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Infant mortality in Birmingham – the headline figures

Dr Marion Gibbon – Interim Assistant DPH, Birmingham City Council.

Dr Laura Griffith – Senior Knowledge Transfer Facilitator, Local Knowledge Intelligence Service, PHE Midlands

December 2020

LKISMidlands@phe.gov.uk

Infant mortality

Infant mortality is an indicator of the **general health of an entire population**. It reflects the relationship between causes of infant mortality and upstream determinants of population health such as **economic, social and environmental conditions**.

Infant mortality rate –number of child deaths under one year/1,000 live births

Deaths occurring during the first 28 days of life (the neonatal period) in particular, are considered to reflect the health and care of both mother and new-born.

West Midlands has the highest rate of infant mortality in England

Infant mortality rate

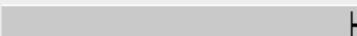
New data

2017 - 19

Crude rate - per 1000

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Area ▲ ▼	Recent Trend	Count ▲ ▼	Value ▲ ▼		95% Lower CI	95% Upper CI
England	–	7,434	3.9		3.9	4.0
West Midlands region	–	1,125	5.6		5.2	5.9
North West region	–	1,106	4.5		4.3	4.8
Yorkshire and the Humber region	–	763	4.2		3.9	4.5
East Midlands region	–	626	4.1		3.8	4.5
South East region	–	1,069	3.7		3.5	3.9
East of England region	–	718	3.5		3.2	3.7
London region	–	1,238	3.4		3.2	3.6
North East region	–	269	3.4		3.0	3.8
South West region	–	520	3.2		2.9	3.5

Source: Office for National Statistics (ONS)

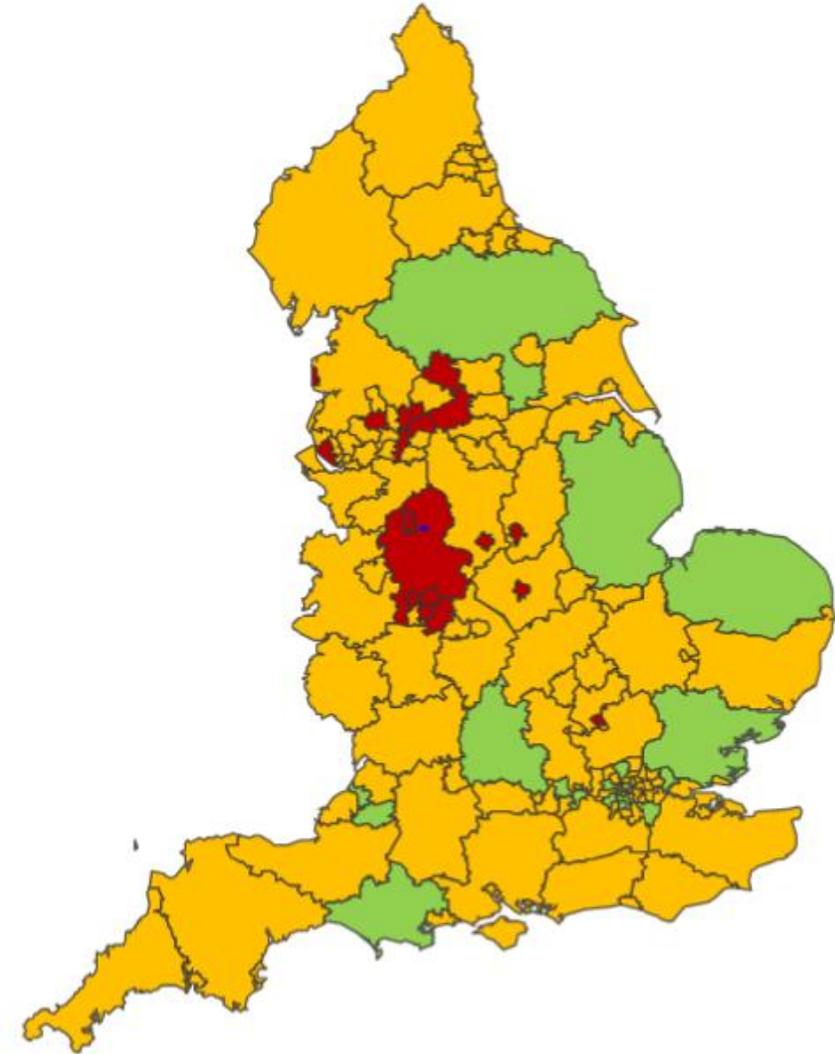
Key message: The West Midlands has a rate of infant mortality that is statistically much worse than the England average. 5.6/ 1,000 compared to 3.9/ 1,000 as the average for England.

Data source: Office for National Statistics.

The national picture of infant mortality – an overview

Key message: **shows the geographical distribution of areas which have statistically higher than average rates of infant mortality**

Areas outside the West Midlands include: Blackpool, Kirklees, Manchester, Bradford, Leicester, Oldham, Nottingham, Rochdale, Derby, Liverpool and Luton.



Birmingham has the 3rd highest rate of infant mortality in England

Infant mortality rate 2017 - 19

Crude rate - per 1,000

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Area	Recent Trend	Count	Value	95% Lower CI	95% Upper CI
England	-	7,434	3.9	3.9	4.0
Stoke-on-Trent	-	74	7.5	5.9	9.4
Sandwell	-	97	7.1	5.8	8.7
Birmingham	-	336	7.0	6.3	7.8
Walsall	-	77	6.8	5.4	8.5
Blackpool	-	31	6.4	4.4	9.1
Kirklees	-	93	6.2	5.0	7.6
Manchester	-	134	6.1	5.1	7.2
Bradford	-	135	6.1	5.1	7.2
Leicester	-	85	6.0	4.8	7.4
Bolton	-	64	5.8	4.5	7.4
Wolverhampton	-	58	5.7	4.4	7.4
Oldham	-	55	5.7	4.3	7.4
Nottingham	-	66	5.6	4.3	7.1
Rochdale	-	48	5.5	4.1	7.3
Derby	-	51	5.4	4.1	7.2
Liverpool	-	94	5.4	4.4	6.6
Luton	-	53	5.3	4.0	7.0
Herefordshire	-	27	5.3	3.5	7.8
North East Lincolnshire	-	27	5.2	3.4	7.6
Kingston upon Hull	-	50	5.0	3.7	6.7
Blackburn with Darwen	-	30	5.0	3.4	7.1
Peterborough	-	43	4.9	3.6	6.7
Southampton	-	44	4.9	3.5	6.5

Key message: The top 4 local authorities with the highest infant mortality rates are all in the WM. **For every 1,000 births in Birmingham, 7 die before reaching their 1st birthday.**

Data source: Office for National Statistics.

There is significant variation within the West Midlands

Infant mortality rate

New data

2017 - 19

Crude rate - per 1000

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Area	Recent Trend	Count	Value	95% Lower CI	95% Upper CI
England	—	7,434	3.9	3.9	4.0
West Midlands region	—	1,125	5.6	5.2	5.9
Stoke-on-Trent	—	74	7.5	5.9	9.4
Sandwell	—	97	7.1	5.8	8.7
Birmingham	—	336	7.0	6.3	7.8
Walsall	—	77	6.8	5.4	8.5
Wolverhampton	—	58	5.7	4.4	7.4
Herefordshire	—	27	5.3	3.5	7.8
Staffordshire	—	121	4.8	4.0	5.8
Solihull	—	32	4.8	3.3	6.7
Coventry	—	58	4.5	3.4	5.8
Shropshire	—	36	4.4	3.1	6.2
Telford and Wrekin	—	26	4.2	2.8	6.2
Worcestershire	—	71	4.1	3.2	5.2
Dudley	—	44	4.1	3.0	5.5
Warwickshire	—	68	3.8	3.0	4.8

Source: Office for National Statistics (ONS)

Key message: all Local Authorities in the West Midlands have rates above the England average (3.9) except Warwickshire. Stoke-on-Trent has the highest rate at 7.5/1,000, Birmingham 7.0/1,000 and Warwickshire the lowest in the region at 3.8/1,000. Data source: Office for National Statistics

Infant mortality rates highest in the most deprived 10%

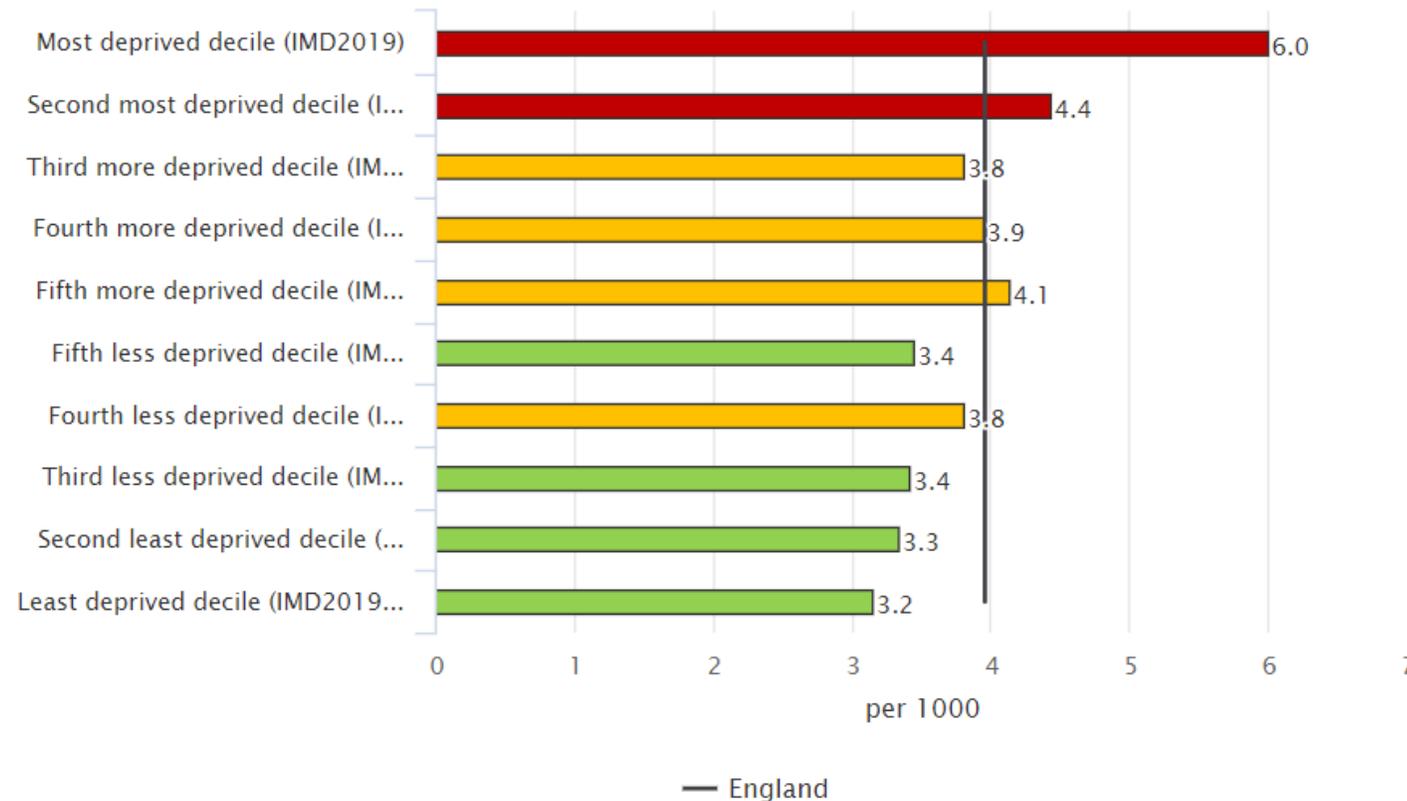
Infant mortality rate **New data** England, 2017 - 19

Crude rate - per 1000

 Export chart as image

 Export chart as CSV file

2001 - 03	2002 - 04	2003 - 05	2004 - 06	2005 - 07	2006 - 08	2007 - 09	2008 - 10	2009 - 11
2010 - 12	2011 - 13	2012 - 14	2013 - 15	2014 - 16	2015 - 17	2016 - 18	2017 - 19	



Partition data by:

-  County & UA (pre Apr2019) deprivation deciles in England (IMD2015)
-  District & UA (pre Apr2019) deprivation deciles in England (IMD2015)
-  LSOA11 deprivation deciles in England (IMD2015)
-  County & UA deprivation deciles in England (IMD2015, 4/19 geog.)
-  District & UA deprivation deciles in England (IMD2015, 4/19 geog.)
-  **County & UA deprivation deciles in England (IMD2019, 4/19 and 4/20 geog.)**
-  District & UA deprivation deciles in England (IMD2019, 4/19 geog.)
-  LSOA11 deprivation deciles in

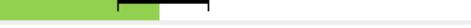
CIPFA nearest neighbour analysis

Infant mortality rate New data 2017 - 19

Crude rate - per 1000

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Area ▲▼	Recent Trend	Neighbour Rank ▲▼	Count ▲▼	Value ▲▼		95% Lower CI	95% Upper CI
England	-	-	7,434	3.9		3.9	4.0
Neighbours average	-	-	-	-		-	-
Sandwell	-	4	97	7.1		5.8	8.7
Birmingham	-	-	336	7.0		6.3	7.8
Walsall	-	13	77	6.8		5.4	8.5
Kirklees	-	9	93	6.2		5.0	7.6
Bradford	-	2	135	6.1		5.1	7.2
Leicester	-	6	85	6.0		4.8	7.4
Bolton	-	15	64	5.8		4.5	7.4
Wolverhampton	-	10	58	5.7		4.4	7.4
Nottingham	-	11	66	5.6		4.3	7.1
Derby	-	12	51	5.4		4.1	7.2
Liverpool	-	7	94	5.4		4.4	6.6
Salford	-	14	49	4.6		3.4	6.1
Coventry	-	5	58	4.5		3.4	5.8
Leeds	-	1	117	4.0		3.3	4.8
Sheffield	-	3	69	3.7		2.9	4.7
Bristol	-	8	52	3.0		2.2	3.9

Source: Office for National Statistics (ONS)

Areas in the West Midlands *still* perform badly when taking into account areas with the most similar statistical characteristics in terms of socio economic features, so-called CIPFA nearest neighbours

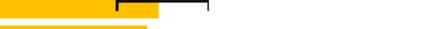
Neonatal mortality rate

Neonatal mortality rate New data 2017 - 19

Crude rate - per 1000

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Area 	Recent Trend	Count 	Value 		95% Lower CI	95% Upper CI
England	–	5,381	2.86		2.78	2.94
West Midlands region	–	842	4.16		3.88	4.45
Stoke-on-Trent	–	59	5.98		4.55	7.72
Birmingham	–	262	5.47		4.83	6.17
Sandwell	–	72	5.29		4.14	6.66
Walsall	–	53	4.70		3.52	6.14
Herefordshire	–	22	4.34		2.72	6.58
Solihull	–	29	4.32		2.89	6.21
Wolverhampton	–	41	4.05		2.91	5.50
Staffordshire	–	95	3.79		3.06	4.63
Worcestershire	–	55	3.19		2.41	4.16
Shropshire	–	25	3.09		2.00	4.56
Telford and Wrekin	–	19	3.09		1.86	4.82
Warwickshire	–	50	2.81		2.09	3.71
Dudley	–	28	2.61		1.73	3.77
Coventry	–	32	2.47		1.69	3.49

Source: PHE based on Office for National Statistics births and deaths data

Key message: isolating neonatal mortality rates still further highlights the fact that 8 County and UA areas in the West Midlands are statistically higher than the national average.

Data source: PHE based on Office for National Statistics births and deaths data

Trends over time – Birmingham

Infant mortality rate New data Birmingham

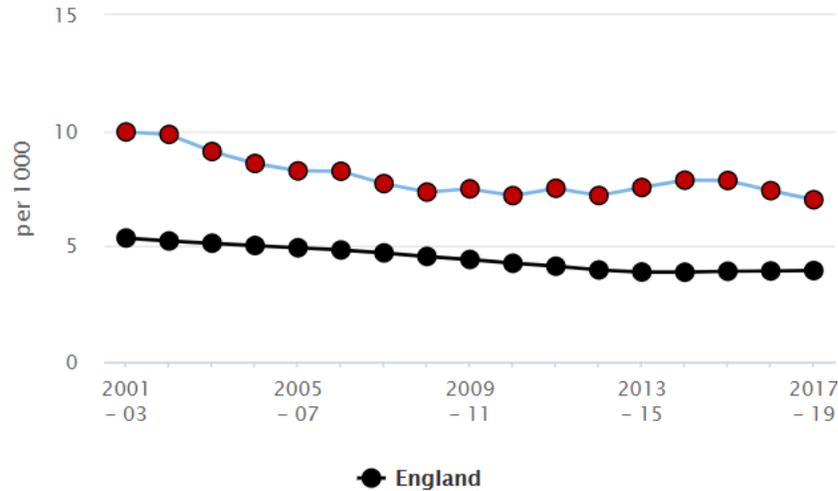
Crude rate - per 1000

 Export chart as image

Show confidence intervals

Show 99.8% CI values

 Export table as CSV file



Recent trend: –

Period	Birmingham				West Midlands	England
	Count	Value	95% Lower CI	95% Upper CI		
2001 - 03	441	9.9	9.0	10.9	6.7	5.4
2002 - 04	449	9.8	8.9	10.8	6.9	5.2
2003 - 05	427	9.1	8.3	10.0	6.8	5.1
2004 - 06	411	8.6	7.8	9.5	6.5	5.0
2005 - 07	406	8.3	7.5	9.1	6.2	4.9
2006 - 08	417	8.2	7.5	9.1	6.3	4.8
2007 - 09	398	7.7	7.0	8.5	6.2	4.7
2008 - 10	381	7.3	6.6	8.1	6.0	4.6
2009 - 11	389	7.5	6.8	8.3	5.9	4.4
2010 - 12	377	7.2	6.5	8.0	5.7	4.3
2011 - 13	395	7.5	6.8	8.3	5.6	4.1
2012 - 14	375	7.2	6.5	8.0	5.5	4.0
2013 - 15	386	7.5	6.8	8.3	5.7	3.9
2014 - 16	402	7.9	7.1	8.7	6.0	3.9
2015 - 17	398	7.8	7.1	8.7	5.9	3.9
2016 - 18	369	7.4	6.7	8.2	5.8	3.9
2017 - 19	336	7.0	6.3	7.8	5.6	3.9

Source: Office for National Statistics (ONS)

Key message: Birmingham has a level of infant mortality which has remained statistically higher than the England average for many years, with the gap varying slightly overtime. Data source: Office for National Statistics

Risk factors for infant mortality – the local picture

Whilst most of the West Midlands has a rate of smoking in early pregnancy that is higher than the England average of 12.8% **Birmingham has a statistically significantly lower rate of 11.6%**.
(Data source MSDS v1.5, 2018-19)



Low birth weight (under 2,500g) and very low birth weight (under 1500g) are known risk factors for infant mortality. **In Birmingham in 2018, 1.72% of babies born were under 1500g compared to an England average of 1.16%**.
(Data source: Office for National Statistics)

Smoking in pregnancy



Smoking

during pregnancy causes up to:

2,200 premature births,
5,000 miscarriages and
300 perinatal deaths
every year in the UK.

25.6% of women in Birmingham are classified as obese in early pregnancy, a rate which is statistically significantly higher than the England average of 22.1%
(Data source MSDS v1.5, 2018-19)



Summary

- Infant mortality is a key public health indicator of the health of the general population as well as of standards of clinical care
- Birmingham has a level of infant mortality that has remained statistically higher than the national average for many years
- Infant mortality is highly correlated with poverty, and rates are particularly high within the poorest decile of the population. 28.1% of Birmingham children live in low income families, compared with 17.0% nationally

Further work is required to better understand the complex local relationship between population level risk factors and individual outcomes



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Further resources:

Public Health Profiles (accessed at <http://fingertips.phe.org.uk/>)

University of Oxford, National Perinatal Epidemiology Unit Inequalities in Infant Mortality Work Programme www.npeu.ox.ac.uk/infant-mortality

NICE Evidence library on Infant mortality

<https://www.evidence.nhs.uk/search?q=Infant+mortality>

RCPCH recommendations: **Why children die - research and recommendations**

(2014) <https://www.rcpch.ac.uk/resources/why-children-die-research-recommendations>

Reducing infant mortality in London: <https://www.gov.uk/government/publications/reducing-infant-mortality-in-london>