
Respiratory Diseases Due to External Agents

11

Key Points

- The majority of respiratory diseases due to external agents are related to occupations or occupational practices which in turn impact on the incidence, prevalence and impact of these diseases on health services
- An exception to this is pneumonitis due to inhalation of solids and liquids which in 2016 accounted for 96% of inpatient hospitalisations in this group
- Pneumonitis due to inhalation of solids and liquids accounted for 1,946 inpatient hospitalisations in 2016 of which 99% were emergencies

Background

Respiratory disease due to external agents incorporates the ICD 10 codes J60-70. For ease of description, these can be divided into three groups:

- Pneumoconioses (ICD 10: J60-65) (Coal-worker's pneumoconiosis, pneumoconiosis due to asbestos and other mineral fibres, due to dust containing silica, due to other inorganic dusts, unspecified pneumoconiosis, and pneumoconiosis associated with tuberculosis). The pneumoconioses are a group of lung diseases caused by inhaling dusts. Occupation causation is usually assumed. Pneumoconiosis associated with tuberculosis (ICD 10: J65) is not included in this chapter but is included in the Tuberculosis Chapter.
- Airway disease due to specific organic dust (ICD 10: J66) or hypersensitivity pneumonitis due to organic dust (ICD 10: J67): this latter includes Farmer's lung (ICD 10: J67.0) which is mainly caused by an allergic reaction to mould spores or other agricultural products¹. Occupation causation is usually assumed for this group.
- Respiratory conditions due to inhalation of chemicals, gases, fumes and vapours (ICD 10: J68): occupation causation is usually assumed here. Other conditions in this group, but without the occupation link, are respiratory conditions due to other external agents (ICD 10: J70) and pneumonitis due to solids and liquids (ICD 10: J69). Pneumonitis due to solids and liquids (ICD 10: J69) will be presented separately in this chapter and in the chapter on older people in view of relatively large numbers.

Incidence and Prevalence

Current data at national level is not available on either incidence or prevalence of these conditions in Ireland. In terms of Farmer's Lung, the incidence in Ireland for the years 1997-2002 was 0.58/100,000 (95% CI 0.36-0.80) compared with the period 1982 – 1996 when the national incidence rate was 1.88/100,000 (95% CI 1.27-2.49). This decline was at least in part associated with changed farming practices including the move from hay to silage production².

Mortality

In 2015, there were 267 deaths from respiratory diseases due to external agents, of which 96.6% (258) were from pneumonitis due to solids and liquids. The equivalent figures in 2007 were 107 of which 88.8% (95) were from pneumonitis due to solids and liquids³. This was an increase of 270%.

Impact on health services

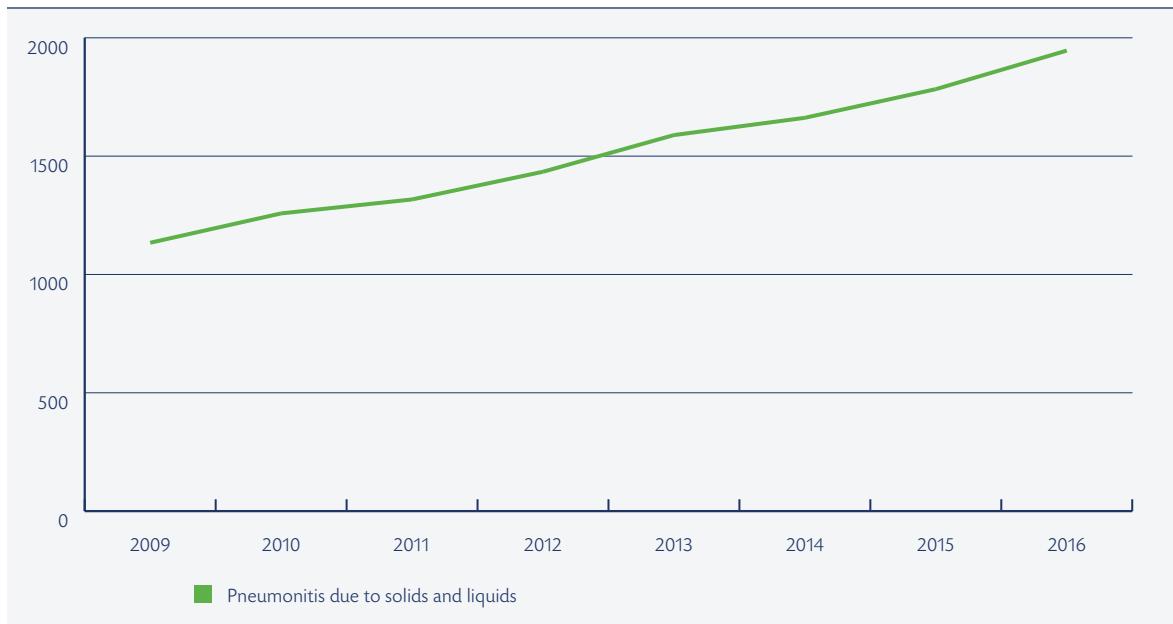
Those with respiratory diseases due to external agents require input both from primary care and specialist respiratory services including diagnostic and Outpatient Department (OPD) settings. As with many other respiratory diseases, data on these diseases is not available at national level for people with full medical cards, those with GP only cards or those who are private patients. This is also true for those who attend GPs, out of hours services, those who attend Emergency Departments and those who attend hospital OPD. Inpatient or day case data is only available from HIPE reporting publicly funded hospitals.

In the decade 2007 – 2016 the number of hospitalisations for respiratory diseases due to external agents was 14,886 of which 95.2% were for pneumonitis due to solids and liquids. The trend for inpatient hospitalisations over the years 2009-2016 for pneumonitis due to solids and liquids is shown in figure 11.1 below.

In 2016, respiratory diseases due to external agents accounted for 2,031 inpatient hospitalisations (2.2% of respiratory inpatient hospitalisations, 0.3% of all inpatient hospitalisations) and 31,019 bed days (5.4% of respiratory inpatient bed days, 0.8% of all inpatient bed days). 96% (1,946) of these inpatient hospitalisations were due to pneumonitis due to solids and liquids.

Over 99% of the latter were emergency hospitalisations as were 84.7% of the others. Table 11.1 below shows details of these hospitalisations (day cases and inpatients) in terms of the specific diagnoses by age and gender. Of the total, 1.5% (31) were day cases.

Figure 11.1. Inpatient hospitalisations with a primary diagnosis of pneumonitis due to solids and liquids, 2009-2016



Source: HIPE 2009-2016. All hospitals reporting data to HIPE

Table 11.1: Hospitalisations, Gender, Age (Median, Mean): Respiratory diseases due to external agents 2016

	ICD 10	Total	% of all J60-J70	Male %	Female %	Average age yrs	Median age yrs
Pneumoconiosis due to asbestos and other mineral fibres	J61	5	0.24	100%	-	77.2	78
Pneumoconiosis due to dust containing silica	J62	<5	0.15	67%	33%	74.3	73
Unspecified pneumoconiosis	J64	<5	<0.1	100%	0%	50.0	50
Hypersensitivity pneumonitis due to organic dust	J67	50	2.42	67%	33%	62.0	65
Respiratory conditions due to inhalation of chemicals; gases; fumes and vapours	J68	16	0.78	56%	44%	44.2	46
Pneumonitis due to solids and liquids	J69	1952	94.6	61%	39%	72.6	78
Respiratory conditions due to other external agents	J70	35	1.7	51%	49%	64.3	68
Resp disease: External agent	J60-J70	2063	100	1260 (61%)	803 (39%)	72.0	77

Source: HIPE 2016. All hospitals reporting activity to HIPE . Note: Pneumoconiosis due to TB (ICD 10: J65) is included in TB chapter. There were no hospitalisations for J60, J63, J66 in 2016.

Gender

Of the deaths from pneumonitis due to solids and liquids in 2007, 58% (55) were in males. In 2015, 55.4% (143) were in males³.

In terms of hospitalisations, for each of the specific diagnostic codes there were more males than females as shown in table 11.1 above.

Age

Due to the small numbers of deaths in each of the individual diagnostic codes, other than for pneumonitis due to solids and liquids, it is difficult to comment. Of those dying from pneumonitis due to solids and liquids in 2007, 53.7% (51) were aged 85 years or over with another 23.2% (22) aged 75-84 years. The comparable figures in 2015 were 48.4% and 29.0%³.

Of the inpatient hospitalisations in 2016 for pneumonitis due to solids and liquids, 76.5% (1,489) were aged 65 years and over and 2% (38) were aged 15 years and younger but both mean and median ages were under 80 years (72.59 years and 78 years respectively). For the other respiratory diseases due to external agents, 52% were aged 65 years and over, with the majority of the others aged 16-64 years.

International Comparison

In Ireland, within this group of respiratory diseases due to external agents, other than pneumonitis due to solids and liquids, the largest group in terms of hospitalisations was hypersensitivity pneumonitis, also called Extrinsic Allergic Alveolitis (EAA).

Internationally a large number of causes of EAA have been reported, such as EAA in farmers, pigeon breeders and budgerigar fanciers, and EAA due to repeated exposures to isocyanates, fungi, mollusc shells to name but a few. There are variations in the prevalence of the specific disease types between countries, due to differences in occupations and practices but also due to local seasonal climate and geographic conditions⁴. In a general population cohort study in the UK, an incidence of ~0.9 cases per 100,000 people per year was found between 1991 and 2003⁴. Farmer's lung is among the most extensively studied types of EAA. Among Swedish farmers, the incidence of EAA is ~20 cases per 100,000 people per year⁴. The Incidence of farmer's lung mentioned earlier in Ireland for the years 1997- 2002 was 0.58/100,000 (95% CI 0.36-0.80)².

References

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3. Central Statistics Office, Vital Statistics 2016
4. Gibson GJ, Loddenkemper R, Lundbäck B, Sibille Y. The European Lung white book; Respiratory Health and Disease in Europe. ERS Journals 2013. Chapter 24, Occupational Lung Diseases. <https://www.erswhitebook.org/chapters/occupational-lung-diseases/>