



16 May 2024  
CAUSES OF DEATH 2022  
2013-2021

*Version rectified on 20/05/2024.*

*In lead and in the 1<sup>st</sup> paragraph of page 4, where it read "The crude mortality rate from cerebrovascular diseases was 92.1 resident deaths per 100,000 inhabitants, higher than in 2021 (92.2)." now reads "The crude mortality rate from cerebrovascular diseases was 92.1 resident deaths per 100,000 inhabitants, lower than in 2021 (92.2)."*

## IN 2022, IT WAS MAINLY DEATHS FROM DISEASES OF THE RESPIRATORY SYSTEM THAT INCREASED

In 2022, 124,942 people died in the country, 0.2% less than in 2021 (125,233). Of all deaths in the country, 124,361 were residents (99.5% of the total).

Deaths from diseases of the circulatory system and malignant neoplasms accounted for 48.9% (0.9 pp more than in 2021), still not reaching half of the deaths that occurred in the country, as in 2021 resulting from the impact of the COVID-19 disease.

Cerebrovascular diseases were the cause of the highest number of deaths in 2022, with 9,616 resident deaths due to stroke, which accounted for 7.7% of total resident deaths. The crude mortality rate from cerebrovascular diseases was 92.1 resident deaths per 100,000 inhabitants, lower than in 2021 (92.2). Women continued to be the ones most fatally affected by strokes, with a ratio of 75.8 male deaths per 100 female deaths, which, having decreased compared to the previous year (77.8), reflects the relative worsening of the female condition.

Of all deaths due to malignant neoplasms, 4,410 resident deaths caused by malignant neoplasms of the trachea, bronchi and lung stood out, which represented 3.5% of the total resident deaths and increased by 0.5% over the previous year. These neoplasms continued to affect men and women very differently, with crude mortality rates of 64.5 deaths per 100,000 men and 21.9 deaths per 100,000 women, resulting in a ratio of 268.7 deaths of men per 100 of women.

In 2022, diseases of the respiratory system, which, according to WHO standards, do not include COVID-19 disease, caused 12,114 resident deaths, 18.1% more than in the previous year, with a substantial impact on total resident deaths (1.5 pp more, from 8.2% in 2021 to 9.7% in 2022) and, at the same time, an increase in the mortality rate from 98.6 per 100,000 inhabitants in 2021 to 116.0 per 100,000 inhabitants in 2022. Almost 40% of the increase in deaths caused by diseases of the respiratory system was associated with the increase in deaths from pneumonia, with 4,488 deaths in 2022, which represented 3.6% of the mortality that occurred in 2022 (3.0% in 2021), and an increase of 19.5% deaths compared to the previous year.

Individually, the COVID-19 disease caused the second highest number of deaths (7,769 deaths), accounting for 6.2% of mortality in 2022, despite the decrease of almost 40% in the total number of deaths caused by this disease. The decrease in the number of deaths compared to the previous year was reflected in a substantial reduction in the mortality rate, from 124.5 deaths per 100,000 residents in Portugal in 2021 to 74.4 in 2022, remaining higher in the case of men (81.6) than women (67.8).



Statistics Portugal releases today the statistical results on mortality by causes of death in Portugal in 2022, according to 55 groups of causes of death based on the «OECD Health Data» list of the Organization for Cooperation and Economic Development (OECD). This information considers the codification of death certificates by the Directorate-General of Health until May 8, 2024.

The indicators include the main groups of causes of death by disease, especially diseases of the circulatory system, malignant neoplasms, diseases of the respiratory system, and endocrine, nutritional, and metabolic diseases, as well as deaths from external causes of injury or poisoning and those caused by the new coronavirus SARS-CoV-2, also called COVID-19.

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; standardized death rate; and average number of potential years of life lost, among others.

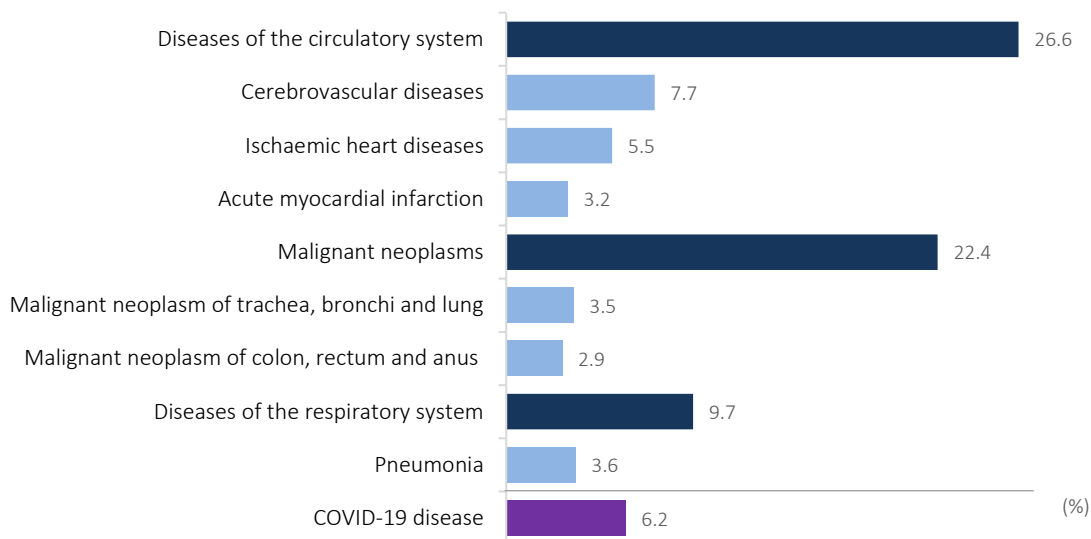
This information is available using the Tree-navigation available at Statistics Portugal website, [https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine\\_bdc\\_tree&contexto=bd&selTab=tab2](https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_bdc_tree&contexto=bd&selTab=tab2), and choosing the Health/Causes of death. The indicators for the main causes of death are presented in this press release.

In 2022, diseases of the circulatory system and malignant neoplasms accounted for 48.9% of total mortality, 0.9 pp more than in 2021

In 2022, 124,942 people died in the country, 0.2% less than in 2021 (125,233). Of total deaths in the country, 124,361 were residents (99.5% of the total).

Deaths from diseases of the circulatory system and malignant neoplasms accounted for 48.9% (0.9 pp more than in 2021), not reaching half of the deaths that occurred in the country as in 2021 resulting from the impact of the COVID-19 disease.

Figure 1. Proportion of deaths in the country from some causes of death, 2022

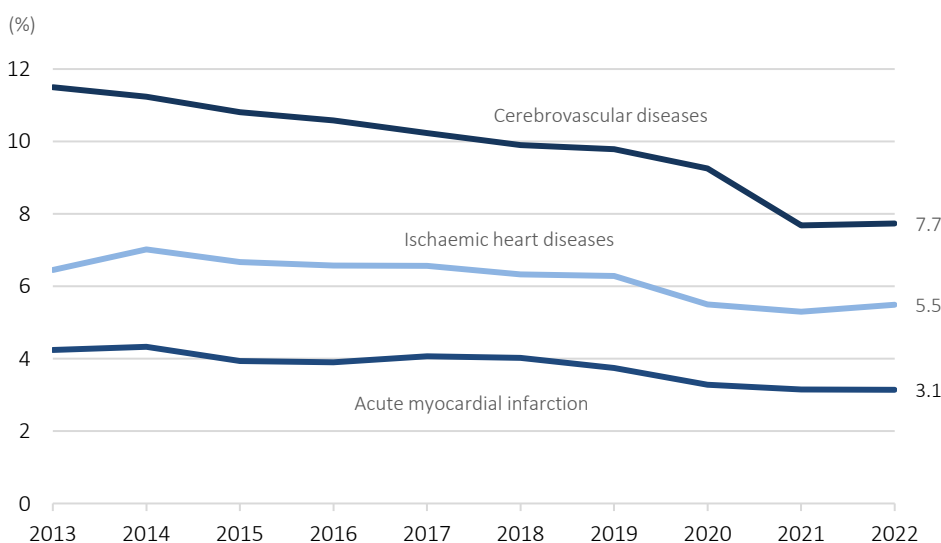


Source: Statistics Portugal, Mortality by causes of death.

### 7.7% of deaths caused by cerebrovascular diseases

Considering only the deaths of residents, diseases of the circulatory system caused 32,996 deaths, resulting in a crude mortality rate of 315.9 per 100,000 inhabitants, higher than in the previous year (310.8).

Figure 2. Proportion of deaths from cerebrovascular diseases, acute myocardial infarction and ischemic heart disease, Portugal, 2013-2022



Source: Statistics Portugal, Mortality by causes of death.



Of all diseases of the circulatory system, cerebrovascular diseases, also known as strokes, continued to stand out in 2022, having caused the highest number of deaths in the country (9,616 deaths, that is, 7.7% of the total deaths of residents), despite showing a higher downward trend than that recorded for ischemic heart disease and acute myocardial infarction. The mortality rate from cerebrovascular diseases was 92.1 resident deaths per 100,000 inhabitants, lower than in 2021 (92.2).

In 2022, stroke deaths continued to affect mainly women, with a ratio of 75.8 male deaths per 100 female deaths, which, having decreased compared to the previous year (77.8), reflect the relative worsening of the female condition. Women also continued to die relatively later than men from this disease: the average age at death for women was 84.1 years and for men 79.9 years.

Of the total number of deaths due to cerebrovascular diseases, 93.7% were of persons aged 65 years and over and 82.1% of persons aged 75 and over; 1,027, or 10.7%, died under 70 years of age. 9,359 potential years of life were lost due to cerebrovascular diseases, less than in the previous one (10,652), which results from the decrease in the number of deaths under 70 years of age due to this cause. The average number of potential years of life lost was 9.1 years, lower than in the previous year (9.8).

## 5.5% deaths due to ischemic heart disease

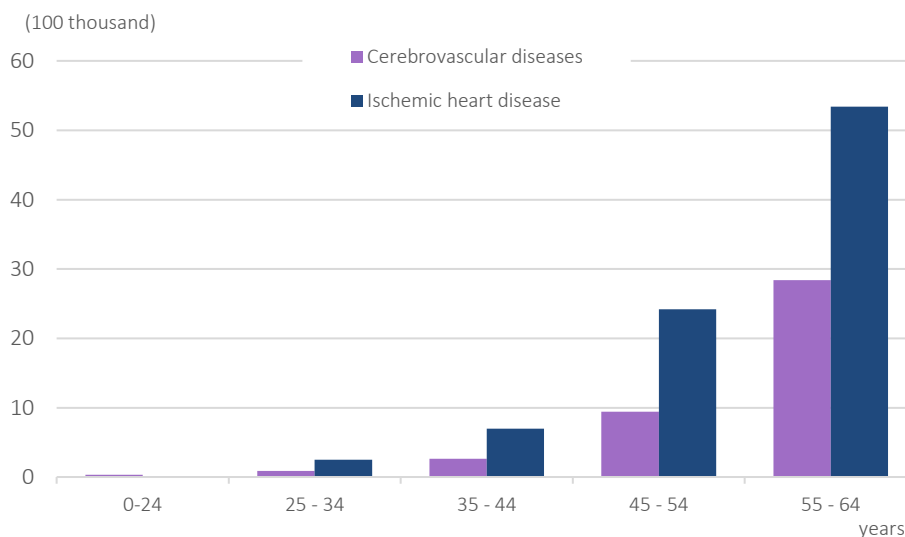
Still in the set of diseases of the circulatory system, there were 6,826 deaths of residents due to ischemic heart disease, representing 5.5% of the total deaths of residents in 2022, and an increase of 3.1% compared to the previous year, when there were 6,622 deaths due to this cause.

The crude mortality rate of residents was 65.3 deaths per 100,000 inhabitants in 2022, higher than in 2021 (63.6). In 2022, these deaths mainly affected men, with a ratio of 144.7 male deaths per 100 female deaths, higher than in 2021 (130.7). The average age at death for women was 74.0 years, which remained substantially later (about 8 years less) than for men (82.3 years).

In 2022, of the total deaths of residents due to ischemic heart disease, 81.6% were of people aged 65 and over and 65.1% of people aged 75 and over; 1,735, or 25.4%, died under the age of 70. A total of 19,568 potential years of life were lost due to ischemic heart disease, less than in the previous year (18,633), resulting from the decrease in the number of deaths under 70 years of age due to this cause. The average number of potential years of life lost was 11.3 years (the same as in 2021).

Compared to other diseases of the circulatory system, such as cerebrovascular diseases, ischemic heart diseases have higher crude mortality rates in the age groups below 55 years.

Figure 3. Crude mortality rates from cerebrovascular diseases and ischemic heart disease, per 100,000 inhabitants before 65 years of age, by age group, Portugal, 2022



Source: Statistics Portugal, Mortality by causes of death.

### The decrease in deaths from acute myocardial infarction continued in 2022

In 2022, there were 3,908 deaths of residents due to acute myocardial infarction, representing 3.1% of total mortality and decreasing by 0.7% compared to the previous year (3,936 deaths).

The crude mortality rate due to acute myocardial infarction for residents was 37.4 deaths per 100,000 inhabitants, with significantly increasing values for 45 years and over (cf. page 7, Figure 4.D).

Deaths of residents due to acute myocardial infarction mainly affected men, with a ratio of 155.8 deaths of men per 100 of women, which deteriorated considerably in relation to the previous year (132.8). The average age at death for women was 81.1 years, about 8 years more than for men (72.9 years).

Of the total number of deaths of residents due to acute myocardial infarction, 78.6% were of persons aged 65 years and over and 60.9% of persons aged 75 and over; 1,141, or 29.2%, died under 70 years of age. A total of 13,083 potential years of life were lost due to acute myocardial infarction, more than in the previous year (12,310), resulting from the increase in the number of deaths under 70 years of age due to this cause. The average number of potential years of life lost was 11.5 years, the same as in the previous year.



## Deaths caused by malignant neoplasms of the of the trachea, bronchi, and lungs continued to rise in 2022

Considering only resident deaths, malignant neoplasms caused 27,836 deaths in 2022, 0.9% more than in the previous year (27,577 deaths in 2021). This set of diseases accounted for 22.4% of resident deaths in 2022.

In 2022, the mortality rate of residents due to malignant neoplasms was 266.5 per 100,000 inhabitants, much higher in the case of men (327.6) than in women (210.6). There were 102,277 potential years of life lost, which is lower than the result of 105,311 years of life lost in 2021.

Of malignant neoplasms, there were 4,410 deaths caused by malignant neoplasms of the trachea, bronchi and lung, which accounted for 3.5% of the total deaths of residents and increased by 0.5% over the previous year. These neoplasms continued to affect men and women very differently, with crude mortality rates of 64.5 deaths per 100,000 men and 21.9 deaths per 100,000 women, resulting in a ratio of 268.7 deaths of men per 100 of women. The crude mortality rate due to malignant neoplasms of the trachea, bronchi and lung was 42.2 deaths per 100,000 residents, with significantly increasing values for 45 years and older (cf. page 7, Figure 4.E).

Malignant neoplasms of the colon, rectum, and anus accounted for 2.9% of resident mortality in 2022, with 3,597 deaths (0.2% less than in the previous year). These neoplasms continued to affect mainly men, with a ratio of 133.3 deaths of men per 100 of women. The crude mortality rate due to malignant neoplasms of the colon, rectum, and anus was 34.4 deaths per 100,000 residents, with significantly increasing values for 55 years and older (cf. page 7, Figure 4.F).

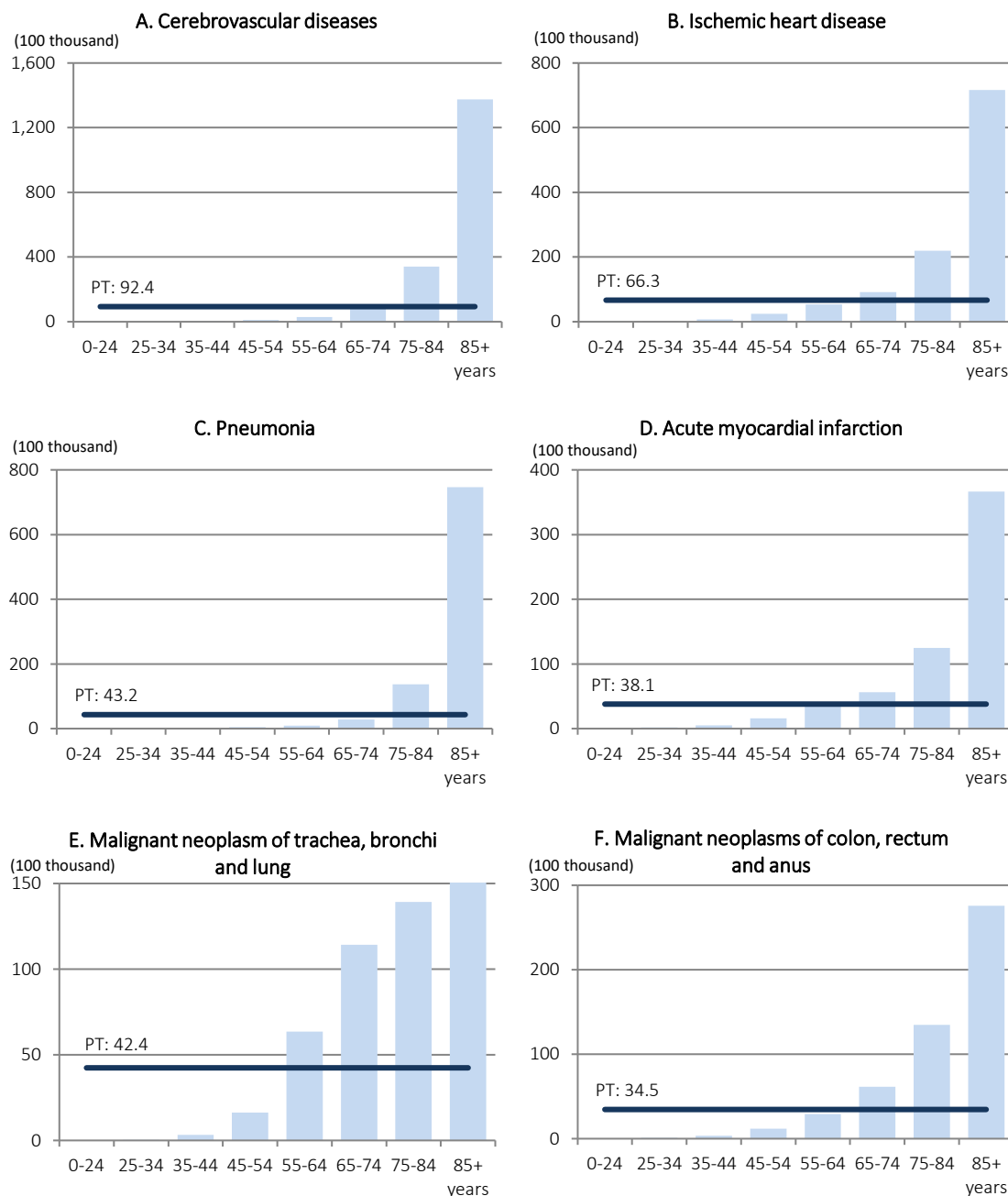
## 18% more deaths from diseases of the respiratory system in 2022

In 2022, diseases of the respiratory system caused 12,114 resident deaths, 18.1% more than in the previous year, with a substantial impact on the representation in relation to the total number of resident deaths (1.5 pp more, from 8.2% in 2021 to 9.7% in 2022) and, at the same time, an increase in the mortality rate from 98.6 per 100,000 inhabitants in 2021 to 116.0 per 100,000 inhabitants in 2022. It should be noted that, following WHO standards, deaths from COVID-19 were not classified or included in the set of respiratory diseases, constituting a separate set of diseases (see methodological note). The average number of potential years of life lost due to diseases of the respiratory system increased from 10.0 in 2021 to 10.5 in 2022.

Almost 40% of the increase in deaths caused by diseases of the respiratory system was associated with the increase in deaths from pneumonia, with 4,488 deaths in 2022, which represented 3.6% of the mortality that occurred in 2021 (3.0% in 2021), and an increase of 19.5% deaths compared to the previous year. The crude pneumonia mortality rate was 43.0 deaths per 100,000 residents, with significantly increasing values for those aged 65 and over (cf. page 7, Figure 4.C).

In 2022, deaths from pneumonia hit men the hardest, with a ratio of 109.2 men per 100 women. The average age at death was 85.0 years for women, about 3 years higher than for men (81.7 years).

Figure 4. Crude mortality rates from some diseases per 100,000 inhabitants, by age group, Portugal, 2021



Source: Statistics Portugal, Mortality by causes of death.



## Deaths caused by the COVID-19 disease

In 2022, there were 7,797 deaths caused by the COVID-19 disease in Portugal, representing 6.2% of the total deaths in the country (5,189 fewer deaths and 4.2 pp less than in 2021). Of these, 7,769 were from residents in Portugal and 28 from residents abroad. These results consider deaths where COVID-19 was the underlying cause of death, i.e. the disease that initiated the chain of pathological events that led to death.

The decrease in the number of deaths compared to the previous year was reflected in a substantial reduction in the mortality rate, from 124.5 deaths per 100,000 residents in Portugal in 2021 to 74.4 in 2022, remaining higher in the case of men (81.6) than women (67.8).

By region, COVID-19 mortality rates were highest in the Região Autónoma da Madeira (100.8 per 100,000 inhabitants) and in the regions Oeste e Vale do Tejo (96.9 per 100,000 inhabitants) and Centro (96.6). The lowest mortality rate was recorded in the region Norte (60.3 per 100,000 inhabitants).

Table 1. Deaths and crude mortality rates due to COVID-19, by sex and NUTS 2, 2022

Region of residence NUTS 2	Deaths by sex			Mortality rates per 100,000 inhabitants and sex		
	MF	M	F	MF	M	F
<b>Total <sup>(1)</sup></b>	<b>7 797</b>	<b>4 087</b>	<b>3 710</b>	<b>74.6</b>	<b>82.0</b>	<b>67.9</b>
Portugal	<b>7 769</b>	<b>4 068</b>	<b>3 701</b>	<b>74.4</b>	<b>81.6</b>	<b>67.8</b>
Mainland	7 358	3 878	3 480	73.9	81.6	66.9
Norte	2 185	1 114	1 071	60.3	64.3	56.7
Centro	1 611	828	783	96.6	104.0	89.9
Oeste e Vale do Tejo	804	404	400	96.9	101.3	92.8
Grande Lisboa	1 354	746	608	65.3	76.5	55.3
Península de Setúbal	527	293	234	64.4	75.5	54.5
Alentejo	435	229	206	92.2	99.3	85.4
Algarve	442	264	178	93.9	115.2	73.6
R. A. Açores	156	76	80	65.2	65.2	65.3
R. A. Madeira	255	114	141	100.8	95.9	105.1

Source: Statistics Portugal, Mortality by causes of death.

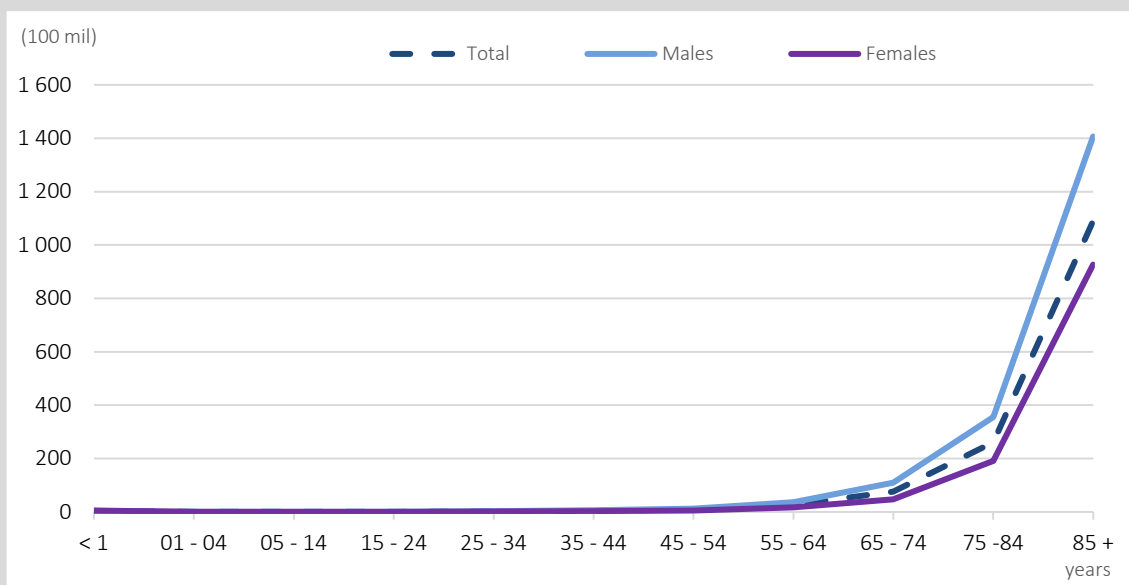
For COVID-19 deaths, the sex ratio among residents in Portugal was 109.9 male deaths for every 100 female deaths (4.2 fewer male deaths for every 100 female deaths than in the previous year), and the average age at death was 81.5 years (80.5 years in 2021), higher for women (83.3 years) than for men (80.0 years).





Mortality rates from COVID-19 continued to be higher in older ages, being more significant from the age of 55 and especially in the age group of 85 and over.

Figure 5. COVID-19 mortality rates per 100,000 inhabitants, by sex and age group, Portugal, 2022

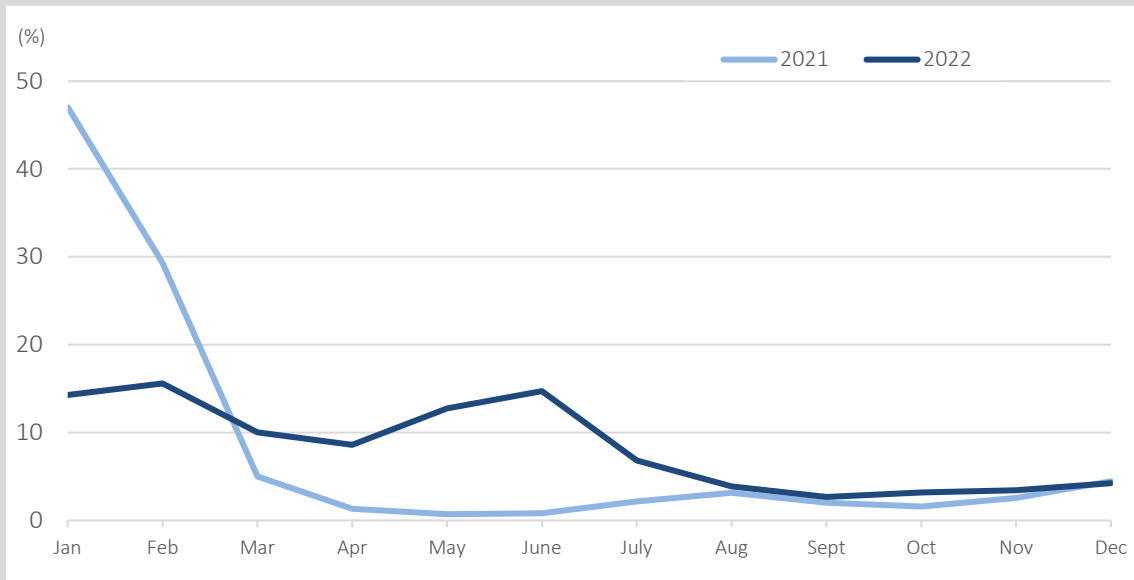


Source: Statistics Portugal, Mortality by causes of death.

The monthly distribution of COVID-19 deaths in 2022 shows a more uniform distribution throughout the year, unlike in 2021, when more than 80% of deaths caused by this disease (81.3%) occurred in the first quarter.



Figure 6. Monthly distribution of the number of deaths from COVID-19, 2021-2022



Source: Statistics Portugal, Mortality by causes of death.



## METHODOLOGICAL NOTE

Data on deaths from causes of death result from the use of administrative data for statistical purposes. This is information subject to civil registration and collected from the Civil Registry Office through the Integrated System of Civil Registration and Identification (SIRIC) and the Death Certificate Information System (SICO). The General Directorate of Health collaborates with the INE by identifying the underlying cause of death and the cause of external death, when there is, and subsequently to the codification of causes of death according to the International Classification of Diseases (ICD-10), of the World Health Organization (WHO). The results of the statistics for 2022 presented in this press release were obtained based on the information of the Information System of Death Certificates available until May 8, 2024. Following WHO standards, deaths due to COVID-19 were not included in the diseases of the respiratory system, constituting a specific category of diseases. In ICD-10, deaths due to COVID-19 were classified according to codes for special uses, corresponding to the following set of codes: U00 to U99.

## CONCEPTS

**Potential years of life lost (PVPA):** Number of years that theoretically a given population stops living if they die prematurely (before the age of 70). It is the result of the sum of the products of the number of deaths occurred in each age group ( $O_i$ ) by the difference ( $A_i$ ) between the upper limit considered (70 years) and the midpoint of the class interval corresponding to each age group.

$$APVP = \sum_i O_i \times A_i$$

**Underlying cause of death:** Illness or injury that initiates the chain of pathological events leading to death, or circumstances of the accident or act of violence that produce the fatal injury.

**External cause:** Circumstance in which a particular injury, intoxication or adverse effect occurs.

**Average age at death:** Quotient between the sum of the product of each midpoint of the age group by the number of observations in each age group and the total number of observations.

**Average number of potential years of life lost:** Quotient between the number of potential years of life lost and the number of deaths under 70 years of age.

**Sex ratio:** Quotient between male and female deaths per 100 women.

**Crude mortality rate:** Number of deaths observed during a certain period of time, usually a calendar year, due to a certain cause of death, referred to the average population of that period (estimated in number of deaths per 100,000 inhabitants).