

Causes of Death: 2022

The Hellenic Statistical Authority (ELSTAT) announces statistical data on the causes of death for the year 2022. The data sources are the death certificates submitted by medical practitioners and, for violent or sudden deaths, by the Forensic Medicine Authorities.

Data on the causes of death are compiled in accordance with the 10th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10, version 2008) which was adopted in 2014. In particular, the data are as follows:

- In 2022, deaths amounted to 140,792¹ (70,795 men and 69,997 women), recording a decrease of 2.2%, in comparison to the 143,904 deaths (73,410 men and 70,494 women) recorded in 2021 (Graph 1).
- The main causes of death in 2022 were diseases of the circulatory system with 44,325 deaths, followed by neoplasms, COVID-19 and diseases of the respiratory system with 29,532, 16,173 and 13,165 deaths, respectively (Table 1, Graph 2).
- Deaths caused by COVID-19 referred to 8,358 men and 7,815 women in 2022. Most of the deaths were recorded in the age group 75 years and over (12,140 deaths), followed by the age groups 60-74 years and 45-59 years with 3,075 and 791 deaths, respectively. In the age group under 15 years, 9 deaths due to the disease were recorded. The COVID-19 disease was the only cause of death, as mentioned in the death certificates, in the 29.3% of the COVID-19 deaths (4,743 deaths), whereas for the 70.7% (11,430 deaths) there was reference to a pre-existing condition (comorbidity). The most common pre-existing conditions of the deceased by COVID-19 were diseases of the circulatory system, neoplasms and endocrine, nutritional and metabolic diseases, with 26.7% (4,320 deaths), 15.3% (2,468 deaths) and 7.2% (1,163 deaths), respectively (Table 5, Graph 5).
- In comparison to previous years, the share of deaths caused by diseases of the circulatory system increased from 10.0% in 1938 (first year when analytical data were made available) to 25.0% in 1956 (first year after the Second World War for which data were available) and amounted to 31.5% in 2022. The corresponding share of deaths caused by neoplasms rose from 4.1% in 1938 to 11.7% in 1956 and up to 21.0% in 2022. On the contrary, deaths caused by infectious and parasitic diseases, which in 1938 accounted for 18.4% of the total deaths, dropped significantly to 2.4% in 2022 (Table 2, Graph 3). It should be noted that classification changes should be considered when assessing the comparability of data over time.

¹ It is noted that the data on deaths are finalized after the processing of the data on the causes of death, and therefore, the total number of deaths presented in this announcement does not fully coincide with the data presented in the announcement on "Vital Statistics: 2022" of the 26th October 2023.

² Data on deaths caused by COVID-19 presented in this announcement have been compiled according to the International Guidelines for certification and classification (coding) of COVID-19 disease as cause of death, of the World Health Organization and may differ from those announced by the National Public Health Organization (EODY).

Information on methodological issues:

Population, Employment & Cost of Living Statistics Division
Population and Migration Statistics Section
Georgia Thymoglou, tel: +30 213 135 2175, e-mail: g.thymoglou@statistics.gr
Aikaterini Fentouri, tel: +30 213 135 2895, e-mail: a.fentouri@statistics.gr

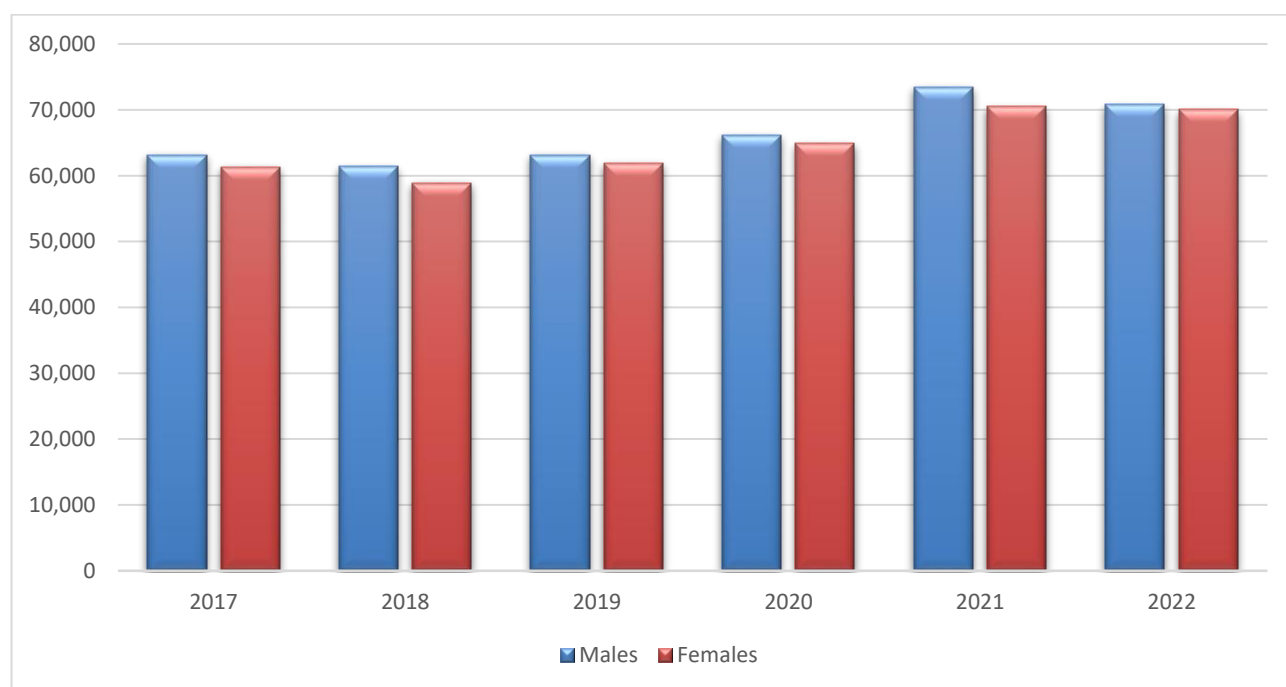
Information on data provision:

Tel: + 30 213 135 2022, -2308, -2310
e-mail: data.dissem@statistics.gr

- The number of deaths due to suicides, as recorded by the Forensic Medicine and Criminal Investigation Authorities, amounted to 516 in 2022, compared to 467 in 2021 (increase by 10.5%). It should be noted that any discrepancies between these data and the corresponding data of other agencies may be on account of the different methodology used or other underlying factors, such as the need for time-consuming research by the Forensic Medicine Authorities in order to investigate the conditions resulting to the death, deaths caused by late effects after a suicide attempt, etc.
- The data presented in this Publication do not include data on the number of refugees/migrants who died while border-crossing before being registered in the Country or have drowned in Greek territorial waters. The corresponding figures per year are 27 in 2017, 72 in 2018, 62 in 2019, 59 in 2020, 84 in 2021 and 122 in 2022.

The data on the causes of death for the year 2022 are presented below, broken down by sex, age group, place of usual residence of the deceased and month of occurrence (Tables 3,4,6 and 7, Graphs 4,6).

Graph 1. Deaths by sex, 2017-2022



Graph 2. Percentage distribution of deaths by main categories of causes of death, 2022

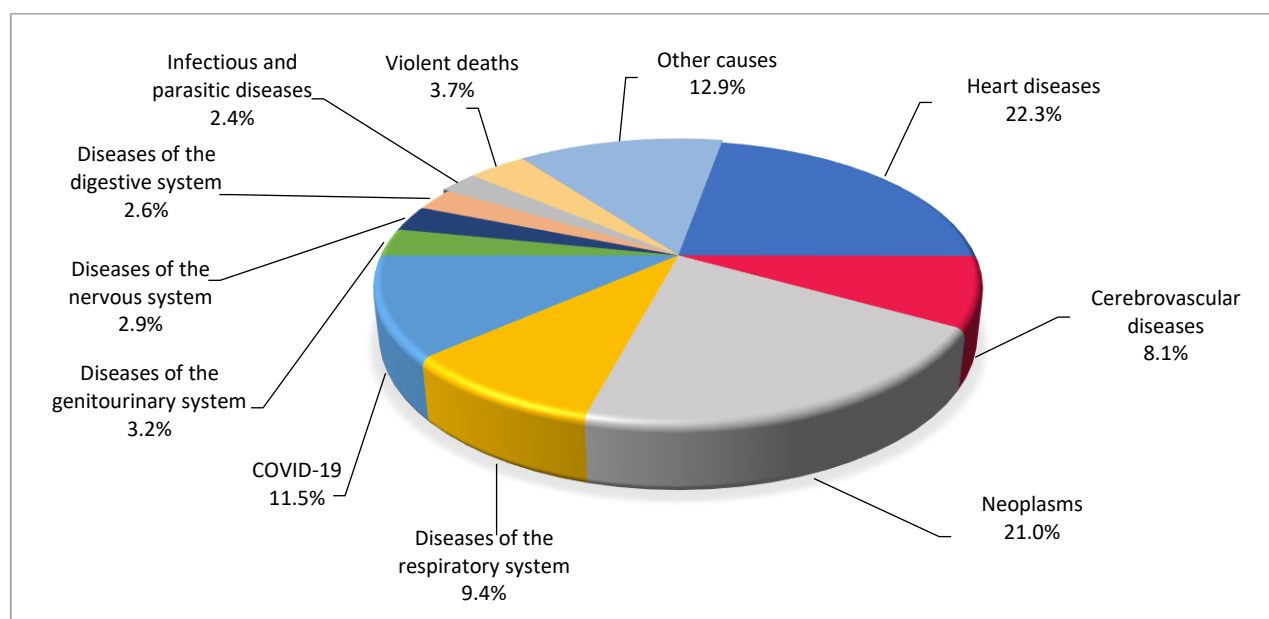


Table 1. Deaths by categories of causes of death, broken down by the most important subcategories, 2017-2022

Causes of death	2017	2018	2019	2020	2021	2022
Total deaths	124,495	120,291	124,954	131,025	143,904	140,792
Certain infectious and parasitic diseases	4,165	4,054	4,234	3,921	3,244	3,413
Neoplasms, of which:	30,567	30,331	30,637	30,829	30,675	29,532
<i>Malignant neoplasms of colon, rectosigmoid junction, rectum, anus and anal canal</i>	2,686	2,681	2,851	2,774	2,775	2,760
<i>Malignant neoplasm of liver and intrahepatic bile ducts</i>	1,422	1,422	1,480	1,384	1,326	1,321
<i>Malignant neoplasm of pancreas</i>	1,882	1,914	1,898	2,000	2,032	1,973
<i>Malignant neoplasms of trachea, bronchus and lung</i>	7,178	7,046	7,117	7,014	6,959	6,696
<i>Malignant neoplasm of breast</i>	2,187	2,201	2,261	2,219	2,269	2,039
<i>Malignant neoplasm of prostate</i>	1,688	1,711	1,706	1,785	1,848	1,735
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	332	263	340	338	389	484
Endocrine, nutritional and metabolic diseases, of which:	2,464	2,509	2,740	2,767	3,035	3,157
<i>Diabetes mellitus</i>	2,122	2,220	2,384	2,401	2,580	2,691
Mental and behavioural disorders, of which:	1,827	1,940	2,256	2,658	3,215	3,396
<i>Dementia</i>	1,624	1,720	1,949	2,280	2,753	2,752
Diseases of the nervous system, of which:	3,767	3,652	3,546	4,102	4,274	4,131
<i>Parkinson disease</i>	1,651	1,609	1,560	1,474	1,304	1,383
<i>Alzheimer's disease</i>	645	545	504	514	520	535
Diseases of the eye and adnexa	0	0	0	0	3	0
Diseases of the ear and mastoid process	0	1	2	1	0	1
Diseases of the circulatory system, of which:	46,942	44,590	44,234	45,741	46,607	44,325
<i>Heart diseases</i>	31,618	30,526	29,804	31,275	32,749	31,379
<i>Cerebrovascular diseases</i>	13,797	12,574	12,973	13,022	12,437	11,417
Diseases of the respiratory system, of which:	13,847	12,668	13,591	12,576	13,078	13,165
<i>Influenza</i>	93	36	139	128	0	38
<i>Pneumonia & other acute lower respiratory infections</i>	6,766	6,145	6,608	6,038	6,188	6,501
<i>Chronic lower respiratory diseases</i>	3,260	3,029	3,244	3,047	3,285	3,143
Diseases of the digestive system	3,617	3,544	3,585	3,453	3,466	3,700
Diseases of the skin and subcutaneous tissue	62	54	79	57	51	138
Diseases of the musculoskeletal system and connective tissue	318	352	408	418	592	521
Diseases of the genitourinary system	3,578	3,544	3,866	4,275	4,599	4,479
Pregnancy, childbirth, and the puerperium	10	4	6	3	5	3
Certain conditions originating in the perinatal period	159	173	195	168	199	149
Congenital malformations, deformations and chromosomal abnormalities	213	184	196	226	179	187
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	8,236	7,910	10,435	9,712	8,884	8,621
External causes of mortality-Violent deaths	4,391	4,518	4,604	4,752	5,066	5,217
<i>Transport accidents</i>	917	865	840	699	726	789
<i>Falls</i>	902	918	1,063	1,395	1,436	1,339
<i>Accidental drowning and submersion</i>	347	367	363	272	340	380
<i>Accidental poisoning by and exposure to noxious substances</i>	268	268	276	277	291	270
<i>Other accidents</i>	888	923	848	933	1,020	1,207
<i>Suicide</i>	523	567	530	464	467	516
<i>Homicide, assault</i>	89	109	93	86	91	83
<i>Other external causes</i>	457	501	591	626	695	633
COVID-19	-	-	-	5,028	16,343	16,173

Table 2. Main categories of causes of death, years 1938, 1956, 1982, 1992, 2002, 2012 and 2022

Main causes of death	1938	1956	1982	1992	2002	2012	2022
Total deaths	93,766	59,460	86,345	98,231	103,915	116,668	140,792
Diseases of the circulatory system	9,347	14,893	39,043	48,632	51,763	49,728	44,325
Neoplasms	3,831	6,928	17,052	20,472	24,386	28,201	29,532
Diseases of the respiratory system	17,849	3,290	5,386	6,162	7,650	11,384	13,165
Infectious and parasitic diseases	17,283	3,185	773	675	742	1,074	3,413
Violent deaths	2,687	2,821	4,828	4,036	3,993	3,466	5,217
Other causes	42,769	28,343	19,263	18,254	15,381	22,815	45,140*

* Deaths caused by COVID-19 are included

Graph 3. Percentage distribution of main categories of causes of death, years 1938, 1956, 1982, 1992, 2002, 2012 and 2022

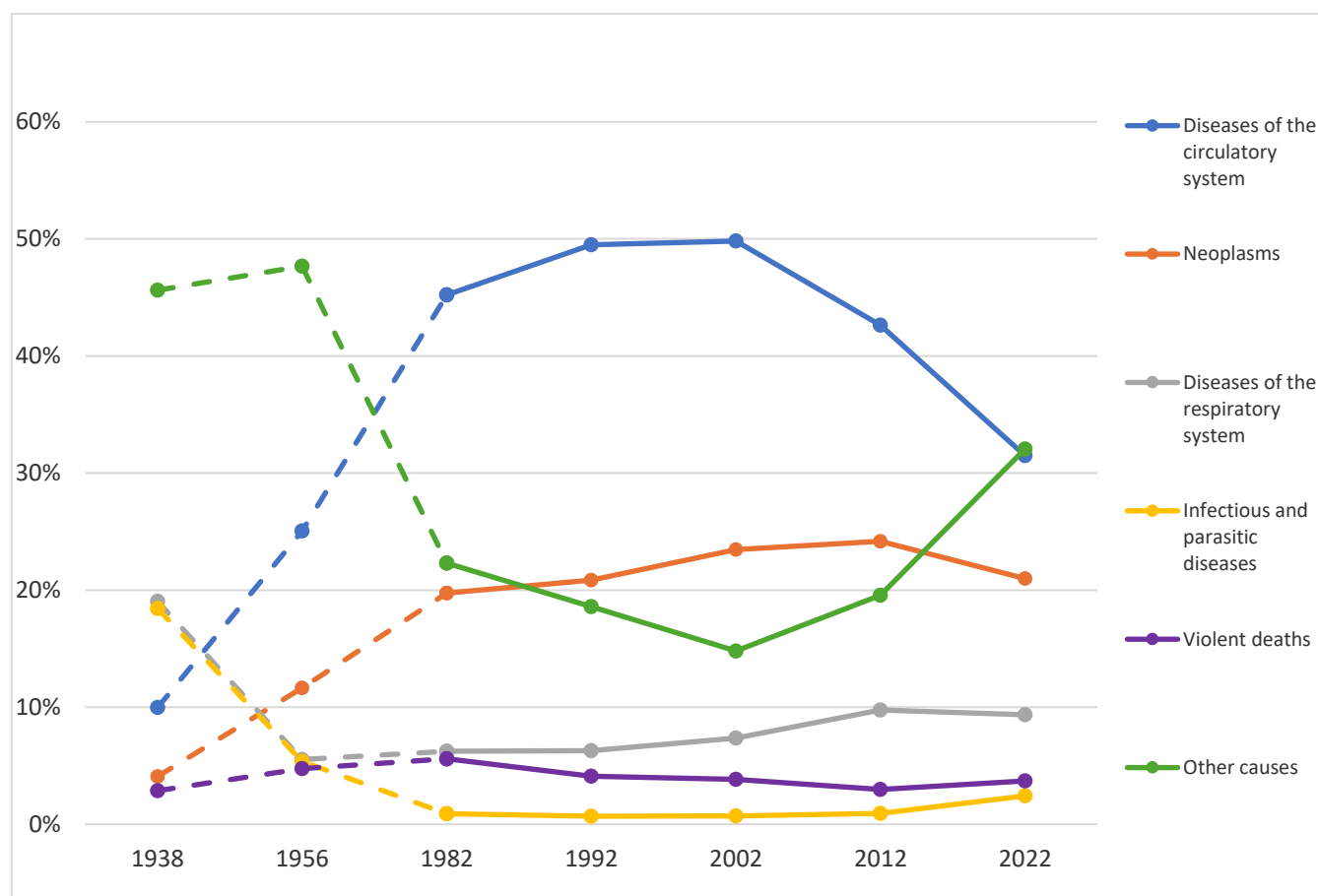


Table 3. Deaths by main categories of causes of death, by age group and sex, 2022

Causes of death	Total deaths per cause	Deaths by age group and sex											
		under 15		15-29		30-44		45-59		60-74		75 and over	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Total deaths	140,792	198	166	444	139	1,313	537	5,570	2,679	16,451	9,022	46,819	57,454
Certain infectious and parasitic diseases	3,413	5	3	3	1	28	7	78	27	205	166	1,026	1,864
Neoplasms, of which:	29,532	14	11	45	32	235	210	1,604	1,289	6,148	3,471	9,710	6,763
<i>Malignant neoplasm of colon</i>	2,445	0	0	1	2	25	8	113	83	419	243	866	685
<i>Malignant neoplasm of bronchus and lung</i>	6,689	0	1	2	1	29	21	455	189	2,313	657	2,308	713
<i>Malignant neoplasm of breast</i>	2,039	0	0	0	2	0	65	3	289	17	521	21	1,121
<i>Malignant neoplasm of prostate</i>	1,735	0	0	0	0	0	0	25	0	300	0	1,410	0
<i>Malignant neoplasm of brain</i>	1,015	8	4	8	4	31	13	109	76	218	154	199	191
<i>Leukaemia</i>	1,124	3	3	8	5	21	7	48	29	163	111	414	312
Diseases of the circulatory system, of which:	44,325	2	4	45	16	293	63	1,800	424	4,352	1,926	14,631	20,769
<i>Heart diseases</i>	31,379	1	4	36	13	242	49	1,456	293	3,239	1,290	10,382	14,374
<i>Cerebrovascular diseases</i>	11,417	1	0	8	2	37	10	229	101	818	522	3,750	5,939
Diseases of the respiratory system	13,165	7	14	9	3	38	13	164	81	843	442	5,538	6,013
Congenital malformations, deformations and chromosomal abnormalities	187	37	31	12	8	13	7	25	14	23	16	0	1
Other pathological causes	28,780	106	88	55	26	222	99	833	421	2,245	1,547	8,827	14,311
Violent deaths	5,217	24	9	258	45	400	89	571	127	727	287	1,236	1,444
<i>Transport accidents</i>	789	5	2	149	25	111	10	137	23	135	46	114	32
<i>Falls</i>	1,339	2	1	6	0	10	2	36	6	94	26	437	719
<i>Accidental drowning and submersion</i>	380	2	1	18	0	19	3	42	11	73	40	101	70
<i>Accidental poisoning by and exposure to noxious substances</i>	270	0	0	18	3	111	28	55	14	20	5	6	10
<i>Other accidents</i>	1,207	8	4	17	1	38	6	117	21	150	81	353	411
<i>Suicide</i>	516	2	0	33	11	84	24	115	22	105	18	86	16
<i>Homicide, assault</i>	83	3	1	10	3	14	6	16	4	10	3	2	11
<i>Other external causes</i>	633	2	0	7	2	13	10	53	26	140	68	137	175
COVID-19	16,173	3	6	17	8	84	49	495	296	1,908	1,167	5,851	6,289

Graph 4. Percentage distribution of deaths by main categories of causes of death, on total deaths by age group and sex, 2022

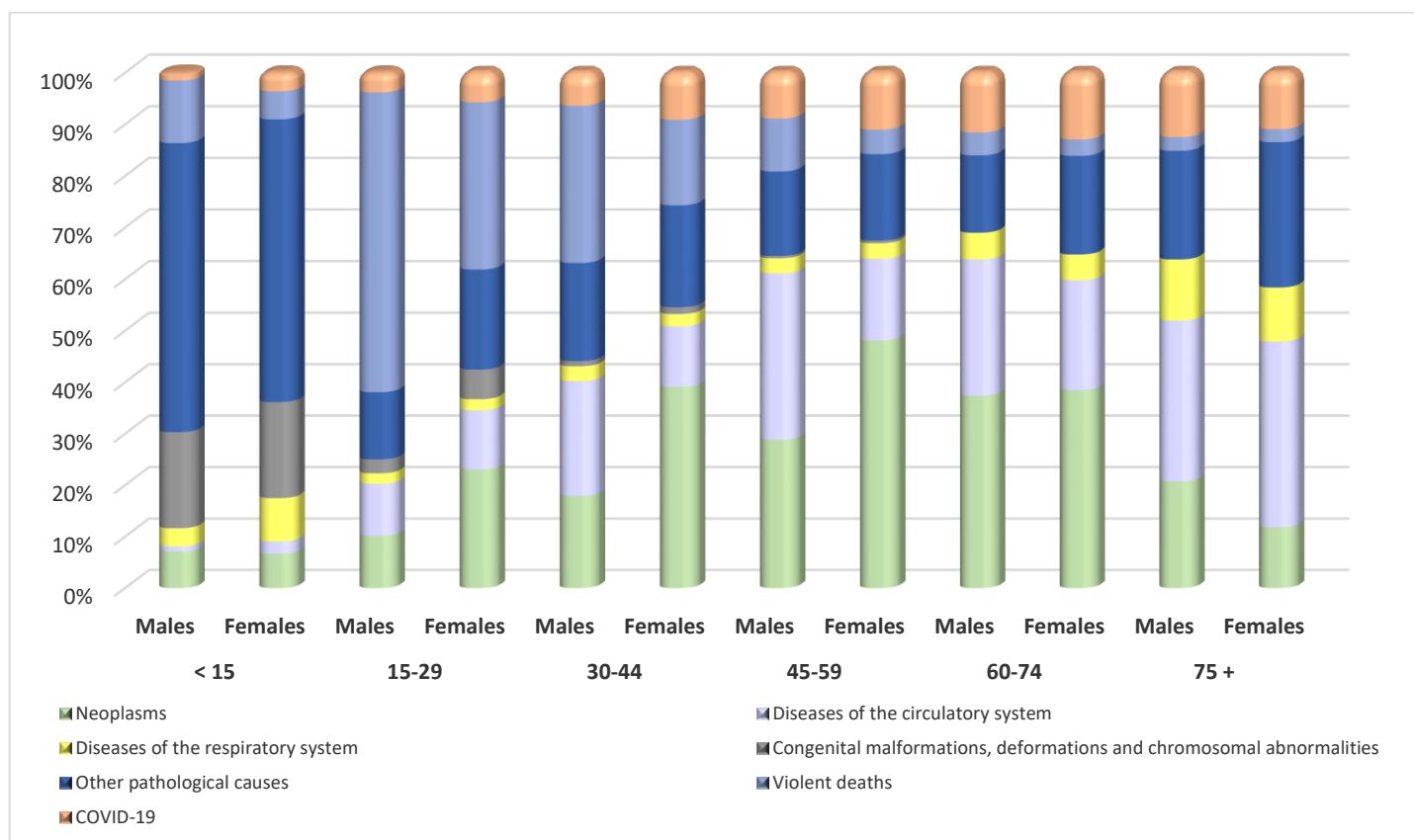


Table 4. Deaths by month of occurrence and cause of death, 2022

Month	Total deaths per month	Causes of death								
		Certain infectious and parasitic diseases	Neoplasms	Heart diseases	Cerebrovascular diseases	Influenza, pneumonia & other acute lower respiratory infections	Transport accidents	Suicides	COVID-19	Other causes
Total deaths	140,792	3,413	29,532	31,379	11,417	6,539	789	516	16,173	41,034
January	15,036	316	2,528	3,224	1,225	627	61	34	2,999	4,022
February	12,533	209	2,229	2,434	985	519	43	35	2,480	3,599
March	13,173	274	2,436	3,049	1,123	691	38	44	1,853	3,665
April	11,864	214	2,338	2,599	944	600	64	54	1,772	3,279
May	10,658	229	2,507	2,403	895	570	68	53	696	3,237
June	10,417	249	2,558	2,335	902	526	68	46	434	3,299
July	12,356	336	2,658	2,643	998	629	90	53	1,376	3,573
August	11,923	390	2,400	2,602	887	565	62	43	1,392	3,582
September	9,651	311	2,363	2,145	752	409	77	42	579	2,973
October	10,179	273	2,476	2,334	846	398	87	42	737	2,986
November	10,807	274	2,465	2,614	865	443	70	41	872	3,163
December	12,195	338	2,574	2,997	995	562	61	29	983	3,656

Table 5. Deaths caused by COVID-19 disease by main pre-existing conditions, age group and sex, 2022

Pre-existing condition (comorbidity)	Total COVID-19 deaths per cause	Deaths by age group and sex							
		Under 45		45-59		60-74		75 and over	
		Males	Females	Males	Females	Males	Females	Males	Females
Total COVID-19 deaths	16,173	104	63	495	296	1,908	1,167	5,851	6,289
Without pre-existing condition	4,743	42	24	214	91	530	355	1,615	1,872
Diseases of the circulatory system	4,320	7	1	44	9	336	151	1,724	2,048
Neoplasms	2,468	9	15	102	97	492	300	896	557
Endocrine, nutritional and metabolic diseases	1,163	8	8	48	38	184	136	342	399
Diseases of the respiratory system	961	1	1	13	8	108	57	452	321
Mental and behavioural disorders	792	10	3	13	1	41	32	244	448
Diseases of the nervous system	590	10	3	23	18	69	46	217	204
Diseases of the genitourinary system	456	0	1	4	10	45	30	207	159
Diseases of the digestive system	200	3	2	14	9	49	11	48	64
Diseases of the musculoskeletal system and connective tissue	136	1	1	2	10	18	31	15	58
Other pathological causes	153	13	2	13	5	17	15	37	51
External causes of morbidity	191	0	2	5	0	19	3	54	108

Graph 5. Percentage distribution of deaths caused by COVID-19 disease by main pre-existing conditions, in total COVID-19 deaths, by age group and sex, 2022

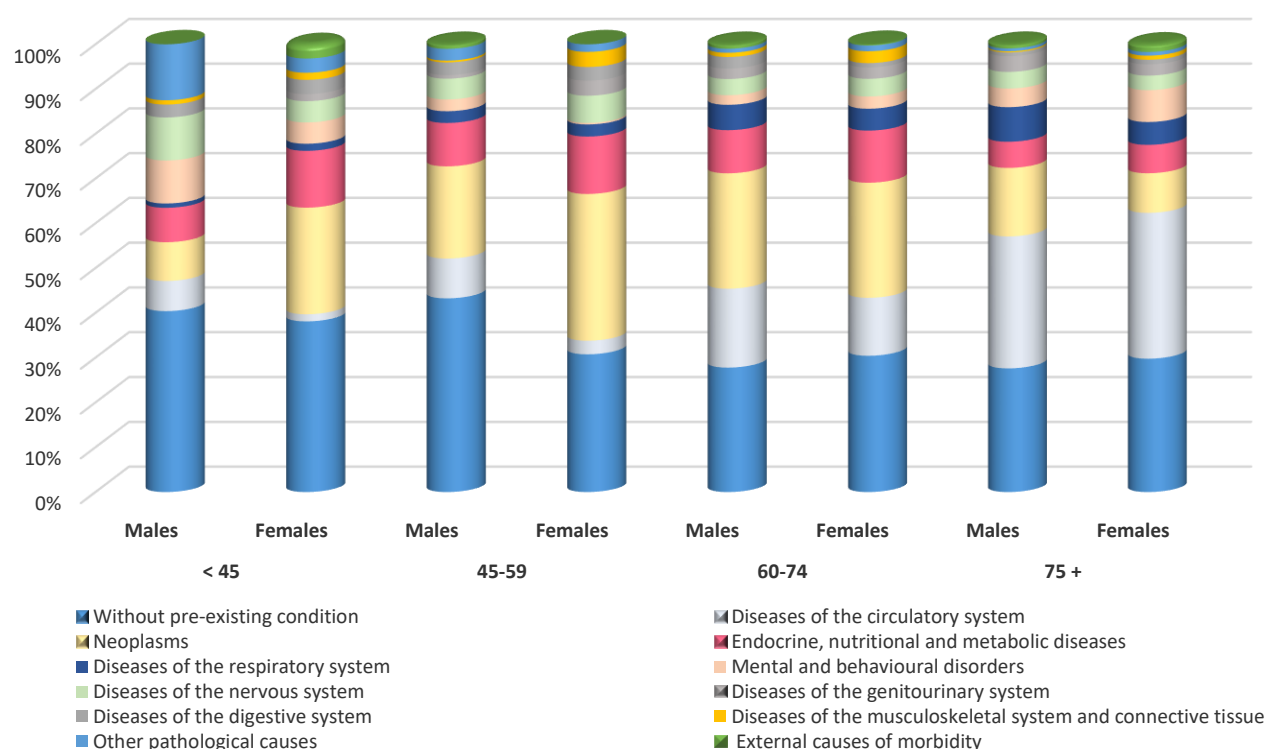
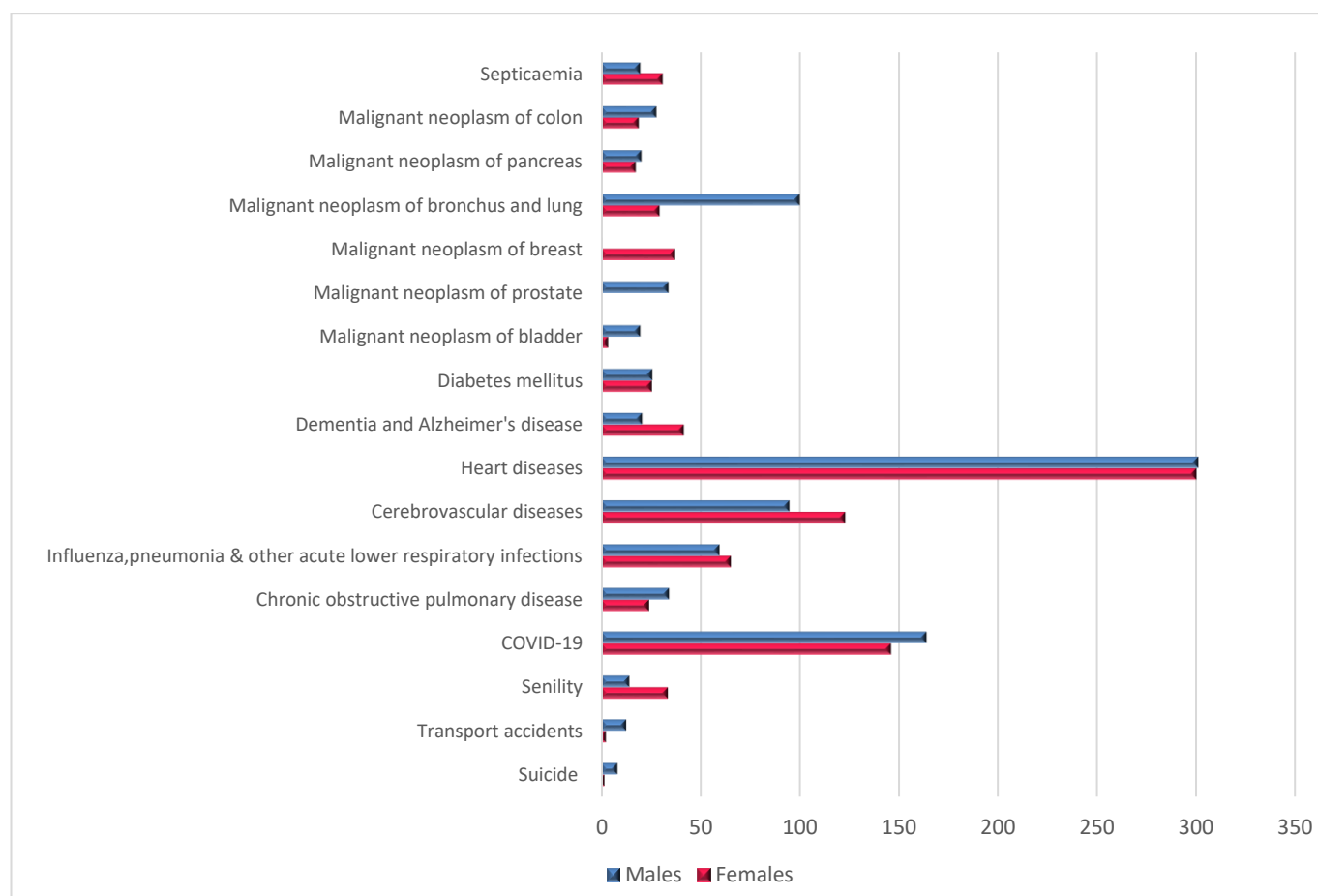


Table 6. Cause-specific mortality by sex, for important categories of causes of death, 2022

Causes of Death	Total	Males	Females
Septicaemia	25.5	19.7	31.1
Malignant neoplasm of colon	23.4	27.9	19.1
Malignant neoplasm of pancreas	18.9	20.3	17.5
Malignant neoplasm of bronchus and lung	64.1	100.1	29.7
Malignant neoplasm of breast	19.5	0.8	37.5
Malignant neoplasm of prostate	16.6	34.0	0.0
Malignant neoplasm of bladder	11.5	19.7	3.6
Diabetes mellitus	25.8	25.8	25.7
Dementia and Alzheimer's disease	31.5	20.7	41.8
Heart diseases	300.6	300.8	300.4
Cerebrovascular diseases	109.4	94.9	123.3
Influenza, pneumonia & other acute lower respiratory infections	62.6	59.7	65.5
Chronic obstructive pulmonary disease	29.2	34.3	24.3
COVID-19	154.9	163.7	146.5
Senility	24.3	14.3	33.8
Transport accidents	7.6	12.8	2.6
Suicide	4.9	8.3	1.7

Graph 6. Cause-specific mortality by sex, for important categories of causes of death, 2022



**Table 7. Cause-specific mortality by main cause of death and NUTS2 Region of the usual residence
of the deceased, 2022***

Causes of Death	Anatoliki Makedonia and Thraki	Kentriki Makedonia	Dytiki Makedonia	Thessalia	Ipeiros	Ionía Nisia	Dytiki Elláda	Stereá Elláda	Peloponnisos	Attiki	Voreio Aigaio	Notio Aigaio	Kriti
Overall cause-specific mortality	1,494.6	1,398.0	1,530.9	1,481.8	1,427.9	1,446.6	1,437.9	1,511.5	1,589.8	1,230.5	1,328.8	989.8	1,130.5
Certain infectious and parasitic diseases	17.5	29.9	32.5	46.1	45.8	60.5	34.6	29.5	35.8	31.4	37.5	17.1	34.0
Neoplasms	305.8	299.4	318.2	308.0	299.2	287.9	284.1	287.3	311.2	269.3	253.7	224.6	242.3
Diseases of the circulatory system, of which:	563.4	439.5	532.0	431.4	498.0	417.8	393.0	531.0	514.0	379.8	382.1	307.4	326.8
<i>Heart diseases</i>	411.0	305.0	378.4	294.7	321.5	286.4	257.9	372.3	366.8	277.0	264.0	220.9	234.4
<i>Cerebrovascular diseases</i>	139.0	120.4	139.2	121.7	161.5	112.2	122.5	144.6	131.1	87.8	109.4	75.8	77.8
Diseases of the respiratory system	120.9	104.5	106.3	137.6	107.6	149.6	170.3	127.2	162.7	125.1	138.7	87.7	127.4
Other pathological causes	289.6	299.2	313.0	330.1	276.0	349.4	297.9	308.2	317.5	241.2	326.2	226.4	245.2
Violent deaths	48.2	51.7	49.2	51.5	53.3	51.2	49.5	56.2	51.9	44.5	52.9	39.7	47.0
<i>Transport accidents</i>	8.0	5.4	4.4	6.1	6.9	12.3	11.0	10.1	9.7	5.9	8.7	10.1	10.1
<i>Falls</i>	8.4	13.9	13.1	15.9	14.1	9.8	10.7	15.2	11.9	13.1	14.4	7.9	10.7
<i>Accidental drowning and submersion</i>	2.0	2.0	1.2	2.0	2.5	4.4	3.3	4.0	2.2	3.2	4.6	2.4	1.6
<i>Accidental poisoning by and exposure to noxious substances</i>	2.5	3.0	1.2	1.6	2.2	2.0	2.8	3.8	1.5	2.6	2.1	1.2	3.4
<i>Other accidents</i>	14.1	15.8	14.7	15.2	11.0	12.3	9.8	13.1	13.4	8.5	10.3	7.6	10.3
<i>Suicide</i>	4.6	4.1	5.2	4.5	10.0	5.4	6.2	4.0	5.8	4.4	5.1	4.3	6.6
<i>Homicide, assault</i>	1.6	0.6	0.4	0.3	0.9	1.0	0.9	0.4	0.7	0.7	1.0	1.5	1.1
<i>Other external causes</i>	7.0	6.9	9.1	5.7	5.6	3.9	4.8	5.7	6.5	6.1	6.7	4.6	3.2
COVID-19	149.2	173.8	179.7	177.2	148.0	130.4	208.5	172.1	196.8	139.3	137.7	86.8	107.8

*Deaths of foreign residents, as well as of those whose usual residence was unknown, are not included.

EXPLANATORY NOTES

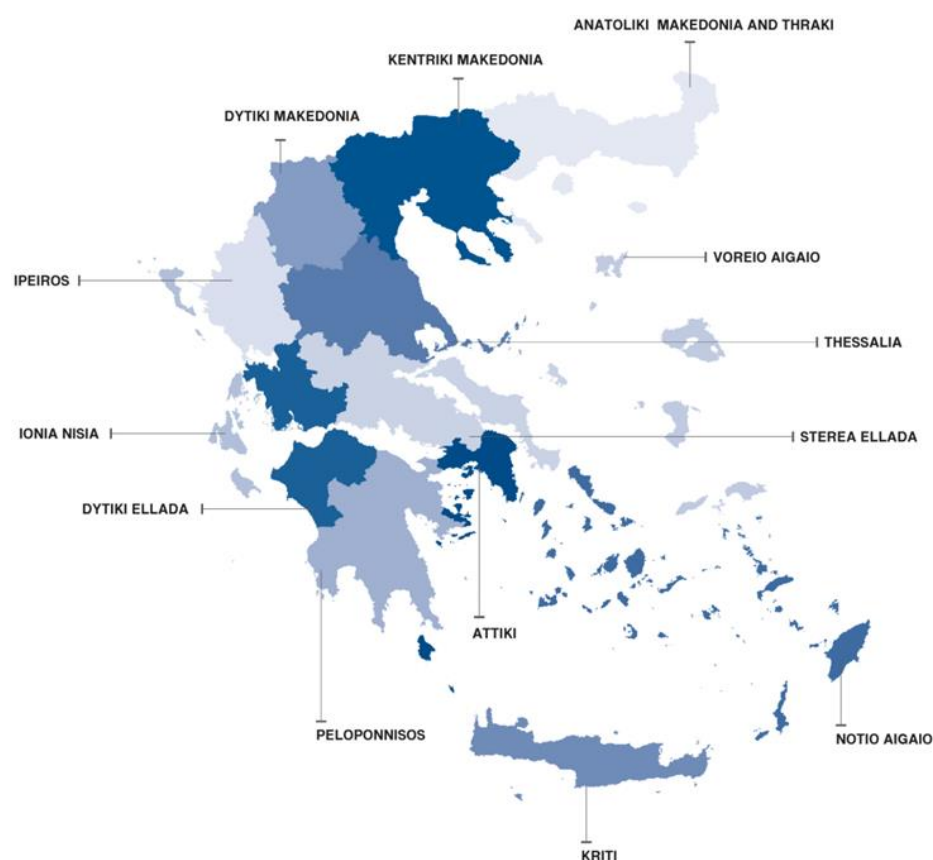
Vital Statistics	Data on the causes of death are part of the Vital Statistics Survey, which is conducted in its current form since 1956. In the context of the survey, individual data on vital events (births, deaths, marriages, registered partnerships and divorces) are drawn, on a monthly basis, from civil registry acts submitted by the Municipal Authorities. From 1938 onwards, data on the causes of death are compiled based on death certificates filled in by medical practitioners or forensic pathologists. As regards violent or sudden deaths, where the cause of death is not specified and more research is needed, data on the causes of death are collected through the Forensic Medicine Authorities. The survey produces statistical results on a yearly basis. Annual data are announced no later than two years after the reference year according to Commission Regulation (EU) No 328/2011.
Legal Framework	The survey is fully harmonized with the European statistical practice: Regulation (EC) No 1338/2008 of the European Parliament and of the Council on "Community statistics on public health and health and safety at work" and Implementing Commission Regulation (EU) No 328/2011, as regards "statistics on causes of death". The survey is governed by Law 344/76 concerning the "Registration of vital events" which lays down the obligations of the Civil Register Offices to collect and then to transmit the data, as well as by Law 3832/2010 on the "Hellenic Statistical System, Establishment of the Hellenic Statistical Authority as an independent authority", as in force.
Coverage	The survey is exhaustive and covers all deaths that have occurred in the Greek territory. Cases of refugees/migrants who died while border-crossing before being registered in the Country or have drowned in Greek territorial waters, are not included in the national data on the Causes of Death.
Reference Period	1/1/2022-31/12/2022.
Definitions	<p>Death: means the permanent disappearance of all evidence of life at any time after live birth has taken place.</p> <p>Main or underlying cause of death: pursuant to the 10th Revision of the International Classification of Diseases (ICD-10) of the World Health Organization (WHO), is the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which caused the fatal injury.</p> <p>Cause-Specific mortality: the rate refers to the number of deaths assigned to a specific cause during a given time interval divided by the population in the middle of the year 2022, per 100,000 inhabitants, which is estimated at 10,437,830.</p>
Methodology	<p>Vital statistics data, after having been collected from the Civil Register Offices, undergo the necessary quality checks and statistics on births, deaths, marriages, registered partnerships and divorces are compiled on an annual basis. All causes of death are coded at a central level by a single team of coders to ensure internal coherence. From 2014 onwards, ELSTAT applies the 4-digit ICD-10 Classification of Diseases, 2008 version. The time series up to 2014 are available in the 4-digit ICD-9 Classification of Diseases. Data for the years 2014-2016 are available in both ICD-9 and ICD-10. From 2017 onwards, data are available only in ICD-10.</p> <p>According to the International Guidelines for certification and classification (coding) of COVID-19 as cause of death of the World Health Organization, a death due to COVID-19 is defined for surveillance purposes as a death resulting from a clinically compatible illness, in a probable or confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID disease (e.g. trauma). There should be no period of complete recovery from COVID-19 between illness and death. A death due to COVID-19 may not be attributed to another disease (e.g. cancer), even if there are pre-existing pathological conditions that are suspected of triggering a severe course of COVID-19.</p>

ELSTAT incorporated the additional codes for COVID-19 into the existing 2008 version of ICD-10. According to the International Guidelines of World Health Organization and Eurostat, COVID-19 is classified in Chapter XXII- Codes for special purposes (U00-U99) of the 10th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10), and specifically in the codes U07.1: COVID-19, virus identified and U07.2: virus not identified for the clinically or epidemiologically diagnosed cases, the possible cases and the suspected cases of COVID-19.

Comments It should be noticed that in Tables 1, 3 and 7, the subcategory “other external causes” of “violent deaths” includes deaths due to misadventures to patients during surgical and medical care, deaths in cases where an investigation by a medical or legal authority has not determined whether the injuries are accidental, suicidal or homicidal, deaths caused by injuries inflicted by law-enforcing agents (including military) on duty while attempting to enforce the law and deaths caused by injuries during war operations.

Geographical Classification Geographical classification is based on the Nomenclature of Territorial Units for Statistics (NUTS).

Map of the Regions (NUTS2) of Greece



References More information (tables, methodology) concerning Vital Statistics is available on the website of ELSTAT: <https://www.statistics.gr/>, at the link Statistics, Population and Social Conditions, Demography, Deaths-Causes of death (ICD-9) and Deaths-Causes of death (ICD-10).