



# Making Chronic Conditions Count 5. Chronic Airflow Obstruction



A systematic approach to estimating and forecasting population prevalence on the island of Ireland







## Making Chronic Conditions Count: 5. Chronic Airflow Obstruction

## December 2010

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## **INTRODUCTION**

#### **Making Chronic Conditions Count**

Chronic conditions are responsible for a significant proportion of early deaths. They reduce quality of life in many of the adults living with them, represent substantial financial costs to patients and the health and social care system, and cause a significant loss of productivity to the economy.

Making Chronic Conditions Count is a programme of work that is undertaken by Ireland and Northern Ireland's Population Health Observatory (INIsPHO), in the Institute of Public Health in Ireland (IPH) along with our partners: the HRB Centre for Health and Diet Research (HRB CHDR) in the Republic of Ireland, the UKCRC Centre of Excellence for Public Health (Northern Ireland) (CoE (NI)) and the Association of Public Health Observatories (APHO).

Making Chronic Conditions Count aims to systematically estimate and forecast the population prevalence of chronic conditions at national and sub-national levels across the island. Estimates and forecasts for hypertension, stroke, coronary heart disease and diabetes were published in March 2010 (Balanda et al, 2010a; Balanda et al 2010b; Barron et al, 2010). This report contains estimates and forecasts for chronic airflow obstruction. Data for other chronic conditions will be published as they are prepared. Making Chronic Conditions Count publications can be accessed at the chronic conditions page of the Health Well website <a href="http://www.thehealthwell.info/chronic-conditions">http://www.thehealthwell.info/chronic-conditions</a>.

#### Chronic airflow obstruction

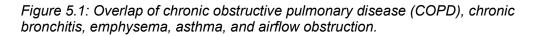
Chronic airflow obstruction is an important public health issue. It is a leading cause of mortality, reduced quality of life and health inequalities.

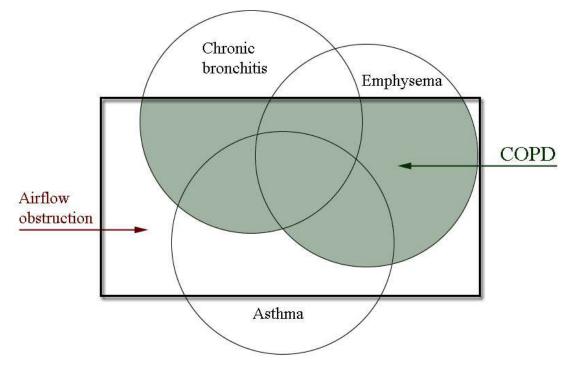
#### Definition

Chronic airflow obstruction is a chronic lung condition that interferes with normal breathing. The definition of chronic airflow obstruction overlaps with the definition of other conditions such as chronic obstructive pulmonary disease (COPD), chronic bronchitis, emphysema and asthma.

Figure 5.1 shows the (non-proportional) overlap of COPD, chronic bronchitis, emphysema, asthma and chronic airflow obstruction. Chronic bronchitis and emphysema are independent effects of cigarette smoking, and may exist with each other and other respiratory conditions. Asthma is associated with reversible airflow obstruction and COPD is associated with airflow obstruction that is not fully reversible.<sup>1</sup> COPD and asthma are frequently distinguishable on the basis of clinical features such as age, smoking status and persistence of airflow obstruction (NICE, 2010).

<sup>&</sup>lt;sup>1</sup> However, measurement of airflow reversibility is no longer the recommended method to distinguish between asthma and COPD due to potentially inconsistent measurements at different times and the arbitrary choice of the magnitude of the airflow reversal (NICE, 2010).





Source: Adapted from McKenzie et al, 2007.

An airflow obstruction is confirmed by a simple test called spirometry that measures how deeply a person can breathe and how fast air can move into and out of the lungs. Spirometry measures the severity of the airflow obstruction but it doesn't identify the specific condition(s) associated with the airflow obstruction. NICE guidelines grade the severity of airflow obstruction as mild, moderate, severe or very severe.<sup>2</sup> The prevalence data in this report exclude mild airflow obstruction and include moderate, severe and very severe airflow obstruction.

#### Epidemiology

Cigarette smoking is the major risk factor for chronic airflow obstruction – it is estimated that 85% of people with chronic airflow obstruction have a history of cigarette smoking (Irish Thoracic Society, 2008). Other risk factors include air pollution (both indoor and outdoor), exposure to certain dusts and chemicals, and the genetic disorder alpha-1 antitrypsin deficiency.

<sup>&</sup>lt;sup>2</sup> NICE guidelines for grading the severity of airflow obstruction are based on spirometry measurements of forced expiratory volume in one second (FEV<sub>1</sub>) and forced vital capacity (FVC).

Stage 1 – Mild: FEV₁/FVC<0.70 and FEV₁≥0.80</p>

Stage 2 – Moderate: FEV<sub>1</sub>/FVC<0.70 and FEV<sub>1</sub> 0.50 to 0.79

Stage 3 – Severe: FEV<sub>1</sub>/FVC<0.70 and FEV<sub>1</sub> 0.30 to 0.49

Stage 4 – Very severe: FEV<sub>1</sub>/FVC<0.70 and FEV<sub>1</sub><0.30</li>

As noted above, chronic airflow obstruction overlaps with a number of respiratory conditions. Ireland and the United Kingdom have higher mortality due to respiratory conditions than other European countries:

- In 2007 Ireland and the United Kingdom had the highest age standardised death rate for diseases of the respiratory system of the EU-27 states<sup>3</sup> (WHO Europe, 2010).
- In 2007 Ireland and the United Kingdom had the highest age standardised death rate for bronchitis, emphysema and asthma of the EU-27 states<sup>3</sup> apart from Hungary (WHO Europe, 2010).

Deaths due to respiratory conditions are a substantial proportion of all deaths on the island. In 2008:

- Diseases of the respiratory system (ICD 10 codes J00-J99) were responsible for approximately 13% of all deaths on the island.
- Chronic lower respiratory diseases (ICD 10 codes J40-J47) were responsible for approximately 5% of all deaths on the island.

From a global perspective, the latest WHO estimates (2007) suggest that currently 300 million people have asthma and 210 million people have COPD. COPD was the fourth leading cause of death worldwide in 2004 (WHO, 2008) and it is predicted that it will become the third leading cause of death worldwide by 2020 (Lopez et al, 2006).

While respiratory disease affects all population groups it disproportionately affects those who are disadvantaged and is a major contributor to health inequalities on the island. In the Republic of Ireland during 2005-2007 and in Northern Ireland during 2004-2006, the annual age standardised mortality rate for chronic lower respiratory disease in the lower occupational classes was more than three times as large as the rate in the higher occupational classes (IPH, 2010).

## **POLICY CONTEXT**

#### **Republic of Ireland**

The Department of Health and Children's (DoHC) *Tackling Chronic Disease. A Policy Framework for the Management of Chronic Diseases* (2008) outlines the policy requirements for the prevention and care of chronic disease. It calls on the Health Service Executive (HSE) to develop and implement disease management programmes for the major chronic diseases. The HSE's Chronic Illness Framework (2008) is an overarching framework within which disease-specific strategies will be developed. Both policy documents aim to promote and improve the health of the population and reduce risk factors for chronic disease.

A draft *National Respiratory (COPD) Framework* has been developed by the Irish Thoracic Society, the HSE and the Irish College of General Practitioners (Irish Thoracic

<sup>&</sup>lt;sup>3</sup> Data were not available for Belgium, Denmark, Germany, Portugal and Slovakia.

Society, 2008). It describes four components of care for COPD services: assess and monitor disease; reduce risk factors (notably smoking); manage stable COPD; manage exacerbations. It also includes four goals to reduce the burden of respiratory disease.

Smoking is the main risk factor for chronic airflow obstruction. *Towards a Tobacco Free Society* (DoHC, 2001) proposes an integrated strategy for tackling tobacco consumption and promoting a tobacco-free society. The HSE's *Tobacco Control Framework* (HSE, 2010) sets out an evidence-based approach to address tobacco and to outline national standards for service provision. The Republic of Ireland has had legislative restrictions and conditions on the advertising, sale and consumption of tobacco since 2002. These include a ban on smoking in indoor work and public places which was implemented in 2004.

#### **Northern Ireland**

The Department of Health, Social Services and Public Safety's (DHSSPS) A Healthier Future – A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005-2025 (2004) undertakes to prioritise public health to reduce mortality, morbidity and the prevalence of risk factors relating to chronic respiratory disorders.

A Healthier Future. A Strategic Framework for Respiratory Conditions (DHSSPS, 2006) highlights the importance of reducing morbidity of respiratory conditions and more effective treatment for people who have respiratory conditions. The framework makes recommendations under the headings: Prevention; Promoting expert self-management; Assessment, diagnosis and treatment; Pulmonary rehabilitation; Promotion and coordination of research. The *Service Framework for Respiratory Health and Wellbeing* (DHSSPS, 2009) sets standards in relation to the prevention, diagnosis, treatment, care, rehabilitation and palliative care of individuals and communities at a greater risk of developing respiratory disease.

A Five Year Tobacco Action Plan 2003-2008 (DHSSPS, 2003) set targets for increasing the proportion of non-smokers among children and young people, pregnant women, and disadvantaged adults. A review of the action plan (DHSSPS, 2009) showed that these targets have been met. A key enabler was the introduction in 2007 of legislative controls on smoking in enclosed and substantially enclosed public places and workplaces. A new Tobacco Control Strategy is being developed to succeed the 2003-2008 action plan.

## THE STUDY

This report contains estimates and forecasts of the population prevalence of chronic airflow obstruction among adults aged 16 years and over. It shows how its prevalence varies across the island and what change is expected between 2007, 2015 and 2020. Prevalence data are presented for Local Health Offices in the Republic of Ireland and Local Government Districts in Northern Ireland.

The prevalence of chronic airflow obstruction is based on spirometry measurement of lung function from the Health Survey for England 2001. The prevalence data exclude mild airflow obstruction and include moderate, severe, and very severe airflow obstruction as defined by NICE (2010). Analysis of the Health Survey for England 2001 showed that excluding mild airflow obstruction reduces prevalence by approximately 5.5% (Shahab et al, 2006).

NICE recommends that the specific type of airflow obstruction should be diagnosed based on spirometry measurement and the clinical features of the airflow obstruction. The current study's spirometry measurements alone cannot distinguish between different conditions associated with airflow obstruction. Therefore, what we refer to as chronic airflow obstruction in this report is likely to include COPD and some, but not all, cases of asthma, chronic bronchitis and emphysema.

## **METHOD**

This section provides only a broad description of methods. Full details can be found in the Making Chronic Conditions Count technical supplement (Barron et al, 2010) which can be accessed at <u>www.thehealthwell.info/chronic-conditions</u>.

Estimating and forecasting the prevalence of chronic airflow obstruction involved three steps that are described in Figure 5.2.

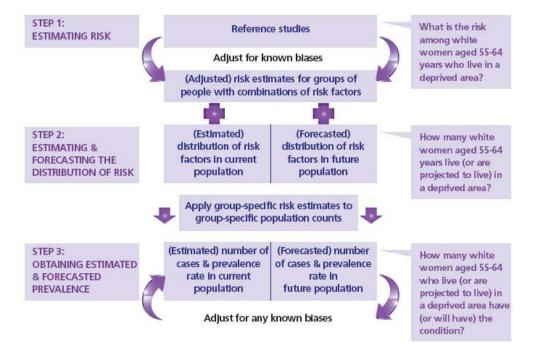


Figure 5.2: How the chronic airflow obstruction model works

### Step 1: Estimating risk

Data from the Health Survey for England 2001 were used to create a regression model of chronic airflow obstruction prevalence. The risk factors included in the model were age, sex, ethnicity, area deprivation, active smoking and rurality. Table 5.1 describes the definition, the reference study and the risk factors used in the chronic airflow obstruction model.

Table 5.1: Definition, reference study and risk factors for the chronic airflow obstruction model.

Condition	Definition	Reference study	Risk factors
Chronic airflow obstruction	Moderate, severe and very severe airflow obstruction as defined by NICE guidelines (NICE, 2010). Mild airflow obstruction is not included. These categories are based on spirometry measurement of forced expiratory volume in one second (FEV <sub>1</sub> ) and forced vital capacity (FVC) such that FEV <sub>1</sub> /FVC<0.70 and FEV <sub>1</sub> <0.80.	Health Survey for England 2001	Age Sex Ethnicity Area deprivation Active smoking Rurality

## Step 2: Estimating and forecasting the distribution of risk

The distribution of risk factors in Local Health Offices (LHO) in the Republic of Ireland and Local Government Districts (LGD) in Northern Ireland was estimated for the years 2007, 2015 and 2020. If risk factor data were not available at LHO or LGD level then the distribution of the risk factor at a larger geographical area was applied to all LHOs or LGDs within that larger geographical area.

#### Step 3: Obtaining estimated and forecasted prevalence

Prevalence estimates for 2007 and prevalence forecasts for 2015 and 2020 were produced for each LHO in the Republic of Ireland and each LGD in Northern Ireland. Figures were broken down by age, sex, ethnicity and local area deprivation bands.

## **KEY FINDINGS**

The key findings of the study are presented below. Detailed estimates and forecasts of the prevalence of chronic airflow obstruction, broken down by sex and age within each area, are given at the end of the report.

Key findings: Chronic airflow obstruction
In 2007 it is estimated that nearly 94,000 adults in the Republic of Ireland (2.8%) had chronic airflow obstruction. By 2020 this is expected to rise to over 131,000 (3.1%). This represents a 40% increase – an additional 38,000 adults – in less than 15 years.
In 2007 it is estimated that nearly 46,000 adults in Northern Ireland (3.3%) had chronic airflow obstruction. By 2020 this is expected to rise to nearly 56,000 (3.7%). This represents a 21% increase – an additional 10,000 adults – in less than 15 years.
Chronic airflow obstruction is more common among males than females. In 2007, the prevalence rate among males was nearly 50% higher than among females.
The prevalence of chronic airflow obstruction increases with age. In 2007 about one in twelve adults aged 75 years and over were living with the condition. In 2020 relatively more of the adults living with the condition will belong in the older age groups.
In 2007 chronic airflow obstruction tended to be most common in Belfast and its surrounds and in some parts of Dublin.
In 2007 chronic airflow obstruction prevalence was generally higher in the most deprived areas.
In 2007 chronic airflow obstruction prevalence was higher in Northern Ireland than in the Republic of Ireland. North-South differences in the current and future prevalence are chiefly due to differences in current and (projected) future demographic and socio-economic profiles and smoking rates.

## **FINDINGS**

### National estimates in 2007

In 2007, 2.8% of adults in the Republic of Ireland (93,816 people) and 3.3% of adults in Northern Ireland (45,989 people) were affected by chronic airflow obstruction.

The estimated chronic airflow obstruction prevalence rate (2.8%) in the Republic of Ireland was similar to estimates from other survey studies. Direct comparisons with these studies, however, are confounded by important differences in methodology and definitions of the chronic respiratory diseases included in the surveys. The data from the surveys reflect the prevalence of self-reported, doctor-diagnosed chronic respiratory diseases while the model's estimates are based on physical measurement of lung function.

- In SLÁN 2007 (Morgan et al, 2008) 3% of adults aged 18 years and over reported having had a doctor-diagnosis of chronic bronchitis, chronic obstructive lung (pulmonary) disease or emphysema in the previous 12 months.
- In the Quarterly National Household Survey 2007 (CSO, 2008) 2% of adults aged 18 years and over reported ever having had a doctor-diagnosis of bronchitis.

The estimated chronic airflow obstruction prevalence rate (3.3%) in Northern Ireland was higher than estimates from other studies:

- It was higher than the Quality and Outcomes Framework (QOF) COPD estimate (1.5%) that was based on primary care data (DHSSPS, 2007). However, this is not unexpected because the QOF covers all ages while this report covers adults aged 16 years and over.
- The Health and Social Wellbeing Survey 2005-2006 found that 2% of adults aged 16 years and over have ever been told by a doctor that they have COPD (DHSSPS, 2007).

Again, direct comparisons are confounded by important differences in methodology.

Chronic airflow obstruction prevalence in England in 2007 was estimated to be 3.5% (APHO, 2007). The percentage of people who were living with the condition in 2007 was lower in the Republic of Ireland than it was in either Northern Ireland or England. This was chiefly due to differences in demographic and socio-economic profiles, and smoking rates. In particular, both Northern Ireland and England had an older population than the Republic of Ireland in 2007.

## Demographic variation in 2007

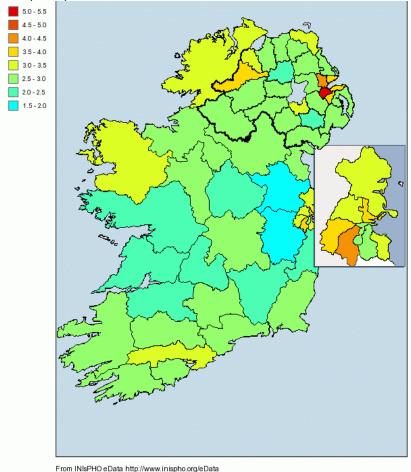
More males than females had chronic airflow obstruction. This was true in both the Republic of Ireland (male 3.3%, female 2.3%) and Northern Ireland (male 4.1%, female 2.6%).

Chronic airflow obstruction was more common in older age groups. Approximately one in twelve adults aged 75 years and over in Northern Ireland (8.5%) and the Republic of Ireland (8.2%) had the condition.

Ethnicity did not contribute much to North-South differences because neither jurisdiction had a large 'non-white' ethnic population.

## Geographical variation in 2007

Figure 5.3: Percentage of adults who had chronic airflow obstruction across Local Health Offices (LHOs) in the Republic of Ireland and Local Government Districts (LGDs) in Northern Ireland (2007).

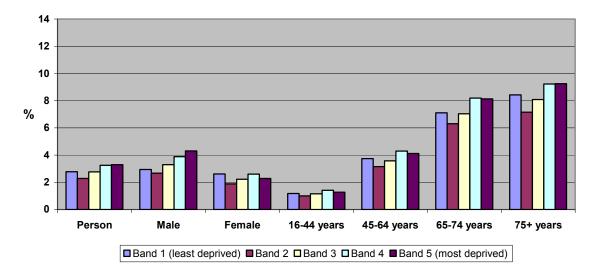


Chronic airflow obstruction prevalence was highest in Belfast and its surrounds and in parts of Dublin. This may reflect a higher risk of chronic airflow obstruction in urban areas.

#### Socio-economic variation in 2007

Figures 5.4 and 5.5 show how chronic airflow obstruction prevalence varied with an area's local socio-economic circumstances.

Figure 5.4: Percentage of adults who had chronic airflow obstruction across the deprivation bands<sup>4</sup> in the Republic of Ireland within each sex and each age group (2007).



In the Republic of Ireland the prevalence of chronic airflow obstruction appeared to increase with increasing deprivation across deprivation bands two, three and four but a social gradient is less apparent when the least deprived and most deprived areas were also considered. High prevalence rates in the least deprived areas (band one) may reflect that all the LHOs in band one (Cork South Lee, Dublin South City, Dublin South East and South Dublin) had a substantial urban component. Interestingly, the relationship between prevalence and deprivation appeared to be different for males and females. For males, prevalence generally increased with increasing deprivation. The relationship was less clear for females among whom prevalence was broadly similar across deprivation bands.

<sup>&</sup>lt;sup>4</sup> See Making Chronic Conditions Count: Hypertension, Stoke, Coronary Heart Disease, Diabetes. A systematic approach to estimating and forecasting population prevalence on the island of Ireland. Technical *Supplement* (Barron et al, 2010; available at <u>www.thehealthwell.info/chronic-conditions</u>) for definitions of the deprivation bands.

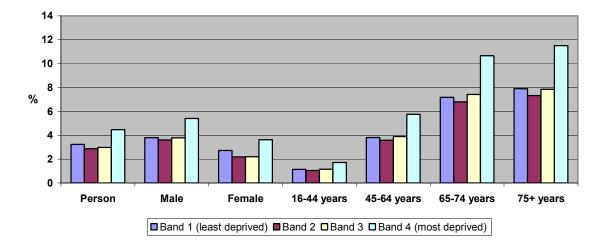


Figure 5.5: Percentage of adults who had chronic airflow obstruction across the deprivation bands<sup>4</sup> in Northern Ireland within each sex and each age group (2007).

In Northern Ireland the prevalence of chronic airflow obstruction in the most deprived areas appeared to be higher than in other areas. The effect of local socio-economic circumstances on prevalence appeared to be the same among males and females, and did not seem to depend on age.

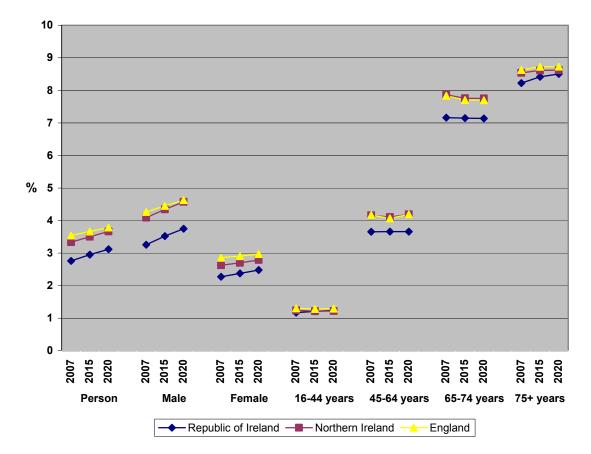
## How prevalence of chronic airflow obstruction will change between 2007 and 2020

The percentage of adults who have chronic airflow obstruction is expected to increase over time:

- In Northern Ireland, it is expected to increase from 3.3% in 2007 to 3.5% in 2015 to 3.7% in 2020.
- In the Republic of Ireland, it is expected to increase from 2.8% in 2007 to 2.9% in 2015 to 3.1% in 2020.

With an ageing population, more adults will be living with chronic airflow obstruction in 2020 than in 2007. The number of adults in Northern Ireland living with the condition is expected to rise from 45,989 in 2007 to 55,666 in 2020; an increase of 9,677 adults (21.0%). The number of adults in the Republic of Ireland living with the condition is expected to rise from 93,816 in 2007 to 131,323 in 2020; an increase of 37,507 adults (or 40.0%). A proportionally larger increase is expected in the Republic of Ireland because its population is projected to increase more than Northern Ireland's population.

Figure 5.6: Expected changes in the percentage of adults in the Republic of Ireland, Northern Ireland and England who have chronic airflow obstruction within each sex group and age group (2007, 2015, 2020).



The overall increase in the prevalence of chronic airflow obstruction between 2007 and 2020 is similar in the Republic of Ireland and Northern Ireland. A proportionately larger increase is expected among males than females. As there appears to be little change in prevalence expected among people aged less than 75 years, these increases are mainly expected among people aged 75 years and over.

An ageing population profile and higher chronic airflow obstruction prevalence rates in older age groups mean that a growing percentage of adults living with the condition will belong to the older age groups. Between 2007 and 2020, the percentage of adults living with the condition who are aged 65 years and over will rise in the Republic of Ireland from 38.3% to 43.8%. In Northern Ireland the percentage will rise from 43.2% to 48.6%.

Table 5.2: Demogra	aphic and	geographic	variation	in the perc	entage of	adults in th	ne Republ	ic of Ireland	l who had	chronic air	flow obst	ruction 200	7	
	Males (	16+ years)	Females	(16+ years)	Persons	(16+ years)	16-44	4 years	45-64	4 years	65-7	4 years	75+	years
Local Health Office	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number Prevalence		Number Prevalence		Number Prevalence	
Carlow / Kilkenny	1,486	3.1%	876	1.8%	2,362	2.5%	543	1.0%	886	3.2%	485	6.4%	449	7.3%
Cavan / Monaghan	1,712	3.6%	948	2.1%	2,660	2.8%	578	1.1%	974	3.6%	545	7.1%	564	8.2%
Clare	1,148	2.7%	700	1.6%	1,848	2.2%	397	0.8%	713	2.7%	382	5.5%	356	6.3%
Donegal	2,466	4.3%	1,308	2.3%	3,774	3.3%	794	1.3%	1,401	4.1%	809	8.1%	771	9.2%
Dublin North	3,051	3.5%	2,594	2.8%	5,645	3.2%	1,547	1.4%	2,187	4.5%	1,140	8.4%	771	9.8%
Dublin North Central	2,040	3.9%	1,777	3.3%	3,816	3.6%	1,035	1.6%	1,206	5.0%	777	9.2%	799	10.8%
Dublin North West	2,609	3.5%	2,261	2.9%	4,870	3.2%	1,617	1.6%	1,660	4.9%	827	9.3%	766	10.9%
Dublin South City	1,494	2.6%	1,389	2.4%	2,883	2.5%	896	1.2%	996	3.8%	482	7.3%	509	8.5%
Dublin South East	1,350	3.0%	1,329	2.7%	2,678	2.9%	681	1.2%	941	3.9%	514	7.2%	543	8.5%
Dublin South West	2,703	4.6%	2,231	3.6%	4,934	4.1%	1,289	1.8%	1,953	5.7%	951	10.4%	742	12.3%
Dublin West	2,097	4.0%	1,704	3.2%	3,800	3.6%	1,271	1.8%	1,438	5.5%	602	10.5%	489	12.1%
Dun Laoghaire South Dublin	1,703	3.5%	1,645	3.0%	3,348	3.2%	677	1.2%	1,222	3.9%	739	7.2%	711	8.6%
Galway	2,755	3.0%	1,695	1.8%	4,449	2.4%	1,078	1.0%	1,595	3.2%	916	6.5%	860	7.4%
Kerry	1,810	3.3%	1,060	1.9%	2,870	2.6%	550	1.0%	1,084	3.1%	626	6.2%	609	7.1%
Kildare/West Wicklow	1,778	2.2%	1,165	1.5%	2,943	1.8%	877	0.9%	1,187	2.7%	484	5.6%	395	6.4%
Laois / Offaly	1,720	3.1%	1,029	1.9%	2,749	2.5%	657	1.0%	1,018	3.3%	554	6.6%	520	7.7%
Limerick	1,854	3.1%	1,163	1.9%	3,017	2.5%	682	1.0%	1,131	3.2%	645	6.4%	560	7.4%
Longford / Westmeath	1,391	3.1%	838	1.9%	2,229	2.5%	511	1.0%	832	3.2%	459	6.4%	428	7.2%
Louth	1,453	3.4%	932	2.1%	2,385	2.7%	600	1.2%	889	3.7%	477	7.3%	419	8.2%
Мауо	1,919	3.9%	1,088	2.2%	3,007	3.1%	544	1.1%	1,107	3.6%	676	7.1%	680	8.0%
Meath	1,484	2.3%	962	1.5%	2,446	1.9%	694	0.9%	949	2.7%	435	5.6%	367	6.4%
North Cork	1,048	3.2%	643	2.0%	1,691	2.6%	349	1.0%	625	3.2%	360	6.4%	357	7.3%
North Lee – Cork	2,471	3.7%	1,992	3.0%	4,462	3.3%	1,158	1.5%	1,716	4.7%	862	8.9%	726	10.4%
North Tipperary / East Limerick	1,010	2.6%	619	1.6%	1,630	2.1%	365	0.8%	608	2.7%	341	5.4%	316	6.3%
Roscommon	823	3.4%	467	2.0%	1,289	2.7%	231	1.0%	459	3.1%	293	6.3%	306	7.2%
Sligo / Leitrim / West Cavan	1,222	3.3%	713	1.9%	1,935	2.6%	368	1.0%	717	3.1%	419	6.3%	429	7.2%
South Lee – Cork	1,963	2.8%	1,813	2.4%	3,776	2.6%	951	1.1%	1,373	3.5%	773	6.9%	679	8.1%
South Tipperary	1,174	3.3%	685	2.0%	1,859	2.6%	376	1.0%	691	3.2%	402	6.4%	390	7.3%
Waterford	1,523	3.2%	950	2.0%	2,473	2.6%	557	1.0%	913	3.3%	539	6.5%	463	7.5%
West Cork	763	3.6%	448	2.2%	1,212	2.9%	210	1.0%	440	3.3%	284	6.5%	279	7.4%
Wexford	1,879	3.6%	1,085	2.1%	2,963	2.9%	662	1.1%	1,110	3.6%	666	7.2%	525	8.2%
Wicklow	1,079	2.5%	731	1.6%	1,810	2.1%	438	0.9%	717	2.8%	362	5.6%	294	6.4%
Republic of Ireland	54,978	3.3%	38,838	2.3%	93,816	2.8%	23,183	1.2%	34,738	3.7%	18,824	7.2%	17,072	8.2%

Table 5.3: Demog	aphic and	d geograph	ic variatio	n in the per	centage c	of adults in t	the Repub	lic of Irelan	id who ha	ve chronic a	airflow ob	struction 20	015	
	Males (*	16+ years)	Females	(16+ years)	Persons	(16+ years)	16-4	4 years	45-6	4 years	65-7	4 years	75+	years
Local Health Office	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence
Carlow / Kilkenny	1,860	3.3%	1,041	2.0%	2,901	2.6%	592	1.0%	1,060	3.2%	654	6.4%	596	7.5%
Cavan / Monaghan	2,103	3.8%	1,116	2.1%	3,219	3.0%	634	1.1%	1,139	3.5%	751	7.1%	695	8.4%
Clare	1,420	2.9%	821	1.7%	2,241	2.3%	432	0.9%	823	2.7%	526	5.5%	459	6.4%
Donegal	3,033	4.6%	1,542	2.4%	4,575	3.5%	870	1.3%	1,639	4.1%	1,114	8.2%	951	9.5%
Dublin North	3,848	3.8%	3,096	2.9%	6,944	3.3%	1,802	1.5%	2,615	4.5%	1,506	8.4%	1,021	10.0%
Dublin North Central	2,577	4.3%	2,116	3.5%	4,693	3.9%	1,173	1.6%	1,441	5.0%	1,025	9.3%	1,053	11.0%
Dublin North West	3,264	3.8%	2,678	3.1%	5,942	3.4%	1,858	1.6%	1,982	4.9%	1,092	9.3%	1,010	11.1%
Dublin South City	1,866	2.9%	1,642	2.5%	3,508	2.7%	1,016	1.2%	1,189	3.8%	636	7.3%	667	8.6%
Dublin South East	1,709	3.3%	1,586	2.8%	3,295	3.0%	782	1.3%	1,124	3.9%	677	7.3%	711	8.6%
Dublin South West	3,392	5.0%	2,655	3.7%	6,046	4.3%	1,473	1.9%	2,334	5.7%	1,255	10.5%	984	12.5%
Dublin West	2,611	4.3%	2,017	3.3%	4,628	3.8%	1,470	1.9%	1,718	5.5%	795	10.6%	645	12.3%
Dun Laoghaire South Dublin	2,178	3.7%	1,977	3.1%	4,155	3.4%	786	1.3%	1,459	3.9%	974	7.2%	936	8.7%
Galway	3,382	3.2%	2,014	1.9%	5,396	2.5%	1,237	1.0%	1,904	3.2%	1,214	6.5%	1,041	7.7%
Kerry	2,274	3.6%	1,255	2.0%	3,529	2.8%	591	1.0%	1,281	3.1%	855	6.3%	803	7.4%
Kildare/West Wicklow	2,438	2.5%	1,519	1.6%	3,957	2.0%	1,038	0.9%	1,554	2.7%	802	5.6%	562	6.6%
Laois / Offaly	2,196	3.4%	1,229	2.0%	3,425	2.7%	730	1.1%	1,262	3.3%	767	6.6%	666	7.9%
Limerick	2,289	3.3%	1,362	2.0%	3,650	2.7%	735	1.0%	1,305	3.3%	889	6.4%	721	7.5%
Longford / Westmeath	1,778	3.3%	1,001	2.0%	2,778	2.7%	567	1.0%	1,032	3.2%	634	6.4%	545	7.4%
Louth	1,774	3.6%	1,095	2.2%	2,869	2.9%	660	1.2%	1,040	3.7%	656	7.3%	512	8.4%
Мауо	2,374	4.1%	1,296	2.3%	3,671	3.2%	628	1.1%	1,322	3.6%	896	7.1%	824	8.3%
Meath	2,051	2.6%	1,261	1.6%	3,312	2.1%	826	0.9%	1,243	2.7%	721	5.6%	523	6.6%
North Cork	1,312	3.5%	761	2.1%	2,073	2.8%	375	1.0%	738	3.2%	492	6.5%	469	7.5%
North Lee – Cork	3,045	4.1%	2,335	3.1%	5,380	3.6%	1,238	1.5%	2,026	4.7%	1,172	8.9%	944	10.6%
North Tipperary / East Limerick	1,248	2.8%	725	1.7%	1,973	2.3%	393	0.8%	702	2.7%	470	5.4%	407	6.4%
Roscommon	1,020	3.6%	556	2.1%	1,576	2.9%	268	1.0%	548	3.1%	389	6.3%	371	7.4%
Sligo / Leitrim / West Cavan	1,508	3.6%	840	2.0%	2,348	2.8%	404	1.0%	839	3.1%	578	6.4%	528	7.4%
South Lee – Cork	2,429	3.1%	2,126	2.6%	4,555	2.8%	1,008	1.1%	1,620	3.5%	1,050	6.9%	877	8.3%
South Tipperary	1,479	3.5%	818	2.1%	2,298	2.8%	411	1.0%	827	3.2%	542	6.4%	518	7.5%
Waterford	1,908	3.5%	1,131	2.1%	3,040	2.8%	607	1.1%	1,092	3.3%	727	6.6%	613	7.7%
West Cork	967	3.9%	533	2.3%	1,500	3.1%	226	1.0%	520	3.3%	387	6.6%	367	7.6%
Wexford	2,355	3.9%	1,294	2.2%	3,649	3.1%	725	1.2%	1,328	3.6%	898	7.2%	697	8.4%
Wicklow	1,507	2.8%	966	1.8%	2,473	2.3%	519	0.9%	938	2.8%	599	5.6%	416	6.5%
Republic of Ireland	69,196	3.5%	46,403	2.4%	115,599	2.9%	26,075	1.2%	41,646	3.7%	25,744	7.1%	22,133	8.4%

Table 5.4: Demogr	ographic and geographic variation in the percentage of adults in the Republic of Ireland who have chronic airflow obstruction 2020													
	Males (	16+ years)	Females	(16+ years)	Persons	(16+ years)	16-4	4 years	45-6	4 years	65-7	4 years	75+	years
Local Health Office	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence
Carlow / Kilkenny	2,125	3.5%	1,155	2.1%	3,279	2.8%	600	1.0%	1,178	3.2%	762	6.4%	739	7.6%
Cavan / Monaghan	2,378	4.1%	1,229	2.2%	3,608	3.2%	645	1.2%	1,244	3.6%	874	7.1%	844	8.5%
Clare	1,610	3.0%	901	1.8%	2,511	2.5%	443	0.9%	887	2.7%	620	5.5%	562	6.5%
Donegal	3,435	4.9%	1,698	2.5%	5,133	3.7%	888	1.3%	1,791	4.1%	1,297	8.1%	1,157	9.7%
Dublin North	4,455	3.9%	3,482	3.0%	7,937	3.5%	1,957	1.5%	2,975	4.5%	1,769	8.4%	1,236	10.1%
Dublin North Central	2,987	4.6%	2,381	3.6%	5,368	4.1%	1,252	1.7%	1,642	5.0%	1,204	9.3%	1,271	11.1%
Dublin North West	3,752	4.0%	2,992	3.1%	6,744	3.6%	1,983	1.7%	2,259	4.9%	1,282	9.3%	1,220	11.2%
Dublin South City	2,146	3.1%	1,836	2.6%	3,982	2.8%	1,078	1.3%	1,355	3.8%	747	7.3%	802	8.7%
Dublin South East	1,985	3.5%	1,784	2.9%	3,769	3.2%	839	1.3%	1,279	3.9%	796	7.3%	856	8.7%
Dublin South West	3,923	5.3%	2,983	3.8%	6,905	4.5%	1,582	1.9%	2,657	5.7%	1,474	10.5%	1,192	12.7%
Dublin West Dun Laoghaire South	3,000	4.6%	2,256	3.4%	5,256	4.0%	1,585	2.0%	1,959	5.5%	934	10.6%	778	12.4%
Dublin	2,552	3.9%	2,240	3.1%	4,792	3.5%	859	1.3%	1,660	3.9%	1,143	7.3%	1,129	8.8%
Galway	3,813	3.4%	2,234	1.9%	6,047	2.7%	1,282	1.0%	2,080	3.2%	1,442	6.5%	1,243	7.7%
Kerry	2,599	3.8%	1,393	2.1%	3,991	3.0%	598	1.0%	1,412	3.2%	1,000	6.3%	981	7.5%
Kildare/West Wicklow	2,914	2.6%	1,775	1.7%	4,689	2.2%	1,083	0.9%	1,850	2.7%	994	5.6%	762	6.7%
Laois / Offaly	2,524	3.6%	1,362	2.2%	3,886	3.0%	730	1.1%	1,412	3.3%	929	6.6%	814	8.0%
Limerick	2,590	3.5%	1,492	2.1%	4,083	2.8%	748	1.0%	1,407	3.3%	1,046	6.4%	882	7.6%
Longford / Westmeath	2,044	3.6%	1,112	2.1%	3,156	2.9%	568	1.1%	1,155	3.2%	769	6.5%	665	7.5%
Louth	1,989	3.8%	1,201	2.3%	3,190	3.0%	671	1.2%	1,137	3.7%	765	7.3%	618	8.5%
Мауо	2,701	4.4%	1,452	2.3%	4,153	3.4%	661	1.2%	1,445	3.6%	1,064	7.1%	984	8.4%
Meath	2,463	2.8%	1,479	1.7%	3,942	2.3%	861	0.9%	1,479	2.7%	893	5.6%	709	6.7%
North Cork	1,495	3.8%	843	2.2%	2,338	3.0%	378	1.1%	813	3.2%	575	6.5%	572	7.6%
North Lee – Cork North Tipperary / East	3,428	4.4%	2,563	3.3%	5,992	3.9%	1,243	1.5%	2,232	4.7%	1,371	8.9%	1,146	10.7%
Limerick	1,416	2.9%	795	1.8%	2,211	2.4%	402	0.9%	757	2.7%	553	5.5%	499	6.5%
Roscommon Sligo / Leitrim / West Cavan	1,162 1,713	3.8% 3.8%	624 928	2.1% 2.1%	1,786 2,641	3.0% 3.0%	282 412	1.0% 1.0%	599 917	3.1% 3.1%	461 673	6.3% 6.3%	444 640	7.5% 7.5%
South Lee – Cork	2.745	3.8%	2.340	2.1%	2,041 5.086	3.0%	1,013	1.0%	1,783	3.1%	1,228	6.9%	1,061	8.3%
	2,745 1,700	3.3% 3.8%	2,340	2.7%	5,086 2,612	3.0% 3.0%	418	1.1%	920	3.5% 3.2%	632	6.9% 6.4%	643	8.3% 7.6%
South Tipperary	,	3.8% 3.7%	912 1,256	2.2%	2,612	3.0% 3.0%				3.2% 3.4%	632 847	6.4% 6.6%	643 760	7.6% 7.8%
Waterford	2,181				,		615 221	1.1%	1,215		-			
West Cork	1,112	4.2%	594	2.4%	1,706	3.3%	231	1.1%	573	3.3% 3.7%	453	6.6% 7.2%	448	7.8% 8.5%
Wexford	2,691	4.2%	1,436	2.3%	4,127	3.3%	737	1.2%	1,478		1,047		865 564	
Wicklow Republic of Ireland	1,822 <b>79,450</b>	3.0% <b>3.7%</b>	1,143 <b>51,873</b>	1.9% <b>2.5%</b>	2,966 131,323	<u>2.4%</u> <b>3.1%</b>	543 27,187	0.9% <b>1.2%</b>	1,116 <b>46,667</b>	2.8% <b>3.7%</b>	743 30,386	5.6% <b>7.1%</b>	564 <b>27,083</b>	6.6% <b>8.5%</b>

Table 5.5: Dem	ographic	and geogra	phic varia	tion in the p	ercentage	of adults in	Northern	Ireland who	o had chr	onic airflow	/ obstruct	tion 2007		
	Males (	16+ years)	Females	(16+ years)	Persons (	16+ years)	16-4	4 years	4 years 45-64 years			4 years	75+ years	
Local Government District	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence
Antrim	657	3.3%	397	1.9%	1,054	2.6%	227	1.0%	412	3.5%	235	6.5%	180	7.1%
Ards	950	3.2%	607	1.9%	1,557	2.5%	251	0.9%	623	3.0%	363	5.7%	319	6.1%
Armagh	738	3.5%	442	1.9%	1,180	2.7%	221	1.0%	455	3.4%	276	6.4%	229	6.7%
Ballymena	884	3.7%	547	2.2%	1,432	2.9%	247	1.0%	530	3.5%	343	6.5%	311	7.0%
Ballymoney	391	3.4%	231	2.0%	622	2.7%	118	1.0%	231	3.3%	143	6.3%	130	6.8%
Banbridge	518	2.9%	331	1.8%	849	2.3%	174	0.9%	322	3.0%	187	5.7%	166	6.2%
Belfast	5,943	6.0%	4,863	4.2%	10,805	5.0%	2,220	1.9%	3,716	6.4%	2,391	11.7%	2,478	12.4%
Carrickfergus	627	4.1%	509	3.1%	1,136	3.6%	211	1.3%	433	4.4%	261	8.2%	231	8.9%
Castlereagh	1,095	4.4%	931	3.3%	2,026	3.9%	343	1.4%	712	4.4%	467	8.2%	503	9.0%
Coleraine	815	3.8%	511	2.2%	1,327	2.9%	219	1.0%	489	3.5%	333	6.5%	285	7.0%
Cookstown	491	3.6%	281	2.0%	772	2.8%	164	1.1%	291	3.7%	167	7.2%	150	7.7%
Craigavon	1,292	3.8%	807	2.3%	2,099	3.0%	435	1.2%	790	3.9%	474	7.4%	400	7.9%
Derry	1,726	4.3%	1,033	2.4%	2,759	3.3%	640	1.4%	1,095	4.6%	589	8.6%	436	8.9%
Down	879	3.3%	515	1.9%	1,394	2.6%	262	0.9%	530	3.3%	317	6.3%	285	6.7%
Dungannon	677	3.2%	412	2.0%	1,089	2.6%	234	1.0%	403	3.4%	241	6.6%	211	7.0%
Fermanagh	870	3.6%	496	2.1%	1,366	2.8%	251	1.0%	528	3.5%	305	6.6%	282	6.9%
Larne	464	3.8%	280	2.2%	744	3.0%	122	1.0%	292	3.5%	181	6.5%	150	7.1%
Limavady	495	3.6%	272	2.1%	767	2.9%	177	1.2%	302	3.9%	161	7.5%	126	7.8%
Lisburn	1,403	3.4%	896	1.9%	2,299	2.6%	445	1.0%	886	3.3%	521	6.4%	446	6.9%
Magherafelt	518	3.1%	297	1.8%	815	2.5%	181	1.0%	302	3.3%	176	6.4%	156	6.9%
Moyle Newry and	276	4.3%	155	2.3%	431	3.2%	69	1.1%	165	3.9%	106	7.2%	91	7.7%
Mourne	1,329	3.8%	811	2.2%	2,140	3.0%	459	1.1%	813	3.9%	481	7.5%	387	7.9%
Newtownabbey	1,473	4.7%	1,193	3.5%	2,666	4.1%	482	1.5%	994	5.0%	612	9.2%	578	10.0%
North Down	1,322	4.3%	1,105	3.3%	2,428	3.8%	371	1.3%	936	4.4%	539	8.0%	581	8.7%
Omagh	745	3.8%	427	2.1%	1,172	3.0%	249	1.1%	458	3.9%	250	7.4%	215	7.8%
Strabane	695	4.6%	365	2.4%	1,060	3.5%	221	1.3%	398	4.5%	246	8.4%	195	8.9%
Northern Ireland	27,275	4.1%	18,714	2.6%	45,989	3.3%	8,995	1.2%	17,105	4.2%	10,367	7.9%	9,522	8.5%

Table 5.6: Demo	able 5.6: Demographic and geographic variation in the percentage of adults in Northern Ireland who have chronic airflow obstruction 2015													
		16+ years)		(16+ years)		(16+ years)		1 vears		4 years		4 years	75+	years
Local Government District	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence
Antrim	792	3.5%	470	2.0%	1,262	2.7%	241	1.0%	451	3.4%	317	6.6%	252	7.3%
Ards	1,143	3.6%	699	2.0%	1,841	2.8%	237	0.8%	657	2.9%	541	5.7%	406	6.3%
Armagh	888	3.7%	509	2.0%	1,397	2.8%	234	0.9%	504	3.4%	356	6.4%	303	7.0%
Ballymena	1,018	4.0%	621	2.3%	1,639	3.1%	237	1.0%	577	3.4%	415	6.5%	410	7.1%
Ballymoney	491	3.7%	274	2.1%	765	2.9%	123	1.0%	276	3.3%	192	6.4%	174	7.1%
Banbridge	645	3.1%	401	1.9%	1,046	2.5%	178	0.9%	403	3.0%	253	5.8%	212	6.2%
Belfast	6,142	6.2%	4,775	4.3%	10,917	5.2%	2,105	1.9%	3,801	6.5%	2,405	11.8%	2,606	12.7%
Carrickfergus	782	4.8%	593	3.3%	1,375	4.0%	187	1.3%	530	4.4%	340	8.2%	319	9.2%
Castlereagh	1,165	4.7%	968	3.6%	2,133	4.1%	287	1.3%	793	4.4%	497	8.2%	556	9.1%
Coleraine	928	4.3%	543	2.4%	1,471	3.3%	183	1.0%	518	3.5%	393	6.6%	377	7.2%
Cookstown	596	3.9%	322	2.1%	918	3.0%	175	1.1%	330	3.8%	220	7.2%	193	7.9%
Craigavon	1,547	4.0%	939	2.3%	2,486	3.1%	474	1.1%	904	3.9%	590	7.4%	518	8.1%
Derry	2,046	4.8%	1,182	2.6%	3,229	3.7%	605	1.4%	1,269	4.5%	758	8.7%	597	9.3%
Down	1,046	3.6%	596	2.0%	1,642	2.8%	260	0.9%	605	3.2%	417	6.4%	360	6.9%
Dungannon	856	3.2%	486	2.0%	1,342	2.6%	293	1.0%	484	3.4%	299	6.6%	265	7.3%
Fermanagh	1,036	3.9%	564	2.2%	1,600	3.0%	258	1.0%	596	3.5%	393	6.7%	353	7.2%
Larne	534	4.2%	304	2.3%	837	3.2%	105	1.0%	311	3.4%	230	6.6%	191	7.3%
Limavady	594	4.1%	317	2.3%	911	3.2%	168	1.2%	351	3.9%	222	7.5%	170	7.9%
Lisburn	1,678	3.7%	1,035	2.1%	2,713	2.8%	433	0.9%	1,004	3.3%	683	6.5%	592	7.1%
Magherafelt	622	3.2%	343	1.9%	965	2.6%	195	1.0%	363	3.3%	216	6.4%	191	7.0%
Moyle	316	4.5%	169	2.3%	485	3.4%	69	1.1%	178	3.8%	124	7.3%	115	8.1%
Newry and Mourne	1,624	3.9%	949	2.3%	2,573	3.1%	497	1.1%	971	3.9%	583	7.6%	522	8.2%
Newtownabbey	1,617	5.1%	1,296	3.8%	2,913	4.4%	428	1.4%	1,054	4.9%	725	9.2%	706	10.1%
North Down	1,490	4.7%	1,186	3.5%	2,676	4.1%	336	1.2%	919	4.3%	730	8.0%	691	8.9%
Omagh	909	4.1%	495	2.3%	1,404	3.2%	260	1.1%	542	4.0%	325	7.4%	277	8.0%
Strabane	806	5.1%	413	2.5%	1,219	3.8%	203	1.3%	449	4.5%	305	8.5%	262	9.1%
Northern Ireland	31,313	4.3%	20,450	2.7%	51,763	3.5%	8,772	1.2%	18,840	4.1%	12,532	7.8%	11,619	8.6%

Table 5.7: Demo	le 5.7: Demographic and geographic variation in the percentage of adults in Northern Ireland who have chronic airflow obstruction 2020														
	Males (*	16+ years)	Females	s (16+ years)	Persons	(16+ years)	16-	44 years	45-64	vears	65-7-	4 vears	75+ years		
Local Government District	Number	Prevalence	Number	Prevalence	Number	Prevalence	Number	Prevalence		Prevalence	Number	Prevalence	Number	Prevalence	
Antrim	884	3.6%	523	2.0%	1,406	2.8%	256	1.0%	491	3.4%	331	6.7%	328	7.3%	
Ards	1,262	3.8%	762	2.1%	2,024	2.9%	231	0.8%	698	3.0%	561	5.6%	534	6.4%	
Armagh	984	3.9%	556	2.1%	1,540	2.9%	242	1.0%	537	3.4%	384	6.5%	377	7.1%	
Ballymena	1,107	4.2%	668	2.4%	1,775	3.2%	239	1.0%	608	3.5%	441	6.5%	487	7.2%	
Ballymoney	558	4.0%	304	2.1%	862	3.0%	123	1.0%	317	3.4%	204	6.4%	218	7.2%	
Banbridge	736	3.3%	450	2.0%	1,186	2.7%	184	0.9%	450	3.1%	285	5.8%	268	6.3%	
Belfast	6,287	6.5%	4,746	4.4%	11,033	5.4%	2,039	1.9%	3,831	6.7%	2,401	11.9%	2,762	12.9%	
Carrickfergus	890	5.3%	648	3.5%	1,538	4.4%	175	1.3%	577	4.6%	384	8.3%	400	9.3%	
Castlereagh	1,209	5.0%	983	3.8%	2,192	4.3%	266	1.3%	813	4.7%	512	8.3%	601	9.1%	
Coleraine	991	4.6%	561	2.5%	1,552	3.6%	163	1.0%	525	3.6%	410	6.7%	453	7.4%	
Cookstown	667	4.1%	350	2.2%	1,017	3.2%	183	1.1%	359	3.9%	236	7.2%	240	8.1%	
Craigavon	1,730	4.2%	1,031	2.4%	2,760	3.2%	507	1.2%	996	4.0%	627	7.5%	631	8.3%	
Derry	2,263	5.2%	1,284	2.8%	3,546	4.0%	591	1.4%	1,376	4.7%	850	8.7%	730	9.4%	
Down	1,161	3.8%	651	2.1%	1,813	2.9%	265	0.9%	648	3.3%	463	6.4%	438	7.0%	
Dungannon	992	3.3%	542	2.0%	1,533	2.7%	330	1.0%	556	3.5%	333	6.7%	314	7.4%	
Fermanagh	1,148	4.1%	613	2.2%	1,761	3.2%	258	1.0%	634	3.5%	452	6.7%	417	7.3%	
Larne	577	4.6%	319	2.4%	897	3.5%	98	1.0%	328	3.6%	238	6.7%	233	7.5%	
Limavady	659	4.4%	347	2.5%	1,006	3.5%	156	1.2%	380	4.0%	253	7.5%	217	8.0%	
Lisburn	1,853	3.9%	1,127	2.2%	2,980	3.0%	439	0.9%	1,075	3.4%	732	6.5%	734	7.2%	
Magherafelt	700	3.4%	375	2.0%	1,074	2.7%	194	1.0%	408	3.3%	249	6.5%	224	7.0%	
Moyle	343	4.8%	180	2.4%	523	3.6%	69	1.1%	178	3.8%	140	7.4%	137	8.2%	
Newry and Mourne	1,835	4.1%	1,045	2.3%	2,879	3.2%	535	1.1%	1,065	4.0%	661	7.6%	619	8.3%	
Newtownabbey	1,696	5.3%	1,356	4.0%	3,052	4.6%	399	1.4%	1,086	5.1%	746	9.2%	820	10.2%	
North Down	1,589	5.0%	1,242	3.7%	2,832	4.3%	322	1.3%	920	4.4%	741	8.0%	848	9.1%	
Omagh	1,019	4.3%	541	2.4%	1,559	3.4%	267	1.2%	575	4.0%	382	7.5%	336	8.0%	
Strabane	883	5.5%	443	2.7%	1,326	4.1%	190	1.3%	489	4.6%	329	8.6%	318	9.2%	
Northern Ireland	34,022	4.6%	21,645	2.8%	55,666	3.7%	8,720	1.2%	19,919	4.2%	13,342	7.8%	13,686	8.6%	

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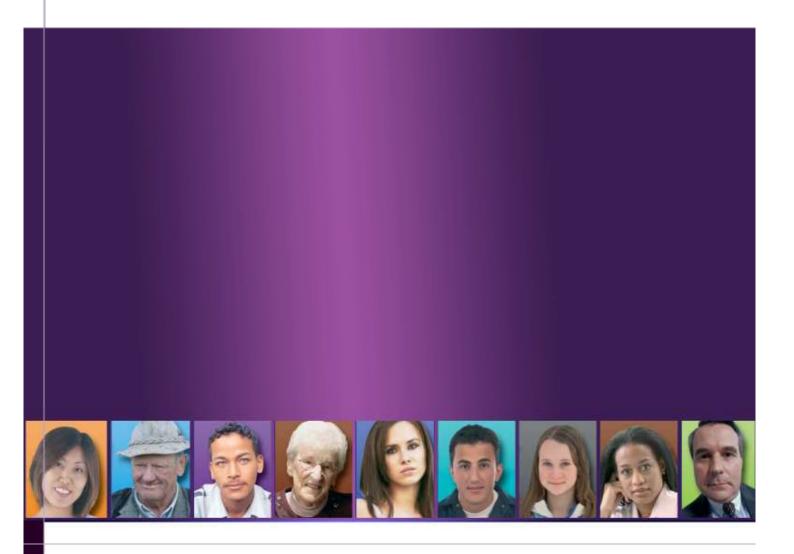
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