Public Health Scotland

Scottish Burden of Disease

Future prevalence and burden of atrial fibrillation

A Management information release for Scotland

Publication date: 18 March 2025

Translations and other formats are available on request at:

phs.otherformats@phs.scot

0131 314 5300

Public Health Scotland is Scotland's national agency for improving and protecting the health and wellbeing of Scotland's people.

www.publichealthscotland.scot

This is a Management information publication

Published management information are statistics which may be in the process of being transitioned into official statistics. They are most commonly the aggregation and summary of operational data as statistics, to inform business decisions. They may not comply with the UK Statistics Authority's Code of Practice with regard to high data quality or high public value but there is a public interest or a specific interest by a specialist user group in accessing these statistics as there are no associated official statistics available.

Users should therefore be aware of the aspects of data quality and caveats surrounding these data, all of which are listed in this document.

Visit the UK Statistics Authority website for more information about the **Code of Practice** and **Management Information**.

Visit our website for **further information about our statistics and PHS as an Official Statistics producer.**

Contents

Context

Scotland is expected to see a rapidly ageing population, within the context of a slight overall decrease in population, over the next two decades.[1] Public Health Scotland's Scottish Burden of Disease (SBoD) study has recently been adapted to consider how these demographic and population health trends may affect the health of the population in the future. Initial work focused on the impact of the changing demographic situation only and found that, despite a projected 1.2% decrease in the Scottish population, the combined annual disease burden from all causes of disease and injury is forecast to increase 21% in the next 20 years.[2] Absolute increases in combined morbidity and mortality disease burdens are forecast to be largest for cardiovascular diseases, cancers, and neurological diseases – together accounting for approximately two-thirds of the total increase in forecasted disease burden.

These findings are set alongside the context of a projected reduction in working-age population over that same time period with an old-age dependency ratio projected to increase from 57% in 2022 to 64% in 2042.[1] These changes will have important implications for public health and the health and social care system. To address these challenges, alongside financial constraints and sustainability, decision makers need to consider both more effective approaches to prevention and different models of care. In doing so, alongside demographic change, consideration of epidemiological changes is needed as these have the potential to either ease or add to the pressure within an already stretched system.

Background

Disease prevalence is a measure of the overall occurrence of a disease at a point in time. It can help us to better understand the scale of population-level health demands that are likely to arise from living with a disease. This in turn can inform discussions over how best to meet these health needs through health and social care service provision, and over how these needs could be reduced, or managed, through public health interventions.

Disease prevalence is largely influenced by three epidemiological factors:

- The rate of new cases (incidence)
- The rate of remission (cure)
- The survival rate of prevalent cases (death)

Atrial fibrillation is a long-term condition.[3] The consequences from atrial fibrillation can vary from person to person and can include an increased risk of stroke and heart failure, in addition to risk of early death. The prevalence of atrial fibrillation is influenced through two main pathways: the incidence of atrial fibrillation, and the survival rate of prevalent cases. If improvements in mortality are not met by equivalent improvements in disease prevention, the number of prevalent cases will grow. Increasing use of catheter ablation in the treatment of atrial fibrillation is reported in England; if this trend is replicated in Scotland it may, in the future, lead to the prevalence being further influenced by rates of remission.[4] However for the purposes of this analysis we have not considered any remission from atrial fibrillation.

In this report, we project the prevalence of atrial fibrillation over the next two decades by incorporating information on historic trends of the prevalence of atrial fibrillation, alongside projected changes in the Scottish population. The SBoD 2019 study found atrial fibrillation was the 25th leading cause of disease burden in Scotland, with an estimated 22,000 disability-adjusted life years (DALYs). Atrial fibrillation exhibits sizeable absolute and relative inequalities, with 19% of DALYs estimated to be attributable to inequalities in multiple deprivation.[5]

Methodology

Data

Estimates of the number of people living with atrial fibrillation in Scotland were calculated for each year from 2000 to 2019. Cases were identified from the following Scottish Morbidity Records (SMR) datasets: 00 Outpatients; 01 General Inpatient and Daycase dataset (SMR01); 04 Mental Health Inpatients dataset (SMR04); and Geriatric Long-Stay (SMR01E) dataset, using a standard lookback period of 20 years.[6] SMR01/01E records allow the recording of up to six diagnosis codes. In records from 1997, ICD-10 coding was applied in Scotland, and prior to 1997 ICD-9 was applied.[7,8] Cases were identified if an appropriate code was recorded in any of the six positions and the records linked with the National Records of Scotland (NRS) Vital Events (Deaths) Register using the Community Health Index Number.[9,10] The SBoD study follows Global Burden of Disease (GBD) methodology therefore, for the purposes of this analysis, we have considered paroxysmal, persistent and permanent atrial fibrillation together.

Prevalence was estimated annually, between 2000 and 2019, and included individuals with a recorded diagnosis of atrial fibrillation in the previous 20 years who were still alive at the end of the year of interest. In addition, exclusion adjustments were made to account for the small proportion of prevalent individuals who we estimated would no longer be living in Scotland in the year of interest.

A full list of ICD codes used to define atrial fibrillation can be found in **Appendix 1**.

Analyses

Future estimates of prevalence were projected using age-period-cohort (APC) regression models. APC analysis allow us to separate, and project trends of, effects related to: age on cases (A); how cases develop over time (P); and, the difference in the case risk in successive birth cohorts (C). There are several advantages to this approach, the main one being that period and cohort effects serve as proxies for

changing events such as risk factors, public health, and improvements in medical interventions, which are often difficult to measure directly.

APC models were fitted to sex-specific data and the best fitting models, based on goodness-of-fit criteria, were selected. In addition, where the linear period trend was included in the model, either the full trend (from 2000-2019) was used or the more recent trend only (from 2010-2019). The linear period trend was selected based on whether a significant change ($p < 0.05$) was estimated between the two time periods. Following selection of the best-fit model, the resulting age and sex specific prevalence estimates were combined with Office for National Statistics (ONS) 2020-based interim national population projections, recommended for use by the NRS, to generate future estimates of prevalence.[11]

For both male and female models, a full age-period-cohort model was identified as the best fitting model. In addition, the linear period trend for the two most recent time periods (2010-2019) was applied. To compensate for the likelihood that these trends are unlikely to continue without changing indefinitely, the linear trend parameter was cut by 0%, 25% and 50% in the first, second and third 5-year period, respectively, to decrease the effect of current trends.[12]

As a comparator, future estimates of prevalence incorporating demographic changes only were calculated. Here, the sex-specific atrial fibrillation prevalence for 2019 was calculated by five-year age group. These age and sex-specific estimates were then applied to population projections to generate future estimates. These estimates assume that the rate of prevalence remains constant over the forecast period. That is, all future changes would be due to the changing demographics in Scotland ignoring the time trends identified in APC models. Estimates included in this report are those which include the impacts of projected demographic changes and historic epidemiological trends, unless stated.

Estimates of prevalence for atrial fibrillation reported here may differ to other published estimates of prevalence in Scotland, as these estimated follow the disease models and definitions outlined by the SBoD study. Analysis was carried out in RStudio using the Nordpred package for modelling. [13, 14]

Finally, these estimates of future prevalence were then used to calculate estimates of the future burden of atrial fibrillation due to morbidity. The SBoD study follows the Global Burden of Disease (GBD) methodology which relies on severity distributions to quantify the proportion of the prevalent population in a particular health state (e.g. asymptomatic/symptomatic) and on disability weights to take account of the consequences of both the condition and the severity of the condition.[15] Prevalence forecasts were distributed to each severity level according to the fixed proportions developed for use in the GBD 2016 study.[16] The burden due to morbidity was calculated by applying the disability weight to the number of prevalent cases in each severity level and adjusting for comorbidity. Severity distributions and disability weights for atrial fibrillation can be found in **Appendix 1, Table A3.**

Main points

- From 2019 to 2044, the number of people with atrial fibrillation in Scotland is estimated to increase by 56%, from 113,700 prevalent cases to 177,600; an additional 63,900 people living with atrial fibrillation in 2044, compared to 2019.

- Absolute and relative changes differ between the age groups and sexes. The largest absolute change in prevalence is forecast for males and females aged 65 to 84 years. The largest sex-specific relative increases are projected for males aged 85 years and over.

- Due to projected increases in the number of prevalent cases, unless mitigated by reductions in disease severity, the non-fatal burden of atrial fibrillation will increase between 2019 and 2044.

- These projected increases in prevalence and burden of atrial fibrillation are not inevitable - effective prevention at all levels (primary, secondary and tertiary) can contribute to reducing the number of people developing atrial fibrillation, whilst appropriate management and treatment can assist those who do develop it to move into remission from the condition or to live at lower levels of severity

- These estimates are intended as a baseline for future scenarios and do not consider any future changes in the rate of interventions or other changes in the management of the condition.

Results and commentary

Results

From 2000-05 to 2015-19, the number of people with a diagnosis of atrial fibrillation increased by 83% (Figure 1). Through incorporating the impact of projected population changes (age-effects) from 2019 onwards and assuming the underlying prevalence rate remains the same as it was in 2019, we estimate the number of people with atrial fibrillation could rise from 113,700 to 159,800 from 2019 to 2044; an increase of 41% (Figure 1 and Table 1). Refining these estimates further by incorporating historical pre-pandemic age-, period- and cohort-effects identified in underlying historic data, we estimate that the number of people with atrial fibrillation would increase from 113,700 in 2019 to 177,600 in 2044; an increase of 56% (Figure 1 and Table 1).

Figure 1: Trend in the number of people with atrial fibrillation (2000 to 2019) with projections to 2044 (mean value per five-year period)

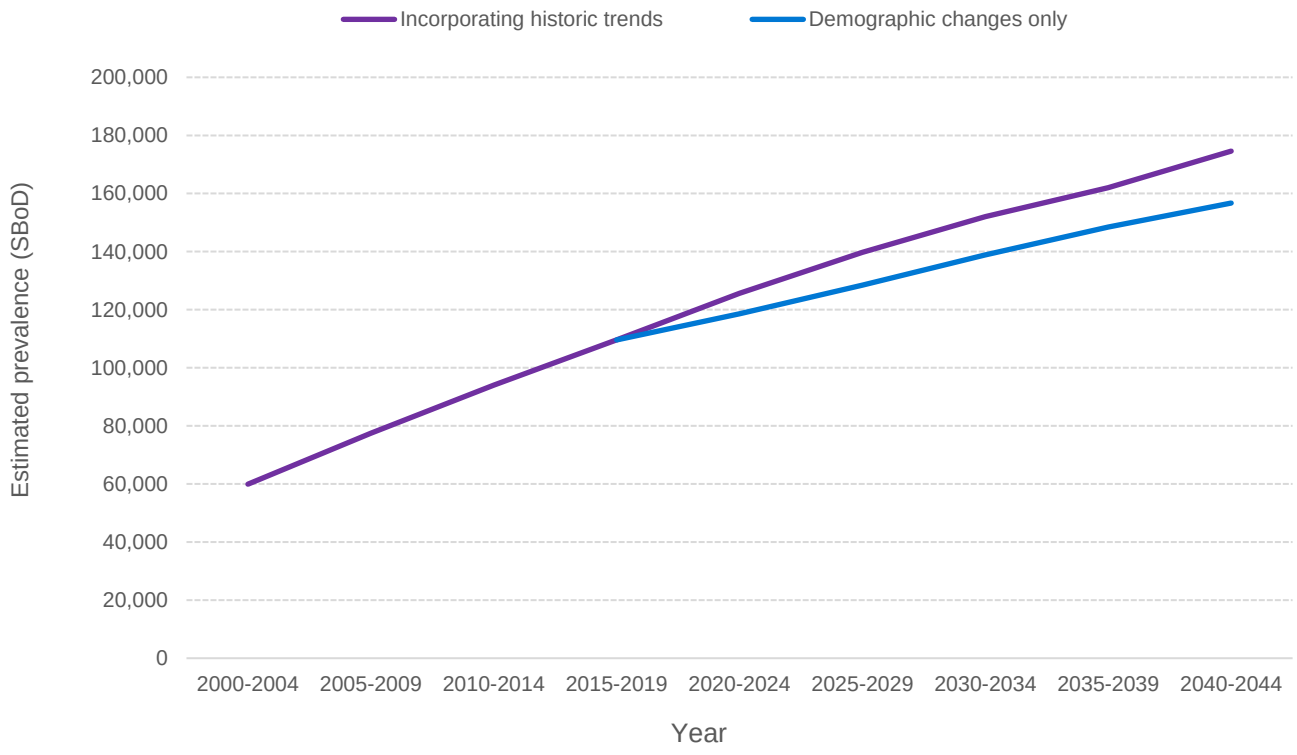

Table 1: Estimated number of people with atrial fibrillation in Scotland using two different methods (selected years) with projections to 2044

Method	2019	2024	2029	2034	2039	2044	Change (n) (2019 to 2044)	Change (%) (2019 to 2044)
Demographic changes only	113,655	122,509	132,722	143,091	151,921	159,754	+46,099	+40.6%
Incorporating historic trends and demographic changes	113,655	129,787	144,406	156,496	165,313	177,580	+63,925	+56.2%

In the full model, incorporating historic trends and demographic changes, the largest absolute and relative increases in prevalence are expected to be seen for males. For males, an increase of 62% is projected, representing an absolute increase of 40,000 prevalent cases (Table 2). For females, there is projected to be a 49% increase in prevalence, representing an absolute increase of 23,900 prevalent cases.

Table 2: Estimated number of people with atrial fibrillation incorporating historic trends with projections to 2044, by sex (selected years)

Sex	2019	2024	2029	2034	2039	2044	Change (n) (2019 to 2044)	Change (%) (2019 to 2044)
Male	64,646	74,338	83,682	91,637	97,587	104,699	40,053	+62.0%
Female	49,009	55,449	60,724	64,859	67,726	72,881	23,872	+48.7%

In addition to sex-specific differences, we project that these prevalence projections are likely to impact age groups in different ways (Figure 2, Table 3). For females, relative increases are projected across all age groups, with similar increases projected in all age groups 45 years and above. However, for males, small relative decreases are projected in the two youngest age group, with projected increases in all age groups 25 years and over. It is important to note that increases in younger age groups are based on small absolute baseline prevalence and therefore any change will result in inflated relative changes.

Figure 2: Percentage change (2019-2044) in the estimated number of people with atrial fibrillation by sex and age group

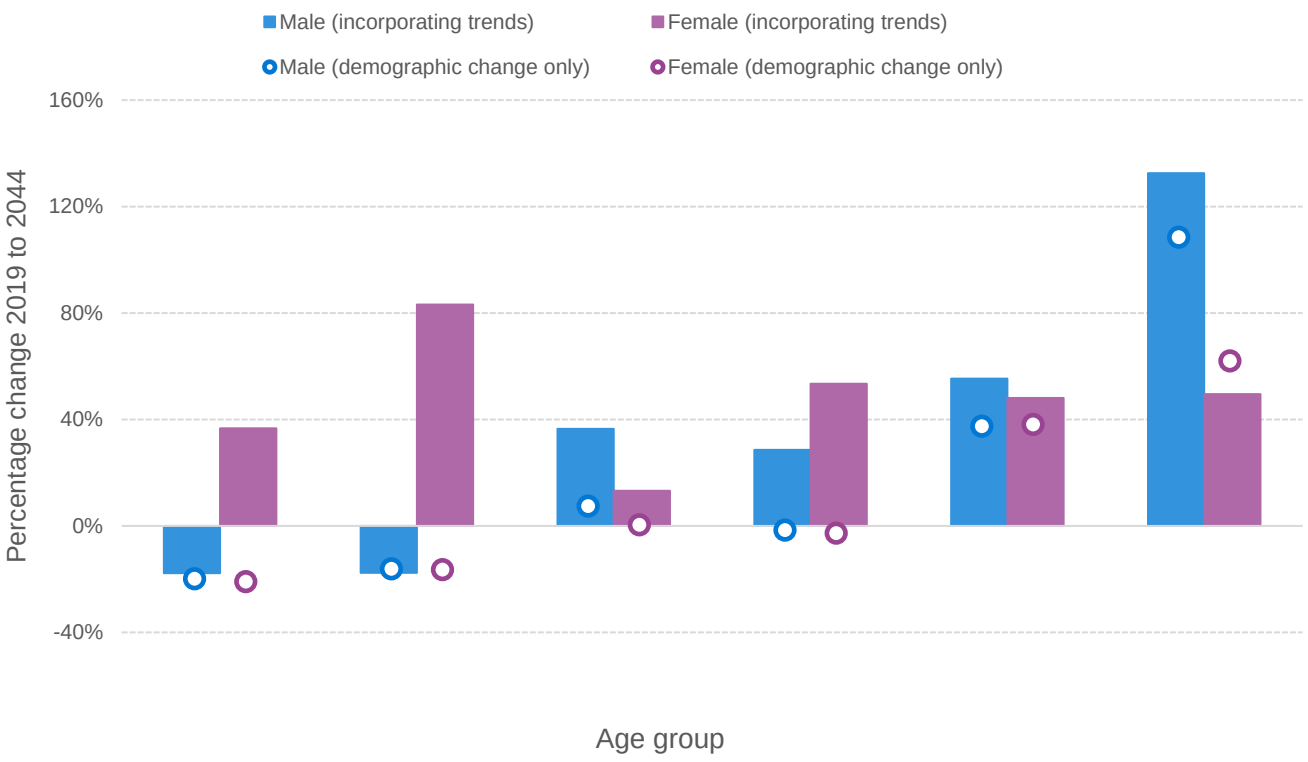

Table 3: Percentage change (2019-2044) in the estimated number of people with atrial fibrillation by sex and age group

Sex	Agegroup	Demographic changes only % (n)	Incorporating historic changes % (n)
Male	under 15 years	-19.8% (-3)*	-17.7% (-3)*
	15 to 24 years	-16.1% (-15)	-17.6% (-16)
	25 to 44 years	7.5% (126)	36.5% (612)
	45 to 64 years	-1.5% (-194)	28.6% (3,579)
	65 to 84 years	37.5% (14,984)	55.3% (22,114)
	85 years and over	108.5% (11,269)	132.5% (13,767)
Female	under 15 years	-20.9% (-2)	36.7% (4)
	15 to 24 years	-16.4% (-5)	83.2% (26)
	25 to 44 years	0.5% (3)	13.2% (72)
	45 to 64 years	-2.7% (-139)	53.4% (2,746)
	65 to 84 years	38.2% (10,825)	48.1% (13,639)
	85 years and over	62.0% (9,250)	49.5% (7,384)

* Differences in percentage change due to rounding of absolute numbers

Generally, including the impact of historical epidemiological trends on projections increases the estimated number of prevalent cases in age groups over 25 years for males. For females, the impact of historical epidemiological trends on projections increases the estimated number of prevalent cases in all age groups less than 85 years. The largest absolute increases are projected in the 65 to 84 years age group. For males aged 65 to 84 years an absolute increase of 22,100 prevalent cases is projected from 2019 to 2044, representing a relative increase of 55%. For females aged 65 to 84 years an absolute increase of 13,600 prevalent cases is projected from 2019 to 2044, representing a relative increase of 48%.

In burden of disease studies, prevalence is used to calculate the non-fatal burden [years lived with disability (YLD)] of a condition, along with estimates of the severity and disability associated with the disease. For atrial fibrillation, the severity is also adjusted to consider asymptomatic cases, which mitigates any potential over-estimation of the burden, due to prevalent cases who may have had successful treatment. Applying burden of disease methodology to the projected values of prevalence, we estimate that the non-fatal burden due to atrial fibrillation is also projected to increase. YLD is projected to be approximately 14,100 YLD in 2044, up from 8,500 in 2019, representing an absolute increase of 5,600 YLD and a relative increase of 66%. Considering males and females stratification, the projected increases in YLD follow the same trends as seen in prevalence.

Overall burden (DALYs) is a composite measure incorporating both non-fatal and fatal burden. This projected increase in non-fatal burden will not necessarily lead to a similar change in the overall burden, as the latter will also be influenced by projected changes in mortality and fatal burden for a disease. Further work by the SBoD team will be focussed on future projections of mortality and fatal burden, in order to develop forecasts of the overall burden of cardiovascular diseases in Scotland.

Summary

Both the prevalence and non-fatal burden of atrial fibrillation are projected to increase over the next 20 years for males and females. Recent estimates of the prevalence of atrial fibrillation from primary care, representing over two-thirds of Scottish General Practices, highlight that from 2019 to 2023 the number of prevalent cases of atrial fibrillation has increased by 9%.[17] This change already exceeds the estimated change in our demographic model, one year sooner than the estimate suggests.

Any projected increases in prevalence and burden are likely to impact the rising demand for services in the future. However, these projected increases are not inevitable. We need to continue to invest in prevention at all levels. Through primary prevention we can reduce the rate of new cases of atrial fibrillation occurring and through deploying effective secondary and tertiary prevention we can reduce the

health-related quality of life impacts, and risk of early death, in people already living with, or at-risk of, atrial fibrillation.

Limitations

Projections, by definition, are unstable and become less robust the longer the forecast period. External events, changes to population projections and limitations in the original models can all impact the robustness of projections. For example, the use of pre-pandemic period time trends in atrial fibrillation prevalence do not take into account any changes in incidence and mortality from 2020 to 2023.

Calculation of historic prevalence, from 2000 to 2019, drew on hospital data covered by the SMR suite of datasets, as listed in the methodology section. This includes SMR00 Outpatient Attendances, which reports episode level outpatient attendances. It is not mandatory for diagnoses to be recorded on the SMR00 Outpatient Attendance record and records including diagnostic data are limited. Therefore, patients who have attended outpatient settings only (i.e. with no inpatient/daycase admissions) are not likely to have been included in the historic prevalence estimates. Firstly, this may have resulted in under-estimation of the prevalence of atrial fibrillation from 2000 to 2019. Examination of previous Quality and Outcomes Framework (QoF) register trend data suggests underestimation of prevalence is likely to be an issue as prevalence derived from SMR data is consistently higher than QoF primary care prevalence. Secondly, limiting the prevalent cases to inpatient hospitalisations may have resulted in a cohort with an older age structure, due to the demographics of hospital activity. [18]

Finally, there may also be uncertainties in the calculation of future burden. When estimating the future non-fatal burden of atrial fibrillation using YLD, these projections assume the distribution across severity levels will remain constant over time. This may not be the case, particularly when decreased mortality rates may cause people to live longer and develop further complications of atrial fibrillation. Any changes to the distribution of prevalence across the severity levels throughout the projection period will affect YLD estimates.

Conclusion and next steps

This analysis forecasts an increase in prevalence of atrial fibrillation in Scotland over the next two decades. Any projected increases in prevalence and burden are likely to impact the sustainability of services in the future. However, these projected increases are not inevitable and, as such, we need to continue to invest in prevention at all levels.

Improving the wider determinants of health and tackling the underlying mechanisms and modifiable risk factors which increase the risk of COPD - primary prevention - is the most effective way to reduce the rate of new cases COPD occurring. The most significant risk factor for COPD is smoking.[19] In 2013, the Scottish Government introduced a target, aiming for a smoking prevalence of 5% or lower amongst the adult population in Scotland.[20] Data from the Scottish Health Survey 2022 illustrates that whilst overall smoking prevalence has been reducing in Scotland since 2003, inequalities persist.[21] In 2022, the age-standardised prevalence of smoking in adults was 25% in those living in the most deprived areas, compared to 7% amongst adults living in the least deprived areas. An updated *Tobacco and Vaping Framework: Roadmap to 2034, published* by the Scottish Government in 2023, acknowledges that whilst progress has been made on this target, continued effort is required, particularly with respect to inequalities in smoking prevalence. [22]

Similar inequalities are seen in adults living with obesity. The Scottish Health Survey 2022 reported that the proportion of adults living with obesity increased as area deprivation increased, with 19% of adults in the least deprived areas living with obesity but 36% of adults in the most deprived areas living with obesity.[23] Scottish Government policy, outlined in *A Healthier Future: Scotland's Diet and Healthy Weight Delivery Plan*, aims, amongst other policies, to reduce all diet-related health inequalities.[24]

For patients who develop AF secondary prevention - early diagnosis and intervention - can help to reduce the severity of ill-health and the risk of early death in those who at at-risk of developing, or exacerbating, other health conditions. People with atrial fibrillation are at a significantly increased risk of having a stroke and stroke itself is a

leading cause of burden of disease in Scotland. Timely treatments and interventions can reduce the risk of AF-related strokes.

The SBoD team are doing further work on the future projections of mortality and fatal burden, to inform forecasts of the overall burden of atrial fibrillation in Scotland. They are also working to build upon these projections to explore how forecasts may be influenced by various scenarios. Examples include changes to the prevalence of underlying risk factors for atrial fibrillation and the introduction of any novel treatments or public health interventions. In addition, the SBoD team are working with the Whole Systems Modelling team at PHS to determine how these various projections and scenarios are likely to impact service provision in the health and social care systems over the next 20 years.

Glossary

Atrial Fibrillation

Atrial fibrillation (AF) is a type of heart rhythm problem where the heartbeat is not steady.

Burden of disease (and injury)

The quantified impact of a disease or injury on a population using the disability-adjusted life years (DALY) measure.

DALY (disability-adjusted life year)

A standardised metric that can be used to quantify the health loss due to dying prematurely or to living with the health consequences of diseases, injuries or risk factors. DALYs are a summary metric of population health. DALYs are an absolute measure of health loss; they count how many years of healthy life are lost due to death and non-fatal illness or impairment. They reflect the number of individuals who are ill or die in each age-sex group and location.

Disability

In burden of disease studies, this is synonymous for “loss of health”, or any, short or long term, departure from full health.

Disability weight

Numerical representations of the severity of health loss associated with a health state. Disability weights are numbers between 0 and 1 that are multiplied by the time spent living with a health loss to determine the years lived with disability associated with the cause of that loss. In the GBD, disability weights are derived from a worldwide, cross-cultural study to compare the relative severity of health problem.

Early death

The burden from dying prematurely. Often used synonymously with **years of life lost**.

Fatal burden

The burden from dying prematurely as measured by years of life lost. Often used synonymously with **years of life lost**.

Health loss

The total burden from early death and ill-health. Often used synonymously with **disability adjusted life year (DALY).**

Health states

The consequences of diseases and injuries or their risk factors. Health state refers to an individual's levels of functioning within a set of health domains such as mobility, cognition, pain, emotional functioning, self-care, etc. Health states do not refer to general well-being (which is a broader construct) or to aspects of participating in society, although they clearly affect these other aspects of life and may be affected by them.

Ill-health

Often used synonymously with **years lived with disability**.

Life expectancy

The average number of years of life expected to be lived by individuals who survive to a specific age.

Non-fatal burden

The burden from living with ill-health as measured by years lived with disability. Often used synonymously with **years lived with disability**.

Sequelae

Consequences of diseases and injuries for which epidemiological estimates and YLD calculations are made. It encompasses not only the traditional clinical meaning, but also a broader categorization of health outcomes such as severity levels for a particular disease, injury or impairment.

Severity distribution

Severity distributions are a means of summarising the range of health loss suffered to disease which enables estimates of disease occurrence to be paired with disability weights to estimate Years Lost to Disability in burden of disease studies.

YLD (Years of Life lived with a Disability)

In burden of disease studies this is also referred to as ‘ill-health’. YLDs are computed

as the prevalence of different disease-sequelae and injury-sequelae multiplied by the disability weight for that sequela. Disability weights are selected on the basis of surveys of the general population about the loss of health associated with the health state related to a disease sequela.

YLL (Years of Life Lost due to premature mortality)

YLLs are computed by multiplying the number of deaths at each age x by a standard life expectancy at age x. In SBoD we use an aspirational world life expectancy table developed for the Global Burden of Disease study.

Contact

Fatim Lakha, Consultant in Public Health Medicine
Clinical and Protecting Health Directorate
phs.sbod-team@phs.scot

Eilidh Fletcher, Principal Information Analyst
Consultancy Services
phs.sbod-team@phs.scot

Grant Wyper, Principal Epidemiologist
Clinical and Protecting Health Directorate
phs.sbod-team@phs.scot

For all media enquiries please email **phs.comms@phs.scot** or call 0131 275 6105.

Acknowledgements

Thank you to Professors Jacob George and Sarah Wild for providing expert input and Dr Rishma Mani for reviewing initial drafts.

Further information

Further information and data for this publication are available from the **publication page** on our website.

Rate this publication

Let us know what you think about this publication via. the link at the bottom of this **publication page** on the PHS website.

Appendices

Appendix 1 – Background information

Table A1: ICD-10 codes

IC10 code	Description
I48-	Atrial fibrillation and flutter

Table A2: ICD-9 codes

IC10 code	Description
427.3-	Atrial fibrillation and flutter

Table A3: Description and allocation to severity levels for atrial fibrillation with corresponding disability weight

Severity level	Description	% of prevalent cases	Disability weight (0-1)
Asymptomatic	-.	60	0.000
Symptomatic	Has periods of rapid and irregular heartbeats and occasional fainting.	40	0.224

Appendix 2 – Publication metadata

Publication title

Scottish Burden of Disease: Future prevalence and burden of atrial fibrillation

Description

Release of Scottish Burden of disease prevalence estimates for atrial fibrillation for 2020-2044.

Theme

Population health and forecasts

Topic

Burden of disease

Format

PDF

Data source(s)

Please see methodology section for full data sources and time periods.

Date that data are acquired

Please see methodology section for full data sources and time periods.

Release date

18/03/2025

Frequency

Ad hoc

Timeframe of data and timeliness

The basis for the publication is SMR data from 1980 to 2019.

Continuity of data

Please see methodology section for information on continuity of data and coding.

Revisions statement

Revisions relevant to this publication

Concepts and definitions

Please see **Glossary**

Relevance and key uses of the statistics

Population health surveillance; service planning and sustainability; quality improvement and assurance.

Accuracy

The report contains projections of the prevalence of disease in Scotland to 2044. Projections and forecasts, by definition, are unstable and become less robust the longer the forecast period. Please see **Limitations** section for full details.

Completeness

Please see methodology section for information on completeness of data.

Comparability

The prevalence described in this report is estimated following the disease models and definitions outlined by the SBoD study and therefore may not be directly comparable to other estimates of prevalence.

Accessibility

It is the policy of Public Health Scotland to make its websites and products accessible according to published guidelines. More information on accessibility can be found on the **PHS website**.

Coherence and clarity

Measures to enhance coherence and clarity within this report include: explanatory chart/table notes, minimal use of abbreviations/abbreviations explained in the text, comprehensive notes on background and methodology.

Value type and unit of measurement

Figures are shown as absolute number, percentages and relative change. Units of measurement are disability-adjusted life years (DALYs); years lived with disability

(YLDs) and years of life lost (YLL) and prevalence of disease. Please see **Glossary** for further details.

Disclosure

The PHS protocol on Statistical Disclosure Protocol is followed.

Official statistics accreditation

Management information.

UK Statistics Authority assessment

Not put forward for assessment.

Last published

First publication.

Next published

To be confirmed.

Date of first publication

Not applicable.

Help email

phs.sbod-team@phs.scot

Date form completed

04 March 2025

Appendix 3 – Early access details

Pre-release access

Under terms of the 'Pre-release Access to Official Statistics (Scotland) Order 2008', PHS is obliged to publish information on those receiving pre-release access ('pre-release access' refers to statistics in their final form prior to publication). The standard maximum pre-release access is five working days. Shown below are details of those receiving standard pre-release access.

Standard pre-release access:

Scottish Government Department of Health and Social Care (DHSC)

NHS board chief executives

NHS board communication leads

Early access for management information

These statistics will also have been made available to those who needed access to ‘management information’, i.e. as part of the delivery of health and care:

Early access for quality assurance

These statistics will also have been made available to those who needed access to help quality assure the publication:

Appendix 4 – PHS and official statistics

About Public Health Scotland (PHS)

PHS is a knowledge-based and intelligence driven organisation with a critical reliance on data and information to enable it to be an independent voice for the public's health, leading collaboratively and effectively across the Scottish public health system, accountable at local and national levels, and providing leadership and focus for achieving better health and wellbeing outcomes for the population. Our statistics comply with the **Code of Practice for Statistics** in terms of trustworthiness, high quality and public value. This also means that we keep data secure at all stages, through collection, processing, analysis and output production, and adhere to the Office for National Statistics '**Five Safes**' of data privacy.

References

[1] National Records of Scotland. Projected Population of Scotland (2020-based). Available at: **https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-projections/population-projections-scotland/2020-based**

[2] Public Health Scotland. Forecasting the future burden of disease: Incorporating the impact of demographic transition over the next 20 years. Available at: **https://www.scotpho.org.uk/comparative-health/burden-of-disease/overview**

[3] **https://www.nhsinform.scot/illnesses-and-conditions/cardiovascular-disease/heart-disease/atrial-fibrillation/**

[4] National Cardiac Audit Programme. National Audit of Cardiac Rhythm Management. 2024 Summary Report. Available at: **https://www.nicor.org.uk/publications/ncap/cardiac-rhythm/2024/crm-final-report-2022-23?layout=file**

[5] Grant I, Chalmers N, Fletcher E, Lakha F, McCartney G, Stockton D, Wyper GMA. Prepandemic inequalities in the burden of disease in Scotland due to multiple deprivation: a retrospective study. BMJ Public Health. 2023;1:e000191. doi: **https://doi.org/10.1136/bmjph-2023-000191**.

[6] Public Health Scotland. Data management in secondary care: hospital activity. Available at: **https://publichealthscotland.scot/services/data-management/data-management-in-secondary-care-hospital-activity/scottish-morbidity-records-smr/what-are-the-smr-datasets/**

[7] World Health Organization. ICD-10: international statistical classification of diseases and related health problems: tenth revision, 2nd ed. World Health Organization. Available at: **https://iris.who.int/handle/10665/42980**

[8] World Health Organization. International classification of diseases: [9th] ninth revision, basic tabulation list with alphabetic index. Available at: **https://iris.who.int/handle/10665/39473**.

[9] National Records of Scotland. Vital events - Deaths. Available at: **https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths**.

[10] Public Health Scotland. Data Dictionary. Available at: **https://publichealthscotland.scot/services/national-data-catalogue/data-dictionary/a-to-z-of-data-dictionary-terms/chi-number/**.

[11] Office for National Statistics. 2020-based interim national population projections: year ending June 2022 estimated international migration variant. Available at: **https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/2020basedinterimnationalpopulationprojectionsyearendingjune2022estimatedinternationalmigrationvariant**

[12] Olsen, A., Parkin, D. & Sasieni, P. Cancer mortality in the United Kingdom: projections to the year 2025. Br J Cancer 99, 1549–1554 (2008). https://doi.org/10.1038/sj.bjc.6604710

[13] RStudio Team (2020). RStudio: Integrated Development for R. RStudio, PBC, Boston, MA URL **http://www.rstudio.com/**

[14] Møller B, Fekjær H, Hakulinen T, Tryggvadóttir L, Storm HH, Talbäck M, Haldorsen T. Prediction of cancer incidence in the Nordic countries up to the year 2020." (2002) European Journal of Cancer Prevention, Volume 11, Supplement 1

[15] The Institute for Health Metrics and Evaluation. The Global Burden of Disease study. Available at: **https://www.healthdata.org/research-analysis/gbd**

[16] Global Burden of Disease Study 2016 (GBD 2016) Data Resources. Available at: **https://ghdx.healthdata.org/gbd-2016**

[17] Public Health Scotland. General practice - disease prevalence data visualisation. Available at: **https://publichealthscotland.scot/publications/general-practice-**

disease-prevalence-data-visualisation/general-practice-disease-prevalence-visualisation-27-june-2023/dashboard/.

[18] Public Health Scotland. Acute hospital activity and NHS beds information (annual). Year Ending 31 March 2024. Available at: https://publichealthscotland.scot/publications/acute-hospital-activity-and-nhs-beds-information-annual/acute-hospital-activity-and-nhs-beds-information-annual-year-ending-31-march-2024/

[19] Scottish Public Health Observatory (ScotPHO). Chronic obstructive pulmonary disease (COPD) disease briefings. Available at: https://www.scotpho.org.uk/health-conditions/chronic-obstructive-pulmonary-disease-copd/key-points/

[20] Scottish Government. Creating a Tobacco-Free Scotland; A Tobacco Control Strategy for Scotland. 2013. Available at: **https://www.gov.scot/publications/tobacco-control-strategy-creating-tobacco-free-generation/pages/1/**

[21] Scottish Government. The Scottish Health Survey, 2022 Edition. December 2023. Available at: **https://www.gov.scot/publications/scottish-health-survey-2022-volume-1-main-report/pages/0/**

[22] Scottish Government. Tobacco and vaping framework: roadmap to 2034. November 2023. Available at: **https://www.gov.scot/publications/tobacco-vaping-framework-roadmap-2034/pages/1/**

[23] Scottish Government. The Scottish Health Survey, 2022 Edition. December 2023. Available at: **https://www.gov.scot/publications/scottish-health-survey-2022-volume-1-main-report/pages/0/**

[24] Scottish Government. A healthier future: Scotland's diet and healthy weight delivery plan. July 2018. Available at:

https://www.gov.scot/publications/healthier-future-scotlands-diet-healthy-weight-delivery-plan/