choices and preparation for birth.
Intervention	First-line screening for Down's, Edwards' and Patau's syndromes by blood test and nuchal scan in first trimester or blood test in second trimester. If high chance result obtained from first-line screening, second-line screening for Down's, Edwards' and Patau's syndromes by NIPT blood test. Scan at 18-21 weeks to check for foetal abnormalities. If high chance results obtained from scan or second-line screening, rapid referral into services for diagnostic testing (including amniocentesis and chorionic villus sampling).
Activity in 2023/24	92.9% screening uptake (10,772 women screened) for first-line screening. 89.9% uptake of 18-21 week scan.
Outcomes	431 women with high chance results from first-line screen. 1,263 women had high chance result from 18-21 week scan.

	235 amniocentesis performed. 67 chorionic villus sampling performed.
Planned activity	Improve avoidable repeat rates Investigate reasons for high rate of second trimester testing

Chapter Contents

1.1. Introduction

Pregnancy screening is offered to all women who attend ante-natal appointments. The aim of pregnancy screening is to alert women, their partners, their midwives and clinical team to increased risk of illness in the pregnant woman or her baby. This knowledge allows decision-making about reproductive choices, treatment or planning for the birth.

This programme covers a number of individual screening tests which are offered across pregnancy. See **Appendix 1.1** for the timelines for testing during pregnancy.

- **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.

- **Infectious diseases screening** aims to identify infection and ensure a plan for treatment and management of affected individuals and their babies is put in place at the earliest opportunity. Screening allows undiagnosed infection to be identified and 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, Edward's syndrome and Patau's syndrome and other congenital anomalies screening** aims to detect chromosomal conditions Down's syndrome, Edwards' syndrome, or Patau's syndrome and other congenital anomalies. 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.

1.2. Eligible Population

The pregnancy screening programmes are offered universally to all pregnant women during antenatal visits.

1.3. The Screening Tests

Antenatal haemoglobinopathies 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, **see Appendix 1.2.**

In addition, a blood test is taken at the 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 1.3**. Scotland is a low prevalence area for haemoglobinopathies and details are included in **Appendix 1.4**.

Screening for sickle cell disorders and thalassaemia is offered to all women as early as possible in pregnancy and ideally by 10 weeks gestation, to give parents time to make an informed decision on whether to continue with the pregnancy.

Infectious diseases in pregnancy screening

Testing for HIV, hepatitis B and syphilis infection is carried out at first antenatal appointment when a blood sample is taken. The full screening pathway is shown in **Appendix 1.5.** Clinical management protocols are in place for diagnosis late in pregnancy or during birth and to manage pregnant women diagnosed with HIV, hepatitis B or syphilis.

Down's syndrome, Edward's syndrome and Patau's syndrome and other congenital anomalies

Screening for Down's syndrome, Edward's syndrome and Patau's syndrome can be carried out using two different screening methods depending on gestational age. The screening tests, using blood tests and ultrasound scans together with maternal risk factors, are used to derive an overall risk of having a baby with a chromosomal condition. Following a higher-chance screening result for one of the chromosomal conditions, women are offered another test, non-invasive prenatal testing (NIPT) or a diagnostic test. The full screening pathway is shown in **Appendix 1.6**. Ultrasound scan undertaken between 18 and 21 weeks, is used to look for other congenital anomalies.

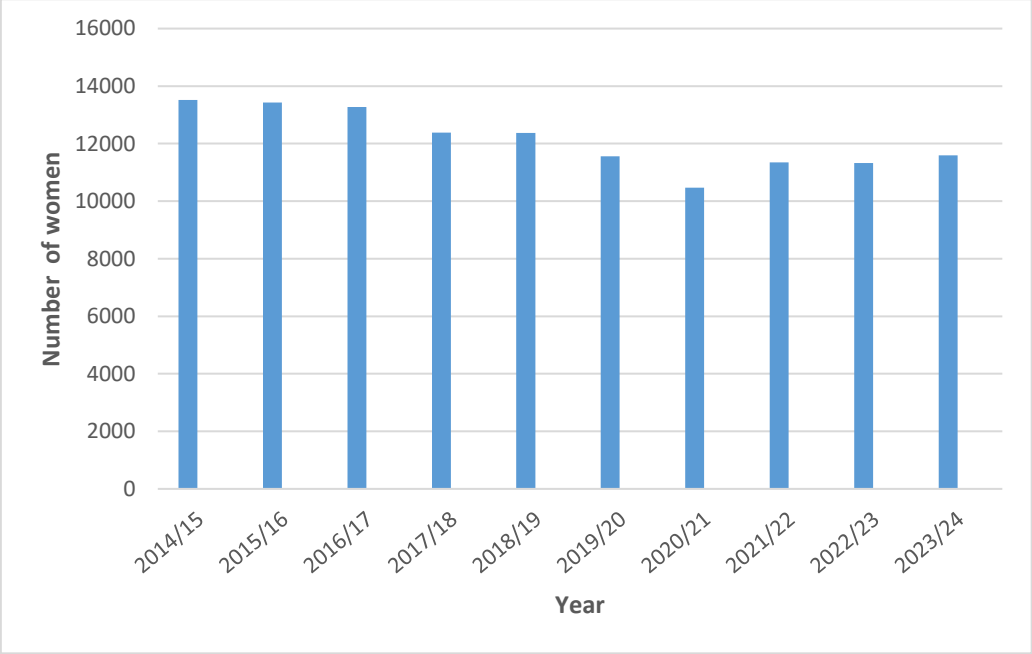
The decision to accept screening for chromosomal and other congenital anomalies raises particular ethical issues for women. Uptake of chromosomal or other congenital anomalies screening depends on whether women would wish further investigation or management.

1.4. Attendance & Timing of First Antenatal Visit

Each NHS Board has a statutory requirement to submit data on antenatal activity. In NHSGGC between April 2023 and March 2024, 11,593 women booked to attend an antenatal appointment. **Figure 1.1** shows the number of women who have attended antenatal clinic in NHSGGC since 2014/15.

From 2014/15 to 2023/24, there has been an overall decline in the number of women attending antenatal clinic from 13,518 in 2014/15 to 11,593 in 2023/24. The number of women booking into maternity services in the current year 2023/24 (11,593 women), is a small increase from the previous two years (11,328 in 2022/23, 11,353 in 2021/22).

Figure 1.1. Total number of pregnant women booked into maternity services in NHSGGC, 2014/2015 to 2023/2024



Source: BadgerNet, September 2024.

Timing of the first antenatal appointment is important for the best care and choices about the pregnancy to be available. In 2023/24, overall 86.2% (9,993) attended before 12 weeks 6 days or 3 months gestation, **see Table 1.1**. This proportion is lower than the last five years but similar to the last seven years, **see Table 1.1** and **Figure 1.2**.

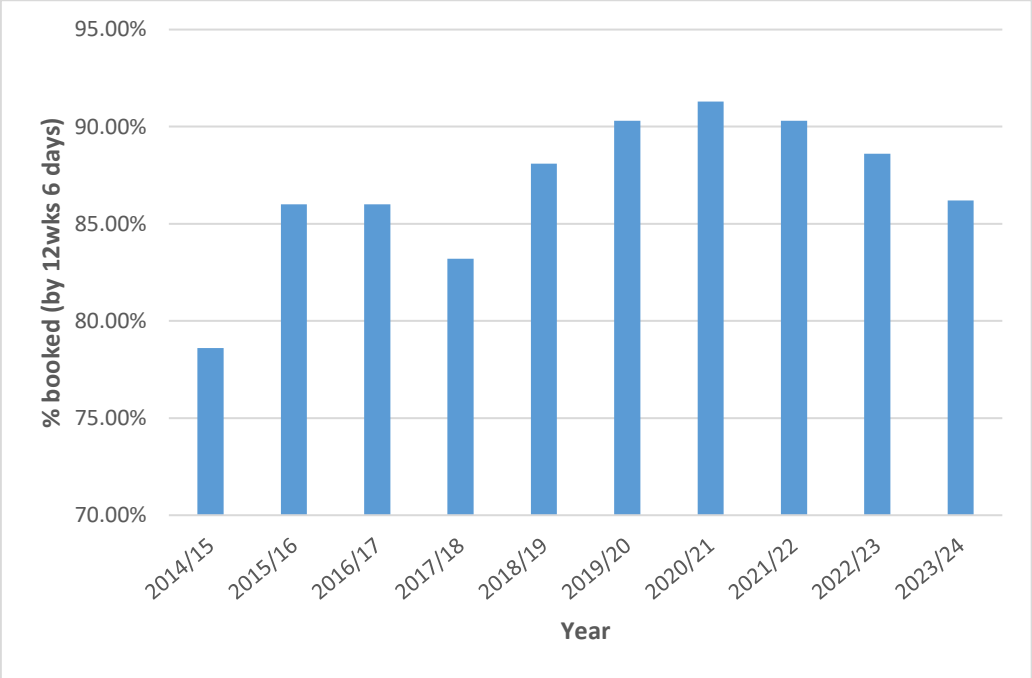
The proportion of pregnant women attending their first appointment at less than 13 weeks gestation was highest at the Royal Alexandria Hospital maternity unit (91.1%) and lowest at the Princess Royal Maternity Hospital (81.1%). The booking for 22 women was unknown.

Table 1.1. Number of women booked for their first antenatal appointment in NHSGGC April 2023 to March 2024, by maternity unit and by gestation age.

Maternity Unit	<=12 Wks 6Days	13Wks 0Days – 16Wks 6Days	17Wks 0Days – 20Wks 6Days	21Wks 0Days - 24Wks 6Days	25Wks 0Days – 30Wks 6Days	>=31Wks 0Days	**Total**	% <=12 Wks 6Days
Princess Royal Maternity Hospital	2,828	371	104	54	55	70	3,489	***81.1***
Queen Elizabeth University Hospital	4,323	388	94	57	61	83	5,012	***86.3***
Royal Alexandra Hospital	2,842	116	34	25	32	34	3,092	***91.9***
Total	**9,993**	**875**	**232**	**136**	**148**	**187**	**11,593**	***86.2***

BadgerNet, September 2024.

Figure 1.2. Percentage of women booked by 12 weeks and 6 days in NHSGGC, 2014 to 2024



Source: BadgerNet, September 2023.

Within NHSGGC, booking for the first antenatal appointment varied according to areas of deprivation or SIMD. In the most deprived areas, 81.2% (4,643) pregnant women booked into maternity services by 12 weeks and 6 days gestation, compared to 92.2% (1,741) pregnant women living in the least deprived areas**. See Table 1.2.**

Maternity Services are developing digital booking options backed up with a communication plan to encourage pregnant women to book early. Women from Black and Minority Ethnic (BME) communities and those residing in areas of high deprivation areas are less likely to contact services by 12 weeks gestation. Work is continuing to engage with these communities to understand the reasons for booking late and to encourage women to book earlier.

Table 1.2. Gestational age at first antenatal booking appointment by deprivation, 1st April 2023 to 31st March 2024

SIMD Quintile	<=12 Wks 6Days	13Wks 0Days - 16Wks 6Days	17Wks 0Days - 20Wks 6Days	21Wks 0Days - 24Wks 6Days	25Wks 0Days - 30Wks 6Days	>=31 Wks 0Days	Unknown	Total	% <=12 Wks 6Days
1 -Most Deprived	3,768	467	144	78	81	94	11	4,643	***81.2***
2	1,850	164	38	31	33	35	1	2,152	***86.0***
3	1,217	95	11	6	14	22	3	1,368	***89.0***
4	1,417	69	17	10	10	18	1	1,542	***91.9***
5 -Least Deprived	1,741	80	22	11	10	18	6	1,888	***92.2***
Total	**9,993**	**875**	**232**	**136**	**148**	**187**	**22**	**11,593**	***86.2***

Source: BadgerNet, September 2024.

The majority of pregnant women 73% (8,480) were 20-29 years of age at booking; 2.8% (327) were under 20 years of age and 4.5% (527) were over 35 years of age, **see Table 1.3**.

Table 1.3. Age at first antenatal booking appointment by HSCP, 1st April 2023 to 31st March 2024

	Age at Booking					
HSCP	**<20**	**20-24**	**25-29**	**30-34**	**35+**	**Total**
East Dunbartonshire	17	180	372	218	56	**843**
East Renfrewshire	10	217	348	214	50	**839**
Glasgow North East	53	849	666	300	59	**1927**
Glasgow North West	50	682	648	384	112	**1,876**
Glasgow South	79	1,063	947	509	139	**2,737**
Inverclyde	24	303	209	117	17	**670**
Renfrewshire	46	669	686	398	75	**1,874**
West Dunbartonshire	48	365	276	119	19	**827**
Total	327	4,328	4,152	2,259	527	**11,593**
%	***2.8***	***37.3***	***35.8***	***19.5***	***4.5***	***100.0***

Source: BadgerNet, September 2024.

The ethnic origin of pregnant women is shown in **Table 1.4**. The largest population group was Scottish (61.1%); Pakistani (7.8%); African (7.1%); Other British (4.3%); Indian (3.7%); Arab (2.6%) and Chinese (1.0%).

Table 1.4. Number of NHSGGC residents booked for their first antenatal appointment by ethnicity, 1st April 2023 to 31st March 2024

2021 Census Ethnic Group[1]	**Total**	**%**
1A. Scottish	7,080	*61.1*
1B. Other British	498	*4.3*
1C. Irish	114	*1.0*
1K. Gypsy/ Traveller	7	*0.1*
1L. Polish	133	*1.1*
1M. Roma	20	*0.2*
1Z. Any other white ethnic group	532	*4.6*
2A. Any mixed or multiple ethnic background	150	*1.3*
3F. Pakistani, Pakistani Scottish or Pakistani British	906	*7.8*
3G. Indian, Indian Scottish or Indian British	424	*3.7*
3H. Bangladeshi, Bangladeshi Scottish or Bangladeshi British	47	*0.4*
3J. Chinese, Chinese Scottish or Chinese British	106	*0.9*
3Z. Other Asian, Asian Scottish or Asian British	177	*1.5*
4D. African, African Scottish or African British	425	*3.7*
4X. African, African Scottish or African British	284	*2.4*
4Y. Other African	118	*1.0*
5C. Caribbean, Caribbean Scottish or Caribbean British	*	*0.0*
5D. Black, Black Scottish or Black British	18	*0.2*
5X. Caribbean or Black	8	*0.1*
5Y. Other Caribbean or Black	8	*0.1*
6A. Arab, Arab Scottish or Arab British	304	*2.6*
6Z. Other ethnic group	147	*1.3*
Refused / Not provided by patient / not known / NULL	83	*0.7*
Grand Total	**11,593**	

Source: BadgerNet, September 2024.
* numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

[1] Ethnic group | Scotland's Census (accessed February 2025)

1.5. Haemoglobinopathies Screening

Haemoglobinopathies

The haemoglobinopathies are a large group of inherited blood disorders which affect the haemoglobin (oxygen carrying) component of blood. They fall into two main groups:

- haemoglobin variants (such as sickle cell disorders) which are associated with the production of abnormal forms of haemoglobin; and
- thalassaemias in which there is an abnormality in the amount of haemoglobin produced.

Sickle cell disorders are caused by a haemoglobin variant HbS. If the child has this in combination with a normal haemoglobin variant, they will carry the 'trait'. However, if they have two copies of the HbS and no normal haemoglobin, this may result in severe life-threatening symptoms. Those with beta-thalassaemia major require regular blood transfusions to maintain life. HbD (or HbAD) is one of the haemoglobinopathy carrier traits – the person has inherited haemoglobin A from one parent and haemoglobin D from the other. They will not have an illness, not experience symptoms but the carrier status is important for future children. HbE (or HbAE) is another haemoglobinopathy carrier trait. The person has inherited haemoglobin A from one parent and haemoglobin E from the other. They will not have an illness, not experience symptoms but the carrier status is important for their future children.

Samples taken for haemoglobinopathies screening

Of the 11,593 women booked for their first antenatal appointment, 11,572 (99.8%) were offered haemoglobinopathies screening and 11,562 tests (99.7%) were performed. Six women refused to give consent and for 4, consent was not recorded, **see Table 1.5.** Testing for haemoglobinopathies screening has been high at >99% in NHSGGC for the last five years, **see Figure 1.3**.

The Family Origin Questionnaire (FOQ) was completed as part of routine early antenatal risk assessment. For low prevalence areas like NHSGGC, it provides the basis for testing for haemoglobin variants and in the interpretation of results and the need for partner testing. Blood samples taken at first antenatal appointment were checked for risk of thalassaemia for all women who consented.

In NHSGGC in 2023/24, 10,114 (87.2%) blood samples for haemoglobinopathies (HBO) testing had a completed Family Origin Questionnaire (FOQ). This varied across sites with the Princess Royal Maternity completing the FOQ for 83.9% of pregnant women and the Royal Alexandra Hospital maternity unit completing FOQ for 90.1% of pregnant women.

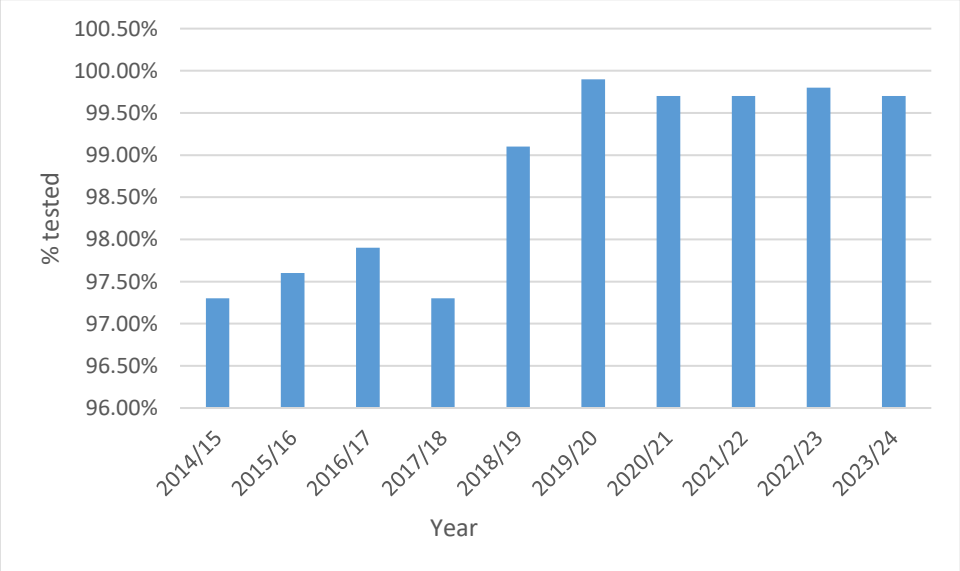
Table 1.5. NHSGGC haemoglobinopathies screening from 1st April 2023 to 31st March 2024

Maternity Unit	Total	HBO offered	HBO refused	HBO consent not known	HBO test performed	FOQ completed	FOQ not completed	**% FOQ completed**
Princess Royal Maternity Hospital	3,489	3,483	*	*	3,479	2,926	553	***83.9***
Queen Elizabeth University Hospital	5,012	5,003	*	*	5,001	4,401	600	***87.8***
Royal Alexandra Hospital	3,092	3,086	*	*	3,082	2,787	295	***90.1***
Total	**11,593**	**11,572**	**<10**	**<10**	**11,562**	**10,114**	**1,448**	***87.2***

Source: BadgerNet, September 2024.
*numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

HBO – Haemoglobinopthies
FOQ – Family Origin Questionnaire

Figure 1.3. Uptake of haemoglobinopathies testing amongst pregnant women, NHSGGC, 2014/15 to 2023/24



Source: BadgerNet, September 2024.

Laboratory staff test samples for haemoglobinopathies even if the FOQ is missing, **see Table 1.6**. The maternal samples tested for haemoglobinopathies identified 23 foetus at risk and 18 cases where partner testing should be offered.

Table 1.6 NHSGGC haemoglobinopathies screening outcome (only if HBO performed) 1st April 2023 to 31st March 2024

	Maternity Unit			
Screening Outcome	Glasgow Princess Royal Maternity	Queen Elizabeth University Hospital	Royal Alexandra Maternity Hospital	Total
01:Fetal At Risk	12	*	*	**23**
02:Fetal Not At Risk	53	75	37	**165**
03:Positive	*	*	*	**6**
04:Carrier	313	498	170	**981**
05:PossibleCarrier	*	*	*	*****
06:KnownCarrier	*	*	*	*****
07:Partner Testing Should Be Offered	12	*	*	**18**
08:Negative	3,028	4,306	2,752	**10,086**
09:Partner Testing Not Required	*	*	*	**7**
10:FOQNO	8	51	71	**130**
Unknown	47	51	43	**141**
Grand Total	**3,479**	**5,001**	**3,082**	**11,562**

Source: BadgerNet, September 2024.
*numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

Key performance indicators for haemoglobinopathy screening in NHSGGC are summarised in **Table 1.7**

Table 1.7 KPIs for Pregnancy and Newborn Screening – Haemoglobinopathy 2023-2024

KPI	Performance threshold	NHSGGC 2023-2024
1.1 Coverage	Essential : ≥95% Desirable : ≥ 99%	99.7%
1.2 Timeliness of pregnancy screen (proportion of women tested by 10+0)	Essential : ≥ 50.0% Desirable : ≥ 75.0%	No data
1.3 Completion of FOQ	Essential : ≥ 95% Desirable : ≥99%	87.2%
1.4 Turnaround (results reported within 3 working days)	Essential: ≥ 90.0% Desirable: ≥ 95.0%	No data
1.5 Timely offer of prenatal diagnosis (PND) (proportion of women offered PND by 12+0)	None set	No data
1.6 Timely reporting of newborn screen positive results (parents given results by 28 days of age)	Essential : ≥ 90.0 % Desirable: ≥ 95.0%	No data
1.7 Timeliness to information and support (newborn with screen positive by 90 days of age)	Essential : ≥ 90.0 % Desirable : ≥ 95.0%	No data

1.6. Infectious Diseases in Pregnancy Screening

The infections that are screened for in pregnancy are hepatitis B (HBV), syphilis and Human Immunodeficiency Virus (HIV). All 3 have the potential to be passed on from mother to baby during or after childbirth and to harm the health of both the mother and her baby. Effective measures are available to prevent all 3 from being transmitted and from causing health problems.

Hepatitis B is a virus that affects the liver. Babies can be immunised at birth to prevent them from being infected.

Syphilis is an infection that can be treated with antibiotics.

Human Immunodeficiency Virus (HIV) can be treated very effectively and transmission of HIV from an infected mother to her baby can be prevented.

Screening tests and results for Infectious diseases

Of the 11,593 women who were booked for a first antenatal appointment in 2023-2024, almost all women who were offered infectious disease screening took up this offer (99.9%).

Antenatal screening identified 13 women diagnosed HIV (including 6 who were newly diagnosed); 48 diagnosed with HBV (including 20 who were newly diagnosed) and 34 women diagnosed with syphilis (not all of whom needed treatment as these included both current and previously diagnosed infections), **see Table 1.8**.

Table 1.8. Infectious diseases tests and results, NHSGGC, 2023/2024

1st April 2023 – 31st March 2024					Results	
	Total number of women booking	**Number of women offered testing**	**Number of women declining test**	**Acceptance rate**	**Positive[1,2]**	
	(N)	(N)	(N)	%	(N)	%
HIV	11,593	11,575 (99.8%)	17	99.9%	13	0.11
HBV	11,593	11,575 (99.8%)	17	99.9%	48	0.4
Syphilis	11,593	11,574 (99.8%)	17	99.9%	34	0.3

Source: BadgerNet and West of Scotland Specialist Virology Centre

Key Performance Indicators

The following tables show KPIs Hepatitis B **(Table 1.9),** syphilis **(Table 1.10)** and HIV **(Table 1.11).**

Table 1.9. KPIs for Pregnancy and Newborn Screening – Hepatitis B, NHSGGC, 2023-2024.

KPI	Performance threshold	NHSGGC 2023-2024
2.1 Coverage	Essential: ≥ 95.0% Desirable: ≥ 99.0%	99.7 %
2.2 Turnaround (results reported within 8 days)	Essential: ≥ 95.0% Desirable: ≥ 97.0%	100% of results reported within 8 days
2.3 Timeliness to information and support (proportion with appointment within 10 days)	Essential: ≥ 97.0% Desirable: ≥ 99.0%	Data not available Forty eight women tested positive for hepatitis B, of whom: • 28 were known about previously; • 20 were new diagnoses. A local protocol is in place for the management of women with hepatitis B infection identified in pregnancy. This covers referral for specialist care; checking viral load at 26 weeks; actions required depending on viral load and paediatric services involvement at delivery.
2.4 Timely assessment (proportion seen by a specialist within an effective timeframe)	Essential : ≥ 75.0% Desirable: ≥ 90.0%	Data not available Description as for 2.3
2.5 Timely neonatal vaccination and immunoglobulin	Essential ≥ 97.0% Desirable ≥ 99.0%	100% of babies born to mothers with hepatitis B received their first dose of hep B vaccine +/- immunoglobulin within 24hrs of birth.

Table 1.10. KPIs for Pregnancy and Newborn Screening – Syphilis, NHSGGC, 2023-2024.

KPI	Performance threshold	NHSGGC 2023-2024
3.1 Coverage	Essential: ≥ 95.0% Desirable: ≥ 99.0%	99.7%
3.2 Turnaround (results reported within 8 days)	Essential: ≥ 95.0% Desirable: ≥ 97.0%	97.7% of results reported within 8 days
3.3 Timeliness to information and support (proportion with appointment within 10 days)	Essential: ≥ 97.0% Desirable: ≥ 99.0%	Data not available Thirty four women had a reactive syphilis test. However not all of these women will have required treatment, since this figure includes women with previously treated syphilis as well as those with current infection. Failsafe in conjunction with sexual health services ensures that all positive women are followed up promptly.

Table 1.11. KPIs for Pregnancy and Newborn Screening – HIV, NHSGGC, 2023-2024.

KPI	Performance threshold	NHSGGC 2023-2024
4.1 Coverage	Essential: ≥ 90.0% Desirable: ≥ 99.0%	99.6%
4.2 Turnaround (results reported within 8 days)	Essential: ≥ 95.0% Desirable: ≥ 97.0%	100% of results reported within 8 days
4.3 Timeliness to information and support (proportion with appointment within 10 days)	Essential: ≥ 97.0% Desirable: ≥ 99.0%	Data not available Thirteen women tested positive for HIV, of whom: • 7 were already known to be HIV positive and were engaged in care; • 6 were new diagnoses. Failsafe in conjunction with sexual health or other services ensures that all HIV positive women are followed up promptly.

1.7. Down's syndrome, Edwards' syndrome & Patau's syndrome screening.

Down's syndrome, Edwards' syndrome and Patau's syndrome are caused by chromosomal abnormalities characterised by an extra copy of a chromosome. Older mothers are more likely to have a baby with a chromosomal condition, although it can occur in women of any age.

The type of screening offered depends on gestational age. For the first-line screening test:

- women who are registered with maternity services between 11+2 and 14+1 weeks gestation are offered the combined test, this includes a nuchal translucency (NT) scan and a blood test. First trimester blood tests are undertaken in NHS Lothian at the national laboratory;
- women who present to maternity services after 14+1 weeks, or where an NT measurement cannot be obtained, will be offered the quadruple test, which is performed between 14+2 and 20+0 weeks gestation. Second trimester blood tests are undertaken in Bolton at the UK national laboratory.

Both of these screening tests provide an assessment of chance that a chromosomal abnormality is present.

If screening returns a higher chance result, women are offered a second-line test, the NIPT (non-invasive prenatal test), which is a blood test. Second-line NIPT blood testing is undertaken in NHS Tayside at the national laboratory. If second-line screening returns a high chance result, diagnostic testing can be offered in the form of amniocentesis or chorionic villus biopsy (CVS).

First-line screening test – screening uptake

Of the 11,593 women booked at antenatal clinics in 2023/24, 10,772 (93%) consented and were screened for Down's syndrome, Edwards' syndrome and Patau's syndrome in either the first or second trimester, see **Table 1.12**.

Table 1.12. First and second trimester Down's, Edwards' and Patau's syndromes screening for pregnant women in NHSGGC, 2018/19 to 2023/24.

	2023/24	**2022/23**	**2021/22**	**2020/21**	**2019/20**	**2018/19**
First Trimester						
Singleton	8,153	7,785	8,037	7,849	7,801	7,961
Twin	110	130	121			
Second Trimester						
Tests	*2,509*	*2,596*	*2,389*	*2,263*	*2,115*	*2,393*
Total Tests	10,772	10,511	10,547	10,112	9,916	10,354
% Second Trimester	23.3%	24.7%	22.7%	22.4%	21.3%	23.1%

The First Trimester samples are taken during 11 weeks +2 days to 14 weeks +1 day of pregnancy. The samples are sent to Lothian Laboratory and during 2023/2024, 8,236 samples were tested. There were no late samples and 434 samples (5.3%) had incomplete request details.

Of the samples tested in the first trimester, 272 samples had increased chance of Down's syndrome and 47 samples had increased chance for Edwards' syndrome or Patau's syndrome. Overall, the Singleton Pregnancy Screen (SPR) for increased chance results in the first trimester was 3.34% for Down's syndrome and 0.58% for Edwards' and Patau's syndromes, **see Table 1.13.**

Table 1.13. First trimester Down's, Edwards' and Patau's syndromes singleton screening samples, NHSGGC, 2023/24.

	Increased chance Down's syndrome	Total screened for Down's syndrome	Down's syndrome SPR	Increased chance Edwards' or Patau's syndromes	Total screened for Edwards' or Patau's syndromes	Edwards' or Patau's syndromes SPR
First Trimester	272	8,147	3.34%	47	8,150	0.58%

Source: First Trimester Trisomy Screening, Lothian Laboratory Annual Report 2023/24.

The second trimester samples are taken up to 20 weeks+0 days gestation and sent to Bolton Laboratory for testing. During 2023/24, 2,596 samples were taken in the second trimester, 112 high chance results were reported (4.5%), **see Table 1.14.**

Table 1.14. Second trimester Down's syndrome screening samples, NHSGGC, 2023/24.

2023/24	Number of samples	% samples	Number of high chance results	% High chance results
Second Trimester	2,509	23.3%	112	4.5%

Source: Bolton Labs, December 2024.

First–line screening test Key Performance Indicators for Down's, Edwards' and Patau's screening

The Key Performance Indicators (KPIs) for first-line screening for Down's syndrome, Edwards' syndrome and Patau's syndrome are shown in the **Table 1.15**. We are currently not able to provide data against most of these KPIs. The data provided is from the NHS Lothian first trimester screening laboratory and does not include data from the second trimester screening laboratory in Bolton. First and second trimester testing combine to provide the full picture of first-line screening.

Table 1.15. KPIs for first-line Down's syndrome, Edwards' syndrome and Patau's syndrome screening in pregnancy, data from the first trimester screening laboratory in NHS Lothian.

KPI	Performance threshold	2023/24
5.1 Coverage	No threshold, screening is voluntary	No data
5.2 Test turnaround time (reported within 3 working days)	Essential: ≥ 97.0% Desirable: ≥ 99.5%	99.2% (All-Scotland data)
5.3 Adequate samples – Proportion of samples that are correct and can be tested	Essential: ≥ 95.0%	98 % (All-Scotland data)
5.4 Timeliness to information and support (proportion with appointment within 3 days)	Essential: ≥ 97.0% Desirable: ≥ 99.0%	No data

1.8. Other Foetal Anomaly Screening

Foetal Anomalies Scan

All women are offered an ultrasound scan between 18 and 21 weeks to confirm the gestation age and identify any possible problems that may require medical intervention during pregnancy or after birth. The number of women who gave consent for a foetal anomaly scan was 10,419 (89.9%) of all bookers. Of those who consented to scanning, 10,418 (100.0%) of scans were performed **(Table 1.16).**

Table 1.16. Uptake of screening for congenital anomalies by foetal anomaly scan (FAS) for the period March 2023 to April 2024 in NHSGGC

Maternity Unit	Pregnant women	FAS consented	*% FAS consented*	FAS performed	*% FAS performed*
Princess Royal Maternity Hospital	3,489	3,173	90.9%	3,173	100.0%
Queen Elizabeth University Hospital	5,012	4,484	89.5%	4,483	100.0%
Royal Alexandra Hospital	3,092	2,762	89.3%	2,762	100.0%
Total	**11,593**	**10,419**	**89.9%**	**10,418**	**100.0%**

Source: BadgerNet, September 2024.

Of the 10,418 foetal scans performed, 1,236 (12.1%) anomalies were suspected. **(Table 1.17).**

Table 1.17. Outcome of foetal anomaly scans performed for the period 1st April 2023 to 31st March 2024

Maternity Unit	Number of foetal scans performed	Anomaly not suspected	Anomaly suspected	*% Anomaly suspected*
Princess Royal Maternity Hospital	3,173	2,722	451	14.2%
Queen Elizabeth University Hospital	4,483	4,118	365	8.1%
Royal Alexandra Hospital	2,762	2,315	447	16.2%
Total	**10,418**	**9,155**	**1,263**	**12.1%**

Source: BadgerNet, September 2024.

1.9. Diagnostic Testing for Foetal Anomalies

Diagnostic testing – Amniocentesis

Amniocentesis is only offered if there's a high chance that a baby could have a health condition or chromosomal condition because:

- an earlier antenatal screening test has suggested there may be a health condition or chromosomal condition;
- a previous pregnancy with health condition or chromosomal condition;
- a family history of a health condition, such as cystic fibrosis or muscular dystrophy.

In 2023/24, 235 amniocentesis samples from NHSGGC were analysed by the Cytogenetics Laboratory. Of these samples, 57 abnormalities were detected (24.2%), of which 43 had a diagnosis of Down's syndrome **(Table 1.18).**

Table 1.18. Amniocentesis Referrals 1st April 2023 to 31st March 2024 in NHSGGC

	Reason for Amniocentesis Referral				Total
	Screening risk	Scan abnormality	NIPT	Other	
Number of patients	33	148	*	36	**235**
% total referrals	14.0%	63.0%	7.7%	15.3%	
Normal results	28	112	*	36	178
Down's, Edwards' and Patau's syndromes	*	22	16	0	43
Other foetal abnormality	*	14	0	0	14
Failed analysis	0	0	0	0	0
Total	*	**36**	*	**0**	**57**

Source Cytogenetics Lab – Dec 2024
NIPT – Non-Invasive Prenatal Test
*numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

Diagnostic testing – Chorionic Villus Biopsy

Chorionic Villus Biopsy (CVS) is another test that can be offered to pregnant women if there is a high risk the baby could have a health condition or chromosomal condition.

This could be because:

- an earlier antenatal screening test has suggested there may be a health condition or chromosomal condition, such as Down's syndrome, Edwards' syndrome or Patau's syndrome or sickle cell anaemia;
- a previous pregnancy with these health conditions or chromosomal condition;
- there is a family history of a health condition, such as cystic fibrosis or muscular dystrophy and a health condition is detected in baby during a routine ultrasound scan.

In 2023/24, 67 chorionic villus biopsies from NHSGGC were analysed by the Cytogenetics Laboratory. Of these biopsies, 14 abnormalities were detected (21%), 11 of those had a diagnosis of Down's syndrome **(Table 1.17).**

Table 1.19. Chorionic Villus Biopsy Referrals & Outcomes 1st April 2023 to 31st March 2024

	Reason for CVS referral				Total
	Screening risk	Scan abnormality	NIPT	Other	
Number of patients	*	39	*	23	**67**
% total referral reasons	4.5%	58.2%	3.0%	34.3%	
Normal results	*	27	0	23	53
Down's, Edwards' and Patau's syndromes	0	*	*	0	11
Other foetal abnormality	0	*	0	0	*
Failed analysis	0	0	0	0	0
Total	0	12	*	0	**14**

Source Cytogenetics Lab – Dec 2024
NIPT – Non-Invasive Prenatal Test
*numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

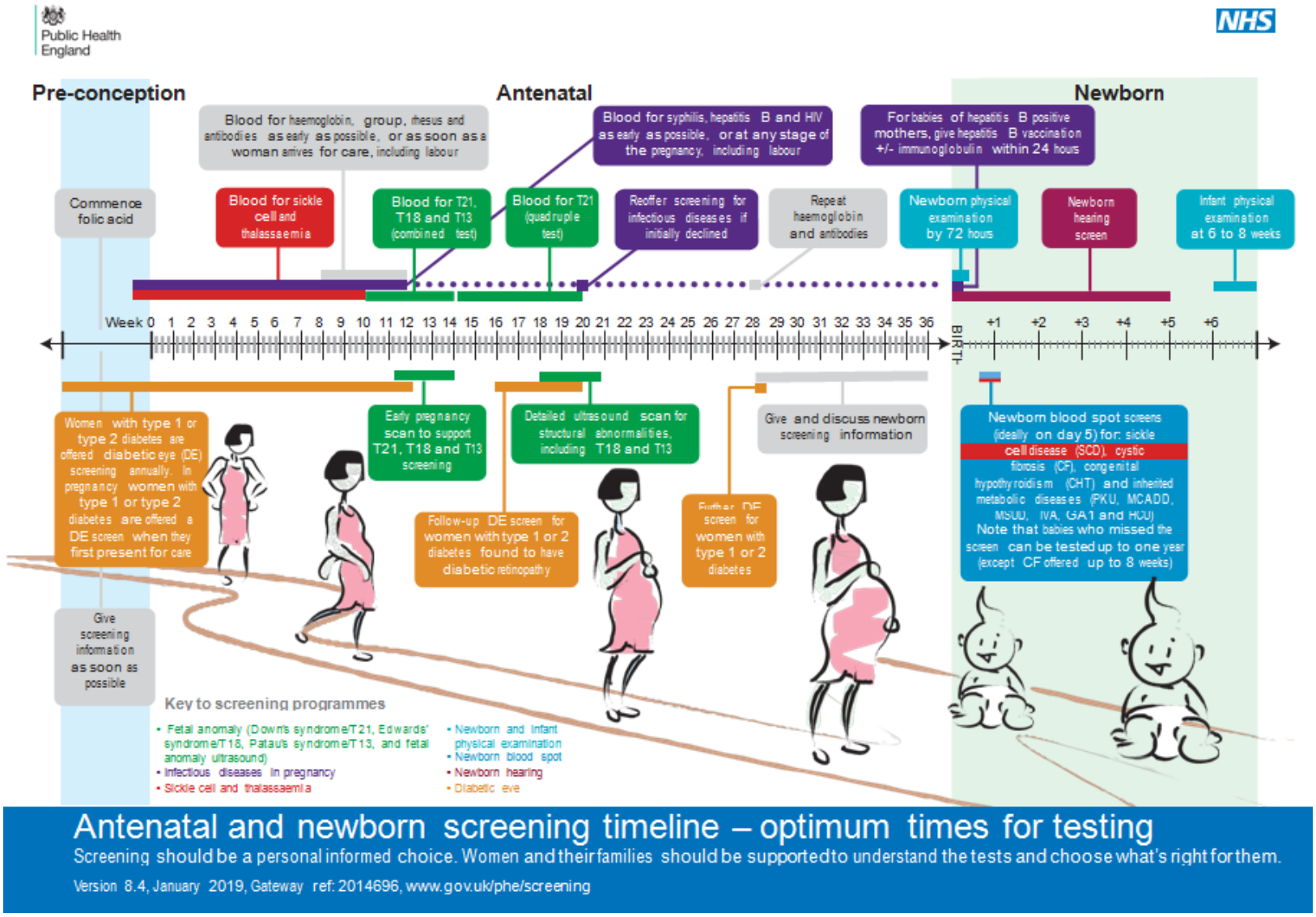
1.10. Information Systems

The report contains data extracted from the Maternity Services patient management system BadgerNet; the NHSGGC patient management system Trakcare and laboratory management data systems.

1.11. Challenges & Priorities

- Work continues to ensure that there are low numbers of unavoidable repeat samples for first trimester screening. These cause anxiety and waste NHS resources.
- NHSGGC has a high proportion of second trimester first-line Down's, Edwards' and Patau's syndromes screening testing. We will undertake work to investigate why this is. The second trimester test returns a higher rate of false positives than the first trimester test, so earlier testing is preferred.
- We will develop reports to demonstrate our activity against more of the screening KPIs. For this report, new reports for uptake of infectious disease screening were developed, to ensure true uptake is reported.
- We will develop a better understanding of the haemoglobinopathies testing pathway, especially the timings of testing, FOQ completion and partner testing.

Appendix 1.1


Public Health England
NHS
Pre-conception
Antenatal
Newborn
Blood for haemoglobin, group, rhesus and antibodies as early as possible, or as soon as a woman arrives for care, including labour
Blood for syphilis, hepatitis B and HIV as early as possible, or at any stage of the pregnancy, including labour
For babies of hepatitis B positive mothers, give hepatitis B vaccination +/- immunoglobulin within 24 hours
Commence folic acid
Blood for sickle cell and thalassaemia
Blood for T21, T18 and T13 (combined test)
Blood for T21 (quadruple test)
Reoffer screening for infectious diseases if initially declined
Repeat haemoglobin and antibodies
Newborn physical examination by 72 hours
Newborn hearing screen
Infant physical examination at 6 to 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
Women with type 1 or type 2 diabetes are offered diabetic eye (DE) screening annually. In pregnancy women with type 1 or type 2 diabetes are offered a DE screen when they first present for care
Early pregnancy scan to support T21, T18 and T13 screening
Detailed ultrasound scan for structural abnormalities, including T18 and T13
Give and discuss newborn screening information
Newborn blood spot screens (ideally on day 5) for: sickle cell disease (SCD), cystic fibrosis (CF), congenital hypothyroidism (CHT) and inherited metabolic diseases (PKU, MCADD, MSUD, IVA, GA1 and HCU)
Note that babies who missed the screen can be tested up to one year (except CF offered up to 8 weeks)
Follow-up DE screen for women with type 1 or 2 diabetes found to have diabetic retinopathy
Further DE screen for women with type 1 or 2 diabetes
Give screening information as soon as possible
Key to screening programmes
• Fetal anomaly (Down's syndrome/T21, Edwards' syndrome/T18, Patau's syndrome/T13, and fetal anomaly ultrasound)
• Infectious diseases in pregnancy
• Sickle cell and thalassaemia
• Newborn and infant physical examination
• Newborn blood spot
• Newborn hearing
• Diabetic eye
Antenatal and newborn screening timeline – optimum times for testing
Screening should be a personal informed choice. Women and their families should be supported to understand the tests and choose what's right for them.
Version 8.4, January 2019, Gateway ref: 2014696, www.gov.uk/phe/screening

Appendix 1.2

Screening for Haemoglobinopathies
Family Origin Questionnaire (FOQ)

NHS SCOTLAND

Hospital Name .....
CHI No. .....
Estimated Delivery Date .....
Surname .....
Forename .....
Date of Birth .....
Address 1 .....
Address 2 .....
Postcode .....

Screening test declined ☐

This form must be attached securely to the haematology laboratory request form with the antenatal blood samples. A second copy of the form should be added to the patient's maternity record. (A third copy can be added to the hospital records if applicable). The completion of this form is an ESSENTIAL part of the screening process.

What are your family origins?

Please tick all boxes in ALL sections that apply to the woman and the baby's father

		Woman	Baby's father
A.	**AFRICAN OR AFRICAN CARIBBEAN (BLACK)**		
1/	Caribbean Islands	☐	☐
2/	Africa (excluding North Africa)	☐	☐
3/	Any other African or African-Caribbean family origins (please write in…)		
B.	**SOUTH ASIAN (ASIAN)**		
1/	India or African-Indian	☐	☐
2/	Pakistan	☐	☐
3/	Bangladesh	☐	☐
C.	**SOUTH EAST ASIAN (ASIAN)**		
1/	China including Hong Kong, Taiwan, Singapore	☐ #	☐ #
2/	Thailand, Indonesia, Burma	☐ #	☐ #
3/	Malaysia, Vietnam, Philippines, Cambodia, Laos	☐ #	☐ #
4/	Any other Asian family origins (eg Caribbean-Asian) (please write in…)		
D.	**OTHER NON-EUROPEAN (OTHER)**		
1/	North Africa, South America etc	☐	☐
2/	Middle East (Saudi Arabia, Iran etc)	☐	☐
3/	Any other Non-European family origins (please write in….)		
E.	**SOUTHERN & OTHER EUROPEAN (WHITE)**		
1/	Sardinia	☐ #	☐ #
2/	Greece, Turkey, Cyprus	☐ #	☐ #
3/	Italy, Portugal, Spain	☐	☐
4/	Any other Mediterranean country	☐	☐
5/	Albania, Czech Republic, Poland, Romania, Russia etc	☐	☐
F*	**UNITED KINGDOM (WHITE) refer to guidance at the back**		
1/	England, Scotland, N Ireland, Wales	☐	☐
G*	**NORTHERN EUROPEAN (WHITE) refer to guidance at the back**		
1/	Austria, Belgium, Ireland, France, Germany, Netherlands	☐	☐
2/	Scandinavia, Switzerland etc	☐	☐
3/	Any other European family origins, refer to chart (eg Australia, N America, S Africa) (please write in…)		
	*Hb Variant Screening Requested by F and/or G *(ie request from low risk group)*	☐	☐
	# Higher risk for alpha zero thalassaemia		
H.	**DON'T KNOW (incl. pregnancies with donor egg/sperm)**	☐	☐
I.	**DECLINED TO ANSWER**	☐	☐
J.	**ESTIMATED DELIVERY DATE (please write in if not above)**		
K.	**GESTATION AT TIME OF TEST**		

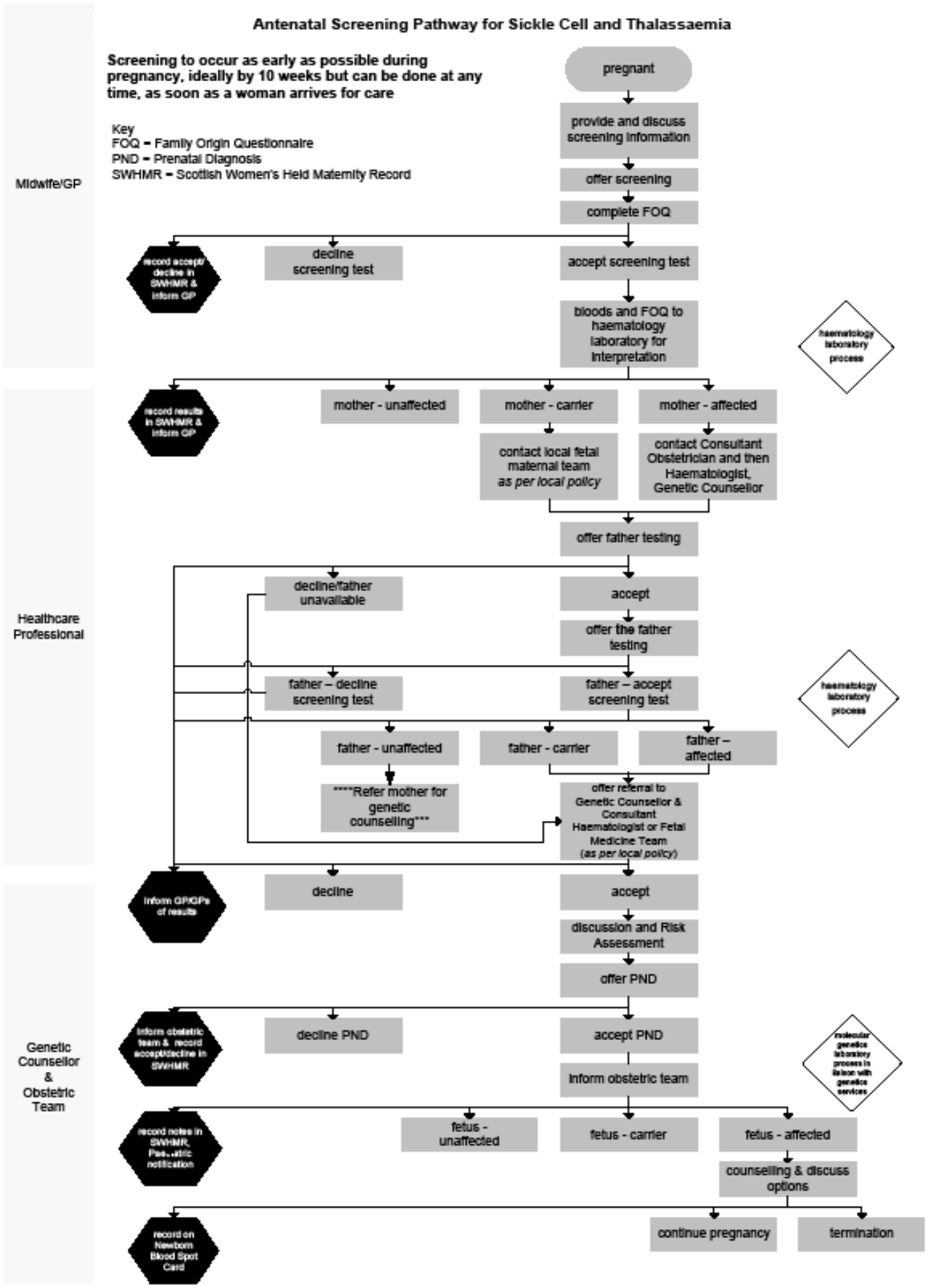
OFFER haemoglobin variant screening to all women if they or their baby's father have answers in a shaded box

Signed _____ Print Name _____

Job Title _____ Contact Tel No _____ Date _____

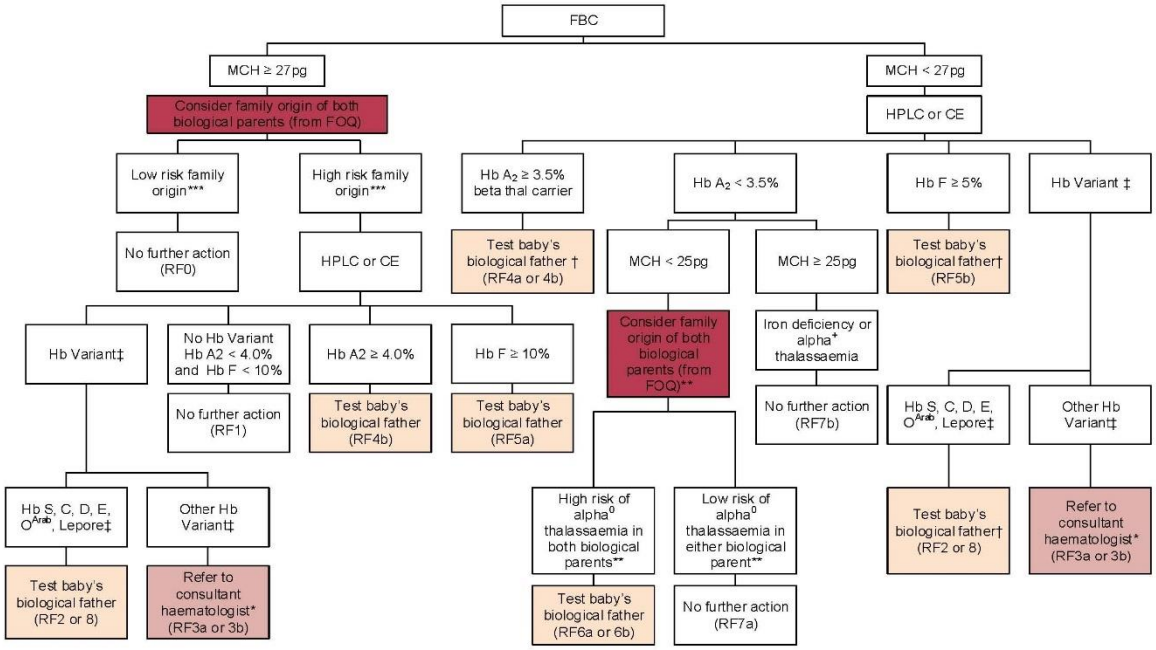
(By Health Care Professional completing the form)

Appendix 1.3


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
record accept/decline in SWHMR & inform GP
decline screening test
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 liaison with genetics services
record notes in SWHMR, Paediatric notification
fetus - unaffected
fetus - carrier
fetus - affected
counselling & discuss options
record on Newborn Blood Spot Card
continue pregnancy
termination

Appendix 1.4

Haemoglobinopathy Screening in Low Prevalence Areas



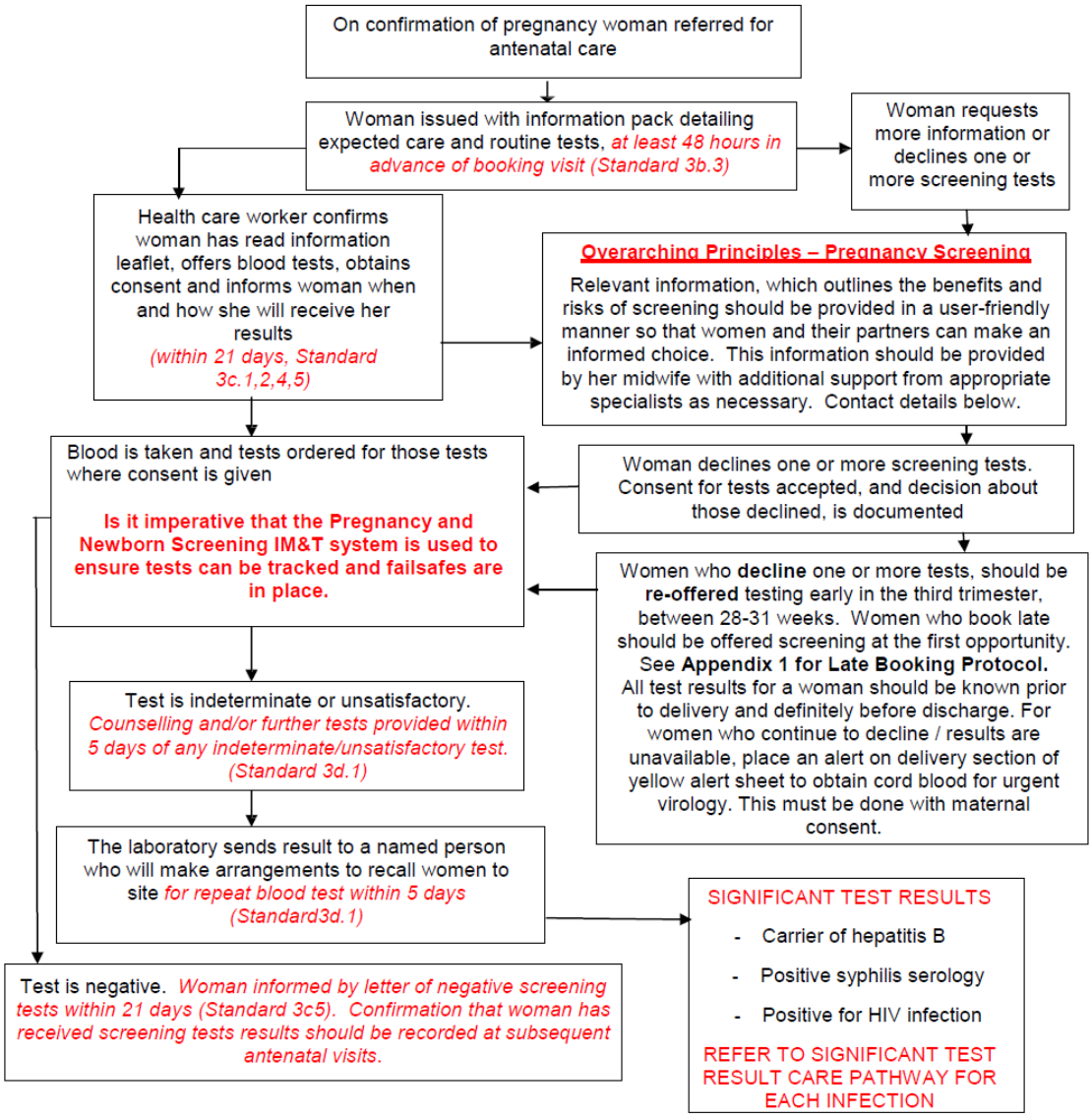
* Refer analytical results to consultant for an opinion on the need for a clinical referral or consult the laboratory support s ervice helpline.
** Consider at high risk if any ethnic origins in China (including Hong Kong), Taiwan, Thailand, Cambodia, Laos, Vietnam, Indonesia, Burma, Malaysia, Singapore, Philippines, Cyprus, Greece, Sardinia, Turkey, or if ethnic/family origin is uncertain or unknown. Reconsider low risk couples if fetal anaemia/hydrops seen on ultrasound scanning or if family history of hydrops fetalis.
*** Low risk or high risk as determined by the family origin questionnaire. **Note: If baby's father is in high risk group, test the mother's sample regardless of her family origins.**
† In all cases consider coexisting α^0 thalassaemia if both parents are from a high risk area and MCH <25pg.
‡ Consider co-existing beta thalassaemia

FBC = Full Blood Count
FOQ = Family Origin Questionnaire
Hb,S,C,D,E,O = Types of haemoglobinopathy variants
HPLC = High Performance Liquid Chromatography
MCH = Mean Corpuscular Haemoglobin

Appendix 1.5

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".
NHS QIS Clinical Standards, Pregnancy and Newborn Screening

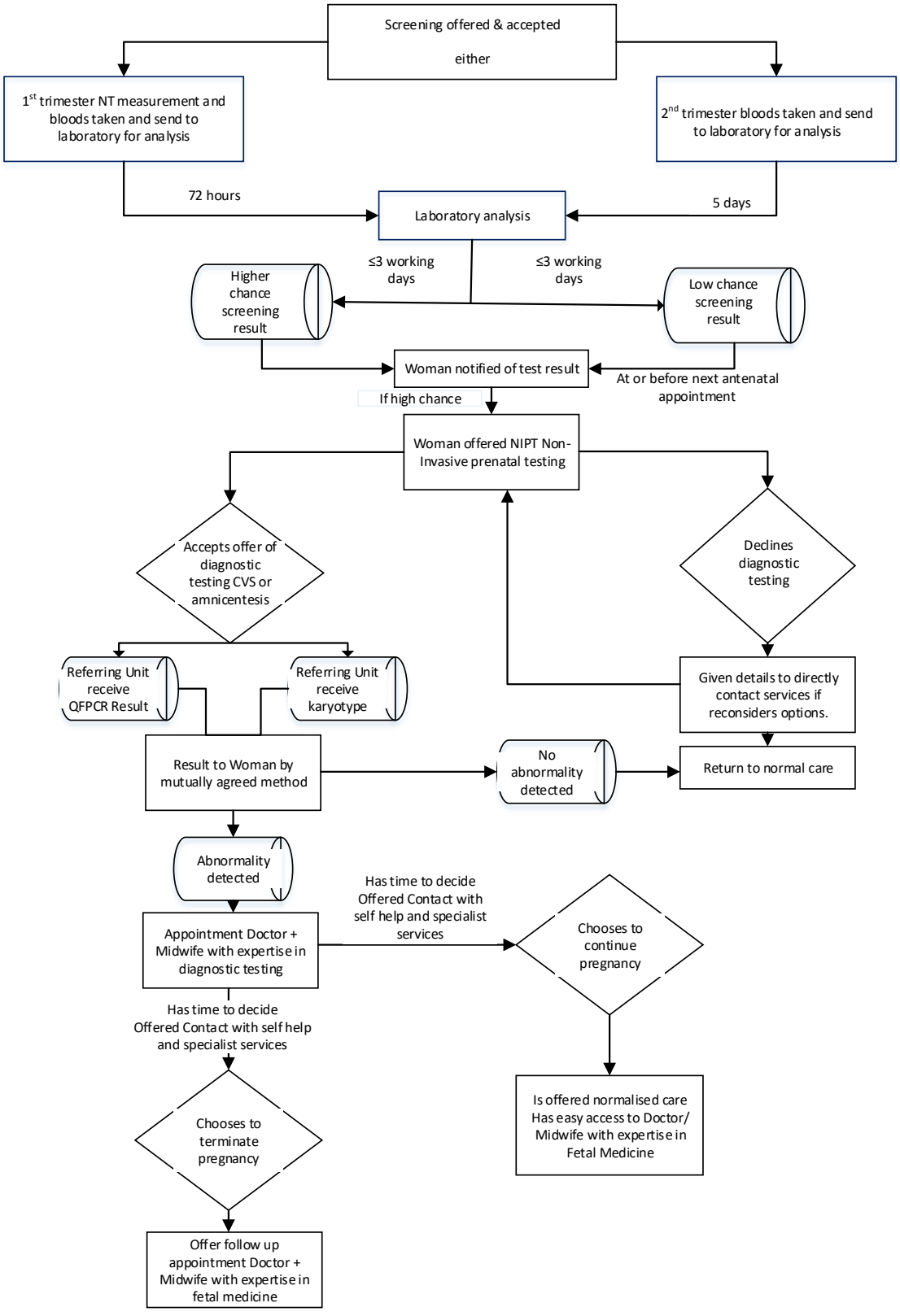


N.B. If a woman feels she has been/continues to be at risk of exposure to HIV, she should be offered re-testing 3 monthly in pregnancy.
If a mother develops symptoms of hepatitis or a sexually transmitted infection she should be referred to SNIPs/or sexual health advisor.

Source: **[CG] Routine ANC screening Virology (nhsggc.org.uk)**
Last reviewed: 25/07/2022
Next review date: 25/07/2024

Appendix 1.6

Down's syndrome, Edwards' syndrome and Patau's syndrome screening pathway.



Appendix 1.7

Members of Pregnancy & Newborn Screening Steering Group (At March 2024)

Dr Alison Potts	Consultant in Public Health and Screening Lead (Chair)
Ms Donna Maria Bean	Lead Sonographer
Dr Vicki Brace	Consultant Obstetrician
Ms Therese Bradley	Germline Program Manager
Mr Paul Burton	Information Manager
Ms Kim Campbell	Senior Healthcare Scientist
Dr Daniel Carter	Consultant in Public Health Medicine
Dr Elizabeth Chalmers	Consultant Paediatrician
Dr Alison Cozens	Consultant in Inherited Metabolic Disorders
Dr Rosemarie Davidson	Consultant Clinical Geneticist
Ms Elaine Drennan	Lead Midwife
Mr Ian Fergus	Site Technical Manager, Diagnostics
Ms Laura Flynn	Interim Lead Midwife
Ms Janice Heggie	Lead Nurse, Neonatal
Dr Louise Leven	Consultant Neonatologist
Dr Louisa McIlwaine	Consultant Haematologist
Ms Victoria Murray	Lead Sonographer
Ms Lynne Peat	Programme Manager, NHS Highland
Mrs Uzma Rehman	Public Health Programme Manager
Mrs Elizabeth Rennie	Screening Programme Manager
Dr Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland

Chapter 2 – Newborn Bloodspot Screening

Summary

Newborn Bloodspot Screening	
Why?	Early identification of rare metabolic conditions Reduce infant morbidity and mortality
Intervention	Blood screening for 10 metabolic disorders Heel prick blood sample taken at day 4-5 of life by midwives Rapid referral into services for diagnostic testing and treatment as needed
Activity in 2023/24	99.9% screening uptake (10,916 babies)
Outcomes	<5 babies were diagnosed with phenylketonuria (PKU) Ten babies were diagnosed with congenital hypothyroidism (CHT) Five tested positive for cystic fibrosis Eight babies were diagnosed with haemoglobinopathy variants and 156 babies were identified as haemoglobinopathy carriers <5 were diagnosed with medium chain acyl-CoA dehydrogenase deficiency (MCADD)
Planned activity	Maintain improvement activity to reduce avoidable repeat samples Review information for parents about sickle cell carrier

Chapter Contents

2.1. Newborn Bloodspot Screening

Newborn bloodspot screening identifies babies who may have rare but serious metabolic conditions. Most babies screened will not have any of the conditions but for the small numbers that do, the benefits of screening are enormous. Early treatment can improve health and prevent severe disability or even death. Every baby born in Scotland is eligible for and routinely offered screening.

Newborn bloodspot screening aims to identify conditions which can lead to problems with growth and development as early as possible after birth. This means that appropriate management for the condition detected can be offered as quickly as possible.

The diseases screened for are:

- phenylketonuria;
- congenital hypothyroidism;
- cystic fibrosis;
- sickle cell haemoglobinopathy;
- medium chain acyl-CoA dehydrogenase deficiency (MCADD);
- maple syrup urine disease (MSUD);
- isovaleric acidaemia (IVA);
- glutaric aciduria type 1 (GA1);
- homocystinuria (HCU).

2.2. Eligible Population

Newborn Bloodspot screening is offered to all newborns. Eligible babies are the total number of babies born within the reporting period (1st April 2023 to 31st March 2024), excluding any baby who died before the age of 8 days.

2.3. The Screening Test

The bloodspot sample is taken on day 4-5 of life whenever possible. There are separate protocols in place for screening babies who are ill, have had a blood transfusion or are born prematurely and when repeat testing is required.

Newborn siblings of patients who have MCADD are offered diagnostic testing at 24–28 hours of age as well as routine testing.

Blood is taken by the community midwife from the baby's heel using a bloodletting device and collected on a bloodspot card consisting of special filter paper. It is then sent to the National Newborn Screening Laboratory in Queen Elizabeth University Hospital, Glasgow, for analysis. This test is also known as the 'heel prick' test or the Guthrie test.

Detailed pathway is shown in **Appendix 2.1**

2.4. Eligible Cohort of Babies in NHSGGC

The number of babies recorded in NHSGGC was 10,927 for 2023-2024. **Table 2** provides a breakdown of births by HSCP and SIMD quintile.

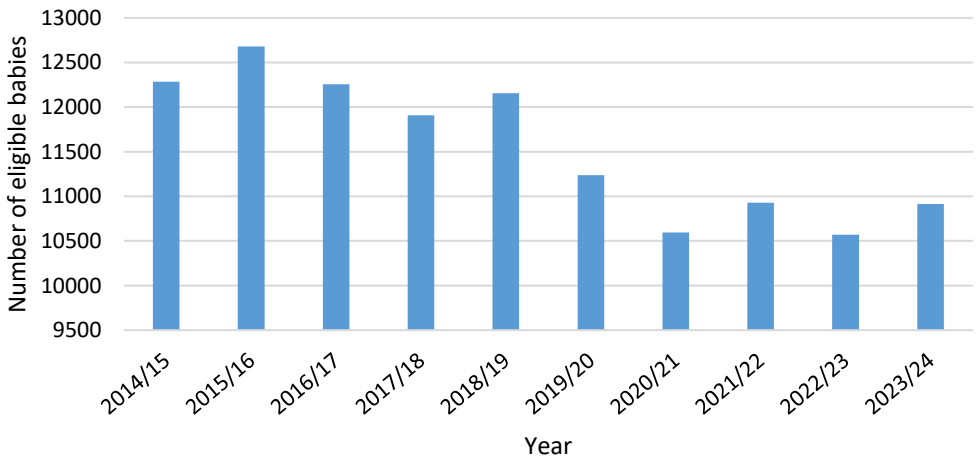
Table 2.1: Number of births in NHSGGC by HSCP area, April 2023 to March 2024.

HSCP	SIMD quintile					Total
	1	2	3	4	5	
East Dunbartonshire	37	163	38	157	441	836
East Renfrewshire	58	105	52	232	361	808
Glasgow City – North East Sector	1,133	231	232	230	43	1,869
Glasgow City – North West Sector	874	244	187	166	373	1,844
Glasgow City – South Sector	1,071	584	325	323	169	2,472
Inverclyde	286	89	76	77	85	613
Renfrewshire	444	348	261	224	411	1,688
West Dunbartonshire	379	196	126	63	33	797
NHSGGC Total	**4,282**	**1,960**	**1,297**	**1,472**	**1,916**	**10,927**

Source: Child Health; Date extracted: September 2024.

The total number of babies eligible for newborn screening in NHSGGC has fallen over the last 10 years, reflecting the fall in birth rate in Scotland over this period, **see Figure 2.1.**

Figure 2.1 Number of Eligible Babies for Newborn Bloodspot Screening within NHS GGC over a 10 Year Period, 1st April 2014 to 31st March 2024.



Source: Child Health; Date extracted: September 2024.

2.5. Ethnicity of Eligible Babies

The breakdown of ethnicity for babies screened in 2023/24 is shown in **Table 2.2**. Trends of ethnicity over time are shown in **Table 2.3**.

- 7,011 (63.2%) were UK White
- 1,166 (10.5%) were South Asian
- 115 (1.1%) were South East Asian
- 667 (6.1%) were African or African Caribbean
- 339 (3.1%) were Southern and Other European
- 128 (1.2%) were Other non-European
- 81 (0.7%) were North European (white);
- Mixed Background was 880 (7.9%);
- and ethnicity was not stated for 520 (4.7%)

Table 2.2 NHSGGC Newborn Bloodspot Screening – Ethnicity of Babies Tested 1st April 2023 to 31st March 2024

A. African or African-Caribbean	B. South Asian (Asian)	C. South East Asian (Asian)	D. Other non-European (other)	E. Southern & other European (white)	F. United Kingdom (white)	G. North Europe (white)	J. Any mixed background	Z. Not stated
667	1,166	115	128	339	7,011	81	880	520
6.1%	10.5%	1.1%	1.2%	3.1%	63.2%	0.7%	7.9%	4.7%

Source: Scottish Newborn Screening Laboratory – Newborn Bloodspot Screening 2023/2024

Table 2.3 Ethnicity of Babies Born in NHSGGC 2017-18 to 2023-2024

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
African or African-Caribbean	3.7%	4.0%	3.4%	3.3%	4.0%	5.1%	6.1%
South Asian (Asian)	9.5%	9.5%	7.6%	7.7%	7.6%	8.6%	10.5%
South East Asian (Asian)	1.8%	1.8%	1.5%	1.3%	1.0%	1.1%	1.1%
Other Non-European (Other)	2.6%	3.0%	2.7%	2.6%	2.3%	2.5%	1.2%
Southern & Other European (White)	5.5%	5.2%	4.6%	3.9%	4.1%	4.2%	3.1%
United Kingdom (White)	64.3%	63.1%	67.9%	68.7%	68.8%	66.1%	63.2%
North Europe (White)	1.1%	1.3%	1.0%	0.9%	0.9%	0.9%	0.7%
Any Mixed Background	5.8%	6.3%	6.1%	6.8%	7.0%	6.8%	4.7%

Source: Scottish Newborn Screening Laboratory – Newborn Bloodspot Screening 2017-23

2.6. Uptake of Newborn Bloodspot Screening

The uptake of newborn bloodspot screening in 2023/24 was 99.9% overall and 99% or more across all HSCP areas **(Table 2.4)**. Uptake was 99.9% across all SIMD categories.

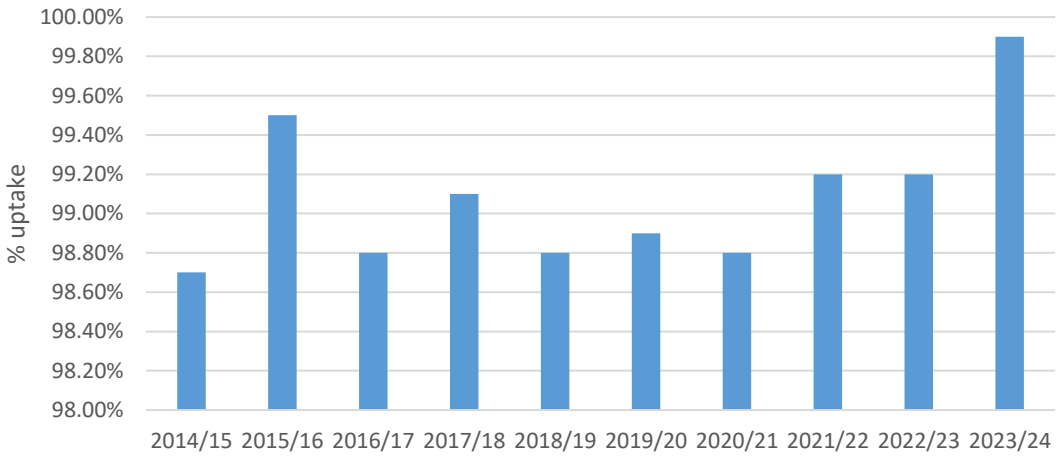
Table 2.4 Uptake of Newborn Bloodspot Screening by HSCP & SIMD quintile, April 2023 to March 2024.

	Most Deprived				**SIMD 2020 Quintile**				Least Deprived			
HSCP	**1**		**2**		**3**		**4**		**5**		**Total**	
	Number screened	**% Uptake**	**Number screened**	**% Uptake**	**Number screened**	**% Uptake**	**Number screened**	**% Uptake**	**Number screened**	**% Uptake**	**Number screened**	**% Uptake**
East Dunbartonshire	37	*100.0*	163	*100.0*	38	*100.0*	156	*99.4*	441	*100.0*	**835**	***99.9***
East Renfrewshire	58	*100.0*	105	*100.0*	52	*100.0*	231	*99.6*	360	*99.7*	**806**	***99.8***
Glasgow North East	1,132	*99.9*	231	*100.0*	232	*100.0*	230	*100.0*	43	*100.0*	**1,868**	***99.9***
Glasgow North West	874	*100.0*	244	*100.0*	187	*100.0*	166	*100.0*	373	*100.0*	**1,844**	***100.0***
Glasgow South	1,071	*100.0*	583	*99.8*	324	*99.7*	323	*100.0*	169	*100.0*	**2,470**	***99.9***
Inverclyde	286	*100.0*	89	*100.0*	76	*100.0*	77	*100.0*	85	*100.0*	**613**	***100.0***
Renfrewshire	444	*100.0*	348	*100.0*	261	*100.0*	224	*100.0*	411	*100.0*	**1,688**	***100.0***
West Dunbartonshire	375	*98.9*	195	*99.5*	126	*100.0*	63	*100.0*	33	*100.0*	**792**	***99.4***
Total	**4,277**	***99.9***	**1,958**	***99.9***	**1,296**	***99.9***	**1,470**	***99.9***	**1,915**	***99.9***	**10,916**	***99.9***

Source: Child Health; Date extracted: September 2024

Uptake of Newborn Bloodspot Screening has been consistently high over the last ten years, with uptake of over 98.5% in all years (**Figure 2.2**). Uptake in 2023/24 was the highest recorded in the last ten years.

Figure 2.2 Uptake Trend for Newborn Bloodspot Screening within NHSGGC over a 10 Year Period, 2014/15 to 2023/24.



In total, 19 babies were not screened as consent for screening was refused.

2.7. Outcomes of Newborn Bloodspot Screening

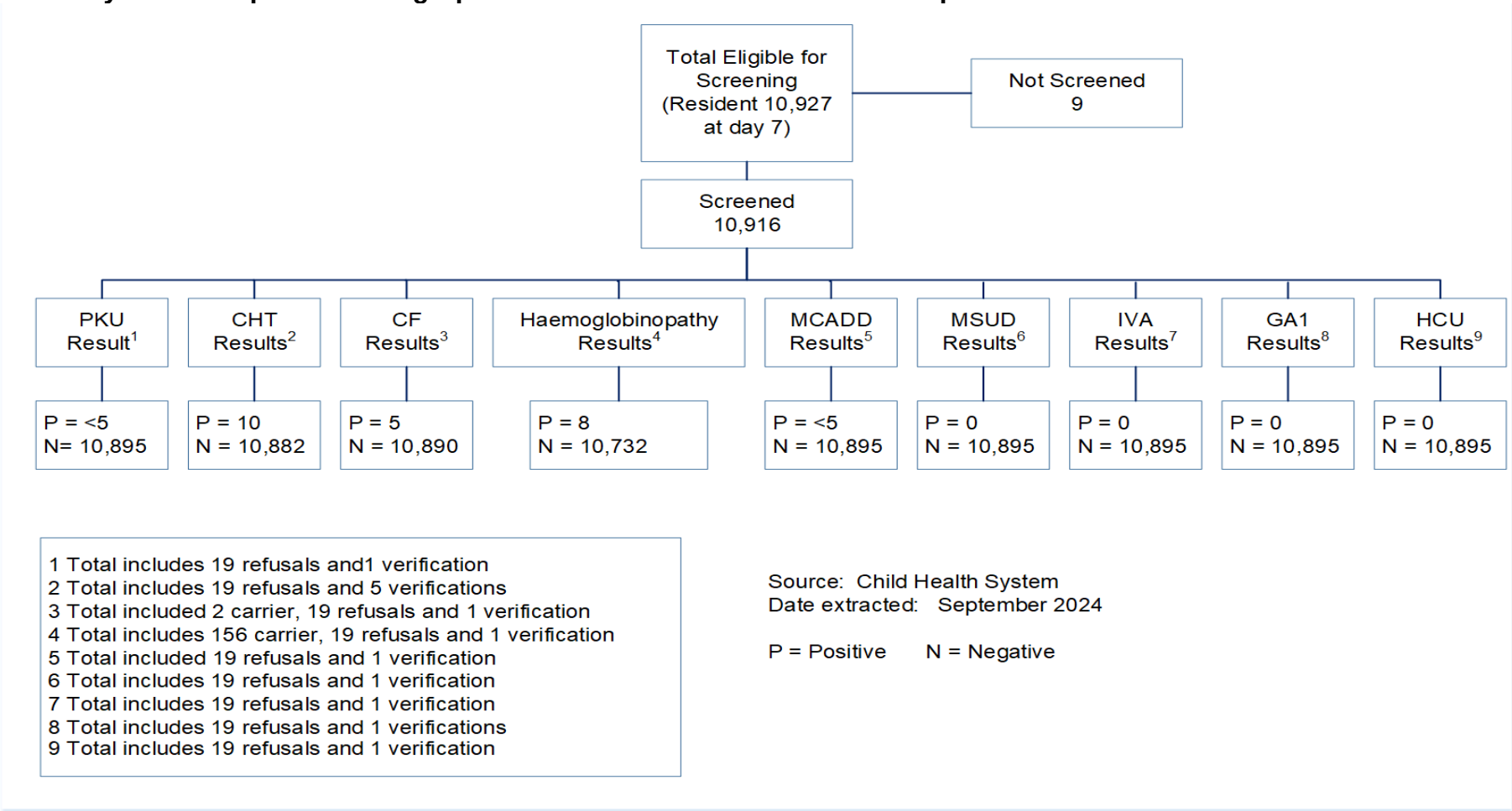
Newborn bloodspot screening identified the following conditions **(see Figure 2.3).**

- <5 babies were diagnosed with phenylketonuria (PKU)
- 10 babies were diagnosed with congenital hypothyroidism (CHT)
- 5 tested positive for cystic fibrosis
- 8 babies were diagnosed with haemoglobinopathy variants and 156 babies were identified as haemoglobinopathy carriers
- <5 were diagnosed with medium chain acyl-CoA dehydrogenase deficiency (MCADD)
- no babies were diagnosed with maple syrup urine disease (MSUD)
- no babies were diagnosed with isovaleric acidaemia (IVA)
- no babies were diagnosed with glutaric aciduria type 1 (GA1)
- no babies were diagnosed with homocystinuria (HCU)

In this report, the phrase less than five (<5) has been used for small numbers, in line with NHS Scotland information governance standards to protect the privacy of individuals.

Figure 2.3

NHS Greater Glasgow & Clyde Residents
Summary of Bloodspot Screening Uptake & Results for Babies Born 1st April 2023 to 31st March 2024



2.8. Repeat Bloodspot Samples in 2023/24

Occasionally bloodspot samples from newborns need to be repeated. This is monitored and a quality improvement programme is in place to ensure this in minimalised.

During 2023/2024, the Scottish Newborn Screening Laboratory received 11,744 newborn bloodspot cards from NHSGGC. This includes babies resident in other Health Board areas, who received care in NHSGGC. The number and reason for repeat tests due to avoidable problems is detailed in **Table 2.5.**

Table 2.5 Number & Reason for Repeat Samples

Reason	Number	Percentage
Insufficient sample	216	1.8
Sample taken <96 hours (too early)	42	0.4
Incorrect blood application	39	0.3
Compressed/damaged sample	24	0.2
Blood quality of sample	9	0.1
Missing CHI	73	0.6
Expired card used	4	0.0
>14 days in transit	4	0.0
Total	**411**	**3.4%**

Source: SNSL Report 2023-24

2.9. Key Performance Indicators for Newborn Bloodspot Screening

Performance in 2023/24 against the Newborn Bloodspot Screening Key Performance Indicators (KPIs) are shown in **Table 2.6**

Table 2.6 Newborn Bloodspot Screening KPIs & Performance, 2023-24 for NHSGGC

NBBS KPI	Performance Threshold	Activity in NHSGGC
8.1 Coverage (number of babies screened)	Essential ≥95% Desirable ≥99%	99.9%*
8.2 Coverage (movers in)	Essential ≥95% Desirable ≥99%	100%[#]
8.3 Avoidable repeat tests	Essential ≤2.0% Desirable ≤1.0%	3.4%[#]
8.4 Null or incomplete result on CHIS	Essential – regular checks to identify babies	Yes, daily failsafe reports
8.5 CHI number recorded on bloodspot card	Essential ≥98% Desirable ≥100%	99.38%[#]
8.6 Timely sample collection (taken between 96 and 120 hours of life)	Essential ≥90% Desirable ≥95%	86.1%[#]
8.7 Timely receipt of sample in the lab	Essential ≥95% Desirable ≥99%	89.8%[#]
8.8 Timely second sample for CF screening	Essential ≥95% taken on days 21-24 Desirable ≥70% taken on day 21	100% taken on day 21[#]
8.9 Timely second sample for borderline CHT screening	Essential ≥95% taken on d28 of life or discharge Desirable ≥99% taken on d28 of life or discharge	65.5%[#]
8.10 Timely second sample for CHT for preterm infant	Essential ≥95% taken 7-10 days after first sample Desirable ≥99% taken 7-10 days after first sample	65.1%[#]
8.11 Timely processing CHT	Clinical referral within 3 days Essential 100%	100%[$]
8.12 Timely entry into clinical care	IMDs attend first clinical appointment by 14 days. Essential 100%.	85%[$]
	CHT referral on first sample, attend first clinical apt by 14 days. Essential 100%	100%[$]
	CHT referral on second sample attend first clinical apt by 21 days. Essential 100%	73%[$]
	CF (2 CFTR mutations detected) attend first clinical apt by 28 days Essential ≥95%, Desirable 100%.	95%[$]
	CF (1 or no CFTR mutations detected) apt by 35 days. Essential ≥80%, Desirable 100%.	50%[$]
	SCD attend first clinical apt by 90 days. Essential ≥90%, Desirable ≥95%.	100%[$]

*NHSGGC population data (calculated this report)
[#] NHSGGC service data (all births in NHSGGC including non-residents), source SNSL Report 2023-24.
[$]All Scotland data, source SNSL Report 2023-24.

2.10. Information Systems

Pregnancy and newborn bloodspot screening tests results are provided by the National Laboratory's Information Management System and data are reported for NHS Greater Glasgow areas.

The results of the bloodspot test are recorded against the individual child's record held within the Scottish Immunisation and Recall System (SIRS) application that supports the failsafe processes for newborn bloodspot screening.

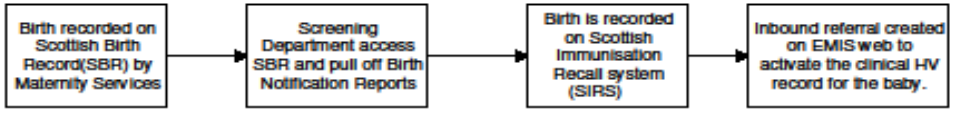
2.11. Challenges & Service Improvements

Table 2.6 has identified areas for quality improvement.

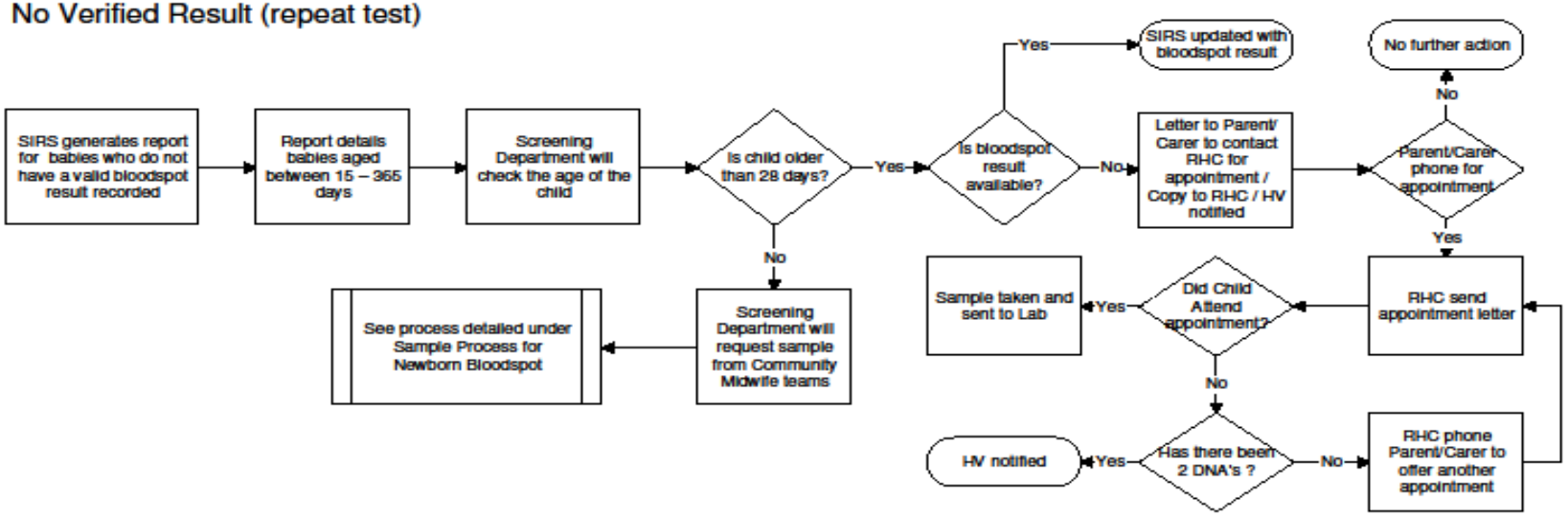
- Avoidable repeats – in 2024/25 quality improvement initiatives have included feedback from the lab on samples that are not suitable for testing, including photographs of the bloodspot card identifying the incorrect items. This work is ongoing.
- Timely sample collection – this may be affected by timings of home visits; family availability; staffing levels and so on. Work to address this is ongoing.
- Timely receipt of the sample in the lab – quality improvement work has been undertaken to identify reasons for delays, which includes delays in sending the samples and delays in transport. Standard processes are now in place, training has been given and improvement is being monitored.
- Work is being undertaken to review information for parents about babies identified as a sickle cell disease carrier. This work is with NHSGGC genetic counselling services.

Appendix 2.1. NHSGGC Newborn Bloodspot Screening Pathway (from Pathways Review Session)

Newborn Bloodspot Screening Process – Screening Department Processes – 01/12/22



Sample Process for Newborn Bloodspot – Overdue or No Verified Result (repeat test)



Appendix 2.2

Members of Pregnancy & Newborn Screening Steering Group (At March 2024)

Dr Alison Potts	Consultant in Public HealthScreening Lead, NHSGGC (Chair)
Ms Donna-Maria Bean	Lead Sonographer
Dr Vicki Brace	Consultant Obstetrician
Ms Becky Brown	Team Lead for Kintyre and Islay/Midwife Sonographer, NHS Highland
Ms Therese Bradley	Germline Program Manager
Mr Paul Burton	Information Manager
Ms Kim Campbell	Senior Healthcare Scientist
Dr Daniel Carter	Consultant in Public Health Medicine
Dr Elizabeth Chalmers	Consultant Paediatrician
Dr Alison Cozens	Consultant in Inherited Metabolic Disorders
Dr Rosemarie Davidson	Consultant Clinical Geneticist
Ms Elaine Drennan	Lead Midwife
Mr Ian Fergus	Site Technical Manager, Diagnostics
Ms Laura Flynn	Interim Lead Midwife
Ms Janice Heggie	Lead Nurse, Neonatal
Dr Robert Lindsay	Reader, Honorary Consultant
Dr Louise Leven	Consultant Neonatologist
Dr Louisa McIlwaine	Consultant Haematologist
Ms Jane McNeilly	Clinical Scientist, Biochemistry
Ms Jennifer Maxwell	Inspector, Quality Assurance
Ms Victoria Murray	Lead Sonographer
Ms Lynne Peat	Programme Manager, NHS Highland
Mrs Uzma Rehman	Public Health Programme Manager
Mrs Elizabeth Rennie	Screening Programme Manager
Ms Jane Richmond	Obstetrician and Gynaecologist, Obstetrics and Gynaecology
Dr Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland
Dr Sarah Smith	Newborn Screening Lab Director
Ms Claire Stewart	General Manager, Obstetrics and Gynaecology
Ms Tara Tchehrazi	Laboratory and Quality Manager, Newborn Screening
Ms Bradley Therese	Germline Program Manager
Ms Louise Thompson	Paediatric Respiratory Consultant, Paediatric Respiratory
Ms Isabel Traynor	Clinical Service Manager, Maternity Unit
Ms Jennie Wild	NHS Highland

Chapter 3 – Universal Newborn Hearing Screening

Summary

Universal Newborn Hearing Screening	
Why?	Early detection of permanent congenital hearing loss. Early detection of mild and unilateral hearing loss.
Intervention	Non-invasive hearing screening test offered to all newborns by four weeks of corrected age (taking account of premature birth). Majority of screening takes place in hospitals, on maternity wards. Outpatient and community clinic appointments are also offered. For those babies who have no clear response in one or both ears after two attempts at the screening test, rapid referral into audiology services for further testing, diagnosis, monitoring and ongoing support.
Activity in 2023/24	100% eligible babies born in NHSGGC in 2023/24 were offered screening. 99.5% (10,932 babies) completed screening.
Outcome in 2023/24	337 babies (3.1%) referred to audiology for diagnostic testing. Of these: 260 with satisfactory hearing; 32 temporary conductive hearing loss; 16 mild/moderate sensorineural hearing loss; 7 severe/profound sensorineural hearing loss; 9 with other types of hearing loss.
Planned activity	Work with the manufacturer of the new screening equipment to ensure high quality screening that meets KPIs

Chapter Contents

3.1. Universal Newborn Hearing Screening

Universal newborn hearing screening aims to detect permanent congenital hearing impairment. In addition, babies with mild and unilateral (one-sided) hearing losses are also identified and receive ongoing review.

3.2. Eligible Population

Universal newborn hearing screening programme is offered to all newborns by 4 weeks of corrected age, except a small number who are excluded due to contraindication to screening. The corrected age is the actual age in weeks minus the number of weeks the baby was pre-term. Eligible babies are those whose mothers were registered with a GP practice within NHSGGC or are resident within the area. The babies excluded are those who died before screening was complete, are contraindicated for the screening test or have not reached the corrected age for screening.

3.3. Screening Tests

Hearing tests are carried out on all eligible babies born using the Automated Auditory Brainstem Response (AABR) protocol. Screening is completed prior to discharge from hospital, or if this is not possible, then an appointment is made at an outpatient clinic.

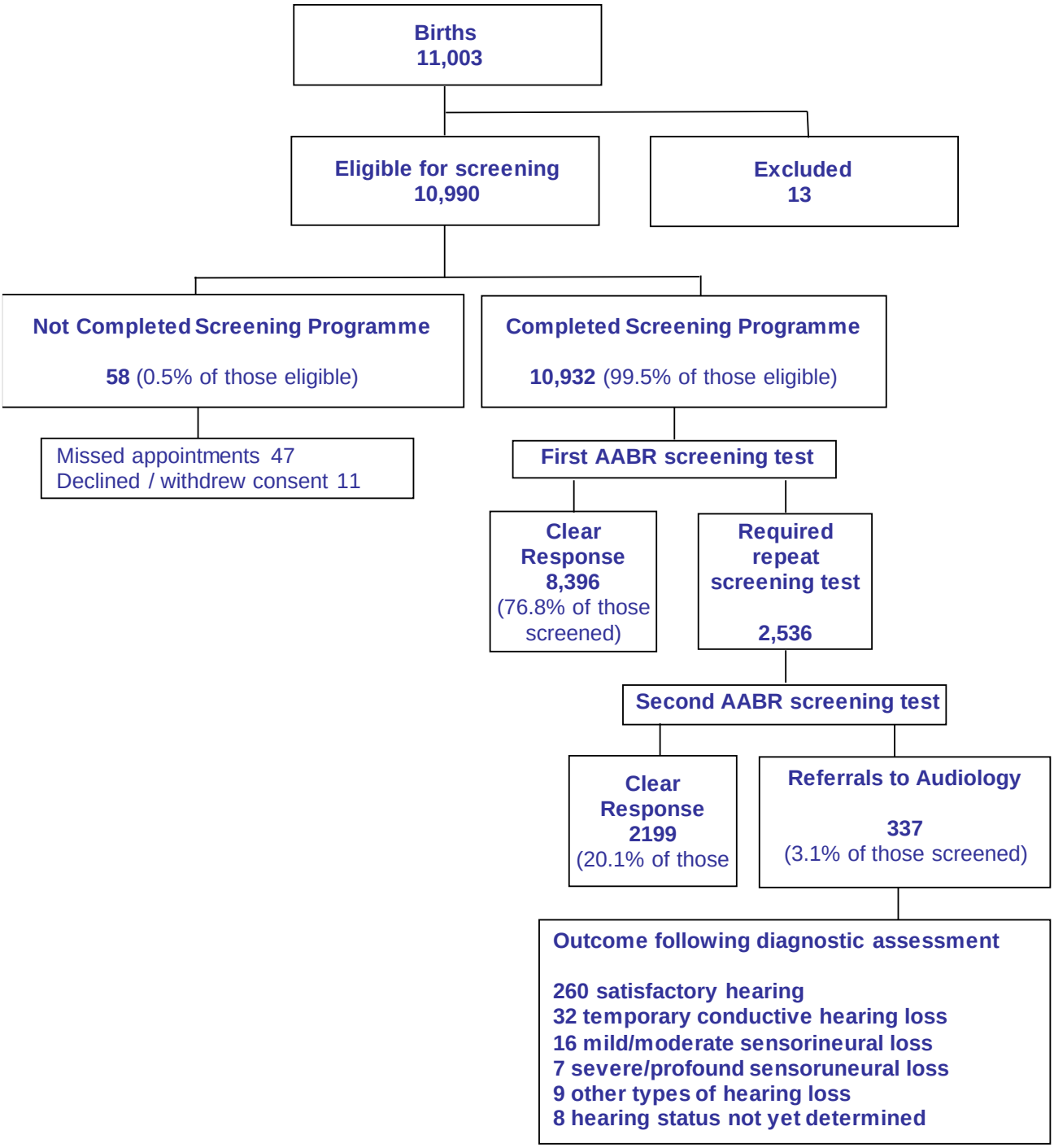
3.4. Repeat Screens

A second screening test may be required if the baby does not pass the initial test. This can be because the baby was unsettled during the test, there was fluid or a temporary blockage in the ear or the baby has a hearing loss. Detailed screening pathway is shown in **Appendix 3.1.**

3.5. Delivery of the Universal Newborn Hearing Screening Programme

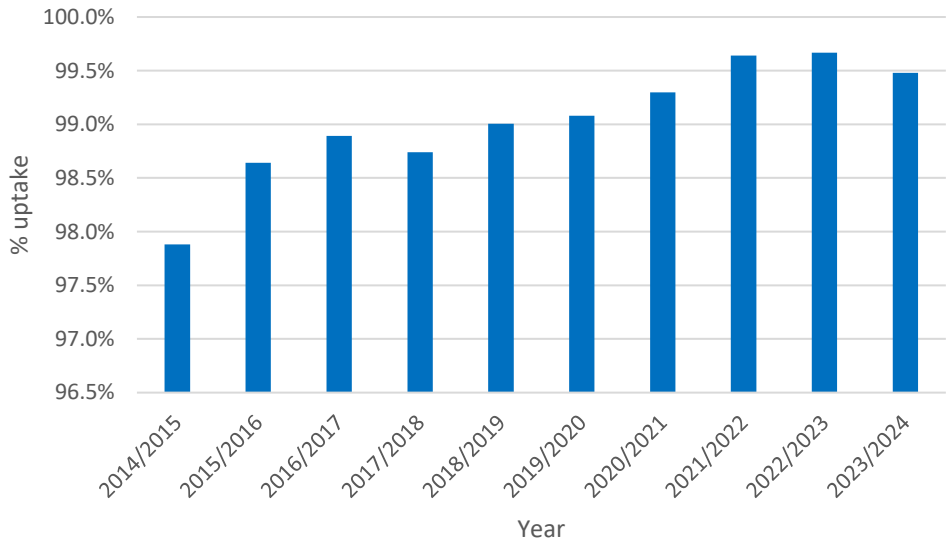
Of the 11,003 babies born in 2023/24 and resident in Greater Glasgow & Clyde, 10,990 were eligible for screening. Of those who were eligible, 10,932 babies (99.5%) completed the newborn hearing pathway. Fifty eight babies did not complete screening, this was due to missed appointments and parents declining to or withdrawing consent for screening. The pathway and numbers of babies at each stage is shown in **Figure 3.1**.

Figure 3.1. Summary of Universal Newborn Hearing Screening Activity, NHSGGC Residents, 1st April 2023 to 31st March 2024.



Newborn hearing screening has had high uptake since 2014/15, when uptake was already 97.9%. Since then, uptake has increased and remains close to 100%. See the trend in uptake over the last ten year, **Figure 3.2**.

Figure 3.2. Universal Newborn Hearing –10 Year Uptake Trend, NHSGGC Residents, 2014/15 – 2023/24,



3.6. Audiology Referrals following Universal Newborn Hearing Screening

The total number of babies referred on to audiology were 308 well babies and 34 from Neonatal Intensive Care Unit (NICU). The reasons for audiology referrals for babies following the universal hearing screening is detailed in **Table 3.1.**

There were 212 unilateral referrals and 95 bilateral referrals for well babies and 20 unilateral referrals and 12 bilateral referrals from neonatal intensive care (NICU). Fewer than 5 babies were referred due to incomplete screening contraindicated.

Table 3.1. NHSGGC Referrals to Audiology from UNHS, 1st April 2023 to 31st March 2024

	Well Baby	NICU
Unilateral referrals	212	20
Bilateral referrals	95	12
Incomplete-baby/equipment reason, equipment malfunction, equipment not available, baby unsettled.	0	0
Incomplete-screening contraindicated	1	2
Total number of babies referred	**308**	**34**

Source: Scottish Birth Record, October 2024

3.7. Timeliness of Assessment within Audiology

The total number of babies who completed the diagnostic assessment process was 304 well babies and 33 babies from NICU. The details of timeliness of assessment are in **Table 3.2.**

In total, 4 well babies did not complete the diagnostic assessment process in the timeframe given and one baby from NICU. Three of these babies moved out of Board before the assessment process could be completed.

Table 3.2. NHSGGC Completion of Newborn Audiology Assessment following Referral from UNHS, 1st April 2023 to 31st March 2024.

	Well Baby	NICU
Number of babies referred who were **offered** an initial appointment either within 4 weeks of screen completion or by 44 weeks gestational age. (Corrected age to be used for babies born at <40 weeks gestation).	286	29
Number of babies referred who **attended** an initial appointment either within 4 weeks of screen completion or by 44 weeks gestational age. (Corrected age to be used for babies born at <40 weeks gestation).	256	25
Number of babies referred who **did not attend** any diagnostic audiology appointments	4	1
Total number of babies completing diagnostic assessment process	**304**	**33**

Source: Scottish Birth Record, October 2024

Outcomes for Babies on Completion of Diagnostic Assessments

Following diagnostic assessment: 260 babies had satisfactory hearing in both ears; 32 babies had temporary conductive loss; ≤ 5 babies had severe or profound hearing loss; 8 babies had moderate bilateral sensorineural loss. All the babies with an identified hearing loss were and will be followed up with the appropriate care pathway for ongoing support and management. See **Table 3.5**.

Table 3.5. Outcomes for Babies Completing the Hearing Diagnostic Assessment Process, NHSGGC, 1st April 2023 to 31st March 2024.

	Well Baby	**NICU**
Satisfactory hearing in both ears	250	10
Hearing status not yet determined	6	*
Temporary conductive loss of any degree	18	14
Mild unilateral permanent conductive loss	0	0
Mild bilateral permanent conductive loss	0	0
Moderate unilateral permanent conductive loss	*	*
Moderate bilateral permanent conductive loss	*	0
Mild unilateral sensorineural loss	*	*
Mild bilateral sensorineural loss	*	0
Moderate unilateral sensorineural loss	*	*
Moderate bilateral sensorineural loss	8	0
Severe/profound unilateral sensorineural loss	*	*
Severe/profound bilateral sensorineural loss	*	*
Unilateral auditory neuropathy spectrum disorder	*	0
Bilateral auditory neuropathy spectrum disorder	0	*
Other – please attach details	*	0
Outcome not known	0	0
Total	**304**	**33**

Source: Scottish Birth Record, October 2024

*numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

Universal Newborn Hearing Screening KPIs 2023-2024 are detailed in **Table 3.6**

Table 3.6 Universal Newborn Hearing Screening KPIs 2023-2024

Criteria	Thresholds	% Achieved
7.1 The proportion of babies eligible for newborn hearing screening for whom the screening process is complete by 4 weeks corrected age.	Essential: >98% Desirable: >99.5%	99.5%
7.2 Refers to the OAE	protocol not used in NHSGGC	
7.3 Refers to the OAE	protocol not used in NHSGGC	
7.4 The proportion of well babies tested using the AABR protocol who do not show a clear response in both ears at AABR1.	Essential: <15% Desirable: <12%	21.7%
7.5 The proportion of babies with a screening outcome who require an immediate onward referral to audiology for a diagnostic assessment.	Essential: <3% Desirable: <2%	3.1%
7.6 The proportion of babies with a no clear response result in one or both ears or other result that requires an immediate onward referral for audiological assessment, who receive an appointment for audiological assessment within the required timescale (within 4 weeks of screen completion or by 44 weeks gestational age).	Essential: >97% Desirable: >99%	89.2%
7.7 The proportion of babies with a no clear response result in one or both ears or other result that requires an immediate onward referral for audiological assessment, who attend for audiological assessment within the required timescale (within 4 weeks of screen completion or by 44 weeks gestational age).	Essential: >90% Desirable: >95%	81.9%

In the year 2023/24, NHSGGC replaced old newborn hearing screening equipment with new equipment. The new equipment had multiple teething issues and faults which led to a high proportion of babies referring their first screening test and needing to attend for a second screening appointment, **see KPI 7.4.** In turn, this led to a higher proportion of babies being referred to audiology for diagnostic assessment, following 2 no clear response screening attempts, **see KPI 7.5.** This caused pressure in the screening service which needed to put on more out-patient clinics to accommodate higher second screen activity; and on the audiology service to accommodate more babies referred for diagnostic testing, **see KPIs 7.6 and 7.7.** Over this period, the number of babies diagnosed with hearing loss was similar to previous years.

Over the course of 2023/24, the screening service has worked closely with the manufacturer to identify faults and roll-out improvements and minor alterations to the screening pathway and this has made the equipment more reliable. Activity in 2024/25 is returning to the activity levels seen before the change in equipment.

3.8. Information Systems

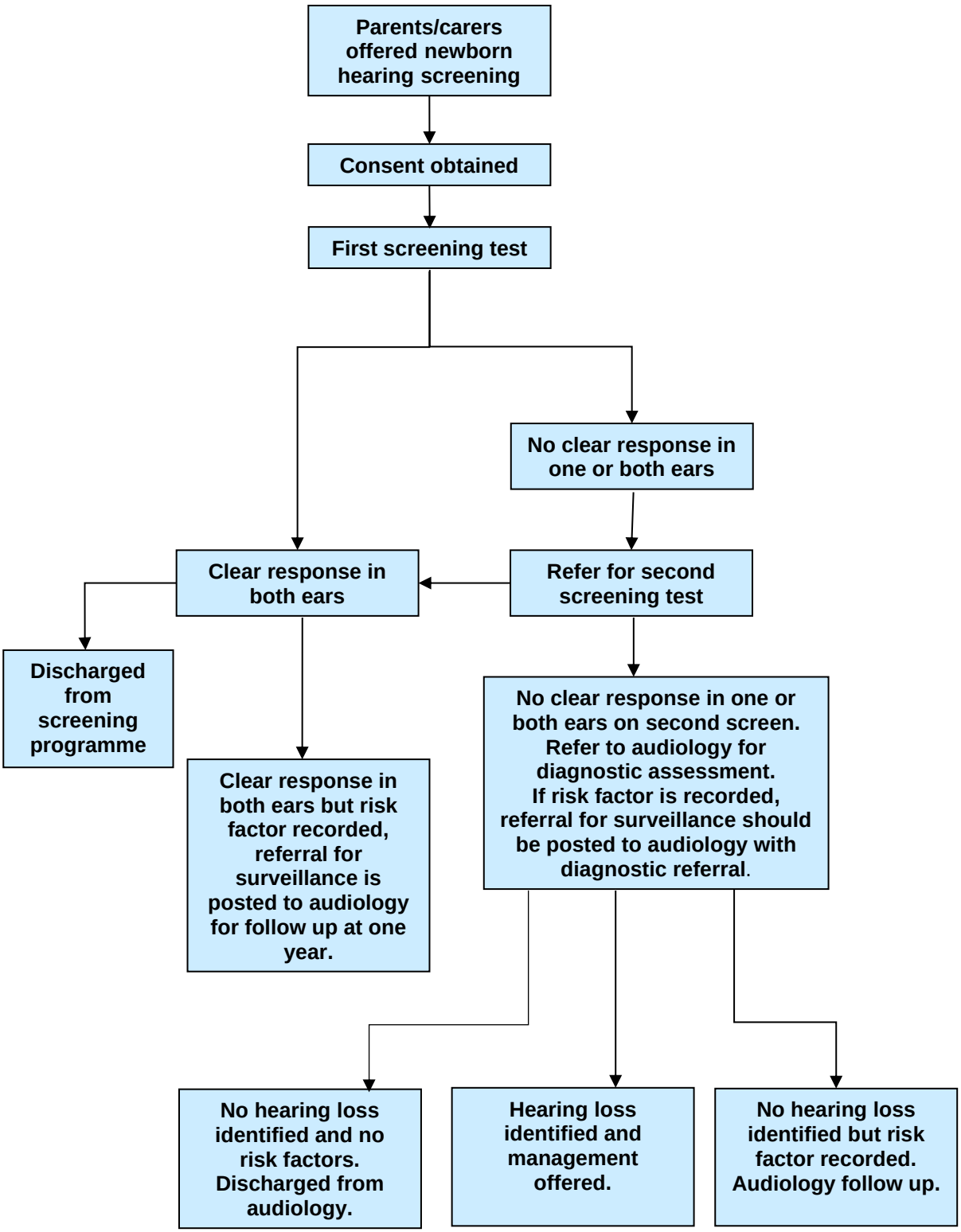
The universal newborn hearing screening programme is supported by the Scottish Birth Record system to deliver hearing screening.

The child health surveillance programme pre-school system holds screening outcomes and is used as a failsafe to ensure all babies are offered hearing screening.

3.9. Challenges & Future Priorities

- Work with the manufacturers of the new screening equipment to ensure high quality screening that meets the service KPIs.
- There is a national priority to develop national newborn hearing screening quality assurance data, through adoption of a single data system for Scotland. Currently all Boards manage their own data in their own data system and produce their own performance data. Decisions about this also involve decisions about a single screening protocol for Scotland, currently NHS Boards can use one of two screening protocols (AABR – used in NHSGGC, or OAE). NHSGGC may need to change ways of working depending on the outcome of these national discussions and decisions. Currently there is no scientific evidence to support NHSGGC changing the screening protocol from AABR. Any new national data system will require investment from all NHS Boards.

Appendix 3.1. NHSGGC Universal Newborn Hearing Screening Pathway



Appendix 3.2

Universal Newborn Hearing Screening Programme Steering Group (At March 2024)

Alison Potts	Consultant in Public Health, (Chair)
Laura Flynn	Lead Midwife
Jim Harrigan	Head of Audiology
Janice Heggie	Lead Nurse Neonatal Services
Ainslie Keenan	Screening Manager
Jennifer Maxwell	Inspector, Quality Assurance
Catherine McAleer	Neonatal Screening Manager
Denise McColl	Acting Senior Charge Midwife, Women & Children's Svs
Juan Mora	Consultant Audiological Physician
Julie Mullin	Assistant Programme Manager, Screening Department
Lynne Peat	Public Health Screening Manager, NHS Highland
Uzma Rehman	Public Health Programme Manager
Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland
Sandra Simpson	Assistant Programme Manager, Screening
Jan Smith	Midwife, NHS Highland
Frances Stewart	Senior Programme Support Team Manager
Lorna Young	Midwife, NHS Highland
Ms Vivien Thorpe	Clinical Scientist
Ms Angela Watt	Lead Midwife
Ms Lorna Young	Midwife, NHS Highland

Chapter 4 - Child Vision Screening

Summary

Pre-school Vision Screening	
Why?	Early identification of poor vision Improves engagement in school and with learning
Intervention	Vision screening test offered to all 4-5 year olds in the year before they attend primary school. Vision screening principally undertaken in nurseries, with hospital and community clinics for those who miss this opportunity or who do not attend nursery. Referral to community optometry and/or hospital optometry and/or community paediatrics and/or GP as needed.
Activity in 2023/24	84.0% screening uptake (9,884 children screened) 26.3% (2,598 children) referred for further investigations
Outcomes	High uptake, return to levels seen before the COVID-19 pandemic. Screening uptake varied by HSCP area, with highest uptake in Renfrewshire 92.6% and lowest in Glasgow North West 77.3%. Smaller variation by SIMD. Screening result varied by HSCP area – highest proportion with visual defects in Glasgow South 33.8% and lowest in Renfrewshire 19.2%. Clear variation by SIMD with visual defects 31.3% in SIMD1 (most deprived) compared to 18.4% in SIMD5 (least deprived).
Planned activity	Work closely with nurseries to ensure screening visits are welcomed Adapt invitations processes to the new Child Health System

P7 School Vision Screening	
Why?	Early identification of poor vision Improves engagement in school and with learning at crucial life stage of entry to secondary school
Intervention	Vision screening test offered to all pupils in P7 Vision screening undertaken in schools Information to attend community optometry for those who do not attend screening day in school Follow up referral to community optometry and/or hospital optometry and/or community paediatrics and/or GP as needed
Activity in 2023/24	86.5% screening uptake (11,363 children screened) 17.5% (1,991 children) identified with visual defect
Outcomes	High uptake

	Screening uptake varied by HSCP area, with highest uptake in Inverclyde at 97.3% and lowest uptake in Glasgow South 77.6%. Smaller variation by SIMD quintile. Screening result varied by HSCP area – highest proportion with visual defects in Glasgow North East 26.9% and lowest in East Dunbartonshire 5.1%. Clear variation by SIMD with visual defects 24.0% in SIMD1 (most deprived) compared to 9.7% in SIMD5 (least deprived).
Planned activity	None. This programme will not run from 2024/25 onwards.

Chapter Contents

Pre-school Vision Screening Programme

4.1. Background

Vision screening is routinely offered to all pre-school age children resident in NHS Greater Glasgow and Clyde.

Lazy eye or amblyopia can be caused by either a squint (strabismus) or differences in the focusing power of each eye (refractive error) which results in the brain receiving different images from each eye. If these problems are not treated early in childhood, this can lead to reduced vision in one or, in some cases, both eyes. The screening programme can also detect reduced vision due to other more uncommon causes.

Vision problems affect 15-20% of children and although obvious squints are easily detected, refractive error and subtle squints often go undetected and long-term vision loss can be the result in adulthood. Most problems can be treated using spectacle lenses to correct any refractive error and occlusion therapy to treat amblyopia (reduced vision) – mainly using 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. The most common cause of poor vision is refractive error.

4.2. 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.

4.3. Pre-school Vision 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.

4.4. Eligible Population

All pre-school children resident in NHS Greater Glasgow and Clyde aged between 4 and 5 years are invited to attend screening for reduced vision.

4.5. Pre-school Vision Screening Pathway

The list of eligible children (the school intake cohort for the following year), with dates of birth between 1st March and the following 28th February are downloaded from CHI and matched against the lists received from nurseries.

Pre-school vision screening clinics take place in nurseries. Children that do not attend nursery or school or whose nursery is unknown or 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 initially.

The assessment appointment involves a full eye examination and allows clinicians to identify whether the screening 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.

4.6. Delivery of Pre-school Vision Screening Programme 2023-2024

Eligible population

In 2023-24 in NHSGGC, 11,765 children aged between 4 to 5 years old were identified using the Community Health Index System as being eligible for pre-school vision screening.

The majority of these children (4,696, 39.9%) resided in the most deprived quintile. The majority of these children were resident within the Glasgow City sectors 3,372 (71.8%) **(Table 4.1).**

Table 4.1. Total number of NHSGGC residents aged 4 to 5 years eligible for pre-school vision screening, by HSCP and SIMD quintiles, 2023-2024

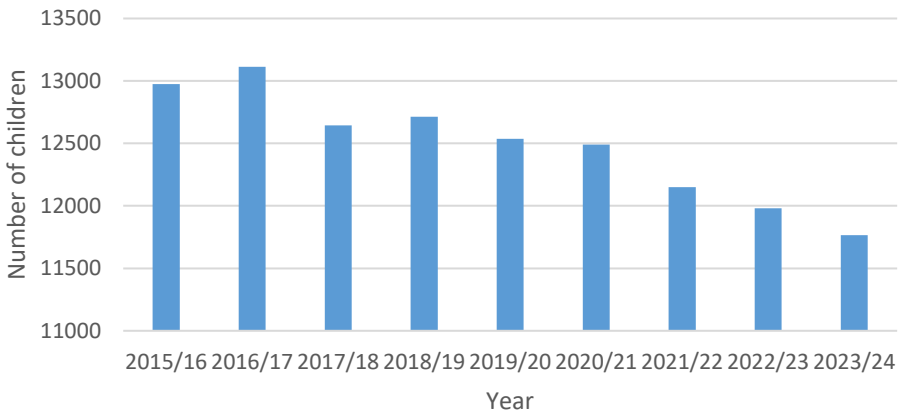
	SIMD Quintile					
	Most deprived				Least deprived	
HSCP	**1**	**2**	**3**	**4**	**5**	**Total**
East Dunbartonshire	49	191	51	233	585	**1,109**
East Renfrewshire	58	112	80	349	495	**1,094**
Glasgow North East	1,249	263	194	208	35	**1,949**
Glasgow North West	933	229	145	142	319	**1,768**
Glasgow South	1,190	549	276	297	139	**2,451**
Inverclyde	304	103	85	88	84	**664**
Renfrewshire	478	402	271	257	445	**1,853**
West Dunbartonshire	435	224	116	66	36	**877**
Total	**4,696**	**2,073**	**1,218**	**1,640**	**2,138**	**11,765**
% of Total	***39.9***	***17.6***	***10.4***	***13.9***	***18.2***	

HSCP – Health and Social Care Partnership

SIMD – Scottish Index of Multiple Deprivation
Source: Child Health Pre-School date extracted: Nov 2024

Over the last 10 years, the number of children eligible for vision screening has fallen, from 13,638 in 2013-14 to 11,765 in the current year 2023-24. This aligns with the fall in birth rate over this period. **See Figure 4.1.**

Figure 4.1. Number of NHSGGC children eligible for pre-school vision screening – 2015-2016 to 2023-2024



Source: Child Health Pre-School date extracted: Nov 2024

Attendance at nursery

Vision screening is principally undertaken in nurseries. However, not all children eligible for vision screening are registered with a nursery. Those that miss screening in nursery (due to not being registered or absent on the day) are sent an appointment during the summer holidays to have their vision tested within a community or hospital clinic.

Registration at nursery for 4-5 year olds varies across the region. Inverclyde has the highest proportion of children registered with a nursery 92.9% (617) and North East Glasgow the lowest, 83.4% (1,475), **see Table 4.2.**

Table 4.2. Number of NHSGGC children eligible for screening, number and percentage registered and not registered with a nursery by HSCP 2023-2024

HSCP	Children eligible for screening	Registered with a nursery	% Registered	Not registered with a nursery	% Not registered
East Dunbartonshire	1,109	1,020	*92.0*	89	*8.0*
East Renfrewshire	1,094	985	*90.0*	109	*10.0*
Glasgow North East	1,949	1,664	*85.4*	285	*14.6*
Glasgow North West	1,768	1,475	*83.4*	293	*16.6*
Glasgow South	2,451	2,080	*84.9*	371	*15.1*
Inverclyde	664	617	*92.9*	47	*7.1*
Renfrewshire	1,853	1,711	*92.3*	142	*7.7*
West Dunbartonshire	877	778	*88.7*	99	*11.3*
Total	**11,765**	**10,330**	*87.8*	1,435	*12.2*

HSCP – Health and Social Care Partnership
Source: Child Health – PS, date extracted: November 2024

The uptake of pre-school vision screening in 2023-24 was 84.0% (9,884) across the whole of NHSGGC. By Health and Social Care Partnership area, in 2023/24 uptake of screening ranged from 77.3% (1,366) in Glasgow North West to 92.6% (1716) in Renfrewshire. This is a difference of 15.3 percentage points. Uptake varied between 79.7% in the most deprived quintile, to 88.4% in the least deprived quintile, **see Table 4.3.**

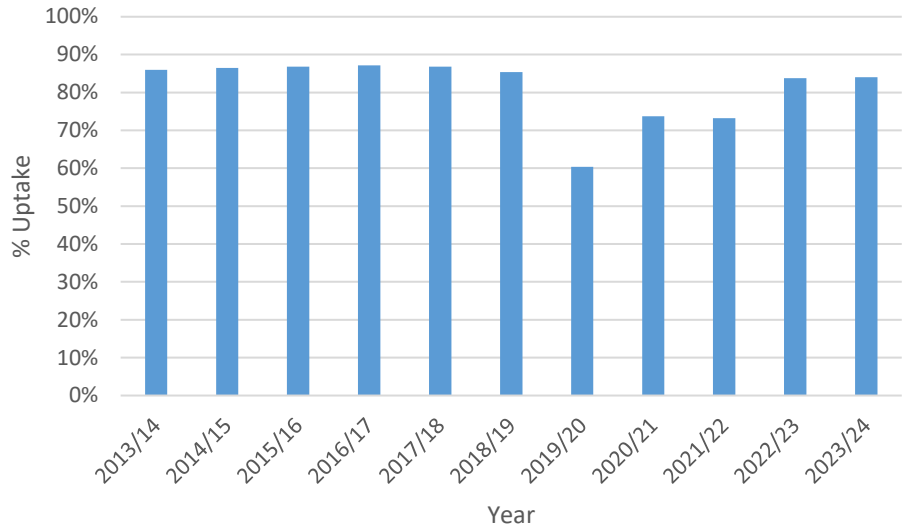
The uptake of pre-school vision screening in 2023-24 and 2022/2023 was 84.0%, across the whole of NHSGGC. This is higher than the previous 3 screening years and is a return to levels similar to those seen before the COVID-19 pandemic, **see Figure 4.2.**

Table 4.3. Percentage uptake of pre-school vision screening in NHSGGC residents aged 4 to 5 years, by HSCP and SIMD quintiles, 2023-2024

	SIMD Quintile					
	Most deprived				Least deprived	
HSCP	**1**	**2**	**3**	**4**	**5**	**Total**
East Dunbartonshire	89.8	92.7	90.2	87.1	87.4	**88.5**
East Renfrewshire	91.4	92.9	91.3	88.0	86.7	**88.3**
Glasgow North East	77.7	81.4	80.9	83.7	85.7	**79.3**
Glasgow North West	75.2	77.7	85.5	75.4	79.9	**77.3**
Glasgow South	76.1	79.2	80.4	85.9	88.5	**79.2**
Inverclyde	91.4	91.3	89.4	87.5	97.6	**91.4**
Renfrewshire	88.5	91.0	94.1	93.8	96.9	**92.6**
West Dunbartonshire	84.4	90.6	88.8	89.4	83.3	**86.9**
Total	**79.7**	**85.4**	**86.7**	**86.8**	**88.4**	**84.0**

HSCP – Health and Social Care Partnership
SIMD – Scottish Index of Multiple Deprivation
Source: Child Health Pre-School date extracted: Nov 2024

Figure 4.2. Percentage uptake of pre-school vision screening in NHSGGC residents aged 4 to 5 years, 2013/14 to 2023-2024.



Source: Child Health Pre-School date extracted: Nov 2024

Ethnicity

The number and percentage of children screened by ethnic group is shown in **Table 4.4**.

The uptake among the most populous groups was 86.9% (7,664) for White – Scottish and 89.1% (358) for White – Other British. For other ethnic groups, uptake among Pakistani groups was 78.6% (696); for Indian groups 83.7% (349) and 82.9% (521) for Africans. Lower uptake was seen in Arab ethnic group 70.5% (234) and amongst those whose ethnicity category was unknown, 65.8% (237) and the White – Gypsy/Traveller group at 26.7% (30).

Table 4.4. NHSGGC Pre-school vision screening by ethnicity 2023-2024

2021 Census Ethnicity Category	Not Screened	Screened	Total	% Screened
1A: Scottish	1,006	6,658	7,664	*86.9*
1B: Other British	39	319	358	*89.1*
1C: Irish	7	30	37	*81.1*
1K: Gypsy/Traveller	22	8	30	*26.7*
1L: Polish	44	130	174	*74.7*
1Z: Other white ethnic group	74	249	323	*77.1*
2A: Any mixed or multiple ethnic groups	79	338	417	*81.1*
3F: Pakistani, Pakistani Scottish, Pakistani British.	149	547	696	*78.6*
3G: Indian, Indian Scottish, Indian British.	57	292	349	*83.7*
3H: Bangladeshi, Bangladeshi Scottish, Bangladeshi British.	6	17	23	*73.9*
3J: Chinese, Chinese Scottish, Chinese British.	18	112	130	*86.2*
3Z: Other Asian, Asian Scottish, Asian British.	36	126	162	*77.8*
4D: African, African Scottish, African British.	89	432	521	*82.9*
4Y: Other African	32	119	151	*78.8*
5C: Caribbean, Caribbean Scottish, Caribbean British.	*	*	*	*80.0*
5D: Black, Black Scottish, Black British.	*	*	*	*85.7*
5Y: Other Caribbean or Black	*	*	*	*80.0*
6A: Arab, Arab Scottish, Arab British.	69	165	234	*70.5*
6Z: Other ethnic group	69	168	237	*70.9*
99: Not Known	81	156	237	*65.8*
Grand Total	**1,881**	**9,884**	**11,765**	*84.0*

Source: Child Health – Pre-School Date Extracted: November 2024
* denotes small numbers, these have been redacted to preserve anonymity.

Outcome of screening

Overall, 68.4% (6,760) children screened had no abnormality detected, this ranged from 61.5% (1,194) in Glasgow South to 75.4% (740) in East Dunbartonshire. **(Table 4.5).**

Of those screened, 26.3% (2,598) children were referred for further investigations. The referral rates varied from 19.2% (199) in Renfrewshire to 38.3% (657) in Glasgow South.

A small number of children needed to be recalled to repeat their screening test as the result was not conclusive, 1.3% (129). The percentage of children screened that were already attending an eye clinic ranged from 7.7%

(47) in Inverclyde to 2.4% (33) Glasgow North West, see **Table 4.5.** Overall 4.0% (397) children were already attending an eye clinic.

Table 4.5. Pre-school Vision Screening Uptake and Outcomes by HSCP Area, NHSGGC, 2023-2024.

HSCP	Total number of children screened	Number of normal results	% Normal	Number referred (of those screened)	% Referred	Number recalled (of those screened)	% Recalled	Number already attending eye clinic	% Already attending eye clinic
East Dunbartonshire	981	740	*75.4*	205	*20.9*	10	*1.0*	26	*2.7*
East Renfrewshire	966	662	*68.5*	254	*26.3*	0	*0.0*	50	*5.2*
Glasgow North East	1,545	990	*64.1*	466	*30.2*	47	*3.0*	42	*2.7*
Glasgow North West	1,366	945	*69.2*	377	*27.6*	11	*0.8*	33	*2.4*
Glasgow South	1,941	1,194	*61.5*	657	*33.8*	2	*0.1*	88	*4.5*
Inverclyde	607	407	*67.1*	140	*23.1*	13	*2.1*	47	*7.7*
Renfrewshire	1,716	1,280	*74.6*	330	*19.2*	23	*1.3*	83	*4.8*
West Dunbartonshire	762	542	*71.1*	169	*22.2*	23	*3.0*	28	*3.7*
Total	**9,884**	**6,760**	***68.4***	**2,598**	***26.3***	**129**	***1.3***	**397**	***4.0***

Source: Child Health – Pre-School Date Extracted: November 2024

The proportion of children with normal screening result varied by deprivation category, see **Table 4.6**. For children residing in the most deprived category 62.4% (2,335) had a normal screening result, compared with 77.5% (1,465) in the least deprived category.

This meant that a larger proportion of children residing in the most deprived areas were referred for further assessment, recalled or were already attending a clinic. Of the 2,598 (26.3%) children referred for further assessment, 31.3% (1,172) were from the most deprived quintile compared to 18.4% (347) from the least deprived quintile.

A small proportion (1.3%, 129) of children were called back to be re-screened due to difficulties screening their vision during the first screen. Of the 397 (4.0%) children already attending an eye clinic, 155 (41.0%) resided in the most deprived quintile, compared to 71 (3.8%) residing in the least deprived quintile **(Table 4.6).**

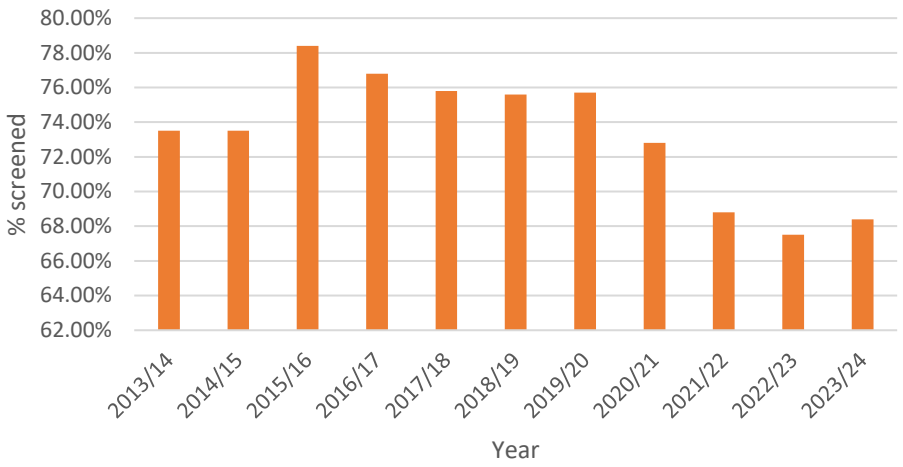
Table 4.6. Pre-school Vision Screening Uptake and Outcomes by SIMD, NHSGGC, 2023-2024.

SIMD	Number of children screened	Number of normal results	% Normal	Number referred	% Referred	Number recalled	% Recalled	Number already attending clinic	% Already attending clinic
1 (Most Deprived)	3,743	2,335	*62.4*	1,172	*31.3*	81	*2.2*	155	*4.1*
2	1,771	1,193	*67.4*	472	*26.7*	23	*1.3*	83	*4.7*
3	1,056	717	*67.9*	292	*27.7*	10	*0.9*	37	*3.5*
4	1,423	1,050	*73.8*	315	*22.1*	7	*0.5*	51	*3.6*
5 (Least Deprived)	1,891	1,465	*77.5*	347	*18.4*	8	*0.4*	71	*3.8*
Total	**9,884**	**6,760**	***68.4***	**2,598**	***26.3***	**129**	***1.3***	**397**	***4.0***

Source: Child Health Pre-School November 2024

Since the pandemic, the number of children with a normal screening result has been lower that the proportions seen before the pandemic. The proportion of children with a normal screening result is higher in 2023/24 than it was in 2022/23, see **Figure 4.3.**

Figure 4.3. Percentage of screened children who had a normal screening result – 10 year trend from 2013-14 to 2023-24



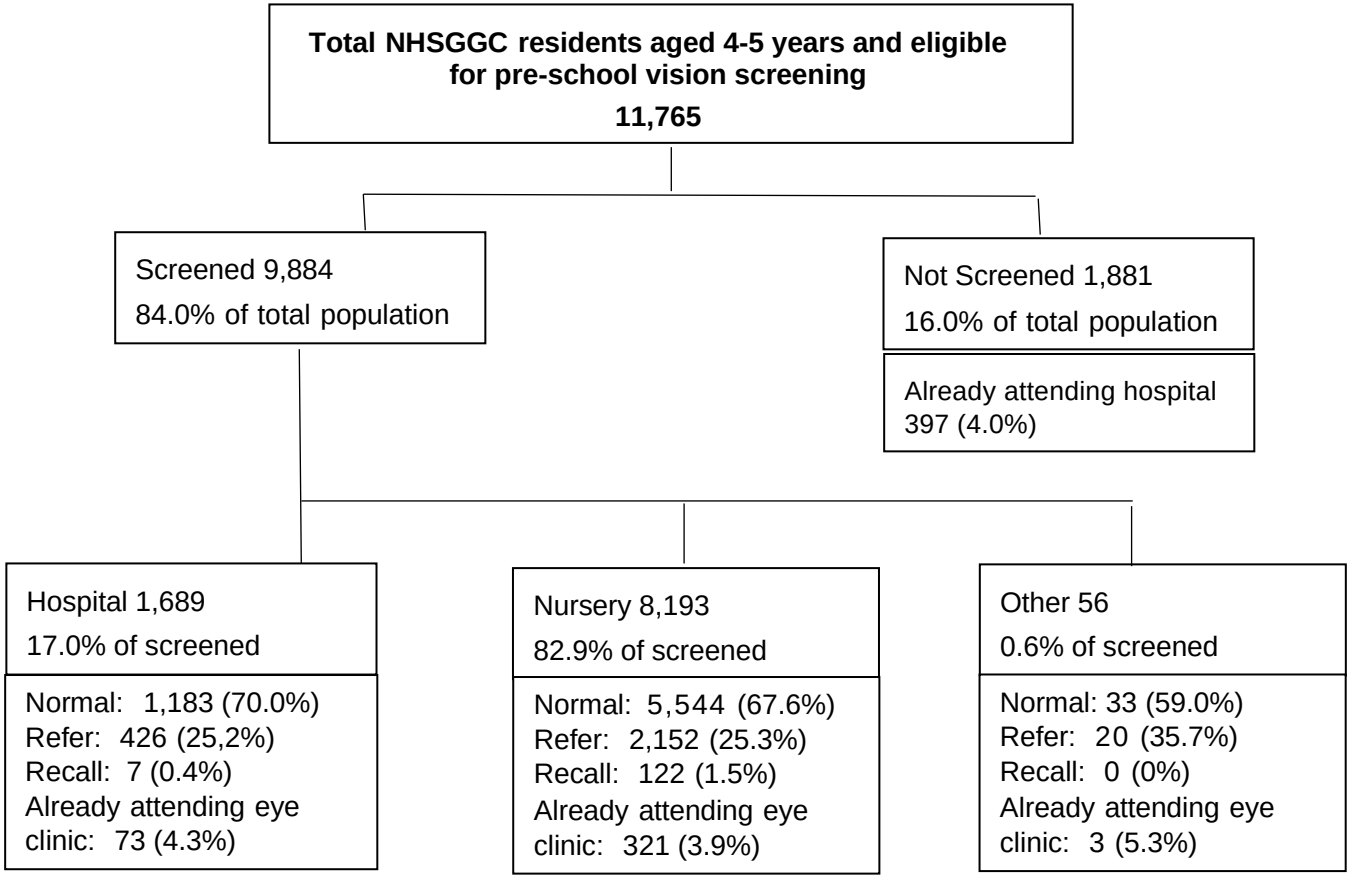
Source: Child Health Pre-School November 2024

The pre-school vision screening summary of activity for the service in NHS Greater Glasgow and Clyde for the school year 2023-24 is outlined in **Figure 4.4.**

Vision Screening for Children with Additional Support Needs

NHSGGC Specialist Children's Services provide an annual eye examination for children in schools with additional support needs from Primary 1 to Senior 6. The results are recorded in the medical record for the child and prescriptions for glasses provided by the optometrist.

Figure 4.4. Summary of NHSGGC pre-school vision screening activity 2023-2024



Source: Child-Health-Pre-School Data extracted: November 24

Primary 7 School Vision Screening Programme

4.7. P7 Eligible Population

School children in Primary 7 resident in NHSGGC are offered a vision screening test prior to transfer to secondary education.

4.8. P7 Vision Screening Test

The screening test involves asking children to identify a line of letters from a Snellen chart or LogMAR chart (if a child is unable to manage a Snellen chart). The eligible cohort includes those who wear glasses.

4.9. P7 Vision Screening Pathway

P7 vision screening takes place in school and is carried out by a healthcare support worker. Children that do not attend school or miss their appointment within the school are advised to attend their local community optometrist. Parents/carers are issued with a result letter.

For those children with an abnormal result (6/9 or poorer in one or both eyes or with glasses 6/12 or poorer in the better eye), parents are referred to their local community optometrist and asked to take their results letter with them.

Children who have specific visual abnormalities leading to visual impairment are referred to a community paediatrician.

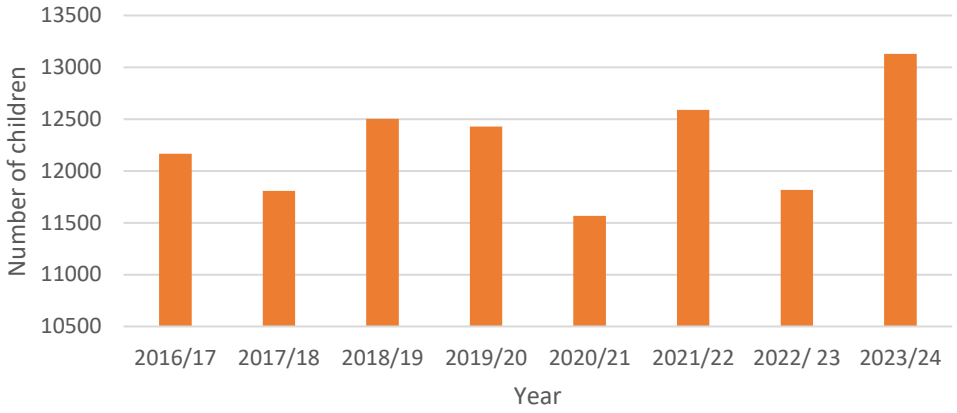
If a child has a sudden onset squint, the school nurse, GP and parent will be informed on the same day as this can be associated with more serious illness which needs urgent assessment and management.

4.10. Delivery of Primary 7 School Vision Screening Programme 2023 to 2024

Eligible population

In 2023/24, 13,130 primary 7 school children were eligible for a vision screening test, this was a substantial increase from the previous year **(Figure 4.5).**

Figure 4.5. Number of children in P7 eligible for vision screening, resident in NHSGGC, 2016/17 to 2023/24.



Source: CHSP_PS, November 2024.

Uptake of screening

In 2023/24, overall uptake of vision screening was 86.5% (11,363 children screened) for P7 children in NHSGGC. The highest uptake of screening was in Inverclyde 97.3% (797 children screened) and the lowest was in Glasgow South Sector at 76.7% (1,855 children screened), see **Table 4.7.**

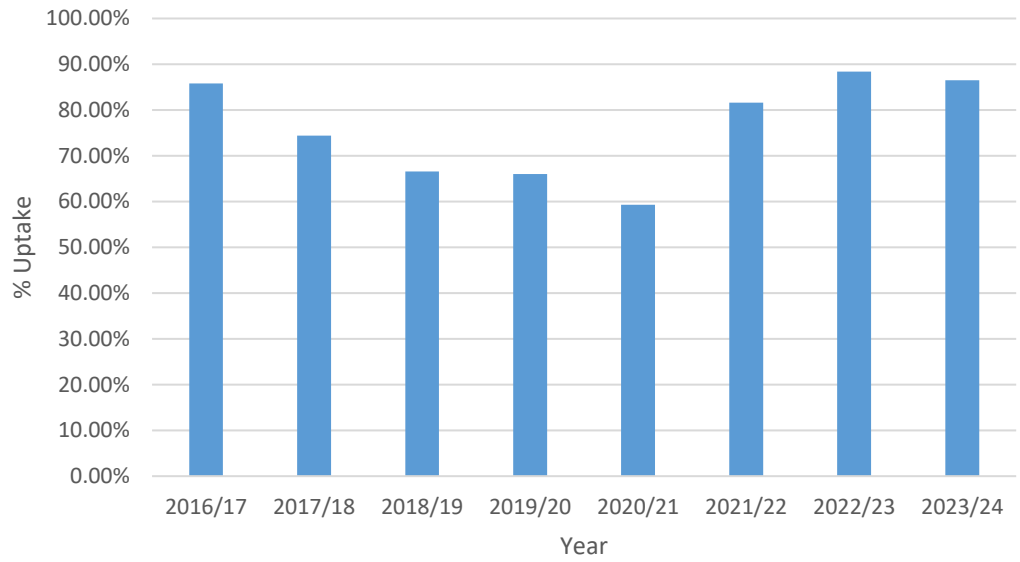
Table 4.7. Uptake of Primary 7 vision screening tests in NHSGGC area, by HSCP area of school, 2023-2024.

HSCP Area (Based on School)	Not Screened	Screened	Total	% Uptake
East Dunbartonshire	78	1,329	1,407	*94.5*
East Renfrewshire	172	1,383	1,555	*88.9*
Glasgow North East Sector	295	1,574	1,869	*84.2*
Glasgow North West Sector	358	1,657	2,015	*82.2*
Glasgow South Sector	565	1,855	2,420	*76.7*
Inverclyde	22	797	819	*97.3*
Renfrewshire	171	1,845	2,016	*91.5*
West Dunbartonshire	106	923	1,029	*89.7*
Total	**1,767**	**11,363**	**13,130**	***86.5***

Source: CHSP_PS, November 2024.

Uptake has now returned to the high levels seen in the last 8 years, showing a full recovery from the drop in uptake seen before, during and following the COVID-19 pandemic, see **Figure 4.6.**

Figure 4.6. Uptake of Primary 7 vision screening, NHSGGC, 2016/17 to 2023/24



Source: CHSP_PS, November 2024.

P7 vision screening varied according to SIMD with lower uptake in the most deprived quintile 83.5% (4,109 children screened) compared to 90.6% (2,468 children screened) in the least deprived quintile, see **Table 4.8.**

Table 4.8. Uptake of Primary 7 vision screening tests by SIMD 2023-2024

SIMD quintile 2016 (Child)	Not screened	Screened	Total	% Uptake
1 (Most deprived)	814	4,109	4,923	*83.5*
2	312	1,918	2,230	*86.0*
3	201	1,207	1,408	*85.7*
4	185	1,661	1,846	*90.0*
5 (Least deprived)	255	2,468	2,723	*90.6*
Total	1,767	11,363	13,130	*86.5*

Source: CHSP_PS, November 2024.

Ethnicity

Uptake of screening by ethnic group was investigated. The uptake among Scottish was (88.8%); Other British (88.3%) and Polish (79.1%). The uptake for Asian groups was Pakistani (85.8%); Indian (87.0%); 88.6% for Other Asian and 92.1% for Chinese. For African (85.3%). The lowest uptake was among the Gypsy/Traveller (64.0%), see **Table 4.9.**

Table 4.9. Uptake of P7 vision screening by ethnic group, NHSGGC, 2023-24

2021 Census Ethnicity Category	Not screened	Screened	Total	% Uptake
1A:Scottish	930	7,370	8,300	*88.8*
1B:Other British	30	226	256	*88.3*
1C:Irish	0	12	12	*100.0*
1K:Gypsy/Traveller	9	16	25	*64.0*
1L:Polish	45	170	215	*79.1*
1Z:Other white ethnic group	22	132	154	*85.7*
2A:Any mixed or multiple ethnic groups	26	216	242	*89.3*
3F:Pakistani, Pakistani Scottish, Pakistani British	72	434	506	*85.8*
3G:Indian, Indian Scottish, Indian British	17	114	131	*87.0*
3H:Bangladeshi, Bangladeshi Scottish, Bangladeshi British	*	*	*	*100.0*
3J:Chinese, Chinese Scottish, Chinese British	16	187	203	*92.1*
3Z:Other Asian, Asian Scottish, Asian British	h	*	*	*88.6*
4D:African, African Scottish, African British	30	174	204	*85.3*
4Y:Other African	*	*	*	*86.4*
5C:Caribbean, Caribbean Scottish, Caribbean British	*	*	*	*100.0*
5D:Black, Black Scottish, Black British	0	9	9	*100.0*
5Y:Other Caribbean or Black	*	*	*	*100.0*
6A:Arab, Arab Scottish, Arab British	11	47	58	*81.0*
6Z:Other ethnic group	4	27	31	*87.1*
99:Not Known	6	50	56	*89.3*
NULL	541	2,112	2,653	*79.6*
Total	**1,767**	**11,363**	**13,130**	***86.5***

Source: CHSP_PS, November 2024.
* denotes small numbers redacted to preserve anonymity

Already wearing spectacles

Of the 11,363 children screened in 2023/24, 19.4% (2,206) were already wearing prescription spectacles. By HSCP, the highest percentage wearing glasses was in Renfrewshire 22.0% (381) and the lowest in West Dunbartonshire 15.2% (140), see **Table 4.10.**

Table 4.10. Number of P7 vision screening test pupils already wearing spectacles, NHSGGC, 2023-2024.

HSCP (school)	No spectacles	Spectacles	Total	% Spectacles
East Dunbartonshire	1,076	253	1,329	*19.0*
East Renfrewshire	1,132	251	1,383	*18.1*
Glasgow North East Sector	1,263	311	1,574	*19.8*
Glasgow North West Sector	1,350	307	1,657	*18.5*
Glasgow South Sector	1,472	383	1,855	*20.6*
Inverclyde	642	155	797	*19.4*
Renfrewshire	1,439	406	1,845	*22.0*
West Dunbartonshire	783	140	923	*15.2*
Total	**9,157**	**2,206**	**11,363**	***19.4***

Source: CHSP_PS, November 2024.

Outcome of screening

Across NHSGGC in 2023/24, the screening test result was normal for 9,372 (82.5%) of those tested, see Table 4.11. This proportion was higher than last year and in line with the fluctuation seen over the last eight years, see **Figure 4.7.**

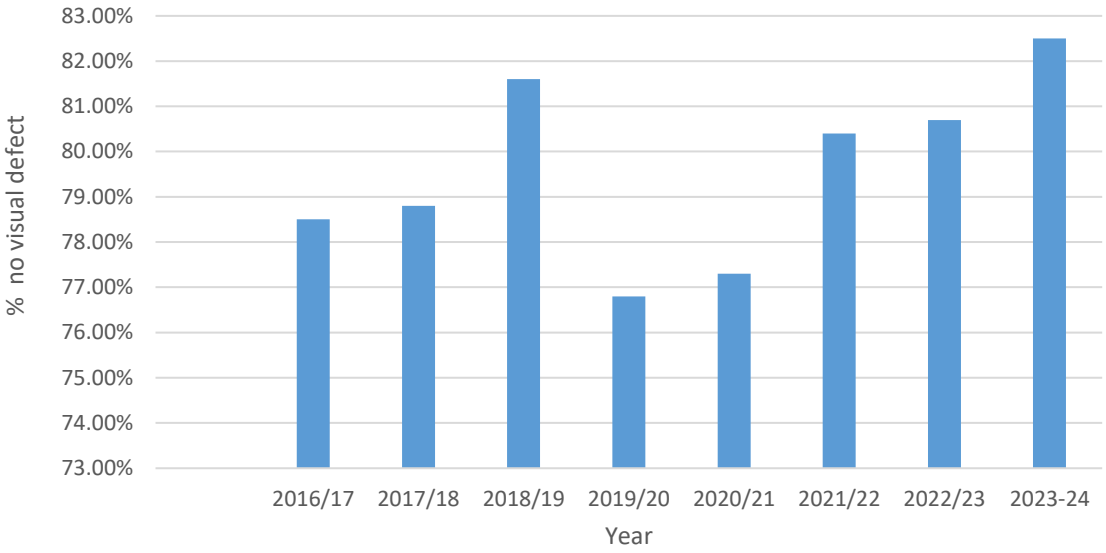
Overall, visual defects were identified in 1,991 (17.5%) of P7 children screened. This varied from 5.1% (68) P7 pupils in East Dunbartonshire to 26.9% (424) P7 pupils in Glasgow North East sector, **see** T**able 4.11**.

Table 4.11. Outcome of P7 vision screening, NHSGGC, 2023-2024.

HSCP (school)	No visual defect	Visual defect	Total	*% Visual defect*
East Dunbartonshire	1,261	68	1,329	*5.1*
East Renfrewshire	1,230	153	1,383	*11.1*
Glasgow North East Sector	1,150	424	1,574	*26.9*
Glasgow North West Sector	1,390	267	1,657	*16.1*
Glasgow South Sector	1,404	451	1,855	*24.3*
Inverclyde	650	147	797	*18.4*
Renfrewshire	1,536	309	1,845	*16.7*
West Dunbartonshire	751	172	923	*18.6*
Total	**9,372**	**1,991**	**11,363**	***17.5***

Source: CHSP_PS, November 2024

Figure 4.7. Percentage of pupils with no visual defect, P7 vision screening, NHSGGC, 2016/17 to 2023/24.



Visual defects were recorded in 24.0% (988) children from the most deprived quintile compared to 9.7% (239) children in the least deprived quintile, see **Table 4.12.**

Table 4.12. NHSGGC Primary 7 vision tests pupils by SIMD 2022-2023: visual defect identified

SIMD quintile (child)	No visual defect	Visual defect	Total	% Visual defect identified
1 (Most deprived)	3,121	988	4,109	*24.0*
2	1,552	366	1,918	*19.1*
3	1,008	199	1,207	*16.5*
4	1,462	199	1,661	*12.0*
5 (Least deprived)	2,229	239	2,468	*9.7*
Total	**9,372**	**1,991**	**11,363**	***17.5***

Source: CHSP_PS, November 2024.

Analysis of Snellen Test results only

Of the 11,363 children screened, 9,156 (80.6%) were screened using the Snellen Test, which is the first choice of test with this age group, see **Table 4.13.**

Of those screened with the Snellen Test, 78.1% (7,154) had a normal outcome of acuity 6/6. The proportion with a normal outcome varied between 66.3% in Glasgow North East sector and 93.8% in East Dunbartonshire.

A follow up with an optometrist is recommended for children with an acuity of 6/9 not wearing spectacles and acuity of 6/12 for those with spectacles. Those children screened with the SnellenTest who did not wear spectacles and with a visual acuity of 6/9 were 12.9% (1,179) of all children screened. The highest

proportion was in Glasgow North East sector 20.0% (253) and the lowest proportion in East Renfrewshire 2.5% (27). Those children wearing spectacles who had additional detected vision defects (acuity score of 6/12) accounted for 823 or 9.0% of pupils screened. Glasgow North East sector had the highest proportion of 13.6% (172) of children with this result and East Dunbartonshire had the lowest percentage at 3.7% (40).

The future of P7 vision screening

NHSGGC has been the only Scottish NHS Board offering P7 vision screening during the last 15 years. This was driven by need and the wide difference seen in outcomes based on deprivation. Staff undertaking this screening work sit within HSCP school nursing teams. In summer 2024, the decision was taken within HSCPs to cease this screening programme. Screening is not being undertaken in 2024/25 and at this time, there are no plans to restore this screening programme.

Table 4.13. Snellen Test screening results, poor visual acuity identified in P7 pupils, NHSGGC, 2023/24.

HSCP (school)	Number of children screened	Snellen Test	% Snellen Test	Acuity 6/6 (normal)	% Acuity 6/6	Acuity 6/9 (no glasses poor acuity)	% Acuity 6/9	Acuity 6/12 or worse (with glasses poor acuity)	% Acuity 6/12 or worse
East Dunbartonshire	1,329	1,076	*81.0*	1,009	*93.8*	27	*2.5*	40	*3.7*
East Renfrewshire	1,383	1,132	*81.9*	976	*86.2*	110	*9.7*	46	*4.1*
Glasgow North East	1,574	1,263	*80.2*	838	*66.3*	253	*20.0*	172	*13.6*
Glasgow North West	1,657	1,350	*81.5*	1,083	*80.2*	139	*10.3*	128	*9.5*
Glasgow South	1,855	1,472	*79.4*	1,019	*69.2*	282	*19.2*	171	*11.6*
Inverclyde	797	642	*80.6*	494	*76.9*	62	*9.7*	86	*13.4*
Renfrewshire	1,845	1,438	*77.9*	1,124	*78.2*	197	*13.7*	117	*8.1*
West Dunbartonshire	923	783	*84.8*	611	*78.0*	109	*13.9*	63	*8.0*
Total	**11,363**	**9,156**	***80.6***	**7,154**	***78.1***	**1,179**	***12.9***	**823**	***9.0***

Source: CHSP_PS, November 2024.

4.11. P7 Child Health Screening Information Systems

Child Health Surveillance System–Preschool (CHS-PS) supports the delivery of the pre-school vision screening programme across NHSGGC. P7 school vision screening is supported by the Child Health Surveillance System-School (CHS-S).

4.12. Pre-school Screening Challenges & Future Priorities

- Ensure the co-operation of all nurseries to allow screening to take place, taking into account GDPR requirements. Uptake is higher in children who attend nursery compared to those not in nursery and who are asked to attend a hospital or community clinic for screening.

- Work with NHS Scotland and other Boards to ensure the safe and effective continuity of vision screening activities during a change of IT systems as the national Child Health Surveillance system undergoes re-procurement.

Appendix 4.1

Members of Child Vision Screening Steering Group (March 2024)

Dr Alison Potts	Consultant in Public Health (Chair)
Mr Paul Burton	Information Manager
Ms Eilidh Cameron	Consultant Paediatrician, Paediatrics
Ms Sandra Gettings	Child Protection Advisor
Ms Elaine Hagen	Team Lead, Screening Department
Ms Lynne Peat	Adult Screening Programmes Manager, Public Health NHS Highland
Ms Debbie MacIntyre	Clinical Service Manager
Mrs Carolyn MacLellan	Head Orthoptist, Ophthalmology
Ms Elaine McCrossan	Lead Orthoptist
Ms Nikki Meek	Optometrist, Ophthalmology
Ms Arlene Polet	Children's & Families Team Lead
Mrs Uzma Rehman	Programme Manager, Public Health
Mrs Diane Russell	Lead Orthoptist
Dr Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland
Mr Gordon Simpson	Optometrist

Section 2

Adult Screening

Chapter 5 – Abdominal Aortic Aneurysm (AAA) Screening

Summary

Abdominal Aortic Aneurysm (AAA) Screening	
Why?	Early identification of aortic aneurysm. Prevention of morbidity and mortality.
Intervention	Screening offered to all eligible men aged 65 years. Screening test is single abdominal ultrasound scan. If aorta >3cm diameter detected, referral into surveillance scans or rapid referral into vascular surgery as needed.
Activity in 2023/24	78.1% screening uptake (5,833 men screened).
Outcomes	Uptake higher than essential threshold (75%) Uptake varies with SIMD, with 15.6% difference between areas of high deprivation (lowest uptake) and areas of low deprivation (highest uptake) Variation in uptake among ethnic groups Comparable uptake among men registered with a learning disability compared with rest of the population Lower uptake among men with severe and enduring mental illness compared to rest of the population, however difference was not statistically significant. 48 men had a positive screening result: - 39 men had a small aneurysm requiring annual surveillance scans; - ≤5 men had a medium aneurysm requiring 3 monthly surveillance scans; - ≤5 men had a large aneurysm requiring surgical assessment.
Planned activity	Undertake patient experience survey with men on surveillance screening and develop improvement plan Continue to work in collaboration with HSCPs to identify opportunities to support uptake in our most deprived communities Develop and implement good practice guidance to support participation in screening for men with a learning disability

Chapter Contents

5.1. Background

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

When an AAA ruptures, less than half of patients will reach hospital alive. When an operation is possible, mortality from ruptured AAA is around 40% despite surgical intervention[2]. Screening eligible men for an AAA can reduce the number of deaths associated with the risk of rupture. Surveillance, management and treatment, where appropriate, of a screen-detected AAA can significantly reduce the chance of rupture and a life limiting outcome[3].

AAA screening was implemented across NHS Greater Glasgow and Clyde in February 2013.

5.2. Aim of the Screening Programme & Eligible Population

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

All men aged 65 years who are resident in the NHSGGC area are invited to participate in the AAA screening programme. Men aged over 65 years of age are able to self-refer to the programme

5.3. Screening Test & Screening Pathway

The screening test involves a single abdominal scan using a portable ultrasound machine. The AAA IT application is used to appoint and manage the patient through the screening pathway. The application obtains the demographic details of the participants by linking with the Community Health Index (CHI). Screening currently takes place in the New Victoria Hospital; New Stobhill Hospital; West Glasgow Ambulatory Care Hospital; Golden Jubilee Hospital; Renfrew Health Centre; Greenock Health Centre and Vale of Leven Hospital.

[2] Bown MJ, Sutton AJ, Bell PRF, Sayers RD. A meta-analysis of 50 years of ruptured abdominal aortic aneurysm repair. BJS. 2002;89(6):714-30

[3] Abdominal aortic aneurysm - UK National Screening Committee (UK NSC) - GOV.UK (Accessed January 2025)

Individuals whose aortic diameter is less than 3.0 cm are discharged. Individuals with a positive result from screening (AAA dimensions between 3.0 and 5.4 cm) will be offered appropriate interval surveillance scanning and treatment. Men with clinically significant AAA (over 5.5 cm) will be referred urgently to secondary care for assessment. **Appendix 5.1** summarises the patient pathways.

Individuals with an AAA over 5.5 cm are 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 is multidisciplinary team decision making 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.

Sometimes an image cannot be achieved if, for example, an individual has a high body mass index, large abdominal girth, bowel gas or has had previous surgery. These can cause issues with visualisation of the aorta and prevent accurate measurements and image capture using ultrasound. If an image cannot be achieved after two appointments the individual will be discharged from the programme and referred to vascular services for management locally.

5.4. Programme Performance & Delivery

The performance and quality of the programme is monitored via defined National AAA Screening Standards[4] and Key Performance Indicators (KPIs)[5]. National AAA programme statistics are published by Public Health Scotland in March each year reflecting the previous year activity. **Appendix 5.2** summarises the most recent published national AAA Key Performance Indicators (KPIs) for NHSGGC for the periods 2021, 2022 and 2023.

Local monitoring data sourced from the AAA database is presented in this report to provide uptake and outcome data for period 1st April 2023 to 31st March 2024. As a result of differences in data extract dates, numbers in local data analysis may differ from those presented in forthcoming published national programme reports.

An overview of NHGGC AAA screening programme activity during 2023/24 is provided in **Figure 5.1.**

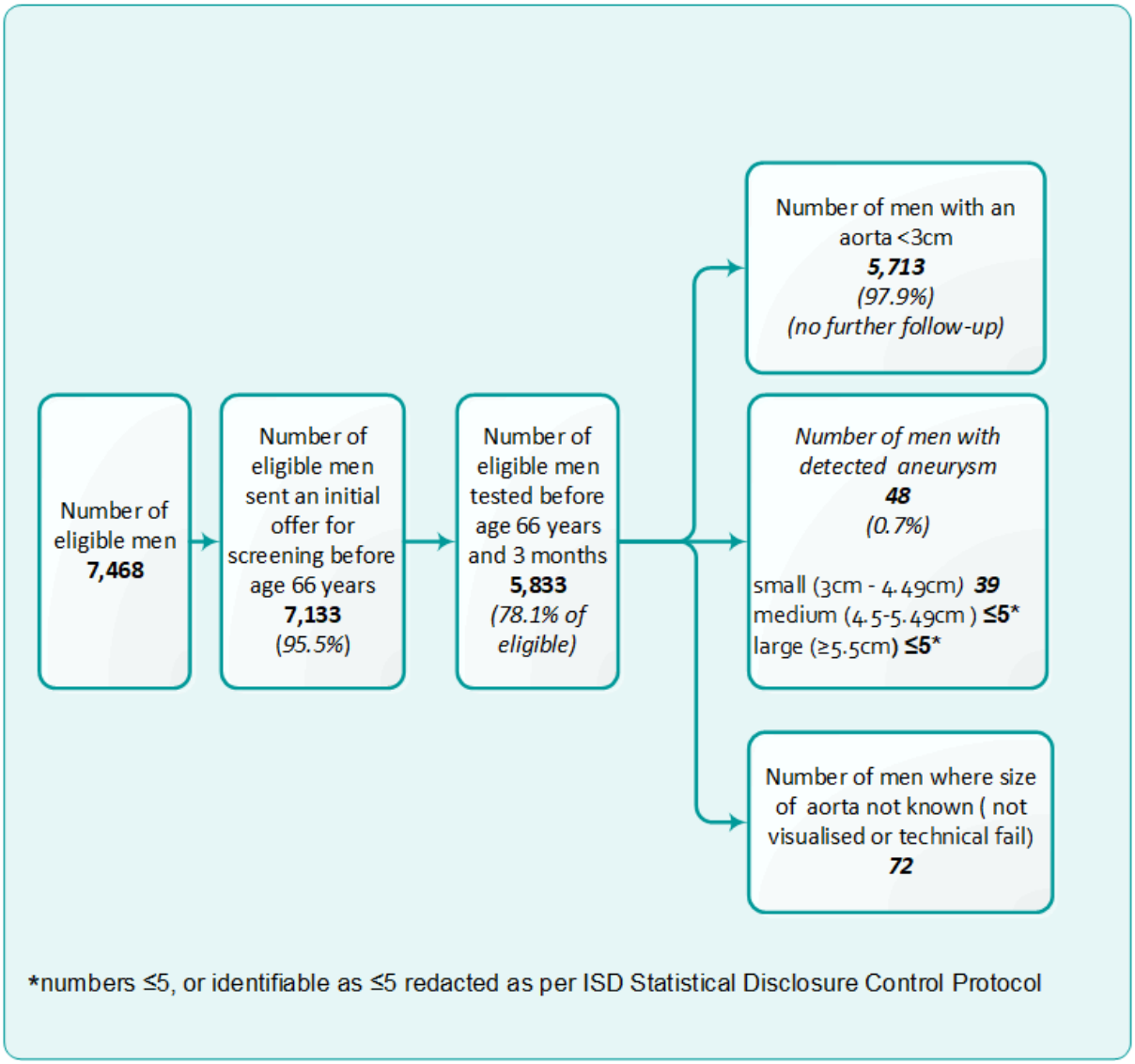
During the period 2023-2024, the total number of eligible men resident in NHSGGC was 7,468 and 7,133 (95.5%) were sent an initial offer of screening

[4] Abdominal Aortic Aneurysm (AAA) screening standards – Healthcare Improvement Scotland (Accessed January 2025)
[5] Guidance and information on the Key Performance Indicators (KPIs) for the Abdominal Aortic Aneurysm screening programme Publication date: 1 March 2022 V1.5 (Accessed January 2025)

before their 66th birthday. Of the 7,468 men eligible for screening, 5,833 (78.1%) were screened before age 66 and 3 months.

For AAA screening, uptake is defined as the **Percentage of eligible men tested before age 66 and 3 months.**

Figure 5.1. AAA screening programme activity, NHSGGC, 2023-24.



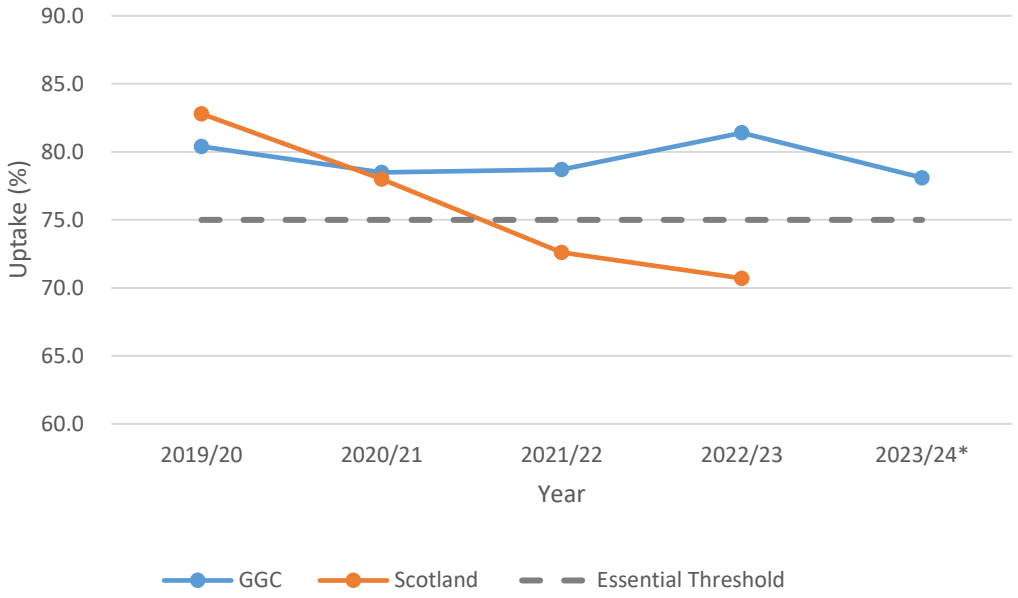
Source: AAA application, January 2024.

5.5. Uptake of Screening

During the period April 2023 to March 2024, the essential threshold of 75% for AAA screening uptake was met in NHSGGC (78.1%), however there was an observed decrease in uptake of 3.3 percentage points from the previous year see **Figure 5.2**.

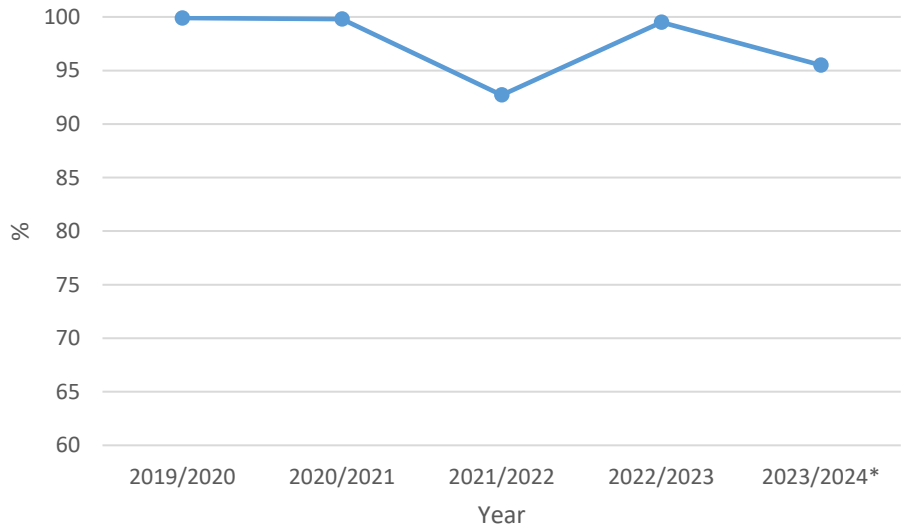
The decline in overall uptake during 2023/24 has been attributed to a reduction in the percentage of eligible men who received an invitation to attend screening before 66 years of age, a 4 percentage point reduction from the previous year, see **Figure 5.3**. This has been a consequence of limited clinic availability in some locations and long term staff absences, impacting on the availability of clinic appointments and the proportion of eligible men who can be offered screening before this cut-off.

Figure 5.2. Uptake of AAA screening among eligible men in NHSGGC and Scotland, 2019/20 to 2023/24*.



Source: Scottish Abdominal Aortic Aneurysm (AAA) screening programme statistics
*AAA application, January 2024, GGC statistics only.

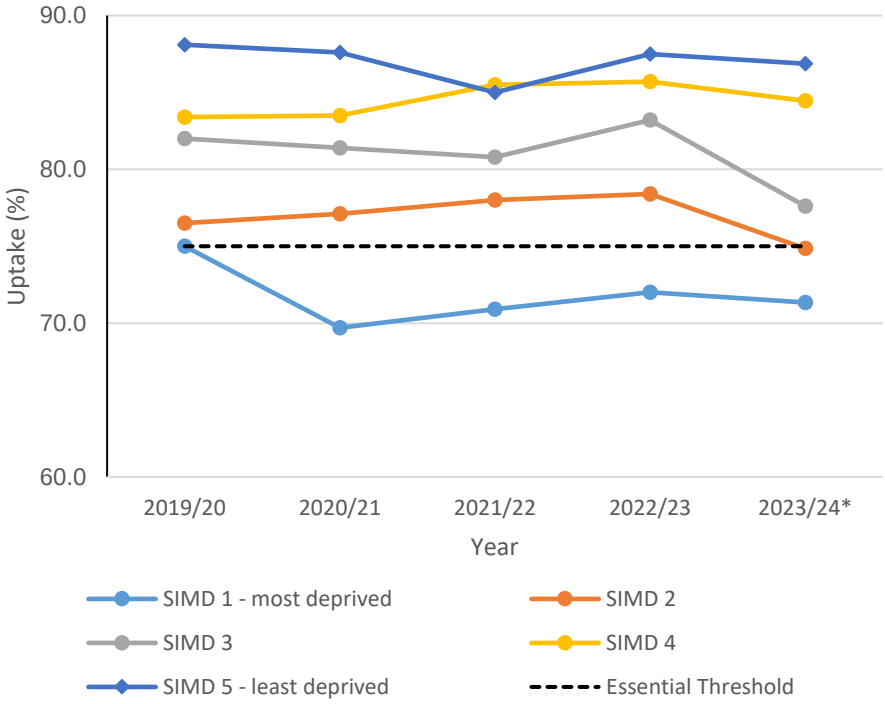
Figure 5.3. Proportion of eligible men sent an invitation to attend AAA screening before age 66 years, NHSGGC, 2019/20 to 2023/24*.



Source: Scottish Abdominal Aortic Aneurysm (AAA) screening programme statistics
* AAA application, January 2024.

Screening uptake was compared by deprivation (SIMD) quintile, see **Figure 5.4**. Uptake was highest amongst men the least deprived quintile (86.9%) and lowest amongst men in the most deprived quintile (71.3%). There was a gradient of decreasing uptake with increasing deprivation across the quintiles. Uptake remained similar between 2022/23 and 2023/24 for SIMD quintiles 1, 4 and 5 and decreased for SIMD quintiles 2 and 3.

Figure 5.4. Uptake of AAA screening among eligible men by deprivation quintile (SIMD), NHSGGC, 2019/20 – 2023/24*.



Source: Scottish Abdominal Aortic Aneurysm (AAA) screening programme statistics
* AAA application, January 2024, GGC statistics only.

During 2023/24, uptake among men residing in the most deprived areas was 15.6 percentage points lower than men residing in the least deprived areas (71.3% vs 86.9% respectively). The essential threshold of 75% uptake was not met among men residing in the two most deprived quintiles (SIMD 1 and SIMD 2), see **Table 5.1.**

Table 5.1. Uptake of AAA screening among eligible men by SIMD quintile (deprivation), NHSGGC, 2023-24.

SIMD quintile 2020	Not screened	Screened	Total	*% Screened*
1 (Most deprived)	704	1,752	2,456	*71.3*
2	335	997	1,332	*74.8*
3	206	714	920	*77.6*
4	177	961	1,138	*84.4*
5 (Least deprived)	213	1,409	1,622	*86.9*
Total	**1,635**	**5,833**	**7,468**	***78.1***

Source: AAA Application, January 2025.

Further local analysis was undertaken to explore variations in uptake of the 2023/24 screening round for populations with protected characteristics including ethnicity, learning disability and mental health and by Health and Social Care Partnership (HSCP) area. However, in some instances, cohort numbers were small therefore caution should be applied when interpreting annual uptake data.

Analysis by ethnicity was undertaken via data linkage to self-reported ethnicity reference dataset held within West of Scotland Safe Haven, see **Table 5.2**. The essential threshold of 75% uptake was achieved for men in Chinese, Scottish Chinese or British Chinese; Irish; Indian, Scottish Indian or British Indian; Other; Scottish; Other British; and Caribbean or Black groups, but was poorer in other census ethnic groups**.** Some census ethnic groups were small and these data are harder to interpret.

Table 5.2. Uptake of AAA screening among eligible men by ethnicity for NHSGGC, 2023-2024.

2021 Census Ethnic Group[6]	Total	Not Screened	Screened	% Screened
Chinese, Scottish Chinese or British Chinese	34	3	31	*91.2*
Irish	51	6	45	*88.2*
Indian, Scottish Indian or British Indian	56	8	48	*85.7*
Other	*	*	*	*83.3*
Scottish	5778	1015	4763	*82.4*
Other British	551	110	441	*80.0*
Caribbean or Black	*	*	*	*80.0*
Pakistani, Scottish Pakistani or British Pakistani	129	38	91	*70.5*
Other ethnic group	33	10	23	*69.7*
Any Mixed or multiple ethnic group	22	7	15	*68.2*
African, Scottish African or British African	33	11	22	*66.7*
Bangladeshi, Scottish Bangladeshi or British Bangladeshi	*	*	*	*66.7*
Other white ethnic group	80	29	51	*63.8*
Polish	22	9	13	*59.1*
Other ethnic group Arab, Scottish Arab or British Arab	*	*	*	*57.1*
Gypsy/Traveller	*	*	*	*0.0*
Opt out, Not known, Null	645	380	265	*41.1*
Grand Total	7468	1635	5833	*78.1*

Source: AAA Application, health systems ethnicity data linkage, January 2025.
* numbers ≤5, or identifiable as ≤5 as per PHS Statistical Disclosure Control Protocol.

Table 5.3 shows that 59 of the 7,468 individuals eligible for AAA screening in 2023/24 were registered with a learning disability (0.8%). Men who were registered with a learning disability had comparable uptake of AAA screening compared to the rest of the population**,** 76.3% compared to 78.1% uptake respectively.

[6] Ethnic group | Scotland's Census (accessed February 2025)

Table 5.3. Uptake of AAA screening among eligible men by Learning Disability, NHSGGC, 2023-24.

Learning Disability	Total	Not screened	Screened	*% Screened*
Rest of population	7,409	1,621	5,788	*78.1*
Registered	59	14	45	*76.3*
Total	**7,468**	**1,635**	**5,833**	***78.1***

Source: AAA Application, Learning Disability, January 2025.

People registered on PsyCIS have had at least one episode of psychosis which is typically seen in patients with a severe or enduring mental illness. **Table 5.4** shows that 75 of the 7,468 men eligible for screening were registered on PsyCIS (1.0%). These individuals had lower of AAA screening, 64% compared to 78.2% in the rest of the population. This difference in uptake was not statistically different, due to the small population of men registered with PsyCIS.

Table 5.4. Uptake of AAA screening among eligible men by severe and enduring mental health, NHSGGC, 2023-24.

PSYCIS	Total	Not screened	Screened	*% Screened*
Rest of population	7,393	1,608	5,785	*78.2*
Registered	75	27	48	*64.0*
Total	**7,468**	**1,635**	**5,833**	***78.1***

Source: AAA Application, PSYCIS, January 2025.

The essential threshold for screening uptake (75%) was met in 5 of 6 HSCPs areas: East Dunbartonshire (*86.6*%); East Renfrewshire (*84.9%*); Renfrewshire (*83.0*%); Glasgow City (75.5%) and Inverclyde (78.5%). The essential threshold was not met in West Dunbartonshire (*66.6%)*, however an evident reduction in the percentage of eligible men invited to participate in screening before their 66th birthday contributed to lower uptake in these area, see **Table 5.5**.

Table 5.5. Uptake of AAA screening among eligible men by Health & Social Care Partnership area, NHSGGC, 2023-24.

HSCP	Total	Invited	% Invited	Not screened	Screened	% Screened
East Dunbartonshire HSCP	747	729	***97.6***	100	647	***86.6***
East Renfrewshire HSCP	622	614	***98.7***	94	528	***84.9***
Glasgow North East Sector	1,121	1,112	***99.2***	271	850	***75.8***
Glasgow North West Sector	1,152	1,043	***90.5***	331	821	***71.3***
Glasgow South Sector	1,445	1,434	***99.2***	310	1,135	***78.5***
Glasgow City	3,718	3,589	***96.5***	912	2,806	***75.5***
Inverclyde HSCP	557	507	***91.0***	120	437	***78.5***
Renfrewshire HSCP	1,219	1,215	***99.7***	207	1,012	***83.0***
West Dunbartonshire HSCP	605	479	***79.2***	202	403	***66.6***
Total	**7,468**	**7,133**	***95.5***	**1,635**	**5,833**	***78.1***

Source: AAA Application, January 2025.

Mapping of AAA uptake rates by intermediate datazones[7] was undertaken to provide further insight into variation in uptake at local geographical level. This illustrates that uptake rates in some pockets of NHSGGC can be significantly lower than HSCPs levels, with 16 of the 257 intermediate zones had uptake rates below 60%. Uptake maps are available on the PHSU website[8].

5.6. Abdominal Aneurysm Screening Outcomes

Table 5.6 shows that of the 5,713 men screened, 48 men (0.8%) had a confirmed positive screening result with an enlarged aorta ≥3cm.

Of these:

- Thirty nine men (81.3%) had an aorta measuring between 3cm to 4.49cm (small aneurysm) requiring annual surveillance scans;
- Fewer than 5 men had a medium aneurysm requiring 3 monthly surveillance scans;
- Fewer than 5 men were found to have a large aneurysm (measuring 5.5 cm or more) requiring surgical assessment and intervention where appropriate.

[7] Intermediate Zones (as opposed to smaller data zones) were used for mapping AAA uptake rates due to small denominator.
[8] Screening Uptake Data Zone maps

Table 5.6. Abdominal Aneurysm screening results for NHSGGC, 2023-2024.

	Largest Measure (cm)					
Result Type	**<3**	**3 - 4.49**	**4.5-5.49**	**≥5.5**	**Not known**	**Total**
Negative	5,713	-	-	-	-	**5,713**
Non Visualisation	-	-	-	-	72	**72**
Positive	-	39	*	*	-	**48**
Total	**5,713**	**39**	*	*	**72**	**5,833**

Source: AAA Application, January 2025 .
* numbers ≤5, or identifiable as ≤5 redacted as per ISD Statistical Disclosure Control Protocol.

5.7. AAA Mortality & Incident Audit

The Public Health Screening Unit leads a programme of audit of AAA screening. A multi-disciplinary group reviews all AAA related mortality and incidents in relation to the screening programme in line with national guidance. This is in addition to the already established system of reviewing the cases of patients who have died from a ruptured aorta at regular Morbidity and Mortality meetings.

The standards for the Scottish AAA Screening Programme state that:

- the screening and surveillance history of men, who died of a ruptured aortic aneurysm, is reviewed and discussed by the collaborative screening centre multidisciplinary team; and
- the mortality rate due to ruptured abdominal aortic aneurysm among men who were screened negative and discharged from the programme is recorded and an action plan implemented.

To comply with these criteria, an annual analysis of deaths due to ruptured AAA's is undertaken. Findings from combined two year period September 2022 to September 2024 identified 143 men with a cause of death potentially attributed to ruptured AAA. Following review of all these cases, no deficiencies in the screening programme were identified and no further investigation of cases was required.

5.8. Challenges & Future Priorities

Limited clinic space availability in Inverclyde and West Dunbartonshire continues to impact on invitation rates of eligible men residing in Inverclyde, West Dunbartonshire and the North West Glasgow areas. We will aim to review and increase clinic capacity in these areas in partnership with HSCPs, in order to increase invitation rates.

We aim to maintain the screening staffing level and screening site locations to ensure stability in the delivery of AAA Screening Programme.

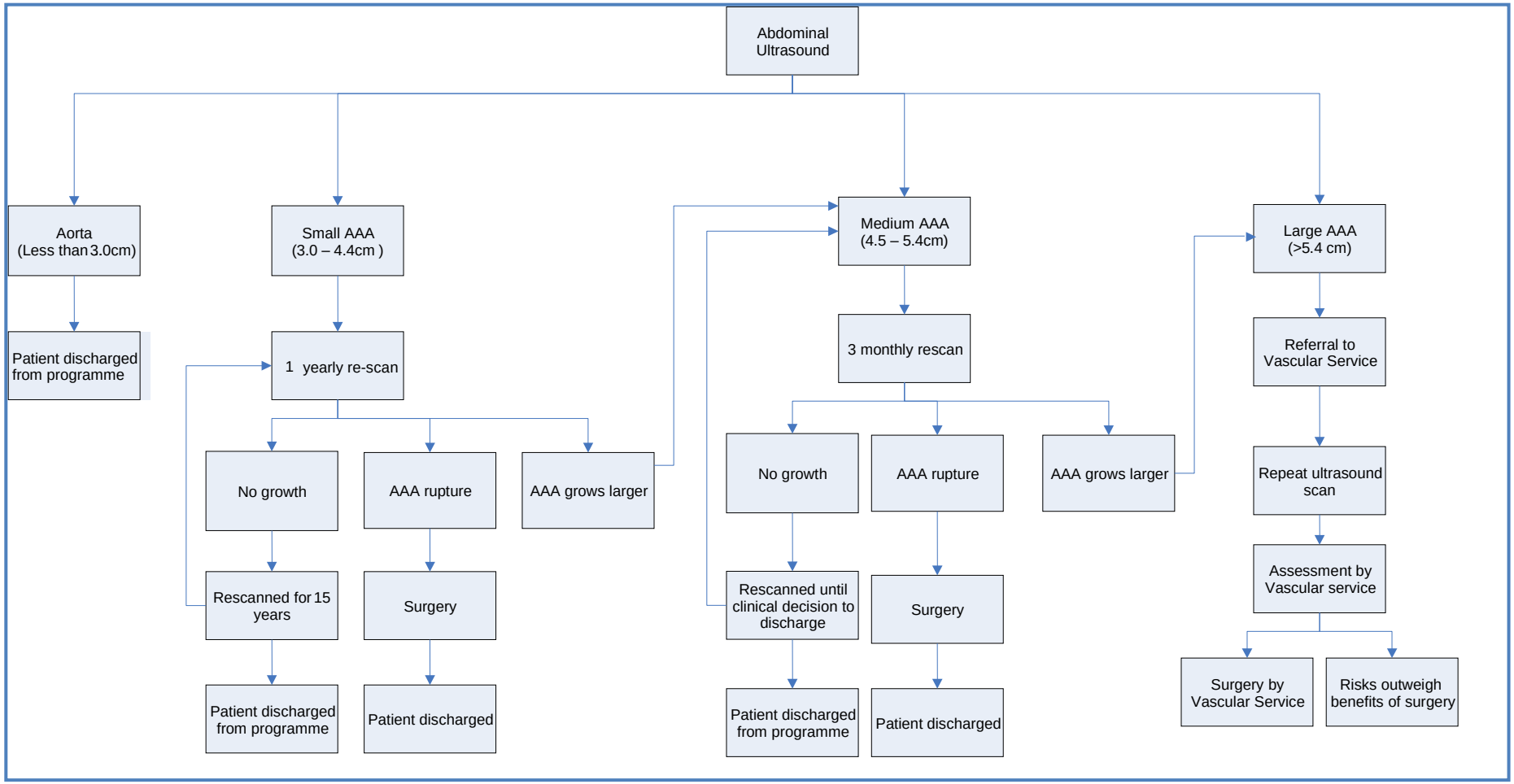
We will review findings from forthcoming patient experience survey with men under surveillance for small and medium AAA and identify actions in order to support patient experience, communication and links to related services.

We will continue to work in collaboration with HSCPs to identify opportunities to support uptake of AAA in our most deprived communities.

Building on learning from engagement with individuals with a learning disability we will develop and implement good practice guidance to support participation in AAA screening.

We will review and implement the NHSGGC Adult Screening Inequalities Action Plan to enable a more co-ordinated approach to reducing inequalities in uptake of screening through targeted interventions. Further details on targeted inequalities actions are detailed in Chapter 10.

Appendix 5.1. Abdominal Aortic Aneurysm (AAA) screening pathway



Appendix 5.2. Abdominal Aortic Aneurysm Key Performance Indicators, NHSGGC, 2022/23.

Public Health Scotland KPI data not available for year ending March 2024 at time of writing.

Description	Essential Threshold	Desirable Threshold	Year ending March 2023
1.1 Percentage of eligible population who are sent an initial offer to screening before age 66 years	≥ 90%	100%	99.5%
1.2 Percentage of men offered screening who are tested before age 66 years and 3 months	≥ 75%	≥ 85%	81.4%
1.3 Percentage of men residing in SIMD 1 areas (most deprived) offered screening who are tested before age 66 and 3 months	≥ 75%	≥ 85%	73.9%
1.4a Percentage of annual surveillance appointments due where men are tested within 6 weeks of due date	≥ 90%	100%	95.5%
1.4b Percentage of quarterly surveillance appointments due where men are tested within 4 weeks of due date	≥ 90%	100%	92.3%
2.1a Percentage of screening encounters where aorta could not be visualised	< 3%	< 1%	2.0%
2.1b Percentage of men screened where aorta could not be visualised	< 3%	< 1%	1.8%
2.2 Percentage of screened images that failed the quality assurance audit and required immediate recall	< 4%	< 1%	1.0%
3.1 Percentage of men with AAA ≥5.5cm seen by vascular specialist within two weeks of screening	≥ 75%	≥ 95%	94.7%
3.2 Percentage of men with AAA ≥5.5cm deemed appropriate for intervention/ operated on by vascular specialist within eight weeks of screening	≥ 60%	≥ 80%	30.8%

Source: Scottish Screening AAA Programme Statistics 2022/23
RED = essential threshold not met
AMBER = essential threshold met, desirable threshold not met.
GREEN = essential and desirable thresholds met

Appendix 5.3

Members of Abdominal Aortic Aneurysm Screening Steering Group (at March 2024)

Dr Alison Potts	Consultant in Public Health (Chair)
Mr Paul Burton	Information Manager
Mrs Lin Calderwood	HI&T Service Delivery Manager
Mr Kevin Daly	Consultant Vascular Surgeon/Lead Clinician
Mrs Mairi Devine	Lead Screener
Mr Andrew Ferguson	SDPM, Diagnostics, Strategy & Programmes/Diagnostics
Mr Marco Florence	Glasgow Local Medical Committee
Mrs Antonella Grimon	AAA Data Administrator
Dr Oliver Harding	Consultant in Public Health Medicine, NHS Forth Valley
Ms Heather Jarvie	Public Health Programme Manager
Dr Ram Kasthuri	Consultant Interventional Radiologist
Ms Debbie MacIntyre	Clinical Service Manager, General Surgery
Ms Joyce McFadyen	Health Records Manager
Mr Calum McGillivray	Programme Support Officer, Screening Department
Mrs Elizabeth Rennie	Programme Manager, Screening Department
Ms Sandra Robertson	Radiology Department Manager
Dr Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland

Chapter 6 – Bowel Screening Programme

Summary

Bowel Screening	
Why?	Early identification of bowel cancer Prevention of morbidity and mortality
Intervention	Screening offered to all eligible men and women aged 50-74 years, every two years. Screening test is quantitative FIT, poo test. Screening kits sent to home address of all those eligible, participants collect a sample at home and return in the prepaid envelope. Where screening test is positive (high risk), rapid follow up at colonoscopy clinic at hospital sites across the region. Rapid referral into bowel surgery as needed.
Activity in 2023/24	61.1% screening uptake (218,065 individuals screened) in the last screening round 2022/23 to 2023/24
Outcomes	Uptake similar to last year and above target (60%) Variation in uptake by deprivation quintile (most deprived 51.3% vs least deprived 72.0%) Variation in uptake by census ethnic group Uptake lower for those with learning disability (44.5%) and those with severe or enduring mental illness (43.8%) Screening positivity rate 3.0% (6,488 individuals) 75.1% of those who tested positive attended for diagnostic investigation Detection rates: - 3,178 people (65.2%) had a polyp detected - 2,567 people (52.7%) had a confirmed adenoma detected - 208 (4.3%) people had a confirmed colorectal cancer diagnosis - polyp and adenomas highest detection rates in males, 65-69 year olds, and most deprived quintile - cancer highest detection rate in males, 65-69 year olds, and most and least deprived quintiles
Planned activity	Monitor and adjust colonoscopy waiting times to ensure meets KPI Investigate the factors contributing to non-engagement with colonoscopy for individuals with a positive screening result Develop options for the introduction of virtual pre-assessment in line with pending national guidance Develop good practice guidance and training for staff for learning disability awareness training and to support staff with informed choice conversations

Chapter Contents

6.1. Background

Colorectal (bowel) cancer is the fourth most common cancer in Scotland for both men and women accounting for 12.0% of all cancers in 2022 (the most recent year for which incidence data is available). Ninety four percent of bowel cancers detected were among people aged over 50 years of age[9].

In 2022, 882 people residing in the NHSGGC area were diagnosed with bowel cancer, of these 514 were male and 368 were female. This gives an age-standardised incidence rate of 102.6 per 100,000 population for men in 2022, higher than the Scotland rate of 91.8 per 100,000. For women the age-standardised incidence rate in 2022 was 61.0 per 100,000 population, lower than the Scotland rate of 63.9 per 100,000.

In 2021**,** the most recent year for mortality data, there were 321 deaths from bowel cancer in NHSGGC, of which 185 were male and 136 were female. This gives an age standardised mortality rate of 41.9 per 100,000 population for men, comparable with the national rate (41.3 per 100,000) and 21.9 per 100,000 population for women was recorded, lower that national rate of 26.4 per 100,000 population[10].

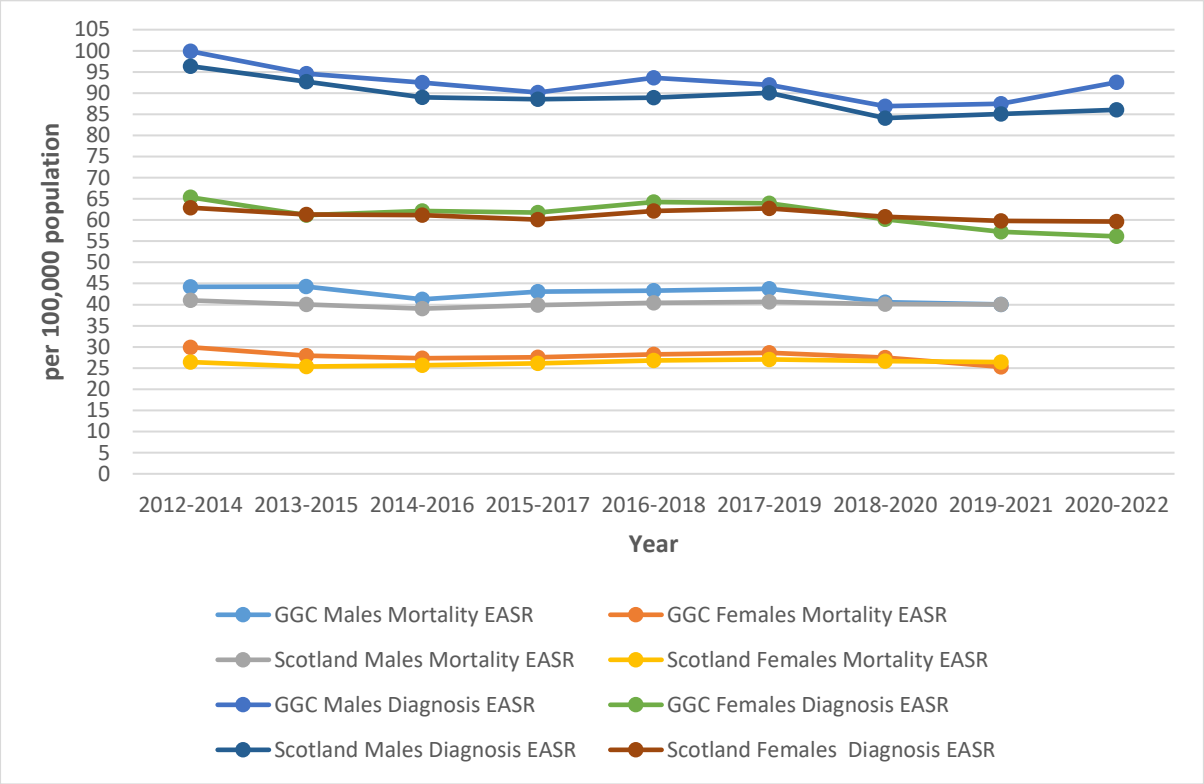
Standardised incidence and mortality rates averaged across rolling 3 year periods for bowel cancer for NHSGGC and Scotland are illustrated in **Figure 6.1**. In the 10 year period between 2012 and 2022, the age-standardised rolling three years incidence rate of bowel cancer in Greater Glasgow & Clyde decreased in both men (99.9 to 92.6 per 100,000) and in women (65.4 to 56.1 per 100,000). In the period between 2012 and 2021 (most recent year for mortality data) mortality rates of bowel cancer in Greater Glasgow & Clyde decreased in men (from 44.2 to 40.1 per 100,000) and in women (29.9 to 25.3 per 100,000). There was a larger than expected fall in colorectal cancer incidence during 2019/20, which has been attributed to under-diagnoses due to COVID-19 pandemic.

The main preventable risk factors for bowel cancer are consumption of red and processed meats, obesity, alcohol consumption and smoking.

The Scottish Bowel Screening Programme was fully implemented across Scotland in 2009.

[9] Cancer incidence in Scotland - to December 2022 - Cancer incidence in Scotland - Publications - Public Health Scotland (Accessed January 2025)
[10] Cancer mortality in Scotland - Annual update to 2021 - Cancer mortality - Publications - Public Health Scotland (Accessed January 2025)

Figure 6.1. Colorectal cancer diagnosis and mortality trends 2012-2022 (rolling three year average), European Age Standardised Rate (EASR), per 100,000 population.



Source: Registration Source: PHS November 2024, Mortality Source: PHS October 2022.

6.2. Aim of the Screening Programme

The purpose of bowel screening is to detect colorectal cancers at the earliest possible opportunity so that treatment may be offered promptly. There is evidence 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 pre-cancerous lesions could lead to a reduction in the incidence of colorectal cancer.

6.3. Eligible Population

The programme invites all men and women between the ages of 50–74 years of age and 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 arrangements. All eligible individuals will be routinely recalled every 2 years. Individuals may request screening above the age of 74.

6.4. The Screening Test & Pathway

In November 2017, the Quantitative Faecal Immunochemical Test (QFIT) was introduced throughout Scotland. This test is recommended as the first choice

for population-wide colorectal cancer screening by the European Guidelines for Quality Assurance in Colorectal Cancer Screening[11]. **Appendix 6.1** provides an overview of the bowel screening pathway.

The National Bowel Screening Centre in Dundee issues invitation letters and screening kits to all eligible residents of NHSGGC to carry out the screening test at home. The kits are then returned to the National Laboratory by post, for testing.

After analysis, the National Centre reports the results to the patient, GP Practice and Health Board. The patient is informed by letter, an electronic notification is sent to the patient's general practitioner and results of all positive tests are sent to the Health Board via SCI Gateway referral.

Patients with positive screening results are invited to contact NHS Greater Glasgow and Clyde administrative staff to arrange a telephone assessment and be offered a colonoscopy. Patients who are unable to undergo colonoscopy will be offered a CT colonography as an alternative where appropriate. If required, patients are then referred for further diagnostic investigations and treatment. Some patients may not be offered a colonoscopy, common reasons being an inability to tolerate any form of bowel preparation; a recent change in health status; a previous failed colonoscopy or unsuitability due to physical incapability.

Anyone who has a positive result will automatically be invited to attend screening again in 2 years' time, unless a permanent exclusion is placed on their record. If a patient declines to attend colonoscopy, a letter is sent to the patient and their GP, asking them to get in touch within 6 months if they change their minds. Otherwise they will be removed from the waiting list. These patients will be invited to take part in bowel screening in the next round, in 2 years' time.

6.5. Programme Performance & Delivery

The National Bowel Screening Programme performance and quality is monitored via defined Key Performance Indicators (KPIs)[12] and National Bowel Screening Standards[13]. KPIs cover information on uptake of screening (completed kits); results of screening; quality of colonoscopy and cancer diagnosis and staging. National statistics are published annually by Public Health Scotland in February each year, reflecting the previous two year screening round. **Appendix 6.2** summarises the most recent published KPI's for NHSGGC and Scotland for time period 1st March 2022 to 30th April 2024.

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4482205/ (Accessed January 2025)

[12] Scottish bowel screening programme statistics - For the period of invitations from May 2021 to April 2023 - Scottish bowel screening programme statistics - Publications - Public Health Scotland (Accessed January 2025)

[13] Bowel screening standards – Healthcare Improvement Scotland (Accessed January 2025)

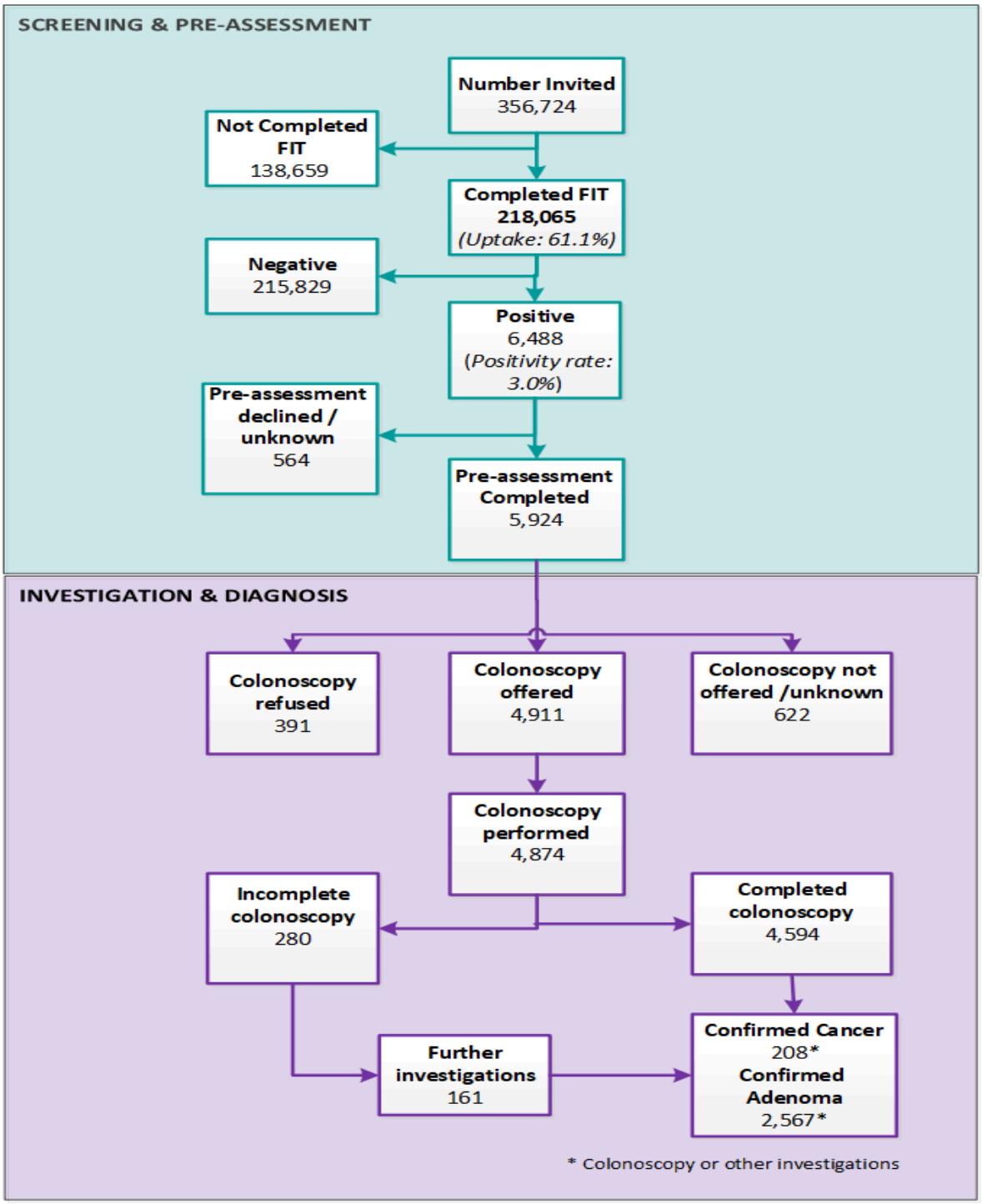
Local monitoring data is presented in this report to provide uptake and outcome data for period 1st April 2022 to 31st March 2024. As a result of differences in data extract dates and data definitions, numbers in local data analysis may differ from those presented in published national programme reports.

For bowel screening, uptake is defined as the **Percentage of eligible people invited with a final outright screening test result[14].**

Figure 6.2 summarises bowel screening uptake for the screening round 1st April 2022 to 31st March 2024 from local analysis, which is based on NHSGGC resident population only. During this time period, 356,724 NHSGGC residents were invited for bowel screening, of which 61.1% returned the screening test. Of the 218,065 completed tests, 6,488 tested positive (3.0%). Of those individuals who had a positive result, 5,924 (91.3%) attended a nurse pre-assessment and over three quarters 4,874 (82.3%) had a colonoscopy performed. Subsequently, 208 cancers and 2,567 adenomas were detected.

[14] Invited represents the number of people invited minus those whose last kit is terminated or undelivered.

Figure 6.2. NHSGGC Eligible Residents Bowel Screening Activity 1st April 2022 to 31st March 2024

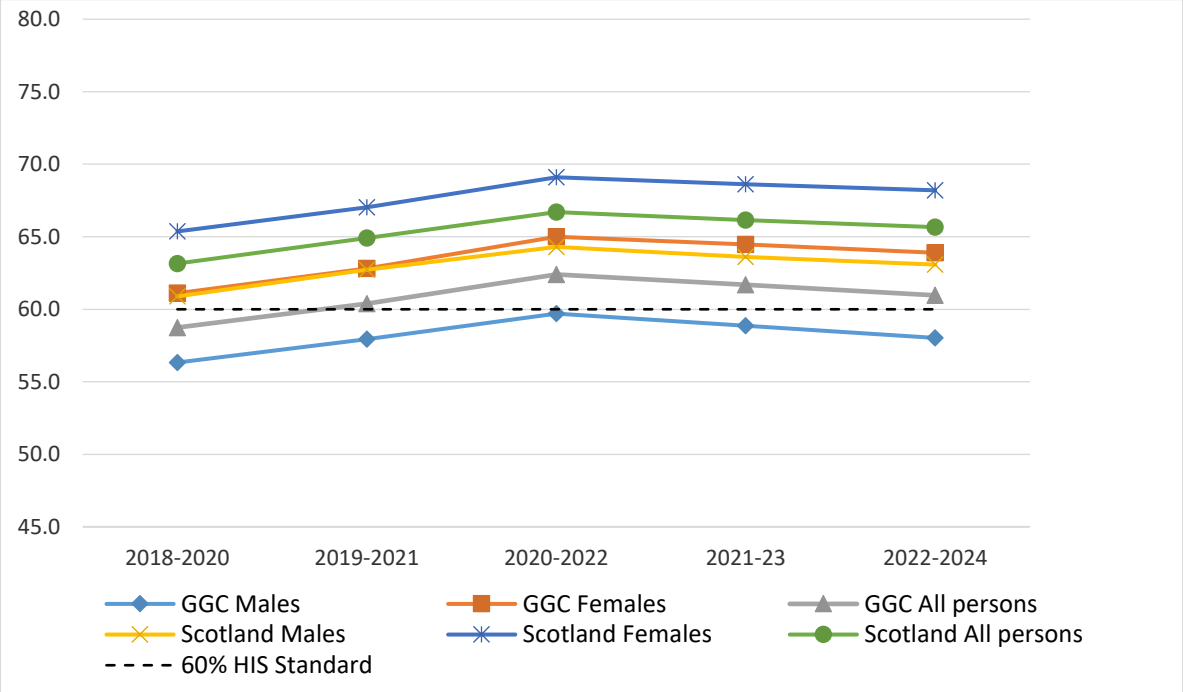


Source: NHS Greater Glasgow and Clyde Bowel Screening IT System, Trakcare, Pathology, Cancer Audit, November 2024.

6.6. Uptake of Screening

The overall uptake of bowel screening has increased both nationally and within NHSGGC following the implementation of FIT testing in 2017, however there was a reduction observed in both men and women in the 2022/24 screening round, with uptake remaining lower in men, see **Figure 6.3**.

Figure 6.3. Uptake of Bowel Screening by sex, in NHSGGC and Scotland, 2018/20 to 2022/24.



Source: PHS Bowel Screening Programme Statistics, 1st April 2018 to 31st March 2024.

For the screening round 2022/23 to 2023/24, overall uptake of bowel screening in NHSGGC was 61.1%, above the Health Improvement Scotland (HIS) standard of 60%. Women were more likely to return a bowel screening test than men (63.7% vs. 58.6% respectively). Uptake in males was below the national target of 60%, see **Table 6.1**.

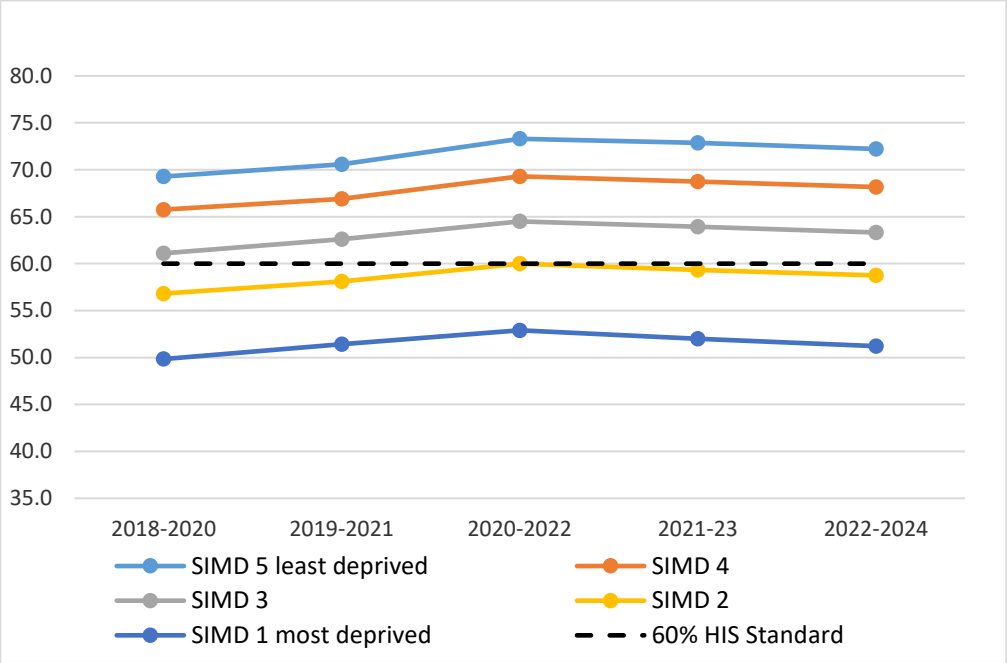
Table 6.1. Uptake of bowel screening by sex, NHSGGC, 1st April 2022 to 31st March 2024.

Sex	Not screened	Screened	Total	*% Screened*
Female	65,303	114,356	179,659	*63.7*
Male	73,356	103,709	177,065	*58.6*
Total	**138,659**	**218,065**	**356,724**	***61.1***

Source: NHSGGC Bowel Screening IT System and Trakcare, November 2024.

Uptake of bowel screening within the most and least deprived quintiles increased following the implementation of FIT testing in 2017. An increase in uptake was observed across all deprivation quintiles during the 2022-24 screening round, see **Figure 6.4**. Lowest uptake continues to be observed among those residing in the most deprived quintiles.

Figure 6.4. Uptake of bowel screening by deprivation quintile, NHSGGC 2018/20 to 2022/24.



Source: PHS Bowel Screening Programme Statistics, 1st April 2018 to 31st March 2024.

For the screening round 1st April 2022 to 31st March 2024, there was a 20.7% percentage point difference in uptake among individuals residing in the most deprived areas compared to individuals residing in the least deprived areas (51.3% vs 72.0% respectively), see **Table 6.2**.

Table 6.2. Uptake of bowel screening by deprivation quintile (SIMD), NHSGGC, 1st April 2022 to 31st March 2024.

SIMD Quintile	Not screened	Screened	Total	*% Screened*
1 (Most deprived)	57,335	60,452	117,787	*51.3*
2	26,078	37,037	63,115	*58.7*
3	16,492	28,576	45,068	*63.4*
4	17,093	36,321	53,414	*68.0*
5 (Least deprived)	21,661	55,679	77,340	*72.0*
Total	**138,659**	**218,065**	**356,724**	***61.1***

Source: NHSGGC Bowel Screening IT System and Trakcare, November 2024.

Further local analysis was undertaken to explore variations in uptake of the 2022/24 screening round for populations with protected characteristics (including age, ethnicity, learning disability and mental health) and geography by Health and Social Care Partnership (HSCP) area.

Uptake of screening increased with increasing age**,** see **Table 6.3.** Uptake was lowest among those aged 50-54 years (53.9%) and increased to 68.7% between those aged 70 to 74 years, a difference of 14.8 percentage points.

Table 6.3. Uptake of bowel screening by age group, NHSGGC, 1st April 2022 to 31st March 2024.

Age group (years)	Not screened	Screened	Total	*% Screened*
50-54	37,628	43,951	81,579	*53.9*
55-59	30,669	42,854	73,523	*58.3*
60-64	31,807	51,319	83,126	*61.7*
65-69	25,220	50,696	75,916	*66.8*
70-74	13,335	29,245	42,580	*68.7*
Total	**138,659**	**218,065**	**356,724**	***61.1***

Source: NHSGGC Bowel Screening IT System and Trakcare, November 2024.

Analysis by ethnicity was undertaken via data linkage to self-reported ethnicity reference dataset held within West of Scotland Safe Haven, groups **see Table 6.4**. The uptake screening standard of 60% was achieved in the Roma; Showman/Showwoman; Irish; Chinese; Scottish; British groups and Gypsy/Traveller but was poorer in other census ethnic groups. Some census ethnic groups were small and these data are harder to interpret.

Table 6.4. Uptake of bowel screening by ethnicity, NHSGGC, 1st April 2022 to 31st March 2024.

2021 Census Ethnicity Category[15]	Not Screened	Screened	Total	*% Screened*
Roma	10	30	40	*75.0*
Showman/Showwoman	12	31	43	*72.1*
Irish	593	1,350	1,943	*69.5*
Chinese, Scottish Chinese or British Chinese	656	1,350	2,006	*67.3*
Scottish	96,400	179,641	276,041	*65.1*
Other British	8,562	15,382	23,944	*64.2*
Gypsy/Traveller	107	189	296	*63.9*
Bangladeshi, Scottish Bangladeshi or British Bangladeshi	49	70	119	*58.8*
Other white ethnic group	1,797	2,415	4,212	*57.3*
Caribbean or Black	217	286	503	*56.9*
Other	614	792	1,406	*56.3*
Other ethnic group Arab, Scottish Arab or British Arab	187	232	419	*55.4*
African, Scottish African or British African	752	897	1,649	*54.4*
Indian, Scottish Indian or British Indian	1,298	1,416	2,714	*52.2*
Any Mixed or multiple ethnic group	640	678	1,318	*51.4*
Polish	484	491	975	*50.4*
Other ethnic group	792	791	1,583	*50.0*
Pakistani, Scottish Pakistani or British Pakistani	3,051	2,430	5,481	*44.3*
Opt out, Not known, Null	22,438	9,594	32,032	*30.0*
Grand Total	138,659	218,065	356,724	*61.1*

Table 6.5 shows that 2,436 of the 367,550 individuals eligible for screening were registered with a learning disability (0.7%). People who were registered with a learning disability had poorer uptake of bowel screening**,** 44.5% compared to 61.2% in the rest of the population.

[15] Ethnic group | Scotland's Census (accessed February 2025)

Table 6.5. Uptake of bowel screening by learning disability, NHSGGC, 1st April 2022 to 31st March 2024.

Learning disability register	Not screened	Screened	Total	*% Screened*
Not registered	137,306	21,6982	354,288	*61.2*
Registered	1,353	1,083	2,436	*44.5*
Total	**138,659**	**218,065**	**356,724**	***61.1***

Source: NHSGGC Bowel Screening IT System and Trakcare (November 2024); Provisional GGC Learning Disability Register, January 2025[16].

People registered on PsyCIS have had at least one episode of psychosis which is typically seen in patients with a severe or enduring mental illness. **Table 6.6** shows that 4,029 of the 356,724 people eligible for screening were registered on PsyCIS (1.1% of the total eligible population). These individuals had poorer uptake of bowel screening, 43.8% compared to 61.3% in the rest of the population.

Table 6.6. Uptake of bowel screening among people with severe and enduring mental illness, NHSGGC, 1st April 2022-31st March 2024.

PsyCIS	Not screened	Screened	Total	*% Screened*
Not registered	136,396	216,299	352,695	*61.3*
Registered	2,263	1766	4,029	*43.8*
Total	**138,659**	**218,065**	**356,724**	***61.1***

Source: NHSGGC Bowel Screening IT System and Trakcare, November 2024); PsyCIS, November 2024.

Uptake was analysed by HSCP area, including calculating Standardized Uptake Rate (SUR) which allows comparison of uptake while controlling for certain factors, in this case age and deprivation. This enables a fairer comparison of uptake rates between HSCPs. Before standardisation, uptake ranged from 55.8% in Glasgow City South Sector to 71.1% in East Dunbartonshire HSCP, see **Table 6.7.** The HIS target of 60% was met in all HSCP areas with the exception of Glasgow City HSCP, where all 3 sectors (North East, North West and South) did not meet the HIS target.

When the known effects of age (increasing uptake with increasing age), and deprivation (lower uptake with increasing deprivation) are taken into account by standardisation, there is much less variation in uptake across HSCP areas (range from SUR 58.0% in Glasgow North West and South, to SUR 64.1% in East Dunbartonshire). This illustrates that most of the differences in uptake across HSCP's is explained by differences in levels of deprivation and age.

[16] LD register used for screening CHI linkage comprises legacy LD Local Enhanced Service register and snapshot of 2024 NHSGGC LD health check register.

As ethnicity was not included in standardisation, this may also be a contributory factor for lower SUR within Glasgow City North West and South Sectors.

Table 6.7. Uptake of bowel screening by HSCP, NHSGGC, 1st April 2022 to 31st March 2024.

HSCP	Not screened	Screened	Total	*% Screened*	*% Screened LCI*	*% Screened UCI*	*% SUR*	*% SUR LCI*	*% SUR UCI*
East Dunbartonshire HSCP	10,556	25,978	36,534	*71.1*	*70.2*	*72.0*	*64.1*	*63.3*	*64.8*
East Renfrewshire HSCP	9,051	20,962	30,013	*69.8*	*68.9*	*70.8*	*62.6*	*61.7*	*63.4*
Glasgow North East Sector	23,292	29,600	52,892	*56.0*	*55.3*	*56.6*	*60.6*	*59.9*	*61.3*
Glasgow North West Sector	24,074	31,651	55,725	*56.8*	*56.2*	*57.4*	*58.0*	*57.3*	*58.6*
Glasgow South Sector	29,461	37,157	66,618	*55.8*	*55.2*	*56.3*	*58.0*	*57.4*	*58.6*
Glasgow City HSCP	76,827	98,408	175,235	*56.2*	*55.8*	*56.5*	*61.5*	*61.1*	*61.9*
Inverclyde HSCP	9,970	16,963	26,933	*63.0*	*62.0*	*63.9*	*63.8*	*62.8*	*64.7*
Renfrewshire HSCP	20,790	37,141	57,931	*64.1*	*63.5*	*64.8*	*62.4*	*61.8*	*63.0*
West Dunbartonshire HSCP	11,465	18,613	30,078	*61.9*	*61.0*	*62.8*	*63.9*	*63.0*	*64.9*
Total	**138,659**	**218,065**	**356,724**	***61.1***	***60.9***	***61.4***			

Source: NHSGGC Bowel Screening IT System and Trakcare, November 2024.
SUR – Standardised Uptake Rate
LCI – Lower Confidence Interval
UCI – Upper Confidence Interval

Mapping of bowel screening uptake rates by data zones was undertaken to provide further insight into variation in uptake at local geographical level. This illustrates that uptake rates in some pockets of NHSGGC can be significantly lower than HSCP levels, as 668 of the 1,458 data zones had uptake rates between 40-59% and a further 60 data zones had uptake rates of below 40%. Uptake maps are available on the PHSU website[17].

6.7. Screening Test Positivity

Overall in the period 2022-2024, 3.0% (6,488 of 218,065) of completed screening tests were reported positive, indicating at higher risk of bowel cancer and meriting further investigation with colonoscopy or equivalent.

- Women had a lower positivity rate than men (2.5% vs. 3.5 %, respectively).
- Positivity rate increases with increasing age (4.0% aged 70-74 vs. 2.3% aged 50-54).
- Those residing in the most deprived communities had higher positivity than the least deprived (3.9% vs. 2.2% respectively).

See Tables 6.8 and 6.9.

Table 6.8. Uptake for bowel screening and positivity rate of screening test by age and sex, NHSGGC, 1st April 2022 to 31st March 2024.

	% Screened			% Positive		
Age group	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
50-54	57.8	50.2	53.9	2.1	2.5	2.3
55-59	61.4	55.1	58.3	2.2	3.2	2.6
60-64	64.2	59.3	61.7	2.3	3.2	2.8
65-69	67.8	65.7	66.8	2.8	4.2	3.5
70-74	69.4	67.9	68.7	3.2	4.9	4.0
Total	**63.7**	**58.6**	**61.1**	**2.5**	**3.5**	**3.0**

Source: NHSGGC Bowel Screening IT system (November 2024)

[17] Screening Uptake Data Zone maps

Table 6.9. Bowel screening positivity rate by SIMD, NHSGGC, 1st April 2022 to 31st March 2024.

SIMD quintile 2016	Negative	Positive	Total	*% Positive*
1 (Most deprived)	58,079	2,373	60,452	*3.9*
2	35,852	1,185	37,037	*3.2*
3	27,757	819	28,576	*2.9*
4	35,414	907	36,321	*2.5*
5 (Least deprived)	54,475	1,204	55,679	*2.2*
Total	**21,1577**	**6,488**	**218,065**	***3.0***

Source: NHSGGC Bowel Screening IT system (November 2024)

6.8. Uptake of Colonoscopy

Of the 6,488 individuals with a positive screening result, 4,874 (75.1%) went on to have colonoscopy or another investigation, see **Table 6.10**.

We investigated the demographic characteristics between those who attended for colonoscopy and those who did not.

- The proportion of colonoscopies not performed was similar between males (24.9%) and females (24.8%), see **Table 6.10**.
- The proportion of colonoscopies not performed increased in older age groups, approximately 22% in those aged 50-64 and 30.5% in those aged 70-74 years, see **Table 6.11.**
- The proportion of colonoscopies not performed increased with increasing deprivation quintile, 28.8% colonoscopies not performed in the most deprived quintile versus 20.6% in the least deprived quintile, see **Table 6.12.**

Table 6.10. Analysis of colonoscopies not performed versus performed by sex, positive bowel screening result, NHSGGC, 1st April 2022 to 31st March 2024.

	Colonoscopy not performed		Colonoscopy performed		Total
Sex	**Number**	**% by sex**	**Number**	**% by sex**	
Female	703	*24.8%*	2,132	*75.2%*	**2,835**
Male	911	*24.9%*	2,742	*75.1%*	**3,653**
Total	**1,614**	***24.9%***	**4,874**	***75.1%***	**6,488**

Source: NHSGGC Bowel Screening IT system (November 2024)

Table 6.11. Analysis of colonoscopies not performed versus performed by age group, positive bowel screening result, NHSGGC, 1st April 2022 to 31st March 2024.

	Colonoscopy not performed		Colonoscopy performed		Total
Age group	**Number**	**% by age**	**Number**	**% by age**	
50-54	224	*22.1%*	788	*77.9%*	**1,012**
55-59	256	*22.6%*	876	*77.4%*	**1,132**
60-64	319	*22.4%*	1,102	*77.6%*	**1,421**
65-69	461	*26.1%*	1,303	*73.9%*	**1,764**
70-74	354	*30.5%*	805	*69.5%*	**1,159**
Total	**1,614**	***24.9%***	**4,874**	***75.1%***	**6,488**

Source: NHSGGC Bowel Screening IT system, November 2024.

Table 6.12. Analysis of colonoscopies not performed versus performed by deprivation quintile (SIMD), positive bowel screening result, NHSGGC, 1st April 2022 to 31st March 2024.

	Colonoscopy not performed		Colonoscopy performed		
SIMD	**Number**	**% by SIMD quintile**	**Number**	**% by SIMD quintile**	**Total**
1 Most deprived	683	*28.8%*	1,690	*71.2%*	**2,373**
2	314	*26.5%*	871	*73.5%*	**1,185**
3	176	*21.5%*	643	*78.5%*	**819**
4	193	*21.3%*	714	*78.7%*	**907**
5 Least deprived	248	*20.6%*	956	*79.4%*	**1,204**
Total	**1,614**	***24.9%***	**4,874**	***75.1%***	**6,488**

Source: NHSGGC Bowel Screening IT system, November 2024.

6.9. Adenoma & Polyp Detection in Those Who Attended Colonoscopy

Tables 6.13, 6.14 and 6.15 provide a summary of adenoma, polyp and cancer detection rates by gender, age and deprivation. Of the 6,488 people who had a positive screening test, 4,874 people underwent a colonoscopy. Of these:

- 3,178 people (65.2%) had a polyp detected;
- 2,567 people (52.7%) had a confirmed adenoma detected; and
- 208 (4.3%) people had a confirmed colorectal cancer diagnosis.

Detection of polyps, adenomas and cancer was higher in males than females, see **Table 6.13**. With males almost twice as likely as females to have polyps (61.4% vs 38.6%), adenomas (62.3% vs 37.7%) or cancer (64.4% vs 35.6%) detected.

Polyp, adenomas and cancers detection rates increased with increasing age from age group 50-54 years (14.3%, 13.0%, 8.2%), to 65-69 (28.6%, 29.7%, 32.2%) years; then fell in the 70-74 years age group (18.4%, 19.1%, 25.5%). Almost a third of polyps, adenomas and cancers were detected in the 65-69 year old age group. See **Table 6.14.**

The highest rates of polyp, adenomas and cancer detections were in those in the most deprived quintile. More than a third of polyps (35.3%) and adenomas (35.0%) were detected in this quintile and almost a third of cancers (27.9%). However, a high detection rate of cancer was also seen in the least deprived quintile (26.0%). Detection rates of polyps and cancers was not as high in this group. See **Table 6.15.**

Figure 6.13. Polyp, adenoma and cancer detection rate by sex for those who had colonoscopy or other investigation, NHSGGC, 2022-2024.

	Patients		Polyps detected		Adenomas detected		Cancer detected	
Sex	N	*%*	N	*%*	N	%	N	*%*
Female	2,132	*43.7%*	1,228	*38.6%*	967	37.7%	74	*35.6%*
Male	2,742	*56.3%*	1,950	*61.4%*	1,600	62.3%	134	*64.4%*
Total	**4,874**	***100.0%***	**3,178**	***100.0%***	**2,567**	**100.0%**	**208**	***100.0%***

Source: NHSGGC Bowel Screening IT system, November 2024.

Table 6.14. Polyp, adenoma and cancer detection rate by age group for those who had colonoscopy or other investigation, NHSGGC, 2022-2024.

	Patients		Polyps detected		Adenomas detected		Cancer detected	
Age group	N	*%*	N	*%*	N	*%*	N	*%*
50-54	788	*16.2%*	456	*14.3%*	334	*13.0%*	17	*8.2%*
55-59	876	*18.0%*	513	*16.1%*	414	*16.1%*	26	*12.5%*
60-64	1,102	*22.6%*	716	*22.5%*	565	*22.0%*	45	*21.6%*
65-69	1,303	*26.7%*	908	*28.6%*	763	*29.7%*	67	*32.2%*
70-74	805	*16.5%*	585	*18.4%*	491	*19.1%*	53	*25.5%*
Total	**4,874**	***100.0%***	**3,178**	***100.0%***	**2,567**	***100.0%***	**208**	***100.0%***

Source: NHSGGC Bowel Screening IT system, November 2024.

Table 6.15. Polyp, adenoma and cancer detection rate by deprivation quintile (SIMD) for those who had colonoscopy or other investigation, NHSGGC, 2022-2024.

	Patients		Polyps detected		Adenomas detected		Cancer detected	
SIMD quintile 2016	N	*%*	N	*%*	N	*%*	N	*%*
1 (Most deprived)	1,690	*34.7%*	1,122	*35.3%*	898	*35.0%*	58	*27.9%*
2	871	*17.9%*	553	*17.4%*	446	*17.4%*	36	*17.3%*
3	643	*13.2%*	405	*12.7%*	331	*12.9%*	30	*14.4%*
4	714	*14.6%*	477	*15.0%*	389	*15.2%*	30	*14.4%*
5 (Least deprived)	956	*19.6%*	621	*19.5%*	503	*19.6%*	54	*26.0%*
Total	**4,874**	***100.0%***	**3,178**	***100.0%***	**2,567**	***100.0%***	**208**	***100.0%***

Source: NHSGGC Bowel Screening IT system, November 2024.

Data presented in **Table 6.15** shows the cancer staging of the 208 people who had a confirmed colorectal cancer diagnosis.

Table 6.16. Colorectal cancer stage for those with a diagnosis of colorectal cancer from the screening pathway, NHSGGC, 2022-24.

Staging	Number	*%*
1	65	*31.3*
2	35	*16.8*
3	39	*18.8*
4	*	*
unknown	67	*32.2*
Total	**208**	

Source: Local Cancer Audit, November 2024.

6.10. Quality improvement in colonoscopy

The Public Health Screening Unit leads a programme of bowel screening audit, focusing on the quality of colonoscopy services. A multi-disciplinary group reviews the performance of all individuals who carry out colonoscopy as part of screening. Three main measures are recorded: adenoma detection rate; completion rate and complication rate. Post colonoscopy cancer rates are now also being audited.

It is expected that all bowel screening colonoscopists will undertake a minimum of 200 unselected colonoscopies per year and that they will have a minimum completion rate of 90% and a minimum adenoma detection rate of 35% in bowel screening colonoscopies. Any complications identified are flagged to sectoral clinical management teams for consideration through

clinical governance process. Any learning from this is shared accordingly across the Health Board.

6.11. Challenges & Future Priorities

We will continue to monitor screening colonoscopy waiting times, increasing capacity where possible to ensure waiting times are in line with standards.

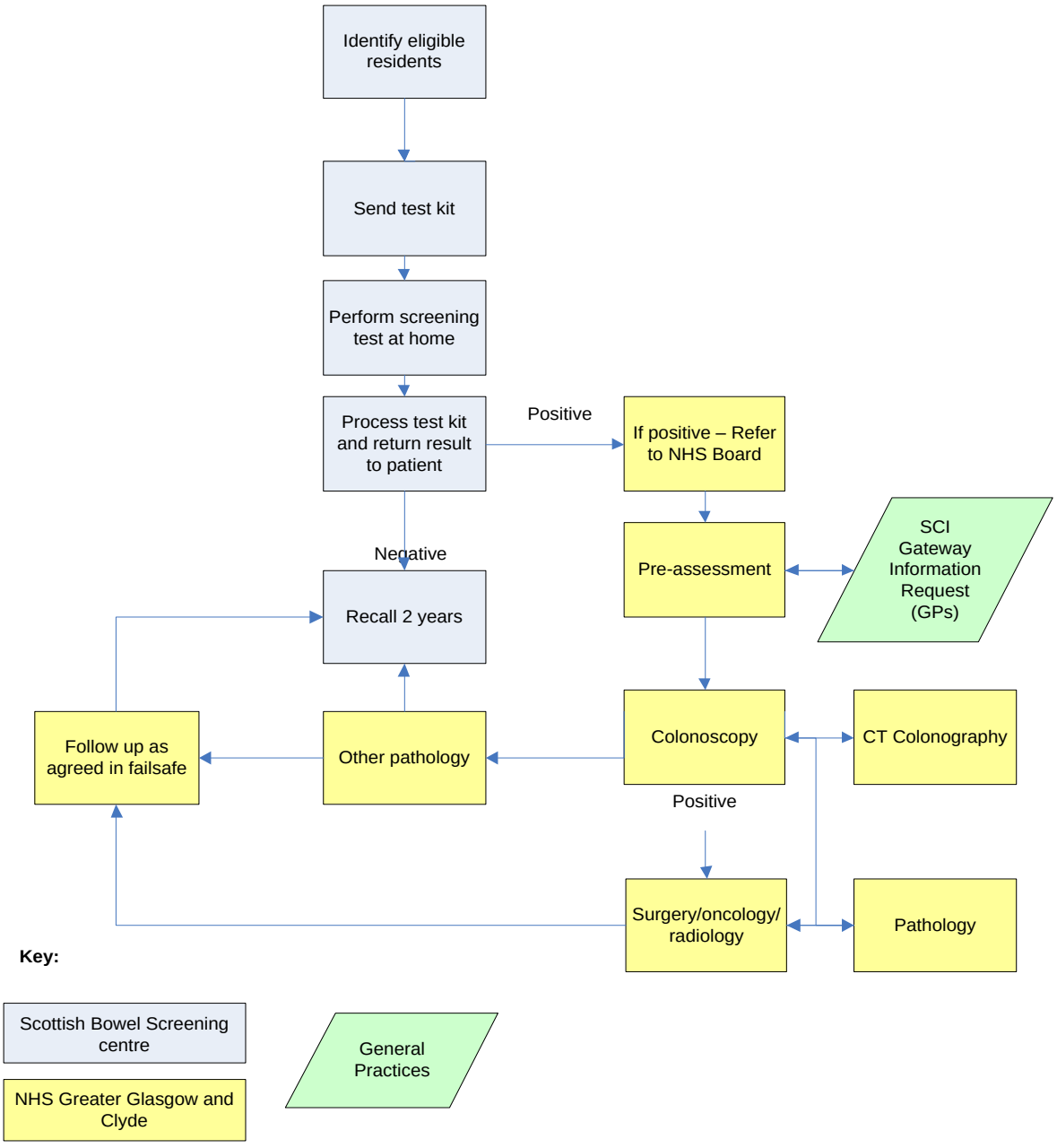
We will progress further analysis of demographic and wider patient factors contributing to refusal/non-engagement with colonoscopy for individuals with a positive screening result, to inform future actions to address variation.

We will scope options for the introduction of virtual pre-assessment in line with pending national guidance, ensuring offer of telephone or face-to-face pre-assessment for patients depending on clinical need or additional support needs.

Building on learning from engagement with individuals with a learning disability, we will deliver learning disability awareness training and develop good practice within screening colonoscopy pre-assessment to support staff with informed choice conversations.

We will continue to progress actions identified within NHSGGC Inequalities Plan for adult screening programmes to enable a more coordinated approach to reducing inequalities in uptake through targeted activities, with a focus on areas of high deprivation **(see Section 10).**

Appendix 6.1. Bowel Screening Pathway



Appendix 6.2. Bowel screening Key Performance Indicators, NHS Greater Glasgow & Clyde, 2022/23.

Key Performance: Indicator Description	Target		1st May 2022 to 30th April 2024
Screening uptake			
1. Overall uptake of screening – percentage of people with a final outright screening test result, out of those invited.	60%		61.0
2. Overall uptake of screening by deprivation category* percentage of people with a final outright screening test result for which a valid postcode is available. [*by Scottish Index of Multiple Deprivation (SIMD) quintile 1 (Q1 most deprived) to quintile 5 (Q5 least deprived)]	60%	Q1	51.2%
		Q2	58.7%
		Q3	63.3%
		Q4	68.2%
		Q5	72.2%
3. Percentage of people with a positive test result, out of those with a final outright screening test result.	N/A		3.04%
Referral, clinical interventions, outcomes			
4. Percentage of people where the time between the screening test referral date to colonoscopy performed: 0 to 4 weeks >4 to 8 weeks > 8 weeks	N/A		20.0% 41.5% 38.4%
5. Percentage of people with a positive screening test result going on to have a colonoscopy performed.	N/A		75.3%
6. Percentage of people having a completed colonoscopy, out of those who had a colonoscopy performed.	90%		94.4%
7. Percentage of people requiring admission for complications arising directly from the colonoscopy, out of those who had a colonoscopy performed.	N/A		0.15%
8. Percentage of people with colorectal cancer, out of those with a final outright screening test result.	N/A		0.097%
Percentage of people with colorectal cancer staged: 9. Dukes' A; 10. Dukes' B; 11*. Dukes' C; 13. Dukes' D; 14. Dukes' not known.	N/A		41.0% 23.5% 28.2% 3.8% 3.4%

Percentage of people with colorectal cancer: 15. where the stage has not yet been supplied; 16. that has a recorded stage.	N/A	- 100%
17. Percentage of people with polyp cancer out of those with a final outright screening test result.	N/A	-
18. Percentage of people with polyp cancer, out of those with colorectal cancer.	N/A	-
19. Percentage of people with adenoma as the most serious diagnosis, out of those with a final outright screening test result.	N/A	1.146%
20. Percentage of people with high risk adenoma as the most serious diagnosis, out of those with a final outright screening test result.	N/A	0.150%
21. Positive Predictive Value of current screening test for colorectal cancer.	N/A	4.3%
22. Positive Predictive Value of current screening test for adenoma as the most serious diagnosis.	N/A	50.0%
23. Positive Predictive Value of current screening test for high risk adenoma as the most serious diagnosis.	N/A	6.5%
24. Positive Predictive Value of current screening test for high risk adenoma as the most serious diagnosis or colorectal cancer.	N/A	10.8%
25. Positive Predictive Value of current screening test for adenoma as the most serious diagnosis or colorectal cancer.	N/A	56.7%
Percentage of people with a colorectal cancer that is a malignant neoplasm of the: 26. colon (ICD-10 C18); 27. rectosigmoid junction (ICD-10 C19); 28. rectum (ICD-10 C20).	N/A	70.1% - 29.9%

Source: Public Health Scotland
Green = target met; Red = target not met

Appendix 6.3

Members of Bowel Screening Steering Group (At March 2024)

Dr Alison Potts	Consultant in Public Health and Screening Lead (Chair)
Dr Stuart Ballantyne	Lead Clinician for Radiology
Mr Paul Burton	Information Manager
Mrs Lin Calderwood	National Portfolio Programme Manager, eHealth
Dr Fraser Duthie	Lead Clinician for Pathology
Ms Heather Jarvie	Public Health Programme Manager
Dr Graeme Marshall	Clinical Director, Glasgow HSCP, NE Sector
Dr David Mansouri	Clinical Lecturer, Glasgow University
Ms Joyce McFadyen	Health Records Site Manager
Mr Calum McGillivray	Programme Support Officer, Screening Dept
Mrs Tricia McKenna	Colorectal Nurse Endoscopist
Mr Gerard McMahon	Bowel Cancer UK
Ms Natalie McMillan	Clinical Service Manager
Ms Lynne Peat	Public Health Screening Programme Manager, NHS Highland
Mrs Elizabeth Rennie	Programme Manager, Screening Department
Dr Andrew Renwick	Consultant, RAH
Dr Nicola Schinaia	Public Health Consultant Medicine, Highland
Dr Jack Winter	Lead Clinician for Endoscopy (North)
Mr Paul Witherspoon	Consultant Surgeon
Ms Margaret Barlow	Interim Lead Nurse, Endoscopy
Ms Julie Huntly	Lead Nurse, Endoscopy
Ms Susan McFadyen	Director of Access
Dr Donald McMillan	Professor of Surgical Science, Glasgow University
Dr Campbell Roxburgh	Professor of Colorectal Surgical Oncology, Glasgow University

Chapter 7 – Breast Screening Programme

Summary

Breast screening	
Why?	Early identification of breast cancer Prevention of morbidity and mortality
Intervention	Screening offered to all eligible women aged 50-70 years, every 3 years Screening test is mammography of both breasts Screening offered at Nelson Mandela Place in Glasgow and in mobile units which visit sites across the board area Where high risk is detected, rapid follow up in assessment clinic for further tests which may include further imaging, clinical examination and biopsy. Rapid referral into breast surgery as needed
Activity in 2023/24	75.9% screening uptake (118,166 women screened) in the last screening round 2021/22 to 2023/24
Outcomes	Uptake has increased since last year Uptake higher than achievable target (70%) but not at desirable target (80%) Large variation in uptake by deprivation quintile (SIMD), with lowest uptake in most deprived quintile (65.2%) compared with least deprived (85.3%). Uptake similar across all age groups Uptake lower for those with learning disability (55.4%) and those with enduring mental illness (57.7%) Variation in uptake across HSCP areas
Planned activity	Work with NSS to address mobile fleet issues Actively monitor slippage of appointments, local uptake rates and assessment clinic waiting times Prioritise telephone reminders to women invited for first screening round and with any special requirements in our areas of low uptake Develop and implement good practice guidance to support participation in breast screening for individuals with a learning disability

Chapter Contents

7.1. Background

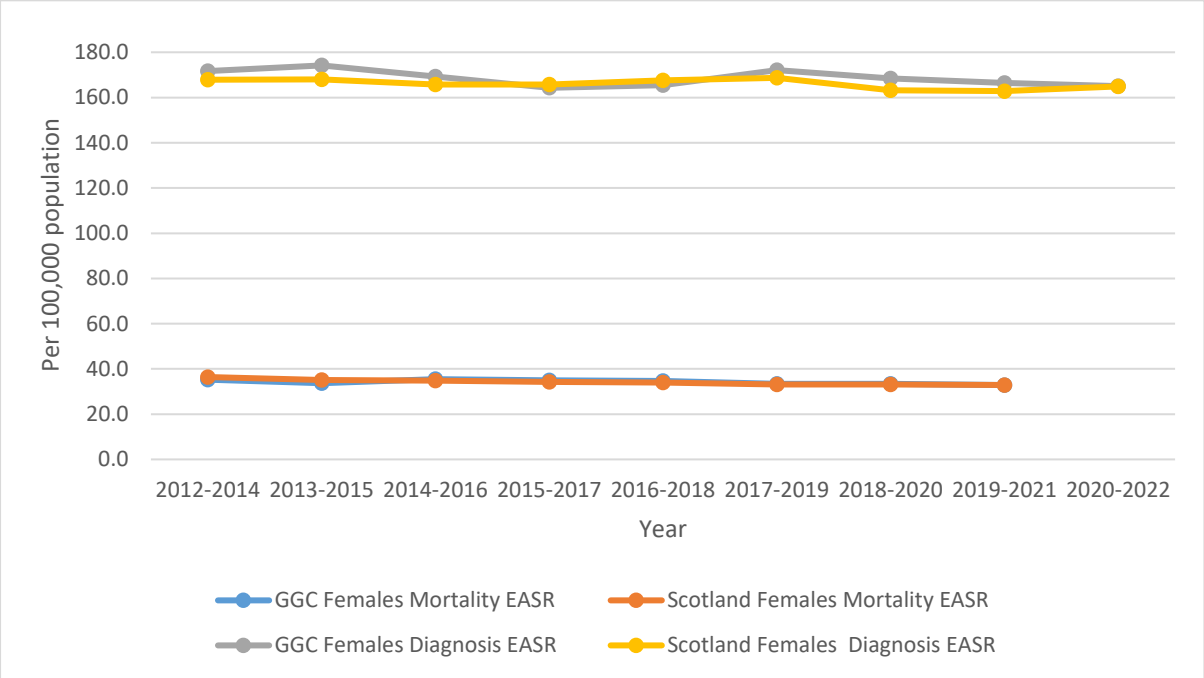
Breast cancer is the most common cancer in women in Scotland, accounting for 29.0% of all new cancers diagnosed in women in 2022 (the most recent year for which incidence data is available)[18]. In the same year, 1,028 new breast cancers were registered among women residing in NHSGGC Board area. This gives an age-standardised incidence rate for NHSGGC of 170.2 per 100,000 population, lower than the Scotland rate of 172.3 per 100,000.

Breast cancer is the second most common cause of death from cancer in women after lung cancer. In 2021, the most recent year that mortality data is available, there were 195 deaths caused by breast cancer in women residing NHSGGC, giving a standardised mortality rate of 31.9 per 100,000 population, lower than the Scotland rate of 33.4 per 100,000 population[19].

Standardised incidence and mortality rates over rolling 3 year periods for breast cancer for NHSGGC and Scotland are illustrated in **Figure 7.1**. In the 10 year period between 2012/14 and 2020/22, the age-standardised rolling 3 years incidence rate of breast cancer in GGC decreased in women from 170.1 to 165.0 per 100,000. During the period 2012/14 to 2019/2021, age standardised mortality rates of breast cancer in women in GGC also decreased, from 35.6 to 32.9 per 100,000. There was a fall in breast cancer incidence during 2019/20, which has been attributed to under-diagnoses due to the COVID-19 pandemic.

[18] Cancer incidence in Scotland - to December 2022 - Cancer incidence in Scotland - Publications - Public Health Scotland (Accessed January 2025)
[19] Cancer mortality in Scotland - Annual update to 2021 - Cancer mortality - Publications - Public Health Scotland (Accessed January 2025)

Figure 7.1. Breast cancer diagnosis 2012/14 to 2020/22 and mortality 2012/14 to 2019/21 (rolling 3 years) European Age Standardised Rate (EASR) per 100,000 population



Source: Registrations – PHS Nov 2024; Mortality – PHS October 2022.

7.2. Aim of Screening Programme

The Scottish Breast Screening Programme was introduced in February 1987 following the publication of the Forrest Report (1986)[20]. Breast screening was implemented in 1988 in North Glasgow, 1991 in South Glasgow and in October 1990 in Argyll & Clyde.

The purpose of breast screening by mammography is to detect breast cancers early. Early detection of breast cancers in this way can result in more effective treatment, which may reduce deaths from breast cancer.

The Scottish Government published the report of Major Review of the Scottish Breast Screening in May 2022[21], recommending ways to make the breast screening programme more accessible; resilient and sustainable; to drive improvements and build upon successful delivery of services. The Breast Screening Modernisation Programme Board, will take forward the recommendations from the report as well as considering additional ways to modernise the service.

[20] Forrest, P, Breast cancer screening: report to health ministers of England, Wales, Scotland and Northern Ireland, H.M.S.O., 1986.
[21] Scottish Breast Screening Programme: major review - gov.scot (www.gov.scot) (Accessed November 2024)

7.3. Eligible Population

Women aged 50 until age 70 years +364 days who are registered with a GP and those women not registered with a GP e.g. women in long-stay institutions, are eligible for a routine screen once every 3 years.

Some women are excluded from routine invitation, for example those who have had bilateral mastectomy or who have signed a disclaimer form to remove themselves from the Scottish Breast Screening Programme call-recall system.

In addition, women older than 70 years can self-refer into the screening programme. From August 2020, this part of the service was temporarily paused to concentrate on reducing waiting times for women within normal programme age. Self-referrals were re-instated in 2023 for women 71-74 years old or those have previously had breast cancer and have been discharged from yearly follow up mammograms.

7.4. The Screening Test & Pathway

The screening method used consists of 2 mammographic views of each breast. The test is a straightforward procedure involving 2 digital images (also known as a mammogram), being taken of each breast using an x-ray machine. Adaptations and/or extra views are captured for augmented breasts including breast implants and implantable devices.

The West of Scotland Breast Screening Service (WoSBSS) screens NHSGGC residents in either the static facility in Nelson Mandela Place in central Glasgow, or, for the majority of residents, in mobile units that visit sites across the NHSGGC area to ensure ease of access for women locally. Eligible women registered with a GP practice within range of Glasgow city centre are invited to attend appointments for screening in the static facility. During 2023/24, the service has been active in NHSGGC areas detailed in **Table 7.1.**

Table 7.1. 2023/2024 screening locations for NHSGGC residents

HSCP	Mobile Unit	Nelson Mandela Place (static)
East Dunbartonshire	-	Milngavie
East Renfrewshire	-	Clarkston
Glasgow City	Easterhouse, Shettleston, Toryglen.	Charing Cross; Dowanhill; Finnieston; Hyndland; Kelvingrove; Kinning Park; Pollokshields; Rutherglen; Shawlands; Townhead.
Inverclyde	-	-
Renfrewshire	Bishopton, Johnston, Linwood.	-
West Dunbartonshire	-	-

Currently, invitations for breast screening are organised by GP practice, with all eligible women in a GP practice being invited for screening at the same time. 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 3 yearly until age 70 years +364 days, when all the eligible women in her GP practice are screened.

A woman can request a screening appointment from the age of 50 years. However, if her GP practice is being screened in the next 6 months, she will be advised to attend at that time instead. The WoSBSS also contacts all long-stay institutions (care homes, prisons and mental health inpatient units) to offer screening to eligible residents.

The Breast Screening Community Liaison Officer works in partnership with Public Health, Primary Care, HSCP Health Improvement and third sector organisations to support participation in screening, including staff training, health road shows and community talks.

The mammograms taken during the screening visit are examined and the results sent to the woman and her GP. Women 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. Tests may include further imaging, clinical examination and possibly ultrasound and biopsy if required. This is the end of the screening part of this pathway.

Following investigation of an abnormality detected by screening, if a woman is found to have cancer, she is referred to secondary care consultant surgeon to discuss the options available to her, which usually involve surgery. The exact course of treatment will depend on the type of cancer found and the woman's personal preferences. **Appendix 7.1** provides an overview of the breast screening pathway.

Assessment clinics are undertaken at the WoSBSS situated in Glasgow. The surgical treatment is undertaken by designated teams in Gartnavel; New Victoria Hospital; New Stobhill Hospital and Royal Alexandra Hospital. A small proportion of women with palpable tumours are referred for treatment to local breast teams.

7.5. Programme Performance & Delivery

Programme performance and quality is monitored via defined Key Performance Indicators (KPI's)[22] and National Breast Screening Standards[23]. National breast screening programme statistics are published annually by Public Health Scotland in April each year, reflecting the previous 3 year screening round. **Appendix 7.2** summarises the most recent published KPIs for Scotland for 3 year rolling period 2020/21 to 2022/23.

Local monitoring data is presented in this report to provide further insight into uptake data for screening period 2021/22 to 2023/24. As a result of differences in data extract dates and data definitions, numbers in local data analysis may differ from those presented in forthcoming published national programme reports.

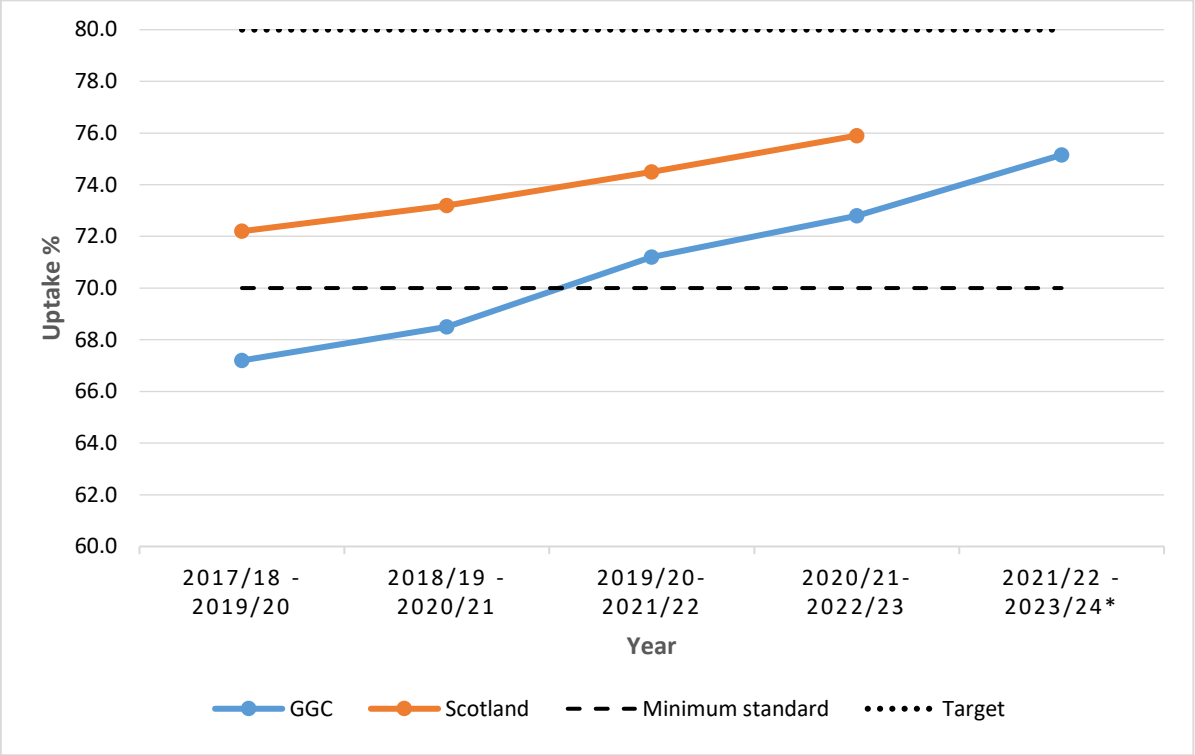
For breast screening, uptake is defined as the **percentage of eligible women aged 50 to 70 years, who have attended routine breast screening appointment in rolling 3 year period.**

7.6. Uptake of Screening

Uptake of breast screening has increased over the last 5 years in NHSGGC and in Scotland as a whole. During the current screening round 2021/22 to 2023/24, the percentage of eligible women who attended for breast screening in NHSGGC was 75.9%, exceeding the national minimum standard of 70%, but below the national target of 80%, see **Figure 7.2.** The Scottish uptake of breast screening remains below the national target of 80%.

[22] Scottish breast screening programme statistics - Annual update to 31 March 2023 - Scottish breast screening programme statistics - Publications - Public Health Scotland (Accessed November 2024)
[23] Breast screening services standards – Healthcare Improvement Scotland (Accessed November 2024)

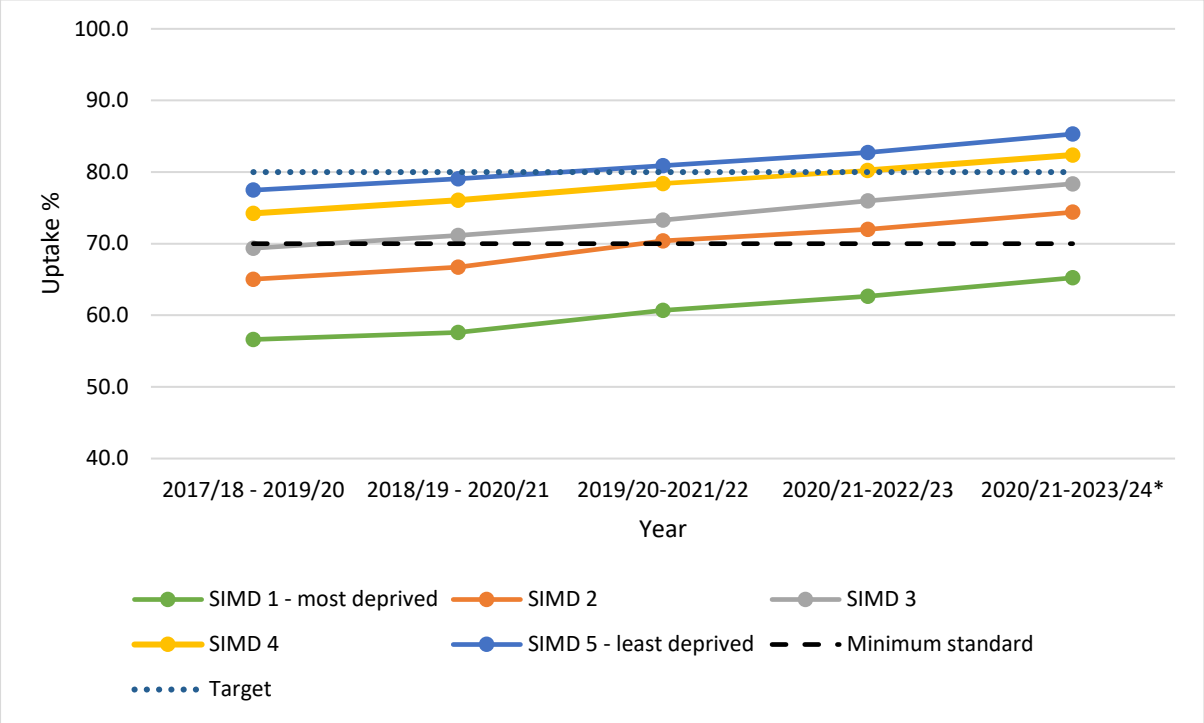
Figure 7.2. Three year rolling average uptake of breast screening in NHSGGC and Scotland 2017/20 to 2021/24* (routine appointments, females aged 50-70 years).



Source: PHS Breast Screening Programme Statistics, 1st April 2017 to 31st March 2023.
* 2021/24 SSBS local report – GGC data only (January 2025)

From 2017 to 2023, uptake of breast screening in NHSGGC increased across all deprivation quintiles. There continues to be a large difference in uptake of screening between women residing in the most and least deprived areas, with lowest uptake observed among women residing in the most deprived areas see **Figure 7.3.**

Figure 7.3. Breast screening uptake in NHSGGC by deprivation quintile (SIMD), 2017/20 to 2021/24



Source: PHS Breast Screening Programme Statistics, 1st April 2017 to 31st March 2023.
* 2021/24 Source: –West of Scotland Breast Screening Data, GGC data only (January 2025).

For the latest screening round, 1st April 2021 to 31st March 2024, uptake of breast screening was lowest among individuals residing in the most deprived Board areas (*65.2*%) and highest in the least deprived areas (*85.3*%), see **Table 7.2,** a difference of 20.1 percentage points.

Table 7.2. Breast screening uptake in NHSGGC by deprivation quintile (SIMD), 1st April 2021 to 31st March 2024.

SIMD Quintile 2016	Not Screened	Screened	Total	% Screened
1 (Most deprived)	17,968	33,717	51,685	65.2
2	7,140	20,744	27,884	74.4
3	4,209	15,249	19,458	78.4
4	4,158	19,446	23,604	82.4
5 (Least deprived)	4,995	29,010	34,005	85.3
Total	**38,470**	**118,166**	**156,636**	**75.4**

Source: West of Scotland Breast Screening Data (January 2025)

Further local analysis was undertaken to explore variations in uptake of 2021/24 screening round for populations with protected characteristics including age, ethnicity, learning disability and severe and enduring mental health, and by Health and Social Care Partnership (HSCP) area.

Uptake of breast screening is similar across all age cohorts, **(Table 7.3)**.

Table 7.3. Uptake of breast screening by age in NHS Greater Glasgow and Clyde, 1st April 2021 to 31st March 2024.

Age Band	Screened	Not Screened	Total	% Screened
50-54	29,793	10,268	40,061	74.4
55-59	31,897	10,095	41,992	76.0
60-64	29,139	9,069	38,208	76.3
65-70	27,337	9,038	36,375	75.2
Total	**118,166**	**38,470**	**156,636**	**75.4**

Source: West of Scotland Breast Screening Data (January 2025)

Comparison of uptake by age and deprivation shows similar low uptake of screening amongst all age cohorts in the most deprived category. Uptake of screening increases for all age cohorts with decreasing deprivation, see **Table 7.4**.

Table 7.4. Uptake of breast screening by age and deprivation quintile (SIMD) in NHSGGC, 1st April 2021 to 31st March 2024.

	% Uptake age band				
SIMD	**50-54**	**55-59**	**60-64**	**65-70**	**Total**
1 (Most deprived)	64.3	65.8	66.5	64.4	65.2
2	74.5	74.9	74.7	73.3	74.4
3	77.2	79.7	79.3	77.2	78.4
4	81.6	83.3	83.0	81.6	82.4
5 (Least deprived)	84.5	85.8	86.0	85.0	85.3
Total	**74.4**	**76.0**	**76.3**	**75.2**	**75.4**

Source: West of Scotland Breast Screening Data (January 2025)

Analysis of breast screening uptake by ethnicity was undertaken by data linkage to the self-reported ethnicity reference dataset held within West of Scotland Safe Haven, see **Table 7.5.**

Uptake was above 70% for most census ethnic groups, with the exception of Gypsy/Traveller; Pakistani; other white; other; ethnic mixed ethnic group and Polish ethnic groups. Lowest uptake was observed in women who did not have ethnicity recorded. However some census ethnicity groups had very small numbers and are therefore difficult to interpret.

Table 7.5. Uptake of breast screening by self-reported ethnicity in NHSGGC, 1st April 2021 to 31st March 2024.

2021 Census ethnicity group[24]	Not screened	Screened	Total	% Screened
Showman/Showwoman	0	18	18	*100.0*
Irish	111	660	771	*85.6*
Scottish	27,164	98,687	125,851	*78.4*
Other ethnic group Arab, Scottish Arab or British Arab.	35	121	156	*77.6*
Roma	*	*	*	*75.0*
Other British	2,602	7,759	10,361	*74.9*
Chinese, Scottish Chinese or British Chinese.	249	739	988	*74.8*
Indian, Scottish Indian or British Indian.	296	861	1,157	*74.4*
Other	185	485	670	*72.4*
Bangladeshi, Scottish Bangladeshi or British Bangladeshi.	13	34	47	*72.3*
Caribbean or Black	73	173	246	*70.3*
African, Scottish African or British African.	204	481	685	*70.2*
Gypsy/Traveller	46	107	153	*69.9*
Pakistani, Scottish Pakistani or British Pakistani.	796	1,682	2,478	*67.9*
Other white ethnic group	644	1,229	1,873	*65.6*
Other ethnic group	228	435	663	*65.6*
Any mixed or multiple ethnic group	203	377	580	*65.0*
Polish	170	247	417	*59.2*
Opt out, not known, null.	5,448	4,062	9,510	*42.7*
Total	**38,470**	**118,166**	**156,636**	***75.4***

Source: West of Scotland Breast Screening Data, West of Scotland Safe Haven ethnicity data, January 2025.
* numbers ≤5, or identifiable as ≤5 redacted as per PHS Statistical Disclosure Control Protocol

[24] Ethnic group | Scotland's Census (accessed February 2025)

Table 7.6 shows that 977 of the 156,636 individuals eligible for screening were registered with a learning disability (0.6%)[25]. Individuals who were registered with a learning disability had poorer uptake of breast screening**,** 55.4% compared to 75.6% in the rest of the NHSGGC population.

Table 7.6. Uptake of breast screening by learning disability in NHSGGC, 1st April 2021 to 31st March 2024.

Learning disability register	Not screened	Screened	Total	*% Uptake*
Not registered	38,034	117,625	155,659	***75.6***
Registered	436	541	977	***55.4***
Total	**38,470**	**118,166**	**156,636**	***75.4***

Source: West of Scotland Breast Screening Data, January 2025.
Learning Disability Database (January 2025).

People registered on PsyCIS have had at least one episode of psychosis which is typically seen in patients with a severe or enduring mental illness. **Table 7.7** shows that 1,670 of the 156,636 people eligible for screening were registered on PsyCIS (1.1% of the total eligible population). Individuals registered on PsyCIS had poorer uptake of breast screening, 57.7% compared to 75.6% in the rest of the population.

Table 7.7. Uptake of breast screening among people with severe and enduring mental illness in NHS Greater Glasgow and Clyde, 1st April 2021 to 31st March 2024.

PSYCIS status	Not screened	Screened	Total	*% Uptake*
Rest of population	37,764	117,202	154,966	*75.6*
PSYCIS (registered)	706	964	1,670	*57.7*
Total	**38,470**	**118,166**	**156,636**	***75.4***

Source: West of Scotland Breast Screening Data, January 2025.

Uptake was analysed by HSCP area, including calculating Standardized Uptake Rate (SUR) which allows comparison of uptake while controlling for certain factors, in this case age and deprivation. This enables a fairer comparison of uptake rates between HSCPs. Before standardisation, the target for screening uptake (80%) was met in East Dunbartonshire (83.1%), East Renfrewshire (82.6%) and Renfrewshire (81.8%). The minimum standard (70%) was met in all other HSCPs, with the exception of Glasgow City North West Sector (68.3%), **see Table 7.8.** When the known effects of age (comparable uptake with increasing age) and deprivation (lower uptake with increasing deprivation) are taken into account by standardisation, variation in uptake between HSCP areas still exits but is less pronounced

[25] Sourced from Learning Disability Register, September 2018, therefore will not capture LD registrations after this date.

(from 71.1% in Glasgow North West, to 80.1% in Renfrewshire). This illustrates that contributing factors to variation in uptake is deprivation and age but there are others too.

Table 7.8. Uptake of breast screening by HSCP area in NHSGGC, 1st April 2021 to 31st March 2024.

HSCP	Routine invitations	Not screened	Screened	Uptake			Standardised uptake		
				% Screened	*% Screened LCI*	*% Screened UCI*	% SUR	% LCI	% UCI
East Dunbartonshire HSCP	17,155	2,902	14,253	*83.1*	*82.3*	*83.8*	*76.8*	*75.6*	*78.1*
East Renfrewshire HSCP	12,762	2,225	10,537	*82.6*	*81.7*	*83.4*	*75.5*	*74.1*	*77.0*
Glasgow North East	24,048	7,620	16,428	*68.3*	*67.3*	*69.4*	*72.7*	*71.6*	*73.8*
Glasgow North West	24,269	7,272	16,997	*70.0*	*69.1*	*71.0*	*71.1*	*70.0*	*72.1*
Glasgow South	28,741	7,885	20,856	*72.6*	*71.7*	*73.4*	*74.4*	*73.4*	*75.4*
Glasgow City	77,058	22,777	54,281	*70.4*	*69.9*	*71.0*	*72.8*	*72.2*	*73.4*
Inverclyde HSCP	12,693	2,954	9,739	*76.7*	*75.6*	*77.8*	*77.8*	*76.3*	*79.4*
Renfrewshire HSCP	22,632	4,108	18,524	*81.8*	*81.2*	*82.5*	*80.1*	*79.0*	*81.3*
West Dunbartonshire HSCP	14,336	3,504	10,832	*75.6*	*74.5*	*76.6*	*77.6*	*76.1*	*79.0*
Total	**156,636**	**38,470**	**118,166**	***75.4***	***75.1***	***75.8***			

Source: West of Scotland Breast Screening Data, January 2025.
SUR – standardised uptake rate
LCI – lower confidence interval
UCI upper confidence interval

Mapping of breast screening uptake rates by data zones was undertaken to provide further insight into variation in uptake at local geographical level. This illustrates that uptake rates in some pockets of NHSGGC can be significantly lower than HSCPs levels, as 305 of the 1,457 data zones had uptake rates between 40-59% and a further 144 data zones had uptake rates of below 40%. Uptake maps are available on the PHSU website.26

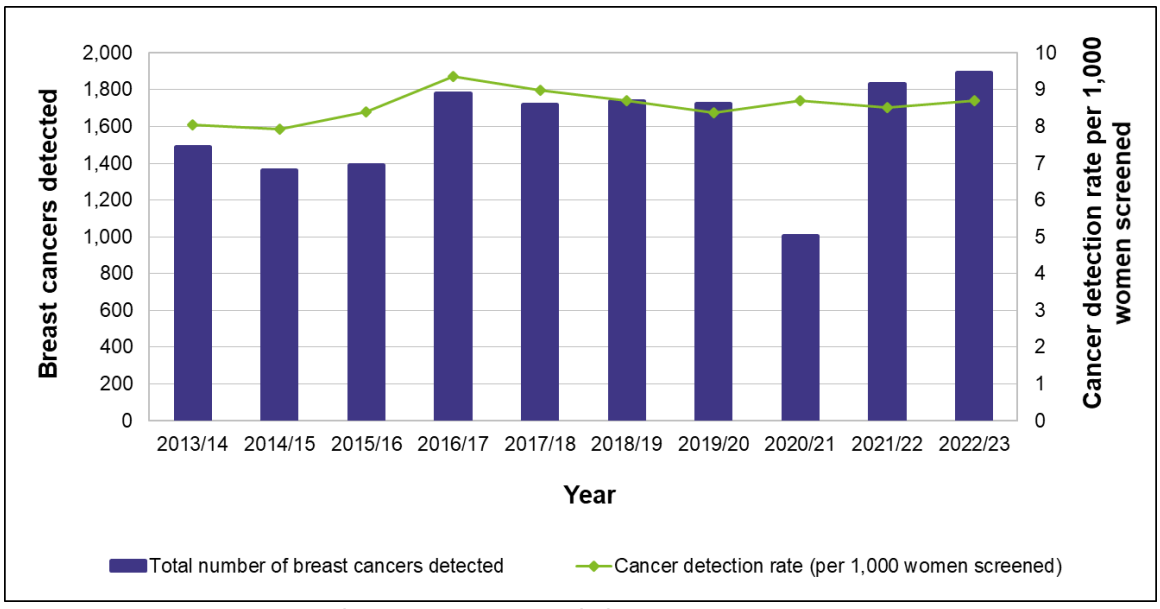
7.7. Breast Screening Outcomes

The most recent national statistics published in May 2024 noted the number of screen-detected breast cancers in women of all ages in Scotland in 2022/23 was 1,894 (rate of 8.7 per 1,000 women screened)27 (Figure 7.4).

In 2022/23, 84.6% (1,603) of the tumours detected were invasive breast cancers. Just under half (44.4%) of these were less than 15mm in size. Such small tumours are unlikely to be detected by physical examination, highlighting the importance of screening in the early detection of breast cancer. Picking up small (<15 mm) cancers is one of the key methods to achieve the aim of reducing deaths due to breast cancer.

NHSGGC specific outcome data is not available.

Figure 7.4. Trends in the number of breast cancers detected and cancer detection rates per 1,000 women screened: Scotland, 2013/2014 to 2022/2023 (all appointment types).



Source: PHS Breast Screening Programme Statistics, May 2024.

[26] Screening Uptake Data Zone maps
[27] Scottish breast screening programme statistics - Annual update to 31 March 2023 - Scottish breast screening programme statistics - Publications - Public Health Scotland (Accessed January 2025)

7.8. Challenges & Future Priorities

During this reporting period, West of Scotland Breast Screening Service mobile units were affected by mechanical issues. These units were not deployed in the Greater Glasgow & Clyde area at the time, however, this indirectly impacted on screening in NHSGGC due to delays in the schedule for these units. We will continue to work with National Service Scotland and suppliers to address issues with equipment and maintenance of the fleet of mobile units.

The service continues to face cost pressures. We will continue to work with National Services Scotland to address these.

The lease for the static site at Nelson Mandela Place in Glasgow, is due for renewal soon. A working group will develop and review options for continuation of service provision in a static site or sites. We will continue to work with NHSGGC Estates, Planning and local communities in order to secure sites for breast screening mobile units. We will prioritise locations by local intelligence in relation to uptake and accessibility.

As far as possible with current staffing profile, we will continue to actively monitor slippage of appointments and local uptake rates. Available screening appointments will continue to be optimised so we can maintain screening uptake rates above the minimum standard.

Capacity for assessment clinics remains a challenge. Whilst waiting time standards are currently under review the service continues to monitor waits closely and add additional appointments wherever possible.

Women are invited for screening based on GP practice and this can lead to women missing screening invitations. Managing this remains a challenge, however the process by which women are invited for screening will be considered as part of the work of the Breast Screening Modernisation Programme Board.

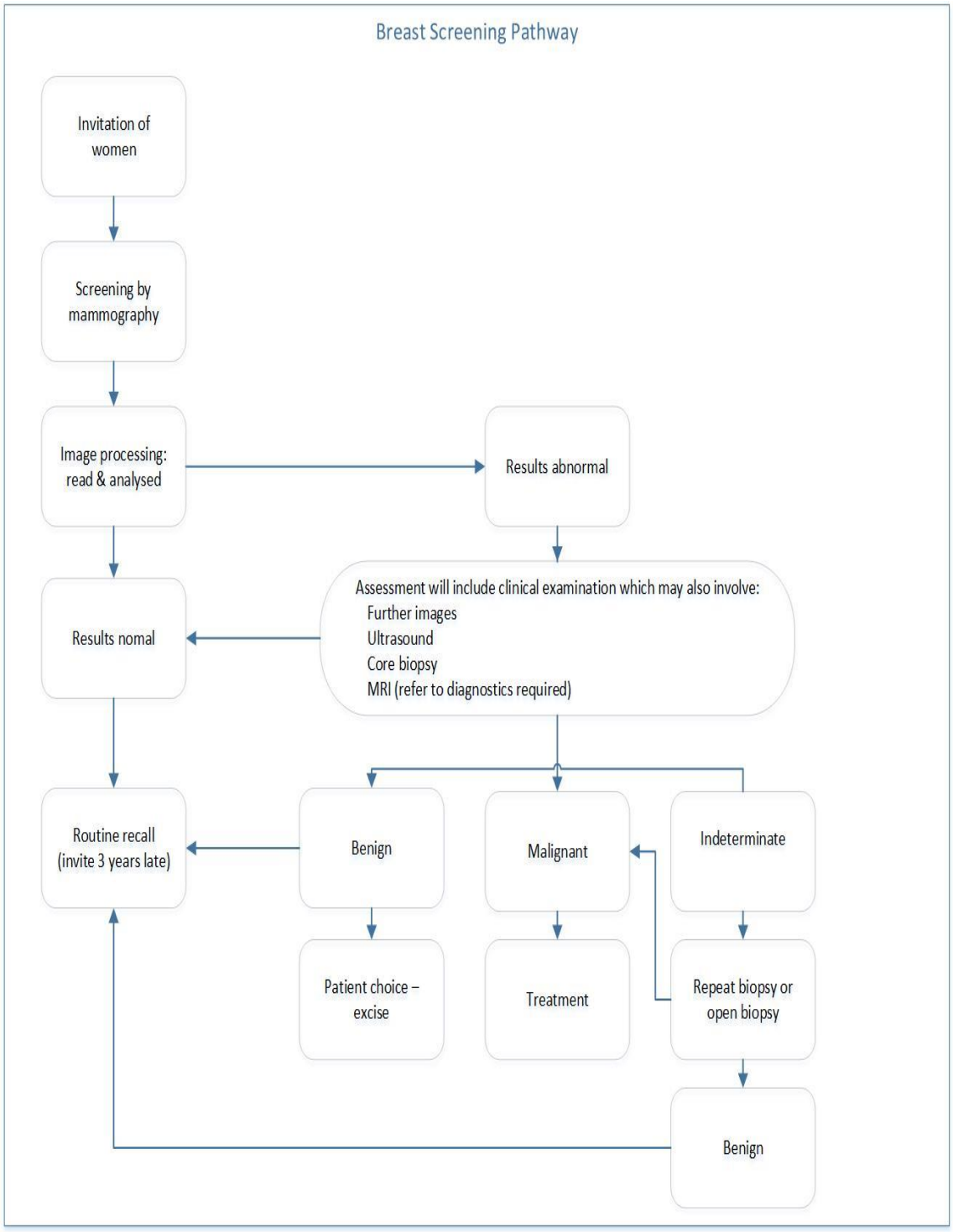
We will continue to prioritise telephone reminders to women invited for first screening round (50-52 years of age) and with any special requirements in our areas of low uptake.

Building on learning from engagement with individuals with a learning disability we will develop and implement good practice guidance to support participation in breast screening.

We will continue to progress actions identified within NHSGGC Inequalities Plan for Adult Screening programmes to enable a more coordinated approach to reducing inequalities in uptake through targeted activities, (see Section 10).

Appendix 7.1

Breast Screening Pathway



Appendix 7.2

Performance data in relation to NHSBSP Standards: Scotland, 1st April 2020 to 31st March 2023, routine appointments[28], females aged 50-70 years.

*This data is not available by NHS Board.

Standard	Appointment type[2]	Age group	Acceptable standard	Achievable standard	Results 2020/23
Attendance rate (percentage of women invited)	All routine appointments	50-70 years	>= 70%	>=80%	**72.8%**
*Invasive cancer detection rate (per 1000 women screened)	Routine –initial screen (prevalent) in response to first invitation	50-52 years	>= 2.7	>= 3.6	**6.3***
	Routine – subsequent screen (incident) (previous screen within 5 years)	53-70 years	>= 3.1	>= 4.2	**7.3***
*Small (<15mm) invasive cancer detection rate (per 1000 women screened)	Routine – initial screen (prevalent) in response to first invitation	50-52 years	>= 1.5	>= 2.0	**2.4***
	Routine – subsequent screen (incident) (previous screen within 5 years)	53-70 years	>= 1.7	>= 2.3	**3.5***
*Non-invasive cancer detection rate (per 1000 women screened)	Routine – initial screen (prevalent) in response to first invitation	50-52 years	>= 0.5	-	**1.4***
	Routine – subsequent screen (incident) (previous screen within 5 years)	53-70 years	>= 0.6	-	**1.3***
*Standardised Detection Ratio (SDR) (observed invasive cancers detected divided by the number expected given the age distribution of the population)	Routine – all initial screens (prevalent) and subsequent screen (incident) (previous screen within 5 years)	50-70 years	>= 1.0	>= 1.4	**1.50***
*Recalled for assessment rate (percentage of women screened)	Routine – initial screen (prevalent) in response to first invitation	50-52 years	<10%	<7%	**6.4%***
	Routine – subsequent screen (incident) (previous screen within 5 years)	53-70 years	<7%	<5%	**3.0%***
*Benign biopsy rate (per 1000 women screened)	Routine – initial screen (prevalent) in response to first invitation	50-52 years	< 1.5	< 1.0	**1.6***

[28] Routine appointments exclude self/GP referral appointments

	Routine – subsequent screen (incident) (previous screen within 5 years)	53-70 years	< 1.0	< 0.75	**0.5***

Source: Public Health Scotland Breast Screening Programme Statistics, annual update May 2024.
GREEN = acceptable and achievable standards met; AMBER = acceptable standard met; achievable standard not met; RED = acceptable and achievable standards not met.

Appendix 7.3

Members of West of Scotland Breast Screening Steering Group (At March 2024)

Ms Celia Briffa-Watt	Consultant in Public Health, NHS Lanarkshire (Chair)
Mr Paul Burton	Information Manager
Ms Lin Calderwood	National Portfolio Programme Manager, National Portfolio
Ms Margo Carmichael	Health Improvement Lead, NHS Lanarkshire
Ms Nuala Dawson	Consultant Radiologist
Dr Rob Henderson	Consultant in Public Health Medicine, NHS Highland
Dr Aileen Holliday	Clinical Effectiveness Coordinator, NHS Forth Valley
Ms Marion Inglis	Business Manager, WoSBSS
Ms Heather Jarvie	Public Health Programme Manager
Dr Jacqueline Kelly	Clinical Director, West of Scotland Breast Screening Service
Ms Khatijah McLellan	Community Liaison Officer, WoSBSS
Dr Graeme Marshall	Clinical Director, NE Glasgow HSCP
Ms Mary McKee	General Manager, Diagnostic Imaging
Dr Alison Potts	Consultant in Public Health, NHSGGC
Dr Archana Seth	Consultant Radiologist (QA Lead Radiologist) Scotland
Ms Cat Graham	Superintendent Radiographer
Ms Lynne Peat	Public Health Programme Manager, NHS Highland

Chapter 8 – Cervical Screening

Summary

Cervical screening	
Why?	Early identification of cervical cancer and cancer pre-cursors Prevention of morbidity and mortality
Intervention	Screening offered to all eligible women aged 25-64 years, every five years Screening sample (smear sample) taken in primary care Screening test is HPV test and cytology Where screening test is positive, referral to colposcopy for further investigation Rapid referral into surgery and oncology as needed
Activity in 2023/24	65.2% screening uptake (233,241 women screened) in the last screening round 2019/20 to 2023/24
Outcomes	Uptake similar to last year, but has fallen over the last six years Uptake does not meet the national target of 80% Large variation in uptake by age group, with lowest uptake in younger age groups Variation in uptake across HSCP areas Variation in uptake across census ethnic groups Uptake lower for those with learning disability (28.3%) Comparable uptake for those with severe or enduring mental illness (62.7%) Cervical invasive cancer audit reviewed 73 new cases of cervical cancer in NHSGGC residents – cervical cancer higher in most deprived quintile, those with inadequate screening history, younger age groups National ‘no cervix’ audit progressing in NHSGGC, due to conclude in March 2025, almost 30,000 medical records will be reviewed
Planned activity	Conclusion of the national ‘No Cervix’ audit Continue work to reduce colposcopy waiting times Develop and deliver a programme of targeted screening awareness campaigns and engagement activities Deliver learning disability awareness training and develop good practice guidance for staff delivering informed choice conversations

Chapter Contents

8.1. Background

Cervical cancer was the twelfth most common cancer in females in Scotland and the most common in women under the age of 35 years in 2022 (the most recent year for which cancer incidence data is available)29.

In 2022, 61 women residing in the NHSGGC area were diagnosed with cervical cancer, which gives an age-standardised incidence rate of 10.2 per 100,000 of the female population, lower than the national rate of 11.8 per 100,000. In 2021, (the most recent year for which cancer mortality data is available) there were 30 deaths from cervical cancer in women residing in NHSGGC, this gives an age standardised mortality rate of 5.1 per 100,000 female population, higher than the national rate of 3.6 per 100,00030.

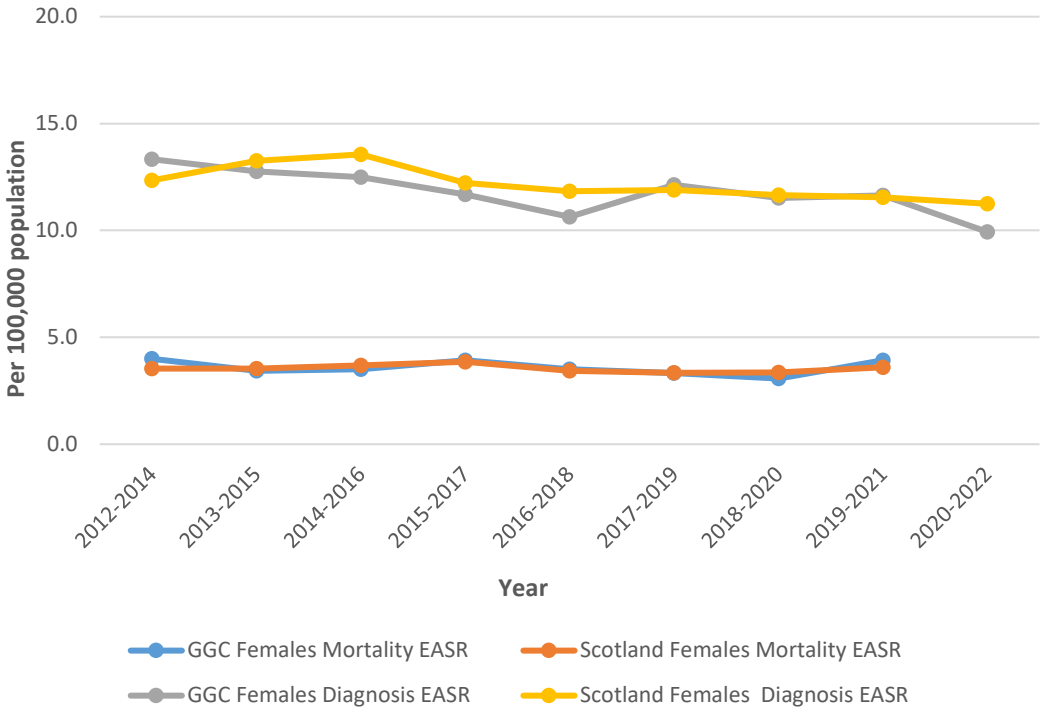
Standardised incidence and mortality rates across rolling three year periods for cervical cancer for NHSGGC and Scotland are illustrated in Figure 8.1. In the 10 year period between 2012 and 2022, the age-standardised rolling three years incidence rate of cervical cancer in women in Greater Glasgow & Clyde decreased from 13.3 to 9.9 per 100,000 population. Rolling three years mortality rates of cervical cancer in women in Greater Glasgow & Clyde decreased from 4.0 to 3.9 per 100,000 during nine year period from 2012 to 2021. There was a larger than expected fall in cervical cancer incidence during 2019/20, which has been attributed to under-diagnoses due to COVID-19 pandemic.

Risk factors for cervical cancer include:

- Exposure to oncogenic types of HPV through all kinds of sexual contact, including touching. The body clears most HPV infections, however a minority become persistent HPV infection which can transform normal cervical cells into abnormal ones, which can develop to precancerous lesions and then invasive cancer. These changes usually occur over a period of 10 to 20 years.
- Increased exposure to HPV, such as a multiple number of sexual partners.
- Immunosuppressive diseases or infections, that make the body more vulnerable to infection.
- Smoking.

[29] Cancer incidence in Scotland - to December 2022 - Cancer incidence in Scotland - Publications - Public Health Scotland December 2024 (Accessed December 2024)
[30] Cancer mortality in Scotland - Annual update to 2021 - Cancer mortality - Publications - Public Health Scotland, October 2022 (Accessed December 2024)

Figure 8.1. Cervical cancer diagnosis and mortality by rolling three year European Age Standardised Rate (EASR) per 100,000 population, NHSGGC and Scotland, 2012/14 to 2020/22



Diagnosis Data Source: PHS November 2024
Mortality Data Source: PHS October 2022

8.2. Aim of cervical screening programme

Cervical screening is a national screening programme which aims to prevent cervical cancer or detect cervical cancer early so it can be treated promptly.

Cervical screening is offered to women and anyone with a cervix aged between 25 and 64 years. It involves taking a sample of cells from the cervix (a smear test) and testing those cells for High Risk Human Papilloma Virus (Hr-HPV) which, if left untreated, can lead to cervical cancer.

The National Cervical Screening Programme performance and quality is monitored via defined Key Performance Indicators (KPI's)31 and National Cervical Screening Standards32.

[31] Scottish cervical screening programme statistics - Annual update to 31 March 2022 - Scottish cervical screening programme statistics - Publications - Public Health Scotland (Accessed December 2024)
[32] Cervical screening standards – Healthcare Improvement Scotland (Accessed December 2024)

8.3. Eligible population

Cervical screening is routinely offered to women and anyone with a cervix registered with a GP practice between the ages of 25-64 years every 5 years.

Participants on non-routine screening (where screening results have shown changes that need further investigation or follow up) will be recalled more frequently and invited up to 70 years of age.

8.4. The cervical screening pathway

Women are called for cervical screening test once every five years. Call/recall for screening is managed through a national database, the Scottish Cervical Call Recall System (SCCRS). Invitations to attend for screening are sent by post to all eligible women, with up to three reminders being sent if they do not attend for screening. Women who miss a screening test are automatically called again five years later. Call/recall for the next screening test is automatic depending on the outcome of the current screening test. Screening tests are usually undertaken at GP practices, by practice nurses.

The cervical screening sample is tested for High Risk Human Papilloma Virus (Hr-HPV) which causes cervical cancer. If the Hr-HPV test is positive, cells in the sample are visualised with cytology. If cytology identifies cell changes (the test is positive), a woman is invited to attend for colposcopy. If a screening test is negative then recall for screening will be the routine interval of five years.

Colposcopy clinics, located in hospital out-patient settings, involves visualising the cervix to identify if there are any changes. If changes are identified, cells and biopsied tissue may be removed for pathological investigation or further tests may be undertaken.

A summary of the Hr-HPV primary pathway is provided in **Appendix 8.1.**

8.5. Preventing HPV infection

HPV infection can cause cervical cancer and HPV immunisation is offered to teenagers in Scotland as part of the national immunisation programme, to prevent cervical cancer. HPV vaccination has been offered to all girls aged 11-13 years since 2008, and all boys since 2019.

There are however, many cancer-causing types of HPV and the vaccine may not protect against all these types. As a result, women and people with a cervix are still invited to participate in the cervical screening programme. Vaccine uptake data is available for all ages

from Public Health Scotland, the latest available data if for the school year 2023/2024[33].

The HPV vaccine was first offered in Scotland in 2008 to girls aged 11-16 years. Girls vaccinated in 2008 are now screening age and there is a national programme to monitor cervical screening uptake in this age group to understand barriers to screening. Recent evidence published in 2024 concluded the no cervical cancer cases have been detected in fully vaccinated women following HPV immunisation at age 12-13 since the HPV immunisation programme commenced in Scotland in 2008[34].

Table 8.1 shows most recent published cervical screening uptake among eligible women who were offered the HPV vaccine at school. Women aged 25-31 years who are fully vaccinated are more likely to have attended cervical screening than women who are incompletely vaccinated or unvaccinated. Women aged 25-31 years who are unvaccinated have a lower uptake of cervical screening at 31.2% in NHSGGC (compared to 37.9% in Scotland overall).

Table 8.1. Uptake of cervical screening by women aged 25-31 years who are fully, partially or not immunised with HPV vaccine, NHSGGC and Scotland, April 2021 to March 2022

	Uptake of cervical screening (%)	
	NHSGGC	**Scotland**
HPV Immunisation status (Full[1])	*68.7*	*69.6*
HPV Immunisation status (Incomplete[1])	*67.0*	*67.5*
No HPV Immunisation status	*31.2*	*37.9*

1. The Immunisation Status of FULL is where the individual has been fully immunised, i.e. had all HPV doses. Incomplete is where the individual has had at least one of the Immunisations but not all of them.
2. Based on SCCRS population denominator (excluding medically ineligible women).
Source: Public Health Scotland , cervical screening programme statistics 2022

8.6. Eligibility for cervical screening

Over a five year period (a single call/recall cycle) in NHSGGC, 357,503 women were eligible to attend cervical screening.

In the call/recall database (SCCRS), 129,615 (35.3%) of eligible women had an active exclusion applied to their record, meaning that

[33] HPV immunisation statistics Scotland - School year 2023/2024 - HPV immunisation statistics Scotland - Publications - Public Health Scotland

[34] Invasive cervical cancer incidence following bivalent human papillomavirus vaccination: a population-based observational study of age at immunization, dose, and deprivation | JNCI: Journal of the National Cancer Institute | Oxford Academic

they are not invited for cervical screening during the current screening round.

Exclusions are applied for a variety of reasons, (Table 8.2). The main reason for exclusion, 'defaulter' (81.7%) relates to women who did not attend for screening following an initial invite and two reminder invites. If they do not attend following these reminders, SCCRS applies a 'defaulter' exclusion and they are excluded from call/recall until their next scheduled recall date (five years for routine recall). Women with a 'defaulter' exclusion can make an appointment for screening in primary care at any time, however they will not be sent a further invite until the next five-year call/recall cycle.

Table 8.2. Exclusions from cervical screening among eligible population, NHSGGC, 2023-24

Exclusion	Frequency	%
Defaulter	105,873	*81.7*
CHI Exclusion	10,390	*8.0*
No Cervix	10,320	*8.0*
Opted Out	2,103	*1.6*
Not Clinically Appropriate	322	*0.2*
No Further Recall	314	*0.2*
Pregnant	276	*0.2*
Anatomically Impossible	7	*<0.1*
Co-morbidity	6	*<0.1*
Terminally Ill	4	*<0.1*
Total	**129,615**	

Source: SCCRS (October 2024)

Medical exclusion includes categories: anatomically impossible, co-morbidity and terminally ill. CHI exclusion categories include: transferred out of Scotland, redundant (because of linked records), transferred out as present address unknown, or deceased. A 'No cervix' exclusion is usually added when a woman has undergone hysterectomy and had their cervix removed. Opted-out is when a woman notifies their GP that they do not want to attend for screening and do not want to receive reminders to attend. This is usually done after discussion with their GP and can be reversed at any time.

8.7. Programme Performance and delivery

Screening is offered to women once every five years unless they are on a treatment or on a higher risk pathway. Prompts and reminders are sent to remind women to contact their GP practice to make an appointment for screening. Uptake is reported over a five and a half years period, the time when every eligible women will have been called for screening.

National Cervical Screening Programme Statistics are published annually by Public Health Scotland. Due to national delays in publication of 2023 programme statistics, Appendix 8.2 summarises the most recent published KPIs for NHSGGC and Scotland for time period 1st April 2021 to 31st March 2022.

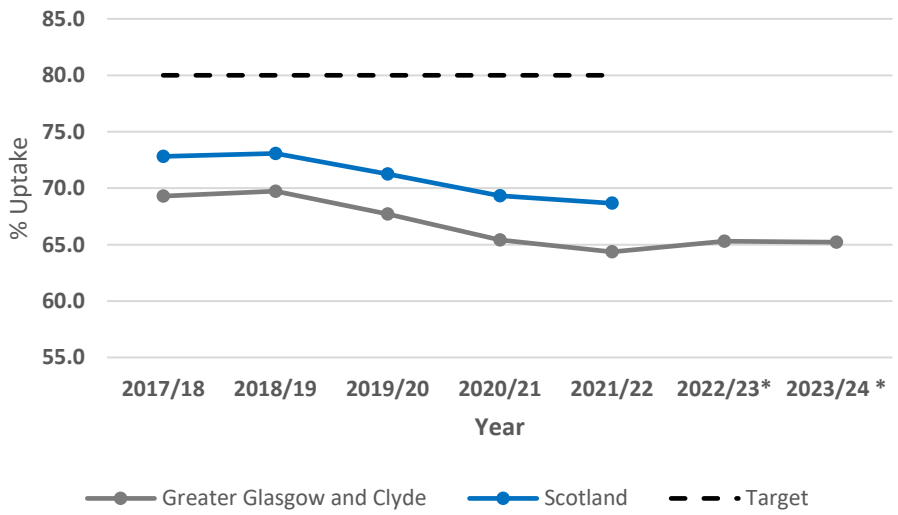
Local monitoring data is presented in this report to provide uptake and outcome data for period 1st April 2023 to 31st March 2024. As a result of differences in data extract dates and data definitions, numbers in local data analysis may differ from those presented in forthcoming published national programme reports.

For cervical screening, uptake is defined as **percentage of eligible women aged 25-64 screened within the last 5.5 years**

8.8. Uptake of Cervical Screening

In recent years, there has been a fall in the proportion of women participating in cervical screening. The fall pre-dates the COVID-19 pandemic in 2020/21, (**Figure 8.2)**. Uptake in Scotland and NHSGGC remains below the national target of 80%.

Figure 8.2. Uptake of cervical screening in Scotland and NHS GGC, 2017/18 to 2023/24.



Source: PHS Cervical Screening Programme Statistics,
*NHSGGC SCCRS extract (November 2023 and October 2024), GGC statistics only

During the period April 2023 to March 2024, the overall uptake of cervical screening in NHSGGC was 65.2%.

Uptake by five year age groups is detailed in **Table 8.3**. Younger women have a poorer uptake of cervical screening than older women.

Among women aged 25 to 29, the uptake rate was 46.5% compared 74.7% among women aged 50-54 years of age. Uptake then steadily decreases with age to 64.4% among women 60-64. No age group achieved the 80% target uptake.

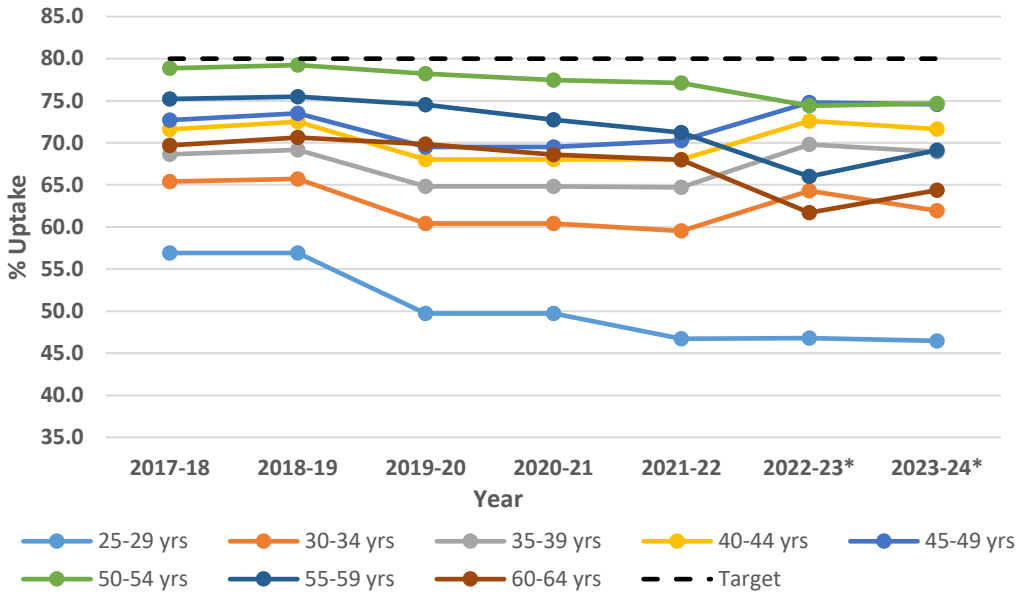
Table 8.3. Uptake of cervical screening in the previous call/recall round (5.5 years) by five year age groups, NHSGGC, 2023/24

Age Group	Not Screened	Screened	Total	*% Uptake*
25-29	31,292	27,164	58,456	*46.5*
30-34	20,772	33,787	54,559	*61.9*
35-39	15,259	33,864	49,123	*68.9*
40-44	12,500	31,591	44,091	*71.6*
45-49	9,142	26,776	35,918	*74.5*
50-54	9,548	28,155	37,703	*74.7*
55-59	12,392	27,764	40,156	*69.1*
60-64	13,357	24,140	37,497	*64.4*
Total	**124,262**	**233,241**	**357,503**	***65.2***

Source: SCCRS (October 2024)

In the time period between 2017-18 and 2023-24 uptake has generally fallen in each age group. In 2023-24, uptake increased among women within 55-59 and 60-64 years of age. However uptake among women aged 25-29, 30-34, 35-39 and 40-45 years of age showed a decline. Uptake among women aged 45-49 and 50-54 stayed the same from the previous year (Figure 8.3). There remains a gap in uptake between the younger women aged 25-29 years and those in older age groups.

Figure 8.3. Uptake of cervical screening in the previous call/recall round (5.5 years) by five year age group, NHSGGC, 2017-18 to 2023-24



Source: PHS Cervical Screening Programme Statistics,
*NHSGGC SCCRS extract (August 2023 and October 2024), GGC statistics only

Uptake was higher in those residing in least deprived areas (67.3%) compared with women residing in the most deprived areas (63.1%). The target of 80% was not met in any deprivation quintile, (Table 8.4).

Table 8.4. Uptake of cervical screening among eligible population by SIMD for NHS Greater Glasgow and Clyde, 2023-24 in previous 5.5 years

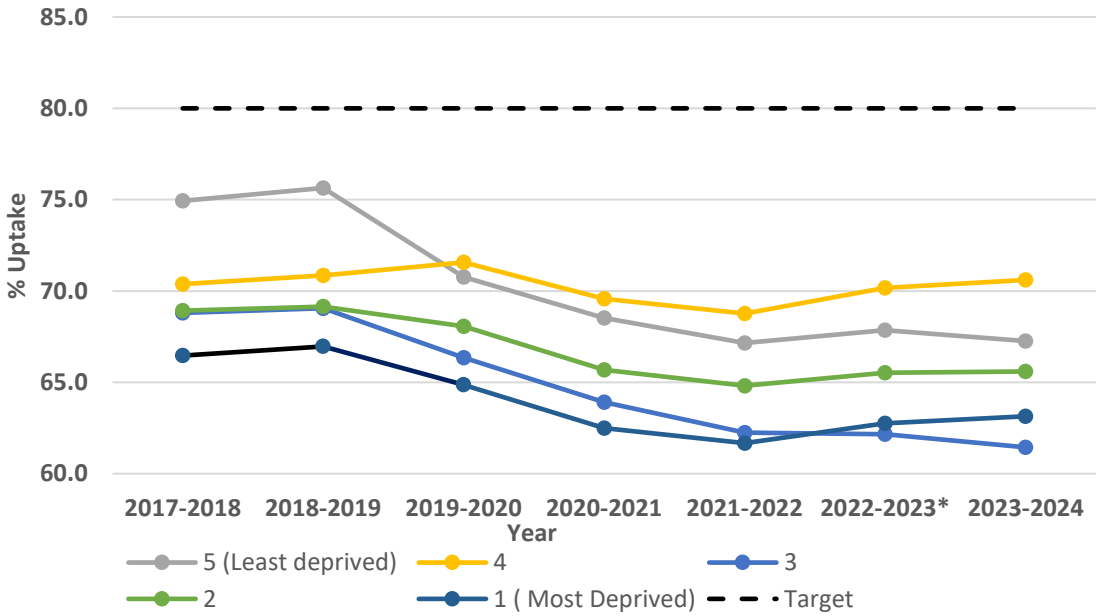
SIMD Quintile	Not Screened	Screened	Total	*% Uptake*
1 (Most Deprived)	44,811	76,757	121,568	*63.1*
2	22,214	42,360	64,574	*65.6*
3	18,678	29,764	48,442	*61.4*
4	14,780	35,495	50,275	*70.6*
5 (Least Deprived)	23,779	48,865	72,644	*67.3*
Total	**124,262**	**233,241**	**357,503**	***65.2***

Source: SCCRS (October 2024)

Over time screening uptake by deprivation quintile has fallen in each quintile, (Figure 8.4). Those women residing in the most deprived SIMD

quintile consistently have the poorest screening uptake, however uptake in 2023-24 reporting period was similar to 2022-23.

Figure 8.4. Uptake of cervical screening amongst eligible women in the previous 5.5 years, by SIMD quintile for NHSGGC residents, 2017-18 to 2023-24



Source: PHS Cervical Screening Programme Statistics,
*NHSGGC SCCRS extract (November 2023 and October 2024), GGC statistics only

Further local analysis was undertaken to explore variations in uptake of 2023/24 screening round for populations with protected characteristics (including ethnicity, learning disability and mental health), and geographically by Health and Social Care Partnership (HSCP) area and at community level via mapping screening uptake by data zone.

Analysis by ethnicity was undertaken via data linkage to self-reported ethnicity reference dataset held within West of Scotland Safe Haven, see **Table 8.5**. Uptake was above 70% for the Showman/Showwoman, Oher British, Irish, Scottish, African, Scottish African or British African, Caribbean or Black and Bangladeshi, Scottish Bangladeshi or British Bangladeshi groups, and below 70% for all other census ethnic groups. Lowest uptake was seen in women who did not have ethnicity recorded (unknown, opt-out / not-known).

Table 8.5. Uptake of cervical screening amongst eligible women in the previous 5.5 years by ethnicity, NHSGGC, 2023/24

2021 Census Ethnicity Category[35]	Not Screened	Screened	Total	*% Uptake*
Showman/Showwoman	6	30	36	*83.3*
Irish	415	1,757	2,172	*80.9*
Scottish	49,288	167,429	216,717	*77.3*
Other British	4,652	14,884	19,536	*76.2*
African, Scottish African or British African	1,022	3,027	4,049	*74.8*
Gypsy/Traveller	294	847	1,141	*74.2*
Caribbean or Black	307	740	1,047	*70.7*
Bangladeshi, Scottish Bangladeshi or British Bangladeshi	83	200	283	*70.7*
Roma	16	35	51	*68.6*
Other white ethnic group	3,068	6,214	9,282	*66.9*
Polish	783	1,562	2,345	*66.6*
Any Mixed or multiple ethnic group	1,222	2,396	3,618	*66.2*
Other	1,068	1,956	3,024	*64.7*
Indian, Scottish Indian or British Indian	1,717	3,129	4,846	*64.6*
Pakistani, Scottish Pakistani or British Pakistani	2,939	5,183	8,122	*63.8*
Other ethnic group	1,146	1,968	3,114	*63.2*
Other ethnic group Arab, Scottish Arab or British Arab	487	713	1,200	*59.4*
Chinese, Scottish Chinese or British Chinese	2,583	2,520	5,103	*49.4*
Opt out, not known, null	53,166	18,651	71,817	*26.0*
Grand Total	**124,262**	**233,241**	**357,503**	***65.2***

Source: SCCRS extract (October 2024), Safe Haven Ethnicity dataset linkage (December 2024)

Uptake of health services amongst those with learning disability is a priority for NHSGGC and this includes uptake of offer of screening. **Table 8.6** shows that 2,045 of the 357,503 individuals eligible for cervical screening were registered with a learning disability (0.6%)[36]. Uptake of cervical screening was 28.3% amongst those with learning disability. This is considerably lower than uptake of cervical screening amongst the rest of the eligible population in NHSGGC.

[35] Ethnic group | Scotland's Census (accessed February 2025)

[36] LD register used for screening CHI linkage comprises legacy LD Local Enhanced Service register and snapshot of 2024 NHSGGC LD health check register.

Table 8.6. Uptake of cervical screening in previous 5.5 years by learning disability, NHSGGC residents, 2023-24

Learning Disability	Not Screened	Screened	Total	*% Uptake*
Rest of population	122,795	232,663	355,458	*65.5*
Registered	1,467	578	2,045	*28.3*
Total	**124,262**	**233,241**	**357,503**	***65.2***

Source: SCCRS ; Learning Disability Register (October 2024)

Uptake of medical services for those with enduring mental illness is a priority for NHSGGC and this includes uptake of offer of screening. Data linkage was undertaken with PsyCIS database. Individuals registered on PsyCIS have had at least one episode of psychosis which is typically seen in patients with a severe or enduring mental illness.

A total of 2,245 of the 357,503 women eligible for cervical screening were registered on PsyCIS (0.6% of the total eligible population). Uptake of cervical screening amongst those eligible and with an episode of psychosis was 62.7%, see Table 8.7. This was similar to the uptake of screening amongst the rest of the eligible population in NHSGGC (65.3%).

Table 8.7. Uptake of cervical screening in the previous 5.5 years by severe and enduring mental health, NHSGGC, 2023-24

PsyCIS	Not Screened	Screened	Total	*% Uptake*
Rest of population	123,424	231,834	355,258	*65.3*
Registered	838	1,407	2,245	*62.7*
Total	**124,262**	**233,241**	**357,503**	***65.2***

Source: SCCRS ; PsyCIS (October 2024)

Variations in cervical screening uptake across HSCPs persist (Table 8.8). They range from 49.9% in Glasgow City North West Sector, to 78.8% in East Dunbartonshire HSCP, representing almost thirty percentage points difference. No HSCP met the minimum target of 80% uptake of screening.

When the known effects of deprivation and age are taken into account by standardisation, using Standardised Uptake Rate (SUR), the variation in uptake across HSCPs is reduced, but there is still a significant gap between lowest (52.8%, North West Glasgow) and highest uptake (73.0%, East Dunbartonshire). Factors other than deprivation and age must be affecting uptake across the region.

Table 8.8. Uptake of Cervical Screening in the previous 5.5 years by HSCP, shown as crude (% screened) and standardised (% SUR) uptake, NHSGGC, 2023/24

HSCP	Not Screened	Screened	Total	*% Screened*	*% Screened LCI*	*% Screened UCI*	SUR %	SUR % LCI	SUR % UCI
East Dunbartonshire HSCP	6,059	22,479	28,538	*78.8*	*77.74*	*79.80*	*73.0*	*72.1*	*74.0*
East Renfrewshire HSCP	5,863	19,505	25,368	*76.9*	*75.81*	*77.97*	*71.1*	*70.1*	*72.1*
Glasgow North East Sector	23,774	36,391	60,165	*60.5*	*59.86*	*61.11*	*62.5*	*61.8*	*63.1*
Glasgow North West Sector	39,297	39,126	78,423	*49.9*	*49.40*	*50.39*	*52.8*	*52.3*	*53.4*
Glasgow South Sector	23,598	46,665	70,263	*66.4*	*65.81*	*67.02*	*66.5*	*65.9*	*67.1*
Glasgow City	86,669	122,182	208,851	*58.5*	*58.17*	*58.83*	*60.4*	*60.0*	*60.7*
Inverclyde HSCP	5,623	14,655	20,278	*72.3*	*71.10*	*73.44*	*70.8*	*69.6*	*71.9*
Renfrewshire HSCP	13,497	36,691	50,188	*73.1*	*72.36*	*73.86*	*71.1*	*70.4*	*71.9*
West Dunbartonshire HSCP	6,551	17,729	24,280	*73.0*	*71.94*	*74.09*	*72.2*	*71.2*	*73.3*
Total	**124,262**	**233,241**	**357,503**	***65.2***	***64.98***	***65.51***			

Source: SCCRS (October 2024)
SUR – Standardised Uptake Rate
LCI – lower confidence interval
UCI – upper confidence interval

Mapping of cervical screening uptake rates by data zones was undertaken to provide further insight into variation in uptake at local geographical level. This illustrates that uptake rates in some pockets of NHSGGC can be significantly lower than HSCPs levels, as 174 of the 1,456 data zones had uptake rates between 40-59% and a further 56 data zones had uptake rates of below 40%. Uptake maps are available on the PHSU website.[37]

8.9. Cytopathology Laboratory

All screening samples are processed by two nationally commissioned Cytopathology Laboratories, located in NHS Lanarkshire and NHS Greater Glasgow & Clyde. Public Health Scotland report annual laboratory workload statistics, detailing number of screening tests processed and laboratory turnaround times against national standards, the most recent year for which this data is available is 2022[38].

8.10. Colposcopy

When a screening sample tests positive for HPV and positive for cell changes at cytology, a colposcopy appointment is offered. Colposcopy enables further investigation by visualising the cervix. Screening test results (HPV positivity and type and extent of abnormality seen at cytology) inform whether colposcopy should be routine, or high risk – where individuals are seen more quickly.

Colposcopy is undertaken in out-patient clinics across NHSGGC, principally Stobhill, Royal Alexandria, Vale of Leven and Inverclyde Royal Hospitals. Outcomes of colposcopy include return to routine screening call/recall for those with no cause for concern; higher frequency screening call/recall for those who need closer monitoring; and biopsy and pathology to identify if any detected changes are cancer.

Colposcopy waiting times have improved dramatically, decreasing from over 50 weeks wait for routine appointment two years ago to 8-12 weeks for routine referrals and 2-3 weeks for urgent suspicion of cancer referrals at the time of this report.

In 2023-24, there were 5,466 new appointment attendances and 2,091 return appointments attendances for colposcopy. These figures includes appointments for women who tested positive at screening test and women who were symptomatic.

[37] Screening Uptake Data Zone maps

[38] Scottish cervical screening programme statistics - Annual update to 31 March 2022 - Scottish cervical screening programme statistics - Publications - Public Health Scotland (accessed December 2024)

Colposcopy service performance benchmarking

There are national performance targets for colposcopy services in Scotland, these are shown in Table 8.11 with details of performance of colposcopy services across NHSGGC.

In Scotland, the Colposcopy Quality Assurance is monitored through NCCIAS39 and its Benchmarking standards. The Benchmarking report is discussed in the colposcopy user meetings twice per year to ensure practices within all units in NHSGGC meet the Scottish targets and in line with the average practices in Scotland within the same duration.

All main colposcopy units in NHSGGC did not meet the Scottish target for cytoreversion, adequacy of biopsy and see and treat rate. This was discussed in colposcopy user meetings with further recommendations to review the local data and practices. In general, performance against the other standards was either met or was close to the Scottish targets and comparable to the average practice in Scotland.

[39] National Colposcopy Clinical Information Audit System

Table 8.11 Performance of colposcopy services across NHSGGC against benchmarking standards, April 2023-March 2024

	Total New Outpatient Attendances	New Outpatient Attendances 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 high grade dyskaryosis having biopsy	% Recommended for treatment as Inpatient
TARGET	**None**	**>= 50 (per annum)**	**> 90%**	**≤ 5%**	**> 97%**	**≥ 90%**	**> 90%**	**< 20%**
SCOTLAND	**16,194**	**13,148**	**85.1**	**4.7**	**96.6**	**80.5**	**89.5**	**10.5**
NHSGGC	**5,424**	**4,946**	**78.3**	**3.4**	**94.4**	**78.5**	**88.4**	**11.4**
Royal Alexandra Hospital	2,480	2,277	73.5	3.4	94.7	65.8	84.2	11.7
Inverclyde Royal Hospital	541	470	72.9	2.0	95.8	66.7	78.7	13.2
Vale of Leven Hospital	132	120	60.0	5.9	92.2	100.0	92.6	5.9
Glasgow Royal Infirmary	5	5	100.0	0.0	100.0	0.0	100.0	0.0
Stobhill Hospital	2,266	2,074	82.3	3.6	94.1	81.0	91.7	11.1

Source: National Colposcopy Clinical Information & Audit System (Extracted November 2024)

8.11. National Invasive Cervical Cancer Audit

This audit reviews all cases of invasive cervical cancer diagnosis in order to identify variations in practice, the reasons for these variations and ultimately how to improve the quality of the screening and clinical services. Findings from invasive cervical cancer audit are collated nationally and published annually in Public Health Scotland Cervical Cancer Quality Performance Indicators Report40.

NHSGGG Invasive cancer Audit Group, comprised of specialists from screening call/recall, public health, pathology and gynaecology. The group meets quarterly. In this reporting period (1st April 2023 to 31st March 2024), NHSGGC audit group reviewed the medical notes of 73 women who developed invasive cervical cancer and had a pathology diagnosis made in NHSGGC laboratories. These included women who had cancer detected via cervical screening, symptomatic presentation or by incidental finding.

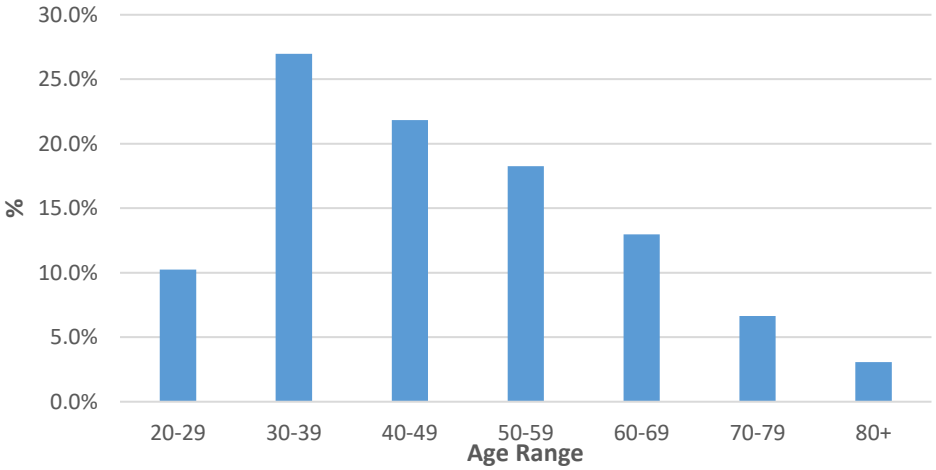
In the ten year period from 1st April 2014 to 31st March 2024, a total of 586 NHSGGC residents who developed invasive cervical cancer had a pathology diagnosis made in NHSGGC laboratories.

Age distribution of invasive cervical cancer cases

The age distribution of NHSGGC residents diagnosed cervical cancer cases is shown in Figure 8.6. More than half (59.0%) cases are in women under the age of 50 years, with 10.2% in women under 30 years, 27.0% in women aged 30-39 years and 21.8% in women aged 40-49 years.

[40] Cervical cancer Quality Performance Indicators - Patients diagnosed between October 2017 and September 2020 - Cervical cancer - Publications - Public Health Scotland (Accessed November 2023)

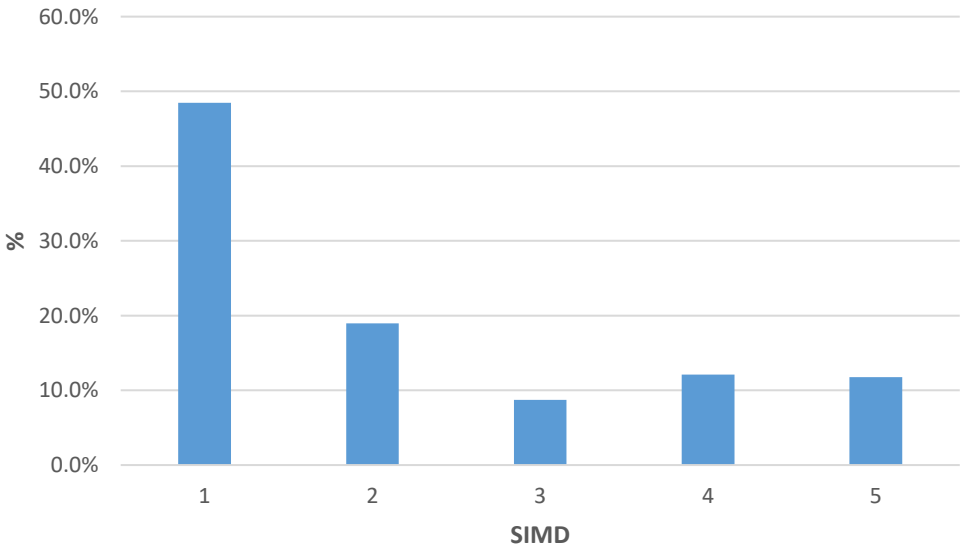
Figure 8.6. Age distribution of invasive cervical cancer cases audited in women resident in NHSGGC, diagnosis date 1st April 2014 to 31st March 2024, 10 year age bands



Source: NHSGGC Invasive Cancer Audit (December 2024)
SIMD distribution of invasive cervical cancer cases

The average SIMD distribution of cases of NHSGGC residents from the last ten years is shown in **Figure 8.7**. Almost half (48.9%) of women diagnosed with invasive cervical cancer over the last 10 years resided in the most deprived SIMD quintile.

Figure 8.7. SIMD distribution of invasive cervical cancer cases audited in women resident in NHSGGC, diagnosis date 1st April 2014 to 31st March 2024, SIMD quintiles.



Source: NHSGGC Invasive Cancer Audit (December 2024)

How invasive cervical cancers were detected

Over the last ten years of invasive cancer audit, invasive cervical cancer cases in women resident in NHSGGC were detected through cervical screening (39.4%), by women presenting to medical services with symptoms (58.2%) and through incidental findings when women were being investigated for other illnesses (1.5%).

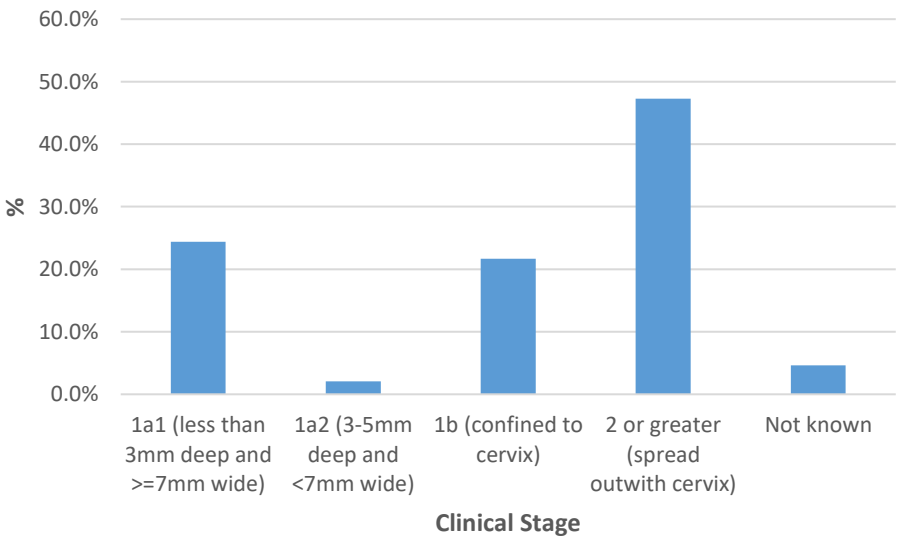
Screening history of women with invasive cervical cancer

Of the 586 women with confirmed invasive cancer, 32.6% of women had an adequate screening history, meaning that they had regularly attended screening; 56.7% of cases had an incomplete screening history where the women had not attended for smear test in response to some or all screening invitations.

Clinical stage of invasive cervical cancers at diagnosis

Invasive cervical cancers are graded or 'staged' based on their size and whether they are confined to the cervix or have grown into surrounding tissues. The proportion of invasive cervical cancer cases at each stage is shown in Figure 8.8, averaged for the last ten years.

Figure 8.8. Clinical stage of invasive cervical cancer cases audited in women resident in NHSGGC, 1st April 2014 to 31st March 2024



Source: NHSGGC Invasive Cancer Audit (December 2024)

8.12. Training

NHSGGC offers training to smear-takers working in primary care and other dedicated smear-taking clinics (see Cervical Skills Training - NHSGGC). To become a smear-taker an initial training day followed by a period of supervised working must be undertaken. Those who become qualified at the end of this are held on a register with NHSGGC and must attend update training at least once every three years.

The initial day of training and the update day are given by clinical staff and staff within the screening programme. Aspects of the screening programme that are incorporated into the training day and update day include:

- how to use SCCRS and any changes or updates;
- changes and updates for call/recall;
- lab results, what they mean and any changes to testing or process;
- any delays in the screening programme;

- programmes of work to improve inequalities in uptake and attendance.

In 2023-24, three initial training days were delivered, with 37 people attending including GPs, practice nurses, sexual health nurses, specialist registrars and other healthcare professionals. Five half-day update training sessions were delivered, attended by 118 people.

8.13. Challenges and Future Priorities

In 2021 the Scottish Government announced that an audit would be undertaken of all women in the SCCRS database currently excluded from call/recall with the ‘no cervix’ exclusion. Discrepancies in how this exclusion had been applied were identified during routine invasive cervical cancer audit. The ‘no cervix’ exclusion is usually applied to women following hysterectomy. The audit examines the clinical evidence to support the ‘no cervix’ exclusion for all women in the SCCRS database, to make sure that the exclusion has been applied appropriately. NHSGGC commenced the review of almost 30,000 from June 2023, and expect to conclude end of March 2025.

We will continue to work to reduce waiting times for clinical investigation of positive screening results.

We will develop and deliver a programme of targeted cancer screening awareness campaigns and engagement activities, targeting GP practices and communities where uptake is lowest.

Building on learning from engagement with individuals with a learning disability, we will deliver learning disability awareness training and develop good practice guidance for staff delivering cervical screening to support informed choice conversations

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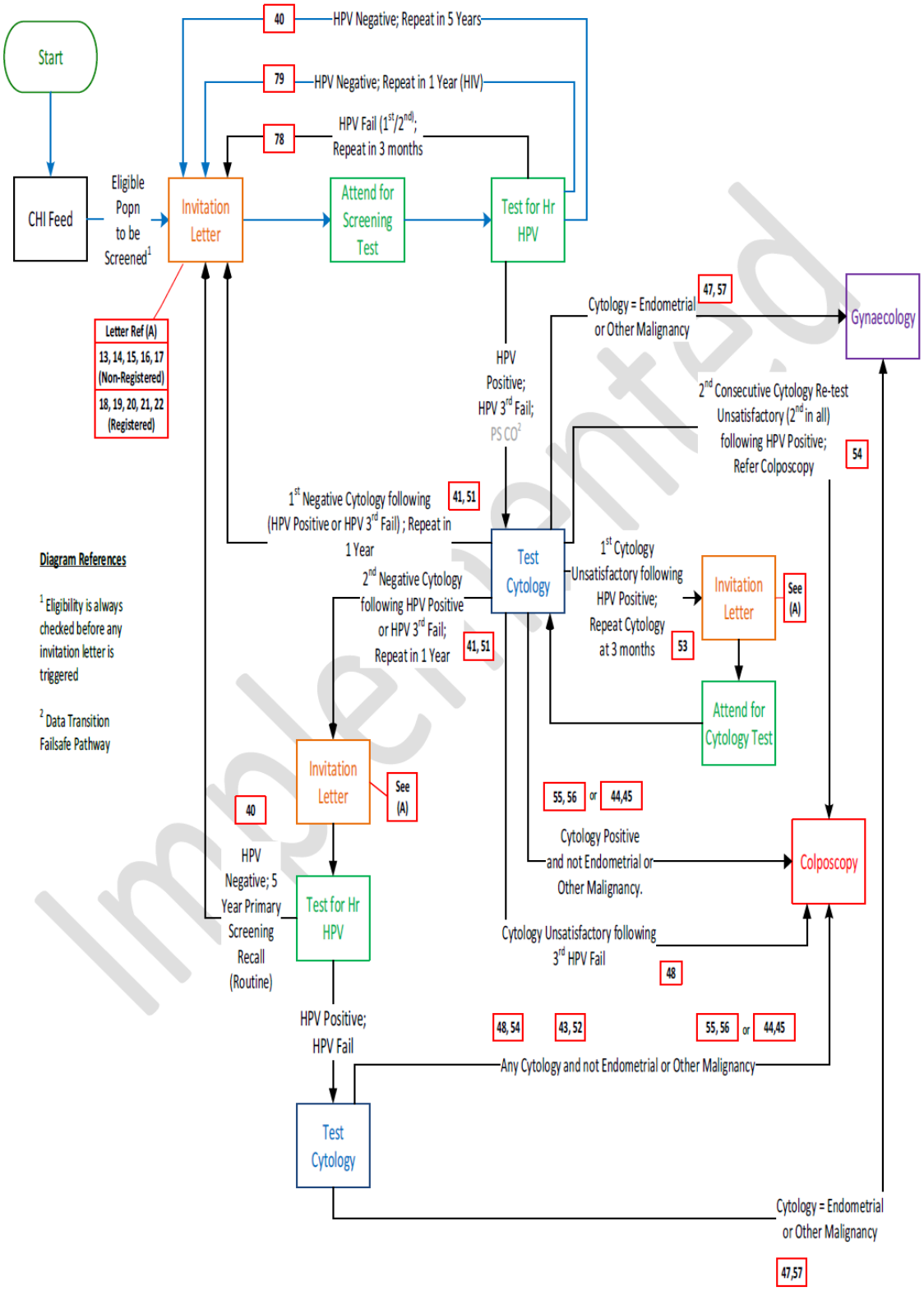
Appendix 8.1 - Hr-HPV Primary Screening Recommended Management Pathway and Key



Pathway Diagram Key:
Colour use on the pathway diagrams is intended to help differentiate different stages.

Symbol	Meaning	Comment
Start	Start of screening process.	
CHI Feed	Daily CHI Feed of eligible participants.	
Invitation Letter	Participant Invitation letter sent from SCCRS.	A process or event (a rectangle signifies a process, sub-process, task or event).
Attend for Screening Test	Activity at sample taking location, e.g. GP Practice, Community setting.	Participant attends for screening.
Test for Hr HPV	Laboratory Process – testing sample for hrHPV (using automatic system).	
Attend for Cytology Test	Physical attendance by participant for sample taking for subsequent consideration of cytology only result component.	
Test Cytology	Laboratory undertakes cytology testing of sample when pertinent (following virology testing).	
Gynaecology	Participant is referred to Gynecology.	
Colposcopy	Participant is referred to Colposcopy.	
XX	Letter number associated with event.	
Letter Ref (A) 13, 14, 15, 16, 17 (Non-Registered) 18, 19, 20, 21, 22 (Registered)	Different letter types associated with invitation letters.	

Appendix 8.2

Key performance indicators for screening uptake for NHSGGC, comparison with All Scotland and the national standard. Taken from the 2021-22 report (2022/23 and 2023/24 not yet available) [red = standard not met]

Screening uptake	Standard %	Scotland %	NHSGGC %
Overall uptake			
The percentage of eligible women (aged 25 to 64) who were recorded as screened adequately	80	**68.7**	**64.4**
Percentage uptake by deprivation quintile			
SIMD 1 (most deprived)	80	62.4	61.7
SIMD 2		66.3	64.8
SIMD 3		68.9	62.3
SIMD 4		73.2	68.8
SIMD 5 (least deprived)		73.1	67.2
Uptake by Age Group			
25-49 years	80	65.7	60.4
50-64 years		73.7	72.3
25-64 years		68.7	64.4

Appendix 8.3 - Members of Cervical Screening Steering Group (at March 2024)

Dr Christine Black	Consultant in Sexual and Reproductive Health
Mr Paul Burton	Information Manager
Dr Maureen Byrne	GP, GP Sub Committee
Mrs Lin Calderwood	HI&T Service Delivery Manager
Mrs Pam Campbell	Referral Management & Clinic Build Lead
Ms Gillian Collins	Team Leader, Cytology
Ms Anne Coventry	Practice Manager
Ms Jade Curtis	Senior Support Officer
Mrs Lorna Dhami	Practice Nurse
Dr Victoria Flanagan	Consultant Obstetrician & Gynaecologist
Mr Marco Florence	Business Coordinator, LMC
Dr Morton Hair	Clinical Lead, Consultant Obstetrician & Gynaecologist, RAH
Mrs Susan Hunt	Interim GPN Professional Nurse Lead
Ms Heather Jarvie	Public Health Programme Manager
Mrs Suzanne Kelly	Jo's Cervical Cancer Trust
Dr Abigail Latimer	Consultant Pathologist
Dr Graeme Marshall	Clinical Director, North East Glasgow
Mr Calum McGillivray	Programme Support Officer, Screening Department
Ms Lynn McLaughlin	General Practice Support and Development Nurse
Dr Alison Potts	Consultant in Public Health Lead for Screening (Chair)
Dr Nicola Schinaia	Consultant in Public Health Medicine, NHS Highland
Mr Craig Spinks	Clinical Service Manager - Gynaecology & ACS,
Mrs Claire Stewart	General Manager, Obstetrics and Gynaecology
Mr Brian Vaugh	Business Manager, Obstetrics and Gynaecology

Chapter 9 - Diabetic Eye Screening (DES)

Summary

Diabetic eye screening	
Why?	Early identification of diabetic retinopathy Prevention or management of sight loss
Intervention	At risk population screening - those with diagnosed diabetes aged 12 years and over (part of clinical care) Photograph of the back of each eye with subsequent image grading Call/recall round length depends on risk factors Screening offered in hospital outpatient and community clinics
Activity in 2023/24	81.8% screening uptake (57,982 people screened)
Outcomes	Uptake higher than standard (80%) Uptake similar between males and females Higher uptake among young people aged 12-14 years (82.1%) and older adults aged 65-74 years (86.2%); lowest among 25-29 year olds (69.5%). Variation in uptake by deprivation quintile (SIMD), with lowest uptake in most deprived quintile (78.5%) compared with least deprived (86.9%) Variation in uptake among ethnic groups 80% uptake target met in all HSCPs
Planned activity	Phased implementation of an online patient booking portal Work with HSCPs to facilitate clinics returning to original locations in East Dunbartonshire and Glasgow City North East Sector Provide learning disabilities awareness training for DES staff and develop best practice guidance for the use of reasonable adjustments Continue to work to resolve Level 3 grading capacity Continue to work with clinicians to manage screening call/recall for patients prescribed GLP-1 Receptor Agonists Continue replacement of aging equipment

Chapter Contents

9.1. Background

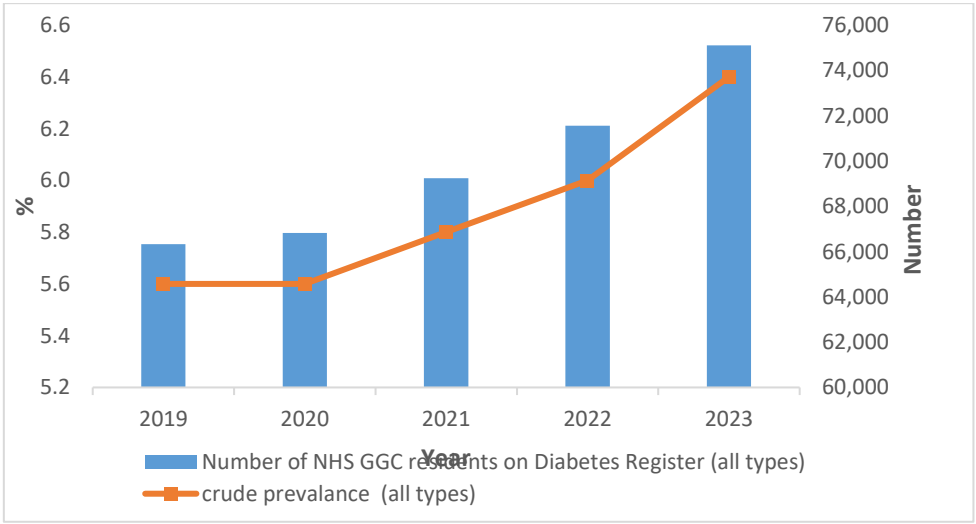
Diabetes mellitus is a long-term condition in which the level of glucose in the blood is raised, leading to abnormal fat metabolism and other complications. There are two main types of diabetes: type 1 and type 2.

- Type 1 often develops before the age of 40 and usually during the teenage years.
- Type 2 is far more common than type 1 and typically affects people over the age of 40, although increasingly younger people are affected as well. It is often associated with being overweight or obese; and people of South Asian, African-Caribbean or Middle Eastern origins are more frequently affected.

The latest Scottish Diabetes Survey 2023[41] reports that in Scotland, there were
353,088 people with known diabetes recorded on local diabetes registers at the end of 2023, representing 6.5% of the population of all ages. Over the last ten years, the proportion of people all ages in Scotland with diabetes has steadily increased, from 5.1% in 2013 to 6.5% in 2023. In 2023, the proportion of people all ages in Scotland with diabetes who have Type 1 diabetes was 10.3% (36,249); Type 2 diabetes was 88.0% (310,541); and 1.8% (6,298) had other forms of diabetes.

Over the five year period 2019 to 2023, the number of people with diabetes in NHS GGC increased from 65,174 (5.6% of the population) to 75,108 (6.4% of the population) respectively, see **figure 9.1.** The relatively high number of new cases diagnosed between 2021 and 2022 may be related to effects of the pandemic and the relatively low number of new cases diagnosed in 2020.

Figure 9.1. Number and crude prevalence (%) of people with Diabetes (all types) in NHSGGC 2019-2023



Source: Diabetes Scottish Diabetes Survey, 2019 – 2023

[41] Scottish-Diabetes-Survey-2023.pdf Accessed November 2024

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 the population by detecting retinopathy at a stage at which it may be effectively treated. If it is detected early enough, treatment can prevent the progression of the disease and save sight for many years in most patients.

The national Diabetic Eye Screening (DES) programme was implemented across NHSGGC in 2004-2005 and is an integral part of diabetes care.

The programme performance and quality of national DES screening is monitored via defined National DES Screening Standards[42] and Key Performance Indicators.

At the time of this report, nationally validated KPI's and clinical outcome data was not available. Therefore it was not possible to compare local and national uptake data or clinical outcomes.

9.2. Aim of the screening programme and eligible population

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.

The Diabetic Eye Screening (DES) programme differs from other screening programmes in that it is an important part of the patient's care pathway rather than screening for a particular condition. All people with diabetes aged 12 and over are eligible for Diabetic Eye Screening.

9.3. The screening test

The screening test is a photograph of the individual's retinas. This is taken in clinics held in hospital out-patient departments and community settings across NHSGGC. If the photograph cannot be graded, then a further slit lamp examination will be performed.

[42] Diabetic retinopathy screening standards – Healthcare Improvement Scotland (Accessed December 2024)

There are two main information systems used in the provision of DES programme.

1. OptoMize provides the call/recall, image capture, grading, quality assurance, and result delivery.
2. SCI-Diabetes is the national data system for all people with diabetes and provides the diabetes population register for screening call/recall and the screening results can be viewed here by clinical staff involved in the care of patients with diabetes.

The OptoMize data system has been used nationally for a few years now. Delays in reporting from OptoMize system have now been resolved, however nationally validated KPIs have not yet been published.

9.4. Screening Pathway

Appendix 9.1 illustrates the pathway to reduce diabetes related blindness in the diabetic population, by identifying and treating sight threatening diabetic retinopathy. The UK National Screening Committee recommendation of revised screening intervals was fully implemented in Scotland by April 2023. This means that individuals who have been regularly screened and the last two outcomes were clear (i.e. no signs of any diabetic changes in both eyes and on both occasions), would be recalled for screening every 24 months, rather than every 12 months.

Patients are initially called for screening by digital photography (fundus photography). However, sometimes clear photographs cannot be obtained due to a range of reasons, e.g. opacities like cataract, or difficulty positioning the patient at the camera. In these cases, patients are transferred to slit lamp screening where the eyes are dilated and are examined by either a static or portable slit lamp to examine the retina.

The DES service have incorporated a new pathway in the screening process. If a patient is found to have maculopathy and good visual acuity, they will be scheduled for an Optical Coherence Tomography (OCT) scan to check for macular oedema. If oedema is found, the patient is referred to the Ophthalmology Clinic. If not, the patient continues in the OCT surveillance clinics within the DES program.

9.5. Screening setting

DES is delivered at five hospital locations and a range of community and mobile clinics. DES screening resumed in the majority of pre-COVID-19 locations in 2023/24 with the exception of Baillieston and Lennoxtown Health Centres, see **Table 9.1**.

Table 9.1. NHSGGC Diabetic Eye Screening locations status 2023/24

Screening Location	Status 2022/23		
	Fundus Photography	Slit Lamp Clinic	OCT Clinic
Hospital Locations			
Gartnavel General Hospital	✓	✓	✓
Glasgow Royal Infirmary	✓	✓	✓
New Victoria Ambulatory Care Hospital	✓	✓	✓
Queen Elizabeth University Hospital	✓	✓	✓
Vale of Leven Hospital	N/A	✓	✓
Health Centre/HSCP Locations			
East Dunbartonshire HSCP			
Milngavie Health Centre	✓	N/A	N/A
Kirkintilloch Health Centre	✓	N/A	N/A
Lennoxtown Health Centre	×	N/A	N/A
East Renfrewshire HSCP			
Barrhead Health Centre	✓	N/A	N/A
Eastwood Health Centre	✓	N/A	N/A
Glasgow City HSCP			
Baillieston Health Centre	×	N/A	N/A
Castlemilk Health Centre	✓	N/A	N/A
Drumchapel Health Centre	✓	N/A	N/A
Easterhouse Health Centre	✓	N/A	N/A
Pollok Health Centre	✓	N/A	N/A
Inverclyde HSCP			
Greenock Health Centre	✓	✓	✓
Renfrewshire HSCP			
Johnston Health Centre	✓	N/A	N/A
New Sneddon Street Clinic	✓	✓	N/A
Renfrew Health Centre	✓	N/A	N/A
West Dunbartonshire HSCP			
Dumbarton Health Centre	✓	N/A	N/A
Clydebank Health & Care Centre	✓	N/A	N/A
Vale of Leven Care and treatment centre	✓	N/A	N/A
Additional Locations			
HMP Barlinnie Mobile Clinic	✓	N/A	N/A
HMP Lowmoss	Patients called to GRI	N/A	N/A
HMP Greenock	Patients called to Greenock HC	N/A	N/A
Rowanbank Mobile Clinic	✓	N/A	N/A
Leverndale Mobile Clinic	✓	N/A	N/A
Surehaven Mobile Clinic	✓	N/A	N/A

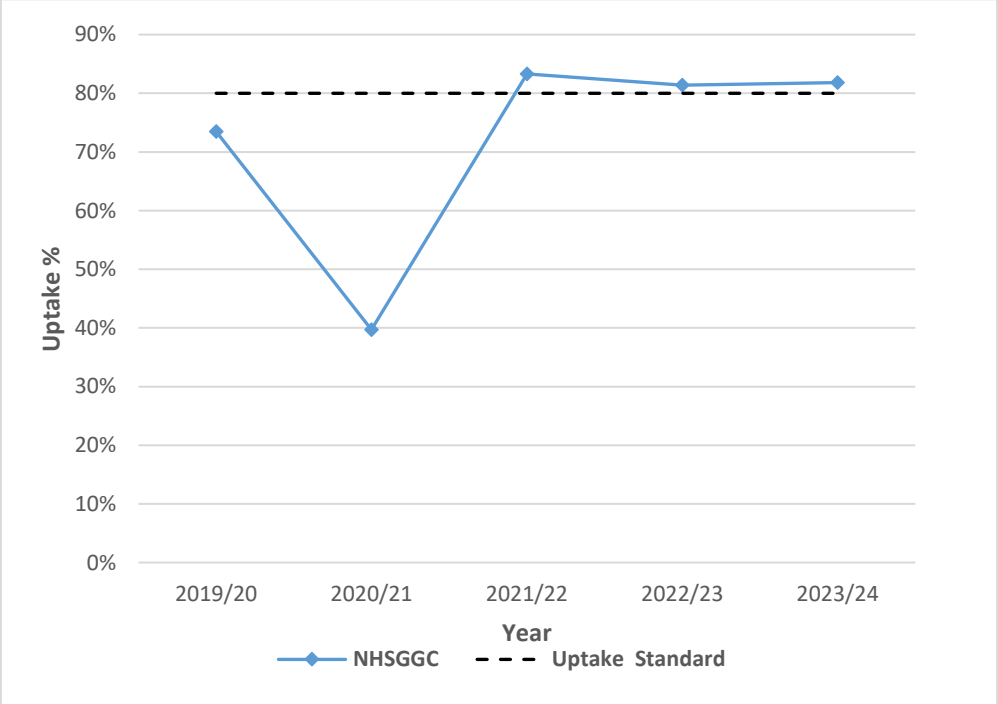
✓ Screening resumed
× Screening not resumed
N/A Not Applicable

9.6. Uptake of diabetic eye screening

Five year trends have been sourced from previous annual screening reports, with data from period for period 1st April 2023 to 31st March 2024 obtained from OptiMize system. As a result of differences in data extract dates and data definitions, numbers in local data analysis will differ from those presented in forthcoming national programme publications.

Overall uptake of diabetic eye screening fluctuated over the 5 year period from 2019/20 to 2023/24. The drop in screening uptake during 2020/21 was due to a pause in screening from March to September 2020, due to the COVID-19 pandemic. The service then had to catch up the backlog of patients who could not be invited during this period. It took the service 18 months to complete this catch up and return to a normal (pre-pandemic) service. Based on local analysis from OptiMize, uptake in 2023/24 was 81.8%, exceeding the national 80% standard. **(Figure 9.2)**.

Figure 9.2. Uptake of Diabetic Eye Screening in NHSGGC, 2019/20 to 2023/24



Source: NHSGGC Annual Screening Reports 2019/20 to 2021/22.
2021/22 SCI Diabetes, November 2022 [43]
2022/23 and 2023/24 OptoMize, October 2024

Of the 70,897 individuals with a confirmed diagnosis of diabetes and eligible for diabetic eye screening, 57,982 (81.4%) were adequately screened (up to date with screening independent of screening round length) at 31st March 2024.

[43] 2020/21 cohort obtained from SCI-Diabetes included all persons, only those over 12 years of age are eligible for screening.

Table 9.2 shows that more than half (53.2%) of the eligible resident population of people with diabetes were male. Uptake was slightly higher amongst males (82.4%) than females (81.0%), however the 80% uptake target was met by both sexes.

Table 9.2. Uptake of Diabetic Eye Screening by sex, NHSGGC residents, 2023-2024

Sex	Not Screened	Screened	Total	% Screened
Female	6,035	25,670	31,705	81.0
Male	6,880	32,312	39,192	82.4
Total	**12,915**	**57,982**	**70,897**	**81.8**

Source: OptoMize, October 2024

Table 9.3 shows that uptake of DES screening is high in young people aged 12-14 years (82.1%), then falls in those aged 15-34 years (lowest in 25-34 years group at 69.5%) and increases with age up to 74 years of age (highest uptake in the 65-74 years age group, 86.2%). Uptake decreases after 75 years of age, 84.1% of individuals aged 75-84 were screened, further decreasing to 79.3% among individuals aged 85 years and older.

Table 9.3. Uptake of Diabetic Eye Screening by age, NHSGGC residents, 2023-2024

Age Group (years)	Not Screened	Screened	Total	% Screened
12-14	37	170	207	82.1
15-24	244	760	1,004	75.7
25-34	667	1,519	2,186	69.5
35-44	1,407	3,712	5,119	72.5
45-54	2,131	7,483	9,614	77.8
55-64	3,164	15,198	18,362	82.8
65-74	2,582	16,076	18,658	86.2
75-84	1,881	9,984	11,865	84.1
85+	802	3,080	3,882	79.3
Total	**12,915**	**57,982**	**70,897**	**81.8**

Source: OptoMize, October 2024

Uptake also increases with decreasing levels of deprivation, with 78.5% uptake among individuals residing in the most deprived areas compared to 86.9% residing in the most affluent areas. The uptake target of 80% was met in all but the most deprived deprivation quintile. See **Table 9.4.**

Table 9.4. Uptake of Diabetic Eye Screening by deprivation quintile, NHSGGC residents, 2023-2024

SIMD Quintile	Not Screened	Screened	Total	% Screened
1 (most deprived)	6,207	22,660	28,867	78.5
2	2,611	11,463	14,074	81.4
3	1,411	7,090	8,501	83.4
4	1,331	7,745	9,076	85.3
5 (least deprived)	1,355	9,024	10,379	86.9
Total	**12,915**	**57,982**	**70,897**	**81.8**

Source: OptoMize, October 2024

Further local analysis was undertaken to explore variations in uptake of screening for populations with protected characteristics (including, ethnicity, learning disability and mental health), and geographically by Health and Social Care Partnership (HSCP) area.

Analysis by ethnicity was undertaken via self-reported ethnicity recorded on SCI-Diabetes. The uptake screening standard of 80% was achieved within Chinese, Pakistani, Black African, Indian, White Scottish/Irish/British, other Asian and other mixed origin ethnic groups. Uptake was generally below the screening standard among Bangladeshi, Black Caribbean, Other Black and Other White ethnic sub groups **(Table 9.5).** Ethnicity was unknown for approximately 10% of the eligible screening population.

Table 9.5. Uptake of Diabetic Eye Screening by ethnicity, NHSGGC residents, 2023-2024

2001 Census Ethnic Group	Not Screened	Screened	Total	*% Screened*
Chinese	90	452	542	*83.4*
White Scottish	6,606	31,874	38,480	*82.8*
Pakistani	600	2,874	3,474	*82.7*
Black African	167	767	934	*82.1*
Indian	300	1,375	1,675	*82.1*
White Irish	63	288	351	*82.1*
Other Asian	172	768	940	*81.7*
Other White British	2,370	10,550	12,920	*81.7*
Other Mixed Origin	197	826	1,023	*80.7*
Bangladeshi	68	256	324	*79.0*
Other Black	36	133	169	*78.7*
Not recorded, Opt out, Not known	1,534	5,487	7,021	*78.2*
Other White	490	1,652	2,142	*77.1*
Other	211	651	862	*75.5*
Black Caribbean	11	29	40	*72.5*
Total	**12,915**	**57,982**	**70,897**	***81.8***

Source: OptoMize, October 2024

Table 9.6 shows that 607 of the 70,897 individuals eligible for screening were registered with a learning disability (0.9%)44. The uptake among individuals registered with a learning disability was similar to the rest of the population (79.6% vs 81.8% respectively).

Table 9.6. Uptake of Diabetic Eye Screening by Learning Disability, NHSGGC residents, 2023-2024

Learning Difficulties Register	Not Screened	Screened	Total	*% Screened*
Not Registered	12,791	57,499	70,290	81.8
Registered	124	483	607	79.6
Total	**12,915**	**57,982**	**70,897**	**81.8**

Source: OptoMize, November 2024; Learning Disability Register, January 2025 .

People registered on PsyCIS have had at least one episode of psychosis which is typically seen in patients with a severe or enduring mental illness. **Table 9.7** shows that 1,247 of the 70,897 people eligible for screening were registered on PsyCIS (1.8% of the total eligible population). These individuals had a lower uptake of DES screening, 71.7% compared to 81.7% in the rest of the population.

[44] LD register used for screening CHI linkage comprises legacy LD Local Enhanced Service register and snapshot of 2024 NHSGGC LD health check register.

Table 9.7. Uptake of Diabetic Eye Screening by Severe and Enduring Mental Health, NHSGGC residents, 2023-2024

PSYCIS	Not Screened	Screened	Total	*% Screened*
Not Registered	12,562	57,088	69,650	82.0
Registered	353	894	1,247	71.7
Total	**12,915**	**57,982**	**70,897**	**81.8**

Source: OptoMize, November 2024; PSYCIS, November 2024

There are variations in screening uptake across HSCPs areas, see **Table 9.8**. Uptake varies from 79.9% in Glasgow City North East Sector to 85.0% in East Renfrewshire. The 80% target for screening was met in all HSCPs, however North East Sector of Glasgow City HSCP fell just 0.1 percentage point below of the target.

When the known effects of age (variation in uptake across age range), and deprivation (lower uptake with increasing deprivation), and sex (slightly higher uptake among men) are taken into account by standardisation, there is much less variation in uptake across HSCP areas (range from SUR 80.7% in Glasgow North West, to SUR 82.7% in Inverclyde). This illustrates that most of the differences in uptake across HSCP's is explained by differences in levels of deprivation, age and sex.

Table 9.8. Uptake of Diabetic Eye Screening by HSCP, NHSGGC residents, 2023-2024

HSCP	Not Screened	Screened	Total	*% Screened*	*% Screened LCI*	*% Screened UCI*	*SUR %*	*SUR % LCI*	*SUR % UCI*
East Dunbartonshire HSCP	925	4,852	5,777	*84.0*	*81.6*	*86.4*	*80.9*	*78.6*	*83.1*
East Renfrewshire HSCP	770	4,359	5,129	*85.0*	*82.5*	*87.5*	*81.8*	*79.4*	*84.2*
Glasgow North East Sector	2,305	9,177	11,482	*79.9*	*78.3*	*81.6*	*81.5*	*79.8*	*83.1*
Glasgow North West Sector	2,173	8,667	10,840	*80.0*	*78.3*	*81.6*	*80.7*	*79.0*	*82.4*
Glasgow South Sector	2,802	12,492	15,294	*81.7*	*80.3*	*83.1*	*82.6*	*81.2*	*84.1*
Glasgow City	7,280	30,336	37,616	*80.6*	*79.7*	*81.6*	*81.9*	*80.9*	*82.8*
Inverclyde HSCP	866	4,086	4,952	*82.5*	*80.0*	*85.0*	*82.7*	*80.1*	*85.2*
Renfrewshire HSCP	1,939	9,397	11,336	*82.9*	*81.2*	*84.6*	*82.1*	*80.5*	*83.8*
West Dunbartonshire HSCP	1,135	4,952	6,087	*81.4*	*79.1*	*83.6*	*81.7*	*79.4*	*84.0*
Total	**12,915**	**57,982**	**70,897**	***81.8***	***81.1***	***82.45***			

Source: OptoMize, October 2024
SUR – Standardised Uptake Rate
LCI – Lower Confidence Interval
UCI – Upper Confidence Interval

9.7. Mapping

Mapping of diabetic eye screening uptake by data zones was undertaken to provide further insight into variation in uptake at local geographical level. This illustrates that the 80% target uptake was achieved in the majority (942) of the 1,455 data zones, with uptake lower than 80% in 513 data zones. Some pockets of NHSGGC can be significantly lower than HSCPs levels, as 77 of the 1,455 data zones had uptake rates between 60-69% and a further 8 data zones had uptake rates of below 60%. Uptake maps are available on the PHSU website[45].

9.8. Challenges and Future Developments

The OptoMize Software update released in December 2022 included an optional self-booking facility to enable patients to book, change or cancel DES appointments. However, implementation of the patient booking portal continues to be delayed due to ongoing national discussion to agree the content of patient letters. NHSGGC will adopt phased implementation of online booking in 2025.

Work continues to ensure that all patients are offered a screening appointment at an accessible location. Some community clinic locations are undergoing refurbishment, and continue to be unavailable for DES screening. We will continue to work with HSCPs to facilitate clinics returning to these locations or alternative locations as soon as possible.

In order to improve uptake of screening, we will work in partnership with general practice to improve engagement in areas of lowest uptake, typically areas of high deprivation.

We will provide learning disabilities awareness training for DES staff and develop best practice guidance for the use of reasonable adjustments to support people with a learning disability to participate in the DES programme.

Capacity within NHSGGC for Level 3 imaging sign-off remains a challenge, leading to delays in sign-off. These images require senior trained staff, often medical grade or consultant ophthalmologist, to undertake image review. Additional grading sessions delivered by an NHSGGC Consultant Ophthalmologist has significantly reduced backlog, however ongoing capacity for review of these images remains limited across NHSGGC and across Scotland. We continue to work to resolve these capacity issues.

[45] Diabetes Eye Screening Uptake Map, 2023/24

Challenges for the screening programme have been identified with the prescription of new medications for the management of diabetes. GLP-1 Receptor Agonist medicines have a low risk of worsening diabetic retinopathy. Patients who are prescribed these medicines require their diabetic eye screening to be up to date to baseline their retinopathy risk, and another screening test within a year of starting on this medication, before returning to their standard call/recall period if risk is low. At the moment, screening for these patients is being managed manually, as the electronic call/recall system cannot be programmed in this way. We will continue to work with clinicians to manage screening call/recall for these patients and accommodate urgent requests for screening for those patients who are not up to date with their screening ahead of being prescribed these medicines.

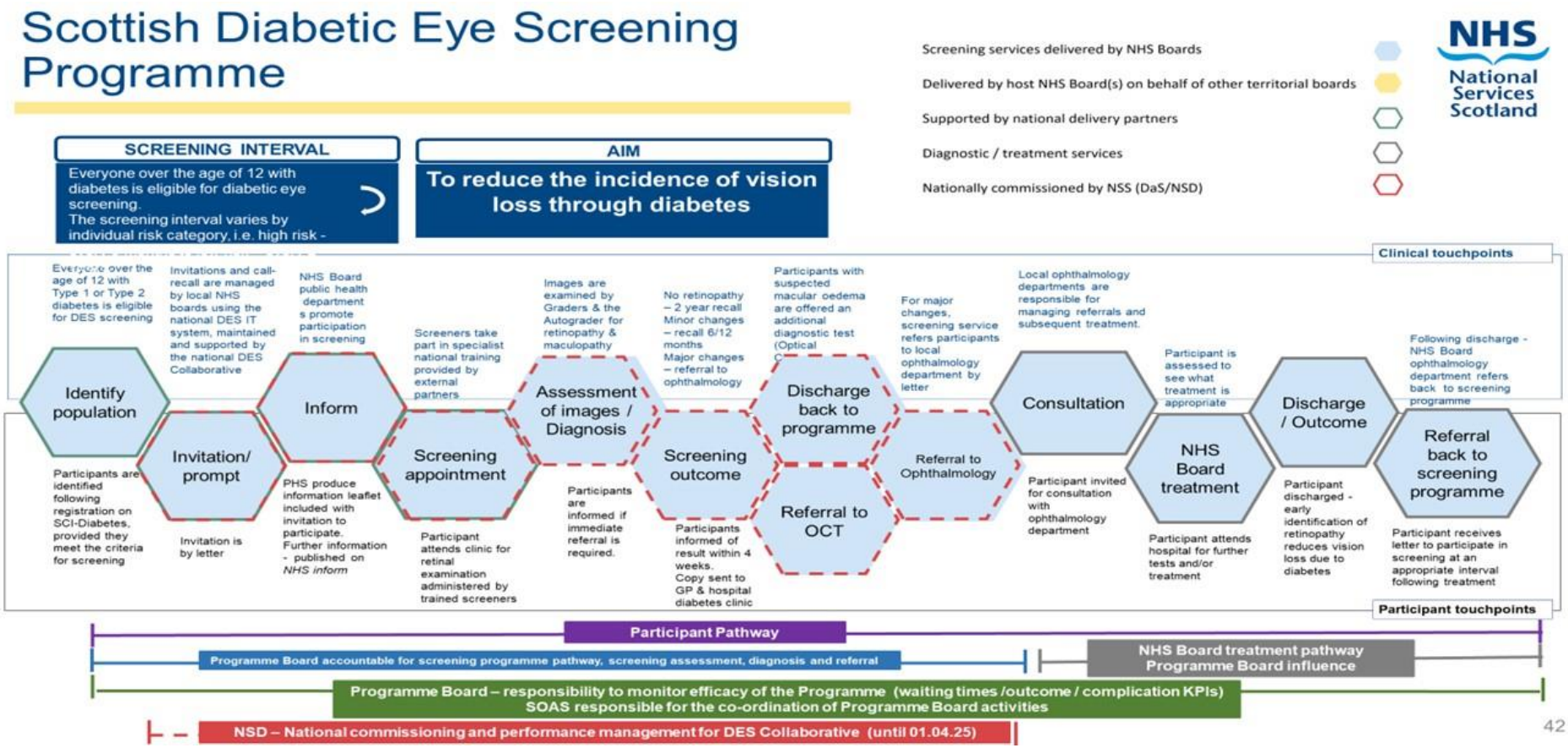
It is anticipated that the number of people with diabetes will continue to increase over the coming years. This will mean that the diabetic eye screening service will need to find additional screening capacity and resources to accommodate this extra demand.

A rolling replacement programme is underway to renew aging equipment. This is expected to conclude by end March 2026.

Plans are in place to ensure future pathway developments to align with national protocols, including OCT surveillance.

It is hoped that publication of national KPI's will be progressed during 2025/26. We will continue to work with National Services Scotland to facilitate local reporting of DES programme clinical outcomes.

Appendix 9.1 - Diabetes Eye Screening Pathway



Appendix 9.2 - Members of Diabetic Eye Screening Steering Group (at March 2024)

Mr Paul Burton	Information Manager
Mrs Lin Calderwood	National Portfolio Programme Manager,eHealth
Mr Liza Campbell	Clinical Service Manager, Ophthalmology
Ms Beth Culshaw	Chief Officer, West Dunbartonshire HSCP
Mr Marco Florence	Glasgow Local Medical Committee
Ms Sarah Freel	Area Wide Optometrists Committee Representative
Dr Mike Gavin	DES Clinical Lead, Consultant Ophthalmologist
Mr Mathew Gray	DES Clinical Co-ordinator
Mrs Elaine Hagen	Assistant Programme Manager, Screening Department
Mrs Fiona Heggie	DES Service Manager
Ms Heather Jarvie	Public Health Programme Manager
Dr Ali Kashif	Diabetes MCN Primary Care Lead / GP
Ms Helen Little	Service Manager, West Dunbartonshire HSCP
Dr Alison Potts (Chair)	Consultant in Public Health, Screening Co-ordinator
Mrs Elizabeth Rennie	Programme Manager, Screening Department
Dr Sonia Zachariah	Specialty Doctor, Diabetic Retinal Screening

Chapter 10 - Inequalities

Summary

Address inequalities in screening	
Why?	Poorer uptake of screening programmes in some population groups Vulnerable groups identified including most deprived, Black Asian and Minority Ethnic (BAME) groups, those with learning disabilities (LD), those with enduring mental illness Poorer health outcomes for vulnerable groups
Intervention	2022-25 Action Plan Specific actions across wide range of vulnerable groups Supported by funding from Scottish Government Cancer Screening Inequalities Fund Taken forward through the Screening Team and in partnership with colleagues in HSCPs and screening services
Activity in 2023/24	Completion of the 2022-25 Action Plan, including: Completion of two years of community engagement with BAME groups led by a dedicated community practitioner Half way through two years of work with the learning disabilities service led by a dedicated practice development lead Preparation for one year intervention addressing cervical screening need for those in long-stay mental health facilities
Outcomes	In-reach into many BAME community groups, with screening awareness and understanding raised Better understanding of barriers to uptake of screening in BAME communities Screening training delivered to LD nurses Screening incorporated into LD health checks Communications materials developed and distributed for LD and screening
Planned activity	Development of new Action Plan, including key areas: - Improve access to screening programmes in communities with the lowest uptake. - Provide data, intelligence and best practice guidance to improve access to cervical screening in primary care settings. - Investigate issues affecting access to service across whole bowel screening pathway and identify improvements to address these. - Provide targeted support for screening within the specialist settings supporting vulnerable populations. - Improve early access to the pregnancy and newborn screening pathway. - Develop and implement a communications plan which supports informed participation in screening programmes.

Chapter contents

10.1. Current action plan 2022-25

The current action plan, NHSGGC Widening Access and Addressing Inequalities in Adult Screening Programmes: Action Plan for 2022-25[46], set out a series of actions over a three year period to address inequalities in uptake of adult screening programmes in NHSGGC. This plan is due for completion by March 2025.
The plan was developed based on a high level programme logic model, shown in **Figure 10.1**. The logic model summarises the approach taken and the intended outcomes of actions aimed at widening access and addressing inequalities.

Figure 10.1 Logic model used to develop the 2022-25 NHSGGC widening access and addressing inequalities in adult screening programmes action plan

Contributors	Evidence-informed activities	Outcomes		
		Short term	Medium term	Longer term
NHS GGC • Screening delivery staff • Public Health • HSCP Health Improvement teams • Practice Development Third sector • Jo's Trust	• Provide learning on inequalities issues for staff who deliver screening. • Deliver service improvements aimed at those who face specific barriers to access. • Promote screening programmes in communities. • Increase awareness of screening among NHS and third sector staff who are not directly involved in screening programmes.	• Staff are aware of the issues impacting on screening uptake and can contribute to addressing these. • Pathways are in place to support access to screening. • People have increased knowledge and awareness of screening programmes in the context of their own lives.	• Access barriers to screening are reduced. • People are able to make an informed choice as to whether to participate in screening.	Improved uptake in screening at population level and within groups who currently have lower uptake rates.

Appendix 10.1 provides a summary progress report on the actions in the plan. Some actions have been refined or merged with others to better reflect how activities are being undertaken. New actions, which have emerged due to priorities arising from service developments or data, are marked with an asterisk (*).
Delivery of the 2022-25 NHSGGC action plan has been impacted by challenges, shared with other Health Boards, in using the Scottish Government Cancer Screening Inequalities Fund (SG CSIF). The most impactful of these has been changes in how boards are able to carry funding forward between financial years, which reduces flexibility in spending and affects continuation of projects across financial year end/start.

[46] https://www.nhsggc.scot/downloads/nhsggc-2022-25-inequalities-in-adult-screening-plan-2/

Actions from the plan are carried out by members of the Screening Team in partnership with colleagues in the Health and Social Care Partnerships for local activity, and colleagues within screening services. Scottish Government funding has allowed us to employ part-time staff to address specific issues. The following sections highlight progress and learning to date for actions to address barriers to screening programmes for Black and Minority Ethnic Communities and individuals with Learning Disabilities. For both of these areas of work, we were able to employ practitioners with specific backgrounds in these areas to develop understanding and interventions to improve access to screening.

10.2. Actions 1 and 2: Black and minority ethnic communities

Addressing barriers to screening for Black and Minority Ethnic communities	
Why?	Known lower uptake of screening programmes
Intervention	Two year fixed term Engagement Practitioner, in post 2022-24. Work with community and faith groups to: - promote screening; - build skills of community leaders and peers to raise and discuss screening; - build understanding of the barriers to informed participation. Share learning from communities to inform approaches to addressing health inequalities and discrimination in a systematic way.
Activity undertaken	Engagement with a range of BME community groups and organisations. Delivery of screening awareness and engagement sessions in partnership with West of Scotland Breast Screening Service, Jo's Cervical Cancer Trust, and HSCP Health Improvement teams. Awareness sessions included: what is screening?; eligibility for each of the cancer screening programmes; access to health services; benefits and risks of screening; symptoms of cervical, breast and bowel cancer; cancer prevention; how to install NHSGGC ILClient App (app for using an interpreter during telephone calls). Access to screening or other issues were raised by participants during discussion and through pre-engagement forms and evaluation. Participants were also asked to complete an equalities monitoring form.
Outcomes	- 1,540 participants took part in - 67 engagement activities with - 47 Chinese, African, and multicultural community groups

	Interpreting services for sessions was provided in Arabic, Cantonese, Farsi, Kurdish, Mongolian, Punjabi, Tamil, Kurdish Sorani, Ukrainian, and Russian. Participants were provided with access to patient information on cervical and breast screening programmes translated to Arabic, Cantonese, Farsi, Kurdish, Mongolian, Punjabi, Tamil, Kurdish Sorani, Ukrainian, and Russian languages. Range of screening specific and general health service access barriers were raised by participants. These have been reviewed to explore the policy, corporate and service responses available to address these issues. Responses include interpreting services, financial inclusion services, and increased community level communications about screening. Findings from this project will inform ongoing community based awareness raising which is coordinated through NHSGGC Community Implementation Group for the screening inequalities plan. Issues have been shared nationally through platforms linked to the development and implementation of the national Equity in Screening Strategy. For further information, see project final report[47].

10.3. Actions 10 and 11: People with learning disabilities

Addressing barriers to screening for people with learning disabilities	
Why?	Research tells us that people with learning disabilities are still dying, on average, 20 years earlier than the general population and are twice as likely to die from preventable illnesses.[48] Local intelligence shows that cancer screening uptake in people with learning disabilities is lower than the rest of the NHSGGC population.
Intervention	Two year fixed term Inequalities Sensitive Practice Development Lead, appointed in January 2024 to: - provide training to Learning Disability Nurse Specialists on screening programmes; - Increase knowledge of screening programmes in the community by working with organisations supporting adults with learning disabilities; - develop guidance and protocols for Learning Disability and Screening Services staff to support the participation in screening programmes including the delivery of cervical screening.
Activity undertaken	Activity undertaken in Year 1 (January 2024 to January 2025)

[47] https://www.stor.scot.nhs.uk/handle/11289/580423 - Inequalities in participation in screening programmes
[48] Keys to life: implementation framework and priorities 2019-2021 - gov.scot

	Commissioned Values into Action Scotland to undertake engagement with individuals with a learning disability residing in NHSGGC to better understand awareness and experiences of adult screening programmes. In partnership with NHSGGC Learning Disability Health Check Team, jointly reviewed and expanded the screening questions included in learning disability health check forms, ensuring they provide a supportive framework for practitioners. Delivered targeted training in collaboration with the West of Scotland Breast Screening Service. Learning Disability Health Check Team members were also provided with easy-read booklets produced by Public Health Scotland, which they now give to eligible patients. In partnership with public health screening team, health improvement teams, Scottish Learning Disability Observatory, Mainstay Drama Group and West of Scotland Breast Screening Service, delivery of a full-day training event for NHSGGC learning disability staff across all health and social care partnerships, featuring the Mainstay Drama Group performance of '*ain't nothing but a bowel test*'. The training covered broader topics including immunisations, sexual health, and smoking cessation. Worked with NHSGGC Corporate Communications Team to create videos aimed at raising awareness about screening among people with learning disabilities. These videos were produced in partnership with individuals with learning disabilities, carers, Mainstay drama group and a learning disability staff. Supplying each NHSGGC Learning Disability Team (community and inpatient) with cancer screening resources, e.g. a model breast, know your lemons breast resource and a model vulva with speculum and brush to support conversations about screening and breast awareness.
Outcomes	Approximately 30 individuals participated in Values into Action Scotland engagement events, including five women providing more detailed account of their experiences of screening programmes[49]. Findings from this engagement activity informed development of staff training programmes and project priority actions. 43 learning disability staff attended the screening training session, staff were from community, inpatient and health check teams. Integration of screening assessment tool within learning disability health checks. Media assets were shared widely on social media and received positive media coverage. NHSGGC is improving access to life-saving cancer screening

[49] https://www.stor.scot.nhs.uk/handle/11289/580422 - Breast screening invitations

	Help Boost Health Screening Uptake - Glasgow Council for the Voluntary Sector

This work will continue into 2025/26. Year 2 priories are:

- updating the NHSGGC Learning Disability Register – working with business intelligence and the Learning Disability Health Check Team to create and maintain a current register will ensure health check opportunities, including conversations about screening, are offered and recorded;
- working with screening services to develop local guidance and protocols to support staff with adjustments and support for people with learning disabilities attending screening appointments.

10.4. Activity in 2025-26

The current plan (see **Appendix 10.1**) is due to be completed by March 2025. There have been two key Scottish Government policy developments since the NHSGGC plan was published:

- the Cancer Strategy for Scotland 2023-2033, launched in June 2023; and
- the Scottish Equity in Screening Strategy 2023-2026, launched in July 2023.

NHSGGC contributed to the development of the Scottish Equity in Screening Strategy through membership of the Reference Sub-Group, Access and Communications Sub-Group, and the Editorial Group. The strategy requires all boards to have an action plan to address inequalities in screening. We were in a position to share NHSGGC plan with other boards and present advice on our process for developing and evaluating it.
These strategies continue to highlight the need to address inequalities in access to and uptake of screening programmes. Activity should now include all screening programmes including pregnancy and newborn programmes. At this time, we do not know if funding from the Scottish Government Cancer Screening Inequalities Fund will be available in 2025/26. However, if available, this funding can only be used to address concerns within the cancer screening (bowel, breast, cervical) screening programmes.
Based on learning from the 2022/25 plan and on local intelligence on variation in uptake of screening programmes, we have developed priorities for work in 2025/26, see Table 10.1. A detailed implementation plan will be developed in partnership with NHSGCC Screening Steering Groups and HSCP Health Improvement Teams.

Table 10.1. NHSGGC Equity in Screening Programme Priorities in 2025/26

Programme Drivers	Scottish Equity in Screening Strategy NHSGGC 2025/26 Annual Delivery Plan - reducing the difference in screening uptake between the most and least deprived quintile for each of the three cancer screening programmes
Programme Impact	Screening is accessible and informed choice is supported for those population groups who currently have a lower uptake of screening than the general population or a suboptimum uptake
Summary of objectives	1. Improve access to screening programmes in communities with the lowest uptake. 2. Provide data, intelligence and best practice guidance to improve access to cervical screening in primary care settings. 3. Investigate issues affecting access to service across whole bowel screening pathway and identify improvements to address these. 4. Provide targeted support for screening within the specialist settings supporting vulnerable populations. 5. Improve early access to the pregnancy and newborn screening pathway. 6. Develop and implement a communications plan which supports informed participation in screening programmes.

APPENDIX 10.1. 2022-2025 Screening Inequalities Action Plan – Progress Summary
Key:

- ● Completed/due to conclude by end March 2025
- ● Delayed
- ● Unable to progress

ACTION	PROGRESS	STATUS
(a) Black and Minority Ethnic people: South Asian, Caribbean, African and Chinese communities		
1. Work with community and faith groups to raise awareness of screening, build skills of community leaders and peers to discuss screening, and increase NHS GGC knowledge of community barriers to informed participation.	A two year fixed term Engagement Practitioner, funded by the SG CSIF, undertook engagement with Black and Minority Ethnic communities over two year period from July 2022 to July 2024. Upon completion of the two year project. 1,540 participants took part in 67 engagement activities with 47 Chinese, Africa, and multicultural community groups. Groups were predominantly in Glasgow City. We collaborated with the West of Scotland Breast Screening Service, Jo's Cervical Cancer Trust, and HSCP Health Improvement teams.	●
2. Respond to learning from and experience of communities.	We conducted an exercise to identify the issues emerging from the community engagement and to clarify the policy, corporate and service responses available to address these issues. There are barriers to accessing health services. These include: cost of attending appointments; not registered with a GP; language barriers and negative experience of staff linked to language; caring responsibilities; and cultural differences in accessing health services. There are also both system and personal barriers to participating in screening. These include limited awareness of programmes and, for cervical, how it links with the HPV vaccination programme; previous negative experiences; embarrassment; community not represented on patient information; and, for cervical, a perception that screening is not required due to individual lifestyles. The next stages are to address these issues specifically within services.	●

ACTION	PROGRESS	STATUS
3. * Pilot the process of sending written communications to women eligible and due for breast screening in their recorded language.	We agreed a protocol and provided funding to West of Scotland Breast Screening Service (from the SG CSIF) for this work. The work was undertaken during 2024, with learning due to be shared in 2025 to inform the development of more systematic approaches to accessible information.	●
(b) People living in the most deprived areas		
4. Deliver a programme of additional community cervical clinics for those who are not currently participating in the programme.	Although service a delivery model and a clinical results management pathway was agreed with the local GP sub-committee, it was not possible to implement this pilot service development due to existing cervical screening commissioning and clinical governance model. This work will be refocused in 2025/26 to provide targeted support for quality improvement activities in GP practices in areas of high deprivation with known lower uptake.	●
5. Raise awareness of screening in areas of deprivation and through GGC communication channels including social networking and media sharing platforms.	Screening programmes are promoted through our corporate communications channels as well as via HSCPs. We continue to link to national campaigns as well as providing local information such as when the breast screening mobile unit is in an area. Our community engagement work has given us important information from which we can develop messages for communications campaigns. We have also partnered with Glasgow Times to launch a Don't Fear the Smear public campaign. This will continue to be a focus of activities in 2025/26.	●
(c) People with physical disabilities		
6. Conduct service EQIA in order that screening services are sensitive to and meet the needs of people with physical disabilities	Screening service and Call Recall staff have participated in training to undertake equality impact assessments (EQIAs). Learning from implementing this action plan will be used to inform future service improvements.	●
(d) People with sensory disabilities		

ACTION	PROGRESS	STATUS
7. Conduct service EQIA in order that screening services are sensitive to and meet the needs of people with sensory disabilities	Screening service and Call Recall staff have participated in training to undertake equality impact assessments (EQIAs). Learning from implementing this action plan will be used to inform future service improvements.	●
8. Engage with Deaf-Blind community in raising the issues of screening and overcoming barriers.	Meetings were held with Deaf-Blind Scotland to raise awareness of screening in partnership with the West of Scotland Breast Cancer Service (WSBCS) and Jo's Cervical Cancer Trust. The WSBCS have identified a need to make information and communication available in Braille. This was implemented as part of action 3.	●
(e) People with learning disabilities		
9. Conduct service EQIA in order that screening services are sensitive to and meet the needs of people with learning disabilities.	Screening service and Call Recall staff have participated in training to undertake equality impact assessments (EQIAs). Learning from implementing this action plan will be used to inform future service improvements. Development of screening programme specific reasonable adjustment guidance for individuals with a learning disability in progress, with initial focus on breast screening.	●
10. Deliver service improvements in access to screening for people with learning disabilities, particularly in relation to the Learning Disabilities Health Check.	In preparation for the introduction of health check in early 2024, we recruited to a fixed term Inequalities Sensitive Practice Development Lead post to drive service improvement within screening programmes and liaise with LD service staff delivering health checks. We delivered screening training for LD health check staff as part of their induction and continue to work in close partnership to support staff queries in relation to screening pathways.	●

ACTION	PROGRESS	STATUS
11. Provide learning opportunities to health staff about the barriers faced by women with learning disabilities and the potential to address screening through the Learning Disabilities Health Check.	Delivery of training to wider learning disability community, inpatient and partner organisations. Creation of social media assets in partnership with individuals with learning disabilities, carers, Mainstay drama group and a learning disability staff.	●
(f) LGBT+ people		
12. Deliver training in equalities sensitive practice in cervical screening.	Due to limited capacity this work has been delayed and will continue into 2025. We continue to promote Public Health Scotland Transgender screening in Scotland | NHS inform guidance within NHSGGC Cervical Skills Training Programme.	●
13. Undertake/support existing engagement work with LGBT+ people to increase uptake.	The comprehensive health needs assessments of lesbian, gay, bisexual, transgender and non-binary people have provided us with direct information about peoples' experiences of accessing services generally and cervical screening in particular.	●
(g) People with severe and enduring mental ill health		

ACTION	PROGRESS	STATUS
14. Promote introductory Learn Pro module on adult screening in order to support staff awareness and to increase the number of in-patients who access screening.	Screening Learn Pro module is live. Most staff completing this module are nursing staff from mental health and learning disabilities services. Others who have completed are from medical, AHPs, administrative, and psychologist staff groups. Staff who do not have access to Learn Pro have had opportunities to access the content through sharing with HSCPs. The Learn Pro module has also been shared with other health boards and the Equity in Screening Strategy team. This module will be maintained to reflect national changes to screening programmes.	●
15. Appraise options for providing access to screening for in-patients via the Physical Health Check Policy.	The Physical Health Check Steering Group have supported a 12 month pilot to deliver in reach cervical screening programme within inpatient mental health settings. Implementation planning is progressing, however delays in progressing recruitment of post have delayed overall project delivery, and this work will continue into 2025/26.	●
(h) Additionally identified local priorities		
16. * Resource additional cervical clinic appointments for women who have experienced trauma	We used SG CSIF to provide non-recurring funding to the Sandyford 'My Body Back' programme in order to increase capacity to address waiting lists. My Body Back offers cervical screening for people who have experienced rape or sexual violence and are due, or overdue, for their test. Supporting those who have experienced trauma is now a national priority. We are also providing guidance and support to develop service evaluation plans.	●
17. * Undertake analysis of colonoscopy pre-assessment data	We investigated the demographic characteristics between those who attended for colonoscopy and those who did not following a positive bowel screening test. This initial analysis revealed proportion of colonoscopies not performed increased with increasing deprivation and with increasing age. We will progress further analysis of demographic and wider patient factors contributing to non-attendance for with colonoscopy for individuals with a positive screening result to inform future actions to address variation.	●

ACTION	PROGRESS	STATUS
18. *Improve understanding of AAA screening experience at the point of delivery	A patient survey of men under surveillance is planned to take place in March 2025. Once completed, we will review findings and identify actions in order to better support patients, communication and links to related services.	●
19. Support GPs to use existing PHS cervical toolkit and framework to target vulnerable groups and eligible people who have not attended.	Due to the unexpected closure of Jo's Cervical Trust in May 2024, this planned partnership work was unable to progress. This work will be refocused in 2025/26 to provide targeted support for quality improvement activities in GP practices in areas of high deprivation with known lower uptake (see item 4 also).	●
(i) Potential mechanisms to integrate findings into work to tackle inequalities in the longer term.		
20. * Pilot follow-up telephone calls to women who fail to contact WSBSS following open invitation letter	We agreed funding through the SG CSIF and a partnership with West of Scotland Breast Screening Service, NHS Lanarkshire, NHS Forth Valley, and NHS Highland (Argyll & Bute) in order to improve uptake of breast screening through improved communication with eligible women who previously did not attend breast screening. This project was undertaken during summer / autumn 2024. Final report is pending, with learning to be shared with national breast screening programme.	●
21. Evaluate and undergo programme of revision of patient information which is due for review in partnership with stakeholders.	With agreement from the Bowel Screening Steering Group, we commissioned (funded from the SG SIF) a qualitative evaluation of the 'Preparing for your Colonoscopy' patient information. Both patients and service delivery staff were interviewed for the evaluation. The Bowel Screening Steering Group has been open and receptive to the report findings. As a result, they revisited 'Pre-Assessment' and 'Bowel Preparation' policies and patient information is being revised.	●