

# THE SEGMENT TOOL

## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Updated May 2016



### Key results for West Midlands

#### 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 West Midlands 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 West Midlands

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

	Male	Female
Life expectancy at birth in West Midlands, 2012-2014	78.9	82.9
Life expectancy at birth in England, 2012-2014	79.6	83.2
Absolute gap in life expectancy between West Midlands and England in years*	-0.7	-0.3

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

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

	Male	Female
Life expectancy at birth in the most deprived quintile of West Midlands, 2012-2014	74.7	79.9
Life expectancy at birth in the least deprived quintile of West Midlands, 2012-2014	82.1	85.5
Absolute gap in life expectancy between most deprived and least deprived areas within West Midlands*	-7.4	-5.6

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

#### Sources:

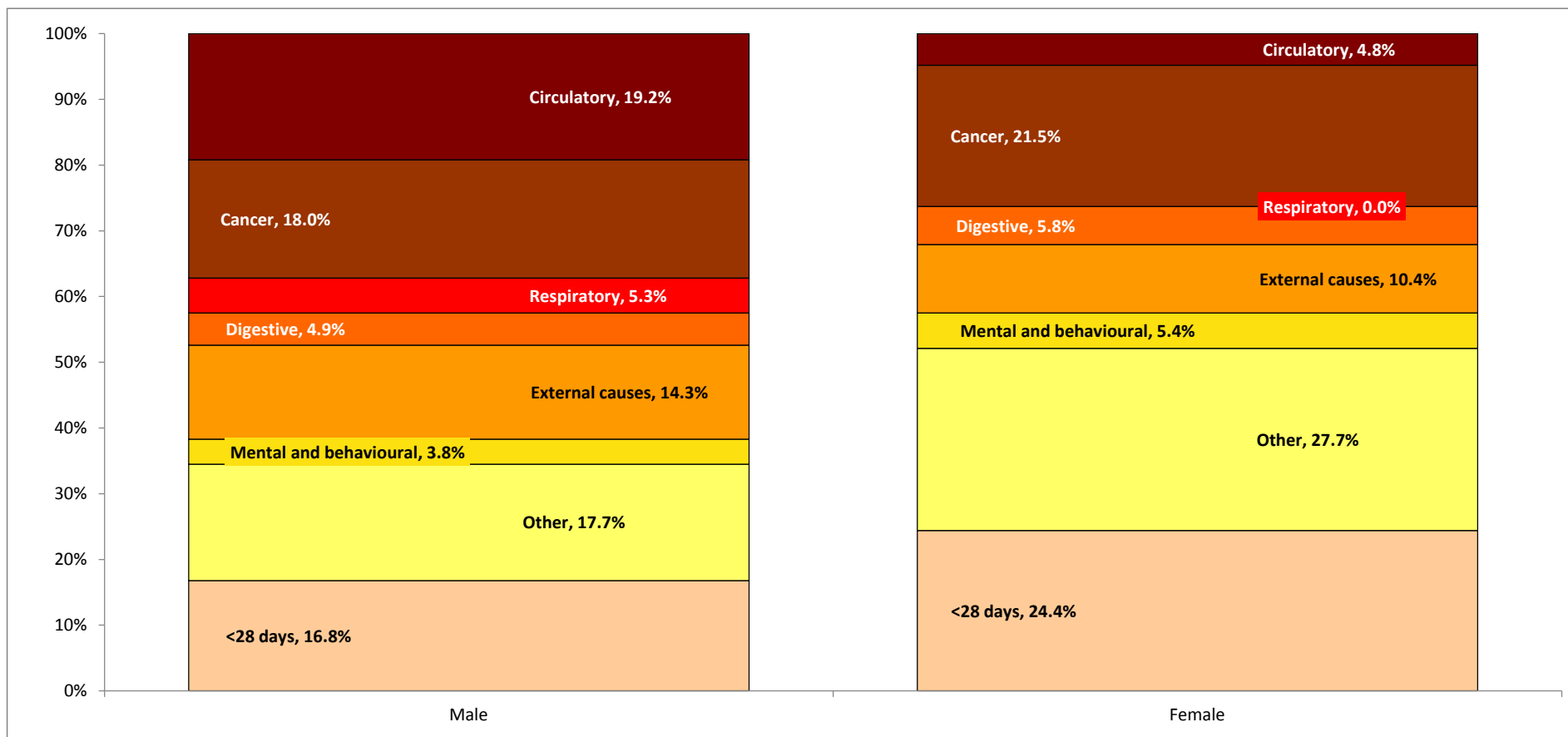
- Life expectancies for regions - Office for National Statistics (ONS), life expectancy at birth for local areas in England and Wales
- Life Expectancies for deprivation quintiles within each local authority - Analysis by Public Health England Epidemiology and Surveillance team based on ONS death registration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

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Between area inequalities: Life expectancy gap between West Midlands as a whole and England

Chart 1: Scarf chart showing the breakdown of the life expectancy gap between West Midlands 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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Chart 2: Bar chart showing life expectancy years gained or lost if West Midlands 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 West Midlands 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	21,377	723	0.13	19.2	20,704	-43	0.02	4.8
Cancer	23,661	822	0.12	18.0	20,377	282	0.07	21.5
Respiratory	10,114	187	0.04	5.3	10,709	-94	0.00	..
Digestive	3,619	95	0.03	4.9	3,699	-14	0.02	5.8
External causes	3,876	442	0.10	14.3	2,415	256	0.03	10.4
Mental and behavioural	5,166	167	0.03	3.8	10,205	143	0.02	5.4
Other	7,859	594	0.12	17.7	10,206	545	0.09	27.7
Deaths under 28 days	496	162	0.11	16.8	365	105	0.08	24.4
<b>Total</b>	<b>76,168</b>			<b>100</b>	<b>78,679</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

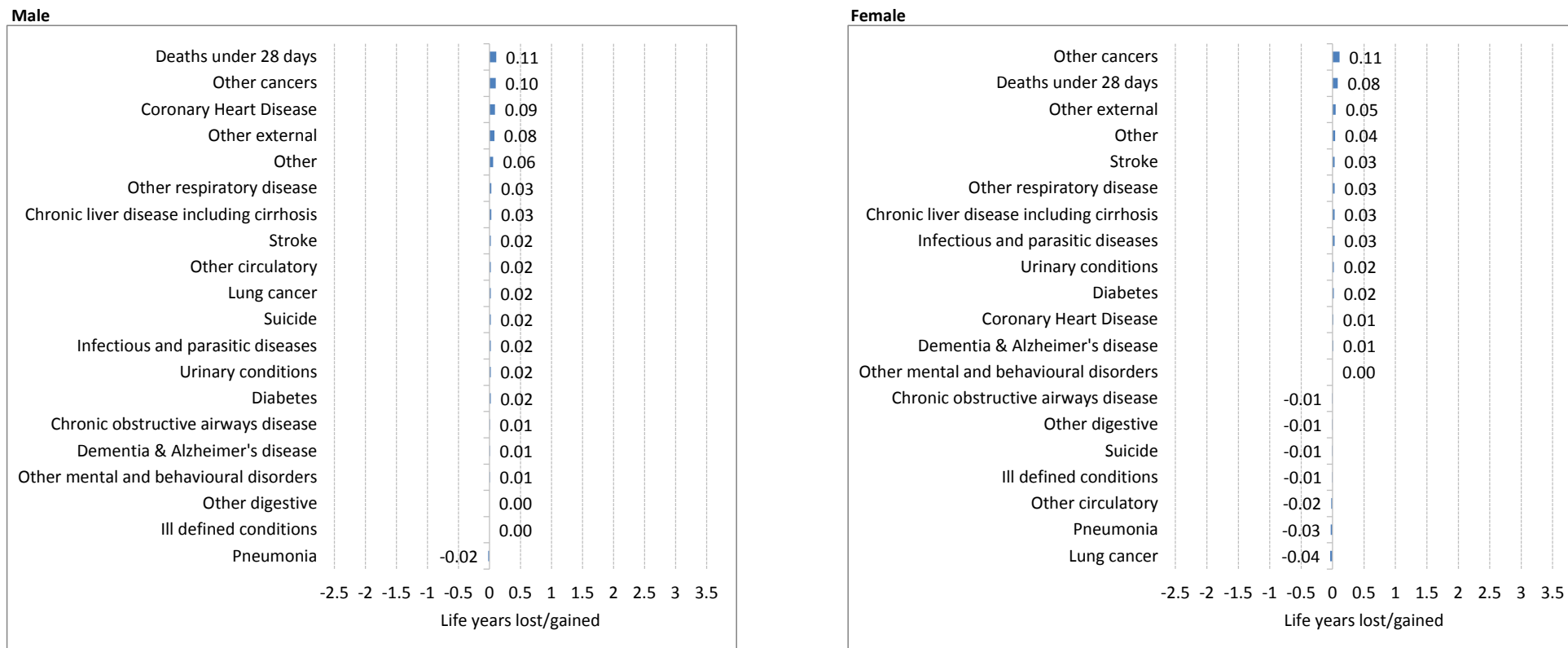
++ The figures have not been calculated as life expectancy is higher than England

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 West Midlands 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 West Midlands 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	11,546	515	0.09	7,576	-18	0.01
	Stroke	4,421	178	0.02	6,497	220	0.03
	Other circulatory	5,413	33	0.02	6,672	-241	-0.02
Cancer	Lung cancer	5,260	159	0.02	3,863	-259	-0.04
	Other cancers	18,401	663	0.10	16,514	541	0.11
Respiratory	Pneumonia	3,362	-172	-0.02	4,268	-310	-0.03
	Chronic obstructive airways disease	4,210	76	0.01	3,791	-89	-0.01
	Other respiratory disease	2,424	222	0.03	2,524	244	0.03
Digestive	Chronic liver disease including cirrhosis	1,298	130	0.03	759	106	0.03
	Other digestive	2,291	-36	0.00	2,941	-121	-0.01
External	Suicide	1,189	55	0.02	312	-25	-0.01
	Other external	2,687	387	0.08	2,119	287	0.05
Mental and behavioural	Dementia & Alzheimer's disease	4,963	120	0.01	10,079	129	0.01
	Other mental and behavioural disorders	204	47	0.01	124	13	0.00
Other	Infectious and parasitic diseases	863	149	0.02	1,041	200	0.03
	Urinary conditions	1,158	120	0.02	1,635	144	0.02
	Ill defined conditions	864	-7	0.00	2,313	-124	-0.01
	Diabetes	923	164	0.02	957	158	0.02
	Other	4,047	173	0.06	4,205	161	0.04
< 28 days	Deaths under 28 days	496	162	0.11	365	105	0.08
Total		76,020			78,552		

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.

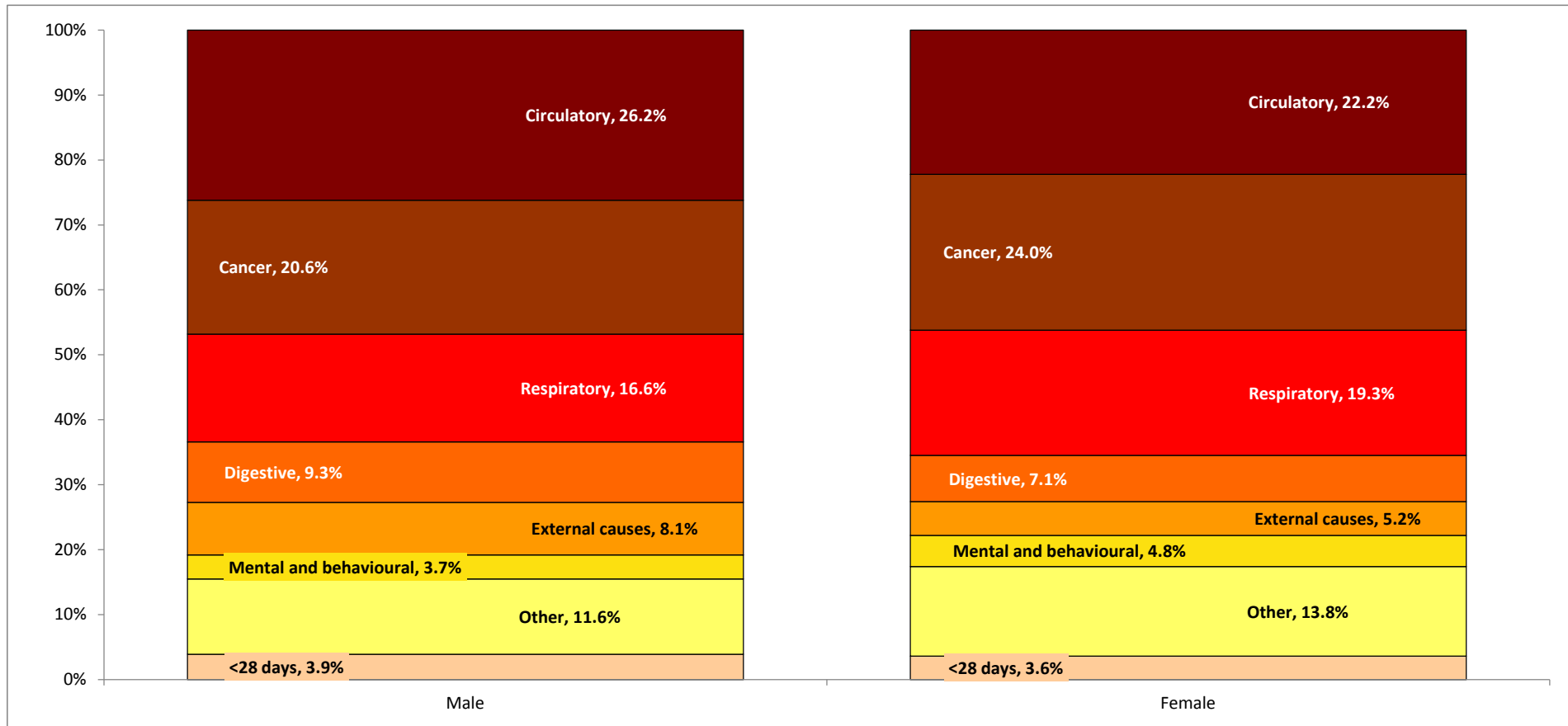
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates.

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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 West Midlands

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

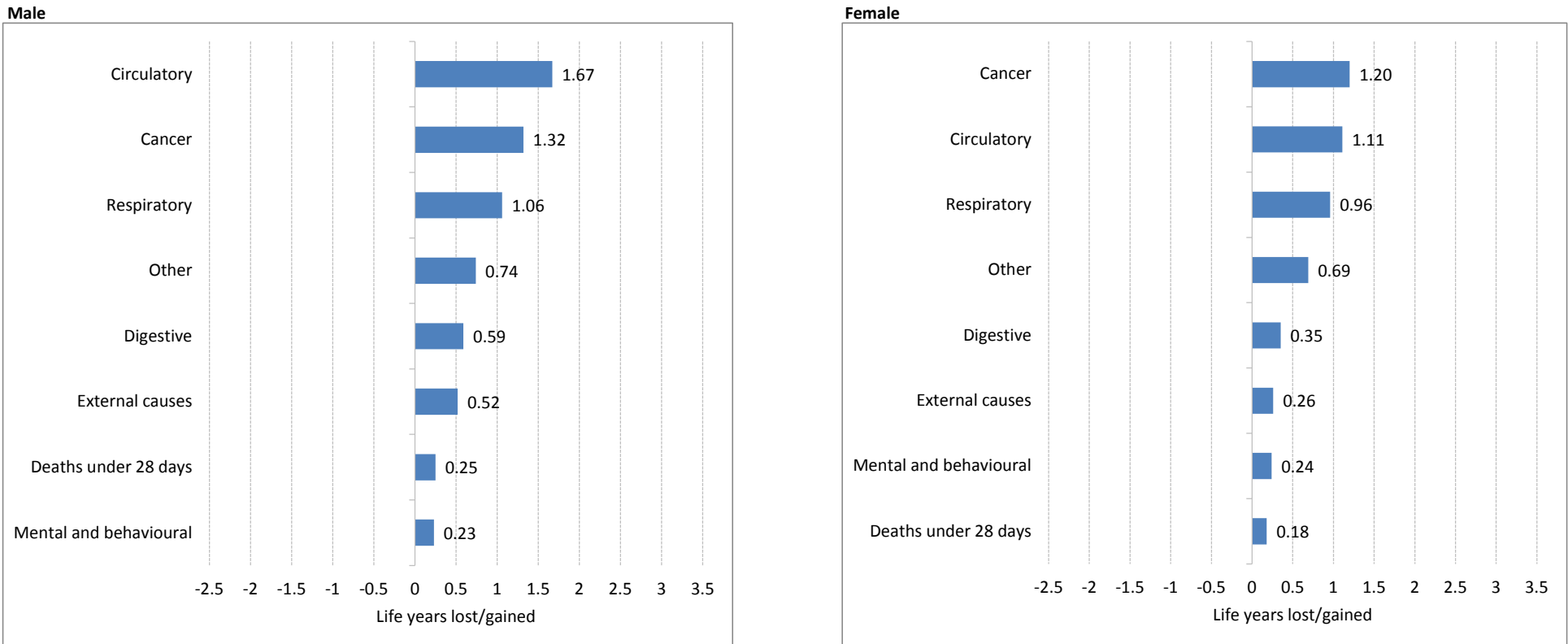
Analysis by Public Health England's (PHE) Epidemiology and Surveillance team based on ONS death registration data, and mid year population estimates, and DCLG Index of Multiple Deprivation, 2015



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Chart 5: Bar chart showing life expectancy years gained or lost if West Midlands most deprived quintile had the same mortality rates as West Midlands 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 West Midlands most deprived quintile and West Midlands 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	4,171	1,797	1.67	26.2	3,579	1,088	1.11	22.2
Cancer	4,345	1,435	1.32	20.6	3,670	1,070	1.20	24.0
Respiratory	2,252	1,314	1.06	16.6	2,119	1,015	0.96	19.3
Digestive	892	541	0.59	9.3	742	308	0.35	7.1
External causes	939	384	0.52	8.1	518	196	0.26	5.2
Mental and behavioural	867	366	0.23	3.7	1,554	351	0.24	4.8
Other	1,589	650	0.74	11.6	1,805	545	0.69	13.8
Deaths under 28 days	218	113	0.25	3.9	143	72	0.18	3.6
<b>Total</b>	<b>15,273</b>			<b>100</b>	<b>14,130</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

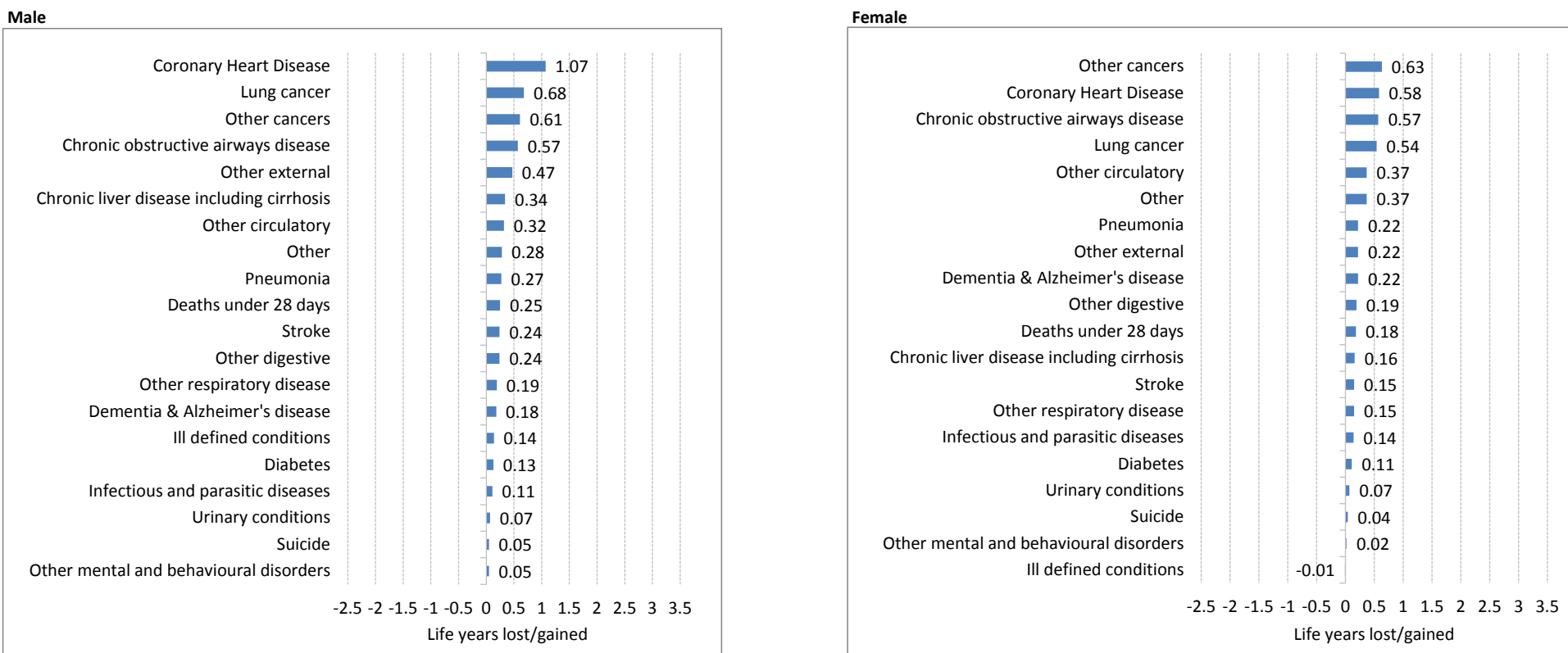
## The figures have not been calculated as life expectancy in the most deprived quintile is higher than life expectancy in the least deprived quintile

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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## SEGMENTING LIFE EXPECTANCY GAPS BY CAUSE OF DEATH

Chart 6: Bar chart showing life expectancy years gained or lost if West Midlands most deprived quintile had the same mortality rates as West Midlands 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 West Midlands most deprived quintile had the same mortality rates as West Midlands 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	2,434	1,189	1.07	1,463	608	0.58
	Stroke	787	286	0.24	970	124	0.15
	Other circulatory	951	323	0.32	1,153	359	0.37
Cancer	Lung cancer	1,243	772	0.68	889	536	0.54
	Other cancers	3,102	663	0.61	2,781	534	0.63
Respiratory	Pneumonia	685	333	0.27	721	231	0.22
	Chronic obstructive airways disease	1,073	760	0.57	940	622	0.57
	Other respiratory disease	480	222	0.19	441	160	0.15
Digestive	Chronic liver disease including cirrhosis	389	283	0.34	197	112	0.16
	Other digestive	495	253	0.24	545	197	0.19
External	Suicide	255	36	0.05	77	20	0.04
	Other external	684	347	0.47	445	179	0.22
Mental and behavioural	Dementia & Alzheimer's disease	803	320	0.18	1,520	333	0.22
	Other mental and behavioural disorders	64	46	0.05	33	17	0.02
Other	Infectious and parasitic diseases	207	122	0.11	237	135	0.14
	Urinary conditions	201	78	0.07	266	67	0.07
	Ill defined conditions	209	109	0.14	297	-37	-0.01
	Diabetes	244	163	0.13	221	117	0.11
	Other	733	185	0.28	775	263	0.37
< 28 days	Deaths under 28 days	218	113	0.25	143	72	0.18
Total		15,257			14,115		

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