

# THE SEGMENT TOOL

## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Updated May 2016



### Key results for North West

#### 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 West 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 West

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

	Male	Female
Life expectancy at birth in North West, 2012-2014	78.1	81.9
Life expectancy at birth in England, 2012-2014	79.6	83.2
Absolute gap in life expectancy between North West and England in years*	-1.5	-1.3

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

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

	Male	Female
Life expectancy at birth in the most deprived quintile of North West, 2012-2014	73.2	78
Life expectancy at birth in the least deprived quintile of North West, 2012-2014	82.4	85.3
Absolute gap in life expectancy between most deprived and least deprived areas within North West*	-9.2	-7.3

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

#### Sources:

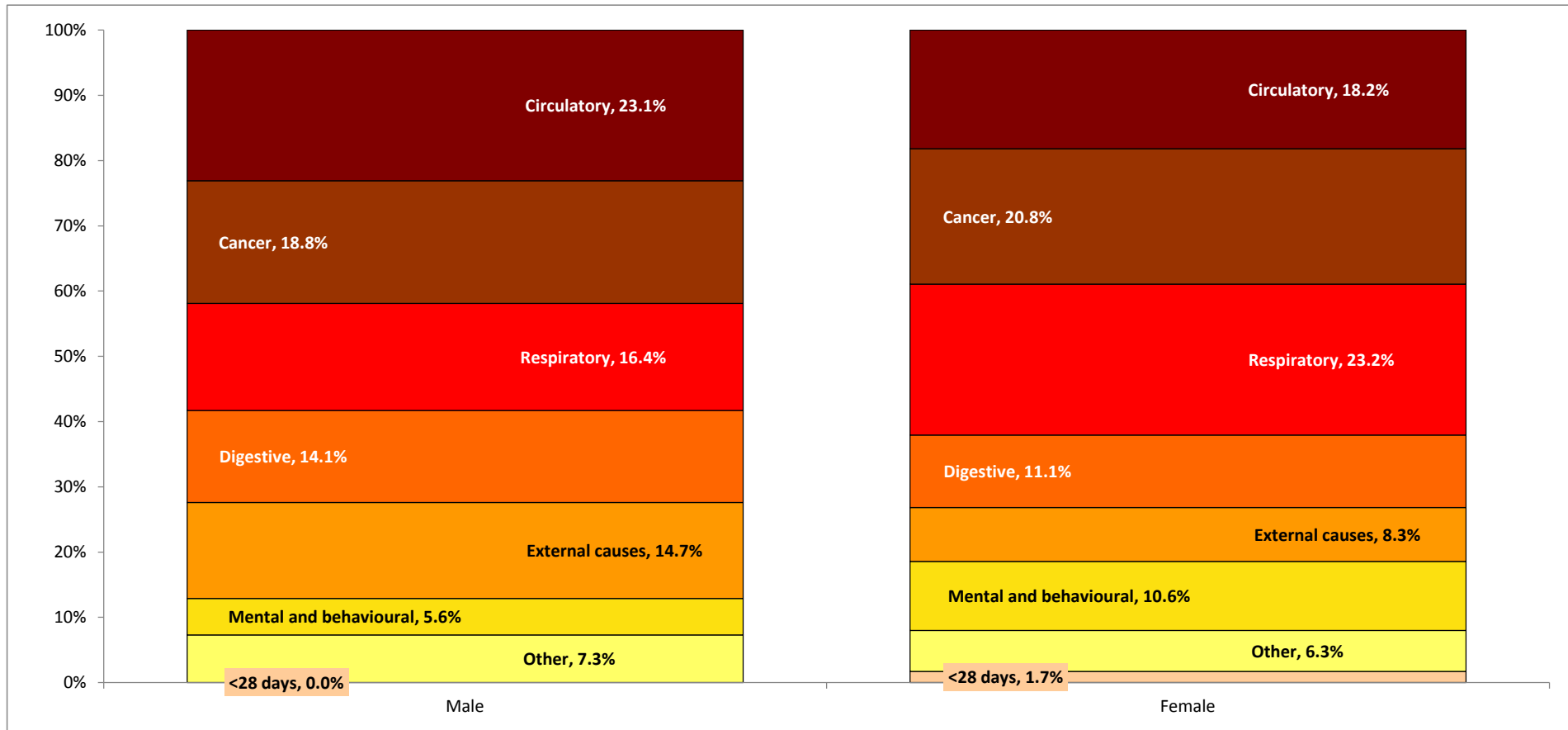
- Life expectancies for regions - Office for National Statistics (ONS), life expectancy at birth for local areas in England and Wales
- Life Expectancies for deprivation quintiles within each local authority - Analysis by Public Health England Epidemiology and Surveillance team based on ONS death registration 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 West as a whole and England

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



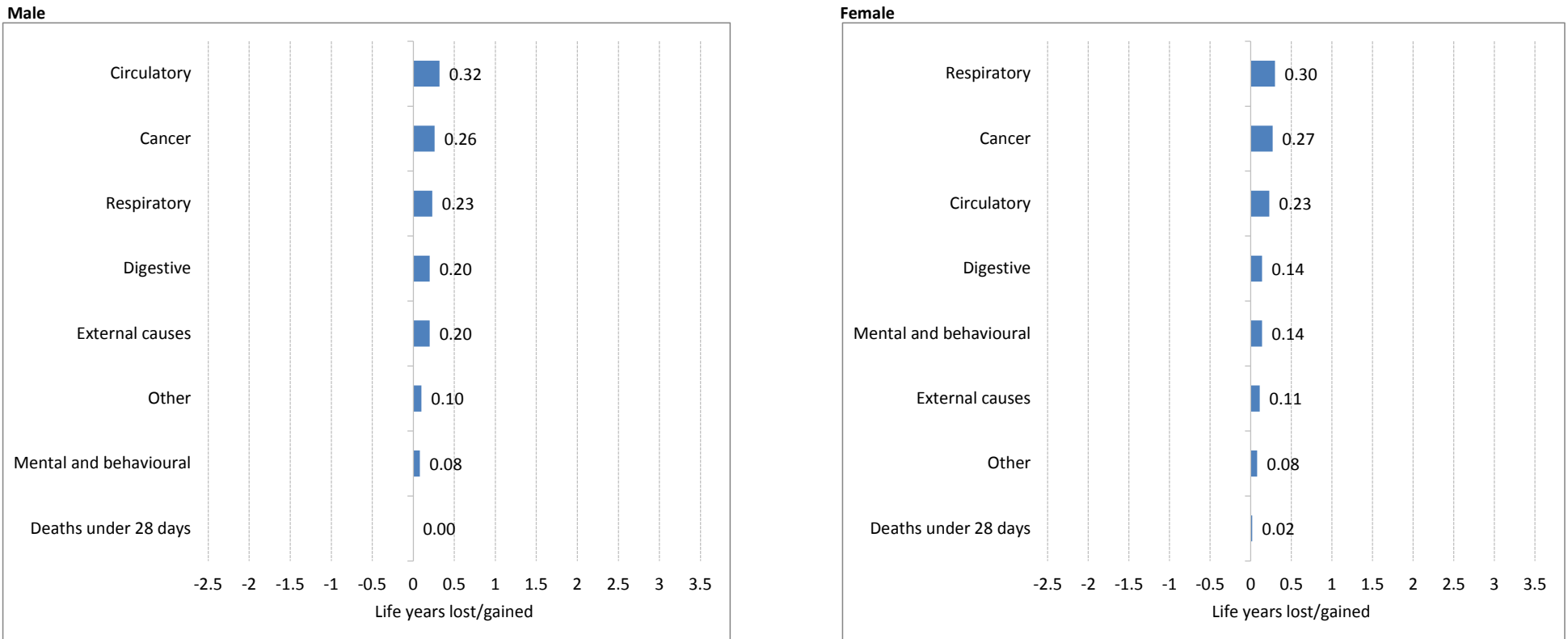
Footnote: Circulatory diseases includes coronary heart disease and stroke. Respiratory diseases includes flu, pneumonia and chronic obstructive airways disease. Digestive diseases includes alcohol-related conditions such as chronic liver disease and cirrhosis. External causes include deaths from injury, 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 West 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 West 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	27,873	2,645	0.32	23.1	27,230	1,773	0.23	18.2
Cancer	30,376	2,211	0.26	18.8	27,282	2,157	0.27	20.8
Respiratory	14,043	2,010	0.23	16.4	16,057	2,793	0.30	23.2
Digestive	5,471	1,106	0.20	14.1	5,469	865	0.14	11.1
External causes	5,223	951	0.20	14.7	3,455	774	0.11	8.3
Mental and behavioural	6,864	884	0.08	5.6	13,938	1,706	0.14	10.6
Other	9,247	391	0.10	7.3	12,319	460	0.08	6.3
Deaths under 28 days	401	-1	0.00	..	351	34	0.02	1.7
<b>Total</b>	<b>99,499</b>			<b>100</b>	<b>106,101</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

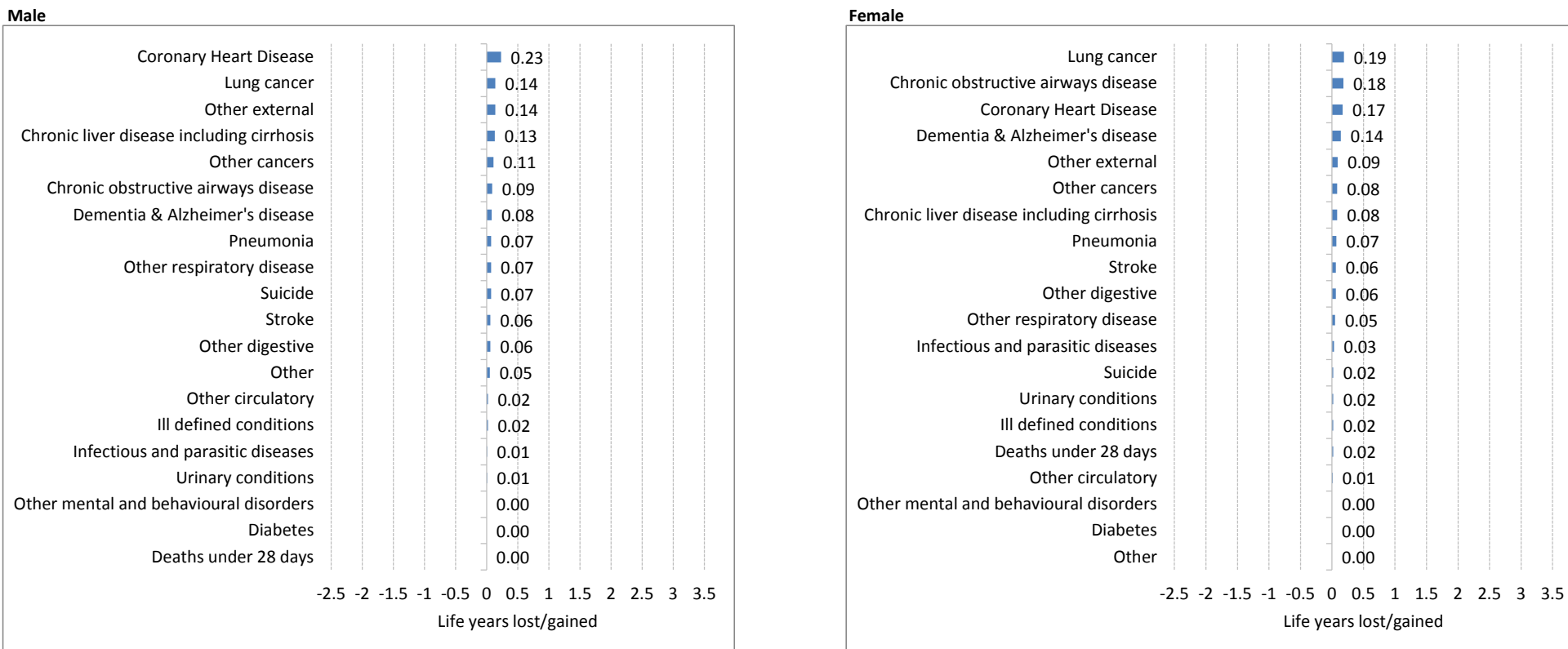
++ The figures have not been calculated as life expectancy is higher than England

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 West 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 West 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	15,538	2,009	0.23	10,801	1,463	0.17
	Stroke	5,711	567	0.06	8,126	439	0.06
	Other circulatory	6,632	76	0.02	8,350	-127	0.01
Cancer	Lung cancer	7,640	1,325	0.14	6,764	1,597	0.19
	Other cancers	22,736	886	0.11	20,518	561	0.08
Respiratory	Pneumonia	4,848	595	0.07	6,186	607	0.07
	Chronic obstructive airways disease	5,796	755	0.09	6,448	1,638	0.18
	Other respiratory disease	3,286	614	0.07	3,302	506	0.05
Digestive	Chronic liver disease including cirrhosis	2,145	661	0.13	1,213	382	0.08
	Other digestive	3,280	435	0.06	4,257	484	0.06
External	Suicide	1,662	232	0.07	485	56	0.02
	Other external	3,561	719	0.14	2,990	726	0.09
Mental and behavioural	Dementia & Alzheimer's disease	6,667	882	0.08	13,803	1,712	0.14
	Other mental and behavioural disorders	198	1	0.00	133	-5	0.00
Other	Infectious and parasitic diseases	975	100	0.01	1,255	217	0.03
	Urinary conditions	1,336	87	0.01	2,061	238	0.02
	Ill defined conditions	1,179	131	0.02	3,198	257	0.02
	Diabetes	885	-41	0.00	963	-21	0.00
	Other	4,852	105	0.05	4,777	-235	0.00
< 28 days	Deaths under 28 days	401	-1	0.00	351	34	0.02
Total		99,329			105,981		

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.

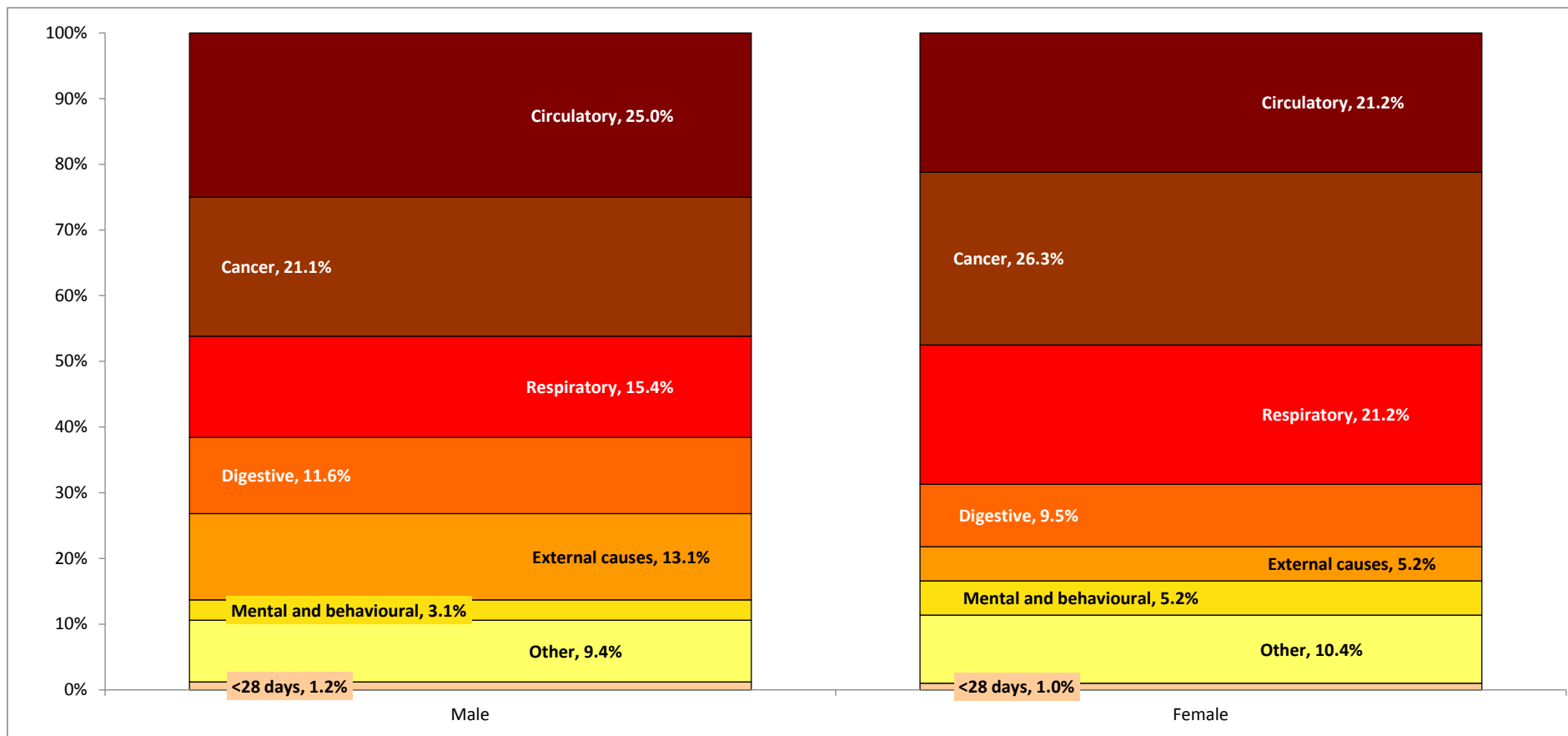
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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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 West

**Chart 4: Scarf chart showing the breakdown of the life expectancy gap between North West most deprived quintile and North West 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.

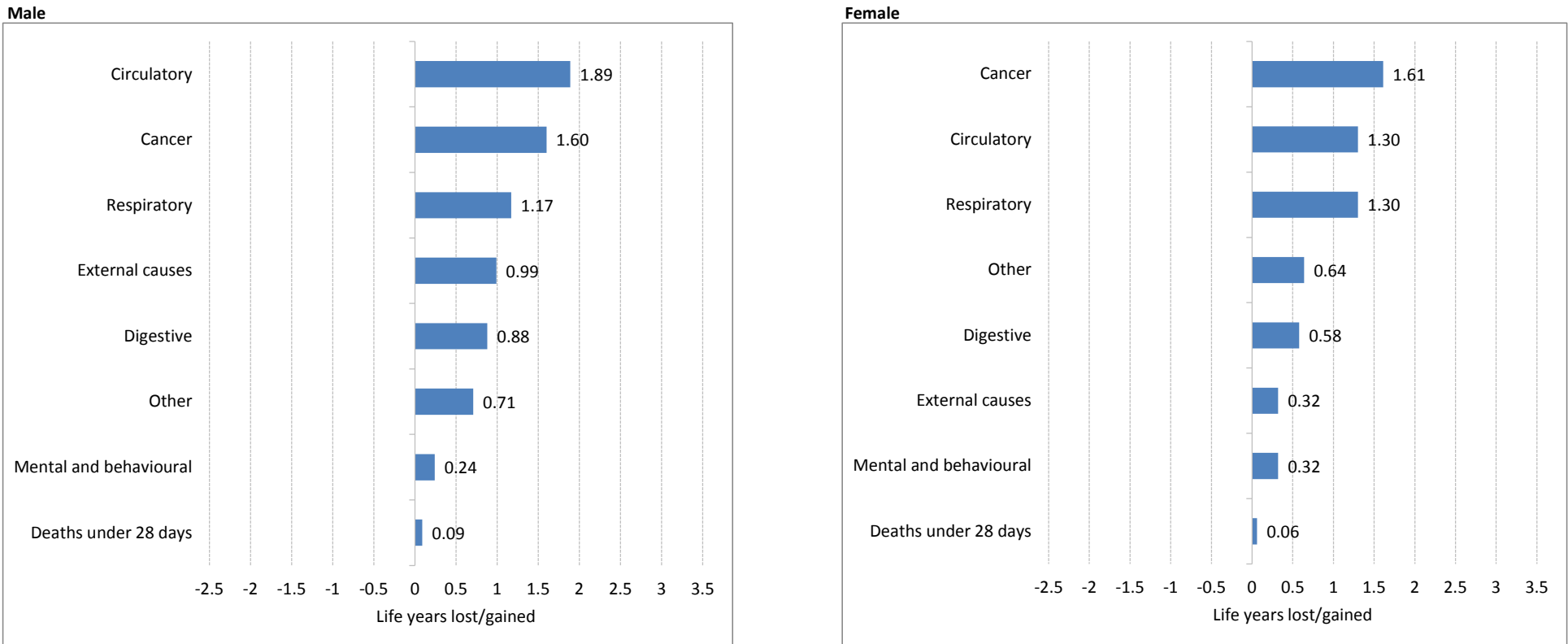
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015



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Chart 5: Bar chart showing life expectancy years gained or lost if North West most deprived quintile had the same mortality rates as North West 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 West most deprived quintile and North West 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	6,038	2,995	1.89	25.0	5,274	1,891	1.30	21.2
Cancer	6,297	2,665	1.60	21.1	5,675	2,271	1.61	26.3
Respiratory	3,430	2,090	1.17	15.4	3,776	2,125	1.30	21.2
Digestive	1,620	1,152	0.88	11.6	1,340	726	0.58	9.5
External causes	1,501	924	0.99	13.1	756	323	0.32	5.2
Mental and behavioural	1,293	551	0.24	3.1	2,478	788	0.32	5.2
Other	1,968	896	0.71	9.4	2,399	863	0.64	10.4
Deaths under 28 days	140	45	0.09	1.2	116	28	0.06	1.0
<b>Total</b>	<b>22,287</b>			<b>100</b>	<b>21,814</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 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

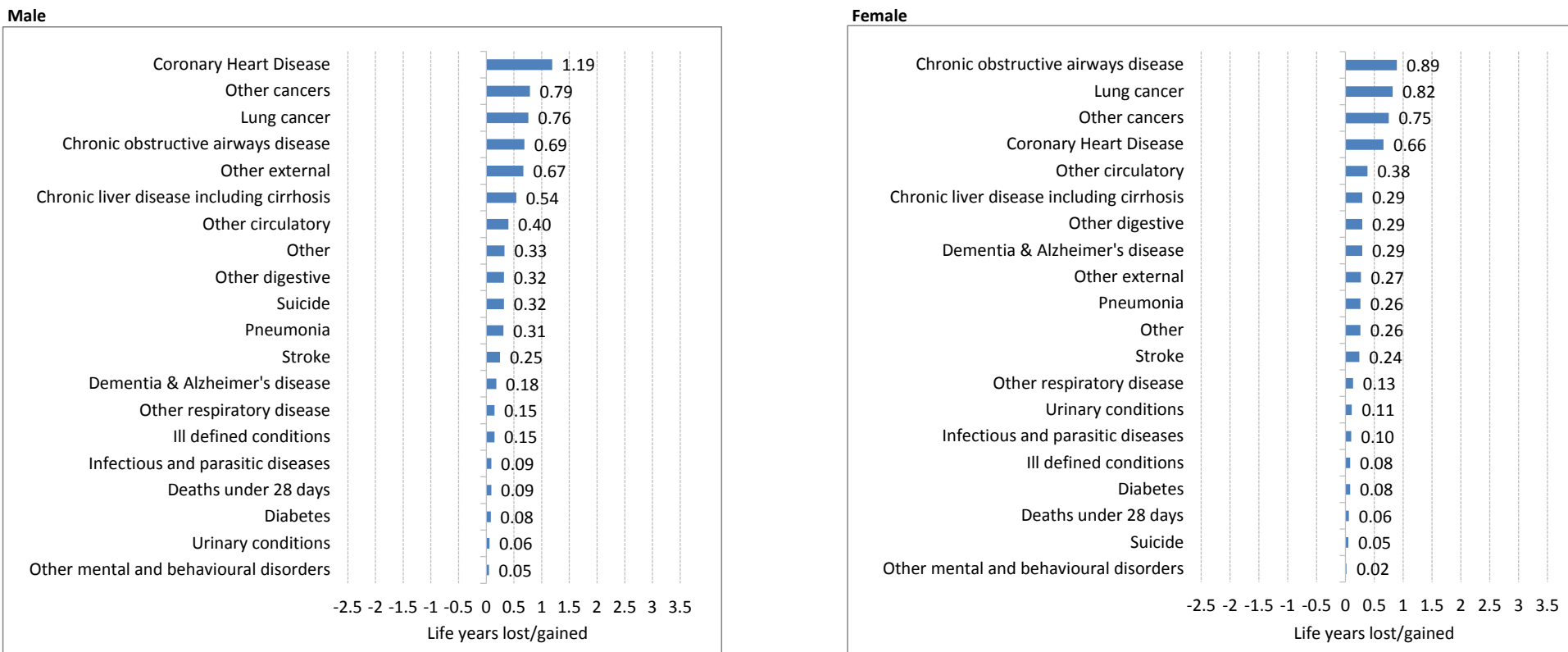
## The figures have not been calculated as life expectancy in the most deprived quintile is higher than life expectancy in the least deprived quintile

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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Chart 6: Bar chart showing life expectancy years gained or lost if North West most deprived quintile had the same mortality rates as North West 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 West most deprived quintile had the same mortality rates as North West 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	3,552	1,935	1.19	2,251	1,044	0.66
	Stroke	1,118	457	0.25	1,417	312	0.24
	Other circulatory	1,369	602	0.40	1,618	542	0.38
Cancer	Lung cancer	2,033	1,369	0.76	1,836	1,246	0.82
	Other cancers	4,264	1,295	0.79	3,839	1,025	0.75
Respiratory	Pneumonia	1,034	516	0.31	1,182	448	0.26
	Chronic obstructive airways disease	1,756	1,347	0.69	1,988	1,501	0.89
	Other respiratory disease	632	241	0.15	605	199	0.13
Digestive	Chronic liver disease including cirrhosis	783	632	0.54	397	276	0.29
	Other digestive	822	508	0.32	943	450	0.29
External	Suicide	469	275	0.32	111	39	0.05
	Other external	1,032	649	0.67	652	289	0.27
Mental and behavioural	Dementia & Alzheimer's disease	1,215	484	0.18	2,444	767	0.29
	Other mental and behavioural disorders	78	67	0.05	34	21	0.02
Other	Infectious and parasitic diseases	222	124	0.09	287	145	0.10
	Urinary conditions	266	126	0.06	433	196	0.11
	Ill defined conditions	297	178	0.15	546	140	0.08
	Diabetes	216	137	0.08	230	132	0.08
	Other	966	336	0.33	891	247	0.26
< 28 days	Deaths under 28 days	140	45	0.09	116	28	0.06
Total		22,265			21,819		

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