



National end of life care
INTELLIGENCE NETWORK



National End of Life
Care Programme
Improving end of life care



External Causes of Death



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Contents

1.	What are the “External causes of death”?	1
1.1	Definition of terms	2
1.2	Note on the source of data in this report	2
2.	Number of deaths from External causes	3
3.	Variation with age	3
4.	Variation with gender	4
5.	Variation with cause of death	5
5.1	Cause of death and age	6
5.2	All causes of death	7
6.	Variation with Place of Death	8
6.1	Place of death and specific external cause of death	10
6.2	Place of death and age	12

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1. What are the “External causes of death”?

A total of 1,405,722 deaths were recorded in England between 2007 and 2009. Of these 49,411 were attributed to an “external cause” as the underlying cause of death. When a mention of an external cause is considered 118,494 deaths have an external cause as either an underlying and/or contributory cause of death. The total number of mentions of external causes is 200,580 in the time period considered.

This report highlights the contribution of this broad category to deaths occurring in England. Deaths from external causes are further grouped into the following sub-categories;

- Injuries (ICD 10 S00-T19)
- Burns & frostbite (ICD 10 T20-T35)
- Poisoning, toxicants & other unspecified (ICD 10 T36-T78)
- Transport accidents (ICD 10 V01-V99)
- Falls & other accidental injury (ICD 10 W00-X59)
- Intentional self harm (ICD 10 X60-X84 & Y10-Y34)
- Assault (ICD 10 X85-Y09 & U50.9)
- Complications of care & other causes (ICD 10 T79-T98, Y35-36 & Y40-Y98)

The distribution of deaths into the sub-categories of external causes is influenced by whether or not the primary underlying cause of death codes are considered alone or with other causes contributing to such deaths. For instance, a death resulting from head injury (S00 -S09) sustained from a road traffic accident would have been coded as a transport accident (V01-V99) (WHO 1992-94 International Statistical Classification of Diseases and Related Health Problems: Tenth Revision).

1.1 Definition of terms

The definition of the term used throughout this report is given as;

Underlying cause of death: is the disease or injury that initiated the train of events directly linked to death; or the circumstances of the accident or violence that produced the fatal injury.

Contributory cause of death: part of the causal sequence of events leading to death, or contributing to the death but not part of the causal sequence.

Cause of death (Mentions): is a death which has a condition listed as either the underlying cause of death or as a contributory cause of death.

1.2 Note on the source of data in this report

Information in this report has been derived from the Annual Public Health Mortality Extract (2010), produced by the Office for National Statistics based on Death Certificate data.

2. Number of deaths from External causes

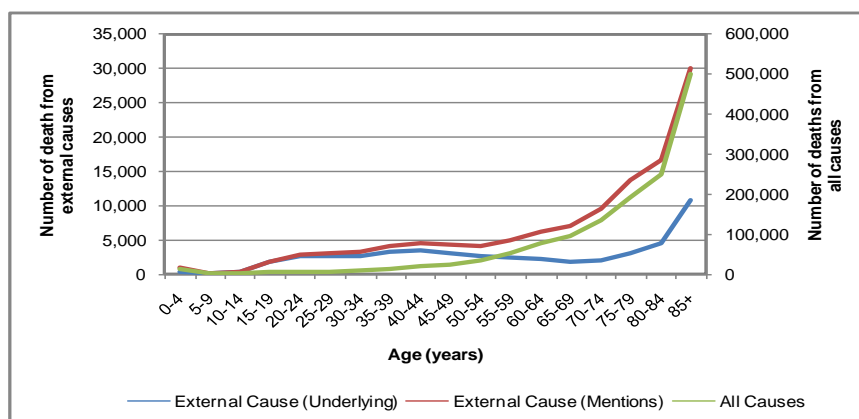
Of the 1,405,722 deaths registered in the three year period between 2007 and 2009, a total of 49,411 deaths (3.5%) have external causes as the underlying cause while 118,494 (8.4%) deaths have mentions of an external cause.

External causes accounted for 4.5% (9.9% with mentions) of all male deaths and 2.6% (7.1% with mentions) of death in females.

3. Variation with age

Most deaths occurred in persons aged over 65 years (See Figure 1 below). However, deaths from external causes included a much higher proportion of young and middle aged persons compared to deaths from all causes where death is relatively less common at a young age.

Figure 1: Number of deaths from external causes, England 2007-2009



Source: ONS Annual Public Health Mortality Extract (2010)

There are variations by age within death from external causes. A high proportion, 31% of deaths (and 39% when mentions are considered) occurred in people age 80 years or older, however this is lower than the 53% of deaths from all causes that occur at 80 years or older (Table 1).

Table 1: Age distribution of deaths from external causes, England 2007-2009

DEATHS	Age in years (%)								Total
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
External causes (Underlying)	5	11	12	13	10	8	10	31	100
External causes (Mentions)	3	5	6	8	8	11	20	39	100
All causes	1	1	1	3	6	12	23	53	100

Source: ONS Annual Public Health Mortality Extract (2010)

The proportion of deaths from external causes is generally higher in younger ages compared with older adults. Over half of all deaths in persons aged 20-29 years are a result of external causes (Table 2a & 2b).

Table 2a: Deaths from external causes as a proportion of all deaths by age, England 2007-2009

DEATHS	Age in years (%)							
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
External causes	16	52	33	16	6	2	2	2
Non external causes	84	48	67	84	94	98	98	98
Total	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

Table 2b: Deaths from external causes (mentions) as a proportion of all deaths by age, England 2007-2009

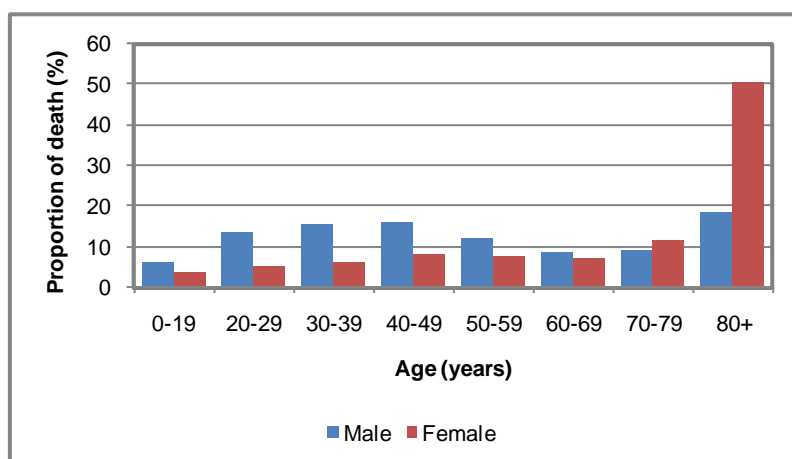
DEATHS	Age in years (%)							
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
External Causes (Mentions)	22	61	41	22	11	8	7	6
Non External Causes	78	39	59	78	89	92	93	94
Total	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

4. Variation with gender

More deaths from external causes occur in males than females (62% of deaths with an underlying external cause are male; 56% of deaths with a mention of external causes are male). Male deaths comprise 48% of all deaths from any cause.

There is greater variation of the proportion of deaths due to external causes with age for females than with males. About half of deaths from external cause in males occur in the young and middle ages (20-49 years) compared with 19% in females. 51% of female deaths occurred in those aged 80 years or older (Figure 2a).

Figure 2a: Proportion of all deaths from external causes by sex, England 2007-2009

Source: ONS Annual Public Health Mortality Extract (2010)

A similar pattern is obtained when mentions of an external cause of death are considered. More variation with age exists in females than males but the proportion of deaths that have a mention of external cause increases with increasing age for both sexes (Figure 2b).

Figure 2b: Proportion of all deaths from external causes (Mentions) by sex, England 2007-2009

Source: ONS Annual Public Health Mortality Extract (2010)

5. Variation with cause of death

Of the 49,411 deaths described as having an underlying external cause, 'falls and other accidental injury' account for more than half (52%). It is the leading underlying external cause in both males (43%) and females (68%).

Table 3a: Distribution of underlying external causes of death by sex, England 2007-2009

	Male (%)	Female (%)	Persons (%)
Assault	5	4	5
Complications of care and other causes	2	3	3
Falls and other accidental injury	43	68	52
Intentional self-harm	32	16	26
Transport accident	18	9	14
Total	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

However the distribution of death by specific external cause changes when mentions of an external cause rather than the underlying cause of death is considered. There were 118,494 deaths with a mention of an external cause with 'Complications of care and other causes' contributing to more deaths than any other external cause of death (Table 3b).

Table 3b: Distribution of external causes (Mentions) of death by sex, England 2007-2009

	Male (%)	Female (%)	Persons (%)
Assault	3	1	2
Burns and frostbite	1	1	1
Complications of care and other causes	47	59	52
Falls and other accidental injury	35	46	40
Injuries	36	46	40
Intentional self-harm	15	6	11
Poisoning, toxicants & unspecified	23	11	18
Transport accident	8	3	6
Total	>100	>100	>100

Source: ONS Annual Public Health Mortality Extract (2010)

5.1 Cause of death and age

Deaths from Intentional Self-harm and accidents are more common in younger adults (20-39 years) than older adults while falls and other accidental injury dominate deaths in older adults (over 60 years). Falls and other accidental injury account for 88% of all external causes of death in the 80 and older age group.

Table 4a: Distribution of underlying external causes of death by age, England 2007-2009

	Age in years (%)								All Ages
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
Assault	15	10	7	6	5	4	2	1	5
Complications of care & other causes	1	1	1	1	3	5	6	3	3
Falls and other accidental injury	23	23	30	32	35	46	66	88	52
Intentional self-harm	16	36	44	46	43	32	15	4	26
Transport accident	45	30	18	15	14	13	11	4	14
Total	100	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

Table 4b: Distribution of external causes (Mentions) of death by age, England 2007-2009

	Age in years (%)								
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All Ages
Assault	12	9	6	4	3	1	0	0	2
Burns and frostbite	1	1	1	1	1	1	0	0	1
Complications of care and other causes	27	9	12	22	41	63	71	62	52
Falls and other accidental injury	21	28	36	33	29	27	31	55	40
Injuries	50	45	33	33	31	24	28	54	40
Intentional self-harm	11	31	35	33	24	10	3	1	11
Poisoning, toxicants & unspecified	26	51	60	51	32	14	6	4	18
Transport accident	32	26	14	12	8	4	3	1	6
Total	>100	>100	>100	>100	>100	>100	>100	>100	>100

Source: ONS Annual Public Health Mortality Extract (2010)

5.2 All causes of death

External causes account for about 4% of all deaths with ‘falls and other accidental injury’ contributing over half of these. Table 5a below shows the distribution of external and non-external causes of death.

Table 5a: Distribution of all deaths by underlying cause, England 2007-2009

	Number of deaths	Proportion (%)
Assault	2,267	<0.5
Complications of care & other causes	1,420	<0.5
Falls and other accidental injury	25,847	2
Intentional self-harm	12,711	1
Transport accident	7,166	1
Non external causes	1,356,311	96
Total	1,405,722	100

Source: ONS Annual Public Health Mortality Extract (2010)

In the time period between 2007 and 2009, a total of 118,494 deaths had an external cause listed as either the underlying cause of death or as a contributory cause of death. This represents 8.4% of all deaths – about double the number of deaths with an underlying external cause.

The Table 5b below shows the distribution of deaths with any mention of an external cause.

Table 5b: Distribution of external causes of death (any mention), England 2007-2009

	Number of deaths	Proportion (%)
Assault	2,434	<0.5
Burns and frostbite	738	<0.5
Complications of care and other causes	62,073	4
Falls and other accidental injury	47,122	3
Injuries	47,257	3
Intentional self-harm	12,763	1
Poisoning, toxicants & unspecified	20,836	1
Transport accident	7,357	1
Non external causes	1,287,228	92
Total Deaths	1,405,722	-

Source: ONS Annual Public Health Mortality Extract (2010)

6. Variation with Place of Death

Over half of all deaths from external causes occur in hospital, similar to the proportion of deaths from all causes that occur in hospital (Table 6a). However, a far greater proportion of deaths from external causes occur elsewhere (21%) compared to all causes (2%). This is to be expected as many deaths from assaults, fatal accidents and self harm possibly occur in public places (See Table 8a). The proportion of deaths which occurred in own residence is significantly higher ($P < 0.0001$) for external causes (24%) than all causes (20%).

For further details on deaths occurring 'elsewhere' see the SWPHO report 'Deaths registered as occurring elsewhere'.

Table 6a: Distribution of deaths by place of death, England 2007-2009

Place of Death	External causes (%)	All causes (%)
Elsewhere	21	2
Hospital	51	57
Hospices	<0.5	5
Nursing homes	2	9
Old people's homes	2	7
Own residence	24	20
Total	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

About 70% of deaths with any mention of external causes occur in hospital. This represents a much higher proportion than is seen in death from all causes (57%) (Table 6b). However the proportion of deaths occurring in other care establishments and own residence are significantly lower ($P < 0.0001$) for external causes compared all causes.

Table 6b: Distribution of deaths (mentions) by place of death, England 2007-2009

Place of death	External causes (any mention) (%)	All causes (%)
Elsewhere	10	2
Hospital	70	57
Hospices	1	5
Nursing homes	2	9
Old people's homes	2	7
Own residence	15	20
Total	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

About 3% (10% with mentions) of all deaths occurring in hospital are due to external causes. 'Falls and other accidental injury' (2%) is the major external cause of death occurring in hospital and 'Complications of care and other causes' (7%) the major external cause of death occurring in hospital when mentions are considered (Table 7).

Table 7: Distribution of hospital deaths by cause of death, England 2007-2009

	Prop of death (underlying external cause) (%)	Prop of death (mentions of external cause) (%)
Assault	<0.5	<0.5
Burns and frostbite	-	<0.5
Complications of care and other causes	<0.5	7
Falls and other accidental injury	2	4
Injuries	-	4
Intentional self-harm	<0.5	<0.5
Poisoning, toxicants & unspecified	-	1
Transport accident	<0.5	<0.5
Non external causes	97	90
Total	100	>100

Source: ONS Annual Public Health Mortality Extract (2010)

6.1 Place of death and specific external cause of death

Table 8a: Distribution of specific cause of death by place of death for deaths from external causes, England 2007-2009

Place of Death	External causes of death (%)					
	Transport accidents	Intentional self-harm	Assault	Complications of care & other causes	Falls & other accidental injury	Total
Elsewhere	37	38	6	0	19	100
Hospital	13	8	4	5	70	100
Hospice*	11	4	0	7	78	100
Nursing homes	1	1	0	7	91	100
Old people's homes	0	3	1	3	93	100
Own residence	0	56	4	1	39	100

* Only 54 deaths from external causes occurred in hospices over the 3 year period considered. (Source: ONS Annual Public Health Mortality Extract 2010)

Table 8b: Distribution of specific cause of death by place of death for deaths from external causes (any mention), England 2007-2009

Place of Death	External causes of death (%)								
	Transport accidents	Intentional self-harm	Assault	Injuries	Burns & Frostbite	Poisoning, toxicants & unspecified	Complications of care & other causes	Falls & other accidental injury	Total
Elsewhere	34	35	6	57	1	43	4	24	>100
Hospital	4	2	1	40	1	6	67	39	>100
Hospice	1	0	0	12	0	3	39	64	>100
Nursing homes	1	0	0	64	0	2	50	68	>100
Old people's homes	0	1	0	71	0	3	46	72	>100
Own residence	0	37	3	22	1	59	19	43	>100

Source: ONS Annual Public Health Mortality Extract 2010)

Table 9a: Distribution of place of death by specific cause for deaths from external causes, England 2007-2009

Place of Death	External causes of death (%)					
	Transport accidents	Intentional self-harm	Assault	Complications of care & other causes	Falls & other accidental injury	All external cause
Elsewhere	53	31	29	1	8	21
Hospital	46	15	48	85	68	51
Hospice	0	0	0	0	0	0
Nursing homes	0	0	0	5	3	2
Old people's homes	0	0	0	2	3	2
Own residence	1	53	23	7	18	24
Total	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

Table 9b: Distribution of place of death by specific cause for deaths from external causes (any mention), England 2007-2009

Place of Death	External causes of death (%)								
	Transport accidents	Intentional self-harm	Assault	Injuries	Burns & Frostbite	Poisoning, toxicants & unspecified	Complications of care & other causes	Falls & other accidental injury	All external causes
Elsewhere	52	31	28	13	12	23	1	6	10
Hospital	47	15	50	70	65	24	89	69	70
Hospice	0	0	0	0	0	0	1	1	1
Nursing homes	0	0	0	4	0	0	2	4	2
Old people's homes	0	0	0	3	0	0	2	3	2
Own residence	1	53	22	9	22	52	5	17	15
Total	100	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

6.2 Place of death and age

Amongst the older adults (60 years and over) deaths from external causes occurs mostly in hospital while deaths in own residence and elsewhere are more common in young people (20-59 years).

Table 10a: Distribution of death from external causes by place of death and age, England 2007-2009

Place of Death	Age in years (%)								
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All Ages
Elsewhere	38	44	38	33	27	19	8	2	21
Hospital	50	30	25	26	31	45	70	80	51
Hospice	0	0	0	0	0	0	0	0	0
Nursing homes	0	0	0	0	0	1	2	5	2
Old people's homes	0	0	0	0	0	0	1	5	2
Own residence	12	26	37	41	42	35	19	8	24
Total	100	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

Table 10b: Distribution of death from external causes (any mention) by place of death and age, England 2007-2009

Place of Death	Age in years (%)								
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All Ages
Elsewhere	27	40	33	25	16	6	2	1	10
Hospital	62	33	31	37	53	72	83	84	70
Hospice	0	0	0	0	1	2	2	1	1
Nursing homes	0	0	0	0	0	1	2	5	2
Old people's homes	0	0	0	0	0	0	1	4	2
Own residence	10	26	36	37	30	18	11	6	15
Total	100	100	100	100	100	100	100	100	100

Source: ONS Annual Public Health Mortality Extract (2010)

About the South West Public Health Observatory

The South West Public Health Observatory (SWPHO) is part of a network of regional public health observatories in the UK and Ireland. These were established in 2000 as outlined in the Government White Paper Saving lives: our healthier nation. Key tasks include: monitoring health and disease trends; identifying gaps in health information; advising on methods for health and health impact assessment; drawing together information from different sources; and carrying out projects on particular health issues.

The SWPHO incorporates the National Drug Treatment Monitoring System South West (NDTMS-SW), and in April 2005 merged with the South West Cancer Intelligence Service (SWCIS). The SWPHO works in partnership with a wide range of agencies, networks and organisations regionally and nationally to provide 'a seamless public health intelligence service' for the South West.

For more information about the SWPHO and its partner organisations, please visit www.swpho.nhs.uk

About the National End of Life Care Intelligence Network

The Department of Health's National End of Life Care Strategy, published in 2008, pledged to commission a National End of Life Care Intelligence Network (NEoLCIN). The Network was launched in May 2010. It is tasked with collating existing data and information on end of life care for adults in England. This is with the aim of helping the NHS and its partners commission and deliver high quality end of life care, in a way that makes the most efficient use of resources and responds to the wishes of dying people and their families.

Key partners include the National Cancer Intelligence Network (NCIN), which will work closely with the Network to improve end of life care intelligence; and the South West Public Health Observatory, lead public health observatory for end of life care, which hosts the NEoLCIN website. The SWPHO has been commissioned to produce key outputs and analyses for the Network, including the national End of Life Care Profiles.

See www.endoflifecare-intelligence.org.uk for more information about the Network and its partners.



SWPHO is part of the UK & Ireland Association of Public Health Observatories.

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