

Piraeus, 23 February 2024

Causes of Death: 2021

The Hellenic Statistical Authority (ELSTAT) announces statistical data on the causes of death for the year 2021. 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 2021, deaths amounted to 143,904¹ (73,410 men and 70,494 women), recording an increase of 9.8%, in comparison to the 131,025 deaths (66,162 men and 64,863 women) recorded in 2020 (Graph 1).
- The main causes of death in 2021 were diseases of the circulatory system with 46,607 deaths, followed by neoplasms with 30,675 deaths, whereas deaths caused by diseases of the respiratory system amounted to 13,078 (Table 1, Graph 2).
- Deaths caused by COVID-19 amounted to 16,343² (8,878 men and 7,465 women) in 2021. Most of the deaths were recorded in the age group 75 years and over (9,942 deaths), followed by the age groups 60-74 years and 45-59 years with 4,669 and 1,464 deaths, respectively. In the age group under 15 years, 2 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 40.5% of the COVID-19 deaths (6,627 deaths), whereas for the 59.5% (9,716 deaths) there was reference to a preexisting condition (comorbidity). The most common pre-existing conditions of the deceased by COVID-19 were diseases of the circulatory system, endocrine, nutritional and metabolic diseases and neoplasms, with 25.8% (4,213 deaths), 9.3% (1,521 deaths) and 9.0% (1,472 deaths), respectively (Table 5, Graph 5).
- In comparison to previous years, the share of deaths caused by diseases of the circulatory system rose 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 up to 32.4% in 2021. The corresponding share of deaths caused by neoplasms rose from 4.1% in 1938 to 11.7% in 1956 and up to 21.3% in 2021. On the contrary, deaths caused by infectious and parasitic diseases, which in 1938 accounted for 18.4% of the total deaths, dropped significantly to 2.3% in 2021 (Table 2, Graph 3). It should be noted that classification changes should be considered when assessing the comparability of data over time.

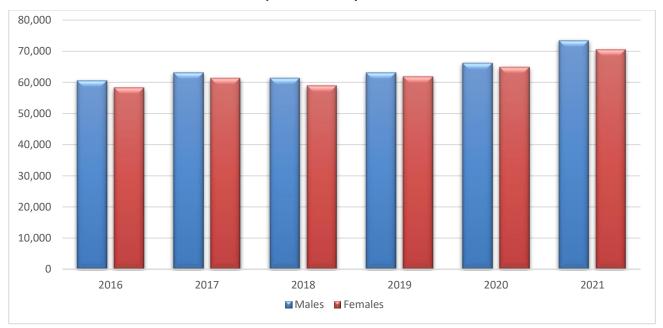
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¹ It is noted that the data on deaths are finalized after the processing of the data on the causes of death, and therefore, the total number of deaths presented in this announcement does not fully coincide with the data presented in the announcement on "Vital Statistics: 2021" of the 4th October 2022.

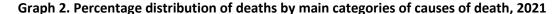
² Data on deaths caused by COVID-19 presented in this announcement have been compiled according to the International Guidelines for certification and classification (coding) of COVID-19 disease as cause of death, of the World Health Organization and may differ from those announced by the National Public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

- The number of deaths due to suicides, as recorded by the Forensic Medicine and Criminal Investigation Authorities, amounted to 467 in 2021, compared to 464 in 2020 (increase of 0.6%). 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 164 in 2016, 27 in 2017, 72 in 2018, 62 in 2019, 59 in 2020 and 84 in 2021.

The data on the causes of death for the year 2021 are presented 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, 2016-2021



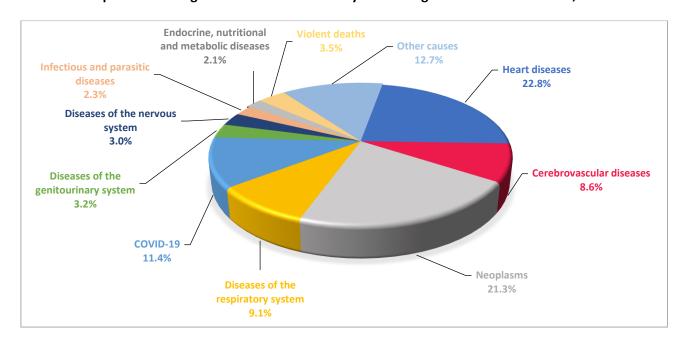


Table 1. Deaths by categories of causes of death, broken down by the most important subcategories, 2016-2021

Causes of death	2016	2017	2018	2019	2020	2021
Total deaths	118,788	124,495	120,291	124,954	131,025	143,904
Certain infectious and parasitic diseases	4,013	4,165	4,054	4,234	3,921	3,244
Neoplasms among which:	30,673	30,567	30,331	30,637	30,829	30,675
Malignant neoplasms of colon, rectosigmoid junction, rectum, anus and anal canal	2,891	2,686	2,681	2,851	2,774	2,775
Malignant neoplasm of liver and intrahepatic bile ducts	1,572	1,422	1,422	1,480	1,384	1,326
Malignant neoplasm of pancreas	1,833	1,882	1,914	1,898	2,000	2,032
Malignant neoplasms of trachea, bronchus and lung	7,127	7,178	7,046	7,117	7,014	6,959
Malignant neoplasm of breast	2,191	2,187	2,201	2,261	2,219	2,269
Malignant neoplasm of prostate	1,646	1,688	1,711	1,706	1,785	1,848
Diseases of the blood and blood-forming organs and certain	271	332	263	340	338	389
disorders involving the immune mechanism Endocrine, nutritional and metabolic diseases among which:	2,006	2,464	2,509	2,740	2,767	3,035
Diabetes mellitus	1,753	2,122	2,220	2,384	2,401	2,580
Mental and behavioural disorders among which:	1,401	1,827	1,940	2,256	2,658	3,215
Dementia	1,244	1,624	1,720	1,949	2,280	2,753
Diseases of the nervous system among which:	3,235	3,767	3,652	3,546	4,102	4,274
Parkinson disease	1,385	1,651	1,609	1,560	1,474	1,304
Alzheimer's disease	600	645	545	504	514	520
Diseases of the eye and adnexa	0	0	0	0	0	3
Diseases of the ear and mastoid process	1	0	1	2	1	0
Diseases of the circulatory system among which:	44,164	46,942	44,590	44,234	45,741	46,607
Heart diseases	28,917	31,618	30,526	29,804	31,275	32,749
Cerebrovascular diseases	13,779	13,797	12,574	12,973	13,022	12,437
Diseases of the respiratory system among which:	13,809	13,847	12,668	13,591	12,576	13,078
Influenza	135	93	36	139	128	0
Pneumonia & other acute lower respiratory infections	6,535	6,766	6,145	6,608	6,038	6,188
Chronic lower respiratory diseases	2,976	3,260	3,029	3,244	3,047	3,285
Diseases of the digestive system	3,500	3,617	3,544	3,585	3,453	3,466
Diseases of the skin and subcutaneous tissue	43	62	54	79	57	51
Diseases of the musculoskeletal system and connective tissue	310	318	352	408	418	592
Diseases of the genitourinary system	3,276	3,578	3,544	3,866	4,275	4,599
Pregnancy, childbirth, and the puerperium	6	10	4	6	3	5
Certain conditions originating in the perinatal period	219	159	173	195	168	199
Congenital malformations, deformations and chromosomal abnormalities	238	213	184	196	226	179
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	7,561	8,236	7,910	10,435	9,712	8,884
External causes of mortality-Violent deaths	4,062	4,391	4,518	4,604	4,752	5,066
Transport accidents	1,013	917	865	840	699	726
Falls	658	902	918	1,063	1,395	1,436
Accidental drowning and submersion	405	347	367	363	272	340
Accidental poisoning by and exposure to noxious substances	238	268	268	276	277	291
Other accidents	704	888	923	848	933	1,020
Suicide	484	523	567	530	464	467
Homicide, assault	87	89	109	93	86	91
Other external causes	473	457	501	591	626	695
COVID-19	-	-	-	-	5,028	16,343

Table 2. Main categories of causes of death, years 1938, 1956, 1981, 1991, 2001, 2011 and 2021

Causes of death	1938	1956	1981	1991	2001	2011	2021
Total deaths	93,766	59,460	86,261	95,498	102,559	111,099	143,904
Diseases of the circulatory system	9,347	14,893	38,193	49,450	51,515	47,741	46,607
Neoplasms	3,831	6,928	16,642	19,968	24,408	27,357	30,675
Diseases of the respiratory system	17,849	3,290	6,100	5,316	7,023	10,335	13,078
Infectious and parasitic diseases	17,283	3,185	778	558	619	952	3,244
Violent deaths	2,687	2,821	4,798	4,187	4,400	3,460	5,066
Other causes	42,769	28,343	19,750	16,019	14,594	21,254	45,234*

^{*} Deaths caused by COVID-19 are included

Graph 3. Percentage distribution of main categories of causes of death, years 1938, 1956, 1981, 1991, 2001, 2011 and 2021

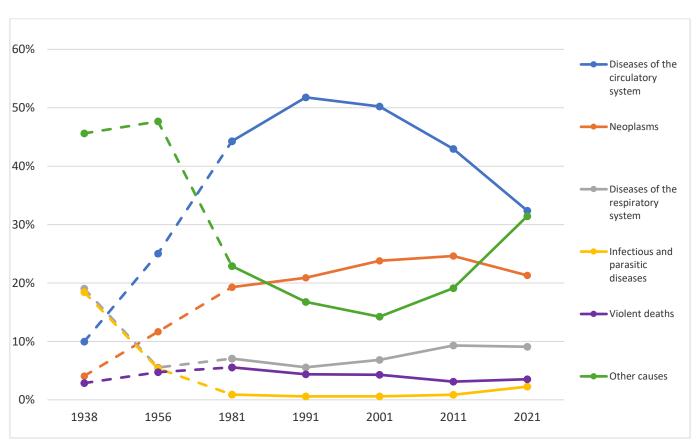


Table 3. Deaths by main categories of causes of death, by age group and sex, 2021

	T I	Deaths by age group and sex												
Causes of death	Total deaths	under 15		15-29		30-44		45-59		60-74		75 an	ıd over	
	per cause	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	
Total deaths	143,904	244	180	442	143	1,456	589	6,242	3,050	18,059	10,044	46,967	56,488	
Certain infectious and parasitic diseases	3,244	0	6	5	3	26	6	78	35	216	163	998	1,708	
Neoplasms among which:	30,675	24	14	38	28	227	240	1,666	1,394	6,467	3,611	10,049	6,917	
Malignant neoplasm of colon	2,416	0	0	0	2	21	11	106	88	398	245	855	690	
Malignant neoplasm of bronchus and lung	6,954	0	0	0	1	28	18	500	217	2,441	658	2,411	680	
Malignant neoplasm of breast	2,269	0	0	0	2	1	79	3	314	16	603	19	1,232	
Malignant neoplasm of prostate	1,848	0	0	0	0	0	0	22	0	301	0	1,525	0	
Malignant neoplasm of brain	1,115	7	7	7	7	32	18	110	82	252	187	207	199	
Leukaemia	1,110	3	2	6	3	17	7	42	31	202	104	401	292	
Diseases of the circulatory system among which:	46,607	4	1	56	15	351	101	1,865	489	4,664	2,083	15,586	21,392	
Heart diseases	32,749	3	1	48	13	288	76	1,504	355	3,478	1,421	10,984	14,578	
Cerebrovascular diseases	12,437	1	0	7	2	47	20	259	111	917	578	4,084	6,411	
Diseases of the respiratory system	13,078	11	8	7	3	42	16	206	74	949	555	5,336	5,871	
Congenital malformations, deformations and chromosomal abnormalities	179	40	32	6	11	8	6	30	18	13	14	1	0	
Other pathological causes	28,712	136	106	59	29	196	89	861	431	2,190	1,561	8,939	14,115	
Violent deaths	5,066	28	12	252	43	440	61	564	117	649	299	1,249	1,352	
Transport accidents	726	6	3	158	24	122	14	141	15	96	24	84	39	
Falls	1,436	4	0	5	3	14	0	37	3	69	47	520	734	
Accidental drowning and submersion	340	4	1	8	0	17	3	27	12	80	44	99	45	
Accidental poisoning by and exposure to noxious substances	291	0	1	18	3	112	16	89	9	17	10	6	10	
Other accidents	1,020	10	4	17	1	45	9	98	20	161	66	282	307	
Suicide	467	1	1	27	7	80	11	104	21	98	22	79	16	
Homicide, assault	91	1	1	9	4	19	4	15	9	11	2	6	10	
Other external causes	695	2	1	10	1	31	4	53	28	117	84	173	191	
COVID-19	16,343	1	1	19	11	166	70	972	492	2,911	1,758	4,809	5,133	

Graph 4. Percentage distribution of deaths by main categories of causes of death, on total deaths by age group and sex, 2021

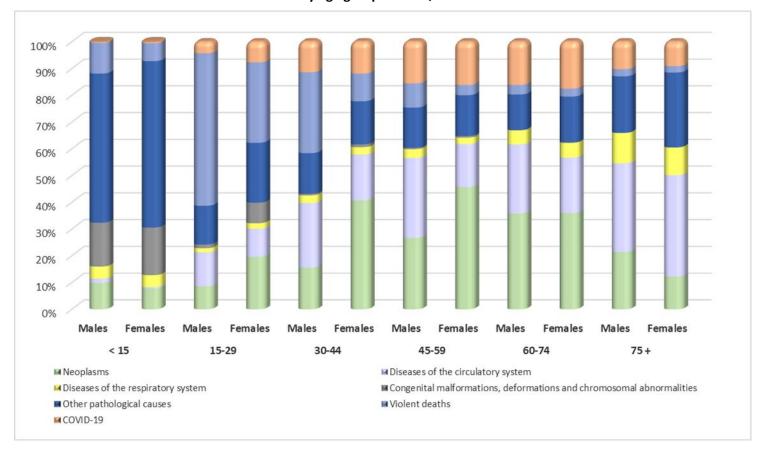


Table 4. Deaths by month of occurrence and cause of death, 2021

		Causes of death											
Month	Total deaths per month	Certain infectious and Neoplasms parasitic diseases		Heart diseases	Cerebrovascular diseases	Influenza, pneumonia & other acute lower respiratory infections	Transport accidents	Suicides	COVID-19	Other causes			
Total deaths	143,904	3,244	30,675	32,749	12,437	6,188	726	467	16,343	41,075			
January	11,596	138	2,513	3,207	1,257	436	50	33	931	3,031			
February	10,159	241	2,277	2,710	951	341	29	27	722	2,861			
March	12,160	175	2,650	2,969	1,160	438	52	42	1,633	3,041			
April	12,204	230	2,457	2,933	936	312	42	33	2,273	2,988			
May	11,674	270	2,513	2,535	971	531	73	52	1,629	3,100			
June	10,947	251	2,573	2,465	995	497	58	51	598	3,459			
July	12,065	336	2,728	2,706	1,054	570	72	45	290	4,264			
August	13,480	339	2,850	2,988	1,205	799	85	37	804	4,373			
September	10,901	297	2,451	2,177	868	516	81	48	1,113	3,350			
October	11,211	331	2,522	2,401	915	529	64	35	1,201	3,213			
November	12,932	297	2,552	2,624	959	556	66	27	2,361	3,490			
December	14,575	339	2,589	3,034	1,166	663	54	37	2,788	3,905			

Table 5. Deaths caused by COVID-19 disease by main pre-existing conditions, age group and sex, 2021

	Total	Deaths by age group and sex											
Pre-existing condition (comorbidity)	COVID-19 deaths per	Un	der 45	4:	5-59	60	0-74	75 and over					
, , , , ,	cause	Males	Females	Males	Females	Males	Females	Males	Females				
Total deaths due to COVID-19	16,343	186	82	972	492	2,911	1,758	4,809	5,133				
Without pre-existing condition	6,627	102	43	535	225	1,231	818	1,695	1,978				
Diseases of the circulatory system	4,213	12	2	118	38	668	304	1,491	1,580				
Endocrine, nutritional and metabolic diseases	1,521	25	13	123	95	305	230	347	383				
Neoplasms	1,472	12	9	91	59	352	168	468	313				
Diseases of the respiratory system	740	2	1	22	18	119	75	294	209				
Mental and behavioural disorders	417	4	3	8	6	26	16	140	214				
Diseases of the nervous system	381	9	4	16	14	51	23	127	137				
Diseases of the genitourinary system	340	3	0	11	9	60	29	126	102				
Diseases of the digestive system	182	5	2	20	2	37	23	38	55				
Diseases of the musculoskeletal system and connective tissue	176	2	2	5	14	20	42	27	64				
Other pathological causes	135	8	3	20	11	27	23	15	28				
External causes of morbidity	139	2	0	3	1	15	7	41	70				

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, 2021

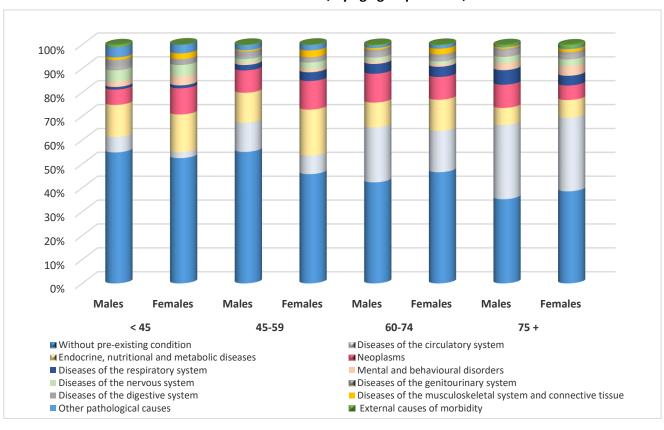


Table 6. Cause-specific mortality by sex, for important categories of causes of death, 2021

Causes of Death	Total	Males	Females
Septicaemia	25.7	20.8	30.3
Malignant neoplasm of colon	23.0	26.8	19.3
Malignant neoplasm of pancreas	19.3	21.4	17.3
Malignant neoplasm of bronchus and lung	66.1	104.6	29.3
Malignant neoplasm of breast	21.6	0.8	41.5
Malignant neoplasm of prostate	17.6	35.9	0.0
Malignant neoplasm of bladder	11.9	20.3	3.9
Diabetes mellitus	24.5	24.5	24.5
Dementia and Alzheimer's disease	31.1	22.9	39.0
Heart diseases	311.4	317.0	306.0
Cerebrovascular diseases	118.3	103.3	132.5
Influenza, pneumonia & other acute lower respiratory infections	58.8	56.7	60.9
Chronic obstructive pulmonary disease	30.8	36.8	25.0
COVID-19	155.4	172.6	138.9
Senility	24.0	14.8	32.8
Transport accidents	6.9	11.8	2.2
Suicide	4.4	7.6	1.5

Graph 6. Cause-specific mortality by sex, for important categories of causes of death, 2021

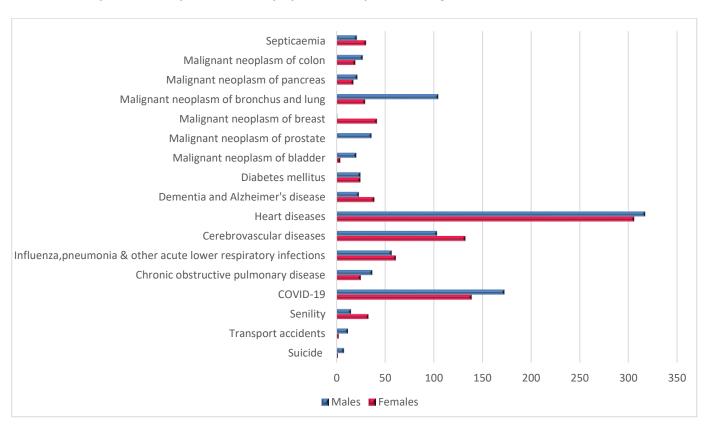


Table 7. Cause-specific mortality by main cause of death and NUTS2 Region of the usual residence, 2021*

Causes of Death	Anatoliki Makedonia and Thraki	Kentriki Makedonia	Dytiki Makedonia	Thessalia	Ipeiros	Ionia Nisia	Dytiki Ellada	Sterea Ellada	Peloponissos	Attiki	Voreio Aigaio	Notio Aigaio	Kriti
Overall cause- specific mortality	1,537.1	1,487.0	1,563.6	1,577.4	1,405.1	1,361.1	1,398.6	1,523.0	1,531.6	1,249.9	1,230.2	993.6	1,114.9
Certain infectious and parasitic diseases	22.9	29.7	27.4	49.6	40.8	44.9	30.3	27.0	35.3	28.2	39.4	17.7	30.9
Neoplasms	293.7	308.4	327.3	322.3	314.7	289.1	299.0	303.5	310.3	279.0	278.8	230.4	251.9
Diseases of the circulatory system among which:	606.7	456.5	565.8	474.6	516.7	419.7	429.8	542.4	527.6	394.5	366.7	322.2	351.4
Heart diseases	440.4	307.8	392.2	323.6	328.7	269.6	284.4	370.8	364.1	291.3	255.2	225.5	254.5
Cerebrovascular diseases	153.8	136.0	157.6	139.5	172.1	134.6	134.2	157.4	147.1	89.1	102.3	84.4	84.8
Diseases of the respiratory system	116.9	107.9	99.3	127.5	115.8	137.5	162.5	132.7	164.5	123.7	128.9	96.6	116.3
Other pathological causes	274.2	286.8	327.3	329.3	294.2	340.3	275.6	318.4	315.3	243.2	309.5	233.8	249.0
Violent deaths	50.0	53.6	44.2	49.5	41.7	50.2	44.4	48.6	57.0	42.5	41.4	41.1	46.5
Transport accidents	6.9	4.8	5.5	7.2	6.2	6.3	7.1	7.6	11.1	6.7	5.6	8.2	6.7
Falls	15.6	19.2	18.0	15.6	10.9	9.3	9.1	13.1	16.4	11.0	16.4	11.3	12.8
Accidental drowning and submersion	1.4	1.8	0.0	2.5	2.2	3.9	3.1	2.5	2.6	2.9	3.6	1.8	2.4
Accidental poisoning by and exposure to noxious substances	2.3	4.5	1.6	1.9	0.9	3.4	2.6	3.5	1.8	2.5	2.0	3.4	1.4
Other accidents	10.3	10.2	8.2	10.4	7.8	12.2	9.4	12.1	12.6	8.1	9.2	7.6	12.8
Suicide	5.0	4.5	4.3	4.6	4.7	9.8	5.5	4.5	3.5	3.8	1.5	3.0	6.6
Homicide, assault	0.4	0.8	2.0	1.0	0.9	1.5	0.9	0.8	0.9	0.9	0.0	0.9	0.5
Other external causes	8.1	7.8	4.7	6.2	8.1	3.9	6.8	4.3	8.1	6.6	3.1	4.9	3.4
*Deaths of foreign	172.7	244.0	172.4	224.7	81.2	79.5	157.1	150.3	121.5	138.7	65.5	51.8	68.9

^{*}Deaths of foreign residents, as well as 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

1/1/2021-31/12/2021.

Definitions

Death: means the permanent disappearance of all evidence of life at any time after live birth has taken place.

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.

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 2021, per 100,000 inhabitants, which is estimated at 10,516,264.

Methodology

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.

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.

Comments

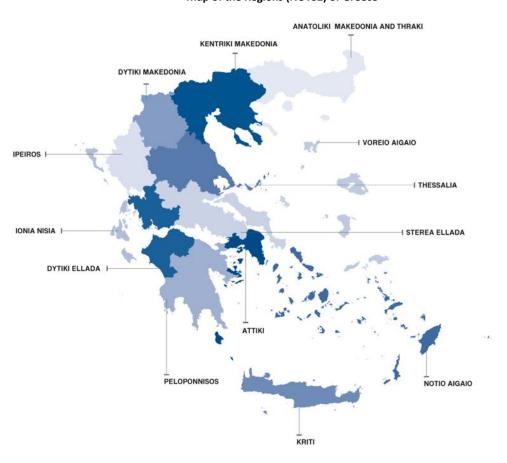
ELSTAT incorporated the additional codes for COVID-19 into the existing 2008 version of ICD-10. According to the International Guidelines of World Health Organization and Eurostat, COVID-19 is classified in Chapter XXII-Codes for special purposes (U00-U99) of the 10th Revision of the International Statistical 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.

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).