
Subject: Multi-morbidity 2024

Date of report: 6 February 2025

Introduction

Morbidity is the state of having a long-term (chronic) medical condition. Multi-morbidity is defined as the presence of two or more long-term medical conditions in a patient.

Studies show that people with multiple chronic conditions (those with multi-morbidity) typically suffer a lower quality of life,¹ have more frequent and lengthy hospital admissions,² and may be more likely to die prematurely,³ than those who do not have multi-morbidity. Managing the health and care needs of people with multiple conditions also becomes increasingly complex.

This report assesses the burden of multi-morbidity experienced by Jersey's population. It summarises the prevalence of certain long-term conditions amongst Jersey residents, as recorded by General Practitioners (GPs). The analysis shows the prevalence of patients with more than one of these conditions (multi-morbidity), and which diseases are most commonly co-occurring. The analysis presented refers to prevalence of conditions and multi-morbidities as at year end 2024, and trends over time are shown where appropriate.

Long-term conditions (morbidities)

There are 12 long-term conditions which form the basis of the multi-morbidity analysis presented. The Government of Jersey incentivises GPs to record patients with any of these long-term conditions through the Quality Improvement Framework (JQIF).⁴

The 12 long-term morbidities are:

- Atrial Fibrillation (AF)
- Asthma (AST)
- Coronary Heart Disease (CHD)
- Chronic Kidney Disease (CKD)
- Chronic Obstructive Pulmonary Disease (COPD)
- Dementia (DEM)
- Diabetes (DIA)
- Heart Failure (HF)
- Hypertension (HYP)
- Mental Health Problems (MH)
- Obesity (OB)
- Stroke and Transient Ischemic Attack (STIA)

See Appendix 1 for the definitions of the criteria used in order to identify patients recorded as having any of the above conditions

¹Fortin et al., 2004. [Health and Quality of Life Outcomes](#)

²Vogeli et al., 2007. [Journal of General Internal Medicine](#)

³Menotti et al., 2001. [Journal of Clinical Epidemiology](#)

⁴Cancer is another long-term condition that is included in the Jersey Quality Improvement Framework. For consistency with previous analysis it has not been included in this report.

Multi-morbidity (2024)

Approximately **14%** of individuals in Jersey are living with multiple morbidities



Hypertension was the most common morbidity, affecting **17%** of the population

Morbidities become more common with age

By age 85, over half of the population is suffering from **2 or more long-term conditions**



The same **10 pairs** of co-occurring morbidities have remained the most common over the **last 9 years**



The **most commonly co-occurring morbidities** are

Hypertension & Obesity



The **most commonly co-occurring set of three morbidities** are

Hypertension, Diabetes & Obesity

Long-term conditions (morbidity) amongst the population

Prevalence of long-term conditions

As at the end of 2024, there were 33,080 individuals who had at least one of the 12 long-term conditions considered in this report who were registered, and considered active, with a GP in Jersey.

The number and proportion of the population⁴ suffering from each of the long-term conditions is shown in Table 1.

The most common long-term condition was hypertension (with 18,125 patients registered), whilst dementia and mental health were the least prevalent long-term conditions (with 895 patients and 880 patients registered respectively) (Table 1).

Table 1. The number of patients on each long-term condition register as at year end 2024. “All patients” include everyone who is on the register, regardless of what other conditions they may have, whilst “patients (single condition)” includes patients who have only that single condition. The number of patients on the register as a proportion of the total population is shown, as well as the average age of patients on the register.

| Condition | All Patients | Proportion of Population | Average Age | Patients (Single condition) | Average Age (Single condition) |
|--|--------------|--------------------------|-------------|-----------------------------|--------------------------------|
| Hypertension (HYP) | 18,125 | 17% | 68 | 7,325 | 65 |
| Obesity (OB) | 11,135 | 11% | 56 | 4,460 | 47 |
| Asthma (AST) | 6,060 | 6% | 49 | 3,430 | 39 |
| Diabetes (DIA) | 5,210 | 5% | 66 | 925 | 56 |
| Coronary Heart Disease (CHD) | 2,965 | 3% | 73 | 515 | 66 |
| Atrial Fibrillation (AF) | 2,900 | 3% | 75 | 450 | 67 |
| Chronic Kidney Disease (CKD) | 2,410 | 2% | 78 | 260 | 70 |
| Chronic Obstructive Pulmonary Disease (COPD) | 2,365 | 2% | 70 | 540 | 64 |
| Stroke and Transient Ischemic Attack (STIA) | 2,040 | 2% | 74 | 365 | 64 |
| Heart Failure (HF) | 1,305 | 1% | 79 | 55 | 67 |
| Dementia (DEM) | 895 | 1% | 82 | 150 | 81 |
| Mental Health Problems (MH) | 880 | 1% | 52 | 415 | 45 |

*Patient numbers rounded to the nearest 5

Source: JQIF register

While many long-term conditions affected males and females relatively equally, some conditions affected one sex more than the other (Figure 1).

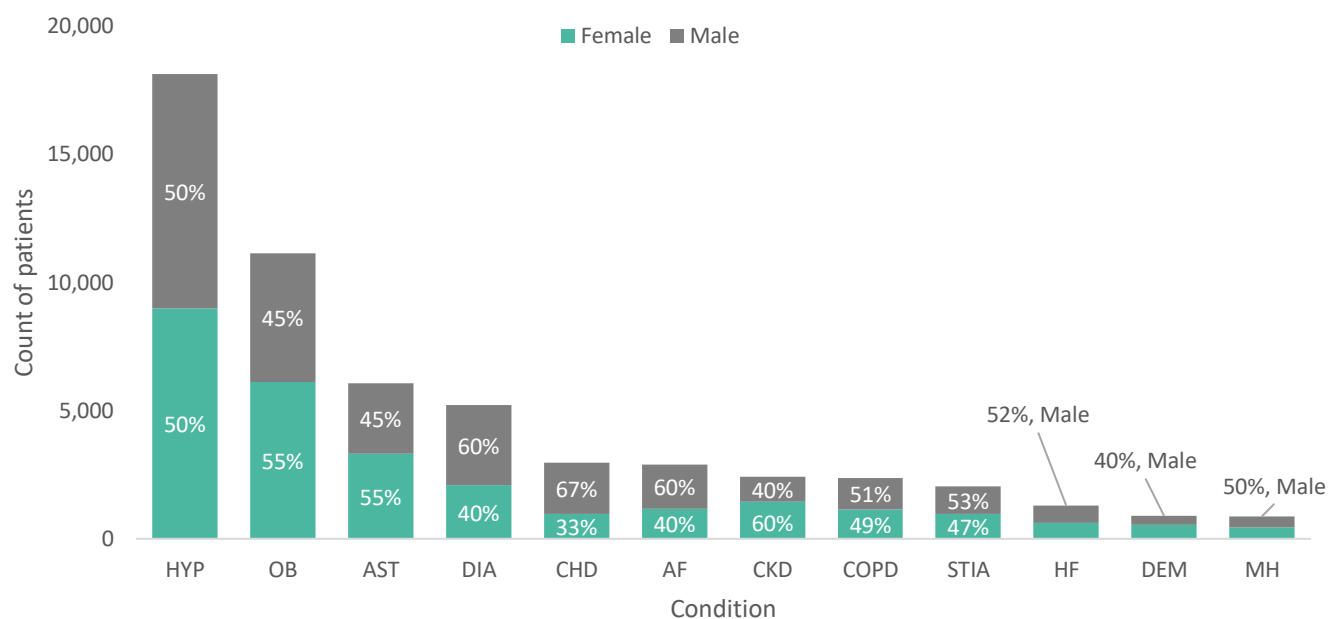
Of the 12 conditions considered:

- those conditions that were more likely to affect female patients were obesity (55% female and 45% male), Asthma (55% female and 45% male) and chronic kidney disease (60% female, 40% male)
- those conditions that were more likely to affect male patients were: coronary heart disease (67% male, 33% female), atrial fibrillation (60% male, 40% female) and diabetes (60% male, 40% female)

For some conditions, the sex difference was largely attributable to the age profile of the condition. For example, there are more females than males overall in older age groups,⁵ so there is expected to be a higher proportion of female patients for conditions affecting primarily older patients such as dementia and chronic kidney disease (average age is 82 amongst dementia patients, and 78 amongst chronic kidney disease patients, Table 1).

⁵ see Notes section for information on the population denominators used

Figure 1. Prevalence of 12 long-term conditions amongst males and females in Jersey

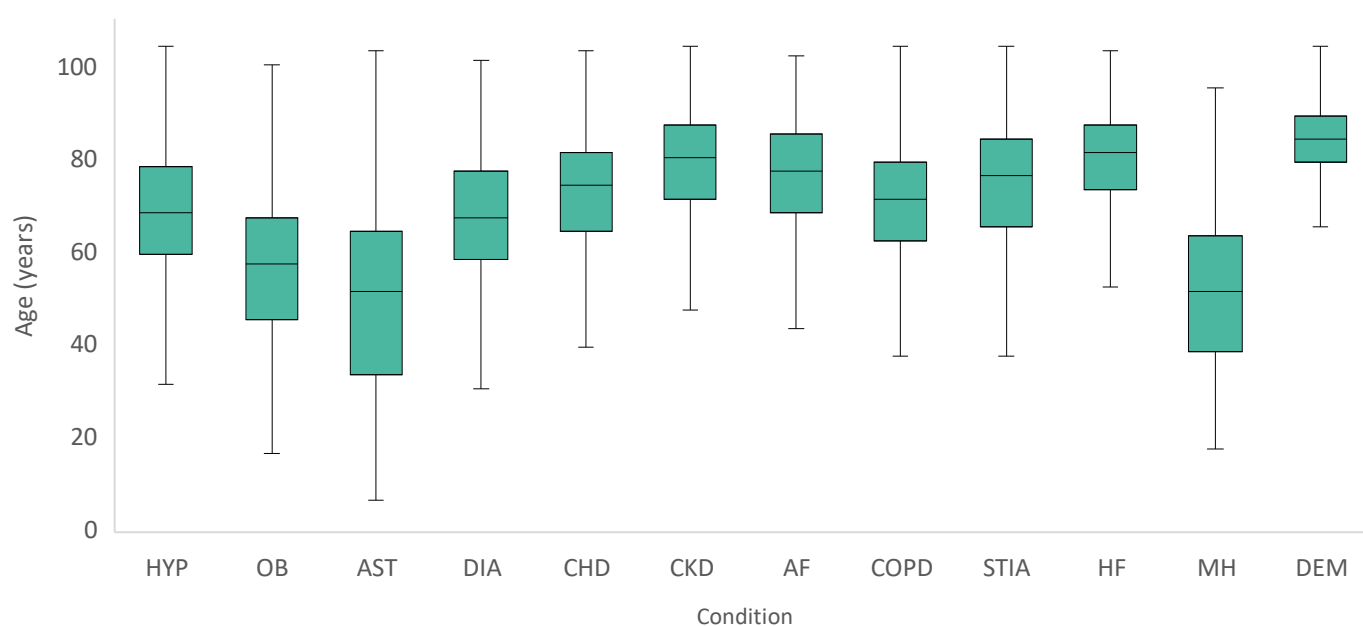


Source: IQIF register

Each long-term condition could affect people of any age, but some conditions are found more commonly in certain age groups. For example, dementia, heart failure and chronic kidney disease affect mainly older people, whilst asthma and mental health problems affect a much broader range of age groups (Figure 2 & Figure 3).

The average age for patients with only a single condition is lower than the average age of all patients (including those with other co-morbidities) (Table 1), because multiple morbidities become more common with age (see section on “Multi-morbidity by age”, Figure 8).

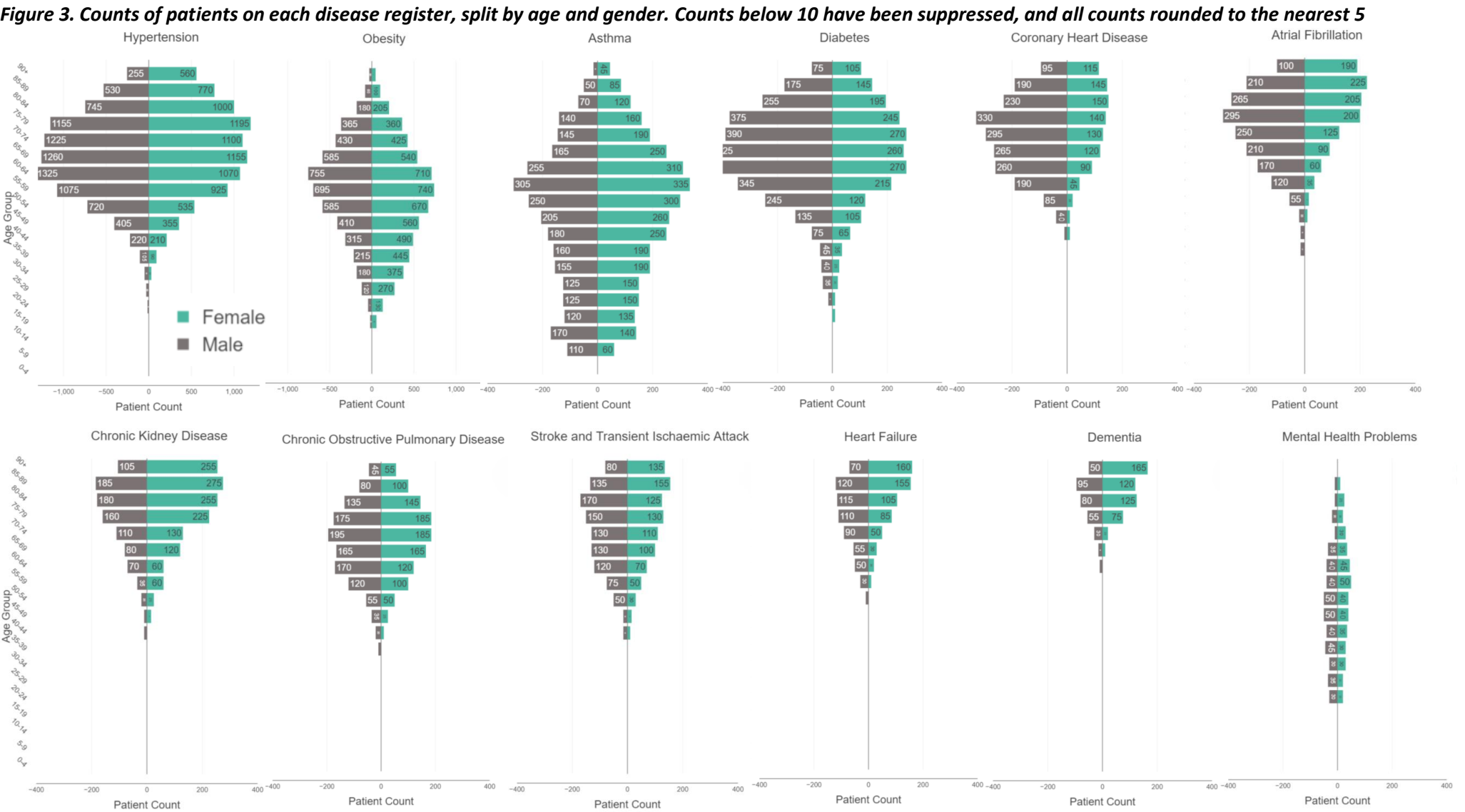
Figure 2. Box and whisker plot showing the average age and interquartile range of ages for each disease register (inclusive of all patients on each register regardless of whether they have other conditions)⁶



Source: IQIF register

⁶[Understanding box and whisker plots](#)

Age-Gender Profiles



Patients with multiple morbidities

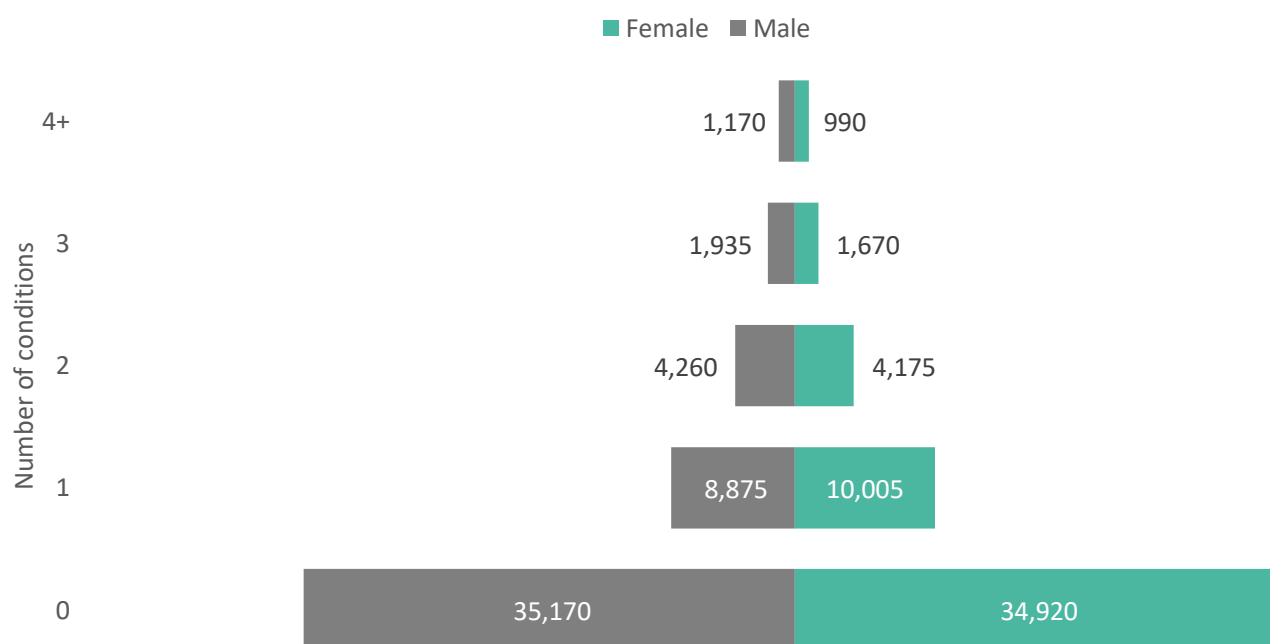
Of the 33,080 individuals who had at least one of the 12 long-term conditions as at the end of 2024:

- 18,885 individuals had a *single* long-term condition
- 14,195 individuals had *two or more* long-term conditions (multi-morbidity)
- approximately 14% of Jersey's overall population⁷ were living with multiple morbidities

Of those individuals having two or more long-term conditions, progressively fewer had a higher number of long-term conditions:

- 8,435 individuals had two conditions, equivalent to 8% of the population
- 3,600 individuals had three conditions, equivalent to 3% of the population
- 2,160 individuals had four *or more* conditions, equivalent to 2% of the population

Figure 4. The numbers of long-term conditions amongst Jersey's population, by gender, as recorded by GP's. The number of people with 0 long-term conditions is estimated by subtracting the number of patients on long-term condition registers from the total population estimate



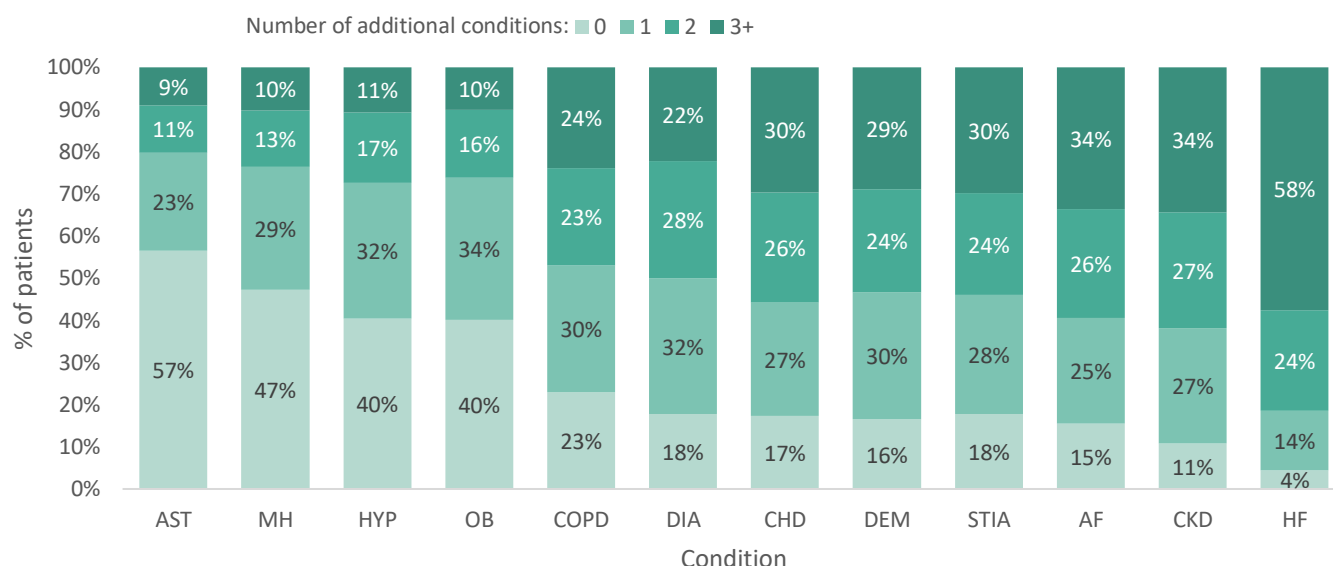
Source: JQIF register

Some long-term conditions are more commonly found to co-occur with other diseases, and Figure 5 shows the number of additional conditions people on each of the disease registers are suffering from. For example:

- of those on the asthma register, 57% have only this *single* morbidity, whilst the other 43% have *at least one other* morbidity
- of those on the heart failure register, just 4% had only this *single* morbidity, and the other 96% had at least one other morbidity. Over half (58%) of patients on the heart failure register had 3 or more additional morbidities

⁷ see Notes section for information on the population denominators used

Figure 5. Percentage of patients with each condition having 0, 1, 2 or 3+ additional conditions



Source: JQIF register

Combinations of two conditions (pairs)

The most commonly co-occurring pairs of morbidities are shown in Table 2.

Hypertension and obesity were the most commonly co-occurring morbidities, being present in 4,785 people, this was 155 less than the previous year.

Note that the analysis of co-occurring conditions is *inclusive*, meaning the patient count includes all patients with those two conditions, including those who may have other additional conditions.

Table 2. Count of patients with each combination of co-occurring disease pairs, darker green indicates higher counts.

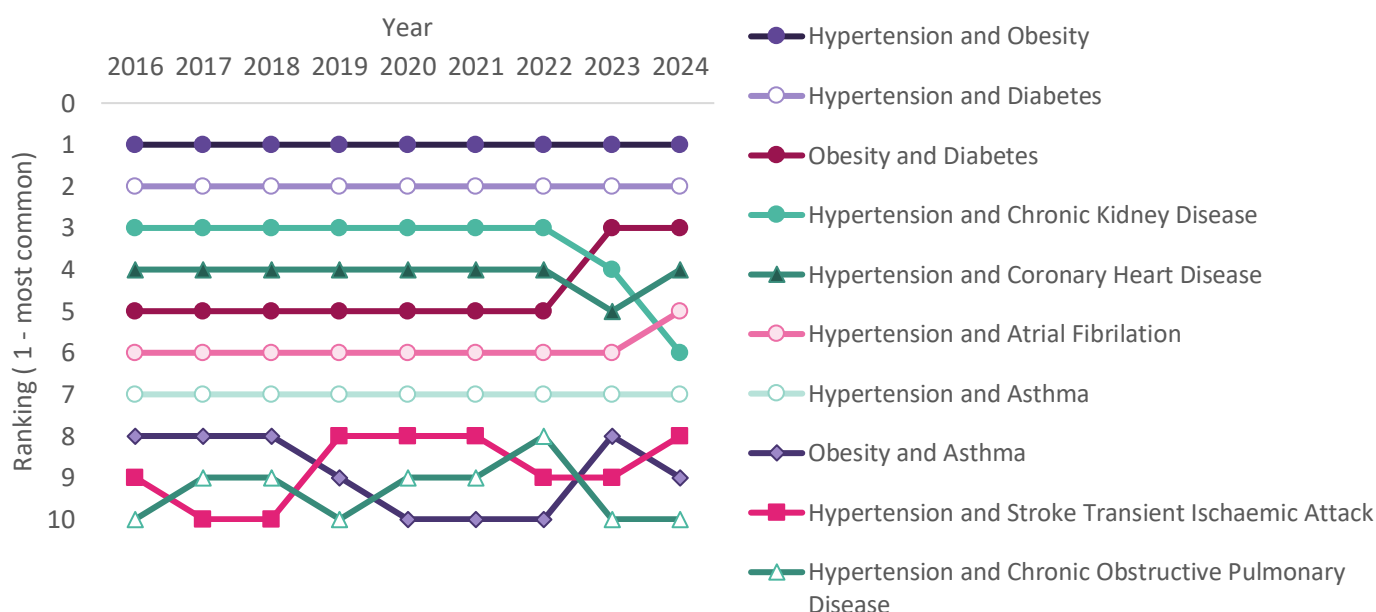
| | Atrial Fibrillation (AF) | Asthma (AST) | Coronary Heart Disease (CHD) | Chronic Kidney Disease (CKD) | Chronic Obstructive Pulmonary Disease (COPD) | Dementia (DEM) | Diabetes (DIA) | Heart Failure (HF) | Hypertension (HYP) | Mental Health Problems (MH) | Obesity (OB) |
|--|--------------------------|--------------|------------------------------|------------------------------|--|----------------|----------------|--------------------|--------------------|-----------------------------|--------------|
| Asthma (AST) | 240 | | | | | | | | | | |
| Coronary Heart Disease (CHD) | 500 | 240 | | | | | | | | | |
| Chronic Kidney Disease (CKD) | 505 | 190 | 415 | | | | | | | | |
| Chronic Obstructive Pulmonary Disease (COPD) | 265 | 570 | 340 | 230 | | | | | | | |
| Dementia (DEM) | 165 | 40 | 110 | 175 | 80 | | | | | | |
| Diabetes (DIA) | 545 | 430 | 715 | 565 | 350 | 165 | | | | | |
| Heart Failure (HF) | 695 | 150 | 390 | 370 | 220 | 85 | 350 | | | | |
| Hypertension (HYP) | 1,790 | 1,445 | 1,810 | 1,750 | 1,165 | 525 | 3,130 | 875 | | | |
| Mental Health Problems (MH) | 25 | 75 | 30 | 40 | 40 | 75 | 85 | 15 | 185 | | |
| Obesity (OB) | 685 | 1,210 | 710 | 495 | 440 | 75 | 2,010 | 350 | 4,785 | 220 | |
| Stroke and Transient Ischemic Attack (STIA) | 450 | 165 | 320 | 305 | 210 | 170 | 395 | 225 | 1,240 | 25 | 350 |

Source: JQIF register

The same 10 pairs of co-occurring morbidities have remained the most common over the last 9 years (Figure 6):

- the disease pairs ranked in positions 1, 2 and 7 have remained in the same order of ranking over the last 9 years
- Obesity and Diabetes has remained at position 3 after rising from position 5 in 2022
- Hypertension and Chronic Kidney Disease has dropped from 3rd to 6th place since 2022
- There has been some movement in pair rankings at positions 5,6, 8 and 9

Figure 6. Ranking of the most commonly co-occurring disease pairs from (2016 to 2024)



Source: JQIF register

Combinations of three conditions (triads)

The most commonly co-occurring triads of morbidities are shown in Table 3:

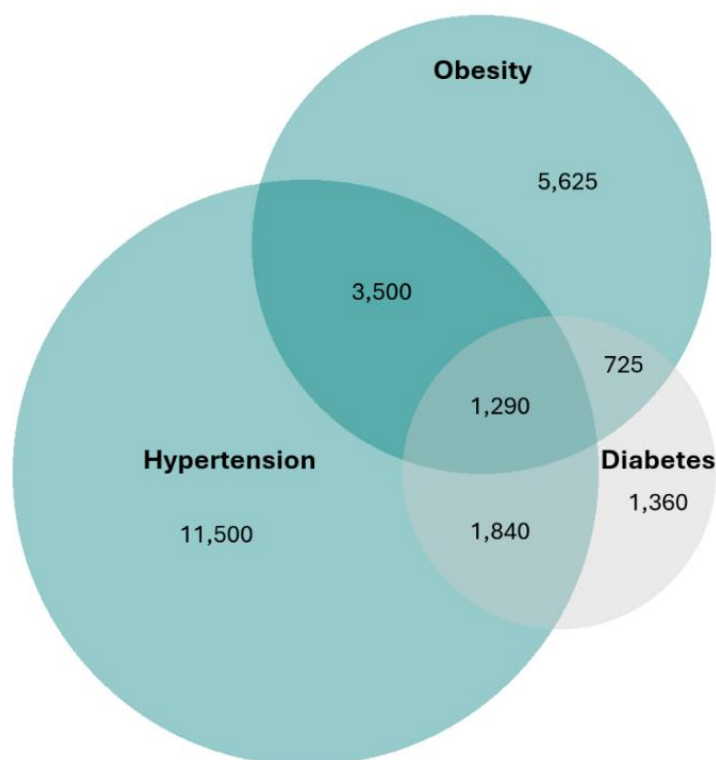
- hypertension, diabetes and obesity were the most commonly occurring triad of diseases, being present in 1,290 people
- hypertension and diabetes also commonly co-occurred with coronary heart disease (in 515 people)

Table 3. Count of patients with different combinations of co-occurring disease triads, top 10

| Rank | Condition | Patients |
|------|--|----------|
| 1 | Diabetes, Hypertension and Obesity | 1,290 |
| 2 | Coronary Heart Disease, Diabetes and Hypertension | 515 |
| 3 | Asthma, Hypertension and Obesity | 505 |
| 4 | Coronary Heart Disease, Hypertension and Obesity | 485 |
| 5 | Atrial Fibrillation, Hypertension and Obesity | 485 |
| 6 | Atrial Fibrillation, Heart Failure and Hypertension | 480 |
| 7 | Chronic Kidney Disease, Diabetes and Hypertension | 465 |
| 8 | Atrial Fibrillation, Chronic Kidney Disease and Hypertension | 410 |
| 9 | Atrial Fibrillation, Diabetes and Hypertension | 410 |
| 10 | Chronic Kidney Disease, Hypertension and Obesity | 390 |

Source: JQIF register

Figure 7. Venn diagram showing the most common occurring triad of disease (Hypertension, Obesity and Diabetes), Jersey, 2024



Source: JQIF register

There has been some movement amongst the ranking of most common disease triads over the past 9 years. However, the same 12 disease triads have been the most commonly co-occurring in Jersey's population over time, each occurring in at least 250 patients at each year-end between 2016 and 2024.

Combinations of four conditions (quads)

The most commonly co-occurring quads of morbidities are shown in Table 4:

- coronary heart disease, diabetes, hypertension and obesity were the most commonly occurring quad of diseases, being present in 195 people
- atrial fibrillation, heart failure and hypertension also commonly co-occurred with chronic kidney disease (in 175 people)

Table 4. Count of patients with different combinations of co-occurring disease quads, top 10

| Rank | Condition | Patients |
|------|---|----------|
| 1 | Coronary Heart Disease, Diabetes, Hypertension and Obesity | 195 |
| 2 | Atrial Fibrillation, Chronic Kidney Disease, Heart Failure and Hypertension | 175 |
| 3 | Chronic Kidney Disease, Diabetes, Hypertension and Obesity | 160 |
| 4 | Atrial Fibrillation, Diabetes, Hypertension and Obesity | 160 |
| 5 | Asthma, Diabetes, Hypertension and Obesity | 150 |
| 6 | Atrial Fibrillation, Heart Failure, Hypertension and Obesity | 150 |
| 7 | Atrial Fibrillation, Coronary Heart Disease, Heart Failure and Hypertension | 135 |
| 8 | Atrial Fibrillation, Diabetes, Heart Failure and Hypertension | 135 |
| 9 | Coronary Heart Disease, Chronic Kidney Disease, Diabetes and Hypertension | 120 |
| 10 | Atrial Fibrillation, Chronic Kidney Disease, Diabetes and Hypertension | 115 |

Source: JQIF register

Multi-morbidity by age

The number of morbidities people suffer from generally increases with age. The average age of someone who has one morbidity is 55 years, whereas the average age of those with 4 or more morbidities is 76 years (Table 5).

Table 5. Average age of people with 1, 2+, 3+ or 4+ morbidities

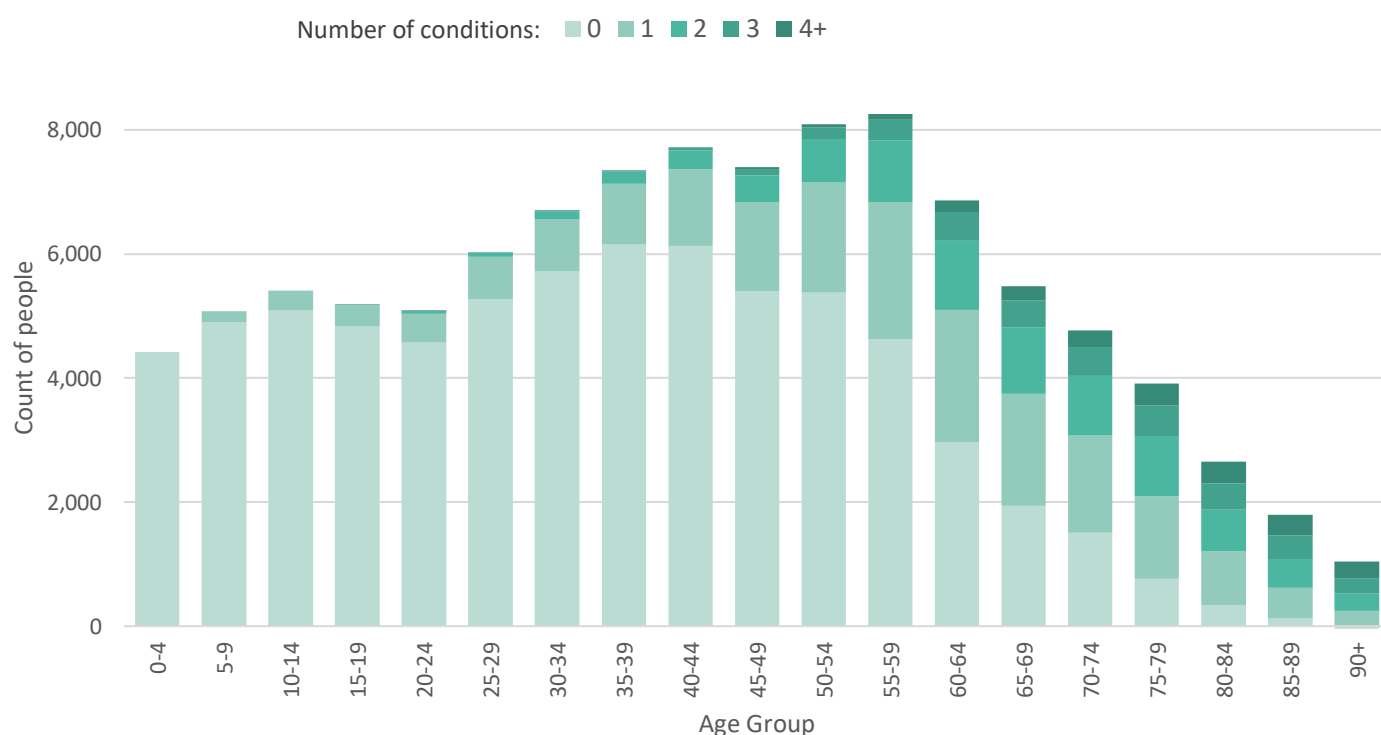
| Number of Conditions | 1 | 2+ | 3+ | 4+ |
|----------------------|----|----|----|----|
| Average Age (years) | 55 | 68 | 73 | 76 |

Source: JQIF register

Figure 8a shows the distribution of multi-morbidity with age (by five-year age bands), and Figure 8b shows this expressed as a proportion of the population within each age band. The data shows that:

- most people aged under 30 years do not suffer from any long-term conditions
- by age 65 over half of the population is suffering from 1 or more long-term conditions
- by age 85 over half of the population is suffering from 2 or more long-term conditions

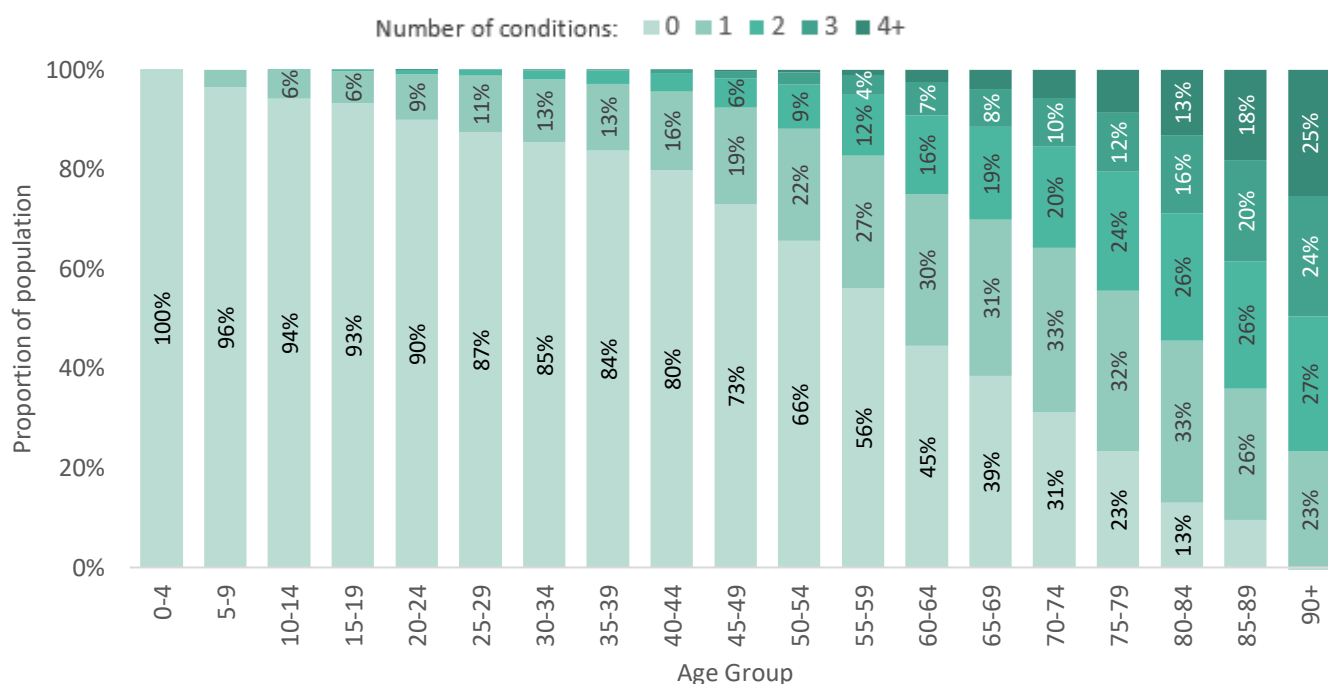
Figure 8a. Number of long-term conditions⁸ by age; count of individual patients



Source: JQIF register

⁸ See Notes section for information on data sources and potential data quality issues

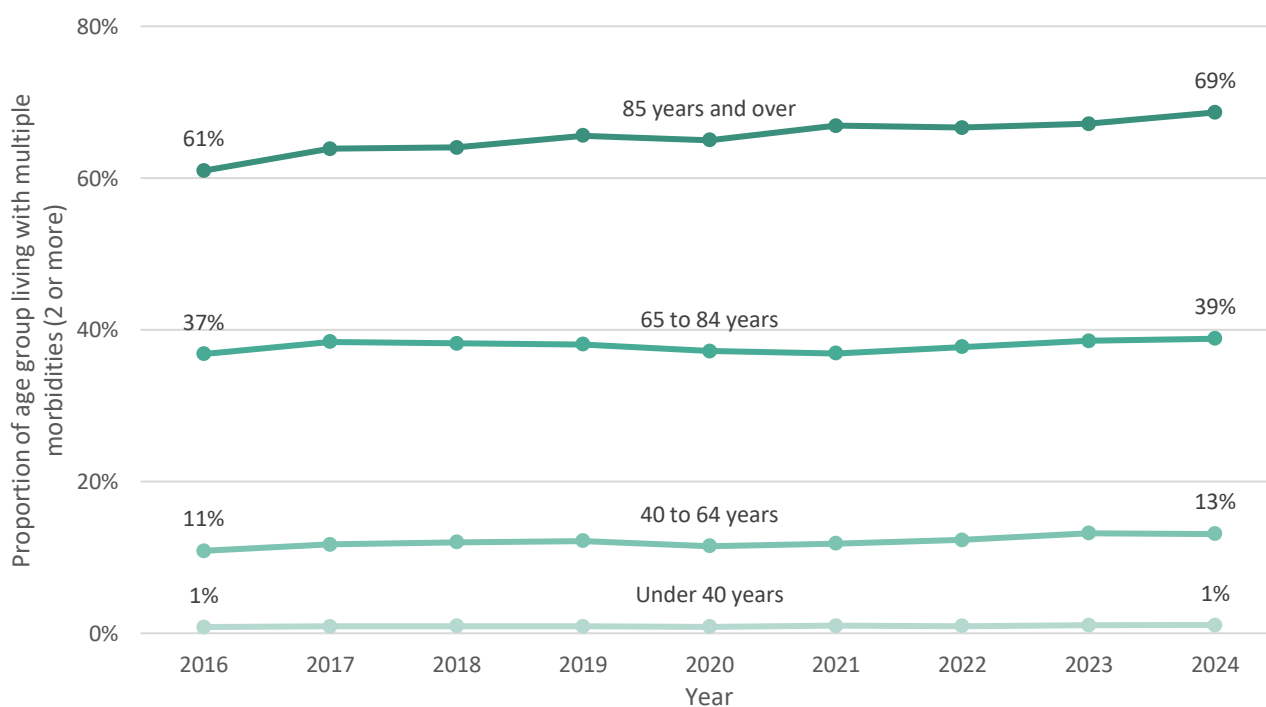
Figure 8b. Number of long-term conditions by age at year end 2024; proportion of population⁹



Source: JQIF register

Overall, there has been a slight increase in the estimated proportion of the population living with multi-morbidity, from 11% in 2016 to 13% in 2023. This has remained the same in 2024 (13%) (Figure 9).

Figure 9. Proportion of Jersey's population in different age bands with multiple morbidities (2 or more long term conditions) between 2016 and 2024;



Source: JQIF register

⁹ see Notes section for info on population denominators used

Notes

Methods

The data used in this report is extracted from the General Practitioner Central Server (GPCS). The registers are calculated based on patients considered 'active' at year end – that is, any patient registered with a Jersey GP practice who had had a consultation within the previous five years, or who had registered with a GP surgery in the previous six months. Public Health Intelligence receives this data as pseudo-anonymised, this restricts the ability to cross-reference information with other data systems for enhanced accuracy. Consequently, the statistics in this report depend on the quality of the data stored in the GP central server.

Appendix 1 details the criteria used to identify patients on each of the 12 long-term conditions. The criteria are defined as per the Jersey Quality Improvement Framework (JQIF). Patient counts below 5 are suppressed, and all counts are rounded to the nearest 5 throughout the report.

Disease combinations (e.g. pairs, triads, quads) are inclusive, meaning for each combination all patients with that set of morbidities is included regardless of whether they have other additional conditions. For example, somebody with 3 conditions (obesity, hypertension and diabetes) would be counted in all 3 of the following disease pairs:

- Obesity and hypertension
- Hypertension and diabetes
- Diabetes and obesity

The number of possible disease pair combinations is **66**, for disease triad combinations is **220** and for disease quad combinations is **715**. Not all disease combinations are found amongst Jersey's population. Analysis for this report looked at all combinations, and the report summarises those which were found to be most commonly co-occurring.

Population figures

Where figures are expressed as a proportion of the population, most recent population estimates¹⁰ and projected population figures for 2024¹¹ provided by Statistics Jersey have been used as denominators. Note that there may be some differences in prevalence estimates compared to previous versions of this report, and older reports used interim estimates in lieu of the official figures being published by Statistics Jersey.

Appendix 1: Jersey Quality Improvement Framework (JQIF) disease register descriptions:

| Code | Condition | Definition |
|---------|---------------------------------------|---|
| AST005 | Asthma | A register of patients with asthma, over the age of 6, excluding patients with asthma who have been prescribed no asthma-related drugs in the preceding 12 months |
| AF007 | Atrial fibrillation | A register of patients with atrial fibrillation |
| CHD001 | Coronary Heart Disease | A register of patients with coronary heart disease |
| CKD005 | Chronic Kidney Disease | A register of patients aged 18 years or over with CKD with classification of categories G3a to G5 (previously stage 3 to 5) |
| COPD009 | Chronic Obstructive Pulmonary Disease | A register of patients with a clinical diagnosis of COPD, confirmed by post-bronchodilator spirometry FEV1/FVC ratio below 0.7 between 3 months before or 6 months after diagnosis, where patient is able to undertake spirometry |
| DEM001 | Dementia | A register of patients diagnosed with dementia |
| DM017 | Diabetes mellitus | A register of all patients aged 17 or over with diabetes mellitus, which specifies the type of diabetes |
| HF001 | Heart Failure | A register of patients with heart failure |
| HYP001 | Hypertension | A register of patients with established hypertension |
| MH001 | Mental Health | A register of people with schizophrenia, bipolar disorder, psychosis and other patients on lithium therapy |
| OB002 | Obesity | A register of patients aged 16 or over with a BMI greater than or equal to 30 in the preceding 12 months. |
| STIA001 | Stroke and Transient Ischemic Attack | A register of patients with stroke and TIA |

Appendix 2: Data tables

Appendix 2.1 shows numbers of patients on the long-term condition registers at year end over the last 8 years. Numbers are rounded to the nearest 5. Please note that slight changes in the register totals can occur as and when changes are made in the GP system (GPCS), and that such changes may not be accounted for as the data is held outside of Government of Jersey.

Note that crude changes in the overall number of patients on a given register may reflect overall changes in the Jersey's demographics, rather than an increase or decrease in the prevalence of the condition itself. Changes in the crude numbers of patients on a register may also reflect improvements in detection or treatment of conditions (e.g., as a result of awareness campaigns or population screening) and may not always indicate an improvement or worsening in the prevalence of the condition itself.

¹⁰ [Population and migration statistics update 2023](#)

¹¹ [Population Projections 2023-2080](#) (0 net migration scenario)

Appendix 2.1. Numbers of patients on the JQIF registers (data held in GPCS), at year end between 2017 and 2024.
Patient numbers rounded to the nearest 5.

| Condition | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| Atrial Fibrillation (AF) | 2,015 | 2,120 | 2,255 | 2,375 | 2,510 | 2,695 | 2,815 | 2,900 |
| Asthma (AST) | 5,555 | 5,570 | 5,625 | 6,985 | 5,725 | 6,055 | 5,965 | 6,060 |
| Coronary Heart Disease (CHD) | 2,620 | 2,675 | 2,770 | 2,830 | 2,890 | 2,915 | 2,925 | 2,965 |
| Chronic Kidney Disease (CKD) | 3,140 | 3,035 | 2,965 | 2,875 | 2,815 | 2,720 | 2,535 | 2,410 |
| Chronic Obstructive Pulmonary Disease (COPD) | 1,995 | 2,055 | 2,105 | 2,160 | 2,215 | 2,305 | 2,325 | 2,365 |
| Dementia (DEM) | 670 | 685 | 685 | 715 | 715 | 765 | 820 | 895 |
| Diabetes (DIA) | 3,840 | 4,015 | 4,165 | 4,415 | 4,670 | 4,840 | 5,055 | 5,210 |
| Heart Failure (HF) | 895 | 945 | 1,025 | 1,040 | 1,105 | 1,125 | 1,175 | 1,305 |
| Hypertension (HYP) | 15,870 | 16,275 | 16,610 | 16,880 | 17,380 | 17,635 | 17,800 | 18,125 |
| Mental Health Problems (MH) | 740 | 755 | 785 | 825 | 825 | 770 | 780 | 880 |
| Obesity (OB) | 10,570 | 10,900 | 10,790 | 8,455 | 9,380 | 9,915 | 11,635 | 11,135 |
| Stroke and Transient Ischemic Attack (STIA) | 1,540 | 1,590 | 1,650 | 1,730 | 1,780 | 1,850 | 2,015 | 2,040 |

Appendices 2.2, 2.3 and 2.4 show a complete list of all disease pairs, triads and quads that occurred in at least 150 people in Jersey at year end (2024).

Appendix 2.2. Pair groups (inclusive) containing over 150 patients, JQIF year end 2024

| Rank | Condition | Patients |
|------|--|----------|
| 1 | Obesity and Hypertension | 4,785 |
| 2 | Hypertension and Diabetes | 3,130 |
| 3 | Obesity and Diabetes | 2,010 |
| 4 | Hypertension and Coronary Heart Disease | 1,810 |
| 5 | Hypertension and Atrial Fibrillation | 1,790 |
| 6 | Hypertension and Chronic Kidney Disease | 1,750 |
| 7 | Hypertension and Asthma | 1,445 |
| 8 | Stroke and Transient Ischemic Attack and Hypertension | 1,240 |
| 9 | Obesity and Asthma | 1,210 |
| 10 | Hypertension and Chronic Obstructive Pulmonary Disease | 1,165 |
| 11 | Hypertension and Heart Failure | 875 |
| 12 | Diabetes and Coronary Heart Disease | 715 |
| 13 | Obesity and Coronary Heart Disease | 710 |
| 14 | Heart Failure and Atrial Fibrillation | 695 |
| 15 | Atrial Fibrillation and Obesity | 685 |
| 16 | Obesity and Atrial Fibrillation | 685 |
| 17 | Chronic Obstructive Pulmonary Disease and Asthma | 570 |
| 18 | Diabetes and Chronic Kidney Disease | 565 |
| 19 | Diabetes and Atrial Fibrillation | 545 |
| 20 | Hypertension and Dementia | 525 |
| 21 | Obesity and Chronic Kidney Disease | 495 |
| 22 | Stroke and Transient Ischemic Attack and Atrial Fibrillation | 450 |
| 23 | Obesity and Chronic Obstructive Pulmonary Disease | 440 |
| 24 | Diabetes and Asthma | 430 |
| 25 | Coronary Heart Disease and Chronic Kidney Disease | 415 |
| 26 | Chronic Kidney Disease and Coronary Heart Disease | 415 |
| 27 | Stroke and Transient Ischemic Attack and Diabetes | 395 |
| 28 | Heart Failure and Coronary Heart Disease | 390 |

| | | |
|----|--|-----|
| 29 | Heart Failure and Chronic Kidney Disease | 370 |
| 30 | Diabetes and Chronic Obstructive Pulmonary Disease | 350 |
| 31 | Heart Failure and Diabetes | 350 |
| 32 | Stroke and Transient Ischemic Attack and Obesity | 350 |
| 33 | Obesity and Heart Failure | 350 |
| 34 | Chronic Obstructive Pulmonary Disease and Coronary Heart Disease | 340 |
| 35 | Stroke and Transient Ischemic Attack and Coronary Heart Disease | 320 |
| 36 | Stroke and Transient Ischemic Attack and Chronic Kidney Disease | 305 |
| 37 | Chronic Obstructive Pulmonary Disease and Atrial Fibrillation | 265 |
| 38 | Coronary Heart Disease and Asthma | 240 |
| 39 | Asthma and Atrial Fibrillation | 240 |
| 40 | Chronic Obstructive Pulmonary Disease and Chronic Kidney Disease | 230 |
| 41 | Stroke and Transient Ischemic Attack and Heart Failure | 225 |
| 42 | Heart Failure and Chronic Obstructive Pulmonary Disease | 220 |
| 43 | Obesity and Mental Health Problems | 220 |
| 44 | Stroke and Transient Ischemic Attack and Chronic Obstructive Pulmonary Disease | 210 |
| 45 | Chronic Kidney Disease and Asthma | 190 |
| 46 | Mental Health Problems and Hypertension | 185 |
| 47 | Dementia and Chronic Kidney Disease | 175 |
| 48 | Stroke and Transient Ischemic Attack and Dementia | 170 |
| 49 | Dementia and Atrial Fibrillation | 165 |
| 50 | Diabetes and Dementia | 165 |
| 51 | Stroke and Transient Ischemic Attack and Asthma | 165 |
| 52 | Heart Failure and Asthma | 150 |

**Patient counts rounded to the nearest 5*

Appendix 2.3. Triad groups containing over 150 patients, JQIF year end 2024

| Rank | Condition | Patients |
|------|--|----------|
| 1 | Diabetes, Hypertension and Obesity | 1,290 |
| 2 | Coronary Heart Disease, Diabetes and Hypertension | 515 |
| 3 | Asthma, Hypertension and Obesity | 505 |
| 4 | Coronary Heart Disease, Hypertension and Obesity | 485 |
| 5 | Atrial Fibrillation, Hypertension and Obesity | 485 |
| 6 | Atrial Fibrillation, Heart Failure and Hypertension | 480 |
| 7 | Chronic Kidney Disease, Diabetes and Hypertension | 465 |
| 8 | Atrial Fibrillation, Chronic Kidney Disease and Hypertension | 410 |
| 9 | Atrial Fibrillation, Diabetes and Hypertension | 410 |
| 10 | Chronic Kidney Disease, Hypertension and Obesity | 390 |
| 11 | Atrial Fibrillation, Coronary Heart Disease and Hypertension | 360 |
| 12 | Coronary Heart Disease, Chronic Kidney Disease and Hypertension | 330 |
| 13 | Atrial Fibrillation, Hypertension and Stroke and Transient Ischemic Attack | 325 |
| 14 | Chronic Kidney Disease, Heart Failure and Hypertension | 300 |
| 15 | Diabetes, Hypertension and Stroke and Transient Ischemic Attack | 280 |
| 16 | Coronary Heart Disease, Heart Failure and Hypertension | 280 |
| 17 | Asthma, Chronic Obstructive Pulmonary Disease and Hypertension | 275 |
| 18 | Asthma, Diabetes and Hypertension | 275 |
| 19 | Coronary Heart Disease, Diabetes and Obesity | 270 |
| 20 | Chronic Obstructive Pulmonary Disease, Hypertension and Obesity | 270 |
| 21 | Heart Failure, Hypertension and Obesity | 260 |
| 22 | Diabetes, Heart Failure and Hypertension | 255 |
| 23 | Chronic Obstructive Pulmonary Disease, Diabetes and Hypertension | 245 |

| | | |
|----|--|-----|
| 24 | Hypertension, Obesity and Stroke and Transient Ischemic Attack | 245 |
| 25 | Chronic Kidney Disease, Hypertension and Stroke and Transient Ischemic Attack | 240 |
| 26 | Coronary Heart Disease, Hypertension and Stroke and Transient Ischemic Attack | 240 |
| 27 | Coronary Heart Disease, Chronic Obstructive Pulmonary Disease and Hypertension | 220 |
| 28 | Atrial Fibrillation, Diabetes and Obesity | 215 |
| 29 | Asthma, Diabetes and Obesity | 215 |
| 30 | Atrial Fibrillation, Chronic Kidney Disease and Heart Failure | 210 |
| 31 | Atrial Fibrillation, Heart Failure and Obesity | 195 |
| 32 | Chronic Kidney Disease, Diabetes and Obesity | 190 |
| 33 | Atrial Fibrillation, Chronic Obstructive Pulmonary Disease and Hypertension | 175 |
| 34 | Atrial Fibrillation, Diabetes and Heart Failure | 175 |
| 35 | Atrial Fibrillation, Coronary Heart Disease and Heart Failure | 175 |
| 36 | Chronic Kidney Disease, Chronic Obstructive Pulmonary Disease and Hypertension | 170 |
| 37 | Heart Failure, Hypertension and Stroke and Transient Ischemic Attack | 170 |
| 38 | Atrial Fibrillation, Asthma and Hypertension | 160 |
| 39 | Chronic Obstructive Pulmonary Disease, Heart Failure and Hypertension | 150 |
| 40 | Asthma, Coronary Heart Disease and Hypertension | 150 |

**Patient counts rounded to the nearest 5*

Appendix 2.4. Quad groups containing over 150 patients, JQIF year end 2024

| <i>Rank</i> | <i>Condition</i> | <i>Patients</i> |
|-------------|---|-----------------|
| 1 | Coronary Heart Disease, Diabetes, Hypertension and Obesity | 195 |
| 2 | Atrial Fibrillation, Chronic Kidney Disease, Heart Failure and Hypertension | 175 |
| 3 | Chronic Kidney Disease, Diabetes, Hypertension and Obesity | 160 |
| 4 | Atrial Fibrillation, Diabetes, Hypertension and Obesity | 160 |
| 5 | Asthma, Diabetes, Hypertension and Obesity | 150 |
| 6 | Atrial Fibrillation, Heart Failure, Hypertension and Obesity | 150 |

**Patient counts rounded to the nearest 5*