

NHS Greater Glasgow and Clyde	Paper No. 25/81
Meeting:	NHSGGC Board Meeting
Meeting Date:	24 June 2025
Title:	Joint Health Protection Plan 2025-2027
Sponsoring Director/Manager	Dr Emilia Crighton, Director of Public Health
Report Author:	Helen Benson, Consultant Public Health

1. Purpose

The purpose of the attached paper is to:

Fulfil the Board's statutory responsibility under section 7 of the Public Health etc. (Scotland) Act 2008 to prepare plans for public health protection. The Joint Health Protection Plan (JHPP) has been prepared in consultation with co-terminus local authorities, as required by the Act, and meets the requirements of the accompanying guidance. Covering the period 2025-2027, the JHPP is prepared on behalf of the Director of Public Health by the Public Health (Health Protection) Liaison Working Group, whose membership and terms of reference are detailed within the document.

2. Executive Summary

The paper can be summarised as follows:

The Joint Health Protection Plan (JHPP) provides an overview of health protection priorities, provision, and preparedness for the NHS Board area, described under the following headings:

- Overview of Health Board and Local Authorities
- Health protection: planning infrastructure
- Health protection: national and local priorities
- Health protection: resources and operational management
- Health protection services: capacity and resilience
- Health protection: public involvement and feedback

The JHPP serves as a reference document that maps out local health protection structures and functions. It includes an outline work plan developed by partner

agencies and the Public Health (Health Protection) Liaison Working Group, focusing on preparedness, resilience, and public engagement over the next two years. An Annex provides contextual information on the population of GGC, including demographics, life expectancy, and burden of disease.

3. Recommendations

The NHSGGC Board is asked to consider the following recommendations:

- Approve the Joint Health Protection Plan for 2025-2027.

4. Response Required

This paper is presented for Approval

5. Impact Assessment

The impact of this paper on NHSGGC's corporate aims, approach to equality and diversity and environmental impact are assessed as follows:

- | | |
|------------------------|------------------------|
| • Better Health | <u>Positive</u> impact |
| • Better Care | <u>Positive</u> impact |
| • Better Value | <u>Neutral</u> impact |
| • Better Workplace | <u>Neutral</u> impact |
| • Equality & Diversity | <u>Positive</u> impact |
| • Environment | <u>Positive</u> impact |

6. Engagement & Communications

The issues addressed in this paper were subject to the following engagement and communications activity:

The JHPP has been subject to significant consultation and agreement with representatives of the six local authorities. An editorial group consisting of members from the seven signatory organisations (GGC PHPU lead authors and local authority Environmental Health team members) met regularly over the first quarter of 2025 to finalise the plan.

Representatives of the following organisations have had opportunity to comment on drafts of the Plan including the work plan through the Public health (Health Protection) Liaison Working Group: Public Health Scotland, diagnostic and reference laboratories, Infection Prevention and Control, SEPA, Scottish Water, Drinking Water Quality Regulator, Animal and Plant Health Agency, and Scotland's Rural University College – Veterinary Consulting.

7. Governance Route

This paper has been previously considered by the following groups as part of its development:

- Public Health Liaison Working Group
- Public Health Senior Management Team
- Corporate Management Team
- Population Health and Wellbeing Committee

In addition to endorsement by the Population Health and Wellbeing Committee and approval by the NHSGGC Board, in accordance with Scottish Government guidance, the JHPP will be submitted to a committee of elected members with appropriate delegated authority in each of the six local authorities.

8. Date Prepared & Issued

Date prepared: 17 April 2025

Date issued: 19 June 2025

Greater Glasgow and Clyde Joint Health Protection Plan 2025-2027

NHS Greater Glasgow and Clyde

East Dunbartonshire

East Renfrewshire

Glasgow

Inverclyde

Renfrewshire

West Dunbartonshire

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1 Foreword

The Public Health etc. (Scotland) Act 2008 requires NHS Boards, in consultation with Local Authorities, to produce a Joint Health Protection Plan (JHPP) which provides an overview of health protection (communicable disease and environmental health) priorities, provision and preparedness for the NHS Board area. Guidance on the content of JHPPs has been published by the Scottish Government.

This plan covers the period from 1 April 2025 to 31 March 2027. The intention is to update the plan every two years, in line with government guidance. The last plan, published in 2024, covered the period 2023-2025.

Over recent years the JHPP has been an invaluable resource to enable, and advocate for, the joint working and mutual support that allowed our teams to deliver new, expanded and adapted services in the context of unprecedented demand, changing policy direction, and during the pandemic, unparalleled restrictions on society.

Since the pandemic, and time of writing the last plan, we have been able to progress a proactive health protection work plan through our joint working. This plan updates on this work, in addition to updating on the status of existing and emerging health protection priorities. Although this document concentrates on health protection activity, it should be seen in the context of our other strategic work, including “Turning the Tide”, our 10 year public health strategy.

The plan is a public document and is available to members of the public on the NHS Greater Glasgow and Clyde website and on request. We hope that you will find this plan to be of interest, and of value, and that its production will contribute to protecting the health of the people who visit, work and live in Greater Glasgow and Clyde.

Dr Emilia Crighton
Director of Public Health
NHS Greater Glasgow and
Clyde

2 Signatories

Authority	Authorised	Position	Approving committee	Date
NHS Greater Glasgow and Clyde (NHSGGC)	Emilia Crighton	Director of Public Health	Population Health & Wellbeing Committee	17 June 2025
East Dunbartonshire	Evonne Bauer	Executive Officer	Place Neighbourhood and Corporate Assets Committee	TBC
East Renfrewshire	Caitriona McAuley	Director of Environment	Cabinet	TBC
Glasgow City	George Gillespie	Executive Director, Neighbourhoods, Regeneration & Sustainability	Environment and Liveable Neighbourhoods City Policy Committee	TBC
Inverclyde	Martin McNab	Public Protection Manager	Environment & Regeneration	TBC
Renfrewshire	Gordon McNeil	Director of Environment, Housing, and Infrastructure	Communities and Housing policy board	TBC
West Dunbartonshire	Alan Douglas	Chief Officer, Regulatory & Regeneration	Signed on delegated authority, and elected members briefed	TBC

3 Purpose

This plan has been prepared following the requirements set out in the Public Health etc. (Scotland) Act 2008. The seven signatory organisations have prepared this plan in collaboration and consultation. This plan is herewith referred to as the Joint Health Protection Plan (JHPP).

The purposes of the plan are:-

- i. To provide an overview of health protection priorities, provision and preparedness for NHSGGC and partner Local Authorities.
- ii. To outline the joint arrangements which NHSGGC and partner Local Authorities have in place for the protection of public health.
- iii. To improve the level of “preparedness” to respond effectively to a health protection incident and emergency.
- iv. To clarify the priorities for the period of the plan 2025-2027.
- v. To develop learning across the agencies.
- vi. To provide a mechanism for reviewing and recording outcomes and achievements.

In addition to content relating to the above purposes, the JHPP also includes an Annex providing relevant contextual information on the population of Greater Glasgow and Clyde, including demographics and population projections, life expectancy and burden of disease.

The plan will be reviewed annually by representatives from environmental health and health protection and any necessary changes made and reported to the JHPP signatories. The plan will only be formally changed and updated every 2 years in accordance with legislative requirements.

4 Introduction

4.1 Public health

Public health, as defined by Acheson, and adopted by the Faculty of Public Health is “the science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society”¹.

Traditionally public health has been divided into three domains – health protection, health promotion and health services public health, supported by public health intelligence. Though the JHPP deals only with the first of the domains, the domains overlap, interact and provide mutual support in improving and protecting the public’s health.

4.2 Health protection

Health protection is a term used to encompass a set of activities within the Public Health function. It involves:

- Ensuring the safety and quality of food, water, air and the general environment
- Preventing the transmission of communicable diseases
- Managing outbreaks and the other incidents which threaten the public health.

The Public Health etc. (Scotland) Act 2008 defines the duties of health boards and local authorities to protect public health including the designation of competent persons, cooperation and planning, and legal powers and functions. Core health protection functions within NHS GGC Health Board are undertaken by the Public Health Directorate Public Health Protection Unit (PHPU), while environmental health departments are responsible for local authority health protection functions.

A range of organisations, stakeholders and services contribute to wider health protection functions. These range from clinicians with responsibility for the notification of cases of infectious disease, laboratories undertaking diagnostic or environmental testing, and those working in local, regional and national organisations with the remit of contributing to activities outlined above, including surveillance and epidemiology.

The profile of health protection has increased significantly in recent years with issues such as immunisation, food borne infections, pandemic flu, COVID-19, healthcare associated infection and other communicable diseases regularly being in the public eye. The quality of public protection from hazards demands a workforce, educated and trained to the highest standards².

4.3 Environmental health

Environmental health has been defined as: “... that area of Public Health activity which strives to improve, protect and maintain health and wellbeing through action on the physical environment and on life circumstances”³.

¹ Independent Inquiry into Inequalities in Health: Report; The Stationery Office; 1998 [Independent inquiry into inequalities in health - GOV.UK](#)

² NHS Education Scotland [Health protection | NHS Education for Scotland](#)

³ Old Report; 2006 (commissioned by Royal Environmental Health Institute of Scotland) [What is Environmental Health? - REHIS](#)

5 Overview of NHS Board and local authorities

Descriptions of the seven partner organisations are included below. Detailed population statistics, including population trends, deprivation and life expectancy of the population for NHSGGC and by local authority, as well as key indicators of health and social determinants of health are contained in an appendix to this plan.

5.1 NHS Greater Glasgow and Clyde

NHSGGC Health Board is responsible for the health needs of the population resident within its catchment area. Its purpose is to:

“Deliver effective and high quality health services, to act to improve the health of our population and to do everything we can to address the wider social determinants of health which cause health inequalities.”

The Health Board provides strategic leadership and performance management for the entire local NHS system in the Greater Glasgow and Clyde area and ensures that services are delivered effectively and efficiently. It is responsible for the provision and management of the whole range of health services in this area including secondary and primary care, and public health. NHSGGC works alongside partnership organisations including Local Authorities and the voluntary sector. NHSGGC serves a population of 1.3 million and employs around 41,000 staff. It is the largest NHS organisation in Scotland and one of the largest in the UK.

5.2 East Dunbartonshire

East Dunbartonshire lies to the north of Glasgow City and is bounded by the Campsie Fells and Kilpatrick Hills. East Dunbartonshire's main settlements are Bearsden, Milngavie, Lenzie, Kirkintilloch and Bishopbriggs. It also has a number of small rural commuter villages including Twechar, Milton of Campsie, Lennoxtown, Torrance and Balmore. It covers an area of 67 square miles and has a population of approximately 109,000 people as well as around 3,000 businesses.

The Forth and Clyde Canal as well as the River Kelvin flow through the area attracting recreational visitors as does Scotland's best-known long-distance footpath, the West Highland Way, that begins in Milngavie before traversing through Mugdock Country Park and the Campsie Fells.

Although East Dunbartonshire, as a whole, is less deprived than other authorities in Scotland, there are a number of specific areas within East Dunbartonshire that fall below the Scottish average.

More information can be found at <https://www.eastdunbarton.gov.uk/about/>

5.3 East Renfrewshire

East Renfrewshire is situated to the south of the city of Glasgow and its significant town centres include Barrhead, Clarkston, Giffnock and Newton Mearns.

It is a relatively affluent area with approximately half of residents working in managerial, professional or technical professions. The majority of residents work in Glasgow and less than a fifth of residents live and work in East Renfrewshire. East Renfrewshire has a population of approximately 99,000 people, with an increasing

pattern of more people settling in the area than leaving which has an impact on the demographic profile and the challenges that this brings.

The quality of East Renfrewshire's built and natural environment is high with low levels of air pollution and over three quarters of residential properties within 200m of greenspace.

The Council's strategy is to consolidate and regenerate the urban areas focussing upon delivering the 3 objectives of:

1. Creating Sustainable Places and Communities;
2. Promoting Sustainable and Inclusive Economic Growth; and
3. Promoting a Net Zero Carbon Place.

5.4 Glasgow City

Glasgow is a city with a great history and heritage built around the River Clyde. The City Council is Scotland's largest local authority and provides services to more than 600,000 residents, as well as those who work, visit and do business in the city on a daily basis.

The Council's current Strategic Plan sets out four Grand Challenges for the Council to deliver against, which are to:

- Reduce poverty and inequality in our communities;
- Increase opportunity and prosperity for all our citizens;
- Fight the climate emergency in a just transition to a net zero Glasgow;
- Enable staff to deliver essential services in a sustainable, innovative and efficient way for our communities.

Glasgow remains a city with unacceptable and long-standing contrasts. Healthy lives, good jobs and access to opportunities are not spread equitably across our communities. Tackling health and social inequalities will therefore inform all of our work. The Council believes that all Glaswegians have the right to enjoy healthy lives free from poverty, discrimination and inequality.

5.5 Inverclyde

Inverclyde covers an area of 61 square miles stretching along the south bank of the estuary of the River Clyde. With a population of approximately 78,000, Inverclyde is one of the smaller local authorities in Scotland. The main towns of Greenock, Port Glasgow and Gourock sit on the Firth of Clyde. The towns provide a marked contrast to the coastal settlements of Inverkip and Wemyss Bay, which lie to the southwest of the area, and the villages of Kilmacolm and Quarrier's Village which are located further inland.

The Council recognises that there are a number of challenges for the area, including population decline. Inverclyde has had one of the largest population declines of all Scottish Council areas over the past 20 years. Fewer births than deaths is the major driver of population decline locally, however a more positive picture is emerging with regard to migration with official estimates showing that overall net migration has been positive in the previous four years (mid 2018-19 to mid-2022-23). Levels of in-migration however have not been high enough to address the population decrease caused by negative natural change.

The age profile of Inverclyde's population is similar to that of Scotland, with an ageing population that is predicted to grow, particularly in the over 75 age group. In common with many areas in Scotland, particularly where there has been a decline in traditional industries, Inverclyde suffers from areas of deprivation and inequality, with estimates showing that more than 1 in 4 children in Inverclyde are living in poverty.

5.6 Renfrewshire

Renfrewshire Council is situated to the west of Glasgow on the south bank of the River Clyde and covers around 103 square miles. Renfrewshire borders Inverclyde Council to the West, North Ayrshire Council to the south and East Renfrewshire is located to the southeast. Renfrewshire has a population of over 179,000, making it the tenth largest council in Scotland in terms of its population.

Paisley has the largest population of around 77,000 and forms the commercial and transport hub for Renfrewshire. The town of Renfrew lies to the north of Paisley and Johnstone to the west.

Glasgow International Airport is located to the north of Paisley and is easily accessed from the M8 Motorway and Paisley Town Centre. It is one of Scotland's busiest airports. It is a key part of the transportation infrastructure of Scotland and is a major contributor to Renfrewshire's economy.

Renfrewshire Council is committed to its role as a health improving organisation and recognises its responsibility in working with partners to improve the health of local communities. This focus is essential due to the significant health inequalities that exist in Renfrewshire, linked often to levels of deprivation within communities.

The Renfrewshire Council Plan for 2022-2027 identifies five strategic outcomes which aim to create a fairer, more innovative, and opportunity-rich Renfrewshire. These include enhancing community infrastructure and safety to create vibrant places, building a strong and inclusive economy with job opportunities, reducing inequalities and promoting social justice, committing to environmental sustainability by reducing carbon emissions and promoting renewable energy, and fostering a culture of integrity, respect, and continuous improvement in council activities. Together, these outcomes are designed to achieve lasting positive change across Renfrewshire.

5.7 West Dunbartonshire

West Dunbartonshire is a diverse area with a rich industrial heritage still evident in the local communities today. Across the three main areas of Clydebank, Dumbarton and the Vale of Leven we see diversity from the densely populated urban centre of Clydebank to the more rural setting of the Loch Lomond and Trossachs National Park, sitting in and beyond the northern edge of the Authority.

With a population of 88,750 in 2023, between 2018 and 2028, the population of West Dunbartonshire is projected to decrease from 89,130 to 87,141. A further decrease is projected, with the population at 82,537 by 2043. This is an overall decrease of 7.4%, which compares to a projected increase of 2.5% for Scotland as a whole in the same time period.

The Council's Strategic Plan 2022-2027 identifies a number of key priorities. A common theme across all the priorities is stronger integration of strategies and interventions aimed at addressing key challenges and realising opportunities. This is particularly true in promoting health and wellbeing, where those factors, often described as key determinants, influence options, choices and patterns of behaviour, which in turn shape health and wellbeing outcomes.

6 Health protection: planning infrastructure

Locally, the Public Health (Health Protection) Liaison Working Group (the “Med-Vet”) provides an area-wide forum for discussion of the surveillance and investigation of infectious diseases (including outbreaks) and environmental hazards affecting, or with the potential to affect, the health of the general population, and to ensure that appropriate procedures are carried out during this process.

The group’s remit is:

- To provide an area wide multidisciplinary forum to monitor, report, discuss and recommend actions to protect the health of our population
- Sharing of intelligence on infectious intestinal disease in humans and animals, and surveillance of environmental hazards in air, water and land which have the potential to impact, or are already damaging to, the health of our population
- To agree basic minimum standards for the investigation of infectious gastrointestinal disease in the human population, and ensure that appropriate follow up action takes place
- To monitor our performance against agreed standards
- To ensure Incident Management Plans are fit for purpose
- To participate in exercises to ensure that all partners are familiar with appropriate responses
- To provide a forum for discussion of issues raised by the Scottish Government, Public Health Scotland and other relevant bodies which have potential to impact on the above
- To monitor untoward events and outbreaks and ensure that our systems are modified appropriately

Membership is drawn from:

- Public Health Protection Unit (PHPU) Consultant, Nursing and Epidemiology Staff
- Local Authority environmental health departments
- Public Health Scotland
- Diagnostic, reference and public analyst laboratories
- Infection Prevention and Control
- Scottish Water
- Drinking Water Quality Regulator
- Scottish Environment Protection Agency
- Animal and Plant Health Agency
- Scotland’s Rural College Veterinary Consulting Service

The JHPP is not a standalone document and existing plans relevant to health should be considered incorporated into the JHPP and are not reiterated here.

There is a series of health protection plans that are prepared by the Health Board, singly or in partnership with Local Authorities and other agencies detailed in Table 1. Additionally, there is a further series of plans maintained or adopted by each Local Authority which follow in Table 2, with further detail given in the accompanying footnotes. These plans complement documents produced at a national level which guide health protection response, including [*Management of Public Health Incidents*](#), *Scottish Waterborne Hazards Plan*, and the *Scottish Exotic animal disease contingency framework plan*.

Table 1: Summary of health protection plans

Plan	Owner	Last updated	Review date	Exercised
Incident Management Plan	Med-Vet Group	2022	2025	2023. Next exercise planned for 2026
Blue-green algae plan	Med-Vet Group	2017	2025 (Main plan) Annually (inland waters risk assessment)	N/A – as the plan is used regularly during the algal bloom season, exercising is not required.
NHSGGC Board Pandemic Response Plan	NHSGGC	February 2025	Every three years or sooner if required	Exercised 2020 used during COVID 19
Multi-agency Resilience Partnership Pandemic Plan	Resilience Partnership	November 2021	Due for review	2020
Major incident	NHSGGC	July 2024	June 2025	Elements of the plan were tested in 2024. In addition, NHSGGC activated its Major Incident response arrangements in 2024.
Mass casualty	SG Health Resilience	2021	Ongoing (6 monthly reviews)	The plan was tested in 2024. A debrief report was issued to boards in Nov 24 with a recommendation to fully review the national mass casualty plan
Glasgow Airport Port Health Procedures ⁴	Glasgow Airport Ltd	2022	September 2025	Joint training session at Glasgow Airport in September 2023.
Operation Waypoint Procedures	Maritime and Coastguard Agency, Inverclyde Council, NHSGGC and partners	Under development		February 2025

⁴ In addition to Glasgow Airport Port Health Procedures, NHSGGC and Renfrewshire local authority maintain internal guideline documents relating to Port Health responsibilities and procedures for Glasgow Airport. A similar document is maintained by Inverclyde local authority relating to sea ports. These have not been reviewed and exercised during the course of the 2023-2025 JHPP.

Table 2: Summary of Local Authority plans applicable to health protection

	East Dunbartonshire	EastRenfrewshire	Glasgow City	Inverclyde	Renfrewshire	West Dunbartonshire
1. Official Food Controls Service Plan	✓	✓	✓	✓	✓	✓
2. Pandemic influenza ⁵	✓	✓	✓	✓	✓	✓
3. Rabies ⁵	✓	✓	X	✓	✓	✓
4. Contaminated land strategy	Underdevelopment	✓	✓	✓	✓	Underdevelopment
5. Health and safety enforcement service plan	✓	✓	X	X	✓	X
6. Council emergency plan ⁶	✓	✓	✓	✓	✓	✓
7. River Clyde flood management strategy	✓	✓	✓	✓	✓	✓
8. Local Outcome Improvement Plan (LOIP)	✓	✓	✓	✓	✓	✓
9. Locality/ Place Plans requirement under the LOIP for deprived areas	✓	Under development	✓	✓	✓	✓
10. Local Development Plan	✓	✓	✓	Under development	Underdevelopment	Underdevelopment
11. Local Housing Strategy, including action plans for: -Private sector -Fuel Poverty	✓	✓	✓	✓	✓	✓
12. Air Quality Strategy/ Progress Report/ Management Area Plans	✓	✓	✓	✓	✓	Underdevelopment

⁵ Local Authorities have adopted regional and/or national plans for pandemic influenza and rabies rather than maintaining individual plans.

⁶ Local authorities in the Renfrewshire and West Dunbartonshire Civil Contingencies Service area (West Dunbartonshire, Renfrewshire, East Renfrewshire, and Inverclyde) maintain a suite of emergency procedure documents along with some incident specific plans and business continuity plans in place of a single emergency plan.

13. Local Heat and Energy Efficiency Strategy (LHEES), superseding Sustainability & Climate Change Framework / Action Plan ⁷ and including as applicable: <ul style="list-style-type: none"> - Carbon management strategy - Sustainability strategy - Green network strategy 	✓	Under development	✓	✓	✓	✓
14. Open Space Strategy	✓	✓	✓	X	✓	✓

⁷ East Dunbartonshire Council maintains a separate climate change action plan, in addition to a Green space strategy and Community Food growing strategy.

6.1 Scottish Health Protection Network

The parties to the JHPP also participate through the Scottish Health Protection Network (SHPN). Since 2015, the SHPN obligate network has provided a national forum of professionals working in health protection from different professional backgrounds, working in different organisations (local and national), and having a range of responsibilities for public health functions. Members of the Med-Vet group contribute to nationally led work via membership of SHPN topic and coordination groups.

In 2022 the SHPN underwent an independent review, that found whilst the network is highly valued, and has well regarded and used outputs, it could increase its impact and required further resource to do so. The headline conclusion of the independent review team was:

The Scottish Health Protection Network is unique. It must not be lost, diluted or allowed to disintegrate. Instead, it should be cherished, strengthened and widely publicised.

The signatories to the plan fully support these conclusions and commit to continuing to support the network through the implementation of the review's findings, recognising the SHPN as the lynchpin in the national health protection planning infrastructure. It is recognised that to do this requires staff resource to participate in relevant groups and supporting the development of health protection guidance.

More detail on the SHPN can be found on the [Public Health Scotland website](#).

7 Health protection activities

7.1 Local and national priorities

The Public Health Priorities for Scotland as published in 2018 highlight the continuing importance of protecting the health of the population from serious risks and infectious diseases through vaccination, infection control and incident response, and the ability to respond to emerging threats, but do not identify specific priority areas for health protection.⁸ The Health Board and Partners are also cognisant of the priorities as stated from time to time by Scottish Government and chief professional officers.

Key priority areas include:

- Pandemic response
- Healthcare associated infections
- Antimicrobial Resistance (AMR)
- Vaccine preventable diseases
- Gastro-intestinal and zoonotic infections
- Blood borne viruses
- Tuberculosis (TB)
- Environmental exposures which have an adverse impact on health⁹
- Climate and sustainability
- Migration and health
- The ongoing consequences of UK withdrawal from the European Union
- Food safety

In addition, the following were considered to be important to improve the delivery of health protection services by both the NHS and Local Authorities:

- Capacity and resilience of health protection services in responding to actual or potential significant threats to public health
- Developing means to assure the quality of health protection services
- Continuing professional development especially with regard to strengthening evidence based good practice
- Improving communications with the public on risks to health and securing a greater degree of involvement in health protection services

In addition to reporting on the above key priority areas, our 2025-2027 Joint Health Protection Plan also includes information on housing and fuel poverty, and food security as emerging population health issues that interplay with several of the key priority areas.

Actions on the key priority areas, and other health protection responsibilities include:

⁸ The Scottish Government (2018) Public Health Priorities for Scotland. Edinburgh
<https://www.gov.scot/publications/scotlands-public-health-priorities/>

⁹ These are referred to as “non-communicable hazards” in the reminder of the JHPP.

7.1.1 Pandemic disease/Covid-19

A comprehensive suite of pandemic flu plans based on national and international guidance, and frequent flu planning “exercises”, are continually updated to ensure readiness for future pandemics. These plans support the West of Scotland multi-agency pandemic influenza planning process, which is led by the Local Resilience Partnerships, and in which close working with key partners ensures a consistent and collaborative approach to planning. The ongoing UK and Scottish Covid Inquiries, and the new Scottish Committee on Pandemic Preparedness will influence how these plans are developed in the future.

The Covid-19 pandemic, the most significant health shock worldwide since the 1919 influenza pandemic. Covid has impacted on every aspect of our lives – individual and community health, delivery of services, education, and economic growth.

The signatories to the plan worked together, along with other partners, including police, fire, and other statutory and voluntary organisations, through resilience partnerships to respond to the Covid pandemic, by for example:

- delivering the Test and Protect (contact tracing) services
- providing information, advice and support to businesses, industry and communities on Covid mitigation measures
- Joint working through incident management process
- Visits to commercial, industrial and public sector buildings and workplaces, to assess, advise and enforce control measures
- Setting up of temporary mortuary facilities
- Supporting education departments and head teachers to manage Covid in schools
- Care for people for those shielding or isolating – including welfare checks, assistance with food / shopping arrangements, prescription deliveries, utilities issues, financial matters, welfare issues, library materials, and general household / property matters
- Support for calls to most socially isolated
- Administration of isolation support and business grants

Two areas of work deserve being highlighted further – work undertaken to deliver the largest mass vaccination drive in living memory, and the design, set up and running of community testing services. The latter included innovative models for delivery, including being among the first community asymptomatic testing pilots (Renfrewshire), combined asymptomatic and symptomatic testing sites (West Dunbartonshire) and mobile testing buses (East Renfrewshire).

This work was facilitated through an operational subgroup of the NHSGGC area pandemic resilience partnership.

7.1.2 Healthcare associated infections

Prevention and control of infection continues to have the highest priority within NHSGGC and the Board Infection Control Committee (BICC), in conjunction with clinical service providers and estates and facilities colleagues, develops an annual infection prevention and control programme and associated work plan to co-ordinate and monitor all the activity of the infection control teams and committees in preventing and controlling infection through effective communication, education, audit, surveillance, risk assessment, quality improvement and development of local

guidance and procedures. The programme addresses the national and local priorities for infection prevention and control.

PHPU and environmental health departments work alongside and support the Infection Prevention and Control Teams (IPCT). NHSGGC's progress against the programme of work is reported at each committee meeting. The most up to date version of the IPC annual report, and Standard Operating Procedures (SOPs) can be accessed on the Infection Prevention and Control section of the NHSGGC website.

Good practice in Infection Prevention and Control does not rest solely within the remit of our IPCT. Every member of staff has a professional responsibility to prevent healthcare associated infection and is accountable for their actions in relation to this. This plan recognises that cases of infectious disease and outbreaks in healthcare settings and cases and outbreaks in the community may be linked and require a cross-boundary response.

The Scottish Infection Prevention Workforce: Strategic Plan 2022 – 2024 was published December 2022. This strategy covers IPCT, Antimicrobial Stewardship, and IPC aspects of health protection teams. We will work together to support the strengthening of infection prevention and control through this framework. In addition, the following Directors' Letter, DL(2024)29, listed the New Deliverables for the Second Phase of the '[Healthcare Associated Infection Strategy 2023-2025](#)'¹⁰ which requires NHS Boards to "ensure that there is clarity around roles, remit and responsibility between IPC/ Health Protection Teams (HPT) in relation to primary, secondary and social care" work is ongoing within NHSGGC to establish this.

7.1.3 Antimicrobial resistance

Antimicrobial resistance (AMR), the ability of microbes to develop resistance to antimicrobials, rendering infections more difficult and in some rare instances, impossible to treat. It is recognised as a global public health threat, compounded by the current lack of new antibiotics being developed.¹¹ The scale of the AMR threat, and the need to contain and control it, is widely acknowledged by country governments, international agencies, researchers and private companies alike.

The COVID-19 pandemic has had a significant and ongoing impact on antibiotic prescribing across healthcare and not least in primary care. The exact relationship is unclear however the last two years has also seen a resurgence of Group A Streptococcal infections, Mycoplasma pneumoniae, Bordetella pertussis as well as significant outbreaks of RSV infection and Influenza in addition to ongoing COVID-19 infections all of which have driven antibiotic prescribing increases. There has also been a significant shift in primary care practice towards more remote consultations with some evidence that these are associated with higher prescribing rates. All of these present significant and ongoing challenges to antimicrobial stewardship in primary care.

[Confronting antimicrobial resistance 2024 to 2029](#) – The UK's updated national action plan was published in May 2024.¹² It sets out the UK's national action plan

¹⁰ <https://www.gov.scot/publications/scottish-healthcare-associated-infection-hcai-strategy-2023-2025/>

¹¹ <https://www.nss.nhs.scot/media/5717/arhai-sonaar-annual-report-2023-v12.pdf>

¹² <https://www.gov.uk/government/publications/uk-5-year-action-plan-for-antimicrobial-resistance-2024-to->

to tackle AMR within and beyond our own borders. The plan was designed to ensure progress towards the 20-year vision on AMR, in which resistance is effectively contained and controlled. It has nine strategic outcomes organised under 4 themes. Action will be taken across human and animal health, agriculture and the environment. The 4 themes are as follows:

- Reducing need for, and unintentional exposure to, antimicrobials;
- Optimising use of antimicrobials;
- Investing in innovation, supply and access; and
- Being a good global partner

These are underpinned by actions across different areas, ranging from reducing infection (through healthy living, immunisation and infection prevention and control) and strengthening antibiotic prescribing stewardship (underpinned by behaviour change strategies) to improving surveillance and boosting research.

Initiatives that are being taken forward out with the acute setting nationally and within NHSGGC include:

- Board level initiatives to identify and address variations in prescribing practice between community health partnerships including provision of bespoke educational activity when required
- Guidelines are regularly updated and available in various formats, and utilised in GP system prescribing support including electronic prescribing prompts to promote shorter duration antibiotic therapy for respiratory tract and urinary tract infections
- Promotion of antibiotic prescribing targets in line with the 2024-2029 NAP to:
 - i. Reduce total antibiotic use by 5% from a 2019 baseline.
 - ii. Increase the proportion of first line (WHO Access) antibiotic use to 70% of all antibiotics prescribed.
- GP practices receive data reports from National Services Scotland on their antimicrobial prescribing twice a year, which supports discussion and review. This compliments other local and national data access.
- Promotion and utilisation of the Scottish Reduction in Antimicrobial Prescribing (ScRAP) and Royal College of General Practitioners' Treat Antibiotics Responsibly, Guidance, Education and Tools (TARGET) resources.

The Scottish Antimicrobial Prescribing Group and NHSGGC Antimicrobial Management Team is engaged in various initiatives to further support and promote antimicrobial stewardship in primary care. At the time of writing, this includes development of supplementary prescribing targets to focus on shorter duration of therapy and use of WHO Access antibiotics for specific indications; targets for dental prescribing are also under evaluation.

7.1.4 Vaccine preventable diseases

Information on national immunisation programmes, including the timetable of routine childhood immunisations, can be found by visiting [Vaccination schedule - Immunisations in Scotland | NHS inform](#).

Uptake rates for routine childhood, HPV and teenage booster vaccines in the

national programme are available [from Public Health Scotland's Childhood Immunisation Statistics release](#).

The ongoing challenge is to encourage and maintain high uptake of vaccines, including covid and 'flu, in target groups across the Health Board area.

Immunisation programmes in NHSGGC are coordinated by the Public Health team, through the multi-partner Strategic Immunisation Group, providing leadership, programme management, education and training and support to primary care, children and families teams and school immunisation teams who administer the vaccines.

Scottish Government announced a Vaccination Transformation Programme (VTP) in early 2017, with the aim of ensuring the health of the Scottish public through the modernisation of the delivery of vaccinations, empowering local decision making and supporting the transfer of vaccination from General Practice to alternative models of delivery, was completed in April 2022. The Scottish Vaccination & Immunisation Programme (SVIP), has taken the learning from the VTP and the coronavirus vaccination programme into a new operational and performance framework. SVIP is a tripartite partnership between PHS, Scottish Government and territorial boards, led by Public Health Scotland.

7.1.5 Gastro-intestinal and zoonotic infections (GIZ)

There is close joint working between NHSGGC and local authority environmental health professionals on GIZ, including through an agreed enteric investigation protocol, the Incident Management plan, and training events and exercises. Gastro-intestinal infections are the largest single group of infectious diseases that benefit from the joint working between the signatories of this plan, in the investigation of cases and clusters of notifiable enteric disease, and in supporting settings experiencing outbreaks of gastrointestinal illness. The health board and local authority environmental health professionals work closely with colleagues from national agencies such as Food Standards Scotland, Public Health Scotland, and animal health in responding to incidents and outbreaks, and the development of guidelines, including via the SHPN topic groups. Whole genome sequencing of isolated pathogens by national reference laboratories has increased the potential for identifying whether cases of gastrointestinal illness are part of wider clusters. NHSGGC and environmental health colleagues have contributed to investigation of UK-wide clusters through completion of enhanced surveillance questionnaires.

The West of Scotland Regional Resilience Partnership has reformed their animal health sub-group to aid in the co-ordination of resilience activities in relation to zoonotic disease. In addition, national plans are available e.g. rabies, which are regularly exercised, and which support local preparedness for zoonotic infections.

Escherichia coli O157 and other Shiga toxin-producing E. coli (STEC)

STEC (also known as verotoxic *E. coli*, VTEC) is the most serious enteric infection that is regularly notified to health protection services, with approximately 40 cases a year notified to PHPU. STEC require a rapid co-ordinated response to minimise risk of further transmission and to identify the potential source. The revised Scottish

STEC public health guidance¹³ was published in January 2025. Parties to the JHPP were involved in the development of this guidance, which aims to reduce the risk of STEC across Scotland and ensure the best evidence based response from all agencies.

7.1.6 Bloodborne Viruses (BBV) and Sexually Transmitted Infections (STIs)

Prevention, control and elimination of BBVs (HIV, Hepatitis B and C) and STIs (syphilis, gonorrhoea and chlamydia) remains a priority for NHSGGC, in line with both global and national priorities.

NHSGGC's approach to BBVs is guided by the Scottish Government's [Sexual Health and Blood Borne Virus \(SHBBV\) action plan](#) and their targets to eliminate Hepatitis C and HIV transmission in Scotland.

Programmes in place within NHSGGC to support delivery of these priorities include:

- Education and awareness raising (public and staff)
- Prevention/Harm Reduction (Injecting equipment provision, free condoms, vaccination, HIV pre and post exposure prophylaxis)
- Case finding (testing and partner notification/contact tracing)
- Treatment

PHPU provides strategic direction; maintains an overview of SHBBVs needs in our population and relevant national developments; monitors progress at board-wide level; and engages with services to deliver an optimal and coordinated response with the resources that are available. Delivery of prevention, testing and treatment programmes take place across a range of NHSGGC services including but not limited to primary care, specialist sexual health services, drug treatment and harm reduction services, prison health and acute services.

An outbreak of HIV amongst people who inject drugs in NHSGGC was identified and declared in 2015, and an Incident Management Team (IMT) has been in place since then to oversee the ongoing response to this outbreak. Following a recent comprehensive assessment, the IMT has concluded that the outbreak is under control and has decided to stand down. However, the IMT has noted there is a risk of a recurrence of the outbreak and made a number of recommendations for maintaining control of the outbreak, and for making further progress towards elimination of HIV transmission.

7.1.7 Tuberculosis (TB)

NHS Greater Glasgow and Clyde (NHSGGC) is proud to have the most ethnically diverse community out of all the Scottish NHS Board areas. We have a record for embracing minority groups and tackling inequalities, but this does not come without its challenges. NHSGGC continues to have the highest burden of TB in Scotland, representing around half of all cases nationally. 72.2% of active TB patients were born outside of the UK. A high proportion of asylum applicants and refugees come from countries where the incidence of TB is 40 cases per 100,000 or greater. Refugees may also come from these countries and both groups move through very congested

¹³ [Public health management of Shiga toxin-producing Escherichia coli \(STEC\) infection - version 2 - Public health management of Shiga toxin-producing Escherichia coli \(STEC\) infection - Publications - Public Health Scotland](#)

travel routes with frequent and often prolonged stays in overcrowded refugee camps, crossing multiple countries. According to population's studies, in 2019, economic migrants who came here legally to study and work made up 80.2% of all the new entrants to Scotland. These individuals will also have come from countries with a higher risk of exposure to TB.

In 2023/2024, there was a sharp increase in TB cases across all the four nations, including 43% increase across Scotland. Some smaller Health Boards borne the brunt of this escalation and saw over 100% increase in cases in comparison to the local increase in cases at around 16% which were mainly made up from migrant communities. This national increase had prompted a raised concerns within national groups including the Scottish Government and we continue to work with our partner organisation to identify and treat active cases.

TB is a challenging and complex condition to manage, with an increasing number of cases requiring enhanced case management (ECM), large contact tracing exercises and additional support to ensure drug adherence. However, the TB Nursing Team have managed to secure over 90% treatment compliance rates in active TB cases.

7.1.8 Non-communicable hazards

Environmental health is concerned with the effects of the physical environment on health status. This is mediated by a wide range of chemical and physical risk factors which may operate either in the indoors or out of doors environment.

Exposures to chemical or physical agents differ in a number of other ways from exposures in association with lifestyle or occupation, as follows:

- Concern is usually with acute or chronic low-level exposures which are difficult to measure and may also be difficult to link to disease
- Examples of important indoor exposures include carbon monoxide, radon, moulds, oxides of nitrogen and volatile organic vapours
- Exposures often occur to complex mixtures rather than just to a single agent
- It may be difficult to estimate historical levels of exposure
- Measurement of small increases in risk for different diseases associated with low-level exposures may be difficult and may be beyond the capability of conventional epidemiology
- Pathways of exposure may be uncertain or difficult to establish. The principal pathways are the inhalational, ingestion and dermal contact pathways.
- Certain well established environmental hazards continue to be important in environmental health protection. An example would be the prevalence of lead hazard in housing and elsewhere. Risks associated with traditional hazards may undergo radical reappraisal. For example, the risk associated with lead, particularly in children and pregnant women, is now recognised to be much greater than previously thought.
- Attention also needs to be given to novel sources of environmental emissions and new hazards. Technological advances in transport and other areas may present entirely novel hazards in environmental health protection. An example would be the advent of the widespread use of lithium ion batteries.
- There is evidence of increasing public awareness of possible

environmental hazards. One strand of evidence for this is the number of requests which emanate from public groups about perceived clusters of disease which require epidemiological investigation.

- In addition to the hazards outlined above, environmental health Departments manage issues including noise pollution and odours, which may be defined as public health nuisances. While not presenting significant hazards to health, it is important to acknowledge the detriment these nuisances may have on wellbeing.

Issues in non-communicable hazards in the area of NHSGGC include the following:

Air pollution is an example of an environmental exposure with a well-known epidemiology, particularly in relation to particulate matter (PM₁₀ and PM_{2.5}). Other pollutants of concern include nitrogen oxides (NO_x) and the “greenhouse gas”, carbon dioxide.

All Local Authorities have a duty to regularly review and assess air quality within their area and report the findings to the Scottish Government on an annual basis. Local Air Quality Monitoring reports, including results from specific air monitoring sites from each NHSGGC local authority are available from the [Scottish Government's Air Quality website](#). Statutory air quality objective levels for specified pollutants are set out in the Air Quality (Scotland) Regulations 2000 and subsequent amendments. Where objective levels are not being achieved the area must be designated an Air Quality Management Area (AQMA) and an Air Quality Action Plan (AQAP) published, outlining action measures the Council are taking forward to improve air quality in those areas, leading to higher overall standards of air quality.

East Dunbartonshire

In East Dunbartonshire, as is the case in much of Scotland, the main pollutants of concern affecting air quality are nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}). The primary local sources of this pollution are related to road traffic and congestion, and while traffic flows have returned to pre-pandemic levels, pollutant levels have generally improved significantly.

East Dunbartonshire Council operate four continuous automatic analysers in our urban centres; one each in Bishopbriggs, Bearsden, Kirkintilloch and Milngavie. These monitors measure NO₂, PM₁₀ and PM_{2.5} with pollutant levels viewable by the public via the Scottish Air Quality website. Nitrogen dioxide levels are additionally monitored by a network of diffusion tubes throughout the Council area. There is currently one Air Quality Management Area in Bishopbriggs which will be kept under review in light of improvements.

An annual progress report is published each year summarising the results of monitoring and detailing ongoing progress to further reduce air pollution. The most recent report (2024) indicated that all monitoring stations and diffusion tubes showed comfortable compliance with Scottish air quality objectives for all pollutants of concern. NO₂ levels have generally followed a downward trend at all monitoring sites in recent years, however particulate matter trends are less clear. All monitoring sites have shown distinct improvement in PM₁₀ levels compared to

2019 levels, however PM2.5 levels have largely remained static in the same timeframe.

East Renfrewshire

Air quality remains good and continues to improve. There are no major industrial or commercial sources of air pollutants within the area and road traffic is therefore the main source of local air pollution. No air quality management areas have been declared. 2023/24, has shown a decrease in pollution levels from those measured in 2022 and remain down on pre-covid levels (2018-2019). NO₂ Levels at 13 of the 23 monitoring locations were down by more than 50% of the levels noted in 2019 (pre-Covid).

Actions to improve air quality:

2023/24 saw the full return of planned proactive work. Home working, virtual meetings and online training are now accepted as a means to complement the traditional work place. This change in work culture is likely to have a significant impact on air quality and levels of transport generated pollutants. The move away from vehicles fuelled by fossil fuels will also be playing a part in the reduction of NO₂ levels.

East Renfrewshire Council continues to arrange joint initiatives between environmental health, community safety, education, culture and leisure, and the communications team to increase the profile of how air quality can be affected by vehicle idling especially around local schools, local transport hubs and taxi ranks.

Two large digital displays were purchased in 2024/25 and placed at school gates, inside schools at Parents' evenings, induction days, social events, Christmas Fayres and in libraries during the summer reading challenges, amongst other places. These rotate key air quality messages and lamppost / bollard collars are erected when Idling Enforcement is taking place in the area. Air quality worksheets and competitions are run in schools and libraries to design and name an Air quality Champion / superhero and have over two hundred entries, annually.

Air Quality monitoring work around school gates is supported by the Scottish Environmental Protection Agency (SEPA) who have provided Air quality monitors and designed and established an accessible digital platform to explain the work being done. Installation of 6 low-cost air monitors provide real time data to empower the local school communities. Production of banners allowed the schools to display their own artwork at their school gates. We continue to support a wider anti-idling awareness campaign in conjunction with 5 neighbouring Local Authorities.

Glasgow City

The Scottish Government announced in 2017 that there would be Low Emission Zones (LEZs) in four Scottish cities, including Glasgow, and the City Council introduced Scotland's first LEZ for the city centre area at the end of 2018. The LEZ has been introduced in two phases, with the first phase targeting improvements in emissions arising from scheduled bus journeys through the city centre. The second

phase of the LEZ came into effect in May 2022, with a statutory one-year grace period, before enforcement began on 1 June 2023.

Glasgow's LEZ is an intervention directed at protecting and improving public health, with the main objective being to improve the health of residents and visitors to the city by contributing towards meeting the air quality objectives prescribed under the Environment Act 1999. It is also now part of a broader approach to enhancing the amenity and attractiveness of the city centre through providing cleaner air.

Priorities for 2024 / 2025 have included the continuing enforcement of the LEZ, and ongoing communications and engagement to increase compliance rates. Initial monitoring results from 2023 are positive, with significant reductions in the monitored levels of NO₂ recorded across the city and particularly within the area of the LEZ.

Levels of NO₂ pollution have been on a downward trend in recent years as a result of improvements in vehicle emissions and the phased introduction of the Glasgow LEZ since 2018. NO₂ levels fell further in 2023 with an average reduction of 19.9% from 2022 recorded by diffusion tubes in the LEZ area.

Inverclyde

Inverclyde Council reviews and assess air quality in relation to seven key pollutants which have an impact on human health. The levels are measured against national standards. There is an automatic air monitor on the main A8 dual carriageway in Greenock which continuously monitors for the main traffic pollutants of NO₂, PM10 & PM2.5. This site has been assessed as having the highest traffic flow in Inverclyde and should therefore be indicative of the maximum levels of these pollutants experienced in the area. There is also a series of passive diffusion tubes located within the district which measure levels of NO₂. Since the introduction of annual progress reports to the Scottish Government reports in 1998, data from all of our monitoring sites have consistently shown that Air Quality Objectives are being met for all measured pollutants. Results from the Greenock A8 monitoring site are available at the [Scottish Air Quality website](#).

Renfrewshire

There are currently three Air Quality Management Areas (AQMAs) within Renfrewshire located in Paisley, Johnstone and Renfrew, declared for both nitrogen dioxide (NO₂) and particulate matter (PM). A Renfrewshire Council Air Quality Action Plan (AQAP) was produced in 2019 containing measures aimed at improving air quality within the council area. Since implementation of the 2019 AQAP and the action measures contained therein, there has been a steady improvement of air quality across Renfrewshire Council with the last exceedance of any air quality objective being in 2019. The 2024 Annual Progress Report reviewed air quality monitoring data from 2023 and confirmed there continues to be no exceedances and that monitored concentrations of both NO₂ and PM continue to show a downward trend across Renfrewshire. As such, the Council's Infrastructure, Land and Environment Policy Board approved the revocation of all three Air Quality Management Areas at its meeting on 19 March 2025. A Revocation Report, which

provides evidence in favour of the revocations, was approved by the Scottish Government and the Scottish Environment Protection Agency (SEPA) in November 2024. It is the intention of Renfrewshire Council to develop a Renfrewshire Council Local Air Quality Strategy, demonstrating the Council's ongoing commitment to improving air quality within the council area, thereby positively impacting on the health and quality of life of residents, workers and visitors to the area.

West Dunbartonshire

The main pollutants of concern within West Dunbartonshire Council area are nitrogen dioxide and particulate matter. Monitoring in West Dunbartonshire is undertaken using automatic monitoring at two sites and the use of a diffusion tube network. Dumbarton unit monitors Nitrogen Dioxide (NO₂) and is part of the Automatic Urban and Rural Network (AURN).

No exceedances of the short and long term NO₂ limit have been registered at the continuous monitoring locations. The annual average level continues to fall at the Clydebank location and the Dumbarton location remains statistically steady.

All NO₂ Diffusion Tubes are consistently below the national annual mean for this pollutant. The Annual mean PM10 and PM2.5 levels at the Clydebank station are below the objective levels with only minor annual fluctuations.

Waste disposal: Landfill has historically been a common way of disposing of domestic, industrial and hazardous waste, although the use of landfill for this purpose will decrease dramatically in the near future. The Scottish Government Zero Waste Strategy, first published in 2010, includes targets for waste reduction and for 70% of the remaining waste to be recycled, with a maximum of 5% going to landfill, by 2025.

In total, 462,944 tonnes of household waste were generated in the NHSGGC Health Board area in 2023. Most of this waste was generated in Glasgow City. Overall, 36.4% of the waste generated in NHSGGC Health Board was recycled. The recycling rate varied from 58.2% in East Renfrewshire to 27.2% in Glasgow City. Overall, 19.7% of the waste generated in NHSGGC Health Board was sent for landfill. The landfill rate varied from 61.1% in West Dunbartonshire to 2.4% in East Dunbartonshire.

The Glasgow Recycling & Renewable Energy Centre (GRREC) is a state-of-the-art residual waste treatment facility located at Polmadie in Glasgow, which became operational in 2019. The GRREC is a key component of the Council's response to the climate emergency and designed to help drive Glasgow towards becoming a more sustainable city.

Historically, all residual waste (waste that cannot be re-used or recycled) would have been landfilled. The environmental challenges associated with landfill are well-documented; in particular their impact on climate change through the release of greenhouse gases as biodegradable waste breaks down. Several studies of possible health risk in populations resident close to landfill sites have been carried out. These have included studies of the risk of cancers, respiratory disease, reproductive

outcomes and effects on general health. No definite evidence for proximity to landfill as a risk factor for health has been found.

As the Council moves away from landfill as the main way to manage residual waste, the GRREC provides a modern and sustainable treatment solution that is aligned to the Council's ambition of becoming a carbon neutral city.

Efforts to increase recycling and sustainable processing of waste have the additional objective of diverting waste from incineration. Incineration of waste results in carbon dioxide emissions and air pollutants. Disposal of waste by incineration is now more contentious and is likely to be taxed going forward.

The Clyde Valley Project is an innovative partnership between five local authorities, including East Renfrewshire and Renfrewshire with Viridor to transform how their household waste is managed. The Clyde Valley Project (first of its type in Scotland at the time), commenced in January 2020 and is having a huge impact in saving natural resources through the increased recycling and energy recovery programme, emphasising the need that waste should be seen as a resource and not waste. The 25-year contract will see up to 190,000 tonnes of residual waste processed each year at the state-of-the-art residual Materials Recycling Facility (in Bargeddie), diverting non-recyclable waste from landfill and instead generating low carbon energy.

Using cutting edge technology, residual black bag waste is collected and processed at the Bargeddie facility and, after the recyclate is extracted for further processing, the remaining non-recyclable waste is sent for energy recovery at Viridor's Dunbar Energy Recovery Facility. The Clyde Valley Waste Partnership non-recyclable material generates enough electricity to power the equivalent of 32,391 homes, on average each year. Under this partnership, Viridor has committed to providing a variety of community benefits to support the local Clyde Valley communities, including employment opportunities, with a particular focus on the recruitment and training of young-people and long-term unemployed.

Figures on domestic waste disposal are published by SEPA and are available at: <https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/>.

Lithium Ion Batteries – recycling, storage and import

An important aspect of environmental health protection is the need to constantly accommodate new information about new sources of emissions. The advent of Lithium Ion batteries and growth in use of batteries of this kind are an example of an entirely new source of emissions. Batteries of this kind have rapidly become ubiquitous in society but the issue of electric cars is particularly important. The issues concerning new technology of this kind and its applications for environmental health protection include the following:

- The chemistry of Lithium Ion batteries is novel and entirely different from the electrochemistry of traditional batteries. The chemistry is still incompletely understood and differs for different manufacturers.

- One aspect of the electrochemistry of Lithium Ion batteries is the propensity for thermal runaway. This is a novel thermal process in which a large amount of heat is generated and toxic chemical substances emitted. This novel thermal process may be complicated by the onset of conventional combustion as a secondary process.
- This means that conventional water-based methods of control may be ineffective in dealing with thermal runaway. There is some evidence that addition of water may in fact promote thermal runaway.
- The public health risk assessment in the case of thermal events in cars is complicated by the fact that, in electric cars, the frequency of thermal events is much less than in conventional vehicles although the consequences may be more severe.

Within the NHSGGC area there are several sites with Battery Energy Storage Systems or where lithium batteries are stored for recycling. Government planning policy means that local authorities have limited say on where future sites may be located.

Environmental asbestos exposure: Asbestos is well established as an environmental risk factor with a widely accepted epidemiological framework for risk assessment. Asbestos has been widely used in the urban built environment and exposures may occur in a range of situations, including factory fires and demolition of blocks of flats. A study of the possible health effects of asbestos from the demolition of high rise flats in Glasgow has demonstrated that risks from such activities are extremely low, though precautionary environmental monitoring during works has been carried out.

Smoke free hospitals: Scotland has been a leader in removing smoking from public places, and this continues to require support through the work of signatories to this plan. The implementation of legislation in 2022, making it an offence to smoke outside hospital buildings remains challenging, and Local Authority and NHS Health Improvement teams require to work together to promote and enforce the legislation more effectively. Variation in both the capacity of environmental health departments and the size and complexity of hospital sites across NHSGGC have meant that efforts to promote and enforce legislation have been more challenging in some local authority areas.

7.1.9 Climate and sustainability

The 26th session of the Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change (UNFCCC) took place in November 2021, in Glasgow, UK. The Glasgow Agreement provides an opportunity to build on the legacy of COP26, and to embed sustainability and climate adaptation and mitigation into all work streams. The signatory local authorities to this Plan maintain local plans and strategies relating to this work, including Local Heat and Energy Efficiency Strategies and climate action plans. NHSGGC's [Climate Change and Sustainability Strategy 2023-2028](https://www.nhsggc.scot/downloads/climate-change-and-sustainability-strategy-2023-2028/)¹⁴ was developed in response to the Scottish Government launching 'A Policy for NHS Scotland on the Climate Emergency and Sustainable Development'¹⁵.

¹⁴ <https://www.nhsggc.scot/downloads/climate-change-and-sustainability-strategy-2023-2028/>

¹⁵ <https://www.publications.scot.nhs.uk/files/dl-2021-38.pdf>

Climate change will bring new challenges to Scotland including increased occurrence of adverse weather events and changes to the prevalence and distribution of vectors such as mosquitos and ticks. The health protection system will need to prepare for and respond to these challenges. Members of Med-Vet contribute to SHPN topic groups scoping this work.

Changes to weather as a result of climate change, particularly increases in frequency of extreme weather events, and storms, temperature rises, increased rainfall and flooding are likely to result in increased service requests to environmental health and pest control teams from both properties and businesses. In addition to leading to an increase in some pests, these conditions also increase the likelihood of mould and damp in properties.

7.1.10 UK withdrawal from the European Union

The impact of the UK's withdrawal from the EU will directly affect the work of environmental health. Export Hubs have been set up to facilitate Scottish businesses exporting their trades and commodities. Both port and inland local authorities continue to monitor compliance of foodstuffs which are imported and exported.

After an initial delay the UK Government published its Border Target Operating Model for the import of foodstuffs in August 2023. This laid out a timetable for the imposition of controls on food entering the UK from the EU. This ultimately involved the use of digital certification, initially for plant products then for animal products coming into the UK through Border Inspection Posts. It had been expected that Greenock Ocean Terminal would have applied to become a Border Inspection Post but as yet no application has been made under the new Target Operating Model. Should this occur, it would involve a potentially significant workload for Inverclyde's environmental health service in checking compliance. Glasgow Airport is not expected to become a Border Inspection Post.

The majority of legislation enforced by environmental health is derived from European legislation including food law, occupational health and safety, water quality, air quality, contaminated land etc. Most laws and regulations have now been amended for domestic purposes whilst maintaining previous standards however implementation of these have at times been delayed due to the conflict in Ukraine and the impact on consumer markets. There may further changes to the legislative landscape in the coming years.

7.1.11 Migrant health

There is a long history of migration into the West of Scotland, with communities developing over many decades and generations. This inward movement continues, and Greater Glasgow and Clyde includes some of the most ethnically diverse communities in Scotland, with an increase in the BME population from 7.5% in 2011 to 13.1 in 2022, well above the Scottish national average.

Some of the migrant groups and the communities they live in are more vulnerable than the general population, due to a number of factors including deprivation and living conditions, prior access to healthcare (including vaccination), barriers to accessing services (such as culture, language, stigma), limited social networks and isolation, and their own lived experiences. These vulnerable communities require additional support of public health services compared to more settled populations.

Over recent years, ongoing conflict in Syria and the Taliban insurgency in Afghanistan have increased the number of new migrants into the West of Scotland through planned resettlement routes. The war in Ukraine has also increased the number of new migrants, supported by the Scottish Government's role as a visa "super sponsor". Local Authorities have led on the inspection and licensing of accommodation and the wider dispersal of asylum seekers. Work streams across a whole range of services with joint working between local government and health and social care partnerships will continue to require significant resource from partners during the period of this plan.

7.1.12 Food safety and food security

Food safety

Scottish Authorities Food Enforcement Rebuild (SAFER) has been launched by Food Standards Scotland (FSS) as a collaborative approach to modernise the national approach to managing the public health risk from food safety.

It has been recognised that there is significant risk of the capacity in local environmental health services failing to provide the resource to meet all aspects of the statutory requirements of the Food Law Code of Practice. To mitigate this risk FSS are seeking to work with local authorities to redefine and develop a framework for Food Law that will deliver the following aims:

- Public health protection & assurance
- Sufficient, sustainable and dynamic resource
- Alternative qualification pathways
- A Food Law delivery model focused on risk and non-compliance
- Vital training and practical guidance
- Technological and digital solutions

This is essentially starting with a blank sheet of paper and is the biggest change to food law delivery since the Pennington Report. It will require significant resource to complete and FSS have asked local authorities to:

- Release environmental health staffing resource to help design and deliver the SAFER programme
- Continue to deliver core functions whilst the programme is developed. FSS will provide relaxations during the process.
- Re-invest the resources saved through SAFER back into food law enforcement
- Protect existing resources for food law enforcement to ensure public health protection and assurance in the food industry

How this impacts the wider EH resource and capacity is unknown at present but should become apparent as the SAFER projects moves forward in 2023. A programme plan is being worked on which should give an indication of the pathways and timescales to completion.

Food security

Ensuring food security for individuals and communities is an important determinant of health outcomes. Increases in the cost of living and food prices specifically have

meant more households are experiencing food insecurity.

The Scottish Government published the [Good Food Nation Plan](#) in January 2024, defining a Good Food Nation as one where everyone has access to safe, nutritious, affordable, sustainable, and age and culturally appropriate food. Colleagues working within the Public Health Directorate will be supporting the implementation of the plan, working alongside local authority environmental health teams in regulation and promotion.

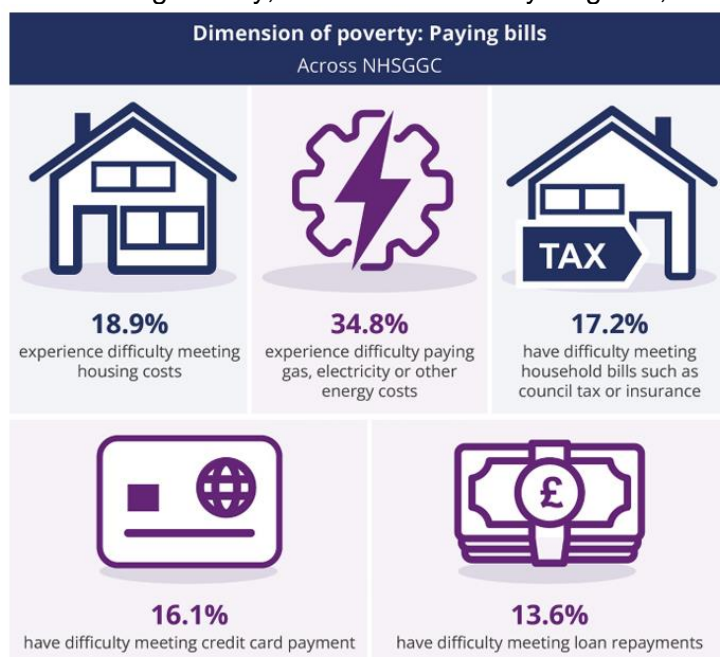
7.1.13 Housing and fuel poverty

The evidence supports poor housing as a risk factor for respiratory diseases including asthma, cardiovascular diseases, injuries, mental health and infectious diseases including tuberculosis and influenza. Housing conditions such as lack of heating, over-crowding or cluttered space and accessibility have been identified by the World Health Organisation as playing a role in the health impact of housing¹⁶.

Across society, people that may not have experienced money worries before are now cutting back due to arrears, rental increases above inflation and rising food and fuel costs¹⁷. The 2022/23 Health and Wellbeing Survey starkly presents the impact of financial insecurity on 'essentials for living', with increases in the proportion of the population having trouble in meeting basic costs (Figure 1).

Figure 1: Summary of proportion of people having trouble paying bills

(Source: Health and Wellbeing Survey, 2022-23 as cited by Crighton, 2024)



Just under two in five people said they had difficulty meeting food and/or home energy costs at least occasionally, rising to one in two in the most deprived areas with

¹⁶ WHO (2018) WHO Housing and Health Guidelines, in Environment Climate Change and Health Team: Guidelines Review Committee (eds.) Geneva, Switzerland: World Health Organisation, pp. 172.

¹⁷ Earwaker, R. and Bestwick, M. (2021) Dragged down by debt: Millions of low-income households pulled under by arrears while living costs rise | Joseph Rowntree Foundation. Available at: <https://www.jrf.org.uk/cost-of-living/dragged-down-by-debt-millions-of-low-income-households-pulled-under-by-arrears-while>.

those under 25 years old, women, and people with a limiting condition most likely to have difficulties. This rise in meeting the costs of essentials is of significant concern, as lack of funds for one or more essentials is a risk factor for destitution¹⁸.

The Scottish Household Survey 2023 report has noted a rise from 31% to 34% of respondents indicating they were in fuel poverty when compared to 2022 with 61% of those who are fuel poor in social housing and 25% in the private sector.

A cold home or home in disrepair can cause damp through condensation on walls and windows exacerbating respiratory and circulatory problems. Dampness predisposes to internal growth of fungal mould and release of airborne spores and exposure to mould spores internally is a risk factor for respiratory ill-health, especially allergic ill-health, rhinitis and asthma.

PHPU works collaboratively with environmental health teams to address individual cases where housing condition is impacting on health. The health improvement team have a range of support pathways in place for fuel and food poverty and for money and debt advice for people accessing hospital services or if lack of home energy is identified in preparation for discharge home from hospital. Support available includes dedicated home energy services to assist with account arrears, reconnection of supply, where appropriate securing registration on the priority services register and access to home energy grants for those eligible. Within primary care, community link workers act as the first port of call for non-clinical support and social prescribing.

Local authorities offer initiatives aimed at preventing and addressing fuel poverty such as advice services, support and signposting. In areas of particularly high fuel poverty, where properties are suitable, property improvements such as external wall insulation and photovoltaic cells can be facilitated via the Scottish Government's Area Based Schemes (ABS) funding.

Wider issues about overall housing standards, supply and condition are addressed in Local Authorities' Local Housing Strategies (LHS). These are formal documents required every 5 years under the Housing (Scotland) Act 2001 with annual reviews on progress. Each LHS is obviously unique to the circumstances of the housing market and stock in the individual Authority but will typically cover the following:

- Overall supply of housing
- Access to affordable housing including how the authority will address homelessness
- Access to specialist housing and aids and adaptations to allow people to remain in their homes
- The condition of the housing stock in the area including energy efficiency and its impact on fuel poverty

Separately local authorities have powers to address housing issues causing nuisance and serious disrepair under a number of statutes and this work forms a significant aspect of the work of environmental health.

¹⁸ Fitzpatrick, S., Bramley, G., Treanor, M., Blenkinsopp, J., McIntyre, J., Johnsen, S. and McMordie, L. (2023) Destitution in the UK 2023 | Joseph Rowntree Foundation. York: Joseph Rowntree Foundation. Available at: <https://www.jrf.org.uk/deep-poverty-and-destitution/destitution-in-the-uk-2023>.

7.2 Local authority environmental health

Examples of local health protection priorities carried out within Local Authorities by Environmental Health Officers and other professional staff, are outlined below. Many are requirements of statute, in order to protect the health of individuals living and working in our communities. In addition to specific priorities listed below, Local Authorities work to prepare for and respond to emerging threats in collaboration with NHSGGC and PHS.

- Reducing harmful air pollutants, such as particulate matter and NO₂.
- Statutory Nuisance (including controlling environmental noise, odours, drainage/sewage problems, waste water spillage, housing disrepair, etc.).
- Communicable disease control.
- Investigation and control of contaminated land; including actively promoting contaminated land remediation using the Councils' planning and development processes.
- Housing standards (including private sector, housing conditions, building disrepair).
- Drinking water quality.
- Pest control.
- Protecting health and consumer interests in relation to food by working with partner organisations and local business, implementing nationally set standards and minimising the risk of food poisoning incidences and outbreaks through inspection, training and initiatives; these activities include tackling the problem of food fraud, and an increasing focus on improving diet and nutrition.
- Maintaining the health of the working population through regulation of workplace safety and through inspection, awareness raising, training etc., and minimising the risk of ill health caused by occupational health exposures including stress.
- Minimising the risk of exposure to environmental incivilities such as abandoned vehicles, dog fouling, litter, illicit tipping, graffiti – there being a growing body of evidence that links stress to aspects of mental health and wellbeing, but also to physical disease- psychosocial dimension.
- Minimising the risk of environmental exposure to tobacco smoke, including secondary exposure, and illicit tobacco products which extends to vaping products, through inspection, enforcement (e.g. preventing sale of tobacco to under 18s with colleagues from Trading Standards), awareness raising of smoking in public places legislation.
- Activities concerning alcohol consumption regulation through licensing standards legislation – including enforcement, education and awareness raising work.
- Protecting the health, welfare and safety of the public through raising standards of premises licensed for the sale of alcohol together with premises licensed for other purposes, e.g. sunbeds, tattooists and skin piercers.
- Protecting the health, welfare and safety of the public through regulating standards at events licensed for public entertainment.
- Promoting community health and well-being by protecting public health through educational and advisory services.
- Working with Scottish Water on public water supplies and with the Drinking Water Quality Regulator (DWQR) on standards of private water supplies.
- Activities related to animal health and welfare, including tick-borne

diseases and the risk of rabies in imported animals, which remains very low due to existing control programmes

At the time of writing, a Scottish Government consultation is in progress on the regulation of non-surgical cosmetic procedures. This is an industry that has undergone significant growth over recent years without corresponding regulation. Health risks associated with these procedures include infections. A likely outcome of this consultation will include a model for local authority licensing of certain premises carrying out specific categories of non-surgical cosmetic procedures.

7.3 Health protection risks and challenges within NHSGGC

7.3.1 Contaminated land

Contaminated land issues are an important aspect of environmental health protection in the West of Scotland. The number and range of contaminated land issues reflects the industrial past of the area. There is a statutory definition of Contaminated Land as “any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that either significant harm is being caused or there is a significant possibility of such harm being caused (SPOSH) or pollution of controlled waters is being, or is likely to be caused”. A designation of land as contaminated would usually result in need for some form of remediation. The aim would be to return land to productive use.

The issue of contaminated land causes considerable public anxiety not only because of effects on health but because of possible effects on housing markets. Contaminated land may represent a risk factor for health in local populations, although the nature and scale of the risk depend on the type of contamination.

In Glasgow, parts of the southeast of the city and into South Lanarkshire are contaminated with chromium as a result of the operations of the former chromium industry in the area. Several epidemiological studies have been carried out in the affected areas, and to date no detrimental effects on health have been demonstrated. In 2019, Clyde Gateway carried out remediation works with the aim of reducing hexavalent chromium contamination in the West Burn and Polmadie Burn, linked to historic chemical works in the area. These works are part of a wider strategy to deal with historic contamination and bring about the development and regeneration of the area.

Similarly, West Dunbartonshire have addressed areas of contamination through local development plans, redeveloping sites along the Clyde waterfront, including the former John Brown’s shipyard and adjoining sites, collectively identified as Queens Quay in Clydebank, the Carless site in Old Kilpatrick, the Exxon site in Bowling and Dumbarton waterfront. Inverclyde also continue to address contaminated land and brownfield sites.

In east Glasgow, there was public concern about an allegedly increased risk of cancer in the population resident close to Greenoakhill Landfill site. An epidemiological investigation was carried out to investigate the incidences of different types of cancer in the index population compared to that of NHSGGC generally. No significant differences were detected in the risks of cancer in the

populations of the index area and NHSGGC.

7.3.2 Glasgow Region City Deal

The Glasgow City Region City Deal is an agreement between the UK Government, the Scottish Government and eight Local Authorities across the Glasgow City Region comprising: East Dunbartonshire; East Renfrewshire; Glasgow City; Inverclyde; North Lanarkshire; Renfrewshire; South Lanarkshire; and West Dunbartonshire Councils.

The Glasgow City Region City Deal is funding infrastructure projects, facilitating business growth and the development of new jobs, as well as improving skills development, educational and health opportunities for people within local communities. Some City Deal projects are also helping to improve public transport and connectivity by incorporating new safer walking and cycling infrastructure, which should help to encourage active travel.

Overall, the City Deal will provide:

- **Improved infrastructure** – £1.13 billion fund to support the delivery of improved transport and connectivity across Glasgow and the Clyde Valley and key development and regeneration sites.
- **Growth in life sciences** – establishment of world class research and development and commercialisation facilities.
- **Supporting business innovation** – providing additional business incubator and grow-on space for entrepreneurs across the Region enabling more small and medium enterprises to grow.
- **Tackling unemployment** – creation of thousands of new jobs and establishment of programmes to provide targeted support to 16-24 year olds and vulnerable residents, and testing new ways of boosting the incomes of people on low wages to make them more self-reliant.

7.3.3 Port health

Within NHSGGC, there is a large international airport (Glasgow International airport) and a large seaport (Greenock), as well as smaller seaports. Glasgow Airport has direct flights to many international destinations including Europe, the Middle East and the Americas. Port of Greenock operates year-round as a major freight terminal, and between April and October has increasing numbers of cruise ships. A new cruise berthing facility was opened in Greenock in 2021 with a new terminal building opened in 2023. Both of these developments were supported by the Glasgow City Deal. West Dunbartonshire provides for Port Health at its Clydebank port location at Rothesay Dock, receiving commercial shipping.

Glasgow City has one seaport at King George V Docks on the southwestern boundary of the city, operated by Peel Ports Group.

Environmental health activities include carrying out ship sanitation inspections and the issuing of certificates. Every vessel on an international voyage requires to have a valid ship sanitation certificate, which are valid for 6 months. This is not a statutory function, and the Council charges for this service, the charge being based on the gross tonnage of the vessel.

The inspection process is based on International Health Regulations and guidance from World Health Organisation (WHO) and involves inspecting all areas of the vessel including accommodation, galley, medical facilities, engine room, holds and deck. An assessment will also be made of controls in place in relation to food safety, potable water, waste management and infection and vector control.

The dock can on occasion be used for more unusual purposes and was host to the cruise ship *Ambition* in 2022/2023 to house Ukrainian refugees. Other vessels will visit, such as those involved in deep sea operations in the North Sea and military or defence vessels. However, the majority of the vessels using the port are bulk cargo or container vessels carrying such commodities as cement, wood, scrap metal, grain, and wind turbine components to all parts of the world. There are on average only around four inspections carried out per year.

There are long established plans between NHS GGC and Renfrewshire Council for Glasgow Airport, and with NHS GGC and Inverclyde for dealing with incidents involving the Port of Greenock. These plans are regularly reviewed and updated. Plans will be reviewed to ensure contingency and public health resilience for the Clydebank port.

Inverclyde Council, NHS GGC and other partners have engaged with the Maritime and Coast Guard Agency on Operation Waypoint. This procedure is to identify and prepare designated landing points for large vessel incidents in coastal waters. The Operation Waypoint procedures have been successfully exercised in February 2025.

There has been an expectation for some years that aircraft and port regulations would be updated after the introduction of the International Health Regulations 2005. The desire to develop these alongside updates in other UK jurisdictions, has delayed this review. Current plans and arrangements will be reviewed and updated if necessary as a result of any changes to the regulations. For the time being port and airport health, with the exception of food imports, is governed by the heavily amended Public Health (Ships) (Scotland) Regulations 1971 and Public Health (Aircraft) (Scotland) regulations 1971 which give local authorities and health boards powers to deal with public health risks arising from ships and aircraft. Renfrewshire Council, NHS GGC, and Glasgow Airport have worked with PHS to provide the necessary assurance for the necessary returns to the UK Health Security Agency (UKHSA) and WHO that the airport meets the requirements of a designated port of entry under the International Health Regulations.

7.3.4 Impact of tourism and cultural events

There has been an increase in the number of visitors to Scotland generally but specifically to locations in the NHS GGC area. This is through an increase in cruise ships arriving through the Port of Greenock in Inverclyde as well as the increase in international flights at Glasgow airport in Renfrewshire. The number of hotels rooms in the area has increased. There has been a number of large events, including music and international sporting events, held within the city; this has resulted in an influx of UK and international visitors. In summer 2026 Glasgow will host the Commonwealth Games.

This can present particular health protection challenges such as the importation of

unfamiliar or non-endemic communicable diseases, opportunities for transmission during mass gatherings, and the potential for mass exposure to point source environmental hazards. It also requires maintenance of good relationships across health board boundaries, across the 4 Nations, and, via the International Health Regulations National Focal Point, further afield.

7.3.5 Water quality and safety issues

The DWQR is responsible for regulating public water supplies.

Lead in drinking water within Schools and nurseries

Lead does not occur naturally in any significant quantities in water supplies. However higher than normal lead levels can occur when pipes in properties – particularly if built pre-1970 – come into contact with lead supply pipes.

Scottish Water provides the public water supply in Scotland and it has responsibility for the part of the service pipe and connection within the street. Where they encounter lead pipes within their ownership, they automatically replace those with modern materials.

All school and nursery premises constitute public buildings where members of the public may consume drinking water. There are established mechanisms, as required by the Public Water Supplies (Scotland) Regulations 2014, between Scottish Water and environmental health teams, to enforce remedial works.

Over recent years, a team of Scottish Water, NHS and local authority staff have been checking water supplies are lead-free at more than 1500 independent nurseries, after school club and schools, and worked to resolve any issues identified. Testing in public sector schools is carried out by relevant local authorities. At time of writing, investigations are 93.65% complete with a total of 4,476 samples at 886 properties having been taken. Some work is still ongoing with a small number of properties. A small number of properties who have refused to engage with Scottish Water/local authorities despite repeated attempts will not have their full investigations completed.

When the scheme has been completed, drinking water supplies at independent schools and private nurseries in Scotland will meet the standard for lead, supporting the health and educational attainment of pupils.

Private water supplies

Environmental health teams are responsible for regulating private water supplies. Private water supplies are those which are not provided by Scottish Water. The source of the water may be from springs, wells, boreholes, rivers, surface waters or lochs. Supplies fall into two main categories, Regulated Supplies which cover either commercial properties or a number of domestic properties and Type B supplies which tend to serve individual or small numbers of domestic properties. The regulatory requirements are obviously more stringent on regulated supplies for which annual sampling and risk assessment is required. Enforcement action is taken where necessary to secure improvements to failing supplies and follow up cases of waterborne disease or contamination in the supply. For Type B supplies, local authorities work with individuals who have raised concerns about their supply, but do not undertake routine sampling or assessment. The Scottish Government also runs a

grant scheme for improvements to private water supplies which is administered by environmental health departments.

More information on private water supplies can be found in the DWQR for Scotland's [2023 report on private water supplies](#).

The below table contains a summary of private water supplies by local authority, where applicable.

Local Authority	Number of regulated supplies	Number of Type B Supplies
East Dunbartonshire	1 (serving approx. 40 persons)	15 (serving approx. 93 persons)
East Renfrewshire	17 (serving approx. 102 residential properties)	117 (serving approx. 158 properties)
Inverclyde	14 (covering 38 properties)	48 (covering 76 properties)
Renfrewshire	15	83
West Dunbartonshire	5 (34 properties serving 142 persons)	15 (23 properties serving 60 persons)

Raw water

Domestic properties across Scotland that have historically received water from Scottish Water's raw water infrastructure will be considered "public supplies" from early 2025. Scottish Water will be undertaking surveys and sampling from these domestic properties with the intention of developing improvement measures that ensure they comply with the Public Water Supplies (Scotland) Regulations.

Waste and sewage effluent, agricultural runoff

Over the past few decades there has been a significant increase in industrial, commercial and sewage effluents entering local rivers, lochs and the sea, along with agricultural run-off from farming practices. Pollution events have increased in numbers, especially when the effluent has not been treated adequately, with possible causes for this being breakdown of equipment at treatment plants, inadequate network capacity or bursts in the ageing infrastructure, high rain weather events possibly linked with climate change to name a few.

The increase in nutrients damages the natural flora and fauna in the water receptor and allows for over stimulation of some organisms such as algae that can choke the waterway and dramatically increase the biological and chemical oxygen demand, which is damaging for the natural inhabitants.

Many of these waters are used by humans and pets for sports and recreational activities such as the significant increase in 'cold water swimming' in recent years and this exposes the user to potential higher levels of pathogens and chemicals which can cause illness and disease.

Authorities and agencies are aware of this increased risk and action plans are starting to be implemented to help mitigate the risks but there will be a long way to go to clean up the waterways.

Bathing and recreational water quality

There is one Designated Bathing Water in the NHSGGC area at Lunderston Bay in

Inverclyde. Designated Bathing Waters are sampled regularly during the Bathing Season (May to September) and the results for Lunderston Bay can be found at [SEPA's bathing water webpage](#). Lunderston Bay has been consistently rated "Good" for bathing water quality over recent years.

The system of Bathing Water Designations, including the Bathing Water season, which is defined by Government, has clearly not kept up with the trend for a significant expansion in year-round wild swimming, often in inland waters not covered by a Bathing Water designation and therefore not sampled for water quality under the regime. An example of this is the significant swimming activity at the White Loch in East Renfrewshire since the Covid Pandemic. The UK Government concluded a consultation on the Bathing Water regulations in England and Wales in December 2024 to reflect these changes. It is not known at the time of writing whether the Scottish Government intends to follow suit.

In all local authority areas in NHSGGC, bodies of water used for recreational purposes including fishing and wild swimming are risk assessed and monitored for blue-green algae, with appropriate measures such as advisory signage put in place when indicated. Signatories to this Plan also collaborate on the local Blue Green algae action plan, in the process of being updated at the time of writing.

7.3.6 Control of Major Accident Hazards (COMAH) Sites

Within the NHSGGC boundary there are six upper tier COMAH sites. In accordance with COMAH legislation, each of these sites has a multi-agency off-site incident management plan. These plans are developed by resilience partners, which include the Health Board and relevant Local Authorities, as well as emergency services and other agencies. These plans are updated and tested on a regular basis in accordance with the relevant legislation.

The sites are

- Provan gasworks (Glasgow)
- EXOLUM Clydebank terminal (West Dunbartonshire)
- Chivas Brothers Dumbuck (West Dunbartonshire)
- Chivas Brothers Dalmuir (West Dunbartonshire)
- Beam Suntory and John Dewar and Sons Ltd, Westthorn Site (Glasgow)
- Diageo, Blythwood (Renfrewshire)

7.4 Significant events, incidents and outbreaks in recent years

Table 3: Significant events, incidents and outbreaks with joint health protection response from January 2023 to January 2025 (not otherwise covered in the plan).

Situation	Dates	Description
UCI Cycling World Championships	2023	From 3-13 August 2023 Glasgow hosted the multi-discipline cycling world championships with more than 2600 athletes from across the globe. NHSGGC and environmental health departments were involved in preparedness for potential health related incidents.
Clusters of gastrointestinal pathogens identified through Whole Genome Sequencing (WGS)	2018-2019	Following the introduction of routine whole genome sequencing (WGS) of gastrointestinal pathogens in Scotland, a number of case clusters were identified, (with isolates of identical/ near identical sequences indicating a common source), with cases spread across different Scottish NHS boards, and/ or across the UK. The investigation of several clusters involving NHSGGC residents (for a range of pathogens including e.coli, salmonella and shigella), were supported jointly by the respective environmental health teams and NHSGGC PHPU, through case interviews (including trawling questionnaires to identify potential food sources), and inspection and environmental sampling at implicated food premises where indicated.
Outbreaks of enteric illness	2003	PHPU and Glasgow City Environmental Health Department investigated a reported outbreak of foodborne illness following a wedding. Inspection of implicated food suppliers were undertaken with Remedial Action notices put in place.
	2024	Following identification of a cluster of cryptosporidium cases in children who had visited a farm park attraction, PHPU and Inverclyde environmental health team worked to investigate and place appropriate measures in place to prevent further cases.

Incidents in childcare, school and higher education settings	2023-2024	<p>NHSGGC PHPU and environmental health and other Local Authority colleagues routinely collaborate to investigate and manage incidents in childcare, school and higher education settings. Examples of such incidents in the last two years include:</p> <p>Hepatitis A diagnosis of a child attending a nursery: Mass vaccination arranged for children and staff at the nursery, and environmental health advice was provided to the school regarding hygiene measures.</p> <p>3 separate incidents relating to diagnosis of Hepatitis A in primary school pupils. Each of these incidents involved diagnosis in a single pupil with mass vaccination arranged for pupils and staff in each of the three schools, and environmental health advice was provided to the schools regarding hygiene measures.</p> <p>Following diagnosis of bacterial meningitis in a university student, contacts were identified and advice provided in line with public health guidance in collaboration with the university.</p> <p>Norovirus outbreaks in schools and nurseries: Support and infection control advice by environmental health and NHSGGC PHPU is routinely given to schools and nurseries experiencing norovirus outbreaks (with increases in norovirus activity in such community settings usually seen over the winter months).</p>
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Situation	Dates	Description
Incidents in residential settings	2024 2023-2024	Hepatitis A diagnosis of a care home worker: mass vaccination of residents and staff members. Scabies outbreaks in care home and asylum accommodation settings. PHPU have coordinated assessment and treatment of cases and exposed people in line with public health guidance. Environmental health departments have provided support to settings as required relating to implementation of environmental measures.
Measles	2024-2025	Against a backdrop of increased incidence of measles in England, since early 2024 PHPU have led on the public health management of several cases of measles in NHS GGC. Many of these cases are believed to have acquired their infection from overseas travel. Where applicable, environmental health departments have worked with PHPU to support the risk assessment and dissemination of information to relevant community settings.
Zoonotic incidents	2023 and 2025	Following detection of avian influenza in deceased wild birds at two separate sites, PHPU provided advice to exposed people. Environmental health teams worked with relevant landowners to ensure appropriate signage was in place in line with government guidance.
Linwood Lithium battery fire	2024	During the initial hours of the lithium battery fire at an electricals recycling plant in Linwood Renfrewshire, PHPU worked with PHS and SEPA to advise on air monitoring. PHPU and Renfrewshire Environmental Health team contributed to the multiagency response through Resilience Partnership meetings.
Exposures to environmental hazards	2023-2025	Examples of enquiries relating to potential environmental hazards where PHPU and relevant local authorities have investigated or advised: Concern was expressed by local residents regarding alleged increases in cancer incidence in the population resident close to the Greenoakhill Landfill facility. An epidemiological investigation was carried out to investigate this possibility. No differences were found in incidence of cancer in the local population and the population of NHS GGC Health Board generally. Advice was given to colleagues in Inverclyde Council regarding an area of possibly contaminated land at Ravenscraig Hospital. Advice was given to colleagues in Inverclyde Council regarding risk associated with raised levels of copper ion in a private water supply in a rural area. Epidemiological analysis was carried out in support of provision of public information about radon exposure in new housing in Renfrewshire.

Of note, there were no Port Health callouts over this time period.

8 Health protection: resources and operational arrangements

8.1 Staffing and ICT resources

“Competent person” is a designation under the Public Health etc. (Scotland) Act 2008 and subsequent regulations and indicates an individual designated by the Health Board or Local Authority, who is empowered to use the relevant powers listed under the Act. In NHSGGC there are 17 individuals who are designated as competent persons, supported by a further nine staff members (including TB specialist nurses, epidemiology and analytics staff, civil contingencies planning unit and other senior staff).

Table 4 demonstrates the numbers of competent persons and other staff in each organisation as full-time equivalents. Staffing resource may fluctuate during the period covered by the plan.

Table 4: Competent persons and other staff contributing to the public health protection function by Local Authority

	Competent persons designated under the Public Health etc. (Scotland) Act 2008 (FTE)	Others who contribute to public health protection functions (FTE)
NHSGGC	15.2	15.4
Glasgow City	22.5	66
East Dunbartonshire	9 + 1 vacant	2
West Dunbartonshire	10.6 + 2 vacant	4 + 1 vacant
East Renfrewshire	5.6	3.1
Renfrewshire	7.5	13
Inverclyde	8	8

All partners have access to IT equipment relevant to their roles, including desktop and laptop computers, mobile telephones and email. In common with all other NHS territorial boards, PHPU uses the HP Zone case and incident management system to manage workflow and to act as the formal record of PHPU response. Additional statistical and epidemiological software and tools are available in PHPU to assist in outbreak response.

8.2 Out of hours/on-call arrangements

8.2.1 NHSGGC

NHSGGC maintain a 24/7 public health service. During office hours (Mon-Fri 9am to 5pm) duty Health Protection Nurse Specialist (HPNS) or Consultant in Public Health (Medicine) (CPH(M)) can be contacted via the PHPU office. Outside office hours the on-call public health services can be accessed via the NHSGGC switchboard. There is a CPH(M) available at all times, and they are able to mobilise additional resource in accordance with incident management plans. It is anticipated that ongoing organisational change work will provide increased weekend daytime capacity.

8.2.2 East Dunbartonshire

During office hours (Monday to Friday 9am to 5pm) Environmental Health staff can be contacted on 0300 123 4510 and by email on environmental.health@eastdunbarton.gov.uk. Out of hours a member of the

management team can be contacted by telephoning the above number.

8.2.3 East Renfrewshire

The Council has no specific out-of-hours environmental health provision. However, the Council is part of the Civil Contingencies Service which has on-call officers and, within the Council's Emergency Plan, there are arrangements that enable the Council's 24-hour Contact Centre to contact key environmental health staff should there be an emergency.

8.2.4 Glasgow City

A call centre responds to calls 24/7 and during office hours (Mon-Fri, 9am-5pm) information will be forwarded to Environmental Health Officers. An Environmental Health Officer may be available at weekends (9am-5pm) and there may be one EHO available between 5pm and 3.00am every night (excluding public holidays). The call centre will forward information to the appropriate officers at weekends and after 5pm. Between 3.00am and 9am the call centre will direct all emergency calls to one of four Assistant Managers or the Group Manager.

8.2.5 Inverclyde

Office hours are 8:45 – 16:45 Monday to Thursday and 8:45-16:00 on Friday. Out of hours contact in the event of an outbreak or incident is by direct contact with the Public Protection Service Manager, the Health Protection Team Leader or the Public Health & Housing Team Leader. For emergencies and incidents which extend beyond a single service response the council's Civil Contingency Service provide a 24/7 response which would include the activation of a Council Incident Officer (CIO) to manage the council's response.

8.2.6 Renfrewshire

Renfrewshire Council Environment & Communities operates an emergency on call service. Outside of office hours a mobile telephone number is manned 24 hours for response to health protection emergencies. This is staffed by EHOs on a rotational basis and all officers are listed as Competent Persons. The on call service covers Port Health emergencies at Glasgow Airport which are responded to jointly by Renfrewshire Council EHOs and Consultants in Public Health (Medicine) from NHSGGC. Renfrewshire Council has an Emergency Contacts Directory which lists all appropriate persons in Renfrewshire Council for contact in an emergency.

8.2.7 West Dunbartonshire

Contact with WDC environmental health during normal working hours is via phone or email (0141 951 7957 environmental.health@west-dunbarton.gov.uk). WDC has a system of emergency contact (phone and email) for Environmental Health in the event of public health incidents and emergencies arising out-of-hours through the Civil Contingencies Service. This system provides for contact of senior officers with capacity to initiate a service response. WDC Emergency Controller – Council Out of Hours Emergency Contact 0141 562 2384/ 0800 197 1004.

8.3 Standard Operating Procedures

The PHPU within NHS Greater Glasgow and Clyde and the six Local Authorities have Standard Operating Procedures (or similar) which are subject to regular review. Many of these relate to health protection, food safety and food hygiene. SOPs are

subject to regular audit. The Med-Vet Group has produced a joint protocol for the epidemiological investigation and surveillance of infectious intestinal diseases which is followed by NHSGGC and the Local Authorities. It describes how PHPU and colleagues in the Local Authorities deal with cases of infectious intestinal diseases such as salmonella and STEC.

8.4 Maintaining knowledge and skills

8.4.1 NHSGGC

All consultants and registrars who take part in duty rota are required to maintain their skills and record continuing professional development (CPD) activities with the Faculty of Public Health (FPH) or alternative Royal College. FPH carry out random audits of members' CPD returns. Maintenance of CPD records is also checked at yearly appraisals. This is in keeping with current General Medical Council (GMC) requirements on revalidation and appraisal for doctors.

Similar arrangements are in place for HPNS, in accordance with the Agenda for Change Knowledge and Skills Framework process and nursing revalidation.

8.4.2 Local Authorities

Local authority environmental health professionals generally have a Performance Development Review, or equivalent, on an annual basis. The majority of EHOs undergo ongoing training to maintain the necessary skills and competencies on a wide range of public health and environmental matters, including health protection. In addition, there are specific requirements in terms of ongoing CPD and experience required for food enforcement. Many environmental health professionals also take part in the Royal Environmental Health Institute of Scotland (REHIS) scheme of CPD, and can gain and maintain Chartered Status as an Environmental Health Officer.

Local Authority environmental health services participate in a number of liaison groups, e.g. West of Scotland Food Liaison Group, West of Scotland Health and Safety Liaison Group, Public Health and Housing Working Group and the Central and West of Scotland Pollution Control Group. At these liaison groups, new legislation, guidance, consultation documents, common issues of interest and difficulties that authorities are experiencing are discussed and common approaches determined.

These groups also provide a network where environmental health professionals can contact other group members out with meetings for advice and information.

8.4.3 Joint training

The Med-Vet Group routinely shares details of relevant training opportunities and conferences, and arranges joint visits to appropriate site visits (i.e. water treatment works, waste management). Joint training sessions between NHSGGC PHPU and Local Authority environmental health staff are also held.

9 Health protection services: capacity and resilience

In the NHSGGC area there are a number of emergency plans that are reviewed, exercised and updated on a regular basis, which are detailed earlier in this plan.

PHPU works closely with the NHSGGC Civil Contingencies Planning Unit. All signatories to this plan are members of the multi-agency West of Scotland Regional Resilience Partnership and the appropriate Local Resilience Partnership(s).

Four Local Authorities are members of a Joint Civil Contingencies Service (CCS). This is based in Paisley and covers East Renfrewshire, Inverclyde, Renfrewshire and West Dunbartonshire Council areas. The CCS provided the secretariat and supported a number of working groups covering the whole NHS Board area during the pandemic.

A memorandum of understanding exists between the West of Scotland NHS Boards (NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Greater Glasgow & Clyde, NHS Highland (for Argyle and Bute) and NHS Lanarkshire) to provide mutual aid in public health emergency situations.

In addition, NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Greater Glasgow & Clyde and NHS Lanarkshire have agreed to work together to provide appropriate personnel to form a Scientific and Technical Advice Cell (STAC) to advise the West of Scotland Regional Resilience Partnership in emergency situations. A similar memorandum of understanding exists between the thirteen Local Authorities of the West of Scotland Regional Resilience Partnership. This enables councils to support each other during emergencies if required.

9.1 Public health workforce

It is recognised locally and nationally that there have been both historic and current challenges in recruiting and retaining specialist health protection workforce, across all partners and agencies. There has been some legacy benefit from the pandemic response, with Scottish Government providing support for there to be an improved resilience and capacity in health protection teams. Though the structures across Test, Trace, Isolate and Support programmes have now been stood down, there have been a small number of additional permanent staff, for example new nursing and data analyst roles in PHPU. However, this needs to be seen in the context of historical under-resourcing of health protection teams, remaining gaps in consultant level staffing across Scotland, and the very tight financial position, which is affecting all public services.

Prior to the pandemic a number of short-, medium- and long-term actions were proposed to increase the resilience of the environmental health workforce which was suffering from an ageing staff demographic and a fall off of new entrants to the profession. Although there was support for a number of these at varying levels the impact of the pandemic together with the subsequent stresses on the Scottish Government budget has meant that there has not been as much progress in some areas as might have been hoped for.

The previous JHPP highlighted the development of a degree course in environmental health with practical training included as a “sandwich” element which

it was hoped would lead to a more straightforward way into the profession. Entry to that course has since been suspended and discussions are ongoing about its future, separately discussions are ongoing about the potential to develop a master's degree to allow easier entry to the profession for those with an appropriate science degree.

In the last couple of years REHIS, the professional Institute for Environmental Health in Scotland, has been developing an alternative route into the profession for those with appropriate degrees which involves assessing the gaps in an individual's qualifications and addressing these through a selection of suitable modular courses. It is hoped that this will assist in the transition of technical staff in local authorities through to becoming qualified EHOs. Details of the process can be found on the [REHIS website](#).

10 Health protection: public involvement and feedback

There are a number of different ways that the Health Board and Local Authorities consult and engage regularly with the public. These include follow up telephone calls regarding public satisfaction with services; customer feedback questionnaires - such as pest control or environmental health premise inspections; Citizens' Panel surveys, online methods of feedback for patients (Care Opinion and NHSGGC Online Feedback), carer audits, patient interviews etc.

In line with the Patient Rights (Scotland) Act 2011, NHSGGC seeks patient feedback, comments, complaints and concerns on an ongoing basis and through a range of different methods, to improve patients' experience of using health services, and to support people to become more involved in their health and health care. The range of different methods used to elicit feedback and the governance structure, as well as findings on common themes and actions taken in response are published annually.¹⁹

Whilst many interactions with public health only comprise one phone call, certain situations do arise for which ongoing support for the affected individuals is necessary. As such, key points to assess are not only the clarity of the information provided, but also the usefulness of the support given and how this can be improved.

In Autumn 2024, with support from the NHSGGC Patient and Public Involvement Team (PPIT), PHPU administered an online survey to seek feedback from patients and other stakeholders who engaged with PHPU over a given 2-week period. As this survey resulted in very limited engagement from recipients, PHPU intends to work further with PPIT with the intention of gathering feedback with a view to improving service delivery. A future approach may include the use of survey software or a phone call using interpretation services for those who do not speak English, and establishment of governance processes to incorporate feedback into service quality improvement activities.

Key actions to undertake in the coming year include:

- Identification of acceptable means of communication to seek feedback in-keeping with staffing, IT and budget constraints.
- Agreement amongst PHPU staff regarding questions to be included in any feedback exercise.
- Maintaining an ongoing relationship with the PPIT.
- Establishment of governance processes to incorporate feedback into service quality improvement activities

Differences in the resources available to environmental health teams, such as access to local authority customer service teams, and team capacity, has meant that it can be challenging to gather feedback from members of the public or businesses engaging with their service. Some of the local authorities participate in the Association for Public Service Excellence (APSE) scheme for collecting feedback. Below are some examples of public involvement and feedback exercises within the

¹⁹ <https://www.nhsggc.scot/downloads/feedback-comments-complaints-and-concerns-annual-report-2023-2024/>

signatories to this plan.

- A sample of service users are contacted and their views on the level of satisfaction obtained. The Council's Facebook page is also used to provide information on Council services, including environmental health. Residents can then use this to raise local issues with the Council
- Environmental health consults, engages and encourages participation in service improvement, and satisfaction levels are gauged through direct face to face contact, community engagement events, directed survey and open invite through web services and social media.
- Peer support and patient engagement programme for adults attending for HIV Treatment and Care. The HIV Prevention Treatment and Care group is planning to co-opt a patient representative onto its steering group. The Stigma Reporting process allows those living with HIV to feedback if they have experienced HIV related Stigma and Discrimination within the NHS.
- Waverley Care is commissioned by NHSGGC to deliver HCV Patient Information and Support services and also the African Health Project. Both of these contracts include user engagement to help understand the needs of the population and target interventions/services effectively.
- Direct public involvement through lay representatives on formal bodies and working groups, for example infection control committees.
- To ensure effective and appropriate communication with the public on perceived and actual risks to health, the communication teams of the Health Board and the respective Local Authorities form an important part of problem assessment groups and incident management teams.
- As part of the Vaccine Transformation Programme, and to ensure that the public were involved from the outset in the discussions on service design for vaccine delivery, a national study was carried out in 2018 to explore the public views of vaccination delivery.²⁰ Eighteen extended focus groups were conducted across six NHS Health Board areas including NHSGGC.
- The NHSGGC PHPU team and the Local Authority environmental health teams, interview members of the public who are affected by notifiable infections to identify the likely source of infection, to organise any required prophylaxis and control measures, and to provide infection prevention and control advice to ensure that the infection is not passed on. Any questions and concerns by these individuals are addressed during these conversations, and individuals are encouraged to get back in contact through phone or email (details provided on pathogen information leaflets) if they have any follow up questions.
- In addition to responding to immunisation enquiries from healthcare professionals, the NHSGGC PHPU team routinely respond to enquiries from members of the public (via email as well as through telephone conversations), including recording and addressing any issues with access to immunisations.
- Governance sign off for the JHPP involves public representation by councillors as elected officials, through the relevant Local Authority committees (see p.2).
- The JHPP is a public facing document and the JHPP 2023-25 document on the NHSGGC website was downloaded 1027 times from April 2024-April 2025.

²⁰ <http://www.healthscotland.scot/media/2492/exploring-public-views-of-vaccination-service-delivery.pdf>

11 Outline work plan

In addition to the day-to-day strategic and reactive health protection work undertaken by the partner agencies, which have been outlined in this plan, an action plan of specific activities is developed and taken forward over the life of each plan by the partner agencies and the wider “Med-Vet” group.

Highlights of progress against the work plan for 2023-2025:

- The Incident Management Plan (IMP) was tested in a full scale incident management exercise in October 2023. Following review of the IMP in 2024, at time of writing the IMP is currently undergoing revision
- The enteric investigation protocol was reviewed and revised in 2023 to align with practice and outcomes of audits of performance of the management of enteric cases
- Following publication of updated national guidance on blue-green algae (cyanobacteria) in summer 2024, at time of writing the NHSGGC Blue Green algae Plan is undergoing review and update
- Joint training on Port Health procedures at Glasgow Airport was held in September 2023
- A structured patient and stakeholder feedback exercise was undertaken in November 2024 with support from NHSGGC PPIT
- Joint public health training sessions between partner organisations have been resumed, including both departmental visits and ad hoc CPD

An outline of key areas of work to be undertaken during the course of the 2025-27 plan are summarised below. The Public Health (Health Protection) Liaison Working Group (the Med-Vet Group) are commissioned by, and have delegated responsibility on behalf of, the Director of Public Health to develop detailed action plans for each of these areas of work.

Many of these key areas of work reflect priority topics or emerging issues in health protection as detailed in the Plan, with a focus on strengthening health protection capabilities and enabling healthy living to prevent ill health.

1. Following completion of review and revision in 2025, we will test the Incident Management Plan in a full-scale incident management exercise in autumn 2026.
2. Following publication of updated national guidance for enteric pathogens including STEC and Hepatitis A, we will review and revise documentation and procedures to ensure local practice remains in line with national guidance.
3. Given the growing threat from avian influenza to commercial flocks, wild birds and the potential for transmission to mammalian species, and following the preparation of single Scottish guidance on zoonotic influenza, we will further progress and finalise joint zoonotic influenza response plans in 2025.

4. The Greenock Port Health Plan will be reviewed, updated and subject to exercise.
5. Following a pilot exercise to gather structured patient feedback in 2024, we will continue to work with the NHSGGC PPIT to develop and trial methods for gathering feedback from patients and stakeholders.
6. After resuming joint training sessions between partners over the course of the last Plan, we will continue to explore and promote opportunities for joint training and CPD.
7. We will work with partners and colleagues in our respective organisations to support the implementation of the Good Food Nation Plan, promoting food security and healthy food environments for our local population.
8. We will work with partner organisations to produce and share communications aimed at supporting our population to understand health benefits and minimise risks from animal contact and outdoor activities. These may include but not be limited to animal visitor attractions, countryside visits, wild swimming and other recreational water use.

Finally, with increasing recognition of the intersect between planetary and human health, there are many programmes of work and research ongoing and planned in organisations within the NHSGGC area. Areas of work relating to climate and sustainability currently being supported by Med-Vet members include the following:

- Routine air quality monitoring, in addition to specific projects engaging members of the public with the impacts of air pollution on health.
- With increasing recognition of the impact climate change may have on the distribution of vectors and prevalence of vector-borne disease, members of Med-Vet have supported local stakeholders with mosquito surveillance projects and contributed to the newly formed SHPN topic subgroup for vector-borne diseases.

The impact of climate change presents new hazards and changing priorities for those working in health protection. Over the course of this Plan, Med-Vet members will continue to horizon scan and identify further opportunities to support and add value to work in this area.

Annex: NHS Greater Glasgow and Clyde summary population profile

Data correct as of 21 February 2025

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Key points

The population of NHSGGC increased by nearly 7% over the last 15 years, though the most recent mid-year estimates saw a stagnation in growth. Demographic challenges for health services include an upward shift in age distribution over time and a high proportion of the NHSGGC population living in deprived data zones. NHSGGC is home to a substantial proportion of residents from ethnic minority groups.

Period life expectancy at birth decreased during the COVID-19 pandemic, but has now risen slightly since 2020-22, although it remains lower than before the pandemic. In the most recent period (2021-2023), life expectancy has increased across all local authorities. Life expectancy is lower among residents living in more deprived areas, i.e. lives are being cut short. Scottish burden of disease estimates for NHSGGC residents illustrate the difference in health loss across age groups and the shift with age in conditions most influential for health losses.

There are significant differences in the population distribution by age, deprivation and ethnicity between and within the six partnership Local Authorities – this heterogeneity of the population needs to be taken into account to achieve equity in health service provision and access.

Current population projections show continued growth and ageing of the NHSGGC population over the next 10-25 years for NHSGGC. The reliability of projections decreases over time, and projections tend to be less reliable in periods of rapid change.

1 Population distribution

The latest available population data for Scotland is based on 2023 mid-year population estimates as released by National Records Scotland (NRS), which was published in October 2024. Data from mid-2011 to mid-2021 has been revised following Scotland's Census 2022.

1.1 NHS GGC trend in total population over time, by Local Authority

Data source: [Population Estimates Time Series Data | National Records of Scotland \(nrs.scotland.gov.uk\)](https://nrs.scotland.gov.uk/population-estimates)

NHSGGC health board has a total population of 1,193,420 residents, according to the latest available NRS mid-year population estimates for 2023. Glasgow City accounts for more than half of the population of NHSGGC (53%) and thus heavily influences all statistics for NHSGGC overall (Table 1).

The population of NHSGGC increased by 6.9% over the 15 year period from 2008 to 2023. Glasgow City and East Renfrewshire saw the largest relative increase in their respective population over this time (9.7% for both), whereas the population of Inverclyde and West Dunbartonshire decreased (-4.5% and -2.7% respectively).

In the year to mid-2023, the population of NHSGGC increased by 14,220 (1.2%) compared to previous year. Migration was the main driver of population growth over the last year. All six partnership Local Authorities (LA) saw a negative natural change (more deaths than births recorded) from the 2022 to 2023 mid-year estimates. The overall increase in the population for East Renfrewshire, Glasgow City and Renfrewshire for the 2023 compared to 2022 estimates was due to net inwards migration exceeding the negative natural change in these LAs (see Figure 10 in [Mid 2023 Population Estimates, Scotland, NRS Report](#)).

More detail on changes in population over time can be found in the NRS interactive dashboard²¹, which at time of writing contains data up to 2022. This shows the underlying components of population change (natural change, net migration and others) which drive these changes. Between 2011 and 2021, the increase in population for East Dunbartonshire and East Renfrewshire was mainly driven by positive net migration from within Scotland. The main driver of population increase for Glasgow City over that time period was international migration (net within Scotland migration was negative for Glasgow City over that period). The most influential driver for the population decrease in Inverclyde and West Dunbartonshire over this period was natural change (fewer births than deaths), and negative net migration within Scotland (the latter was a more influential contributor to population decrease in West Dunbartonshire than Inverclyde).

Table 1: NHSGGC mid-year population estimates 2023, and changes compared to 2008 and 2022 (source: NRS)

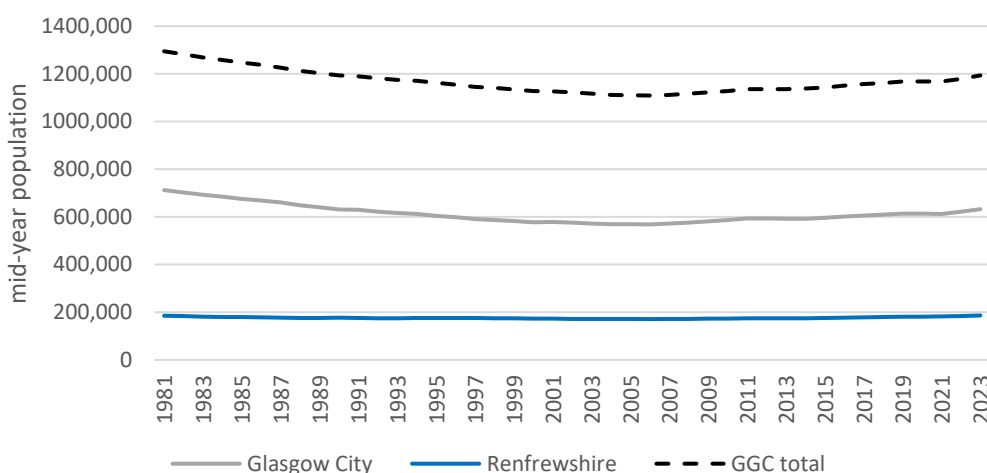
Local Authority	mid-year population estimate 2023 (% of NHSGGC population)	percentage change in population over 15 years (2023 v 2008)	percentage change in population over last year (2023 v 2022)
East Dunbartonshire	109,230 (9.2%)	4.1%	0.2%
East Renfrewshire	98,600 (8.3%)	9.7%	1.5%
Glasgow City	631,970 (53.0%)	9.7%	1.6%
Inverclyde	78,330 (6.6%)	-4.5%	0.0%
Renfrewshire	186,540 (15.26%)	8.1%	1.2%

²¹ [Population Estimates of Scotland - National Records of Scotland \(shinyapps.io\)](https://shinyapps.io/population-estimates-scotland/)

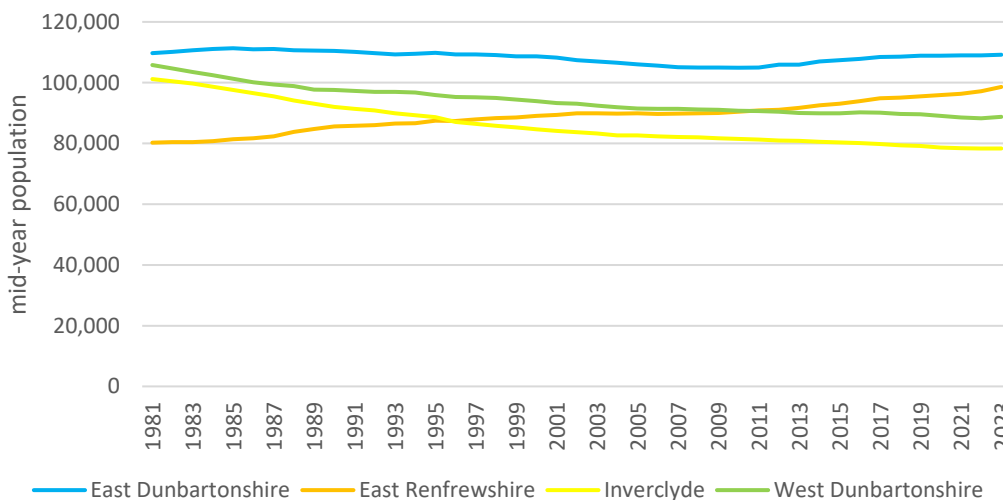
West Dunbartonshire	88,750 (7.4%)	-2.7%	0.5%
NHSGGC total	1,193,420 (100.0%)	6.9%	1.2%

Figure 1: NHSGGC population mid-year estimates by Local Authority over time, 1981 to 2023 (source: NRS). Figure split to allow visualisation of trends through different y-axis scales 1a) NHSGGC total, Glasgow City and Renfrewshire; 1b) East Dunbartonshire, East Renfrewshire, Inverclyde and West Dunbartonshire

1a)



1b)



1.2 NHSGGC population distribution by age

Data source: [Population Estimates Time Series Data | National Records of Scotland \(nrscotland.gov.uk\)](https://www.nrscotland.gov.uk/population-estimates-time-series-data)

1.2.1 Population by age over time, 2023 versus 2013

Figure 2 shows the population distribution of NHSGGC by age group in 2023 compared to 2013. This shows that the majority of the NHSGGC population remained in the working age groups. The population for 0-15, 16-24 and 45-64 year old age groups stayed stable between 2013 and 2023. The largest absolute increase (~32,300 persons, 10.4%) occurred in the 25 to 44 year olds. Whilst the number of people 85 years and over increased by only ~3,400 individuals over that time, this poses the largest relative increase by age group (15%)

increase). Figure 3 shows a population pyramid by age and sex, which further illustrates this shift in age distribution over time.

Figure 2: NHSGGC population distribution as a percentage by age group, mid-year estimates for 2023 compared to 2013 (source: NRS)

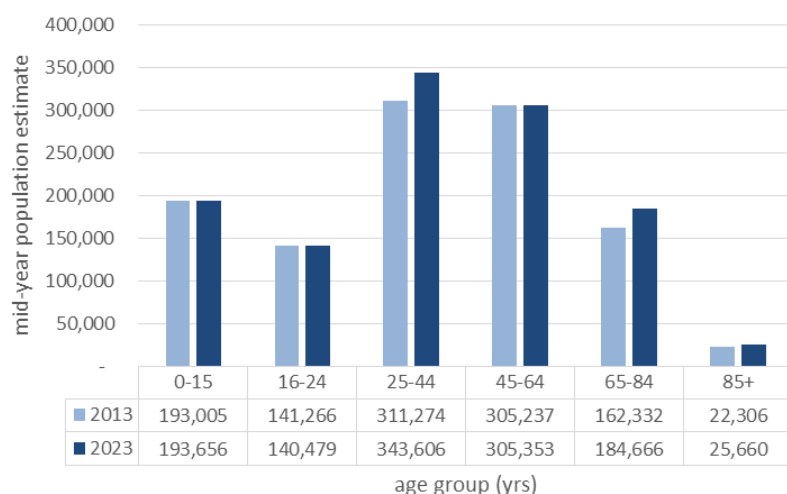
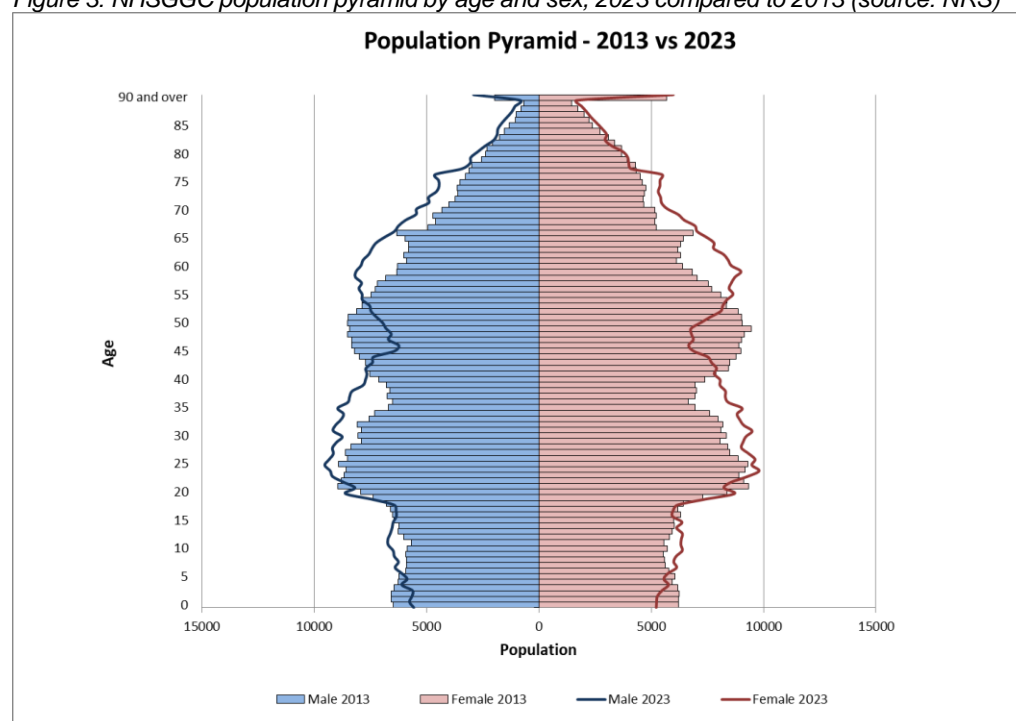


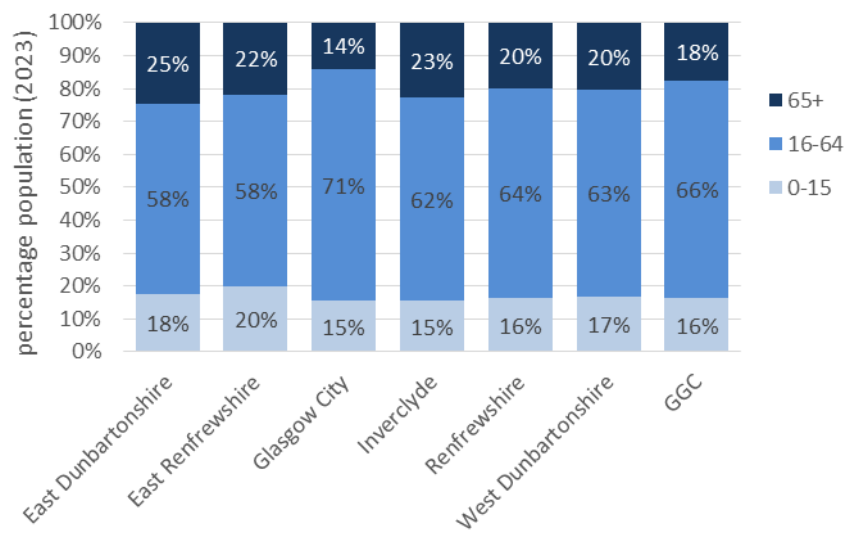
Figure 3: NHSGGC population pyramid by age and sex, 2023 compared to 2013 (source: NRS)



1.2.2 Population distribution by age and Local Authority, 2023

Figure 4 shows the differences in population by age group between the partnership LAs, based on the 2023 mid-year estimates. East Dunbartonshire has the highest proportion of residents aged 65 years or older (25%), East Renfrewshire has the highest proportion of children 15 years or younger (20%), but also a relatively high proportion of residents aged 65 years and older (22%). Glasgow City has the highest proportion of those aged 16 to 64 years (71%), and the lowest proportion of those aged 65 or older (14%).

Figure 4: NHSGGC population distribution in 2023, by age group and Local Authority (source: NRS)



1.3 Population distribution by Scottish Index of Multiple Deprivation 2020

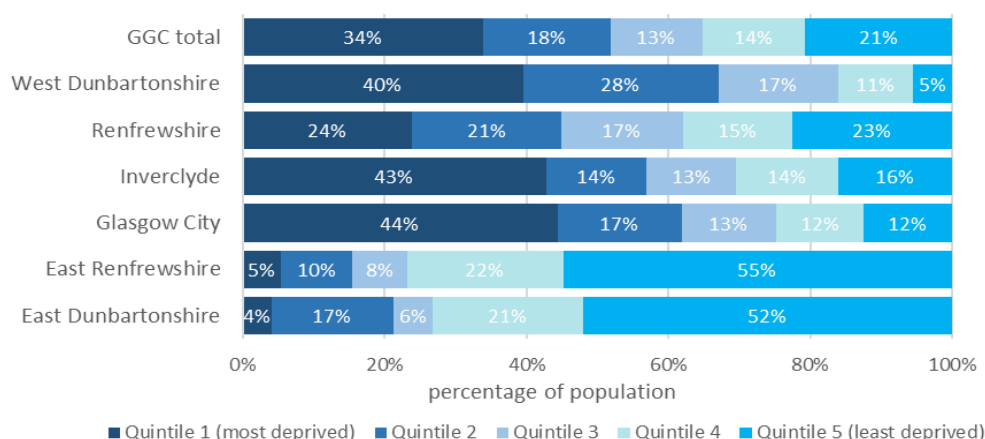
Data source: [Population estimates by Scottish Index of Multiple Deprivation \(SIMD\) - National Records of Scotland \(NRS\)](#)

Deprivation in Scotland is measured using the Scottish Index of Multiple Deprivation (SIMD). The SIMD is a relative measure of deprivation across 6,976 small areas (called data zones). The ranking is updated at intervals, most recently in 2020 (SIMD 2020v2). If an area is identified as 'deprived', this can relate to people having a low income, but it can also mean fewer resources or opportunities.

SIMD looks at the extent to which an area is deprived across multiple (seven) domains: income, employment, education, health, access to services, crime and housing. Data zones are ranked from 1 (most deprived) to 6,976 (least deprived) according to the SIMD. Each SIMD quintile contains 20 per cent of Scotland's data zones, with Quintile 1 containing the 20% most deprived zones, and Quintile 5 the 20% least deprived zones. This section uses the 2021 annual mid-year population estimates for SIMD 2020v2 areas in Scotland (2011 Data Zone based).

Based on 2021 mid-year estimates, over a third (34%) of the population of NHS Greater Glasgow and Clyde are resident in the most deprived quintile of Scottish data zones (Quintile 1). [Figure 5](#) shows the differences in deprivation profile across the six partnership LAs. Glasgow City, followed by Inverclyde have the highest proportion of residents who live in the most deprived quintile of data zones (44% and 43% respectively). Glasgow City continues to have a higher proportion of residents in the most deprived quintile of data zones than other Scottish cities²². In East Renfrewshire and East Dunbartonshire more than half of residents live in the most affluent quintile of Scottish data zones (55% and 52% respectively), with only a small proportion (5% and 4% respectively), living in the most deprived quintile of data zones. [Figure 6](#) shows the heterogeneous distribution of deprivation across NHS Greater Glasgow and Clyde, as a map. Within Glasgow City, the North East Locality has the highest proportion of residents in the most deprived data zones²³. Interactive maps are also available via the Scottish Government on <https://simd.scot/#/simd2020/>

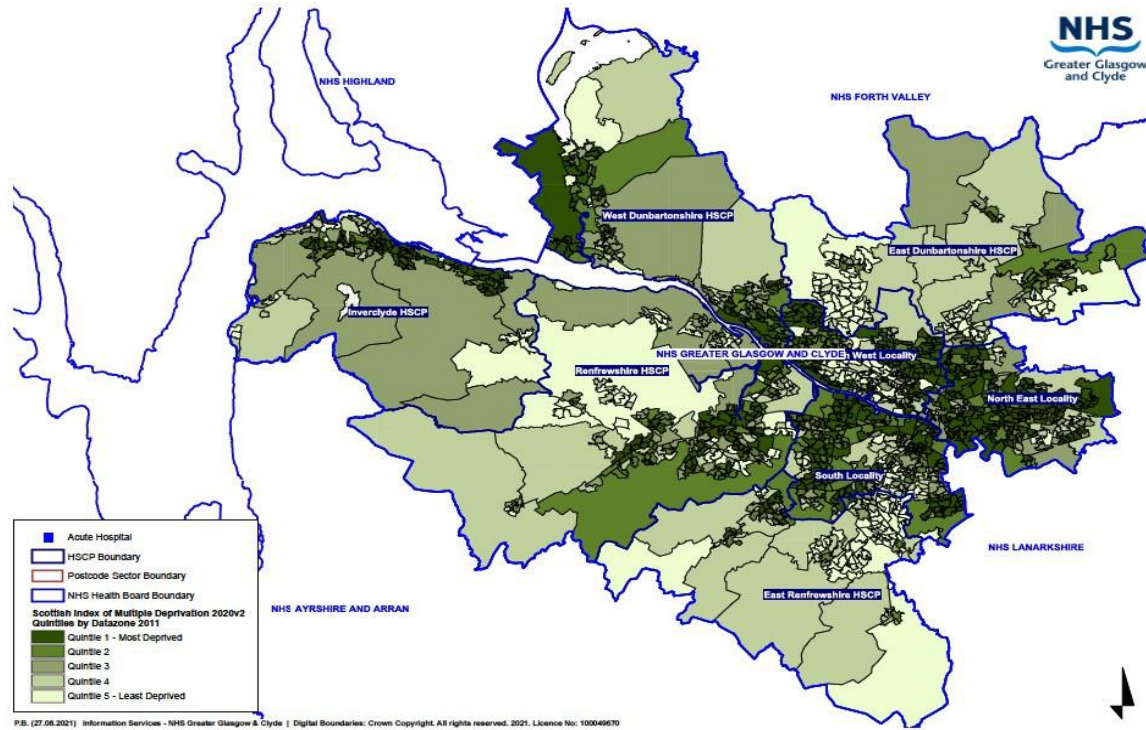
Figure 5: Mid-year 2021 population estimates by Local Authority and percentage distribution across SIMD2020 quintile (source: NRS)



²² [Health in a changing city: Glasgow 2021](#)

²³ [Glasgow City HSCP Demographics & Needs Profile August 2023](#)

Figure 6: Map of SIMD quintiles 2020v2 attribution of data zones (data zone 2011) for NHS Greater Glasgow and Clyde

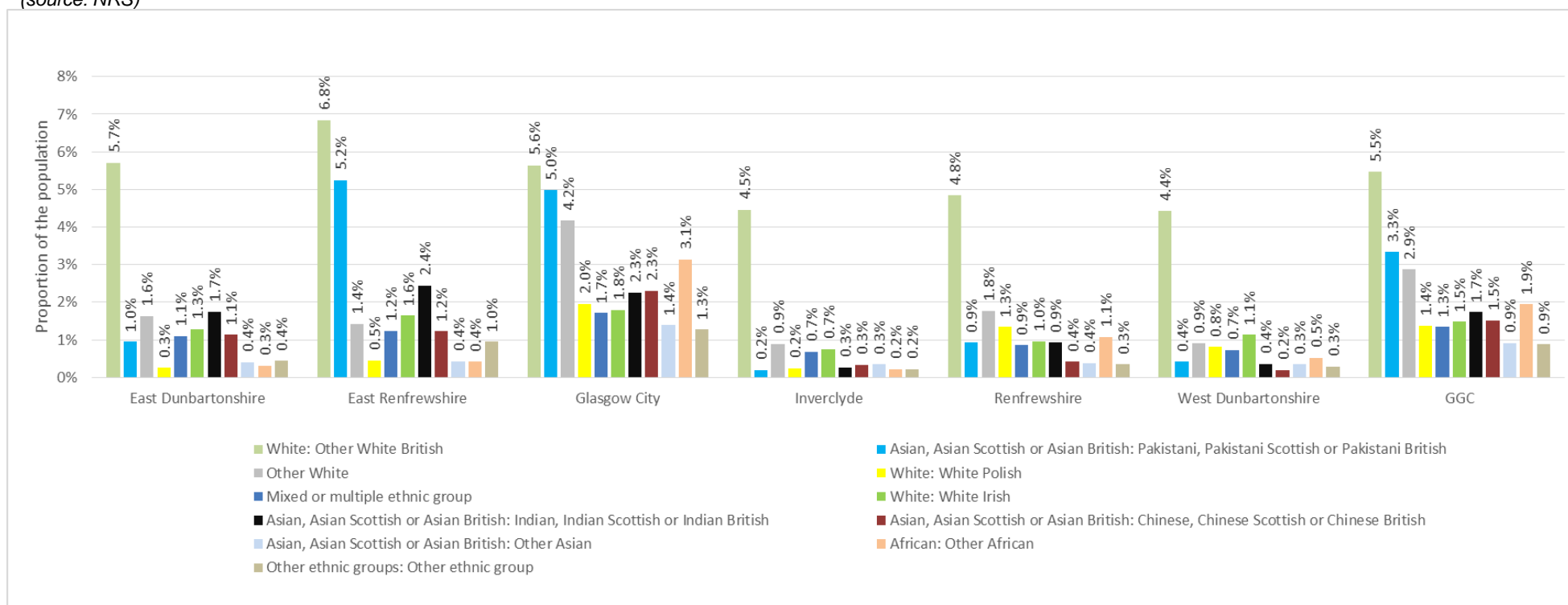


1.4 Population distribution by ethnicity

Data source: <https://www.scotlandscensus.gov.uk/>

According to the most recent published Scottish census estimates (2022), 75.7% of the NHSGGC population identified as white Scottish, ranging from 67.1% in Glasgow City, to 91% in Inverclyde. *Figure 7* shows the distribution by LA over ethnic groups which accounted for 0.5% or more of the NHSGGC population (other than white Scottish). NRS mid-year population estimates show international migration as the main driver of population increase for Glasgow City between 2011 and 2021 (see section 1.1).

Figure 7: Proportion of the population by LA, for ethnic groups accounting for 0.5% or more of the NHSGGC population (excluding white: Scottish), based on census 2022 results (source: NRS)



2 Period life expectancy

Data source: [Life Expectancy in Scotland, 2021-2023 | National Records of Scotland \(nrscotland.gov.uk\)](https://www.nrscotland.gov.uk/nrscotland.gov.uk)

Period life expectancy is often described as how long a baby born now could expect to live if they experienced today's mortality rates throughout their lifetime. This does not take into consideration future changes that may affect how long a person will live, e.g. developments in medicine or changes in legislation. Period life expectancy is thus not an accurate prediction of how long a person born today will actually live, but it is a useful measure of population health at a point in time and is most useful for comparing trends over time, between areas of a country and with other countries. This section uses data from the most recent available NRS estimates of life expectancy (2021-2023), which was published in October 2024.

2.1 Period life expectancy over time and by Local Authority

Figure 8 shows the period life expectancy at birth in NHSGGC and Scotland by sex over time, from 1991- 1993 up to 2021-2023 estimates. It shows that life expectancy for NHSGGC residents was consistently lower than for Scotland overall, and life expectancy was higher for females than for males. Life expectancy increased over time and there was a gradual decrease in gap between females and males over this period. The graph also illustrates a plateauing of life expectancy from 2012-2014 to 2017-2019, and it fell during the COVID-19 pandemic for both NHSGGC residents, as well as Scotland overall. Life expectancy has now risen slightly since 2020-2022 although it is still lower than before the pandemic. Scotland level data shows that the most important driver for the life expectancy for the two periods (2018-2020, 2019-2021) were COVID-19 deaths. There was also some contribution to the fall from increases in other causes of death, particularly circulatory conditions²⁴.

Figure 9 shows the differences in period life expectancy at birth between the partnership LAs. Life expectancy at birth for East Dunbartonshire and East Renfrewshire was consistently higher over time, than in other partnership LAs, for both males and females. Life expectancy for males for these two LAs is comparable to the life expectancy in females in the other four LAs. Glasgow City has the lowest life expectancy for women and men respectively.

Most LAs have seen a decline in life expectancy compared to before the COVID-19 pandemic, with a decline in life expectancy in Inverclyde for both males and females started earlier. In the most recent period (2021-2023), life expectancy has increased across all the local authorities, with biggest recover seen for males in West Dunbartonshire (up by 40 weeks) compared to previous estimates.

²⁴ <https://www.nrscotland.gov.uk/media/pslb0evx/life-expectancy-2021-2023-report-corrected.pdf>

Figure 8: Period life expectancy at birth in NHSGGC and Scotland by sex over time (periods labelled: 2012-2014, 2017-2019, 2021-2023; source: NRS)

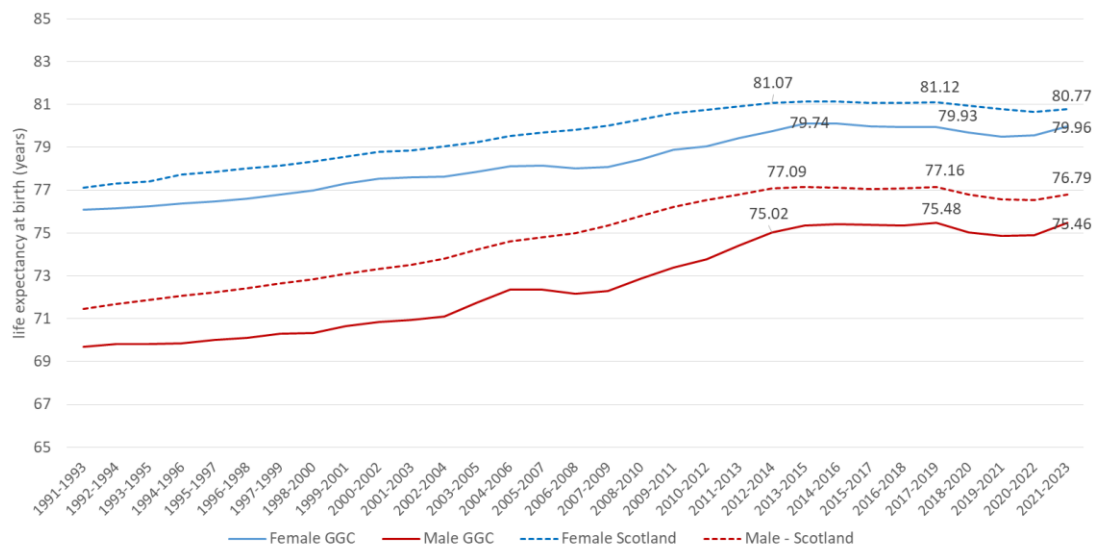
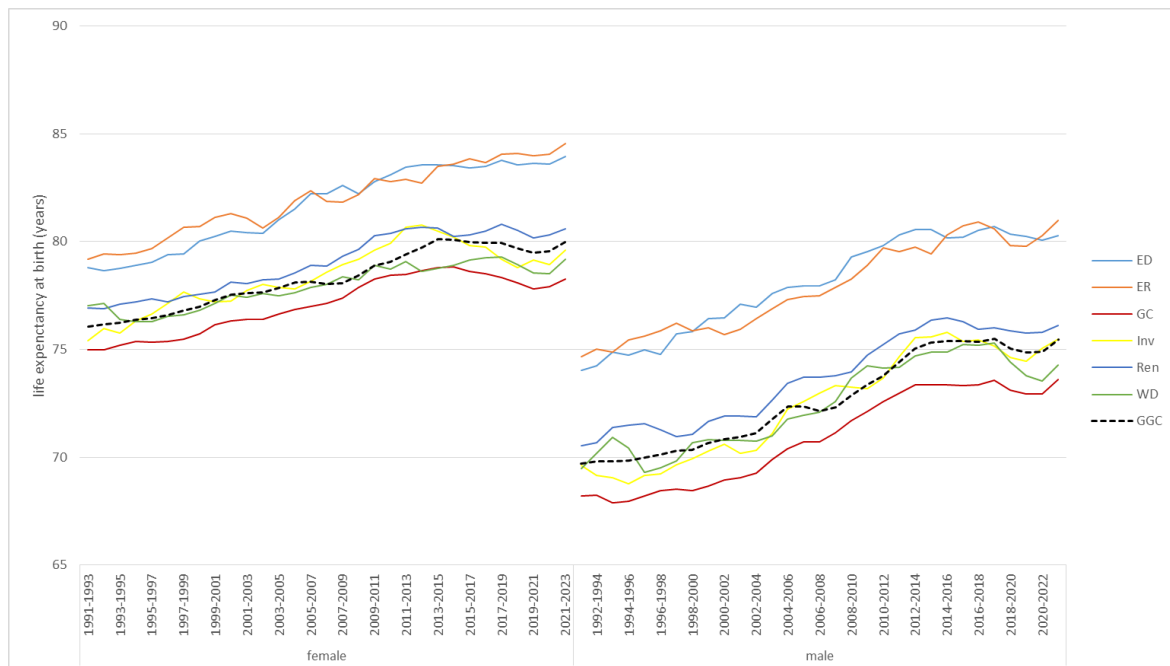


Figure 9: Period life expectancy at birth in NHSGGC by sex and partnership Local Authority over time (source: NRS)

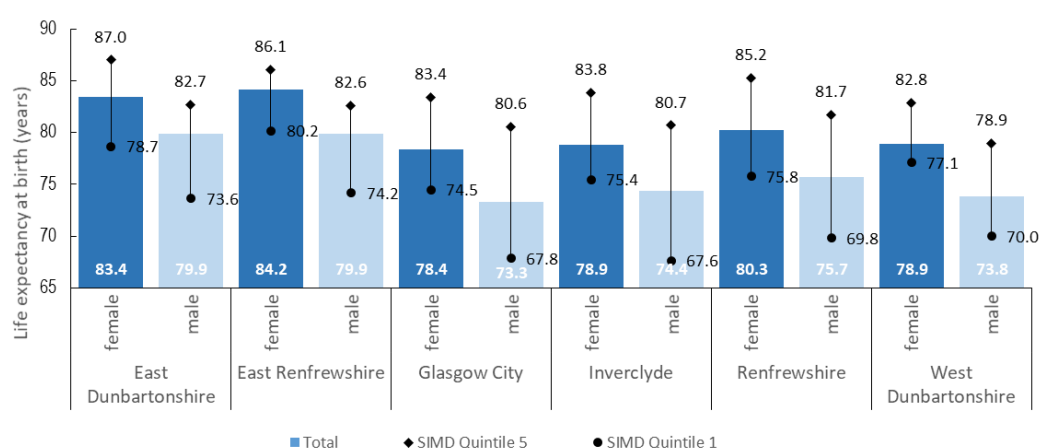


2.2 Period life expectancy (2017-2021) by Local Authority and SIMD quintile

Within each LA, period life expectancy decreases, meaning lives are being cut short, with increasing deprivation.²⁵ Figure 10 shows that for the most recent available data break down by partnership LA and SIMD quintile (2019-2023), the lowest life expectancy was consistently seen for residents of SIMD quintile 1 (most deprived), and the highest in SIMD quintile 5 (least deprived) in both males and females. The gap in life expectancy between most (Quintile 1) and least deprived quintile (Quintile 5) was generally bigger for males than females.

For males, life expectancy was over a decade shorter in the most compared to the least deprived quintile in Glasgow City, Inverclyde and Renfrewshire (shorter in most v least deprived quintile by 13.6 years, 12.8 years and 12.6 years respectively). For females, life expectancy was over a decade shorter in the most compared to the least deprived quintile in Renfrewshire (shorter in most v least deprived quintile by 10.3 years), and almost a decade shorter in the most compared to the least deprived quintile for Glasgow City (shorter in most v least deprived quintile by 9.7 years). The gap in life expectancy between most and least deprived quintile was smallest for females in East Renfrewshire and West Dunbartonshire (shorter in most v least deprived quintile by 4.5 years and 4.8 years respectively), and for males in East Dunbartonshire (shorter in most v least deprived quintile by 8.7 years).

Figure 10: Period life expectancy at birth (2019 to 2023) by sex and partnership Local Authority and most (Quintile 1) versus least (Quintile 5) deprived SIMD Quintile (source: NRS)



²⁵ Life expectancy estimates at the health board level by SIMD quintile are not included in the routine NRS outputs.

3 Burden of disease

Data source: Scottish burden of disease study: <https://scotland.shinyapps.io/phs-local-trends-scottish-burden-diseases/>

The [Scottish Burden of Disease \(SBoD\) study](#) monitors how diseases, injuries and risk factors prevent the Scottish population from living longer lives in better health. The Burden of disease (BOD) assessment standardises estimates of ill-health (years lived with disability - YLD) and early death (years of life lost - YLL) in a composite measure called Disability-Adjusted Life Years (DALYs), also referred to as health loss.

The BoD assessment thus provides a summary measure about which diseases and injuries have the greatest impact on population health and wellbeing, by combining data on deaths and ill health to estimate the total impact of health loss. This approach also allows comparison of the population level impact of very different diseases and conditions, and it is worth considering the contribution of incidence, duration and severity of a condition to the overall estimated burden. High estimates of DALY may for example arise from a small number of deaths, if they occur at a young age (more years of life lost compared to the best case scenario of life expectancy, than deaths occurring in older age groups). High estimates of DALY may also arise from conditions with a comparatively low severity for each individual affected, but with a very high incidence (and or a long duration), leading to a large overall estimate of health loss at the population level. There are a number of caveats to the burden of disease estimates, including that the methodology does not account for co-morbidities, and thus overall estimates of burden of disease need to be interpreted with caution. The latest published Scottish burden of disease estimates (2019) do not as yet account for the impact of COVID-19.

Figure 11 shows the leading causes of health loss for NHS GGC in 2019, as an age adjusted rate per 100,000 population. This shows the increasing burden of disease with age, as well as the shift in the most important causes of health loss by age group, and how this differs by sex. For those aged 65 or older, Alzheimer's and dementia, ischaemic heart disease, cerebrovascular disease, lower respiratory tract infections, Chronic Obstructive Pulmonary Disease (COPD) and lung cancer are the leading causes of health loss for males and females. For the working age population (25-44 years and 45-64 years), drug use disorders, and depression are amongst the leading causes of health loss for males and females in both of these age groups. For females, lower back and neck pain, as well as anxiety disorders are also leading causes of health loss for 25-44 and 45-64 year olds, and headache disorders and lung cancer in the 25-44 year old and the 45-64 year old age group respectively. For males, alcohol disuse disorders and cirrhosis and liver disease are amongst the leading causes of health loss for 25-44 year olds and 45-64 year olds respectively. Self-harm and interpersonal violence, and lower back and neck pain are also amongst the leading causes of health loss for the 25-44 year old males, with ischaemic heart disease and other cancers contributing as leading causes of health loss for 45-64 year old males.²⁶

Figure 12 shows the leading causes of health loss in absolute number of DALYs, by age group and sex for NHS GGC in 2019. It demonstrates that a high proportion of the absolute burden of disease is currently attributable to those in the working age groups and those 65 to 84 years of age. As the population ages, the high rate of burden of disease seen in the older age groups in *Figure 10*, combined with increasing numbers of individuals in an older age group, will increase the proportion of the burden of disease attributable to the older age groups, and is likely to increase the overall burden of disease. Table 2 shows the

²⁶ "other cancers" refers to cancers other than: Oesophageal cancer, Stomach cancer, Colorectal cancer, Liver cancer, Pancreatic cancer, Lung cancer, Breast cancer, Ovarian cancer, Prostate cancer, Kidney cancer, Bladder cancer, Non-Hodgkin's lymphoma, Multiple myeloma and Leukaemia.

corresponding data to *Figure 11* and *Figure 12* on number and age adjusted rates of DALYs for the leading causes of health loss for NHSGGC by age group and sex.

Figure 11: Leading causes of health loss as age adjusted rate of DALYs per 100,000 population, by age group and sex in NHSGGC, 2019 (source: PHS)

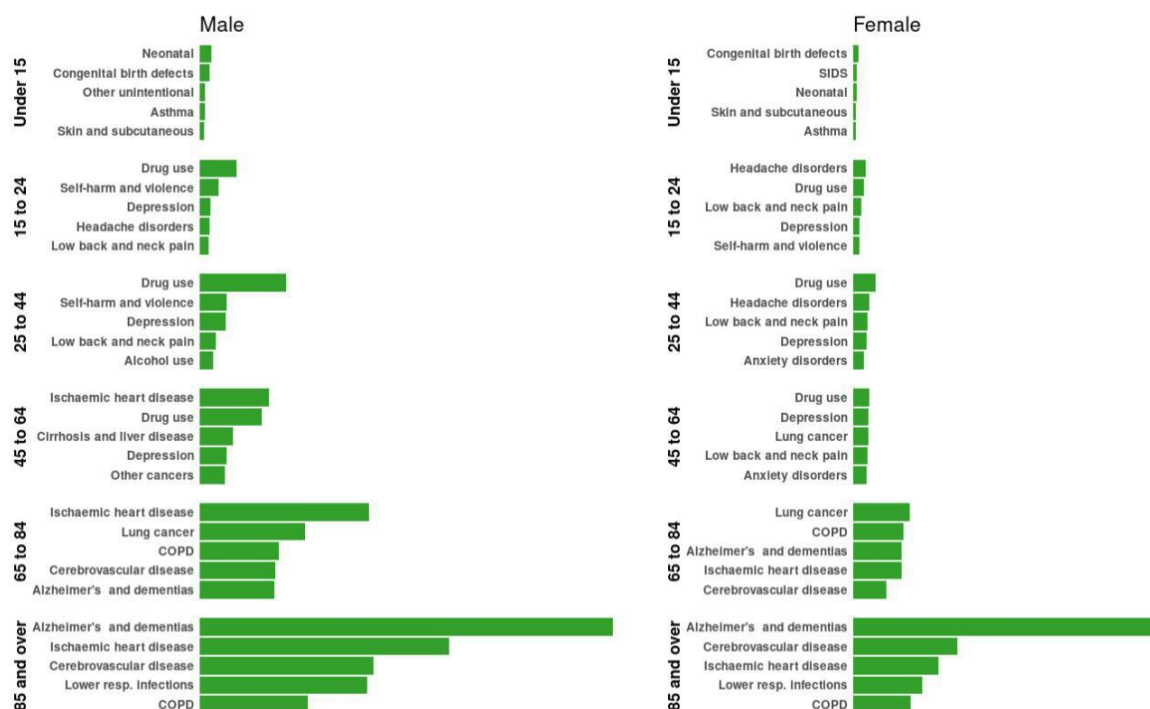


Figure 12: Leading causes of health loss as number of Disability adjusted life years (DALYs) by age group and sex in NHSGGC 2019 (source: PHS)

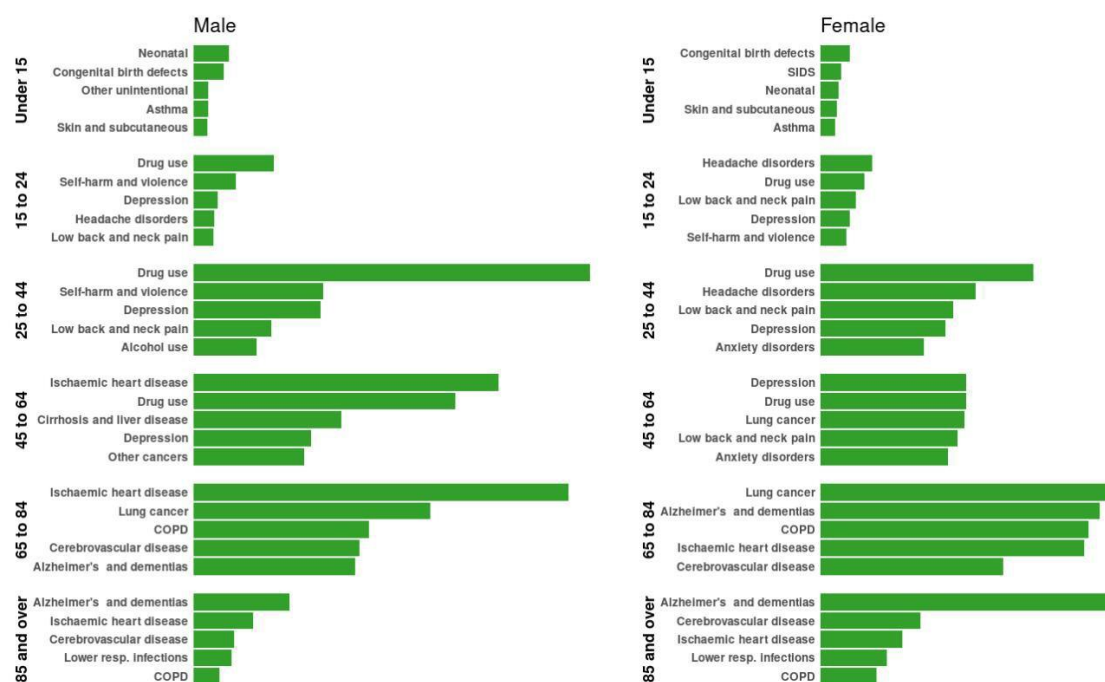


Table 6: Leading causes of health loss as number of Disability adjusted life years (DALYs) and as age adjusted DALY rate per 100,000 population by age group and sex in NHSGGC 2019 (source: PHS)

age group (years)	males			females		
	leading causes of health loss	age adjusted DALY rate per 100,000 population	number of DALYs	leading causes of health loss	age adjusted DALY rate per 100,000 population	number of DALYs
0-14	Neonatal disorders	923.8	918.8	Congenital birth defects	711.4	654.7
	Congenital birth defects	785.2	769.4	Sudden infant death syndrome	480	453.2
	Other unintentional injuries	400.7	372.8	Neonatal disorders	434.9	410.2
	Asthma	390.8	370.2	Skin and subcutaneous diseases	401.4	364.5
	Skin and subcutaneous diseases	363.1	348.6	Asthma	372.2	331.6
15-24	Drug use disorders	2751.5	2055.9	Headache disorders	1548.2	1137.9
	Self-harm and interpersonal violence	1429.5	1088.4	Drug use disorders	1381.1	977.1
	Depression	800	623	Low back and neck pain	1077.3	788.7
	Headache disorders	737.3	542.9	Depression	861.1	648.9
	Low back and neck pain	682.2	508.8	Self-harm and interpersonal violence	763.7	573
25-44	Drug use disorders	6511.7	10159.5	Drug use disorders	2883.2	4699.1
	Self-harm and interpersonal violence	2026.9	3314.3	Headache disorders	2022.2	3435.4
	Depression	1967.5	3267.1	Low back and neck pain	1776.6	2926.8
	Low back and neck pain	1214.9	1992.6	Depression	1686.2	2753.2
	Alcohol use disorders	1034.4	1628.5	Anxiety disorders	1402.7	2289.8
45-64	Ischaemic heart disease	5186.1	7817.8	Drug use disorders	2037.2	3218.6
	Drug use disorders	4682.3	6720.6	Depression	1978.7	3225.3
	Cirrhosis and other chronic liver diseases	2526.4	3780.5	Lung cancer	1927.7	3185.7
	Depression	2044.5	3014.5	Low back and neck pain	1865.4	3029.3
	Other cancers*	1903.8	2837.4	Anxiety disorders	1727	2818
65-84	Ischaemic heart disease	12682	9620.7	Lung cancer	7079	6599.8
	Lung cancer	7933.1	6064	Chronic obstructive pulmonary disease	6288.7	5911.4
	Chronic obstructive pulmonary disease	5986.6	4496.9	Alzheimer's disease and other dementias	6102.2	6168.6
	Cerebrovascular disease	5709.2	4253.2	Ischaemic heart disease	6095	5829.3

	Alzheimer's disease and other dementias	5616.3	4138.7	Cerebrovascular disease	4132.6	4029.3
85+	Alzheimer's disease and other dementias	31010.8	2460	Alzheimer's disease and other dementias	39004.8	6560.2
	Ischaemic heart disease	18718.7	1526.1	Cerebrovascular disease	13114.9	2209.8
	Cerebrovascular disease	13077.2	1050.5	Ischaemic heart disease	10686.8	1817.2
	Lower respiratory infections	12579.4	984.6	Lower respiratory infections	8692.9	1466.3
	Chronic obstructive pulmonary disease	8123.3	668.3	Chronic obstructive pulmonary disease	7163.7	1236.1

*“other cancers” refers to cancers other than Oesophageal cancer, Stomach cancer, Colorectal cancer, Liver cancer, Pancreatic cancer, Lung cancer, Breast cancer, Ovarian cancer, Prostate cancer, Kidney cancer, Bladder cancer, Non-Hodgkin's lymphoma, Multiple myeloma and Leukaemia

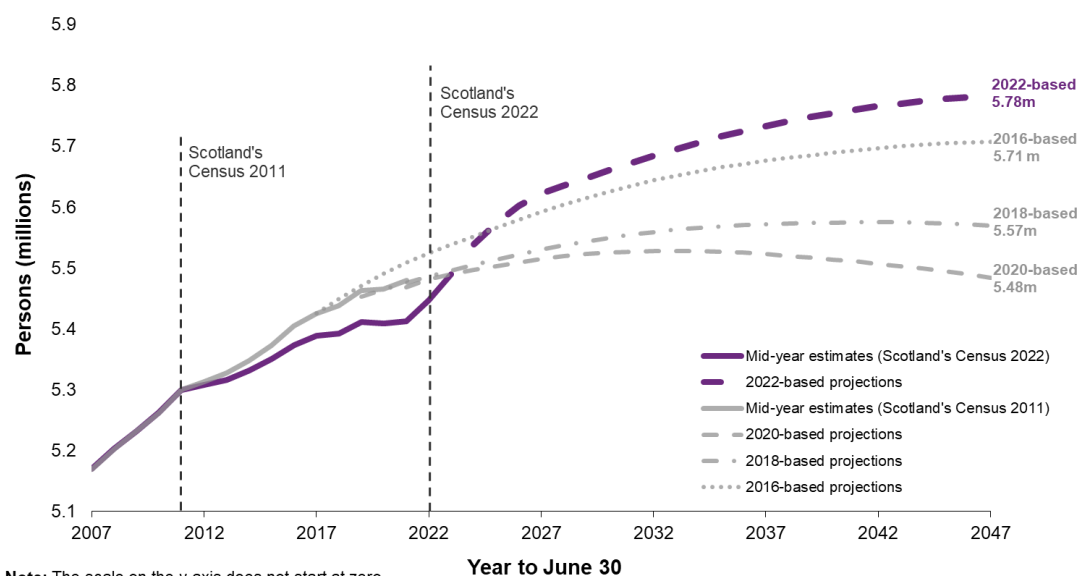
4 Population projections

Data source: [Population Projections | National Records of Scotland \(nrsotland.gov.uk\)](https://nrs.scot.nhs.uk/population-projections/)

NRS produces population projections at regular intervals to support planning and provision of public services as well as policy development. Population projections have limitations that need to be taken account of in their application. They are calculated based on a set of underlying assumptions, which build on current trends. The reliability of projections decreases over time, and projections tend to be less reliable in periods of rapid change. Projections for areas with small populations tend to be less reliable than those for areas with large populations. Projections of the number of adults (particularly elderly people) are usually more reliable than those for children because they are based on people who are already living in Scotland. Migration tends to fluctuate more than fertility or mortality, and it is harder to measure, so there tends to be more uncertainty around the migration figures.

The 2022-based Scotland projected population of Scotland was published in January 2025. It looks at the projected future population of Scotland over the 25 years to mid-2047. It presents the first set of projections to be based on Scotland's Census 2022. No variant projections were produced, and they were not followed by sub-national population projections. Therefore, the latest set of sub-national population projections remain 2018- based and form the basis of this section. It is noted that a higher population is projected by the 2022-based projections for Scotland compared with the previous three sets of projections by the end of the 25-year period (Figure 13). This is likely due to higher projected net migration over this period, following increases in long-term international migration in recent years. The 2022-based projections for Scottish areas are planned for publication in summer 2025, which breaks down the national projections to council areas, health board areas, and other special areas.

Figure 13: Comparison of 2022-based population projections for Scotland with previous projections (source: [NRS](https://nrs.scot.nhs.uk/population-projections/)).



2.2 Population projections for NHS Greater Glasgow and Clyde to 2043

The 2018 based sub-national population projections showed a continuing growth in the population of NHSGGC with the population increasing by ~2% over the 10 years to 2028 (1,200,718) and by ~4% over the 25 year projection time frame to 2043 (1,220,659). They showed a continuing upward shift in the age distribution over this time period (*Figure 14*). The proportion of the population aged 85 years or older was projected to increase to 3.3% by 2043, and 18% of the population was projected to be in the 65-84 year old age group by then. The proportion of the population aged 15 years or younger, and the proportion aged 16-24 years, was projected to progressively decrease to 15% and 10% respectively to 2043 (*Figure 14*).

Figure 14: Population pyramid showing 2018 based population projections for NHS Greater Glasgow and Clyde to 2028 and 2043 (source: NRS)

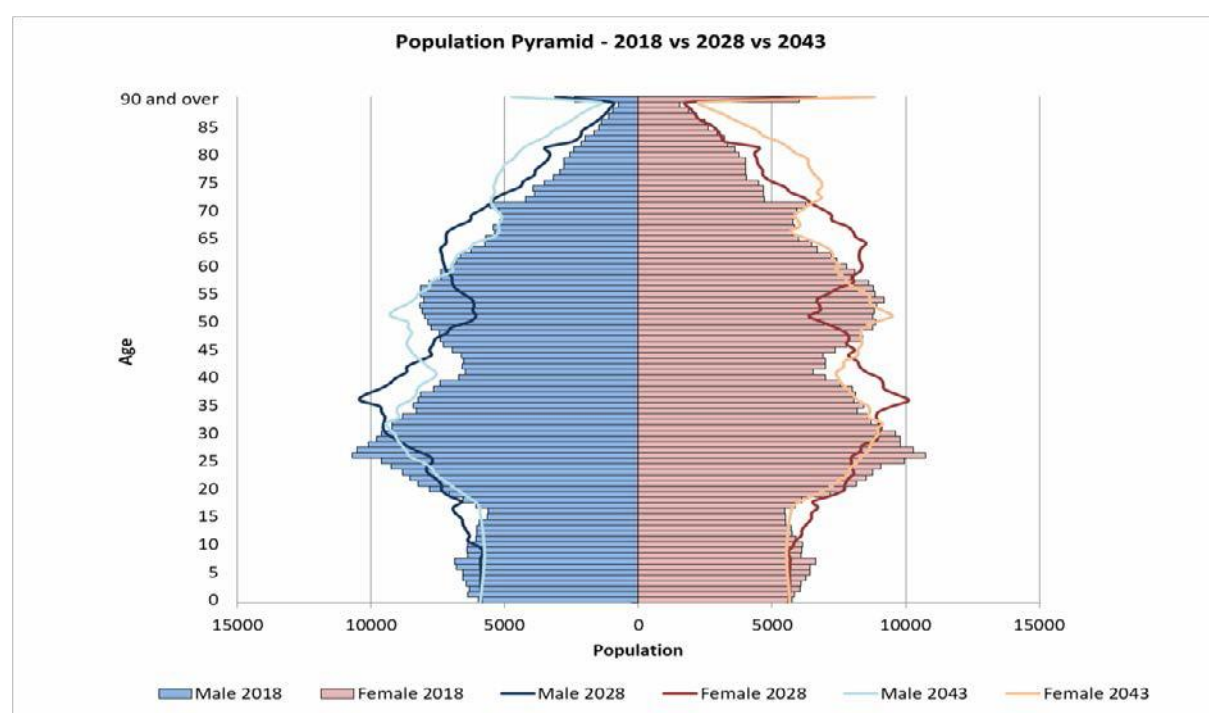
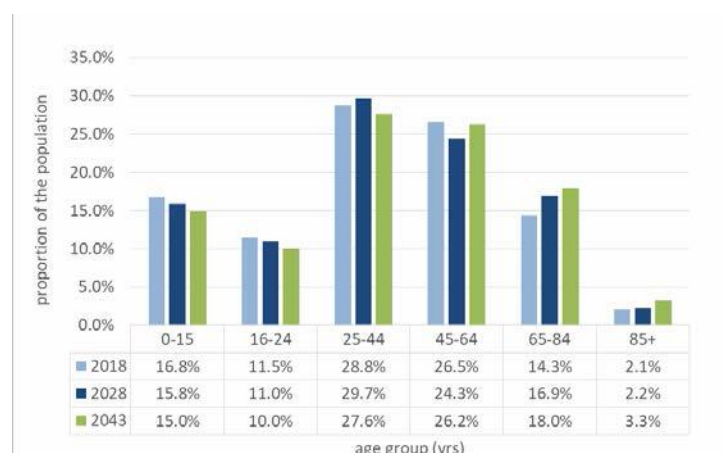


Figure 15: NHSGGC population distribution for as a percentage by age group, 2018 mid-year estimates and projections to 2028 and 2043 (source: NRS)



The most recent estimates for the 2021 mid-year population overall (1,185,040) diverged only minimally from the population projections for 2021 (1,185,013) that were made as part of the longer term 2018 base year projections. The most recent estimates for the 2021 population show a slightly smaller proportion of the population of children aged 15 years or younger, and for adults age 45-64 years and 65-84 years, and a slightly higher proportion of adults aged 25-44 years old, compared to the 2018 based projections for 2021 (*Figure 16*). Based on this comparison, there was no reason to reject the use of the 2018 based projections.

Figure 16: NHSGGC population distribution for as a percentage by age group, 2021 mid-year estimates versus 2018 based projections for 2021 (source: NRS)

