



16 May 2022

CAUSES OF DEATH-2020 (PROVISIONAL DATA)

2010-2020

Figure 7: the text "Proportion of deaths per 100,000 inhab." Was replaced by "Proportion of deaths (in %)" (May 16 -11:50 am)

COVID-19 MORTALITY IS HIGHER AND MORE PREMATURE FOR MEN IN 2020

In 2020, there were 7,125 deaths due to COVID-19 disease, representing 5.8% of all deaths in the country and the second leading cause of death in the year. This result takes into account the number of deaths in which the underlying cause of death, that is, the disease that initiated the chain of pathological events that led to death, was the disease COVID-19. The crude mortality rate from this disease was 69.0 deaths per 100,000 residents in Portugal, higher for men (76.4 per 100,000 men) than for women (62.5 per 100,000 women), while the average age at death was higher for women (83.4 years) than for men (79.9 years). 64.0% of deaths caused by COVID-19 (4,558 deaths) occurred in November and December 2020; in April and October there were 11.9% and 9.1% of all deaths from COVID-19 respectively.

Diseases of the circulatory system continued to be at the origin of the highest number of deaths in Portugal in 2020 (34,593), with an increase of 2.9% in relation to the previous year. Nevertheless, in relative terms, they accounted for 28.0% of all deaths, 1.9 pp less than in the previous year and 1.0 pp less than in 2018. Among deaths by these diseases, deaths from strokes stood out (11,439), with an increase of 4.2% compared to the previous year. On the other hand, there were fewer deaths due to ischaemic heart disease (6,838 deaths) and acute myocardial infarction (4,086 deaths), in both cases 4.4% less than in 2019.

Diseases of the respiratory system, which do not include the COVID-19 disease in accordance with the World Health Organization's definition for ICD-10 classification, caused 11,266 deaths, 8.0% less than in 2019, and represented 9.1% of the total mortality in the country (1.8 pp less than in 2019 and 2.6 pp less than in 2018). In this group of diseases, deaths caused by pneumonia stood out, with 4,359 deaths, representing 3.5% of mortality in 2020 (4.2% in 2019 and 5.1% in 2018) and a 7.3% decrease in deaths compared to the previous year.

In 2020, there were 4,318 deaths from malignant neoplasms of the trachea, bronchus and lung, 2.0% less than in the previous year, representing 3.5% of all deaths in the country (3.9% in 2019 and 3.8% in 2018). Malignant neoplasms of the colon, rectum and anus accounted for 3.1% of mortality in 2020 (3.4% in the previous two years), with 3,810 deaths.

Statistics Portugal releases today the statistical results on mortality by causes of death in Portugal in 2020, 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 takes into account the codification of death certificates by the Directorate-General of Health until May 2, 2022.

CAUSES OF DEATH-2020 (PROVISIONAL DATA)



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 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 years of potential 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_base_dados&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.

Figure 1. Main indicators of deaths from causes of death in 2020

	Deaths		Annual variation	Crude mortality rate	Average age at death	Average number of potential years of life lost (2)	Sex ratio
	No.	%	%	by 100 thousand inhabitants	Years		No.
Total deaths (1)	123,720	100.0	10.1	1,198.5	78.9	12.5	99.3
Diseases of the circulatory system, of which	34,593	28.0	2.9	335.0	81.9	10.3	79.8
Cerebrovascular diseases	11,439	9.2	4.2	111.0	82.2	9.3	75.5
Ischaemic heart diseases	6,838	5.5	-4.4	65.9	77.9	10.6	136.6
Acute myocardial infarction	4,086	3.3	-4.4	39.3	76.6	10.9	143.5
Malignant neoplasms, of which	28,393	22.9	-0.5	275.1	73.7	10.9	144.8
Malignant neoplasm of trachea, bronchus, lung	4,318	3.5	-2.0	41.8	70.8	9.5	289.7
Malignant neoplasm of colon, rectum and anus	3,810	3.1	-0.5	36.9	75.3	10.6	141.8
Diseases of the respiratory system, of which	11,266	9.1	-8.0	109.2	82.9	10.6	109.6
Pneumonia	4,359	3.5	-7.3	42.3	83.5	12.1	112.6
COVID-19 disease	7,125	5.8	x	69.0	81.5	9.3	109.6

Source: Statistics Portugal, Mortality by causes of death.

Explanatory notes: 1) The number of deaths, and their proportion and annual variation, refer to the total number of deaths that occurred in the country, while the other indicators relate only to deaths of residents in Portugal. 2) In relation to the superiority of the average number of potential years of life lost to the total causes in relation to the main causes of death, this is due to the fact that this indicator focuses only on deaths before the age of 70, which tend to occur to a lesser extent in the case of the causes of death analyzed.



Mortality caused by COVID-19 disease mainly affected men

As of March 2020, there have been deaths in Portugal caused by the new Coronavirus SARS-CoV-2, also called COVID-19, with a total of 7,125 deaths recorded by the end of the year, representing 5.8% of the total number of deaths in the country. This result takes into account deaths in which the underlying cause of death, i.e. the disease that initiated the chain of pathological events that led to death, was COVID-19. In deaths due to COVID-19, the sex ratio for residents in Portugal was 109.6 male deaths per 100 female deaths; the average age at death was higher for women (83.4 years) than for men (79.9 years). The crude mortality rate was 69.0 deaths per 100,000 residents in Portugal, higher for men (76.4) than for women (62.5).

In 2020, mortality rates due to COVID-19 were higher in region Norte (91.5 per 100,000 inhabitants) and Área Metropolitana de Lisboa (71.5), and the lowest was recorded in região Autónoma da Madeira (5.9).

Figure 2. Deaths and crudes mortality rates (per 100,000 inhabitants) by COVID-19, by sex, NUTS 2

Figure 2. Deaths and crude mortality rates (per 100,000 inhabitants), by COVID-19, by sex, by NUTS 2

Region of residence NUTS 2	Deaths by sex			Mortality rates by 100 thousand inhabitants and sex		
	MF	M	F	MF	M	F
Total (1)	7,125	3,725	3,400	69.2	76.7	62.5
Portugal	7,107	3,710	3,397	69.0	76.4	62.5
Continente	7,071	3,700	3,371	72.2	80.0	65.1
Norte	3,266	1,721	1,545	91.5	102.1	81.9
Centro	1,285	652	633	57.8	61.9	54.1
A. M. Lisboa	2,048	1,100	948	71.5	82.1	62.1
Alentejo	397	189	208	56.6	56.1	56.9
Algarve	75	38	37	17.1	18.2	16.1
R. A. Açores	21	5	16	8.7	4.3	12.8
R. A. Madeira	15	5	10	5.9	4.2	7.4

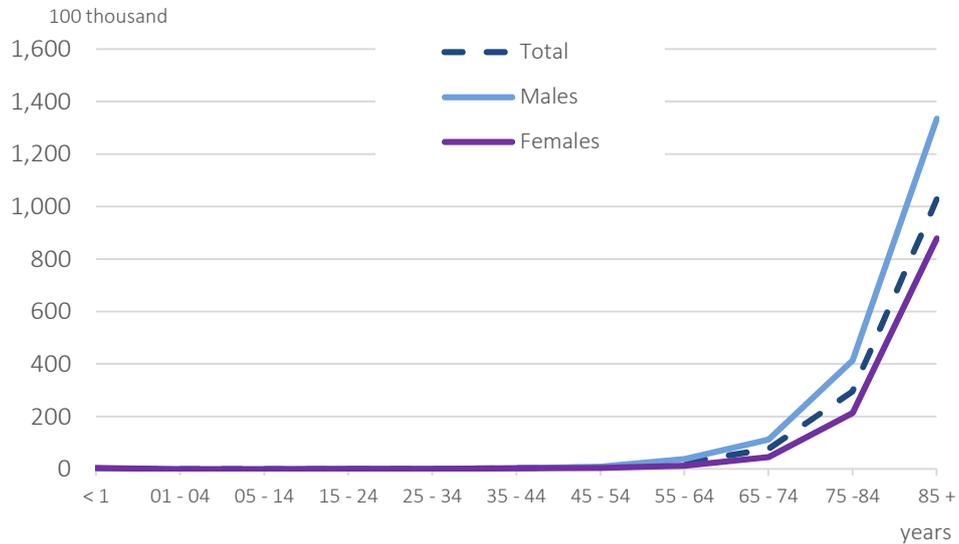
Source: Statistics Portugal, Mortality by causes of death.

Explanatory notes: 1) Mortality rates for the total number of deaths in the country take into account the resident population in the denominator.

Crudes mortality rates due to COVID-19 were higher at older ages, being more significant from the age of 55 and, in particular, in the age group of 85 years and over.

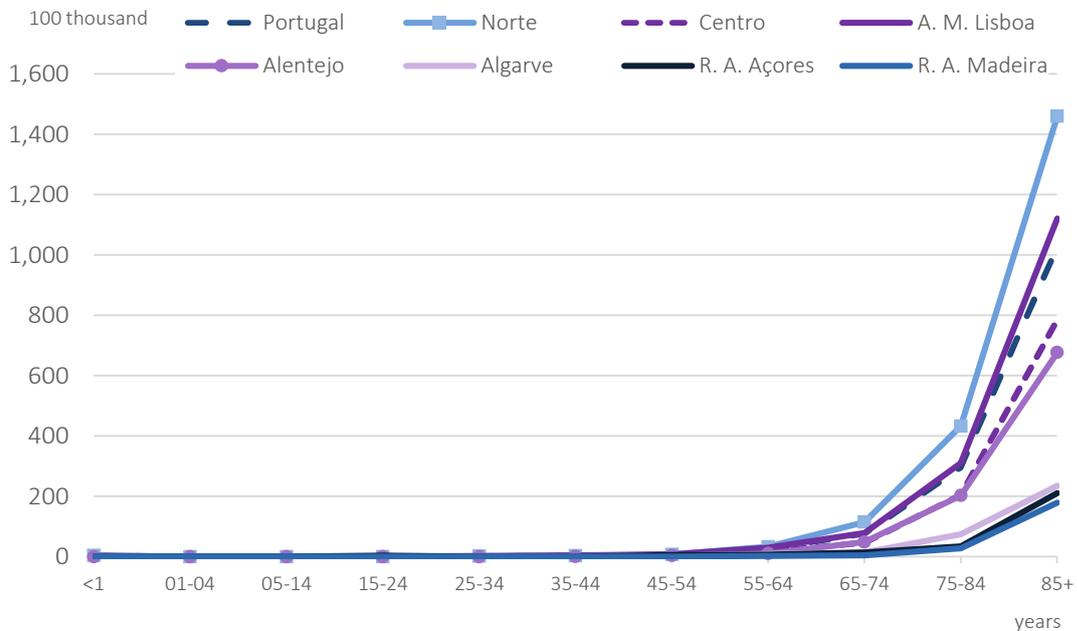


Figure 3. COVID-19 crude mortality rates per 100,000 inhabitants by sex and age group, Portugal, 2020



Source: Statistics Portugal, Mortality by causes of death.

Figure 4. COVID-19 crude mortality rates per 100,000 inhabitants by age group, NUTS 2, 2020



Source: Statistics Portugal, Mortality by causes of death.



The monthly distribution of deaths due to COVID-19 shows most deaths occurred in April and from October to December 2020. 64.0% of deaths caused by COVID-19 (4,558 deaths) occurred in November and December 2020, while in April and October there were 11.9% and 9.1% of all deaths due to COVID-19, respectively.

Figure 5. Monthly distribution of the number of deaths due to COVID-19, by NUTS 2, 2020

NUTS 2	March	April	May	June	July	August	September	October	November	December	Total
Total	212	850	258	138	171	112	180	646	2,090	2,468	7,125
Portugal	212	848	258	137	170	112	180	644	2,084	2,462	7,107
Continente	212	836	255	137	170	112	180	644	2,081	2,444	7,071
Norte	111	503	119	21	10	30	44	272	1,078	1,078	3,266
Centro	52	168	27	12	18	12	22	80	358	536	1,285
A. M. Lisboa	46	136	100	94	125	67	96	232	497	655	2,048
Alentejo	1	21	6	10	16	1	16	49	123	154	397
Algarve	2	8	3	0	1	2	2	11	25	21	75
R. A. Açores	0	11	3	0	0	0	0	0	1	6	21
R. A. Madeira	0	1	0	0	0	0	0	0	2	12	15

Source: Statistics Portugal, Mortality by causes of death.

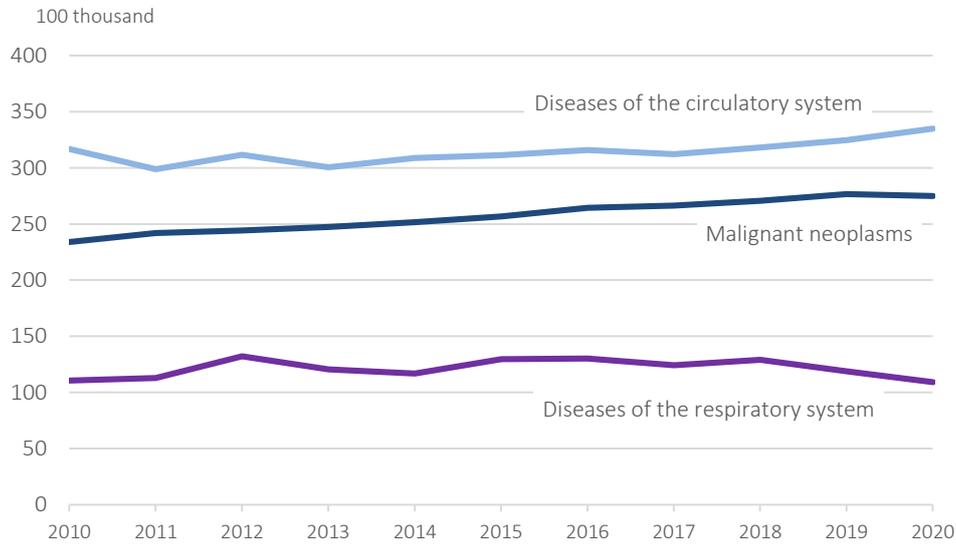
2.9% more deaths due to diseases of the circulatory system in 2020

Deaths due to diseases of the circulatory system increased by 2.9%, while those caused by malignant neoplasms decreased by 0.5% in 2020; together, they still accounted for more than half of the deaths in the country.

Considering the deaths of residents, the crude mortality rate due to diseases of the circulatory system was 335.0 per 100,000 inhabitants, considerably higher than in the previous year and reaching the highest value in the last 10 years. Nevertheless, this increase was not reflected in an increase in the average number of potential years of life lost due to diseases of the circulatory system, having decreased 0.2 years compared to the previous year (10.3 years in 2020 and 10.5 in 2019). The sex ratio in 2020 was 79.8 deaths of resident men per 100 deaths of female residents, lower than that recorded in the previous year (83.0).



Figure 6. Mortality rates due to cerebrovascular diseases, ischaemic heart disease and acute myocardial infarction, per 100,000 inhabitants, Portugal, 2010-2020



Source: Statistics Portugal, Mortality by causes of death.

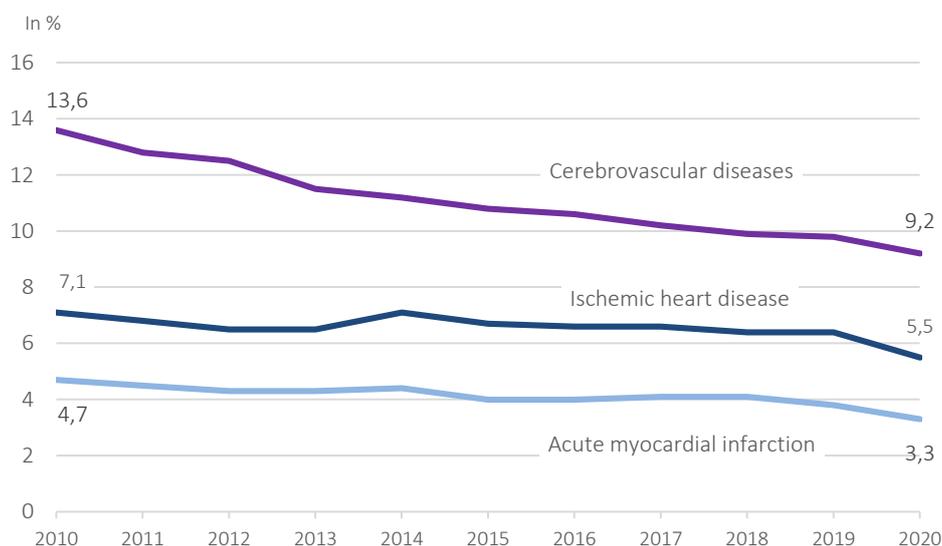
The mortality rate due to malignant neoplasms was 275.1 per 100,000 resident inhabitants, in contrast to the increasing trend in recent years (276.7 in 2019). The average number of potential years of life lost due to malignant neoplasms (10.9) was identical to that recorded in 2019.

More than 11,000 deaths of residents were caused by strokes in 2020

In recent years, in relative terms, there has been a decrease in the proportion of deaths caused by diseases of the circulatory system in the total number of deaths, from 31.8% in 2010 to 28.0% in 2020, mainly due to the decrease in the importance of deaths due to cerebrovascular diseases, also known as strokes (13.6% in 2010, to 9.2% in 2020).



Figure 7. Proportion of deaths (in %) from cerebrovascular diseases, acute myocardial infarction and ischaemic heart disease, in the country, 2010-2020



Source: Statistics Portugal, Mortality by causes of death.

Yet, strokes continued to be the cause of the highest number of deaths in 2020 (11,439), representing 9.2% of mortality and a rate of 111.0 deaths of residents per 100,000 inhabitants. This result reflects a slight increase compared to 2019, when there were 10,975 deaths, which corresponds to 9.8% of the total, and a rate of 106.5 deaths of residents per 100,000 inhabitants.

In 2020, stroke deaths continued to affect mainly women, with a ratio of 75.5 deaths of men per 100 deaths of women. Women also continued to die relatively later than men due to this disease: the average age at death for women was 83.9 years and for men 79.9 years.

Of the total number of deaths due to cerebrovascular diseases, 93.9% were of people aged 65 and over and 82.5% of people aged 75 and over. The average number of potential years of life lost was 9.3, the same as in the previous year.

The corresponding crude mortality rates increased in some elderly age groups: from 103.8 per 100,000 inhabitants in 2019 to 110.2 in 2020 for those aged 65 to 74 years, from 443.9 in 2019 to 461.4 in 2020 for those aged 75 to 84 years.

In 2020, 11,093 potential years of life were lost due to cerebrovascular diseases, more than in the previous year (10,863), as a result of the increase in the number of deaths under 70 years of age from this cause.



Almost 7,000 deaths due to ischemic heart disease

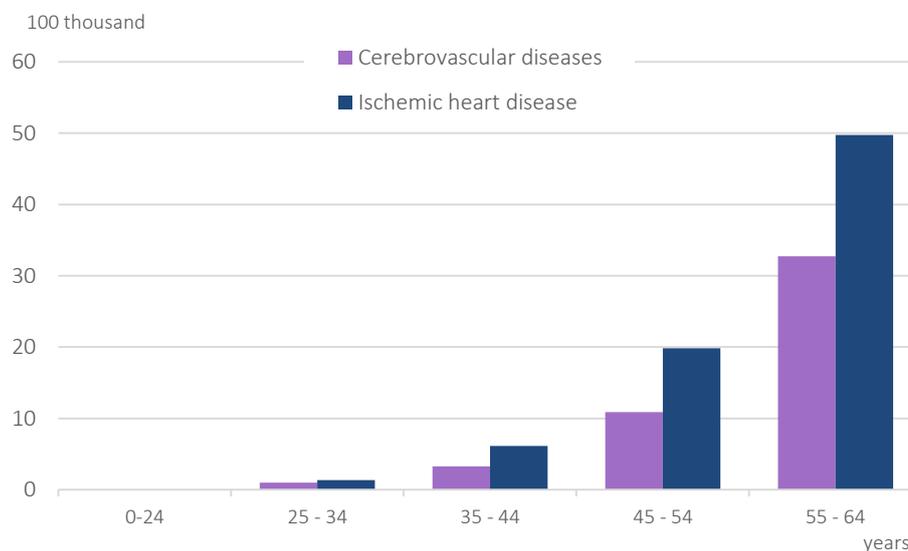
Of all deaths due to diseases of the circulatory system, there were 6,838 deaths due to ischaemic heart disease, representing 5.5% of total mortality in 2020 and a reduction of 4.4% compared to the previous year, when there were 7,151 deaths due to this cause.

Of the total number of deaths due to ischemic heart disease, 6,785 were from residents, which corresponds to a crude mortality rate of 65.9 deaths per 100,000 inhabitants in 2020, higher than in 2019 (68.3). These deaths mainly affected men, with a ratio of 136.6 deaths of men per 100 of women, lower than in 2019 (140.1). The average age at death for women was 82.5 years, remaining substantially later (about 8 years more) than that recorded for men (74.5 years).

Of the total number of deaths of residents due to ischaemic heart disease, 83.3% were of people aged 65 and over and 66.2% of people aged 75 and over. The average number of potential years of life lost was 10.6 years (lower than in 2019: 11.1 years).

Compared to other diseases of the circulatory system, namely cerebrovascular diseases, ischaemic diseases of the heart show higher crude mortality rates for the age groups below 65 years.

Figure 8. Mortality rates from cerebrovascular diseases and ischaemic heart diseases per 100,000 inhabitants before 65 years of age, by age group, Portugal, 2020



Source: Statistics Portugal, Mortality by causes of death.



Deaths from acute myocardial infarction decreased by 4.4%

In 2020, there were 4,086 deaths due to acute myocardial infarction, representing 3.3% of total mortality, with a 4.4% decrease in the number of deaths compared to the previous year (4,275 deaths).

The deaths of residents due to acute myocardial infarction affected mainly men, with a ratio of 143.5 deaths of men per 100 of women. The average age at death for women was 81.2 years, 8 years more than that observed for men (73.3 years).

Of the total number of deaths of residents due to acute myocardial infarction, 81.0% were of people aged 65 and over and 61.7% of people aged 75 and over, with an average number of potential years of life lost of 10.9. The crude mortality rate due to acute myocardial infarction for residents was 39.3 deaths per 100,000 inhabitants, with significantly increasing values for 45 and more years (see page 11, Figure 9.D).

2% fewer deaths in 2020 caused by malignant neoplasms of the trachea, bronchus and lung

Malignant neoplasms caused 28,393 deaths in 2020, representing 22.9% of the total mortality occurred in the country and 0.5% fewer deaths than in the previous year (28,544 deaths in 2019).

In 2020, the crude mortality rate of residents due to malignant neoplasms was 275.1 per 100,000 inhabitants, quite higher in the case of men (344.7) than women (212.9); 108,174 potential years of life lost were recorded, lower than the result of 110,251 years of life lost in 2019, associated to a decrease in the number of deaths under 70 years of age.

Of all malignant neoplasms, there were 4,318 deaths caused by malignant neoplasms of the trachea, bronchus and lung, which represented 3.5% of all deaths in the country and a decrease of 2.0% compared to the previous year. These neoplasms continued to reach men and women very differently, with crude mortality rates of 65.9 deaths per 100,000 men and 20.3 deaths per 100,000 women, resulting in a ratio of 289.7 deaths of men per 100 women. The crude mortality rate due to malignant neoplasms of the trachea, bronchus and lung was 41.8 deaths per 100,000 inhabitants, with significantly increasing values for 45 and more years (see page 11, Figure 9.E).

Malignant neoplasms of the colon, rectum and anus accounted for 3.1% of mortality in 2020, with 3,810 deaths (0.5% less than in the previous year). These neoplasms continued to affect mainly men, with a ratio of 141.8 deaths of men per 100 women. The crude mortality rate due to malignant neoplasms of the colon, rectum and anus was 36.9 deaths per 100,000 inhabitants, with significantly increasing values for 55 and more years (see page 11, Figure 9.F).

8% reduction in deaths from respiratory diseases in 2020

In 2020, respiratory diseases caused 11,266 deaths, 8.0% less than in the previous year, and, at the same time, a decrease in their weight in total deaths (from 10.9% in 2019 to 9.1% in 2020). It should be noted that, following



WHO standards, deaths from COVID-19 were not classified or included in all respiratory diseases, constituting a specific category of diseases (see methodological note).

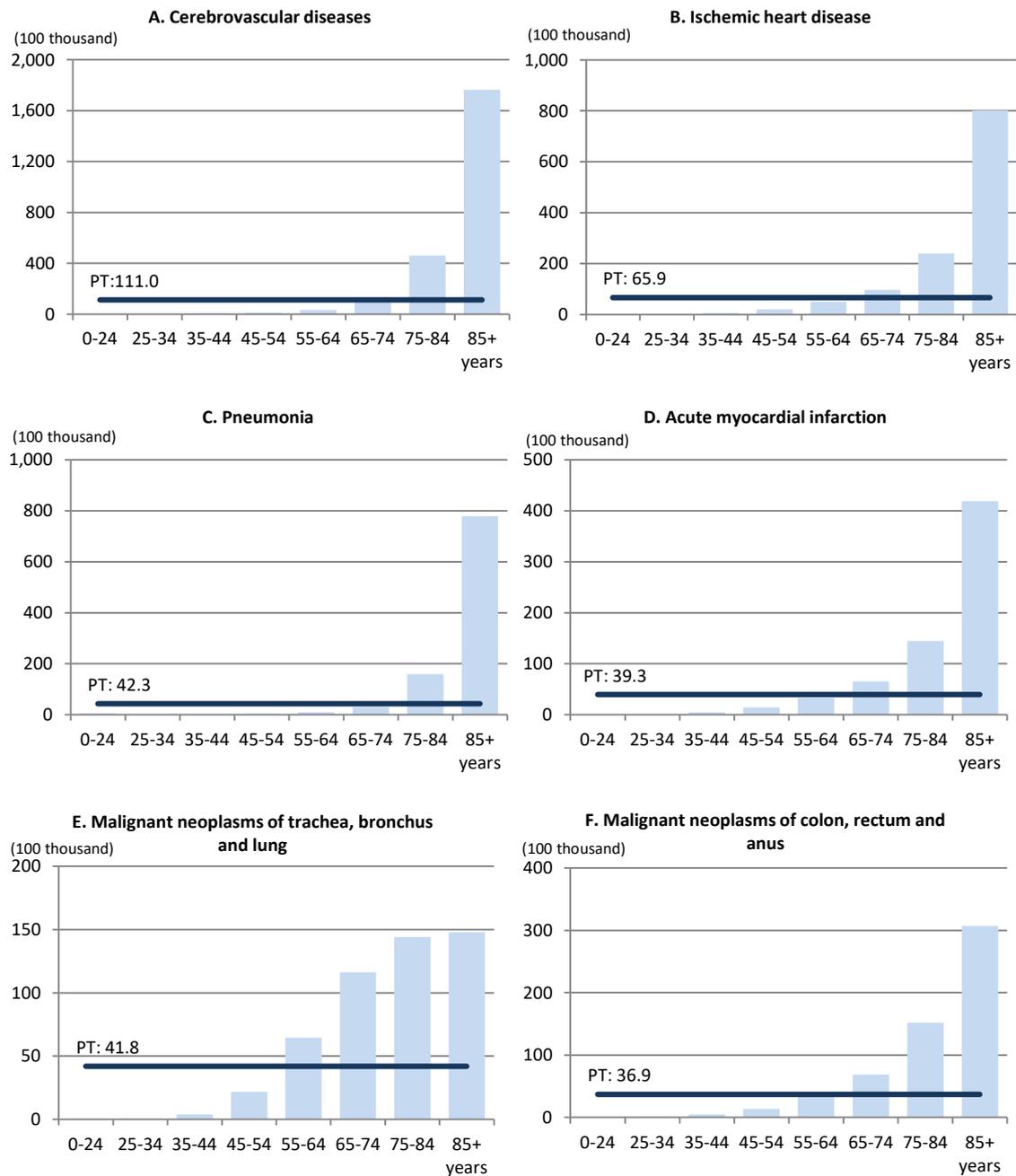
Consequently, the crude mortality rate due to diseases of the respiratory system was 109.2 per 100,000 inhabitants, lower by about 10 deaths per 100,000 inhabitants compared to the previous year (118.8). Yet, the average number of potential years of life lost due to diseases of the respiratory system increased by 0.7 years compared to 2019 (from 9.9 to 10.6), following a decrease in the number of deaths under 70 years of age.

In this group of diseases, the deaths of residents caused by pneumonia stood out, with 4,359 deaths, which represented 3.5% of mortality in 2020 (4.2% in 2019 and 5.1% in 2018) and a decrease of 7.3% deaths compared to the previous year. The crude mortality rate of residents due to pneumonia was 42.3 deaths per 100,000 inhabitants, with significantly increasing values for 65 and over years (see page 11, Figure 9.C).

In 2020, deaths from pneumonia affected men more significantly, with a ratio of 112.6 men for every 100 women. The average age at death was 85.0 years for women, almost 3 years higher than that for men (82.2 years).



Figure 9. Crude mortality rates from some diseases per 100,000 inhabitants, by age group, Portugal, 2020



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 2020 presented in this highlight are provisional and were obtained based on the information of the Information System of Death Certificates available until May 2, 2022. 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). Resulta 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.

Masculinity-to-death 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).