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Dear Colleague

PERINATAL & INFANT MORTALITY SURVEY 2008/9 – BLACK COUNTRY

This report relates to the newly formed **Black Country Cluster and its constituent PCTs**.

It provides an update of mortality rates to 2009 for stillbirths and neonatal deaths, and to 2008 for infant deaths. PCT cohorts are defined here according to postcode.

Method

The regional information is based on the WM Perinatal Death Notifications (PDNs) which the Perinatal Institute receives from its network of co-ordinators in West Midlands units. The information may sometimes differ from the last ONS Vital Statistics, because our data includes late ascertained cases which are notified to the PI on an ongoing basis. We have also implemented cross checks with the WM Safeguarding Children's Boards.

This report includes

- birth rate trend in Black Country, West Midlands (WM) and England & Wales (E&W);
- a short description of Black Country demographics based on PEER 09/10;
- numbers, rates and 3year moving averages for
 - stillbirths (from 24 weeks)
 - early neonatal deaths (birth to age 7 days)
 - perinatal deaths (stillbirths and early neonatal deaths)
 - neonatal deaths (birth to age 28 days)
 - infant deaths (birth to 12 months)

Although these categories overlap, the data are presented for ease of reference and comparison with other reports. Unlike previous national reports, we continue presenting trends by 3 year moving averages, as year-on-year variation may often falsely identify outliers.

As in previous years, we also present 'corrected' rates, whereby we exclude congenital anomalies and pre-viable births, to allow more useful comparisons between PCTs with different populations.

For stillbirths and infant deaths, we have undertaken the following additional analyses:

1. mortality rates plotted against deprivation index of the birth population: this allows each PCTs mortality rate to be seen within the context of the level of deprivation within its population;
2. analysis of stillbirths and infant deaths within major classification groups, to assess the main contributing causes.

Findings

1. Births

- a. As the graph shows, birth trends in BC and WM follow the national trend. The number of births have been increasing in recent years, but appear to have reached a plateau in 2009.
- b. In the table, several comparative maternity demographics are presented for Black Country and the rest of WM. Mothers in BC have a higher rate of deprivation, obesity and teenage pregnancy; they are also more likely to smoke at booking, but have a higher cessation rate. Their babies have higher rates of IUGR (intrauterine growth restriction) and prematurity.

2. Stillbirth trends

- a. Black Country stillbirth rates are higher than those in E&W and, although running along the average WM rate, have recently increased above the regional average. This appears to be mainly due to higher rates in Wolverhampton and Sandwell, although the confidence intervals are wide and overlapping.
 - b. After exclusion of congenital anomalies (2B), the elevated rate of stillbirths in Wolverhampton in 2009 are found to be significantly higher than the West Midlands average.
3. **Stillbirths and Deprivation:** This analysis, for crude and corrected figures, shows that stillbirth rates are mostly within the expected range adjusted for each PCT's IMD score, except for the corrected stillbirth rates in Wolverhampton.
4. **Stillbirth classification groups:** trends are presented for the main groups but analysis is limited because of small numbers. Deaths associated with intrauterine growth restriction (IUGR) represent the largest category, and are higher than in the rest of WM, as are deaths due to placenta/cord causes and intrapartum asphyxia.
5. **Infant deaths – trends**
Black Country infant death rates are also above those in E&W and WM. There is variation between PCTs, which mostly disappears when congenital anomalies and previable births are excluded.
6. **Infant deaths and deprivation:** this analysis shows that, for crude as well as corrected rates, after adjustment for the respective IMD scores the infant mortality rate of the four PCTs lies within the prediction line.
7. **Infant death classification groups** – as elsewhere, the largest categories are pulmonary immaturity and congenital anomalies, with the latter suggesting an increase in recent years. As the histogram shows, the higher infant mortality rate in BC vs WM comparison was reflected in most categories, the difference being most marked in deaths due to immaturity, infection and SUDI.

Sections 8 & 9 show rates for subgroups of infant deaths (**early neonatal and neonatal**). In section 10, rates for **perinatal deaths** are presented, with similar comparisons for crude and corrected rates.

Further analyses are currently being undertaken and will be reported in the coming weeks, including a more thorough analysis of subgroups of the WM maternity population.

Comments and suggestions for our reports are always welcome, and specific analyses continue to be available on request (www.pi.nhs.uk/data).

With sincere regards



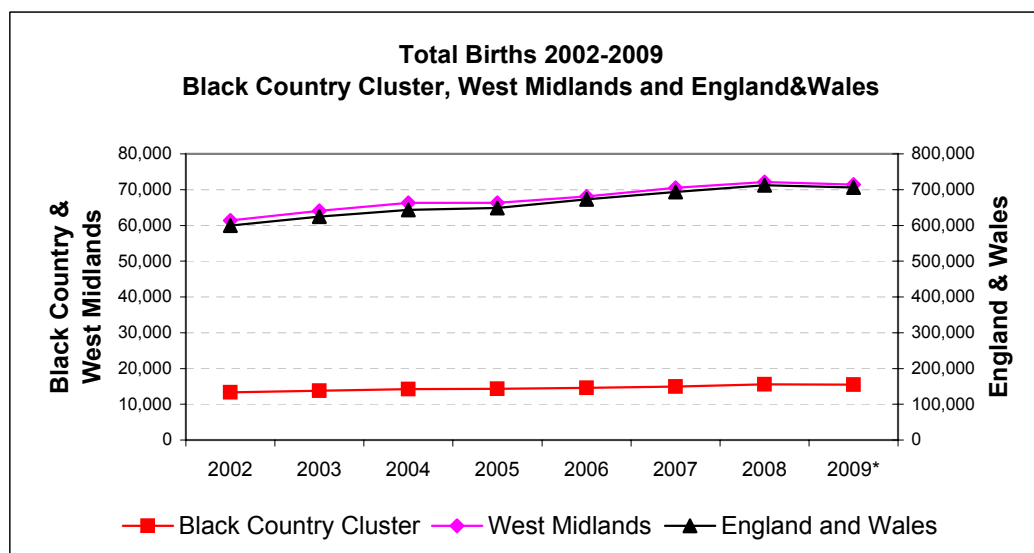
Professor Jason Gardosi
Director, West Midlands Perinatal Institute

1. Births: Black Country, West Midlands and England & Wales 2002-2009

Source: ONS

	2002	2003	2004	2005	2006	2007	2008	2009*
England and Wales	599,279	624,816	643,026	649,094	672,966	693,356	712,328	706,248
West Midlands	61,417	64,079	66,285	66,351	68,063	70,476	72,110	71,452
Black Country Cluster	13,362	13,772	14,189	14,329	14,605	14,973	15,555	15,487
Dudley	3,441	3,361	3,533	3,574	3,570	3,608	3,731	3,643
Sandwell	3,836	3,983	4,132	4,196	4,192	4,434	4,814	4,764
Walsall	3,254	3,357	3,436	3,441	3,626	3,543	3,654	3,695
Wolverhampton	2,831	3,071	3,088	3,118	3,217	3,388	3,356	3,385

* Provisional, live births only



Data: PEER 2009/10

	Black Country	Rest of West Midlands	West Midlands Total		Black Country	Rest of West Midlands	West Midlands Total
Submissions:	12,725	35,774	48,499	Submissions:	12,725	35,774	48,499
Deprivation - IMD Quintile				Maternal Age			
1 (least)	3.7%	9.5%	8.0%	< 16	0.2%	0.2%	0.2%
2	6.5%	13.3%	11.5%	< 18	2.4%	1.8%	2.0%
3	10.7%	17.7%	15.9%	< 20	8.8%	6.8%	7.4%
4	24.1%	19.1%	20.4%	20 - 24	24.6%	22.4%	23.0%
5 (most)	55.0%	40.4%	44.2%	25 - 29	30.6%	28.7%	29.2%
Ethnic Origin				30 - 34	22.7%	24.9%	24.3%
African	3.0%	3.7%	3.5%	35 - 39	10.7%	14.0%	13.1%
African Caribbean	2.8%	2.1%	2.3%	35+	13.2%	17.1%	16.1%
British European	66.0%	67.3%	67.0%	40+	2.6%	3.2%	3.0%
Eastern European	2.8%	2.9%	2.9%	Body Mass Index			
Middle Eastern	1.3%	1.2%	1.3%	< 18.5	3.9%	3.1%	3.3%
South Asian	19.5%	16.9%	17.6%	18.5 - 24.9	46.9%	48.4%	48.0%
Bangladeshi	2.0%	2.2%	2.1%	25 - 29.9	27.5%	28.4%	28.2%
Indian	9.3%	3.6%	5.0%	30 - 34.9	13.5%	12.6%	12.8%
Pakistani	8.3%	11.2%	10.4%	35 - 39.9	5.3%	5.2%	5.2%
Other/Mixed	4.6%	5.8%	5.5%	30+	21.6%	20.0%	20.4%
Smoking				35+	8.1%	7.4%	7.6%
At booking	20.9%	18.7%	19.3%	40+	2.8%	2.3%	2.4%
Late in pregnancy	13.5%	14.2%	14.0%	Prematurity			
Ceased During Pregnancy	32.7%	23.1%	25.9%	< 37 Weeks	7.1%	6.6%	6.7%
IUGR (<10th cust.cent.)	15.97%	13.6%	14.2%	< 34 Weeks	2.3%	2.1%	2.1%

2 A: Stillbirths 2002-2009

West Midlands

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	3365	3565	3517	3473	3590	3585	3617	
West Midlands	391	395	383	403	392	398	416	414
Black Country Cluster	103	85	80	86	82	89	102	105
Dudley	26	21	18	28	20	19	27	20
Sandwell	36	24	24	28	26	26	32	38
Walsall	16	22	18	15	14	21	22	21
Wolverhampton	25	18	20	15	22	23	21	26

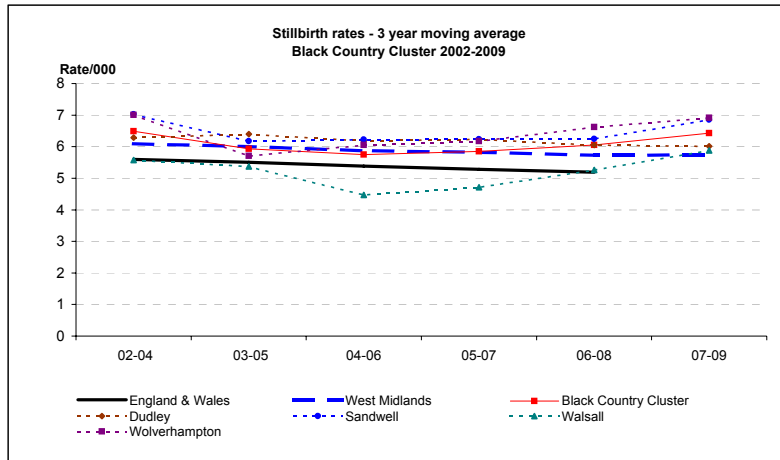
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales*	5.6	5.7	5.5	5.4	5.3	5.2	5.1		
West Midlands	6.4	6.2	5.8	6.1	5.8	5.6	5.8	5.8	5.3 - 6.4
Black Country Cluster	7.7	6.2	5.6	6.0	5.6	5.9	6.6	6.8	5.6 - 8.2
Dudley	7.6	6.2	5.1	7.8	5.6	5.3	7.2	5.5	3.6 - 8.5
Sandwell	9.4	6.0	5.8	6.7	6.2	5.9	6.6	8.0	5.8 - 10.9
Walsall	4.9	6.6	5.2	4.4	3.9	5.9	6.0	5.7	3.7 - 8.7
Wolverhampton	8.8	5.9	6.5	4.8	6.8	6.8	6.3	7.7	5.2 - 11.2

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales	5.6	5.5	5.4	5.3	5.2	
West Midlands	6.1	6.0	5.9	5.8	5.7	5.7
Black Country Cluster	6.5	5.9	5.8	5.9	6.0	6.4
Dudley	6.3	6.4	6.2	6.2	6.1	6.0
Sandwell	7.0	6.2	6.2	6.2	6.3	6.9
Walsall	5.6	5.4	4.5	4.7	5.3	5.9
Wolverhampton	7.0	5.7	6.0	6.2	6.6	6.9

*ONS



2 B: Stillbirths 2002-2009 - CORRECTED

(Excluding major congenital anomalies)

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	282	284	279	311	268	284	290	259
Black Country Cluster	70	64	61	70	62	61	78	71
Dudley	16	13	16	28	12	10	19	14
Sandwell	27	17	17	18	22	17	27	20
Walsall	14	17	13	13	11	17	17	14
Wolverhampton	13	17	15	11	17	17	15	23

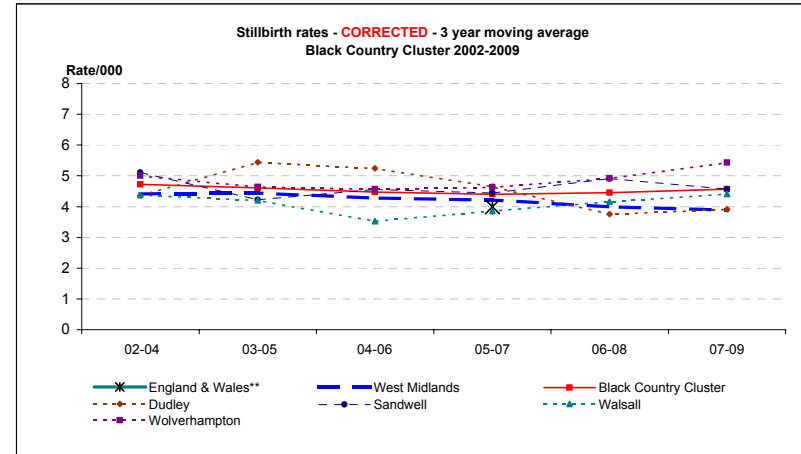
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales**				4.1	4.1	3.9			
West Midlands	4.6	4.4	4.2	4.7	3.9	4.0	4.0	3.6	3.2 - 4.1
Black Country Cluster	5.2	4.6	4.3	4.9	4.2	4.1	5.0	4.6	3.6 - 5.8
Dudley	4.6	3.9	4.5	7.8	3.4	2.8	5.1	3.8	2.3 - 6.4
Sandwell	7.0	4.3	4.1	4.3	5.2	3.8	5.6	4.2	2.7 - 6.5
Walsall	4.3	5.1	3.8	3.8	3.0	4.8	4.7	3.8	2.3 - 6.4
Wolverhampton	4.6	5.5	4.9	3.5	5.3	5.0	4.5	6.8	4.5 - 10.2

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales**				4.0		
West Midlands	4.4	4.4	4.3	4.2	4.0	3.9
Black Country Cluster	4.7	4.6	4.5	4.4	4.5	4.6
Dudley	4.4	5.4	5.2	4.7	3.8	3.9
Sandwell	5.1	4.2	4.6	4.4	4.9	4.6
Walsall	4.4	4.2	3.5	3.9	4.2	4.4
Wolverhampton	5.0	4.6	4.6	4.6	4.9	5.4

** CEMACH



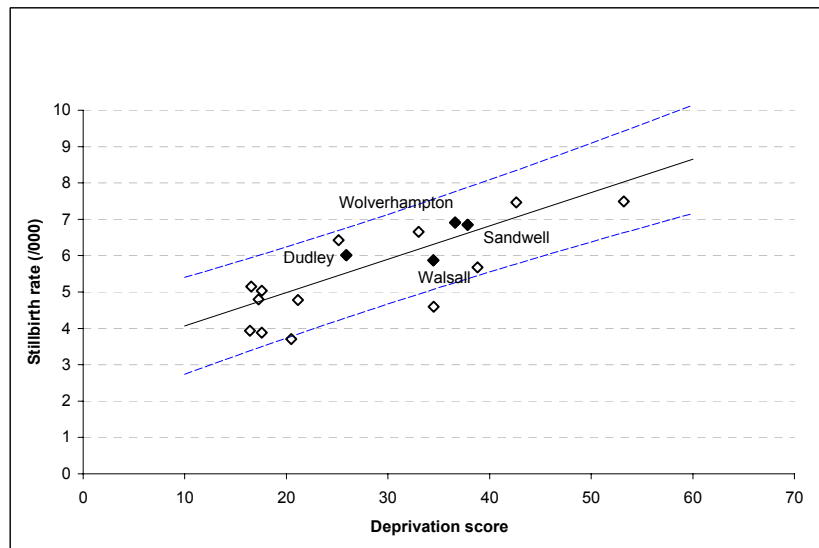
x = England & Wales 3 y adjusted average from CEMACH

3. Stillbirths and Deprivation, Black Country PCTs

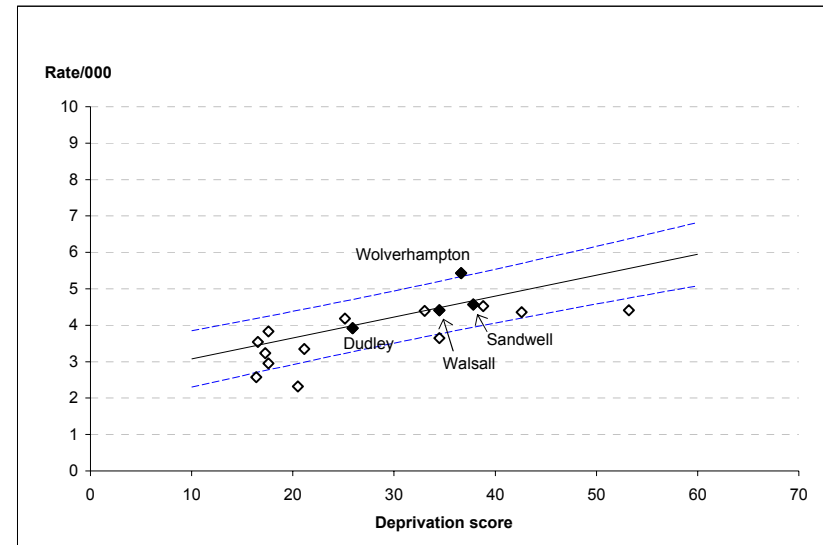
Graphs show stillbirth rates for the last triennium (2007-9) for Black Country PCTs, plotted against each PCT's respective deprivation score (IMD 2007).

Regression line with 90% prediction intervals (based on 2002-2009 data) are also shown

A. Crude rates



B. Corrected rates - after excluding major congenital anomalies



4. Stillbirths in the Black Country, 2002 -2009: Classification in main groups

Groups based on ReCoDe classification

	2002	2003	2004	2005	2006	2007	2008	2009
Births	13362	13772	14189	14329	14605	14973	15555	15487

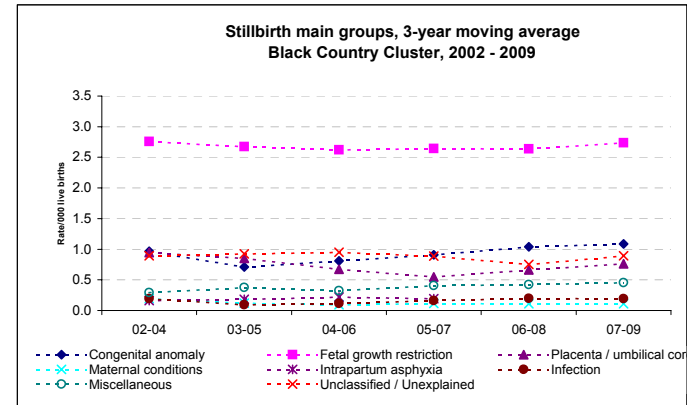
MAIN GROUPS

Numbers

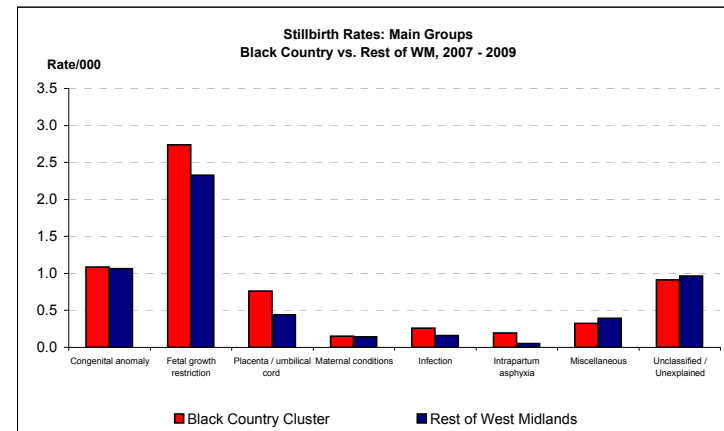
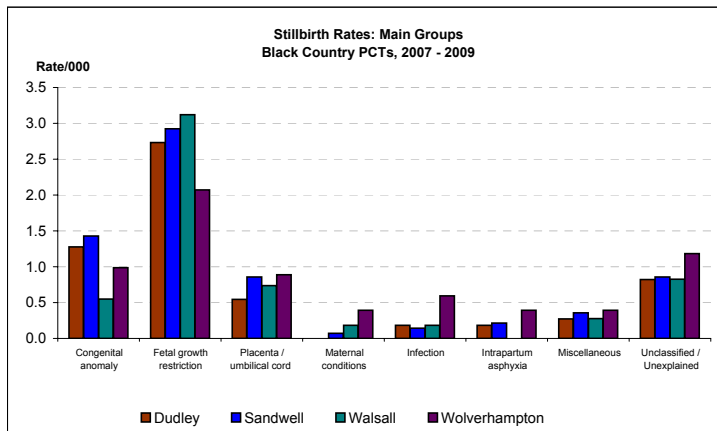
Congenital anomaly	19	9	12	9	14	17	16	17
Fetal growth restriction	42	38	34	41	38	37	44	45
Placenta/Umbilical cord	14	14	11	11	7	6	17	12
Maternal conditions	4	3	1	1	2	2	1	2
Infection	5	2	1	1	3	3	3	3
Intrapartum asphyxia	3	4	3	1	3	4	3	2
Miscellaneous	3	6	3	7	4	7	8	6
Unclassified / Unexplained	13	9	15	15	11	13	10	18

3-year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
Congenital anomaly	1.0	0.7	0.8	0.9	1.0	1.1
Fetal growth restriction	2.8	2.7	2.6	2.6	2.6	2.7
Placenta / umbilical cord	0.9	0.9	0.7	0.5	0.7	0.8
Maternal conditions	0.2	0.1	0.1	0.1	0.1	0.1
Infection	0.2	0.1	0.1	0.2	0.2	0.2
Intrapartum asphyxia	0.2	0.2	0.2	0.2	0.2	0.2
Miscellaneous	0.3	0.4	0.3	0.4	0.4	0.5
Unclassified / Unexplained	0.9	0.9	1.0	0.9	0.8	0.9



Births 2007-9	Dudley		Sandwell		Walsall		Wolverhampton		Black Country Cluster		Rest of West Midlands	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
MAIN GROUPS - 2007-9												
Congenital anomaly	14	1.3	20	1.4	6	0.6	10	1.0	50	1.1	179	1.1
Fetal growth restriction	30	2.7	41	2.9	34	3.1	21	2.1	126	2.7	391	2.3
Placenta / umbilical cord	6	0.5	12	0.9	8	0.7	9	0.9	35	0.8	74	0.4
Maternal conditions	0	0.0	1	0.1	2	0.2	4	0.4	7	0.2	24	0.1
Infection	2	0.2	2	0.1	2	0.2	6	0.6	12	0.3	27	0.2
Intrapartum asphyxia	2	0.2	3	0.2	0	0.0	4	0.4	9	0.2	9	0.1
Miscellaneous	3	0.3	5	0.4	3	0.3	4	0.4	15	0.3	66	0.4
Unclassified / Unexplained	9	0.8	12	0.9	9	0.8	12	1.2	42	0.9	162	1.0



5 A: Infant Deaths 2002-2008

Numbers

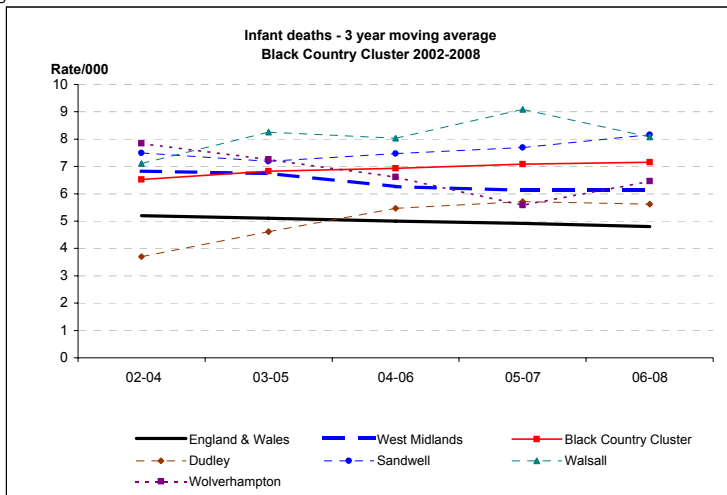
	2002	2003	2004	2005	2006	2007	2008
England and Wales*	3144	3274	3234	3217	3329	3309	3369
West Midlands	407	476	419	423	407	421	456
Black Country Cluster	81	95	92	100	105	104	112
Dudley	11	15	12	21	25	15	21
Sandwell	30	31	28	29	36	33	40
Walsall	22	24	25	35	24	37	26
Wolverhampton	18	25	27	15	20	19	25

Rate/1,000	2002	2003	2004	2005	2006	2007	2008	2008 CI
England and Wales*	5.3	5.3	5.1	5.0	5.0	4.8	4.8	4.6 - 4.9
West Midlands	6.7	7.5	6.4	6.4	6.0	6.0	6.4	5.8 - 7.0
Black Country Cluster	6.1	6.9	6.5	7.0	7.2	7.0	7.2	6.0 - 8.7
Dudley	3.2	4.5	3.4	5.9	7.0	4.2	5.7	3.7 - 8.7
Sandwell	7.9	7.8	6.8	7.0	8.6	7.5	8.4	6.1 - 11.4
Walsall	6.8	7.2	7.3	10.2	6.6	10.5	7.2	4.9 - 10.5
Wolverhampton	6.4	8.2	8.8	4.8	6.3	5.6	7.5	5.1 - 11.0

Infant death rates - 3 year moving average - PDN

	02-04	03-05	04-06	05-07	06-08
England & Wales	5.2	5.1	5.0	4.9	4.8
West Midlands	6.8	6.7	6.3	6.1	6.1
Black Country Cluster	6.5	6.8	6.9	7.1	7.2
Dudley	3.7	4.6	5.5	5.7	5.6
Sandwell	7.5	7.2	7.5	7.7	8.2
Walsall	7.1	8.3	8.0	9.1	8.1
Wolverhampton	7.8	7.3	6.6	5.6	6.5

*ONS



5 B: Infant deaths 2002-2008 - CORRECTED

Corrected = excluding major congenital anomalies, <22 weeks gestation and <500g birthweight

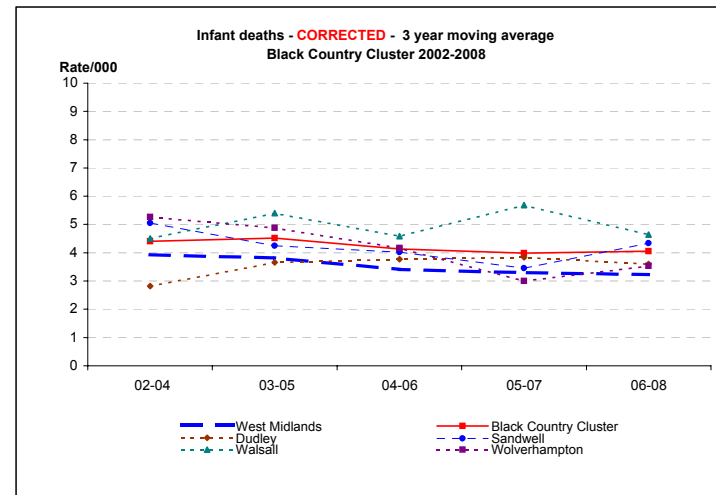
Numbers

	2002	2003	2004	2005	2006	2007	2008
West Midlands	238	275	236	235	209	228	239
Black Country Cluster	53	65	63	62	52	60	70
Dudley	8	11	10	17	13	11	15
Sandwell	20	22	18	12	20	12	26
Walsall	14	16	15	24	9	27	14
Wolverhampton	11	16	20	9	10	10	15

Rate/1,000	2002	2003	2004	2005	2006	2007	2008	2008 CI
West Midlands	3.9	4.3	3.6	3.6	3.1	3.3	3.3	2.9 - 3.8
Black Country Cluster	4.0	4.7	4.5	4.4	3.6	4.0	4.5	3.6 - 5.7
Dudley	2.3	3.3	2.8	4.8	3.7	3.1	4.0	2.5 - 6.7
Sandwell	5.3	5.6	4.4	2.9	4.8	2.7	5.4	3.7 - 8.0
Walsall	4.3	4.8	4.4	7.0	2.5	7.7	3.9	2.3 - 6.5
Wolverhampton	3.9	5.2	6.5	2.9	3.1	3.0	4.5	2.7 - 7.4

3 year moving averages

	02-04	03-05	04-06	05-07	06-08
West Midlands	3.9	3.8	3.4	3.3	3.2
Black Country Cluster	4.4	4.5	4.1	4.0	4.1
Dudley	2.8	3.7	3.8	3.8	3.6
Sandwell	5.1	4.3	4.0	3.5	4.3
Walsall	4.5	5.4	4.6	5.7	4.6
Wolverhampton	5.3	4.9	4.2	3.0	3.5

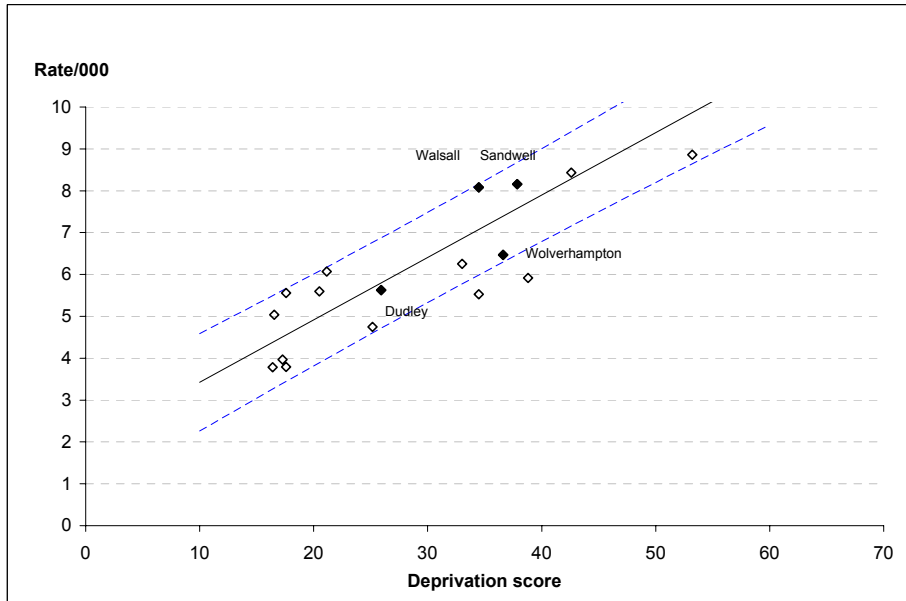


6. Infant deaths and Deprivation, Black Country PCTs

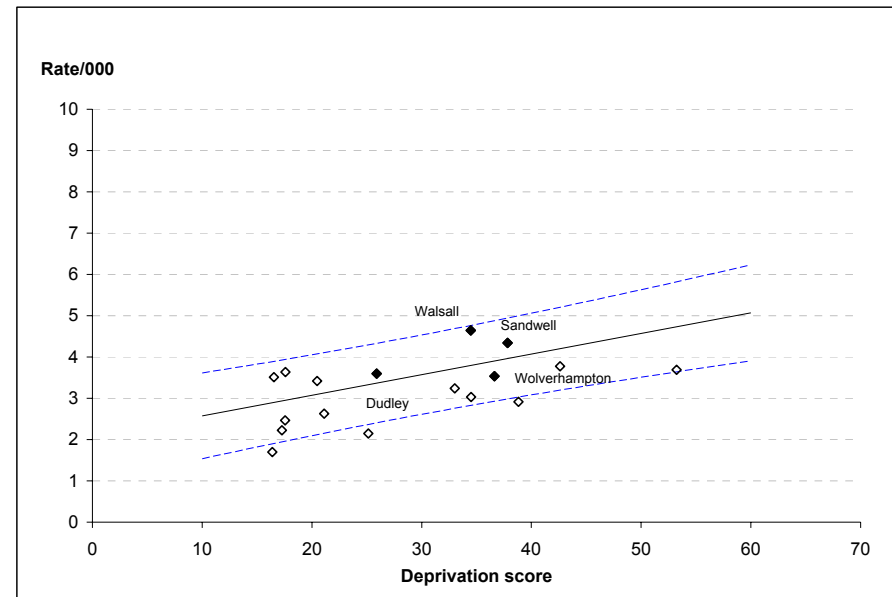
Graphs show infant deaths for the last available triennium (2006-8) for Black Country PCTs, plotted against each PCT's respective deprivation score (IMD 2007).

Regression line with 90% prediction intervals (based on 2002-2008 data) are also shown

a. Crude rates



B. Corrected rates (after excluding major congenital anomalies and neonatal deaths <22 weeks and/or <500g)



7. Infant Deaths in Black Country, 2002-2008: main groups

Groups based on Fetal/Neonatal/Infant classification

	2002	2003	2004	2005	2006	2007	2008
Live Births	13259	13687	14109	14243	14523	14884	15453

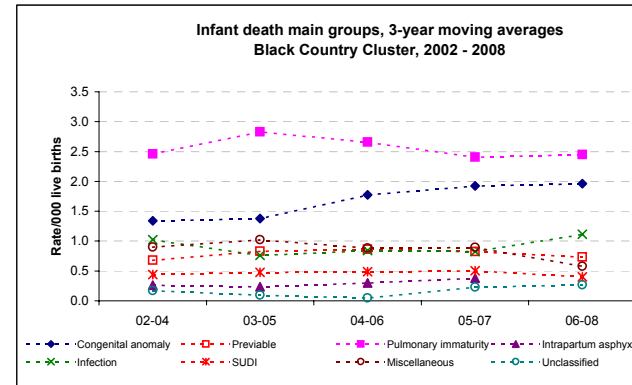
MAIN GROUPS

Numbers

Congenital anomaly	20	15	20	23	33	28	27
Previabie	7	13	8	14	15	7	11
Pulmonary immaturity	22	38	41	40	33	32	45
Intrapartum asphyxia	0	6	2	3	5	5	7
Infection	17	14	11	7	18	11	21
SUDI	5	6	7	7	7	8	3
Miscellaneous	14	12	11	20	7	12	7
Unclassified	3	4	0	0	2	8	2

3-year moving averages

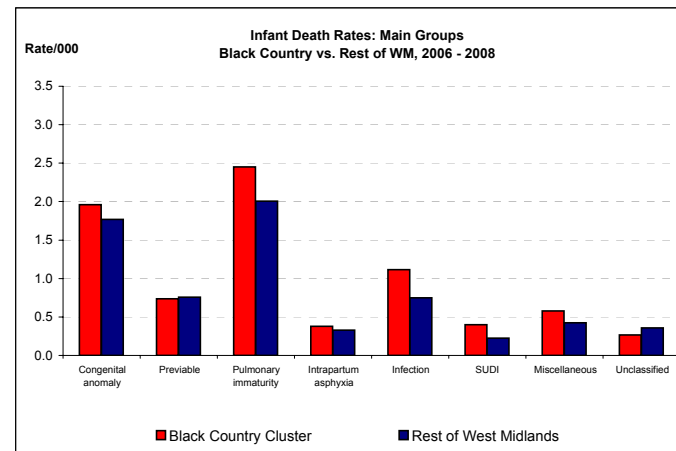
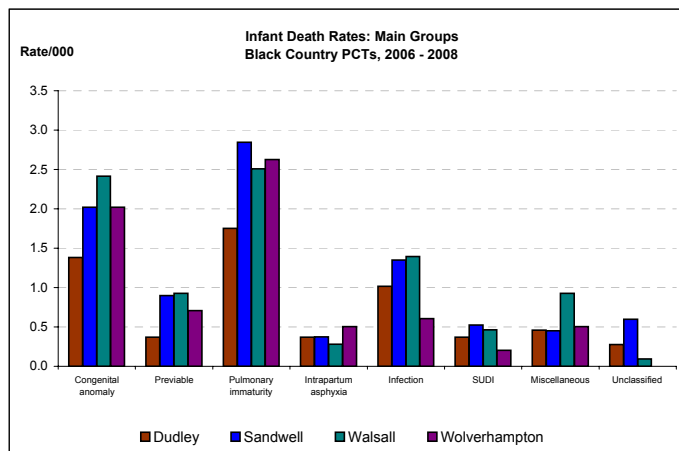
	02-04	03-05	04-06	05-07	06-08
Congenital anomaly	1.3	1.4	1.8	1.9	2.0
Previabie	0.7	0.8	0.9	0.8	0.7
Pulmonary immaturity	2.5	2.8	2.7	2.4	2.5
Intrapartum asphyxia	0.2	0.3	0.2	0.3	0.4
Infection	1.0	0.8	0.8	0.8	1.1
SUDI	0.4	0.5	0.5	0.5	0.4
Miscellaneous	0.9	1.0	0.9	0.9	0.6
Unclassified	0.2	0.1	0.0	0.2	0.3



	Dudley	Sandwell	Walsall	Wolverhampton	Black Country Cluster	Rest of West Midlands
Live Births 2006-8	10843	13356	10766	9895	44860	164583

MAIN GROUPS - 2006-8

	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Congenital anomaly	15	1.4	27	2.0	26	2.4	20	2.0	88	2.0	291	1.8
Previabie	4	0.4	12	0.9	10	0.9	7	0.7	33	0.7	125	0.8
Pulmonary immaturity	19	1.8	38	2.8	27	2.5	26	2.6	110	2.5	330	2.0
Intrapartum asphyxia	4	0.4	5	0.4	3	0.3	5	0.5	17	0.4	54	0.3
Infection	11	1.0	18	1.3	15	1.4	6	0.6	50	1.1	123	0.7
SUDI	4	0.4	7	0.5	5	0.5	2	0.2	18	0.4	37	0.2
Miscellaneous	5	0.5	6	0.4	10	0.9	5	0.5	26	0.6	70	0.4
Unclassified	3	0.3	8	0.6	1	0.1	0	0.0	12	0.3	59	0.4



8 A: Early Neonatal deaths 2002-2009

Early neonatal = birth to age 7 days

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	1628	1726	1714	1681	1750	1762	1763	
West Midlands	234	266	255	270	245	268	258	246
Black Country Cluster	43	48	57	65	63	66	65	57
Dudley	5	5	7	10	13	11	11	9
Sandwell	16	17	17	24	24	16	20	12
Walsall	10	10	13	22	13	24	16	18
Wolverhampton	12	16	20	9	13	15	18	18

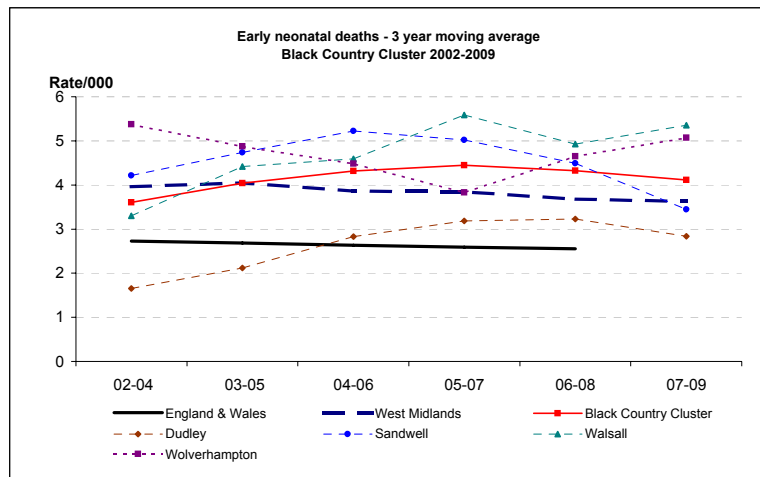
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales*	2.7	2.8	2.7	2.6	2.6	2.6	2.5		
West Midlands	3.8	4.2	3.9	4.1	3.6	3.8	3.6	3.5	3.1 - 3.9
Black Country Cluster	3.2	3.5	4.0	4.6	4.3	4.4	4.2	3.7	2.9 - 4.8
Dudley	1.5	1.5	2.0	2.8	3.7	3.1	3.0	2.5	1.3 - 4.7
Sandwell	4.2	4.3	4.1	5.8	5.8	3.6	4.2	2.5	1.5 - 4.4
Walsall	3.1	3.0	3.8	6.4	3.6	6.8	4.4	4.9	3.1 - 7.7
Wolverhampton	4.3	5.2	6.5	2.9	4.1	4.5	5.4	5.4	3.4 - 8.5

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales	2.7	2.7	2.6	2.6	2.6	
West Midlands	4.0	4.0	3.9	3.8	3.7	3.6
Black Country Cluster	3.6	4.0	4.3	4.4	4.3	4.1
Dudley	1.7	2.1	2.8	3.2	3.2	2.8
Sandwell	4.2	4.7	5.2	5.0	4.5	3.4
Walsall	3.3	4.4	4.6	5.6	4.9	5.4
Wolverhampton	5.4	4.9	4.5	3.8	4.6	5.1

*ONS



8 B: Early Neonatal Deaths 2002-2009 - CORRECTED

Corrected = excluding major congenital anomalies, <22 weeks gestation and <500g birthweight

Numbers

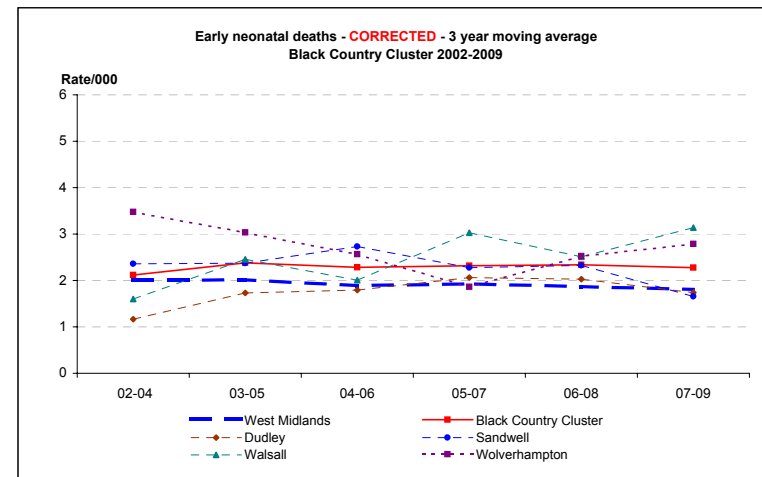
	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	118	134	129	131	117	144	130	110
Black Country Cluster	21	29	37	34	27	40	38	26
Dudley	2	5	5	8	6	8	8	3
Sandwell	8	9	11	9	14	6	11	6
Walsall	4	5	7	13	1	18	8	8
Wolverhampton	7	10	14	4	6	8	11	9

Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
West Midlands	1.9	2.1	2.0	2.0	1.7	2.1	1.8	1.5	1.3 - 1.9
Black Country Cluster	1.6	2.1	2.6	2.4	1.9	2.7	2.5	1.7	1.2 - 2.5
Dudley	0.6	1.5	1.4	2.3	1.7	2.2	2.2	0.8	0.3 - 2.4
Sandwell	2.1	2.3	2.7	2.2	3.4	1.4	2.3	1.3	0.6 - 2.8
Walsall	1.2	1.5	2.0	3.8	0.3	5.1	2.2	2.2	1.1 - 4.3
Wolverhampton	2.5	3.3	4.6	1.3	1.9	2.4	3.3	2.7	1.4 - 5.1

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
West Midlands	2.0	2.0	1.9	1.9	1.9	1.8
Black Country Cluster	2.1	2.4	2.3	2.3	2.3	2.3
Dudley	1.2	1.7	1.8	2.1	2.0	1.7
Sandwell	2.4	2.4	2.7	2.3	2.3	1.7
Walsall	1.6	2.5	2.0	3.0	2.5	3.1
Wolverhampton	3.5	3.0	2.6	1.9	2.5	2.8



9 A: Neonatal deaths 2002-2009

Neonatal = birth to age 28 days

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	2129	2234	2223	2205	2331	2269	2299	
West Midlands	294	329	314	327	316	316	321	321
Black Country Cluster	54	60	68	77	82	78	84	74
Dudley	7	9	7	13	20	11	17	12
Sandwell	21	20	20	25	31	22	24	15
Walsall	13	12	18	28	15	27	22	25
Wolverhampton	13	19	23	11	16	18	21	22

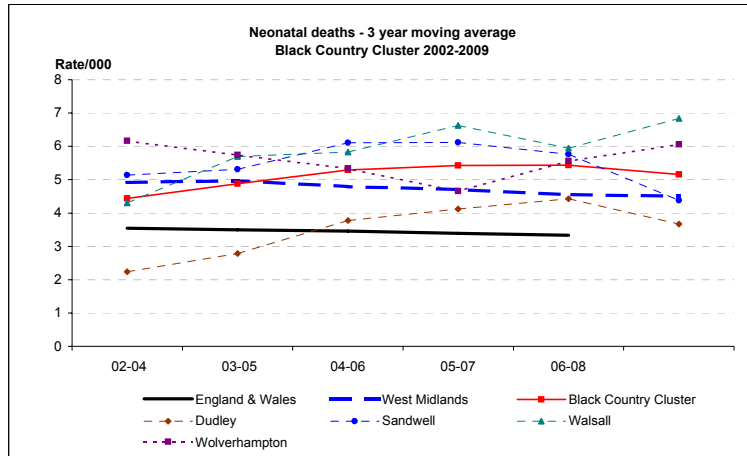
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales*	3.6	3.6	3.5	3.4	3.5	3.3	3.2		
West Midlands	4.8	5.2	4.8	5.0	4.7	4.5	4.5	4.5	4.1 - 5.0
Black Country Cluster	4.1	4.4	4.8	5.4	5.6	5.2	5.4	4.8	3.8 - 6.0
Dudley	2.0	2.7	2.0	3.7	5.6	3.1	4.6	3.3	1.9 - 5.8
Sandwell	5.5	5.1	4.9	6.0	7.4	5.0	5.0	3.2	1.9 - 5.2
Walsall	4.0	3.6	5.3	8.2	4.2	7.7	6.1	6.8	4.6 - 10.0
Wolverhampton	4.6	6.2	7.5	3.5	5.0	5.3	6.3	6.5	4.3 - 9.9

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales	3.5	3.5	3.5	3.4	3.3	
West Midlands	4.9	5.0	4.8	4.7	4.6	4.5
Black Country Cluster	4.4	4.9	5.3	5.4	5.4	5.2
Dudley	2.2	2.8	3.8	4.1	4.4	3.7
Sandwell	5.1	5.3	6.1	6.1	5.8	4.4
Walsall	4.3	5.7	5.8	6.6	5.9	6.8
Wolverhampton	6.2	5.7	5.3	4.7	5.6	6.1

*ONS



9 B: Neonatal Deaths 2002-2009 - CORRECTED

Corrected = excluding major congenital anomalies, <22 weeks gestation and <500g birthweight

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	157	176	166	172	168	172	168	149
Black Country Cluster	28	37	45	44	41	46	52	38
Dudley	4	7	5	10	11	8	13	5
Sandwell	11	11	13	10	18	8	13	7
Walsall	6	7	10	19	3	21	12	15
Wolverhampton	7	12	17	5	9	9	14	11

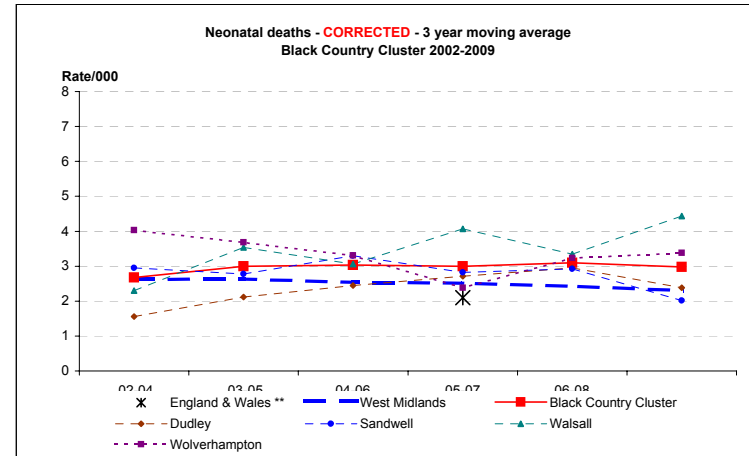
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales**				2.1	2.3	2.0			
West Midlands	2.6	2.8	2.5	2.6	2.5	2.5	2.3	2.1	1.8 - 2.5
Black Country Cluster	2.1	2.7	3.2	3.1	2.8	3.1	3.4	2.5	1.8 - 3.4
Dudley	1.2	2.1	1.4	2.8	3.1	2.2	3.5	1.4	0.6 - 3.2
Sandwell	2.9	2.8	3.2	2.4	4.3	1.8	2.7	1.5	0.7 - 3.1
Walsall	1.9	2.1	2.9	5.5	0.8	6.0	3.3	4.1	2.5 - 6.7
Wolverhampton	2.5	3.9	5.5	1.6	2.8	2.7	4.2	3.3	1.8 - 5.9

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales **				2.1		
West Midlands	2.6	2.6	2.5	2.5	2.4	2.3
Black Country Cluster	2.7	3.0	3.0	3.0	3.1	3.0
Dudley	1.6	2.1	2.5	2.7	3.0	2.4
Sandwell	2.9	2.8	3.3	2.8	2.9	2.0
Walsall	2.3	3.5	3.1	4.1	3.3	4.4
Wolverhampton	4.0	3.7	3.3	2.4	3.2	3.4

**CEMACH



X = England & Wales 3 y adjusted average from CEMACH

10 A: Perinatal Deaths 2002-2009

Perinatal = stillbirths and early neonatal deaths

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	4993	5291	5231	5154	5340	5347	5380	
West Midlands	625	661	638	673	637	666	674	656
Black Country Cluster	146	133	137	151	145	155	167	162
Dudley	31	26	25	38	33	30	38	29
Sandwell	52	41	41	52	50	42	52	50
Walsall	26	32	31	37	27	45	38	39
Wolverhampton	37	34	40	24	35	38	39	44

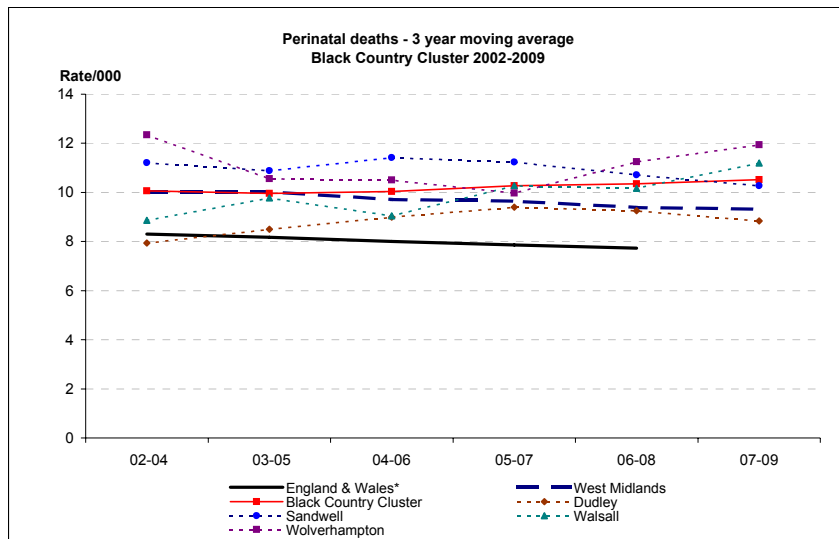
Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales*	8.3	8.5	8.1	7.9	7.9	7.7	7.6		
West Midlands	10.2	10.3	9.6	10.1	9.4	9.5	9.3	9.2	8.5 - 9.9
Black Country Cluster	10.9	9.7	9.7	10.5	9.9	10.4	10.7	10.5	9.0 - 12.2
Dudley	9.0	7.7	7.1	10.6	9.2	8.3	10.2	8.0	5.5 - 11.4
Sandwell	13.6	10.3	9.9	12.4	11.9	9.5	10.8	10.5	8.0 - 13.8
Walsall	8.0	9.5	9.0	10.8	7.4	12.7	10.4	10.6	7.7 - 14.4
Wolverhampton	13.1	11.1	13.0	7.7	10.9	11.2	11.6	13.0	9.7 - 17.4

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales*	8.3	8.2	8.0	7.9	7.7	
West Midlands	10.0	10.0	9.7	9.6	9.4	9.3
Black Country Cluster	10.1	10.0	10.0	10.3	10.3	10.5
Dudley	7.9	8.5	9.0	9.4	9.3	8.8
Sandwell	11.2	10.9	11.4	11.2	10.7	10.3
Walsall	8.9	9.8	9.0	10.3	10.2	11.2
Wolverhampton	12.3	10.6	10.5	10.0	11.2	11.9

*ONS



10 B: Perinatal Deaths 2002-2009 - CORRECTED

Corrected = excluding major congenital anomalies, <22 weeks gestation and <500g birthweight

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	400	418	408	442	385	428	420	369
Black Country Cluster	91	93	98	104	89	101	116	97
Dudley	18	18	21	36	18	18	27	17
Sandwell	35	26	28	27	36	23	38	26
Walsall	18	22	20	26	12	35	25	22
Wolverhampton	20	27	29	15	23	25	26	32

Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
West Midlands	6.5	6.5	6.2	6.7	5.7	6.1	5.8	5.2	4.7 - 5.7
Black Country Cluster	6.8	6.8	6.9	7.3	6.1	6.7	7.5	6.3	5.1 - 7.6
Dudley	5.2	5.4	5.9	10.1	5.0	5.0	7.2	4.7	2.9 - 7.5
Sandwell	9.1	6.5	6.8	6.4	8.6	5.2	7.9	5.5	3.7 - 8.0
Walsall	5.5	6.6	5.8	7.6	3.3	9.9	6.8	6.0	3.9 - 9.0
Wolverhampton	7.1	8.8	9.4	4.8	7.1	7.4	7.7	9.5	6.7 - 13.3

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
West Midlands	6.4	6.4	6.2	6.1	5.9	5.7
Black Country Cluster	6.8	7.0	6.7	6.7	6.8	6.8
Dudley	5.5	7.2	7.0	6.7	5.8	5.6
Sandwell	7.4	6.6	7.3	6.7	7.2	6.2
Walsall	6.0	6.6	5.5	6.9	6.7	7.5
Wolverhampton	8.5	7.7	7.1	6.5	7.4	8.2

