



Irish Thoracic Society

Respiratory Health of the Nation

2018



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FOREWORD

The lungs are essential for life and all of us at one time or another have experienced breathlessness, a common and often chronic and disabling symptom for people with respiratory disease. The Irish Thoracic Society is the national organisation representing respiratory healthcare professionals on the island of Ireland.

The society is dedicated to leading and advancing the care of people with respiratory illness. On behalf of all our members, I wish to congratulate Dr Máire O'Connor, Ms Eimir Hurley, and Professor Terry O'Connor and thank them for this vital and comprehensive work that brings into strong focus the burden and breadth of respiratory diseases in Ireland.

It is now 15 years since Drs Neil Brennan and Terry O'Connor compiled their first report on behalf of the Irish Thoracic Society that identified the complexity, scale and cost of respiratory diseases in Ireland. They entitled their report INHALE – Ireland Needs Healthier Airways and Lungs – the Evidence, and it was a major milestone for respiratory care in this country. In it they demonstrated that respiratory disease was the most commonly reported long-term illness in young adults, the most common reason to visit a GP in Ireland and that one in five deaths in Ireland was due to respiratory conditions. Changes in mortality, morbidity and management of lung diseases were subsequently tracked for their second INHALE report published in 2008.

Much good work has taken place over the last two decades and the Society acknowledges the developments in Ireland that have led to improvements in respiratory care. Genuine leadership was shown in efforts to improve the air we breathe both outdoors and in the workplace and there is in place a multi-faceted Tobacco Free Ireland strategy. Yet there is still much to do as tobacco smoking remains our leading cause of preventable death. The work of the National

Programmes for cancer and cystic fibrosis has resulted in advances in care and outcomes for patients with these conditions. National Clinical Programmes for Asthma and COPD will provide models of care and many quality initiatives for patients with these common diseases. We welcome recent appointments of Advanced Nurse Practitioners that have the potential to augment services, improve lengths of stay and reduce pressure on emergency departments. Yet some of our hospitals do not yet have access to consultant respiratory specialists, the numbers of which lag well behind other EU countries, and so the care of chronic lung disease falls back on under-resourced and over-stretched primary care providers. Basic elements of quality care such as pulmonary rehabilitation continue to be severely limited for our patients compared to other countries. Thus, despite the improvements, many challenges clearly remain. While we welcome the over-arching vision for the provision of healthcare to our citizens contained in the Sláintecare Strategy, this must incorporate a responsive approach to the specific challenge of respiratory disease in order to impact on the significant burden on our population and health services highlighted in this report.

The authors of Respiratory Health of the Nation 2018 include not just an over-view of the impact of respiratory disease in Ireland but also of eleven common conditions and two key population groups - children and older people. The data herein provides us with the most accurate and comprehensive picture to date of our nation's respiratory health. Some key findings include that respiratory disease now accounts

for more hospitalisations than that for cardiovascular and non-lung cancer cases combined and that the vast majority of these are for emergency, unscheduled care. Our death rate from respiratory diseases is the fourth highest in the EU-28 and 38.2% higher than the EU average. Furthermore, in the period between 2008 and 2016 covered by this report the number of deaths from respiratory disease increased by 14.6%. This compared with a 7.5% drop in cardiovascular deaths during the same time. Indeed, as many respiratory conditions such as COPD and sleep apnoea, which is estimated to affect up to 100,000 adults in Ireland, are under-recognised, these data may not quantify the true impact.

What is clear from this report is that respiratory disease affects people at all stages of life, disproportionately affects those from lower socio-economic groups and includes conditions that may be prevented or at least detected earlier through awareness, lifestyle choices and access to co-ordinated and specialist services. These chronic respiratory diseases in addition have adverse and under-appreciated economic effects on families and communities. We need to prepare for the growing burden of lung disease on our health services due to our growing and ageing population by ensuring that adequate resources and best evidence based practice is used to care for them; we need to be vigilant for communicable and emerging infections including multi-drug resistant TB; and we need to meet the challenge of providing continuity of care for conditions such as COPD through integrated care with a properly resourced primary care community.

The authors should be commended by all for this vital report which has illuminated the toll of respiratory disease on our nation and will be critical reading for all involved in the planning and delivery of healthcare. In their conclusion they recommend six areas of action for Respiratory Health in Ireland. The European Respiratory Society has recently made a public health call to action to improve respiratory health that enunciates ten principles for Lung Health. Taken together these include a structured, co-ordinated and funded approach to tackling chronic lung diseases in which all stakeholders – policymakers, patients and carers – collaborate to lead on improvements in respiratory health.

The Irish Thoracic Society now calls for a Taskforce that would be charged with delivering an over-arching Respiratory Strategy for the nation. The principles of this would include maintenance of good lung health throughout life, the early detection and recognition of respiratory disease, the collection of data to establish the true prevalence and outcome of respiratory diseases, and an integrated and resourced model for delivery of care for our patients in the most appropriate setting.



Professor Ross Morgan
President, the Irish Thoracic Society

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Respiratory disease includes a wide range of acute and chronic diseases that substantially contribute to the medical and economic burden on Ireland's health system. Respiratory disease led to 5,720 deaths and 14.3% of all inpatient hospitalisations in Ireland in 2016. Respiratory disease causes almost one in 5 deaths in Ireland.

Respiratory disease places a huge burden on individuals, the Irish population and the health services. National data is not available for primary care but the burden is reflected by the fact that 20% (19.3% of males, 20.6% of females) of those with full General Medical Services (GMS) coverage for the entire year, filled at least one prescription for respiratory medications in 2016. Respiratory medication cost 11% of the GMS budget and 12% of the Drugs Payment Scheme (DPS) budget in 2016.

Over the period 2009-2016, respiratory disease accounted for the highest proportion of inpatient hospitalisations and bed-days used in public hospitals compared to other diseases. In 2016 this figure was 92,391 (14.3%) inpatient hospitalisations and 578,319 (15.8%) inpatient bed days. Comparable figures for cardiovascular disease were 8.2% and 11.3% and for non-respiratory cancers, 4.7% and 8.0%.

The majority of hospitalisations for respiratory disease were emergencies – 84.8% of the 92,391 in 2016, accounting for over half a million bed days (519,587), which equates to 18.7% of all emergency hospitalisations and 20.1% of emergency bed-days. The comparable figure for cardiovascular disease was 10.7% and 14.3%.

Many respiratory diseases are more common in lower socio-economic groups. There is a correlation between some of the most common lung diseases and social deprivation. For COPD and lung cancer, this can be explained in part by higher rates of smoking, as well as greater exposure to air pollution and adverse

factors in childhood. There are geographical and socio-economic variations in mortality from respiratory disease in Ireland.

Lung Cancer

Lung cancer accounted for 1,864 deaths (20.6% of cancer deaths) in Ireland in 2016. This was an increase of 11.8% (1,668) on the 2007 figure. However, in the same period, the age standardised mortality rate per 100,000 population reduced from 63.2 in 2007 to 56.2 in 2016. In both males and females, lung cancer is the leading cause of cancer deaths.

Over a quarter of patients (26%) presented initially as emergencies. Those resident in more deprived areas were more likely to present as emergencies. Both males and females in lower socio-economic groups had at least double the incidence of lung cancer, compared to those in higher socio-economic groups.

Chronic Obstructive Pulmonary Disease (COPD)

The prevalence of COPD in Ireland is unknown. COPD places a significant burden of disease on people and health services in Ireland. It is second only to lung cancer as a cause of death from respiratory disease. It is responsible for more deaths than any non-respiratory cancer.

In 2016, among those with GMS eligibility, medication costs for COPD were €67.6 million. Ireland has the highest hospitalisation rate among selected

OECD countries. In 2016, the Irish age standardised hospitalisation rate for COPD was 389 per 100,000 population, with 15,979 inpatient hospitalisations using 124,847 inpatient bed days. Over 87% of COPD hospitalisations are as emergencies. The majority of hospitalisations are in the older age group.

There are regional variations in both mortality and hospitalisations with the inland/midland counties particularly affected.

Pneumonia and Acute Lower Respiratory Infection (unspecified)

Pneumonia is the 5th most frequent cause of death in Ireland. In 2016, it caused over 1,000 deaths, compared to 1,125 in 2007. It is the third commonest cause of death from respiratory disease.

Although people with pneumonia and acute lower respiratory infections (unspecified) are largely treated in the community setting, in 2016 they accounted for 31.7% (29,293) of respiratory inpatient hospitalisations and 40.3 % (231,819) of respiratory inpatient bed days. 58.4% of these hospitalisations were among those aged 65 years and over; 98% of hospitalisations were emergencies.

Asthma

Ireland has one of the highest rates of asthma in the world. Current estimates suggest that the prevalence of doctor-diagnosed asthma in children (“asthma ever”) is 21.5% and 7-9.4% in adults. As it typically

begins earlier in life than many other chronic diseases, it can impose a high lifetime burden on individuals, caregivers and the community.

Relatively speaking the numbers of patients dying each year from asthma are small (<75). The majority (>70%) of deaths occur in those aged over 70 years. In recent years, the 5 year standardised mortality rate has started to increase. For 2012-2016 it was 1.92 compared with the low of 1.67 in 2010-2014.

The number of day case hospitalisations for asthma increased from 1,336 in 2009 to 2,889 in 2016. In terms of inpatient hospitalisation, the age standardised rate in 2016 was 46 per 100,000 population. 97% of hospitalisations were emergencies. Ireland’s age standardised hospitalisation rate does not differ significantly from the OECD average.

Cystic Fibrosis

Cystic fibrosis is a chronic inherited disease of both childhood and adulthood. Ireland has one of the highest global incidences of cystic fibrosis. Seven mutations of the CFTR gene account for over 80% of cystic fibrosis cases in Ireland. The F508del mutation which causes severe or classic cystic fibrosis is a more common cause of cystic fibrosis in Ireland than in many other countries.

Newborn screening for cystic fibrosis commenced in the Republic of Ireland in July 2011. Since that time the numbers of new patients diagnosed following symptomatic presentation annually is approximately

25%. Although still a potentially lethal disease the median age of death has increased in the last decade from 23 years to 32.5 years.

There has been little change in the number of inpatient hospitalisations over recent years. In 2016, there were 1,110 of which 72% were as emergencies. The majority of hospitalisations were in the age group 16-64 years.

Interstitial Lung Disease and Sarcoidosis

Sarcoidosis and idiopathic pulmonary fibrosis are amongst the more common of the 300-plus interstitial lung diseases. There are approximately 350 deaths each year from these conditions in Ireland. Each year there are approximately 900 day cases and almost as many inpatient hospitalisations with these diagnoses. The national prevalence or incidence is not available for these diseases. It is hoped that the national hospital based registry commenced in 2016 for idiopathic pulmonary fibrosis will provide valuable information in the future.

Obstructive Sleep Apnoea

Obstructive sleep apnoea syndrome (OSAS) is increasingly recognised as a public health problem internationally. There is no data available nationally on its prevalence in Ireland. However, given its link with obesity, and Ireland's obesity epidemic, it can be assumed to be a potentially sizable problem in Ireland.

As a reflection of this, the number of hospitalisations almost doubled between 2007 and 2016 (1,203 to 2,241), sleep studies were among the top 20 principal procedures reported by acute hospitals in 2016, they were among the top 5 procedures for elective hospitalisations, and sleep disorders were the 4th most common principal diagnoses among elective inpatient hospitalisations in 2016.

Pulmonary Vascular Disease

Numbers dying from pulmonary embolism in Ireland have changed little in recent years despite the increase in population. National data is not available on its incidence. The 1,426 inpatient hospitalisations in 2016 are an underestimate of its impact on health and health services. The prevalence of pulmonary hypertension, a progressive often fatal disease, is unknown in Ireland. As for other countries, it is probably under recognised in Ireland.

Respiratory Diseases Due to External Agents

While the majority of diseases in this group are related to occupations or occupational practices which in turn impact on their incidence and prevalence, an exception to this is pneumonitis due to inhalation of solids and liquids which accounted for 96.6% (258) of deaths in this group in 2015.

In 2016, pneumonitis due to inhalation of solids and liquids accounted for 96% of inpatient hospitalisations (1,946) in this group and shows a persistent rising trend since 2009. In 2016, 76.5% of those hospitalised were aged 65 years and over. Over 99% were admitted as emergencies.

Respiratory Infectious Diseases

Respiratory infectious diseases continue to cause considerable morbidity in Ireland. Many are notifiable and therefore incidence data is available. The best protection against influenza, the world's most important viral disease, is vaccination of vulnerable individuals. There is considerable room for improvement on vaccination uptake in Ireland. Influenza places major strains on the acute hospital system despite being mainly dealt with in the community.

While childhood vaccination programmes have positively impacted on many diseases, challenges remain in achieving the required 95% uptake in all geographical areas and population groups. In addition, protection of those vulnerable to infection due to age or chronic disease, including respiratory, by vaccination is inadequate in Ireland.

Tuberculosis

While the number of cases of tuberculosis (TB) has fallen over the last decade, this decline has levelled off in the past two years. In 2016, 318 cases were notified and 20 people died from TB. In 2016, the highest age specific incidence rate was in those aged 25-34 years.

42.6% (136) of cases notified in 2016 lived in HSE East. The areas with the highest crude incidence were Dublin North West and Dublin North Central, which are both areas of higher social deprivation.

Paediatric Respiratory Diseases

25% of children's consultations with General Practitioners are for respiratory problems. Acute respiratory infections, such as influenza and RSV, continue to cause major morbidity in the paediatric population. The uptake of vaccination programmes is less than the recommended 95% for many diseases nationally.

Respiratory diseases account for 31.9% of inpatient hospitalisations of 0-4 year olds and 26.7% of those aged 0-15 years. Acute infections – acute upper respiratory infection, acute bronchiolitis – account for 37% of respiratory hospitalisations in those aged 0-15 years.

Asthma and cystic fibrosis are the chronic respiratory diseases which impact most in childhood.

Respiratory Disease Burden for Older People

In 2016, 13.5% of the Irish population were aged 65 years and over. In the same year, 43% of those hospitalised for respiratory problems were aged 65 years and over. Of the over half a million (578, 319) inpatient hospital beds used for those with respiratory problems in 2016, 64.1% were used by those aged 65 years and over. The most common respiratory diagnoses were COPD, acute lower respiratory infection (unspecified) and pneumonia accounting for 74.2% of respiratory hospitalisations in this age group and 74.6% of respiratory bed days.

In older age groups, as respiratory disease often coexists with other comorbidities, the care associated with this age group is often more complex than with younger age groups. Vaccination is a key protection from a number of acute respiratory infectious diseases, especially influenza and pneumococcal disease.

Future Direction

The enjoyment of the highest attainable standard of health is a fundamental human right according to WHO. The authors recommend six areas of action by which this can be achieved for Ireland – awareness and advocacy, prevention, clinical care, research, data and new and re-emerging challenges.