



# Annual Mortality Report 2016

## Summary Statistics

- During 2016 there were 3343 deaths in residents of Malta, with a stable trend in the crude mortality rate and a decreasing trend in standardised mortality rate, reflecting the postponement of death to older age groups.
- 70.2% of deaths occurred within a hospital with 53.7% occurring at Mater Dei Hospital.
- Circulatory diseases including heart diseases and stroke accounted for 36.1% of all deaths while cancer deaths accounted for 28.4% of all deaths.
- Trends in major causes of death including heart disease, stroke and diabetes are showing a downward or stable trend, however mortality rates for diabetes in Malta are higher than the EU average.
- Trends in standardised mortality rate due to lung cancer in women, dementia in both sexes and suicide in males are showing an upward trend. However, mortality rates from these causes in Malta is lower than the EU average.
- Causes of death vary with age and gender with external causes of death accounting for a large percentage of deaths in the younger (15-44 years) age groups, cancers dominating the middle-aged groups and circulatory diseases increasing in importance with increasing age. Conditions such as dementia, pneumonia and diabetes are important causes of death in the older age groups.

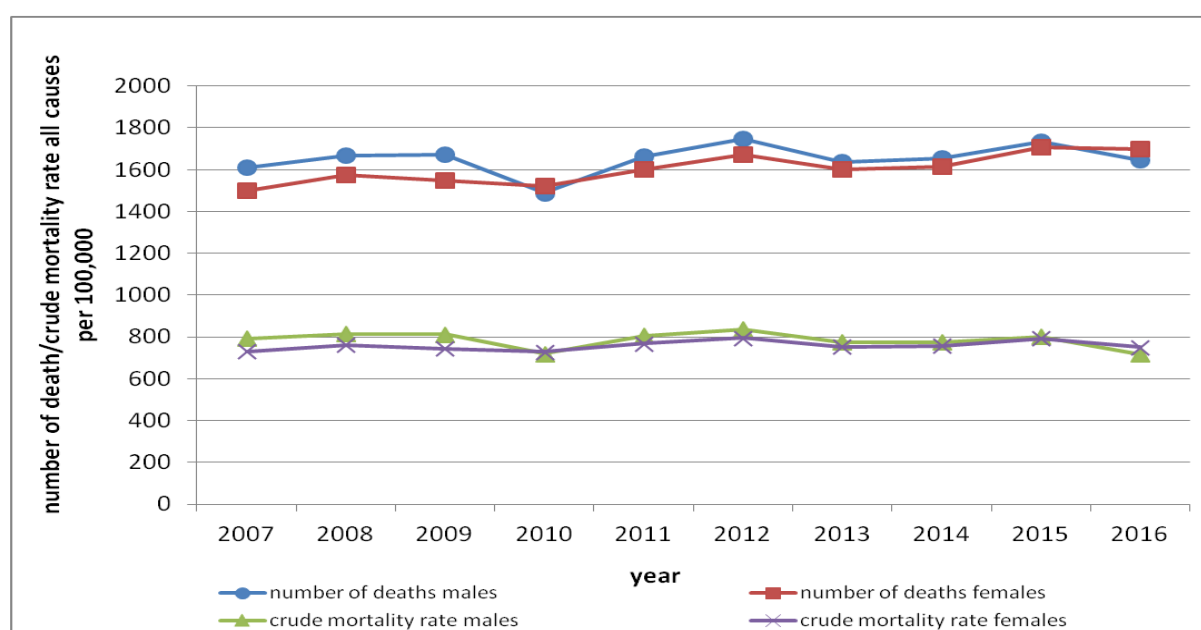
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## Overview

During the year 2016 there were 3343 deaths among residents of the Maltese Islands dying in Malta or abroad. There were 1645 male deaths and 1698 female deaths, a decrease of 89 male and 11 female deaths from 2015. There were also 83 non-residents who died in Malta a decrease of 8 deaths from 2015.

## Trends in the number of deaths and crude mortality rates over time

Over the past 10 years (2007-2016) there has been a very slight increasing trend in the number of deaths in females and stable trends in males. This increasing trend in the number of overall deaths is due to population growth over the years. Infact, the crude mortality rate (total number of deaths by gender divided by total mid-year population by gender) in both males and females has remained stable over the past 10 years (figure 1). Also, usually there are more male than female deaths however in 2016 the number of female deaths outnumbered the number of male deaths.



**Figure 1: Number of deaths and crude mortality rate by gender over 10 years**

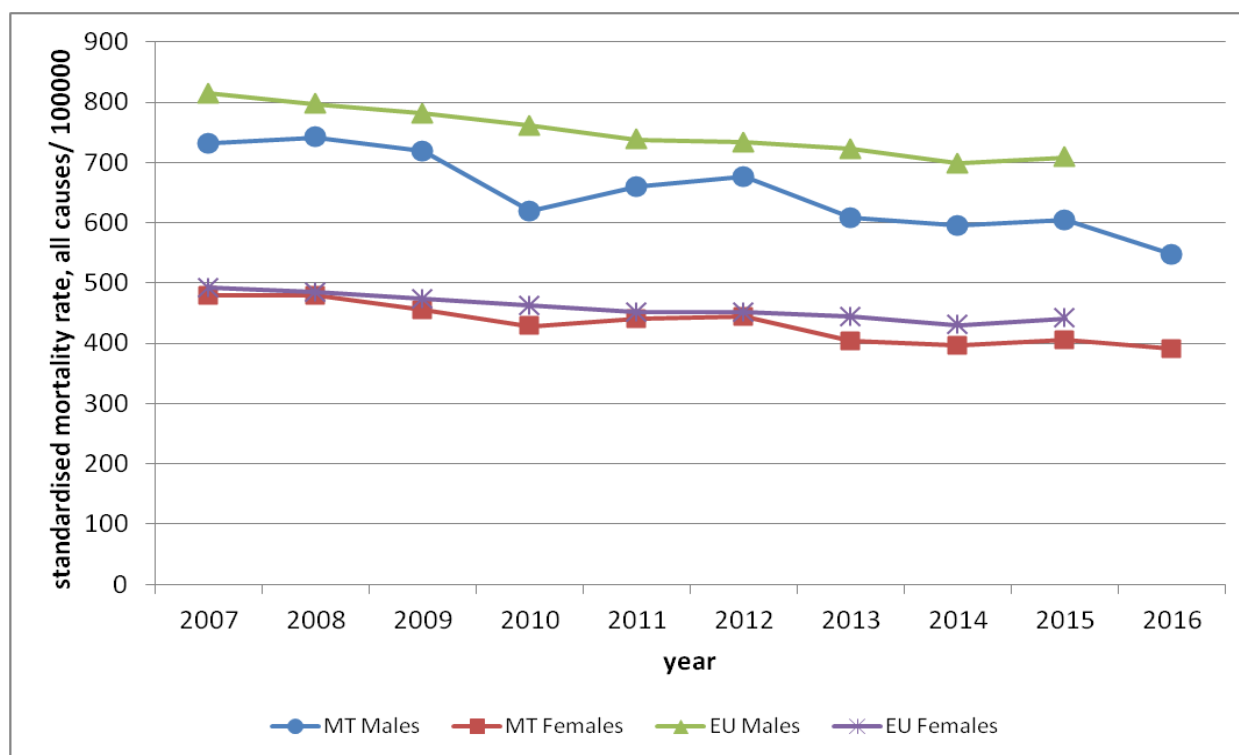
In 2016, the life expectancy at birth for Maltese males was 80.6 years and for females was 84.4 years.<sup>1</sup> The oldest male death recorded in 2016 was 101 years old and the oldest female death was 107 years. The average age at death was 73.1 years in males (median 76 years) and 78.9 years (median 83 years) in females.

<sup>1</sup> Source: National Statistics Office:

[https://nso.gov.mt/en/News\\_Releases/View\\_by\\_Unit/Unit\\_C5/Population\\_and\\_Migration\\_Statistics/Pages/Population%20Revisions.aspx](https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_C5/Population_and_Migration_Statistics/Pages/Population%20Revisions.aspx)

## Standardised mortality rate in Malta compared to the European Union

The trend in the age standardised mortality rate (SMR) in Malta as well as that of the EU average is showing a downward trend in both males and females with rates for males being higher than in females. SMR for men and women in Malta compare favourably with the EU average with rates being lower for Malta than the EU average particularly in men (figure 2).

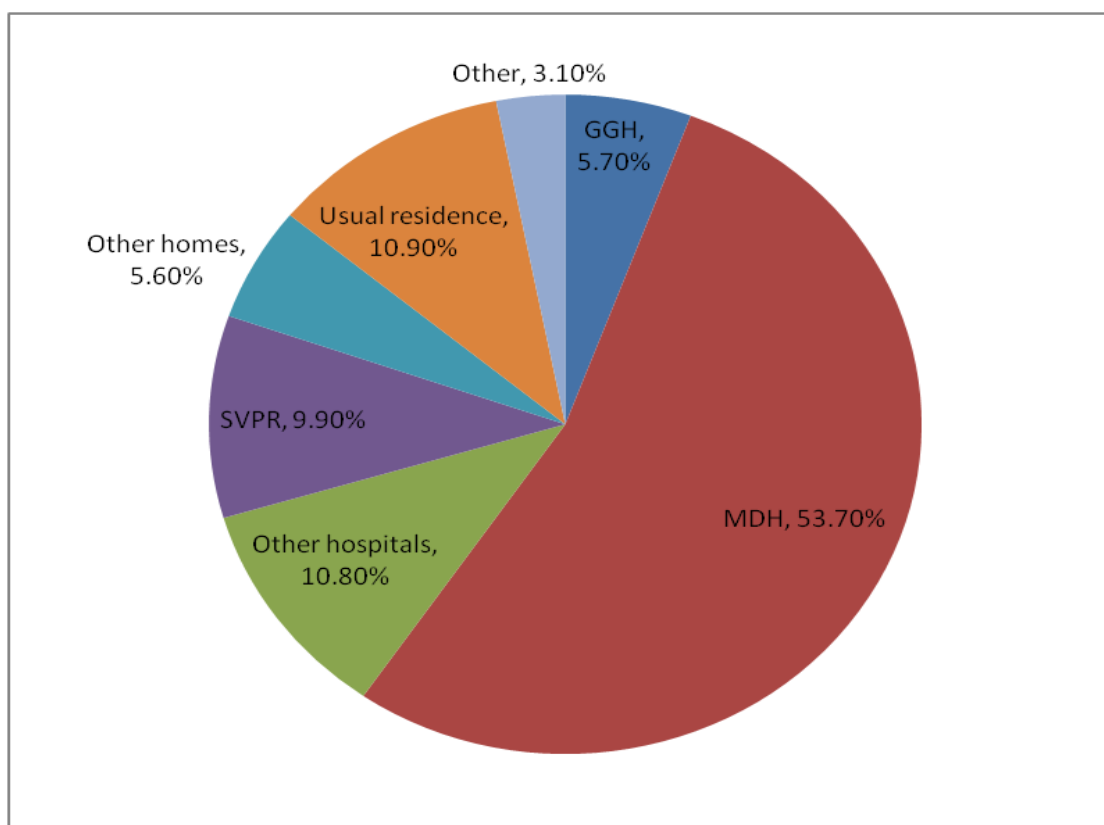


**Figure 2: Trends in standardised mortality rates in males and females all ages in Malta compared to the EU average<sup>2</sup>**

## Distribution by type of place of death

70.2% of all deaths in residents occur within a hospital setting including both private and public hospitals but excluding residential homes (figure 3). The percentage of deaths at Mater Dei Hospital was 53.7% (1797 deaths) compared to 53.8% in 2015.

<sup>2</sup> WHO: <https://gateway.euro.who.int/en/>

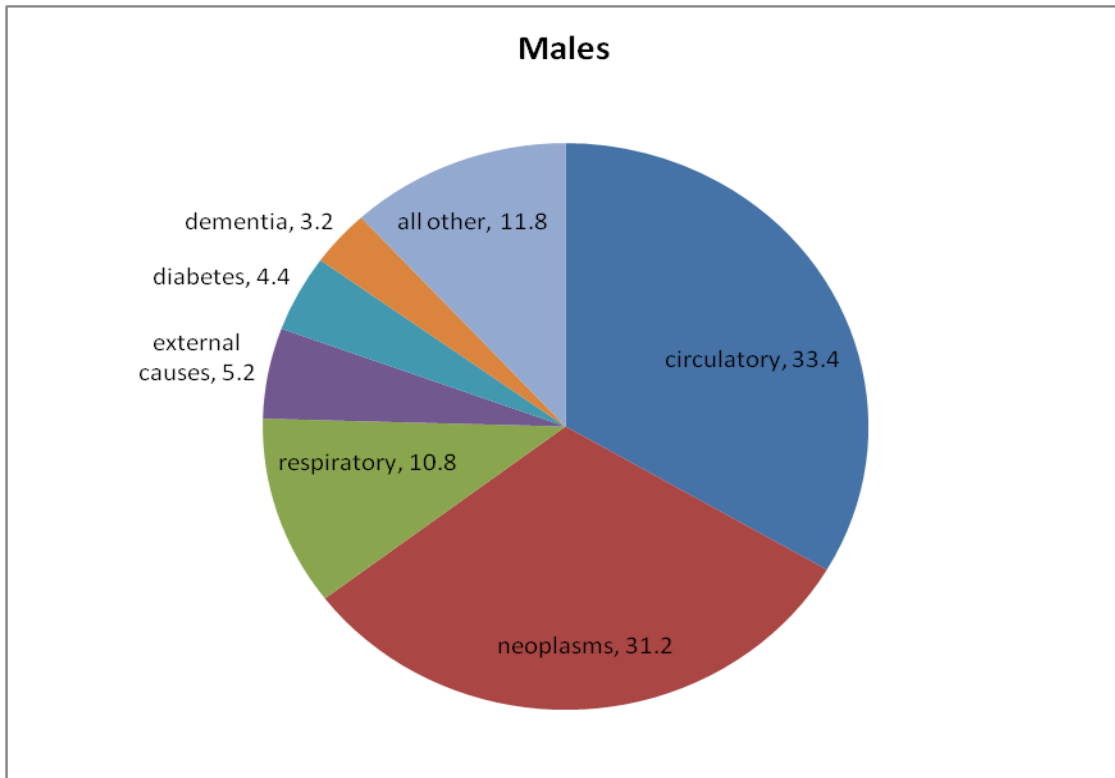


**Figure 3: percentage of deaths in persons of all ages by place of death**

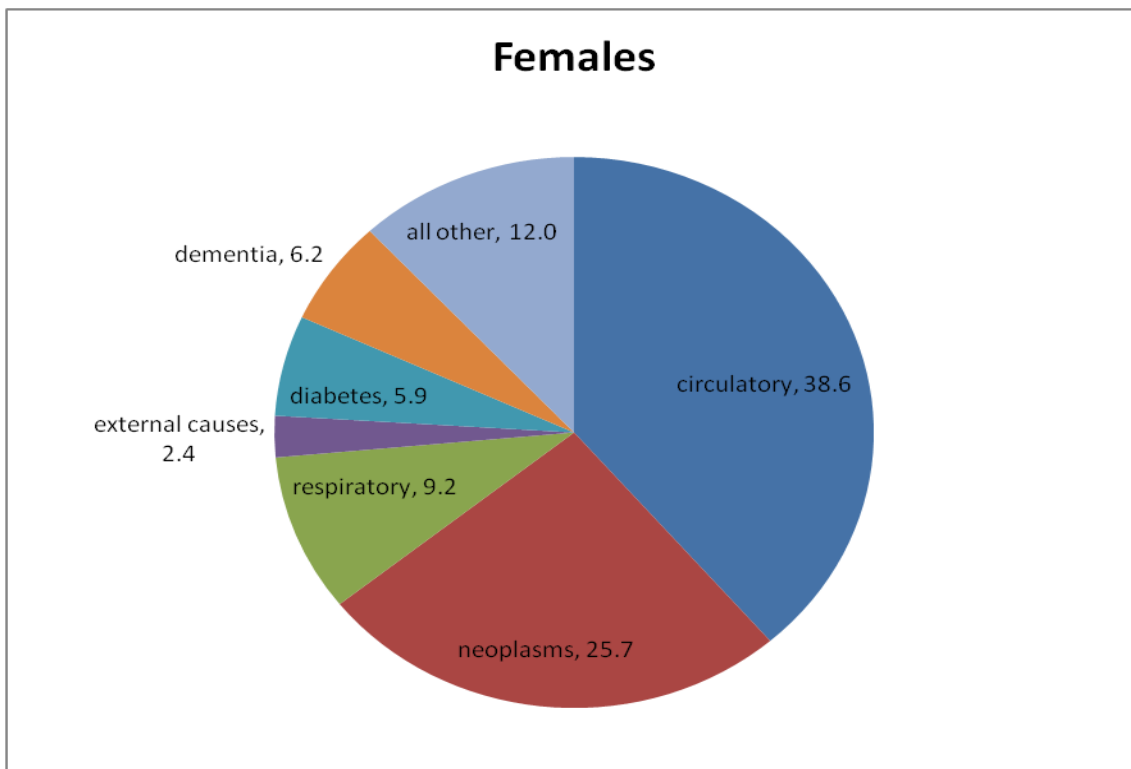
## Causes of death

During 2016 there were 1206 deaths due to diseases of the circulatory system, a decrease of 128 deaths from the year 2015. Diseases of the circulatory system were the leading cause of death and accounted for 36.1% of the total number of deaths in 2016. These included mainly deaths due to ischaemic heart disease, heart failure and stroke. The number of deaths from neoplasms totalled 949 deaths, an increase of 12 deaths from 2015 and accounted for 28.4% of all deaths. It is interesting to note that in males the percentage of deaths due to neoplasms has nearly reached that due to circulatory diseases, but this is not so in females (figures 4,5). There were 335 deaths due to respiratory conditions mainly chronic obstructive airways disease and chest infections. Diabetes as underlying cause of death accounted for 5.1% of all deaths or 172 deaths. It is also an important risk factor for circulatory diseases. Dementia which is an important cause of death in the elderly accounted for 4.7% of all deaths or 158 deaths.

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**Figure 4: Main causes of death in males during 2016**



**Figure 5: Main causes of death in females during 2016**

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## Leading causes of death in males

The main cause of death in males was ischaemic heart disease which accounted for 20% of all male deaths in 2016. Lung cancer is the second most common cause of death in males, accounting for 8% of all male deaths in 2016. Other leading cancer deaths in males included colorectal and pancreatic cancer. In 2016, diabetes and dementia made it to the top ten leading causes of death in males accounting for 4.3% and 3.2% of male deaths respectively.

Cause of death	ICD-code	number of male death	% of male death
Ischaemic heart disease	I20-I25	329	20
Malignant neoplasm of trachea, bronchus and lung	C33-C34	132	8
Cerebrovascular disease	I60-I69	108	6.5
Other heart disease	I26-I51	73	4.4
Diabetes mellitus	E10-E14	72	4.3
Chronic lower respiratory diseases	J40-J47	64	3.9
Pneumonia and other acute lower respiratory infections	J12-J22	68	4.1
Malignant neoplasm of colon, rectum and anus	C18-C21	60	3.6
Malignant neoplasm of the pancreas	C25	42	2.5
Dementia	F01-F03, G30	53	3.2

**Table 1: Leading causes of death in males**

## Leading causes of death in females

Diseases of the circulatory system continued to feature as the leading causes of death in females. Malignant neoplasm of the breast is the leading cause of cancer deaths in females. Dementia, chest infections and diabetes were also important causes of death, especially in older females. Other cancers which feature in the top 10 causes of death in females include colorectal, lung and ovarian.

Cause of death	ICD-10 code	number of female of deaths	% of female deaths
Ischaemic heart disease	I20-I25	330	19.4
Cerebrovascular disease	I60-I69	151	8.9
Other heart diseases	I26-I51	126	7.4
Dementia	F01-F03, G30	105	6.1
Pneumonia and other acute lower respiratory infections	J12-J22	89	5.2
Malignant neoplasm of breast	C50	73	4.2
Diabetes mellitus	E10-E14	100	5.8
Malignant neoplasm of colon, rectum and anus	C18-C21	60	3.5
Malignant neoplasm of trachea, bronchus and lung	C33-C34	52	3.1
Malignant neoplasm of ovary	C56	31	1.8

**Table 2: Leading causes of death in females**

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## Trends in major groups of causes of death

Most major causes of death as described in tables 3 and 4 in males and females of all ages are showing a downward or stable trend in the standardised mortality rate, with the exception of lung cancer in females which is showing an upward trend over the past 10 and 20 years.

Cause of death	Trends over past 10 years (2007-2016)	
	males	females
All causes of death (A00-Y89)	↓	↓
Certain infectious and parasitic diseases (A00-B99)	↑	↑
Malignant neoplasms (C00-C97)	↓	↓
Malignant neoplasm of trachea, bronchus & lung (C33-C34)	↓	↑
Malignant neoplasm of female breast (C50)		↓
Diabetes mellitus (E10-E14)	↔	↔
Dementia (F01,F03)	↓	↔
Diseases of the circulatory system (I00-I99)	↓	↓
Ischaemic heart disease (I20-I25)	↓	↓
Cerebrovascular disease (I60-I69)	↓	↓
Diseases of the respiratory system (J00-J99)	↓	↔
Diseases of the digestive system (K00-K93)	↓	↓
Diseases of the genitourinary system (N00-N99)	↔	↔
External causes of morbidity and mortality (V01-Y89)	↓	↓
Transport accidents (V01-V99, Y85)	↓	↔
Intentional self harm (X60-X84, Y87.0)	↔	↑

**Table 3: 10 year trend in major causes of death in persons of all ages**

Cause of death	Trends over past 20 years (1997-2016)	
	males	females
All causes of death (A00-Y89)	↓	↓
Certain infectious and parasitic diseases (A00-B99)	↓	↓
Malignant neoplasms (C00-C97)	↓	↓
Malignant neoplasm of trachea, bronchus & lung (C33-C34)	↓	↑
Malignant neoplasm of female breast (C50)		↓
Diabetes mellitus (E10-E14)	↔	↔
Dementia (F01,F03)	↑	↑
Diseases of the circulatory system (I00-I99)	↓	↓
Ischaemic heart disease (I20-I25)	↓	↓
Cerebrovascular disease (I60-I69)	↓	↓
Diseases of the respiratory system (J00-J99)	↓	↓
Diseases of the digestive system (K00-K93)	↓	↓
Diseases of the genitourinary system (N00-N99)	↓	↓
External causes of morbidity and mortality (V01-Y89)	↓	↓
Transport accidents (V01-V99, Y85)	↓	↔
Intentional self harm (X60-X84, Y87.0)	↑	↔

**Table 4: Long term trends in major causes of death in persons of all ages**



## Most common cancer deaths

Lung cancer followed by colorectal and pancreatic cancers are the commonest causes of cancer death in both genders combined (table 5). On the other hand, lung cancer is the commonest cause of cancer death in males whilst breast cancer is the commonest cause of cancer death in females.

Commonest cancer deaths	ICD-10 code	Number of death	% of cancer death
Malignant neoplasm of trachea bronchus and lung	C33-C34	184	5.5
Malignant neoplasm of colon and rectum	C18-C21	120	3.6
Malignant neoplasm of pancreas	C25	86	2.5
Malignant neoplasm of breast	C50	73	2.1
Malignant neoplasm of prostate	C61	49	1.4
Malignant neoplasm of ovary	C56	31	0.9

*Table 5: commonest cancer deaths*

## Commonest causes of death by age group

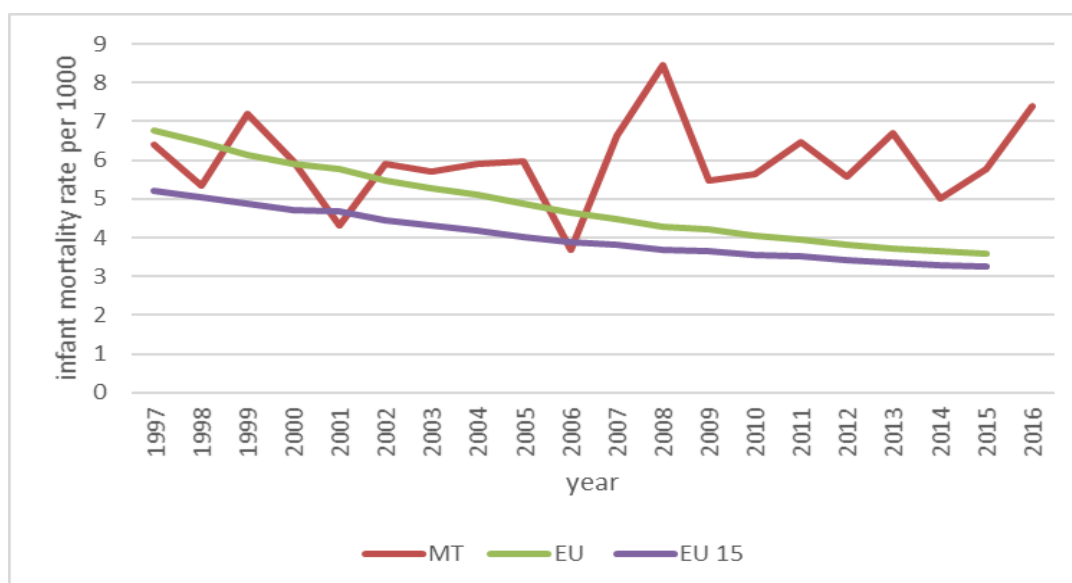
The relative importance of different causes of death varies in different age groups.

### Deaths in children below the age of one year

There were 33 deaths in infants during the year 2016 accounting for 1.0% of the total deaths. Of these, 20 were male and 13 were female. This was an increase of 8 infant deaths over 2015. The most important causes of death in this age group were conditions originating in the early neonatal period such as low birth weight. The next commonest cause of death in infants was due to congenital anomalies.

The infant mortality rates for Malta was 7.4 deaths per 1000 live births (figure 6), higher than that of the EU average. One reason for this is that in Malta termination of pregnancy is illegal and therefore infants born with terminal congenital anomalies may die soon after rather than being aborted during pregnancy and thereby also raising infant mortality rates.

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**Figure 6: Trends in infant mortality rate in Malta compared to the EU average**

### Deaths in children between 1-14 years of age

In this age group there were a total of 4 deaths accounting for 0.9% of total deaths. There was an increase of 1 death from 2015.

### Deaths in 15-44 age group

There was a total of 92 deaths in this age group accounting for 2.75% of the total deaths. There was a decrease of 7 deaths from 2015. Of these, 60 were male and 32 were female. External causes of death accounted for the largest number of deaths in this age group i.e. 43 deaths and were mainly due to suicides, transport accidents and falls. Neoplasms followed and accounted for 18.5% of all deaths and circulatory diseases accounted for 12 % of all deaths in this age group.

cause of death	ICD 10 code	males	females	total	% from total of this age group
external causes	V01-Y89	32	11	43	46.7
neoplasms	C00-D48	6	11	17	18.5
circulatory diseases	I00-I99	8	3	11	12.0

**Table 6: Commonest causes of death in persons 15-44 years**

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### Deaths in the 45-64 age group

There were 443 deaths in this age group representing 13.2% of all deaths. There was a decrease of 5 deaths from 2015. Ischaemic heart disease and lung cancer are the two leading causes of death in this relatively young age group (table 7).

cause of death	ICD 10 code	males	females	total	% from total of this age group
ischaemic heart disease	I20-I25	54	22	76	17.1
malignant neoplasm of trachea, bronchus and lung	C33-C34	36	14	50	11.2
malignant neoplasm of pancreas	C25	15	8	23	5.2
diabetes mellitus	E10-E14	18	6	24	5.4
Malignant neoplasm of the colon, rectum and anus	C18-C21	10	11	54	12.1

*Table 7: Commonest causes of death in persons 45-64 years*

### Deaths in the 65-84 age group

There were 1673 deaths in this age group accounting for 50.04% of all deaths. There was a decrease of 29 deaths from 2015. Ischaemic heart disease is the leading cause of death in this age group followed by cerebrovascular disease (table 8).

cause of death	ICD 10 code	males	females	total	% from total of this age group
ischaemic heart disease	I20-I25	202	152	354	19.1
cerebrovascular disease	I60-I69	69	65	134	7.2
malignant neoplasm of trachea, bronchus and lung	C33-C34	97	40	137	7.4
other heart disease	I26-I51	30	66	96	5.2
diabetes mellitus	E10-E14	52	63	115	6.2

*Table 8: Commonest causes of death in persons 65-84 years*

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### Deaths in the 85+ age group

There were 1098 deaths in this age group accounting for 32.8% of all deaths. There was a decrease of 76 deaths from 2015. Circulatory diseases predominate in this age group. However, other conditions including dementia, respiratory infections and diabetes were important causes of mortality in older persons (table 9).

cause of death	ICD 10 code	males	females	total	% from total of this age group
ischaemic heart disease	I20-I25	90	163	253	23
cerebrovascular disease	I60-I69	32	80	112	10.2
other heart diseases	I26-I51	37	58	95	8.6
Pneumonia and other acute lower respiratory infections	J12-J22	39	56	95	8.6
dementia	F01-F03, G20	42	80	122	11.1
diabetes mellitus	E10-E14	54	90	144	13.1

*Table 9: Commonest causes of death in persons 85+ years*

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## Document Information

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Special thanks go to Ms Connie Scicluna and Ms Desire D'Amato who work unremittingly on the National Mortality Registry.

## Methodology

### Data Analysis

The information used is based on details obtained from death certificates and supplemented by other sources of information including ISOFT, electronic case summary,, newspaper cuttings as well as collaboration with pathologists, public health doctors, police and certifying doctors. These additional sources of information are needed for verification. They add detail and ensure that mortality data is as reliable and as accurate as possible.

The International Statistical Classification of Diseases and Related Health Problems- ICD 10 is used to translate diagnoses of diseases from words into alphanumeric codes in order to permit easier storage, retrieval and analysis of the data. This also allows comparison between different countries and over different periods of time.

### Additional Sources of Data

The National Statistics Office of Malta was the source from which information about mid-year population 2016 by age group and gender was obtained. WHO Gateway and Eurostat database were used as a source of data for some of the figures in this report.

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## Definitions

### Crude Death Rate

This is equal to the total number of registered deaths divided by the estimated resident mid-yearly population of that year multiplied by 1000 (or 100,000). The following mid-year population of 2016 (table A), provided by the National Statistics Office has been used for this annual report.

Age-group (yrs)	male	female	total
All ages	229,058	226,352	455,410
0	2,363	2,193	4,556
1	2,346	2,180	4,526
2	2,309	2,084	4,393
3	2,325	2,128	4,453
4	2,332	2,200	4,532
5-9	11080	10390	21,470
10-14	10563	9971	20,534
15-19	12256	11542	23,798
20-24	15989	14585	30,574
25-29	18700	17348	36,048
30-34	18640	16865	35,505
35-39	17596	16092	33,688
40-44	15855	14822	30,677
45-49	13762	12995	26,757
50-54	14476	14042	28,518
55-59	15631	15649	31,280
60-64	14557	14572	29,129
65-69	14690	15358	30,048
70-74	10323	11444	21,767
75-79	6473	8188	14,661
80-84	4137	6332	10,469
85-89	1880	3554	5,434
90-94	630	1431	2,061
95-99	127	339	466
100+	18	48	66

**Table A: Mid-population 2016 in residents of the Maltese Islands (Source: National Statistics Office, Malta)**

### Age-Standardised Death/Mortality Rate

The age-standardised death/mortality rate for a particular condition is that which would have occurred if the observed age-specific death rates for the condition were applied in a given standard population. The European Standard Population as reported by WHO and Eurostat have been used in this report.

