

# THE SEGMENT TOOL

## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Updated May 2016



### Key results for North East

#### Introduction

The Segment Tool has been developed by Public Health England's (PHE) Epidemiology and Surveillance team and provides information on the causes of death that are driving inequalities in life expectancy at local area level. Targeting the causes of death which contribute most to the life expectancy gap should have the biggest impact on reducing inequalities.

This document presents key results for North East and provides data tables and charts showing the breakdown of the life expectancy gap in 2012-14 for two comparisons:

1. The gap between the region as a whole and England as a whole.
2. The gap between the most deprived quintile of the region and the least deprived quintile of the region.

The tool, along with a user guide and technical document, can be downloaded from <http://fingertips.phe.org.uk/profile/segment>

**Due to changes made in this version of the Segment Tool, the results presented here are not directly comparable with previous versions.**

#### Interpreting the charts

Two types of chart are included below.

The scarf charts show, for each broad cause of death, the percentage contribution that it makes to the overall life expectancy gap between the areas selected. This could be between the region as a whole and England, or between the most deprived quintile of the region and the least deprived quintile of the region, depending on which comparison has been selected. If a cause shows a contribution of 0, this means that the cause of death does not make any contribution to the life expectancy gap.

The bar charts show, for a more detailed breakdown of causes of death, the years of life expectancy that would be gained or lost in the selected area, if it had the same mortality rates as the comparator area.

The tables show the percentage contributions and years of life gained for each cause of death. The number of deaths occurring in the area in 2012-14 are shown, and alongside, the number of excess deaths. Excess deaths are the number of 'extra' deaths that occur in the selected area because it has a higher mortality rate for that cause of death than the comparator area. If these deaths were prevented, then the contribution of that cause of death to the overall life expectancy gap would be eliminated. For some causes of death, there are no excess deaths in the selected area, and therefore no impact is made to the life expectancy gap. If this is the case the table shows a value of "..".

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### Contextual information for North East

#### Information on inequalities in life expectancy between North East and England

	Male	Female
Life expectancy at birth in North East, 2012-2014	78.0	81.7
Life expectancy at birth in England, 2012-2014	79.6	83.2
Absolute gap in life expectancy between North East and England in years*	-1.6	-1.5

\*A value below 0 indicates a lower life expectancy in the selected area compared to England.

#### Information on inequalities in life expectancy within North East

	Male	Female
Life expectancy at birth in the most deprived quintile of North East, 2012-2014	73.5	78.2
Life expectancy at birth in the least deprived quintile of North East, 2012-2014	82.3	85.3
Absolute gap in life expectancy between most deprived and least deprived areas within North East*	-8.8	-7.1

\*A value below 0 indicates a lower life expectancy in the most deprived quintile compared with the least deprived quintile.

#### Sources:

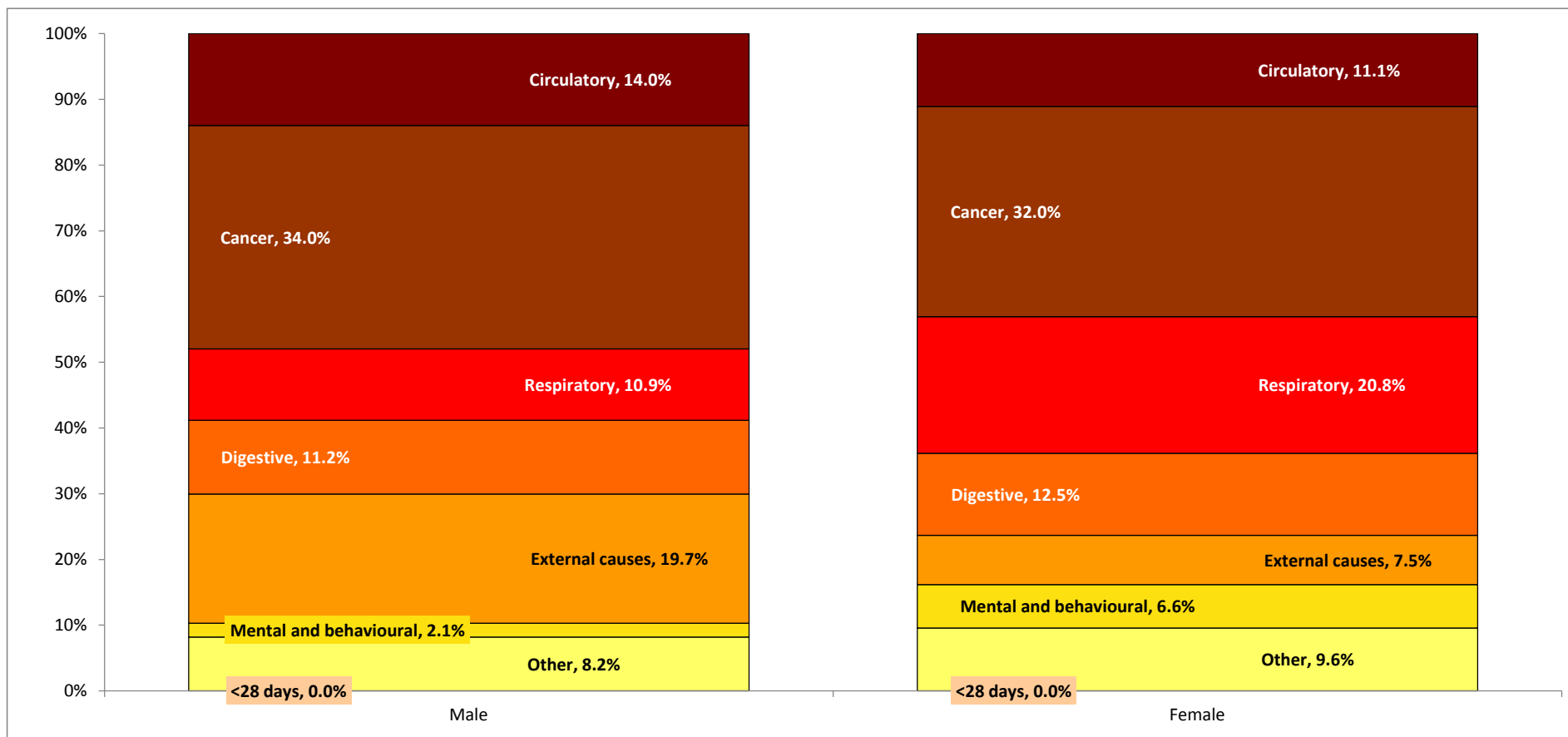
- Life expectancies for regions - Office for National Statistics (ONS), life expectancy at birth for local areas in England and Wales
- Life Expectancies for deprivation quintiles within each local authority - Analysis by Public Health England Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015

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Between area inequalities: Life expectancy gap between North East as a whole and England

Chart 1: Scarf chart showing the breakdown of the life expectancy gap between North East as a whole and England as a whole, by broad cause of death, 2012-2014



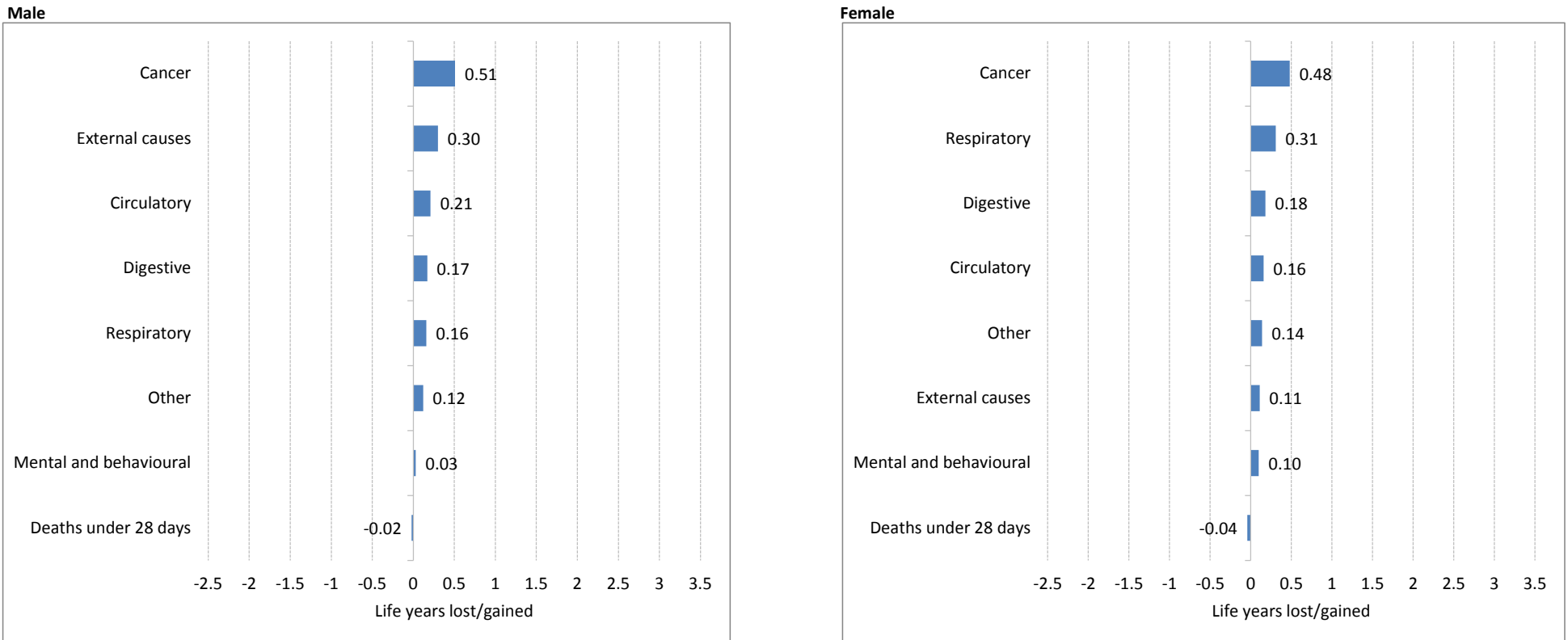
Footnote: Circulatory diseases includes coronary heart disease and stroke. Respiratory diseases includes flu, pneumonia and chronic obstructive airways disease. Digestive diseases includes alcohol-related conditions such as chronic liver disease and cirrhosis. External causes include deaths from injury, poisoning and suicide. Mental and behavioural includes dementia and Alzheimer’s disease.

Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates

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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Chart 2: Bar chart showing life expectancy years gained or lost if North East as a whole had the same mortality rates as England as a whole, by broad cause of death, 2012-2014



Footnote: Circulatory diseases includes coronary heart disease and stroke. Respiratory diseases includes flu, pneumonia and chronic obstructive airways disease. Digestive diseases includes alcohol-related conditions such as chronic liver disease and cirrhosis. External causes include deaths from injury, poisoning and suicide. Mental and behavioural includes dementia and Alzheimer's disease.

Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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**Table 1: Breakdown of the life expectancy gap between North East as a whole and England as a whole, by broad cause of death, 2012-2014**

Broad cause of death	Male				Female			
	Number of deaths in region	Number of excess deaths in region	Number of years of life gained/lost*	Contribution to the gap (%)	Number of deaths in region	Number of excess deaths in region	Number of years of life gained/lost*	Contribution to the gap (%)
Circulatory	10,225	568	0.21	14.0	10,178	488	0.16	11.1
Cancer	12,527	1,737	0.51	34.0	11,180	1,524	0.48	32.0
Respiratory	5,215	607	0.16	10.9	6,156	1,104	0.31	20.8
Digestive	2,118	458	0.17	11.2	2,272	514	0.18	12.5
External causes	1,977	390	0.30	19.7	1,272	260	0.11	7.5
Mental and behavioural	2,374	84	0.03	2.1	5,064	437	0.10	6.6
Other	3,767	398	0.12	8.2	5,119	625	0.14	9.6
Deaths under 28 days	127	-10	-0.02	..	86	-21	-0.04	..
<b>Total</b>	<b>38,330</b>			<b>100</b>	<b>41,326</b>			<b>100</b>

Counts of deaths have been adjusted take account of changes in ICD-10 coding made in 2014. This means totals may differ between tables. Further details can be found in the technical document.

\* A positive figure indicates that life expectancy years would be gained if the region had the same mortality rate as England as a whole (ie the mortality rate in the region for the cause is higher than England as a whole). A negative figure indicates that life expectancy years would be lost if the region had the same mortality rate as England as a whole.

.. The calculated contribution to the gap is negative

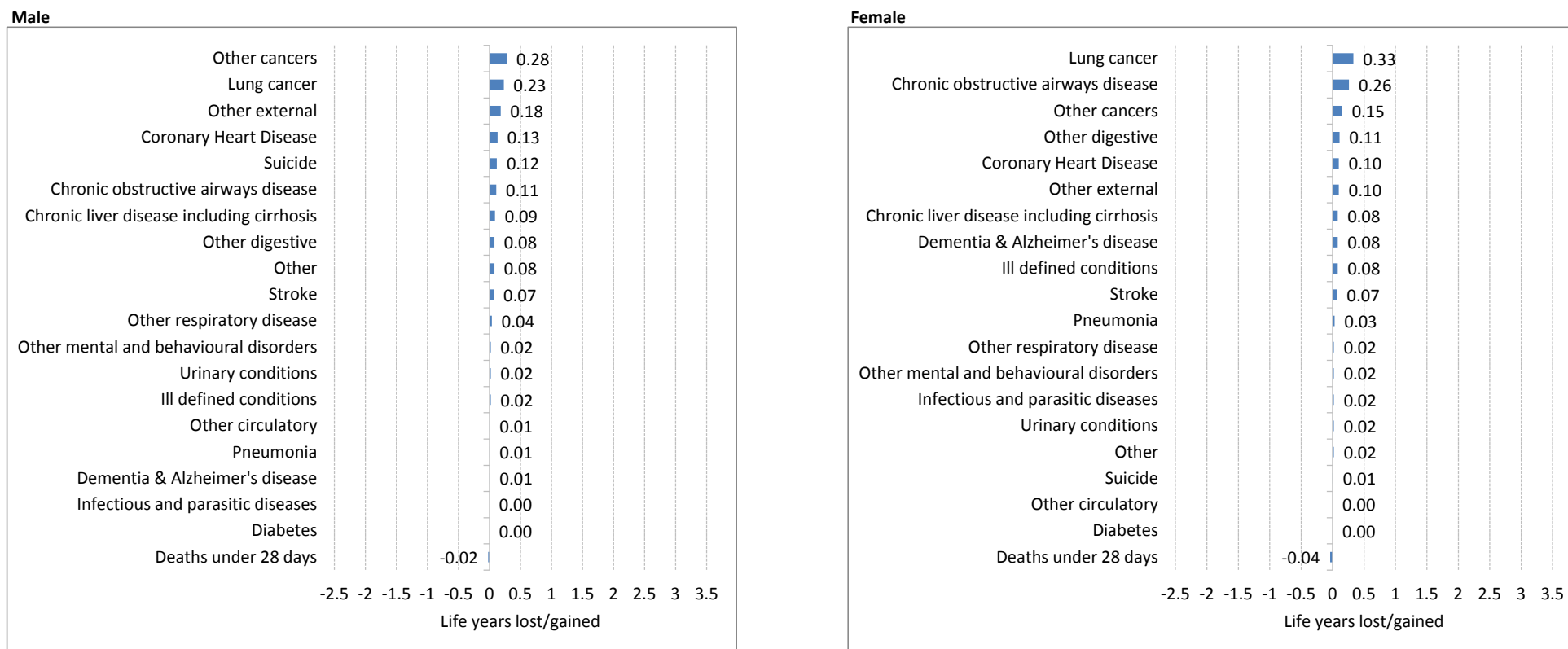
++ The figures have not been calculated as life expectancy is higher than England

Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Chart 3: Bar chart showing life expectancy years gained or lost if North East as a whole had the same mortality rates as England as a whole, by detailed cause of death, 2012-2014



Footnote: See table below for details of cause groupings. Details of causes of death included in the 'other' category can be found in the Technical Document. Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

**Table 2: Table showing life expectancy years gained or lost if North East as a whole had the same mortality rates as England as a whole, by detailed cause of death, 2012-2014**

Broad cause of death	Detailed cause of death	Male			Female		
		Number of deaths in region	Number of excess deaths in region	Number of years of life gained/lost*	Number of deaths in region	Number of excess deaths in region	Number of years of life gained/lost*
Circulatory	Coronary Heart Disease	5,460	278	0.13	3,897	336	0.10
	Stroke	2,228	257	0.07	3,192	269	0.07
	Other circulatory	2,540	35	0.01	3,109	-114	0.00
Cancer	Lung cancer	3,225	803	0.23	3,125	1,131	0.33
	Other cancers	9,302	934	0.28	8,055	393	0.15
Respiratory	Pneumonia	1,643	18	0.01	2,202	91	0.03
	Chronic obstructive airways disease	2,350	416	0.11	2,842	995	0.26
	Other respiratory disease	1,183	160	0.04	1,100	37	0.02
Digestive	Chronic liver disease including cirrhosis	720	161	0.09	447	129	0.08
	Other digestive	1,382	294	0.08	1,825	386	0.11
External	Suicide	669	142	0.12	177	17	0.01
	Other external	1,308	248	0.18	1,101	246	0.10
Mental and behavioural	Dementia & Alzheimer's disease	2,269	52	0.01	4,982	409	0.08
	Other mental and behavioural disorders	105	32	0.02	80	28	0.02
Other	Infectious and parasitic diseases	378	45	0.00	503	108	0.02
	Urinary conditions	539	61	0.02	784	93	0.02
	Ill defined conditions	460	66	0.02	1,459	359	0.08
	Diabetes	355	1	0.00	359	-16	0.00
	Other	2,032	225	0.08	1,994	85	0.02
< 28 days	Deaths under 28 days	127	-10	-0.02	86	-21	-0.04
Total		38,273			41,320		

Counts of deaths have been adjusted take account of changes in ICD-10 coding made in 2014. This means totals may differ between tables. Further details can be found in the technical document.

\* A positive figure indicates that life expectancy years would be gained if the region had the same mortality rate as England as a whole (ie the mortality rate in the region for the cause is higher than England as a whole). A negative figure indicates that life expectancy years would be lost if the region had the same mortality rate as England as a whole.

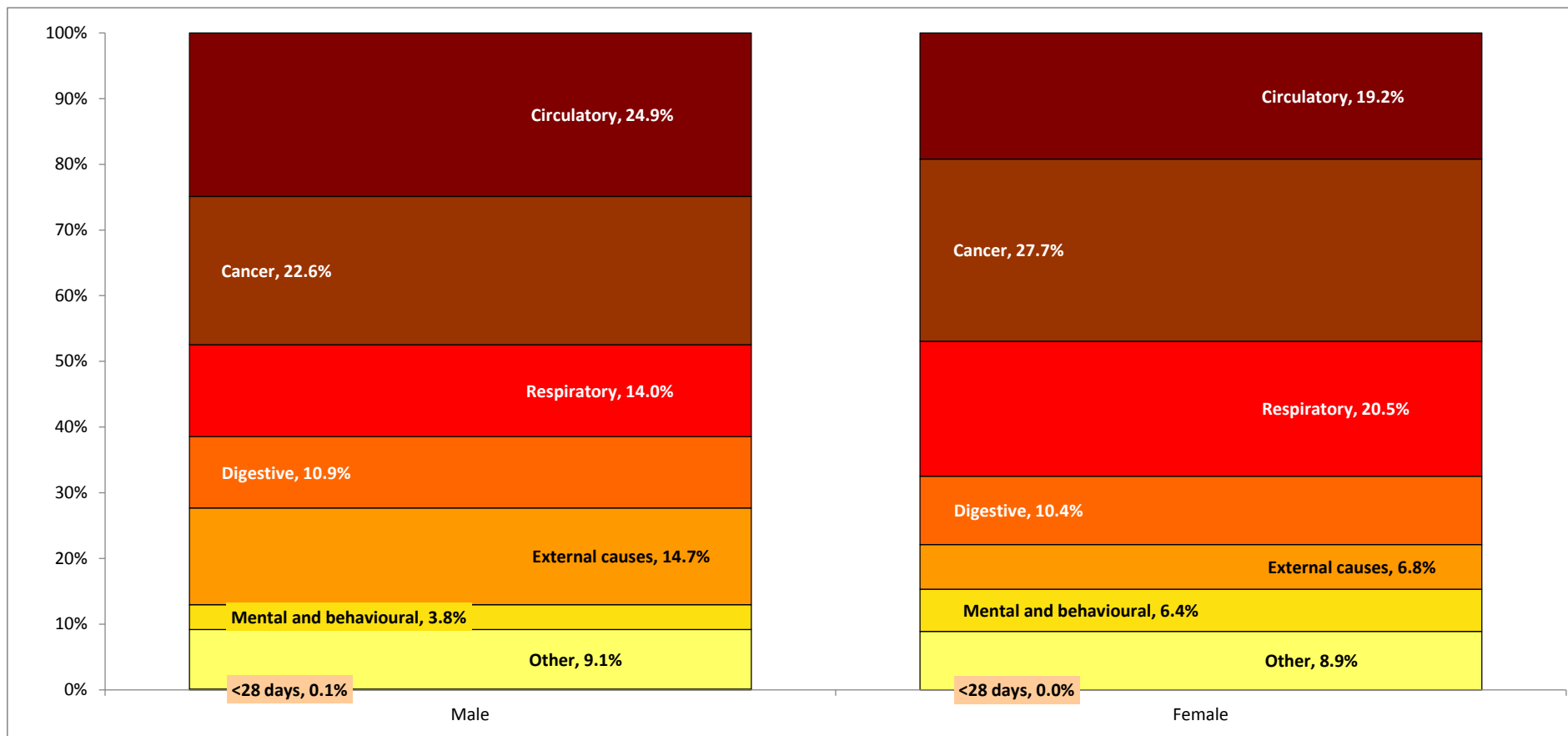
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Within area inequalities: Life expectancy gap between the most deprived quintile and least deprived quintile of North East

Chart 4: Scarf chart showing the breakdown of the life expectancy gap between North East most deprived quintile and North East least deprived quintile, by broad cause of death, 2012-2014



Footnote: Circulatory diseases includes coronary heart disease and stroke. Respiratory diseases includes flu, pneumonia and chronic obstructive airways disease. Digestive diseases includes alcohol-related conditions such as chronic liver disease and cirrhosis. External causes include deaths from injury, poisoning and suicide. Mental and behavioural includes dementia and Alzheimer’s disease.

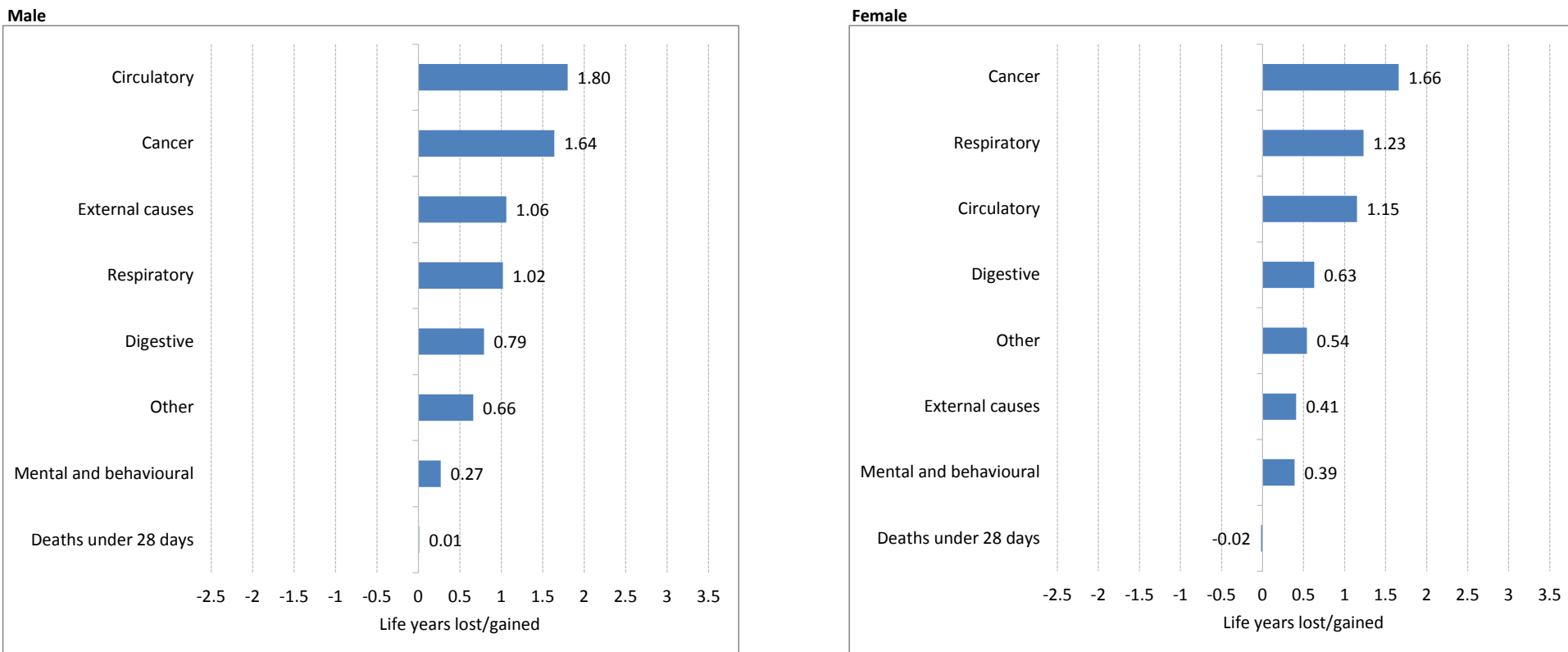
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015



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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Chart 5: Bar chart showing life expectancy years gained or lost if North East most deprived quintile had the same mortality rates as North East least deprived quintile, by broad cause of death, 2012-2014



Footnote: Circulatory diseases includes coronary heart disease and stroke. Respiratory diseases includes flu, pneumonia and chronic obstructive airways disease. Digestive diseases includes alcohol-related conditions such as chronic liver disease and cirrhosis. External causes include deaths from injury, poisoning and suicide. Mental and behavioural includes dementia and Alzheimer’s disease.

Analysis by Public Health England’s (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015

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**Table 3: Breakdown of the life expectancy gap between North East most deprived quintile and North East least deprived quintile, by broad cause of death, 2012-2014**

Broad cause of death	Male				Female			
	Number of deaths in most deprived quintile	Number of excess deaths in most deprived quintile	Number of years of life gained/lost*	Contribution to the gap (%)	Number of deaths in most deprived quintile	Number of excess deaths in most deprived quintile	Number of years of life gained/lost*	Contribution to the gap (%)
Circulatory	2,246	1,083	1.80	24.9	2,107	728	1.15	19.2
Cancer	2,619	1,053	1.64	22.6	2,388	935	1.66	27.7
Respiratory	1,300	794	1.02	14.0	1,543	829	1.23	20.5
Digestive	596	388	0.79	10.9	562	309	0.63	10.4
External causes	551	342	1.06	14.7	304	116	0.41	6.8
Mental and behavioural	521	251	0.27	3.8	1,102	442	0.39	6.4
Other	810	325	0.66	9.1	1,055	301	0.54	8.9
Deaths under 28 days	39	1	0.01	0.1	21	-3	-0.02	..
Total	8,682			100	9,082			100

Counts of deaths have been adjusted take account of changes in ICD-10 coding made in 2014. This means totals may differ between tables. Further details can be found in the technical document.

\* A positive figure indicates that life expectancy years would be gained if the most deprived quintile of the region had the same mortality rate as the least deprived quintile (ie the mortality rate in the most deprived quintile for the cause is higher than that of the least deprived quintile). A negative figure indicates that life expectancy years would be lost if the most deprived quintile in the region had the same mortality rate as the least deprived quintile.

.. The calculated contribution to the gap is negative

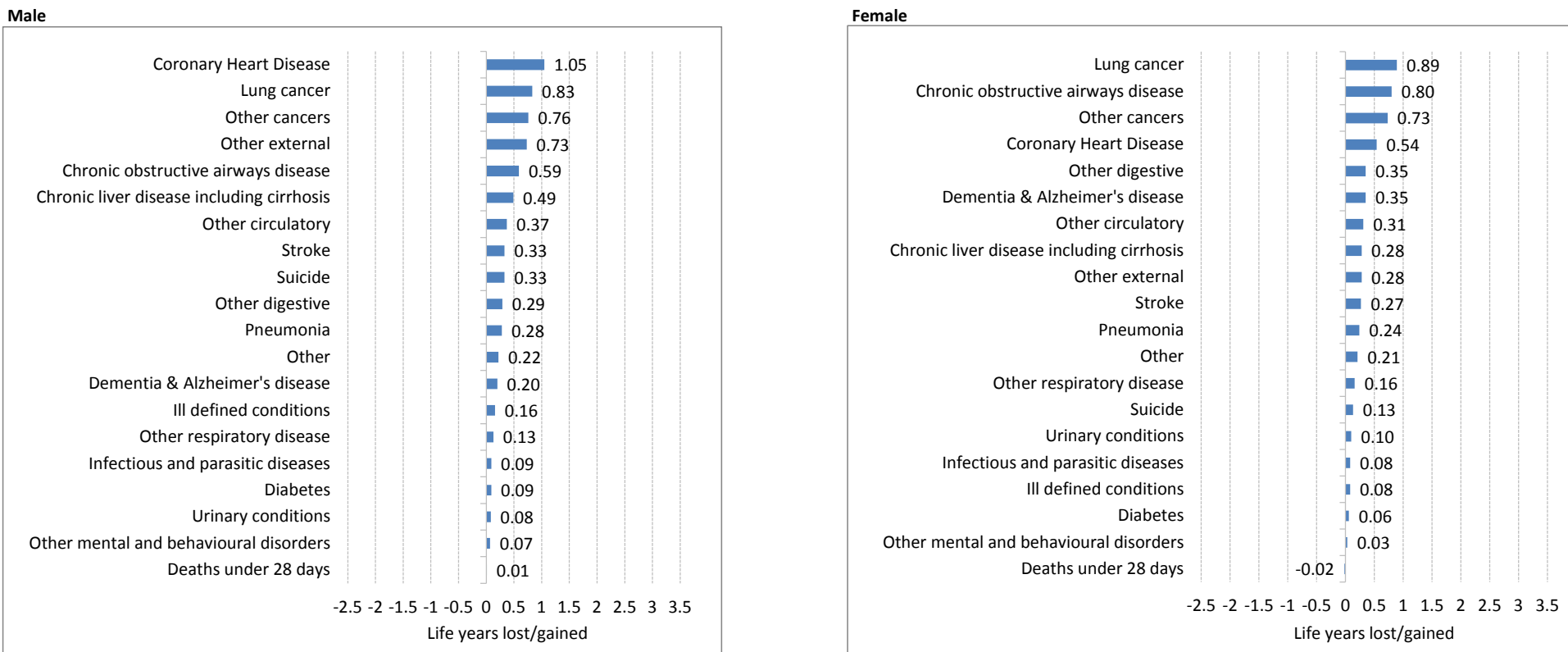
## The figures have not been calculated as life expectancy in the most deprived quintile is higher than life expectancy in the least deprived quintile

Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015

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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Chart 6: Bar chart showing life expectancy years gained or lost if North East most deprived quintile had the same mortality rates as North East least deprived quintile, by detailed cause of death, 2012-2014



Footnote: See table below for details of cause groupings. Details of causes of death included in the 'other' category can be found in the Technical Document. Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015

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Table 4: Table showing life expectancy years gained or lost if North East most deprived quintile had the same mortality rates as North East least deprived quintile, by detailed cause of death, 2012-2014

Broad cause of death	Detailed cause of death	Male			Female		
		Number of deaths in most deprived quintile	Number of excess deaths in most deprived quintile	Number of years of life gained/lost*	Number of deaths in most deprived quintile	Number of excess deaths in most deprived quintile	Number of years of life gained/lost*
Circulatory	Coronary Heart Disease	1,237	623	1.05	836	324	0.54
	Stroke	481	235	0.33	636	199	0.27
	Other circulatory	529	225	0.37	640	208	0.31
Cancer	Lung cancer	845	569	0.83	835	555	0.89
	Other cancers	1,774	485	0.76	1,553	380	0.73
Respiratory	Pneumonia	410	218	0.28	486	184	0.24
	Chronic obstructive airways disease	655	491	0.59	813	568	0.80
	Other respiratory disease	238	94	0.13	245	85	0.16
Digestive	Chronic liver disease including cirrhosis	252	195	0.49	133	92	0.28
	Other digestive	339	190	0.29	429	218	0.35
External	Suicide	186	106	0.33	57	38	0.13
	Other external	365	236	0.73	249	79	0.28
Mental and behavioural	Dementia & Alzheimer's disease	483	223	0.20	1,078	428	0.35
	Other mental and behavioural disorders	38	28	0.07	24	14	0.03
Other	Infectious and parasitic diseases	81	30	0.09	110	49	0.08
	Urinary conditions	134	72	0.08	191	85	0.10
	Ill defined conditions	109	51	0.16	293	33	0.08
	Diabetes	86	55	0.09	83	37	0.06
	Other	397	115	0.22	372	93	0.21
< 28 days	Deaths under 28 days	39	1	0.01	21	-3	-0.02
Total		8,678			9,084		

Counts of deaths have been adjusted take account of changes in ICD-10 coding made in 2014. This means totals may differ between tables. Further details can be found in the technical document.

\* A positive figure indicates that life expectancy years would be gained if the most deprived quintile of the region had the same mortality rate as the least deprived quintile (ie the mortality rate in the most deprived quintile for the cause is higher than that of the least deprived quintile). A negative figure indicates that life expectancy years would be lost if the most deprived quintile in the region had the same mortality rate as the least deprived quintile.

Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015