

## Causes of death

2017

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### **Mortality caused by malignant neoplasm of trachea, bronchus and lung shows significant values as from the age of 45**

In 2017, the diseases of the circulatory system and the malignant neoplasms continued to be the two main underlying causes of death in the country, accounting for 29.4% and 25.0% of all deaths, respectively. Following the trend in recent years, mortality caused by the diseases of the circulatory system continued to decrease, in contrast to that of malignant neoplasms, which continued to increase. The diseases of the respiratory system remained the third cause of death, with 11.6% of total mortality in the country.

The cerebrovascular diseases, also called strokes, caused the larger number of deaths in 2017 (11,270), accounting for 10.2% of mortality.

Deaths caused by ischemic heart disease (7,314) accounted for 6.6% of mortality. Compared to other diseases of the circulatory system, namely cerebrovascular diseases and acute myocardial infarction, the ischemic heart disease shows relatively more deaths for the age groups below 65 years.

Among deaths due to malignant neoplasms, it stood out those caused by malignant neoplasms of trachea, bronchus and lung, representing 3.8% of the total, and by malignant neoplasms of colon, rectum and anus, with 3.5%. The crude mortality rate due to malignant neoplasms of trachea, bronchi and lung significantly increases for age groups above 45 years old.

Pneumonia is one of the main diseases of the respiratory system, which caused 5,623 deaths in 2017, representing 5.1% of mortality in 2017.

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Statistics Portugal releases the publication [Causes of death 2017](#) (*Causas de morte 2017*), with the statistical results on mortality by cause of death in Portugal in 2016.

55 groups of causes of death are under review, based on the list used by the 'OECD Health Data' of the Organisation for Economic Co-operation and Development (OECD), which include the main causes of death by disease, especially malignant neoplasms, diseases of the circulatory system, of the respiratory system, and endocrine, nutritional and metabolic diseases, as well as deaths from external causes of injury or poisoning.

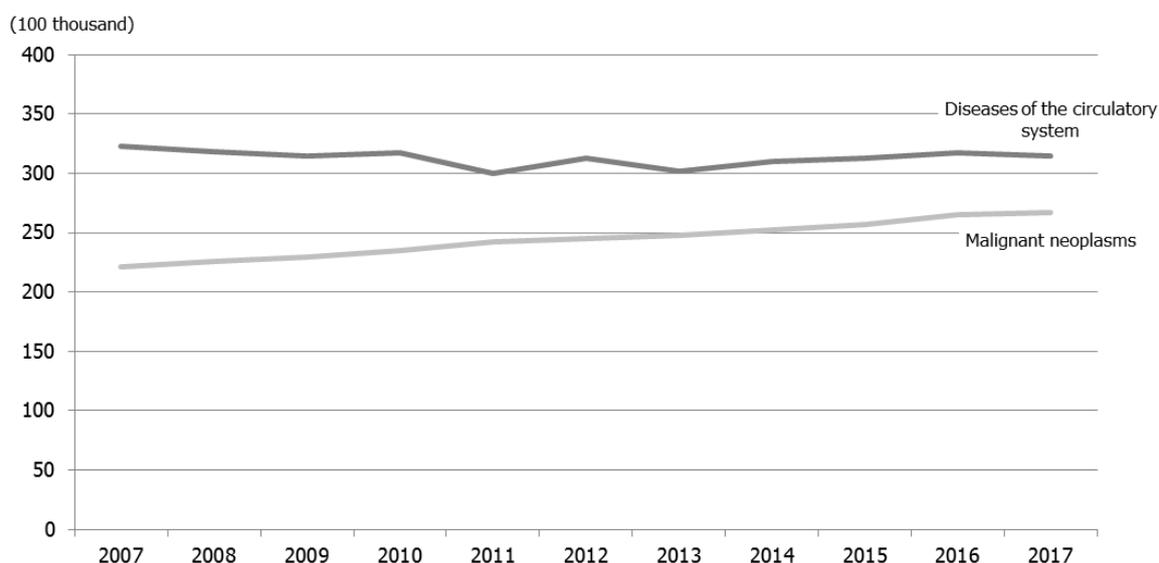
Each cause of death is indicated together with the number of deaths by sex, age group, and place of residence of the deceased, and other derivative indicators: sex ratio; average age at the time of death; crude death rate; and average number of years of potential life lost, among others.

## The mortality rate of the diseases of the circulatory system decreased in relation to the one of malignant neoplasms

In 2017, there were 110,187 deaths in the country. Together, the diseases of the circulatory system (29.4%) and the malignant neoplasms (25.0%) accounted for more than half (54.4%) of the deaths occurred in the country in 2017, being the two main causes of death.

The crude mortality rates for the diseases of the circulatory system and for the malignant neoplasms were, respectively, 314.2 and 267.0 deaths per 100 thousand inhabitants. In the last 10 years, there has been a decrease in the number of deaths due to the diseases of the circulatory system and an increase in deaths caused by malignant neoplasms, resulting in the convergence between the two mortality rates.

**Figure 1 - Crude mortality rates due to diseases of the circulatory system and malignant neoplasms, per 100 thousand inhabitants, in the country, 2007-2017**



Source: Statistics Portugal, Mortality by causes of death

## Strokes were the disease of the circulatory system that caused the largest number of deaths: 10.2% in 2017

In 2017, the diseases of the circulatory system continued to be the main cause of death in the country, with 32,366 deaths, or 29.4% of total mortality in the country, less 1.3% than in 2016 (32,805 deaths).

The cerebrovascular diseases, also known as strokes, caused the largest number of deaths (11,270), accounting for 10.2% of mortality in 2017 and a crude death rate of 109.4 per 100 thousand inhabitants. This result reflects an improvement from 2016, when there were 11,738 deaths (468 more deaths than in 2017), corresponding to 10.6% of total deaths and to a crude rate of 113.7 deaths per 100 thousand inhabitants.

In 2017, stroke deaths affected mainly women, with a ratio of 77.2 male deaths per 100 women. However, women died relatively later due to this cause: the average age at time of death for women was 83.8 years old, and for men 80.0 years old.

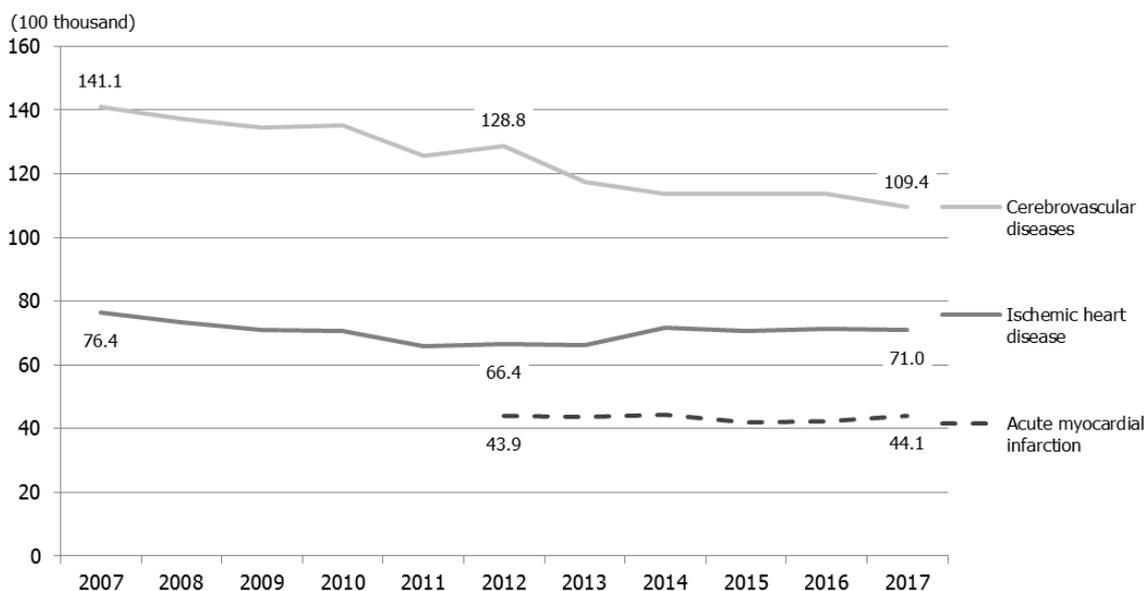
Of the total of deaths due to cerebrovascular diseases, 93.4% were of persons aged 65 and over, and 82.9% of those aged 75 and over, resulting in an average number of potential years of life lost of 10.1. The corresponding crude mortality rates (cf. page 7, Figure 4.A) show a considerable increase in older ages: 105.1 per 100 thousand inhabitants for those aged 65 to 74, 479.7 to the ones aged 75 to 84, and 1,930.9 for the 85 years and over.

**However, among the diseases of the circulatory system, mortality due to strokes was the one that decreased the most in the last 5 years**

The crude mortality rate due to cerebrovascular diseases in 2017 (109.4 deaths per 100 thousand inhabitants) accounted for less 31.7 deaths per 100 thousand inhabitants than in 2007 (141.1), and for less 19.4 per 100 thousand inhabitants than in 2012.

The crude mortality rate due to ischemic heart disease was also lower in 2017 (71.0) than in 2007 (76.4), but higher than the number of about 66 deaths per 100 thousand recorded from 2011 to 2013.

**Figure 2 - Crude deaths rates per 100 thousand inhabitants: cerebrovascular diseases, ischemic heart disease and acute myocardial infarction, in the country, 2007-2017**



Source: Statistics Portugal, Mortality by causes of death

**The ischemic heart disease accounted for 6.6% of deaths in 2017**

Still in the context of the diseases of the circulatory system, there were 7,144 deaths due to ischemic heart disease, accounting for 6.6% of deaths in 2017. This result shows a slight improvement of less 0.7% in relation to the previous year, when a total of 7,368 deaths due to this cause was listed.

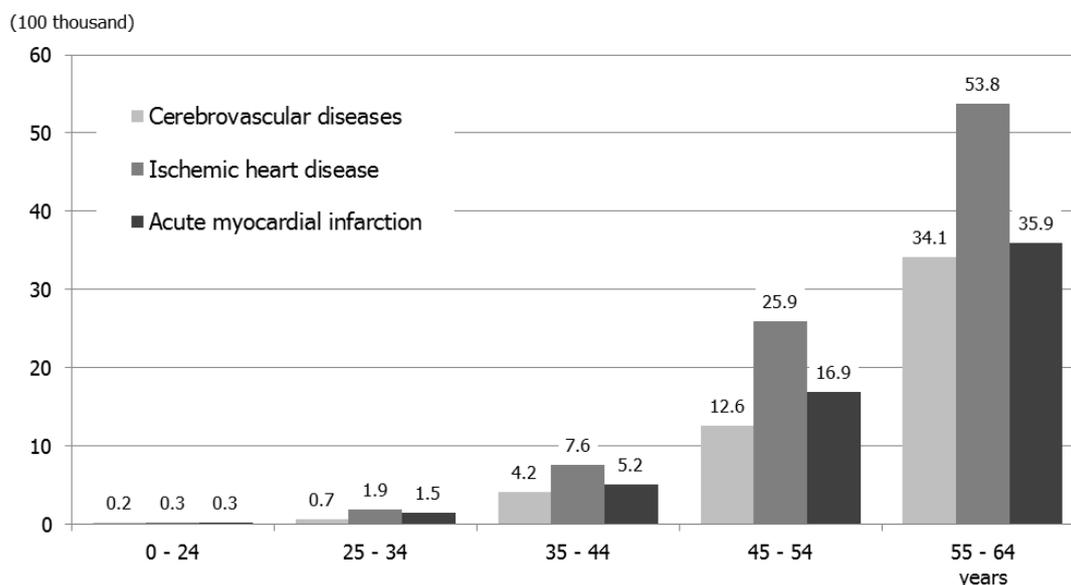
Deaths due to ischemic heart disease affected mainly men, with a ratio of 135.1 male deaths per 100 female. The average age at time of death for women was 81.8 years, more 8.1 years than for men (73.7).

The crude mortality rate due to ischemic heart disease was 71.0 deaths per 100 thousand inhabitants in 2017, with an increasing incidence for age groups higher than 45 years old (cf. page 7, Figure 4.B).

Of the total deaths due to ischemic heart disease, 82.5% were of persons aged 65 years and over and 65.3% of those aged 75 and over, resulting in an average number of potential years of life lost of 11.3 years.

On the other hand, compared to other diseases of the circulatory system, namely cerebrovascular diseases and acute myocardial infarction, the ischemic heart disease shows an excess of mortality for the age groups below 65 years.

**Figure 3 - Crude deaths rates per 100 thousand inhabitants before 65 years old, by age group: cerebrovascular diseases, ischemic heart disease and acute myocardial infarction, in the country, 2017**



### **Acute myocardial infarction caused 4.1% of deaths in 2017**

In 2017, there were 4,542 deaths due to acute myocardial infarction, accounting for 4.1% of mortality in 2017 and an increase of 3.6% in relation to the previous year (4,385 deaths).

Deaths due to acute myocardial infarction affected mainly men, with a ratio of 136.9 male deaths per 100 female. The average age at time of death for women was 81.1 years old, 8.5 years more than for men (72.8).

Of the total deaths due to acute myocardial infarction, 81.2% were of persons aged 65 and over and 62.7% of those aged 75 and over (cf. page 7, Figure 4.D), resulting in an average number of potential years of life lost of 11, 3 years.

### **Of the malignant neoplasms, those related to the trachea, bronchus and lung were the ones that caused more deaths**

Malignant neoplasms remained the second underlying cause of death in 2017, with 27,503 deaths, or 25.0% of total mortality in the country, 0.5% more than in 2016 (27,357 deaths).

Among them, it stood out deaths caused by malignant neoplasms of trachea, bronchus and lung, representing 3.8% of the total, and those caused by malignant neoplasms of colon, rectum and anus, with 3.5%.

Malignant neoplasms of trachea, bronchus and lung caused 4,240 deaths in Portugal in 2017, 3.8% more than in 2016 (4,085 deaths).

These neoplasms mainly affected men, with rather different crude mortality rates for men (66.4 deaths per 100 thousand male residents) and for women (18.5 deaths per 100 thousand female residents), resulting in a ratio of 322.3 male deaths per 100 female. The average age at time of death for women was 71.7 years, higher than for men (70.0).

Of the deaths due to this cause, 67.6% were of persons aged 65 years and over and 37.5% of those aged 75 and over, resulting in an average number of potential years of life lost of 9.6.

The crude mortality rate due to malignant neoplasms of trachea, bronchus and lung was 41.2 deaths per 100 thousand inhabitants, significantly increasing for age groups above 45 years old (cf. page 7, Figure 4.E).

### **On average, deaths due to malignant neoplasms of colon, rectum and anus occurred 5 years later than those related to trachea, bronchus and lung**

Malignant neoplasms of colon, rectum and anus caused 3,852 deaths in 2017, less 1.5% than in 2016 (3,909 deaths).

These malignant neoplasms affected mainly men, with a ratio of 114.0 male deaths per 100 female. The average age at death for women was 76.4 years, higher than for men (74.7). On average, deaths due to malignant neoplasms of colon, rectum and anus occurred five years later (at 75.4 years of age) than those caused by malignant neoplasms of trachea, bronchus and lung (at 70.4 years).

Of deaths due to this cause, 80.4% were of persons aged 65 and over and 58.3% of those aged 75 and over, resulting in an average number of 10.0 potential years of life lost.

The crude mortality rate due to malignant neoplasms of colon, rectum and anus was 37.4 deaths per 100 thousand inhabitants, significantly increasing for age groups above 55 years old (cf. page 7, Figure 4.F).

### **5.1% of deaths in 2017 were caused by pneumonia, which affected mostly women**

The diseases of the respiratory system remained the third underlying cause of death in 2017, with 12,819 deaths, or 11.6% of total mortality in the country, and decreasing by 4.9% in relation to 2016 (13,474 deaths) .

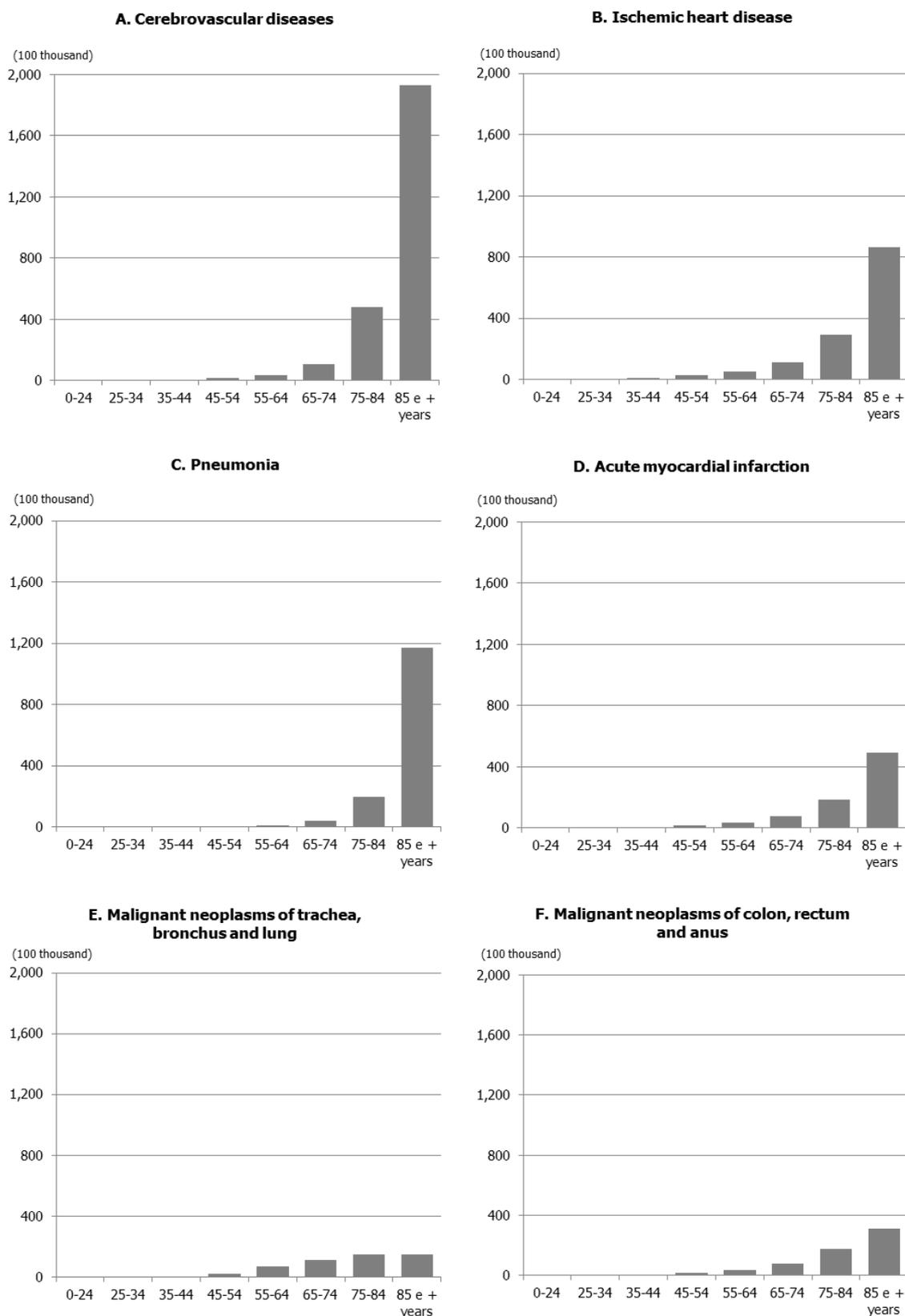
Of deaths due to diseases of the respiratory system, it stood out those caused by pneumonia, with 5,623 deaths, representing 5.1% of the mortality in 2017 and a rate of 54.6 deaths per 100 thousand inhabitants.

Deaths due to pneumonia affected mainly women, with a ratio of 93.4 male deaths per 100 women. The average age at time of death for women was 82.1 years, about 3 years less than that for men (85.2).

Of deaths due to this cause, 95.2% were of persons aged 65 years and over and 87.9% of persons aged 75 and over, resulting in an average number of potential years of life lost of 11.3 years.

By age group (cf. page 7, Figure 4.C), the crude mortality rate for pneumonia was significantly higher for age groups above 75 years old and, especially, for the ones above 85 years old.

**Figure 4 - Crude deaths rates due to some diseases per 100 thousand inhabitants , by age group, in the country, 2017**



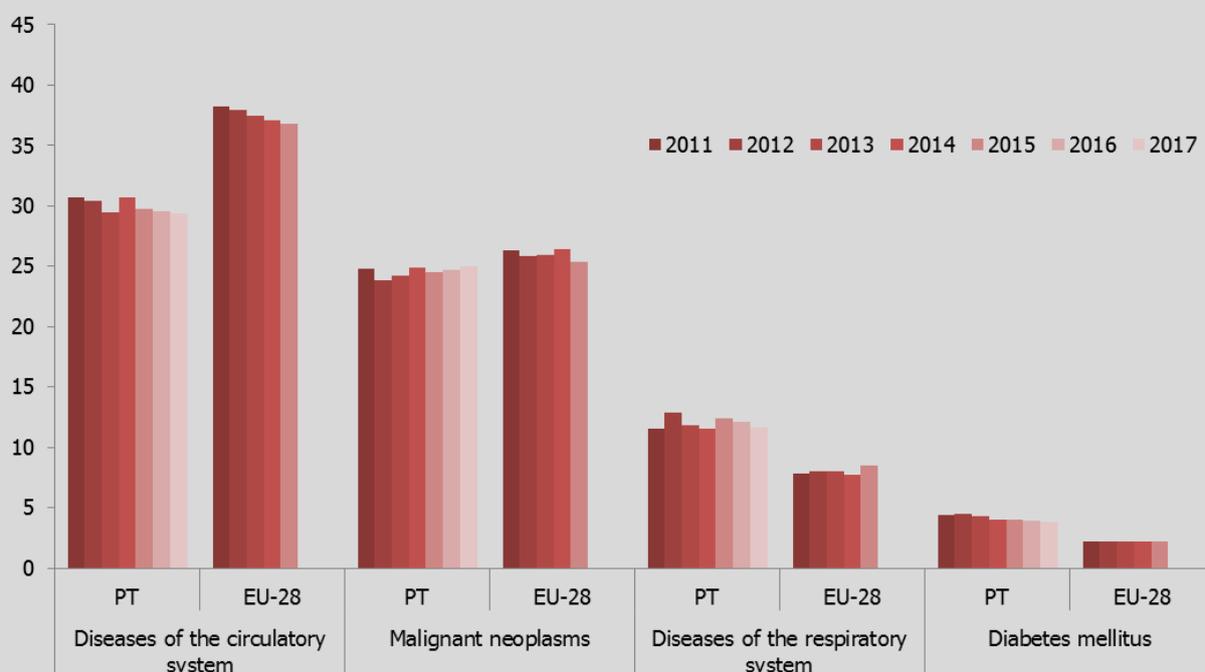
Fonte: Statistics Portugal, Mortality by causes of death

## Comparison with the European Union

In Portugal, as in the EU-28, the two main causes of death are the diseases of the circulatory system and the malignant neoplasms, which account for more than half of deaths (in 2015, 54.2% in Portugal and 62.1% in the EU-28, according to the most recent data published by Eurostat). In 2017, in Portugal, it was 54.4%.

However, the diseases of the circulatory system cause relatively fewer deaths in Portugal than in the EU-28 (in 2015, the proportion of deaths due to these diseases was 29.8% in Portugal and 36.7% in the EU-28). In 2017, in Portugal, it was 29.4%.

**Figure 5 - Deaths by some causes of death, Portugal 2011-2017 and EU-28 2011-2015 (% of total)**



The incidence of deaths due to malignant neoplasms in Portugal is quite close to that in the EU-28, although slightly lower (in 2015, the proportion of deaths due to malignant neoplasms in Portugal was 24.5% and in the EU-28 it was 25.4%). In 2017, in Portugal, it was 25.0%.

In contrast, in Portugal, there are relatively more deaths due to diseases of the respiratory system (in 2015, 12.4% of deaths in Portugal and 8.5% of deaths in the EU-28) and, especially, due to *Diabetes mellitus* (4.0% in Portugal vs. 2.3% in the EU-28 in 2015). In 2017, 11.6% and 3.8% of deaths in Portugal were caused by diseases of the respiratory system and *Diabetes mellitus*, respectively.

## Technical note

Data on deaths by cause of death resulted from the utilisation of administrative data for statistical purposes, from information subject to civil registration and collected by civil registries through the *Sistema Integrado do Registo e Identificação* (integrated civil identification and registration system) and the *Sistema de Informação dos Certificados de Óbito* (death certificate information system). The Portuguese Directorate-General of Health collaborates with Statistics Portugal, coding the causes of death according to the International Classification of Diseases (ICD-10) of the World Health Organisation (WHO).

**Years of potential life lost:** number of years that theoretically a certain population ceases to live if dying prematurely (under the age of 70). It is calculated by summing the number of deaths in each age group, multiplied by the difference between a selected upper limit and the midpoint of the age group.

**Average age at death:** the ratio of the sum of each midpoint in the age group, multiplied by the number of observations, in each age group, to the total number of observations.

**Sex ratio:** the ratio of male deaths to female deaths, for every 100 women.

In [http://www.ine.pt/portal/page/portal/PORTAL\\_INE/Publicacoes](http://www.ine.pt/portal/page/portal/PORTAL_INE/Publicacoes) are available the publication Causes of death 2016, associated with this press release.