



31 January 2012

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Dear Colleague

Perinatal & Infant Mortality Report - 2010

This report covers the **Black Country NHS Cluster** and its constituent LAs and provider units, and includes stillbirth, perinatal and infant mortality data up to 2010.

The information is based on ONS denominators (births) and WM Perinatal Death Notifications (PDNs) which we receive from all West Midlands units. (NB: PDN rates occasionally differ from ONS-VS figures because our data are regularly updated with late ascertained cases. We also use various cross checks for high accuracy, e.g. with the WM Safeguarding Children's Boards).

For the first time, we are also including an analysis of the main perinatal death categories from 30 weeks, to help improve our understanding of mortality rates at gestations where immaturity plays a lesser role (Section 8).

The results can be summarised as follows:

<u>Section</u>	<u>Main Finding</u>
1. Birth rate	Upward trend in Cluster, following regional and national trends
2. Population characteristics	Highlights high deprivation rates and wide range in KPIs.
3. Stillbirths	Recent increase in overall stillbirth trend
4. Stillbirth categories	Largest groups: fetal growth restriction and congenital anomalies
5. Early neonatal and perinatal rates	Following regional and national trend
6. Infant deaths	Not following national downward trend; however rates within LAs within expected range when adjusted for IMD score
7. Infant death categories	Largest group immaturity related - no significant change; followed by congenital anomalies which show significant upward trend
8. Perinatal deaths from 30+weeks	Largest category: fetal growth restriction - no change.

Further comments are made within the respective sections.

As always, the team at the Institute is happy to provide supplementary information as required.

With sincere regards

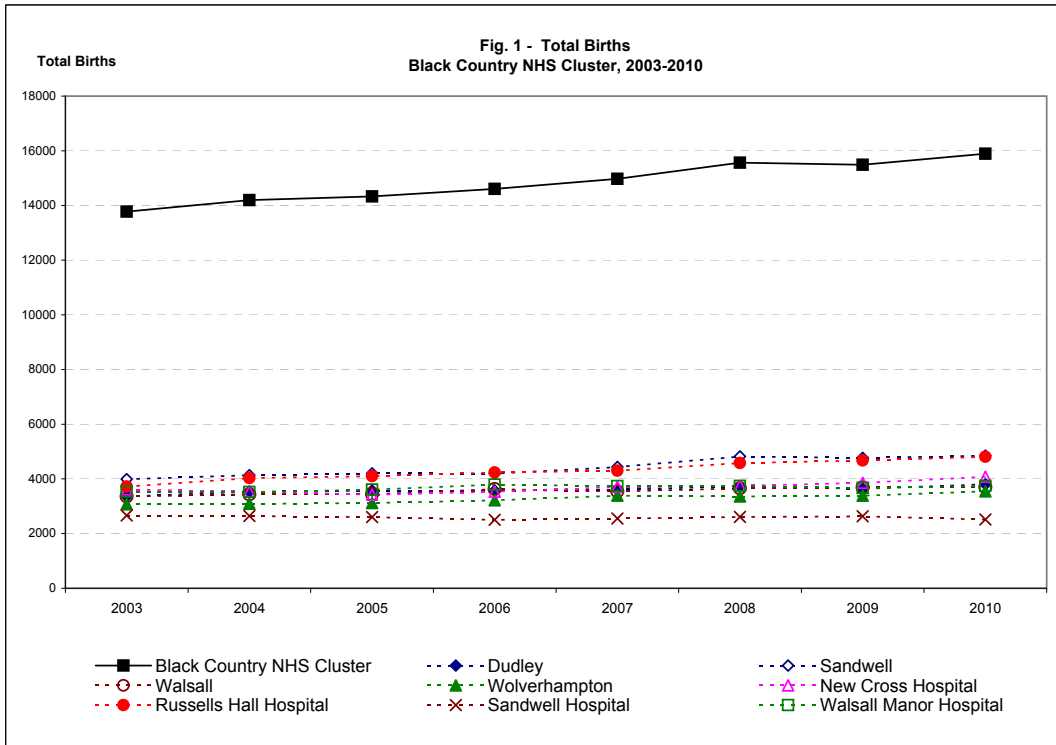


Professor Jason Gardosi
Director, West Midlands Perinatal Institute

1. Births: Black Country NHS Cluster, West Midlands 2003-2010

Source: ONS

	2003	2004	2005	2006	2007	2008	2009	2010
England and Wales	624816	643026	649094	672966	693356	712328	709936	726879
West Midlands	64080	66300	66350	68064	70472	72126	71452	72459
Black Country NHS Cluster	13777	14196	14332	14607	14973	15564	15488	15896
LA/UA								
Dudley	3361	3533	3574	3570	3606	3731	3641	3801
Sandwell	3988	4138	4199	4194	4436	4819	4767	4852
Walsall	3357	3436	3441	3626	3543	3657	3694	3698
Wolverhampton	3071	3089	3118	3217	3388	3357	3386	3545
Delivery Unit								
New Cross Hospital	3617	3542	3422	3533	3708	3751	3854	4077
Russells Hall Hospital	3720	4030	4104	4238	4299	4580	4678	4812
Sandwell Hospital	2665	2643	2603	2506	2553	2610	2633	2514
Walsall Manor Hospital	3541	3521	3611	3792	3737	3747	3668	3747



Comment:

The Table and Figure illustrate the increasing birth rate in the E&W, WM, Black Country and its LAs and most maternity units (data up to 2010)

2. Demographics: Black Country NHS Cluster, 2010

Source: PEER | Jan - Dec, 2010

	West Midlands	Black Country Cluster	Dudley LA	Sandwell LA	Walsall LA	W'hampton LA	New Cross Hospital	Russells Hall Hospital	Sandwell Hospital	Walsall Manor Hospital
Total Births:	72,459	15,896	3,801	4,852	3,698	3,545	4,077	4,812	2,514	3,747
Submissions:	58,718	14,105	3,171	4,302	3,498	3,134	3,582	3,931	2,268	3,699
% Submissions:	81.0	88.7	83.4	88.7	94.6	88.4	87.9	81.7	90.2	98.7
Deprivation - IMD Quintile										
1 (least)	8.6%	3.9%	8.7%	0.0%	6.3%	1.8%	5.1%	8.6%	0.4%	5.5%
2	12.7%	6.5%	13.2%	1.5%	5.4%	7.6%	9.6%	12.0%	0.8%	5.2%
3	16.5%	10.4%	12.9%	10.4%	8.7%	9.8%	10.8%	11.9%	10.4%	8.8%
4	21.2%	24.0%	33.6%	22.2%	21.4%	19.5%	20.2%	30.7%	21.0%	23.5%
5 (most)	41.0%	55.2%	31.5%	65.8%	58.2%	61.3%	54.4%	36.8%	67.4%	57.0%
Ethnic Origin										
African	3.5%	2.9%	1.2%	3.7%	2.3%	4.2%	3.7%	1.2%	3.7%	2.4%
African Caribbean	2.0%	2.7%	1.0%	4.1%	1.6%	3.9%	3.5%	1.3%	4.7%	1.3%
British European	67.9%	64.2%	82.0%	52.5%	68.1%	57.9%	62.6%	81.7%	49.3%	67.9%
Eastern European	3.7%	3.5%	1.3%	5.0%	2.2%	5.2%	4.6%	1.4%	7.6%	2.0%
Middle Eastern	1.1%	1.3%	1.3%	1.5%	0.1%	2.2%	1.9%	1.2%	1.9%	0.3%
South Asian	15.6%	19.6%	9.8%	26.0%	21.6%	18.7%	16.4%	10.4%	26.3%	21.8%
Bangladeshi	1.9%	2.1%	0.3%	3.7%	3.3%	0.2%	0.2%	0.4%	5.0%	3.5%
Indian	5.1%	9.6%	2.4%	13.1%	7.0%	15.1%	13.1%	3.3%	14.2%	7.6%
Pakistani	8.6%	7.9%	7.2%	9.2%	11.2%	3.4%	3.1%	6.7%	7.0%	10.8%
Other/Mixed	6.2%	5.7%	3.3%	7.2%	4.2%	7.9%	7.3%	2.7%	6.4%	4.3%
Migrants										
Non UK Born	20.6%	19.9%	4.6%	29.1%	17.6%	25.6%	23.1%	3.9%	33.5%	17.7%
Maternal Age										
< 16	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.4%	0.2%
< 18	1.9%	2.3%	2.2%	1.8%	2.7%	2.5%	2.5%	2.1%	2.1%	2.8%
< 20	6.9%	8.6%	8.1%	7.9%	9.3%	9.5%	9.3%	8.0%	9.0%	9.4%
20 - 24	22.4%	24.5%	22.8%	24.7%	25.4%	25.1%	25.4%	23.1%	28.1%	25.2%
25 - 29	29.2%	30.6%	29.1%	31.3%	31.2%	30.3%	30.2%	29.1%	29.6%	31.1%
30 - 34	25.4%	22.7%	24.2%	23.3%	21.6%	21.6%	21.3%	24.7%	21.6%	21.6%
35 - 39	13.1%	11.0%	13.0%	10.4%	10.1%	10.7%	11.1%	12.4%	9.4%	10.2%
35+	16.1%	13.6%	15.9%	12.8%	12.6%	13.5%	13.8%	15.0%	11.7%	12.7%
40+	3.0%	2.6%	2.9%	2.4%	2.4%	2.8%	2.7%	2.6%	2.2%	2.5%
Body Mass Index										
< 18.5	3.3%	4.1%	4.0%	4.0%	4.3%	3.8%	3.7%	4.0%	4.1%	4.2%
18.5 - 24.9	48.0%	46.5%	47.8%	46.2%	45.2%	47.0%	47.7%	47.7%	46.2%	45.5%
25 - 29.9	28.3%	27.8%	27.7%	27.8%	27.7%	28.2%	28.0%	27.5%	27.9%	27.4%
30 - 34.9	12.7%	13.2%	12.4%	13.3%	13.5%	13.3%	13.1%	12.6%	13.6%	13.5%
35 - 39.9	5.1%	5.5%	4.9%	5.6%	6.1%	5.1%	4.9%	5.1%	5.2%	6.2%
30+	20.4%	21.6%	20.5%	22.0%	22.8%	21.1%	20.6%	20.8%	21.8%	22.9%
35+	7.6%	8.5%	8.1%	8.6%	9.3%	7.8%	7.5%	8.2%	8.2%	9.4%
40+	2.5%	3.0%	3.2%	3.0%	3.2%	2.7%	2.5%	3.1%	3.0%	3.2%

contd.

	West Midlands	Black Country Cluster	Dudley LA	Sandwell LA	Walsall LA	Whampton LA	New Cross Hospital	Russells Hall Hospital	Sandwell Hospital	Walsall Manor Hospital
Prematurity										
< 37 Weeks	6.0%	6.4%	5.8%	6.4%	7.0%	6.3%	6.6%	5.5%	5.0%	7.1%
< 34 Weeks	1.8%	2.0%	1.6%	2.2%	2.2%	2.0%	2.3%	1.5%	0.5%	2.4%
Onset of Labour										
Induced	22.3%	22.4%	20.5%	20.7%	24.8%	23.7%	23.8%	20.1%	20.7%	25.6%
Mode of Delivery										
Forceps/Ventouse	10.6%	9.3%	7.7%	9.8%	10.0%	9.3%	10.1%	7.5%	8.9%	10.3%
Caesarean Section	23.0%	24.8%	25.6%	24.6%	26.1%	22.9%	23.0%	26.0%	22.7%	26.7%
Elective	9.2%	10.2%	10.5%	9.0%	11.6%	9.8%	9.4%	10.5%	8.6%	11.6%
Non-Elective	13.8%	14.6%	15.0%	15.6%	14.5%	13.1%	13.7%	15.4%	14.2%	15.1%
Outcome										
Apgar < 7 @ 5 Min.	1.4%	1.2%	1.2%	1.3%	1.1%	1.0%	1.0%	1.3%	0.5%	1.3%
NICU Admission (37+ Wks) ^a	2.3%	1.2%	0.3%	1.8%	1.2%	1.7%	**	0.4%	**	1.4%
Early Booking < 13 Weeks *										
Average	83.7%	81.7%	77.0%	78.9%	87.1%	84.3%	84.3%	77.9%	76.8%	87.2%
Range	(63.1% - 90.7%)	(68.9% - 93.5%)	-	-	-	-	-	-	-	-
Fetal growth restriction *										
Birthweight <10th cust. centile										
Average	13.8%	15.3%	14.8%	15.5%	16.4%	14.6%	14.5%	15.2%	14.1%	16.4%
Range	(10.3% - 16.4%)	(9.6% - 18.2%)	-	-	-	-	-	-	-	-
FGR Detection										
Average	31.0%	27.7%	18.5%	34.4%	38.7%	13.3%	11.6%	16.8%	43.4%	40.3%
Range	(11.5% - 48.3%)	(11.7% - 44.7%)	-	-	-	-	-	-	-	-
Detection after referral for FH										
Average	61.5%	60.6%	65.3%	68.5%	71.9%	33.3%	30.9%	64.8%	76.5%	72.8%
Range	(30.9% - 72.5%)	(30.7% - 77.1%)	-	-	-	-	-	-	-	-
Smoking *										
At booking	18.8%	20.7%	19.8%	19.1%	23.5%	20.6%	21.2%	19.4%	22.1%	22.7%
Late in pregnancy	13.6%	13.9%	8.0%	13.0%	16.4%	17.9%	18.6%	7.8%	15.8%	15.6%
Ceased During Pregnancy	27.3%	34.3%	61.9%	33.6%	28.9%	16.3%	15.5%	61.5%	28.7%	29.8%
Range	(15.4% - 61.4%)	(15.3% - 62.2%)	-	-	-	-	-	-	-	-
Breastfeeding Initiation *										
Average	60.5%	53.1%	50.3%	52.3%	48.9%	60.7%	60.2%	50.6%	43.2%	49.4%
Range	(43.1% - 78.0%)	(41.2% - 70.8%)	-	-	-	-	-	-	-	-

Notes

* KPI - Definitions are available [here](#)

** No data given as submissions of denominator <100

^a Collected since 10/2010 only; 12 months data to 09/2011 shown

Comment:

This table compares the characteristics of the maternity population in the West Midlands overall with that of the Black Country and its constituent LAs and units. It shows higher rates of deprivation, smoking, fetal growth restriction (<10th centile) and caesarean sections in the Black Country. Performance in terms of the KPIs is also listed, and seems overall lower than the regional average, but with wide variation between units.

3. Stillbirths 2003-2010

Black Country

Numbers		2003	2004	2005	2006	2007	2008	2009	2010
England and Wales*		3565	3517	3473	3590	3585	3617	3688	3714
West Midlands		395	383	404	391	399	414	433	394
Black Country NHS Cluster		85	80	86	82	89	102	116	86
LA/UA	Dudley	21	17	28	20	19	27	22	22
	Sandwell	24	25	28	26	26	32	44	26
	Walsall	22	18	15	14	21	22	22	18
	Wolverhampton	18	20	15	22	23	21	28	20
Delivery Unit	New Cross Hospital	24	19	17	25	23	22	35	22
	Russells Hall Hospital	22	22	28	29	18	31	23	25
	Sandwell Hospital	15	17	17	9	15	22	24	14
	Walsall Manor Hospital	21	17	16	17	21	23	21	15

Rate/1,000		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
England and Wales*		5.7	5.5	5.4	5.3	5.2	5.1	5.2	5.1	4.9 - 5.3
West Midlands		6.2	5.8	6.1	5.7	5.7	5.7	6.1	5.4	4.9 - 6.0
Black Country NHS Cluster		6.2	5.6	6.0	5.6	5.9	6.6	7.5	5.4	4.4 - 6.7
LA/UA	Dudley	6.2	4.8	7.8	5.6	5.3	7.2	6.0	5.8	3.8 - 8.7
	Sandwell	6.0	6.0	6.7	6.2	5.9	6.6	9.2	5.4	3.7 - 7.8
	Walsall	6.6	5.2	4.4	3.9	5.9	6.0	6.0	4.9	3.1 - 7.7
	Wolverhampton	5.9	6.5	4.8	6.8	6.8	6.3	8.3	5.6	3.7 - 8.7
Delivery Unit	New Cross Hospital	6.6	5.4	5.0	7.1	6.2	5.9	9.1	5.4	3.6 - 8.2
	Russells Hall Hospital	5.9	5.5	6.8	6.8	4.2	6.8	4.9	5.2	3.5 - 7.7
	Sandwell Hospital	5.6	6.4	6.5	3.6	5.9	8.4	9.1	5.6	3.3 - 9.3
	Walsall Manor Hospital	5.9	4.8	4.4	4.5	5.6	6.1	5.7	4.0	2.4 - 6.6

3 year moving averages		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.
England and Wales*		5.5	5.4	5.3	5.2	5.1	5.1	5.0 - 5.2
West Midlands		6.0	5.9	5.8	5.7	5.8	5.7	5.4 - 6.1
Black Country NHS Cluster		5.9	5.7	5.9	6.0	6.7	6.5	5.8 - 7.2
LA/UA	Dudley	6.3	6.1	6.2	6.1	6.2	6.4	5.0 - 8.0
	Sandwell	6.2	6.3	6.2	6.2	7.3	7.1	5.8 - 8.6
	Walsall	5.4	4.5	4.7	5.3	6.0	5.6	4.4 - 7.2
	Wolverhampton	5.7	6.0	6.2	6.6	7.1	6.7	5.3 - 8.5
Delivery Unit	New Cross Hospital	5.7	5.8	6.1	6.4	7.1	6.8	5.4 - 8.4
	Russells Hall Hospital	6.1	6.4	5.9	5.9	5.3	5.6	4.5 - 7.0
	Sandwell Hospital	6.2	5.5	5.4	6.0	7.8	7.7	6.0 - 9.9
	Walsall Manor Hospital	5.1	4.6	4.8	5.4	5.8	5.3	4.1 - 6.8

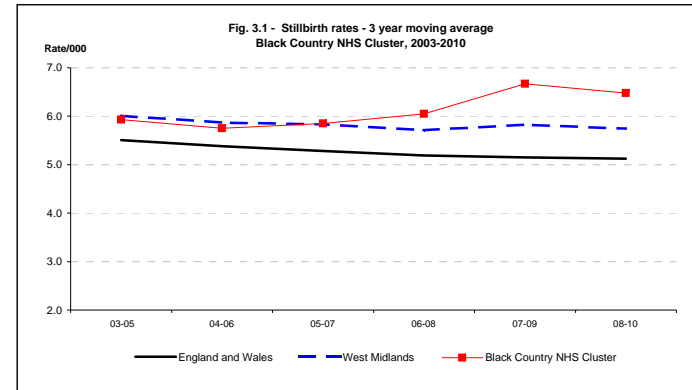


Fig 3.1 Stillbirth trend for Black Country NHS Cluster, West Midlands and England and Wales, 2003 - 2010.

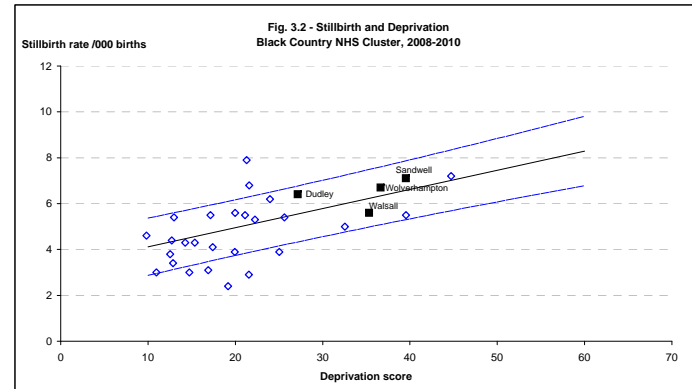


Fig 3.2 Stillbirth rates for last triennium (2008-10) for the Black Country NHS Cluster, plotted against each LA's deprivation score (IMD 2007). Regression lines represent 90% prediction intervals, based on WM 2003-2010.

Comments:

The tables present yearly numbers and rates of stillbirth for Cluster, LAs and provider units.

Figure 3.1 illustrates the 3 year moving trends, which appears to have increased. Figure 3.2 shows the 4 LAs plotted according to deprivation and stillbirth rate; all are within the confidence limits adjusted for social deprivation.

4. Stillbirths in Black Country NHS Cluster, 2003 -2010: Classification in main groups

Groups based on ReCoDe classification

	Black Country NHS Cluster		New Cross Hospital		Russells Hall Hospital		Sandwell Hospital		Walsall Manor Hospital	
Births 2008-10	46948		11682		14070		7757		11162	
MAIN GROUPS - 2008-10	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Congenital anomaly	46	1.0	9	0.8	14	1.0	9	1.2	5	0.4
Fetal growth restriction	119	2.5	25	2.1	35	2.5	18	2.3	32	2.9
Placenta / Umbilical chord	45	1.0	16	1.4	9	0.6	11	1.4	9	0.8
Maternal conditions	7	0.1	1	0.1	1	0.1	3	0.4	1	0.1
Infection	10	0.2	4	0.3	3	0.2	2	0.3	2	0.2
Intrapartum asphyxia	5	0.1	3	0.3	1	0.1	1	0.1	0	0.0
Miscellaneous	21	0.4	12	1.0	2	0.1	4	0.5	2	0.2
Unclassified / Unexplained	51	1.1	9	0.8	14	1.0	12	1.5	8	0.7

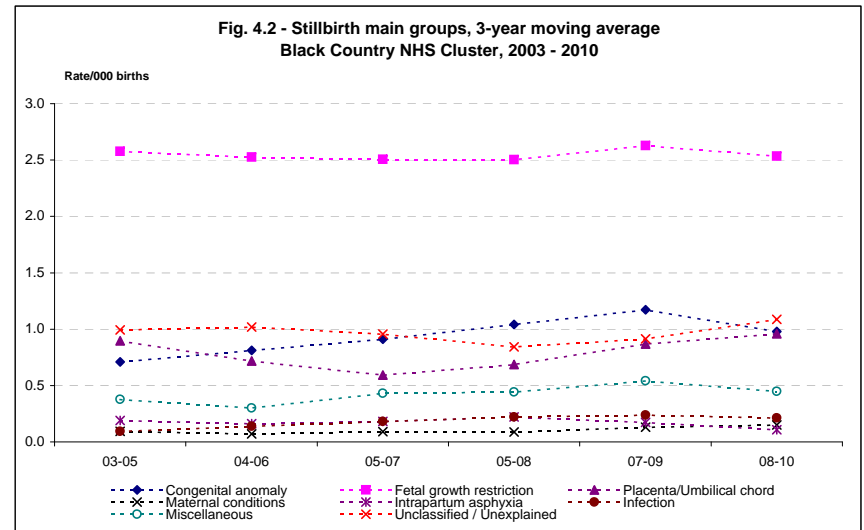
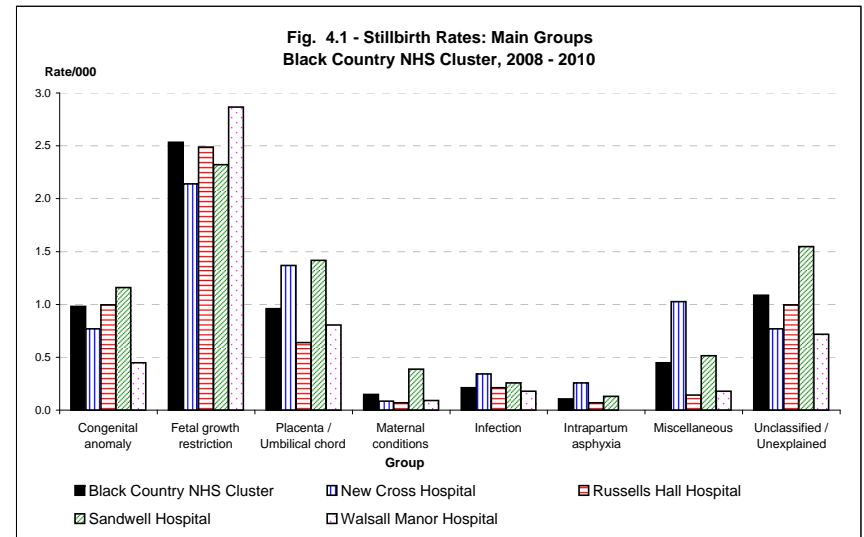
Births	2003	2004	2005	2006	2007	2008	2009	2010
	13777	14196	14332	14607	14973	15564	15488	15896

MAIN GROUPS
Black Country NHS Cluster
Numbers

Congenital anomaly	9	12	9	14	17	16	21	9
Fetal growth restriction	35	34	40	35	35	43	43	33
Placenta/Umbilical chord	14	11	13	7	6	18	16	11
Maternal conditions	3	1	0	2	2	0	4	3
Infection	2	1	1	4	3	3	5	2
Intrapartum asphyxia	4	3	1	3	4	3	1	1
Miscellaneous	7	2	7	4	8	8	9	4
Unclassified / Unexplained	11	16	15	13	14	11	17	23

3-year moving averages

	03-05	04-06	05-07	05-08	07-09	08-10
Congenital anomaly	0.7	0.8	0.9	1.0	1.2	1.0
Fetal growth restriction	2.6	2.5	2.5	2.5	2.6	2.5
Placenta/Umbilical chord	0.9	0.7	0.6	0.7	0.9	1.0
Maternal conditions	0.1	0.1	0.1	0.1	0.1	0.1
Infection	0.1	0.1	0.2	0.2	0.2	0.2
Intrapartum asphyxia	0.2	0.2	0.2	0.2	0.2	0.1
Miscellaneous	0.4	0.3	0.4	0.4	0.5	0.4
Unclassified / Unexplained	1.0	1.0	1.0	0.8	0.9	1.1



Comments:

Fig 4.1. shows the main categories of stillbirth within the Cluster and the provider units. In all units and the cluster, the largest category is fetal growth restriction, followed by congenital anomalies.
Fig 4.2. shows 3 year moving average trend analysis. There has been no drop in stillbirths associated with fetal growth restriction, and a gradual but non-significant rise of congenital anomalies.

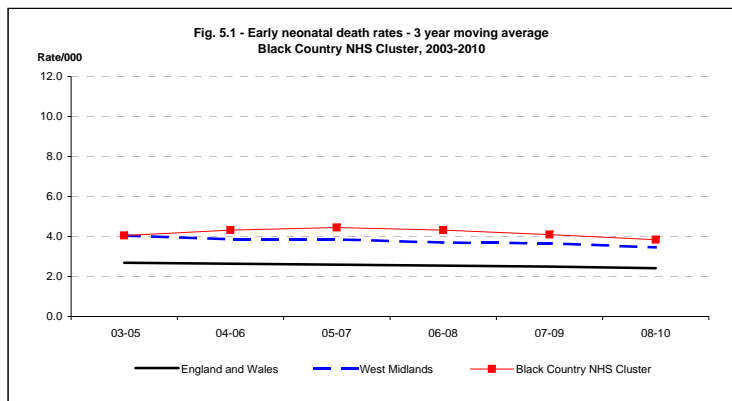
5 A. Early Neonatal Deaths 2003-2010

5 B. Perinatal Deaths 2003-2010

Numbers - PDNs		2003	2004	2005	2006	2007	2008	2009	2010	
LA/UA	England and Wales*	1726	1714	1681	1750	1762	1763	1715	1675	
	West Midlands	267	255	270	246	268	260	253	229	
	Black Country NHS Cluster	48	57	65	63	66	65	56	58	
	Dudley	5	7	10	13	11	11	8	11	
	Sandwell	17	17	24	24	16	20	13	21	
	Walsall	10	13	22	13	24	16	17	10	
	Wolverhampton	16	20	9	13	15	18	18	16	
	Delivery Unit	New Cross Hospital	18	25	12	17	21	22	19	15
		Russells Hall Hospital	5	6	12	13	12	9	4	16
		Sandwell Hospital	7	9	16	10	7	13	10	9
Walsall Manor Hospital		14	14	22	15	19	11	13	10	

Rate/1,000		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.	
LA/UA	England and Wales*	2.8	2.7	2.6	2.6	2.6	2.5	2.4	2.3	2.2 - 2.4	
	West Midlands	4.2	3.9	4.1	3.6	3.8	3.6	3.6	3.2	2.8 - 3.6	
	Black Country NHS Cluster	3.5	4.0	4.6	4.3	4.4	4.2	3.6	3.7	2.8 - 4.7	
	Dudley	1.5	2.0	2.8	3.7	3.1	3.0	2.2	2.9	1.6 - 5.2	
	Sandwell	4.3	4.1	5.8	5.8	3.6	4.2	2.8	4.4	2.8 - 6.6	
	Walsall	3.0	3.8	6.4	3.6	6.8	4.4	4.6	2.7	1.5 - 5.0	
	Wolverhampton	5.2	6.5	2.9	4.1	4.5	5.4	5.4	4.5	2.8 - 7.4	
	Delivery Unit	New Cross Hospital	5.0	7.1	3.5	4.8	5.7	5.9	5.0	3.7	2.2 - 6.1
		Russells Hall Hospital	1.4	1.5	2.9	3.1	2.8	2.0	0.9	3.3	2.1 - 5.4
		Sandwell Hospital	2.6	3.4	6.2	4.0	2.8	5.0	3.8	3.6	1.9 - 6.8
Walsall Manor Hospital		4.0	4.0	6.1	4.0	5.1	3.0	3.6	2.7	1.5 - 4.9	

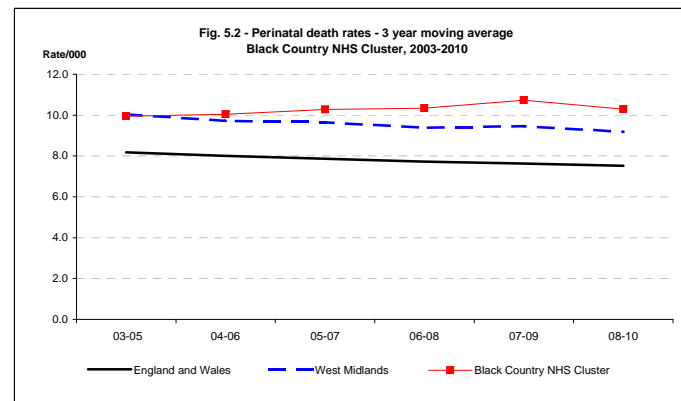
3 year moving averages		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.	
LA/UA	England and Wales	2.7	2.6	2.6	2.6	2.5	2.4	2.3 - 2.5	
	West Midlands	4.1	3.9	3.8	3.7	3.7	3.5	3.2 - 3.7	
	Black Country NHS Cluster	4.0	4.3	4.4	4.3	4.1	3.8	3.3 - 4.4	
	Dudley	2.1	2.8	3.2	3.2	2.7	2.7	1.9 - 3.9	
	Sandwell	4.7	5.2	5.0	4.5	3.5	3.8	2.9 - 4.9	
	Walsall	4.4	4.6	5.6	4.9	5.3	3.9	2.9 - 5.3	
	Wolverhampton	4.9	4.5	3.8	4.6	5.1	5.1	3.9 - 6.7	
	Delivery Unit	New Cross Hospital	5.2	5.2	4.7	5.5	5.5	4.8	3.7 - 6.3
		Russells Hall Hospital	2.0	2.5	2.9	2.6	1.9	2.1	1.4 - 3.0
		Sandwell Hospital	4.1	4.5	4.3	3.9	3.9	4.2	2.9 - 5.9
Walsall Manor Hospital		4.7	4.7	5.1	4.0	3.9	3.1	2.2 - 4.3	



Numbers - PDNs		2003	2004	2005	2006	2007	2008	2009	2010	
LA/UA	England and Wales*	5291	5231	5154	5340	5347	5380	5403	5389	
	West Midlands	662	638	674	637	667	674	686	623	
	Black Country NHS Cluster	133	137	151	145	155	167	172	144	
	Dudley	26	24	38	33	30	38	30	33	
	Sandwell	41	42	52	50	42	52	57	47	
	Walsall	32	31	37	27	45	38	39	28	
	Wolverhampton	34	40	24	35	38	39	46	36	
	Delivery Unit	New Cross Hospital	42	44	29	42	44	44	54	37
		Russells Hall Hospital	27	28	40	42	30	40	27	41
		Sandwell Hospital	22	26	33	19	22	35	34	23
Walsall Manor Hospital		35	31	38	32	40	34	34	25	

Rate/1,000		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.	
LA/UA	England and Wales*	8.5	8.1	7.9	7.9	7.7	7.6	7.6	7.4	7.2 - 7.6	
	West Midlands	10.3	9.6	10.2	9.4	9.5	9.3	9.6	8.6	8.0 - 9.3	
	Black Country NHS Cluster	9.7	9.7	10.5	9.9	10.4	10.7	11.1	9.1	7.7 - 10.7	
	Dudley	7.7	6.8	10.6	9.2	8.3	10.2	8.2	8.7	6.2 - 12.2	
	Sandwell	10.3	10.1	12.4	11.9	9.5	10.8	12.0	9.7	7.3 - 12.9	
	Walsall	9.5	9.0	10.8	7.4	12.7	10.4	10.6	7.6	5.2 - 10.9	
	Wolverhampton	11.1	12.9	7.7	10.9	11.2	11.6	13.6	10.2	7.3 - 14.0	
	Delivery Unit	New Cross Hospital	11.6	12.4	8.5	11.9	11.9	11.7	14.0	9.1	6.6 - 12.5
		Russells Hall Hospital	7.3	6.9	9.7	9.9	7.0	8.7	5.8	8.5	6.3 - 11.5
		Sandwell Hospital	8.3	9.8	12.7	7.6	8.6	13.4	12.9	9.1	6.1 - 13.7
Walsall Manor Hospital		9.9	8.8	10.5	8.4	10.7	9.1	9.3	6.7	4.5 - 9.8	

3 year moving averages		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.	
LA/UA	England and Wales	8.2	8.0	7.9	7.7	7.6	7.5	7.4 - 7.6	
	West Midlands	10.0	9.7	9.7	9.4	9.5	9.2	8.8 - 9.6	
	Black Country NHS Cluster	10.0	10.0	10.3	10.3	10.7	10.3	9.4 - 11.2	
	Dudley	8.4	8.9	9.4	9.3	8.9	9.0	7.4 - 11.0	
	Sandwell	11.0	11.5	11.2	10.7	10.8	10.8	9.2 - 12.6	
	Walsall	9.8	9.0	10.3	10.2	11.2	9.5	7.9 - 11.5	
	Wolverhampton	10.6	10.5	10.0	11.2	12.1	11.8	9.9 - 14.0	
	Delivery Unit	New Cross Hospital	10.9	11.0	10.8	11.8	12.6	11.6	9.8 - 13.7
		Russells Hall Hospital	8.0	8.9	8.9	8.5	7.2	7.7	6.4 - 9.3
		Sandwell Hospital	10.2	10.1	9.7	9.9	11.7	11.9	9.7 - 14.5
Walsall Manor Hospital		9.7	9.2	9.9	9.4	9.7	8.3	6.8 - 10.2	



Comments:

The tables present annual numbers, rates and 3 year moving averages for early neonatal deaths (END; birth to day 7) and perinatal mortality rate (PMR; stillbirths and early neonatal deaths). END rates follow the regional and national trend (Fig 5.1) while PMR (Fig 5.2) is slightly increasing, in accordance with the trend shown for stillbirths (Fig 3.1).

6. Infant Deaths 2003-2010

Black Country

Numbers		2003	2004	2005	2006	2007	2008	2009	2010
England and Wales*		3274	3234	3217	3329	3309	3369	3312	3140
West Midlands		477	419	424	407	423	459	456	406
Black Country NHS Cluster		95	92	100	105	105	112	98	108
LA/UA	Dudley	15	12	21	25	15	21	14	19
	Sandwell	31	28	29	36	34	40	27	38
	Walsall	24	25	35	24	37	26	32	23
	Wolverhampton	25	27	15	20	19	25	25	28
Delivery Unit	New Cross Hospital	31	36	21	25	28	33	28	29
	Russells Hall Hospital	14	12	25	24	17	19	12	25
	Sandwell Hospital	11	17	18	14	17	19	18	15
	Walsall Manor Hospital	27	24	34	24	31	20	25	25

Rate/1,000		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
England and Wales*		5.3	5.1	5.0	5.0	4.8	4.8	4.7	4.3	4.2 - 4.5
West Midlands		7.5	6.4	6.4	6.0	6.0	6.4	6.4	5.6	5.1 - 6.2
Black Country NHS Cluster		6.9	6.5	7.0	7.2	7.1	7.2	6.4	6.8	5.7 - 8.2
LA/UA	Dudley	4.5	3.4	5.9	7.0	4.2	5.7	3.9	5.0	3.2 - 7.8
	Sandwell	7.8	6.8	7.0	8.6	7.7	8.4	5.7	7.9	5.7 - 10.8
	Walsall	7.2	7.3	10.2	6.6	10.5	7.2	8.7	6.3	4.2 - 9.4
	Wolverhampton	8.2	8.8	4.8	6.3	5.6	7.5	7.4	7.9	5.5 - 11.5
Delivery Unit	New Cross Hospital	8.6	10.2	6.2	7.1	7.6	8.8	7.3	7.2	5.0 - 10.3
	Russells Hall Hospital	3.8	3.0	6.1	5.7	4.0	4.2	2.6	5.2	3.5 - 7.7
	Sandwell Hospital	4.2	6.5	7.0	5.6	6.7	7.3	6.9	6.0	3.6 - 9.9
	Walsall Manor Hospital	7.7	6.8	9.5	6.4	8.3	5.4	6.9	6.7	4.5 - 9.9

3 year moving averages		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.
England and Wales*		5.1	5.0	4.9	4.8	4.7	4.6	4.5 - 4.7
West Midlands		6.8	6.3	6.2	6.2	6.3	6.2	5.8 - 6.5
Black Country NHS Cluster		6.8	6.9	7.1	7.2	6.9	6.8	6.1 - 7.6
LA/UA	Dudley	4.6	5.5	5.7	5.6	4.6	4.9	3.7 - 6.3
	Sandwell	7.2	7.5	7.8	8.2	7.3	7.3	6.1 - 8.9
	Walsall	8.3	8.0	9.1	8.1	8.8	7.4	5.9 - 9.2
	Wolverhampton	7.3	6.6	5.6	6.5	6.9	7.6	6.1 - 9.5
Delivery Unit	New Cross Hospital	8.4	7.9	7.0	7.9	7.9	7.8	6.3 - 9.5
	Russells Hall Hospital	4.3	5.0	5.3	4.6	3.6	4.0	3.1 - 5.2
	Sandwell Hospital	5.9	6.4	6.4	6.6	7.0	6.8	5.2 - 8.8
	Walsall Manor Hospital	8.0	7.5	8.0	6.7	6.9	6.3	5.0 - 8.0

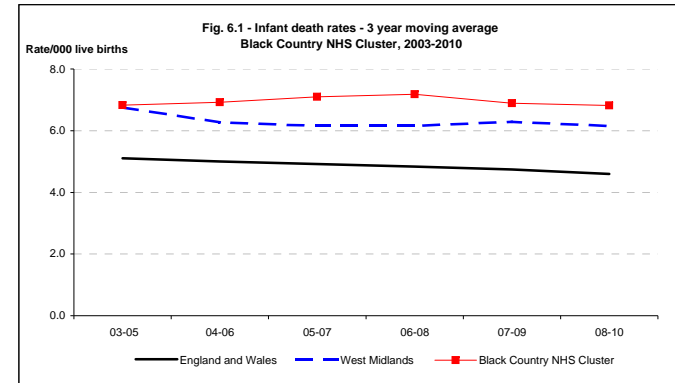


Fig 6.1 Infant death trend for Black Country NHS Cluster, West Midlands and England and Wales, 2003 - 2010.

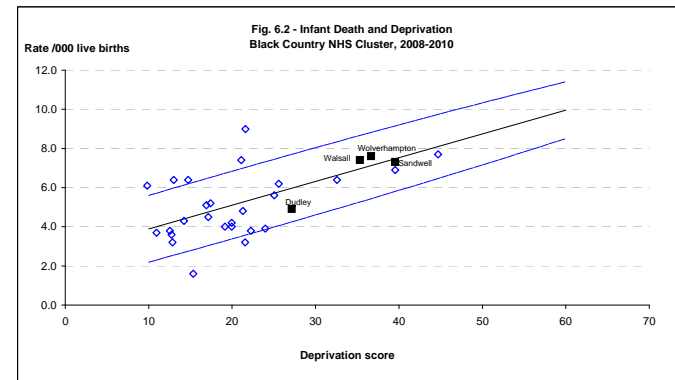


Fig 6.2 Infant death rates for last triennium (2008-10) for the Black Country NHS Cluster, plotted against each LA's deprivation score (IMD 2007). Regression lines represent 90% prediction intervals, based on WM 2003 - 2010.

Comments: The tables present year on year numbers and rates for infant deaths for Cluster, LAs and provider units.

Figure 6.1 illustrates 3 year moving trends; the rate for the Cluster is higher than that of the West Midlands and does not appear to follow the national downward trend
Figure 6.2 shows the four LAs plotted according to infant mortality rate by area based deprivation score; all are within the regional confidence limits adjusted for social deprivation.

7. Infant Deaths in Black Country NHS Cluster, 2003 -2010: Classification in main groups

Groups based on Fetal/Neonatal/Infant classification

	Black Country NHS Cluster		New Cross Hospital		Russells Hall Hospital		Sandwell Hospital		Walsall Manor Hospital	
Births 2008-10	46644		11603		13991		7697		11103	
MAIN GROUPS - 2008-10	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Congenital anomaly	96	2.1	18	1.6	20	1.4	16	2.1	20	1.8
Pre-viability	36	0.8	13	1.1	0	0.0	11	1.4	10	0.9
Pulmonary immaturity	112	2.4	43	3.7	13	0.9	20	2.6	24	2.2
Intrapartum asphyxia	21	0.5	3	0.3	6	0.4	5	0.6	4	0.4
Infection	35	0.8	11	0.9	7	0.5	1	0.1	11	1.0
SUDI	9	0.2	2	0.2	2	0.1	1	0.1	2	0.2
Miscellaneous	23	0.5	7	0.6	4	0.3	5	0.6	3	0.3
Unclassified	22	0.5	6	0.5	4	0.3	4	0.5	6	0.5

	2003	2004	2005	2006	2007	2008	2009	2010
Live births	13692	14116	14246	14525	14884	15462	15372	15810

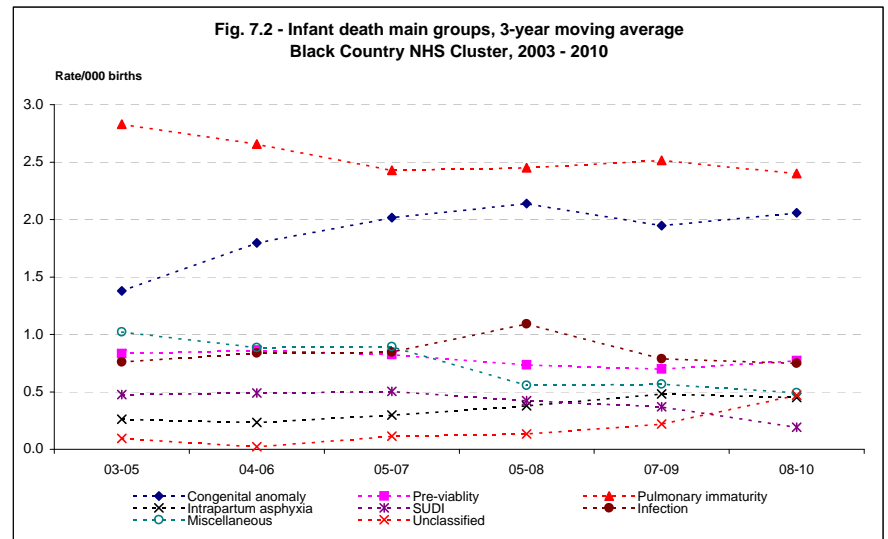
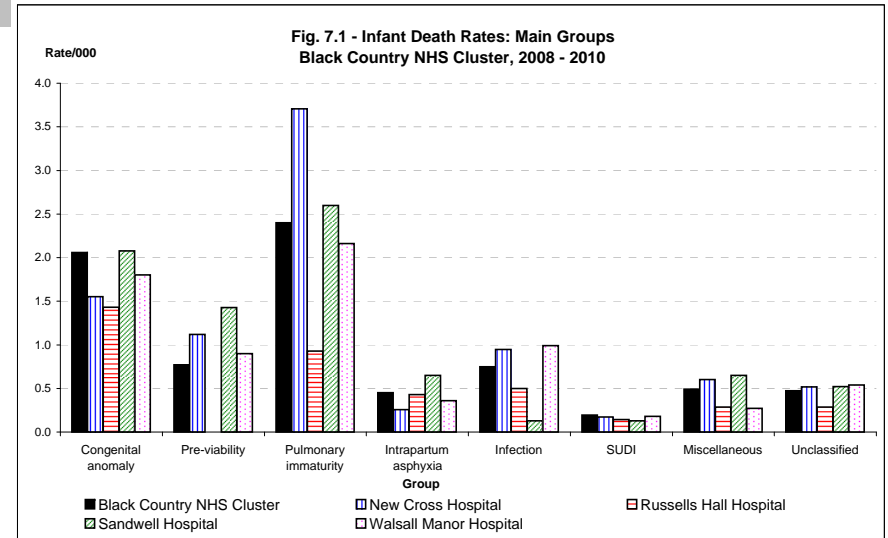
MAIN GROUPS

Black Country NHS Cluster Numbers

Congenital anomaly	15	20	23	34	31	31	27	38
Pre-viability	13	8	14	15	7	11	14	11
Pulmonary immaturity	38	41	40	33	33	44	38	30
Intrapartum asphyxia	6	2	3	5	5	7	10	4
Infection	14	11	7	18	12	19	5	11
SUDI	6	7	7	7	8	4	5	0
Miscellaneous	12	11	20	7	12	6	8	9
Unclassified/Undocumented	4	0	0	1	4	1	5	16

3-year moving averages

	03-05	04-06	05-07	05-08	07-09	08-10
Congenital anomaly	1.4	1.8	2.0	2.1	1.9	2.1
Pre-viability	0.8	0.9	0.8	0.7	0.7	0.8
Pulmonary immaturity	2.8	2.7	2.4	2.5	2.5	2.4
Intrapartum asphyxia	0.3	0.2	0.3	0.4	0.5	0.5
Infection	0.8	0.8	0.8	1.1	0.8	0.8
SUDI	0.5	0.5	0.5	0.4	0.4	0.2
Miscellaneous	1.0	0.9	0.9	0.6	0.6	0.5
Unclassified	0.1	0.0	0.1	0.1	0.2	0.5

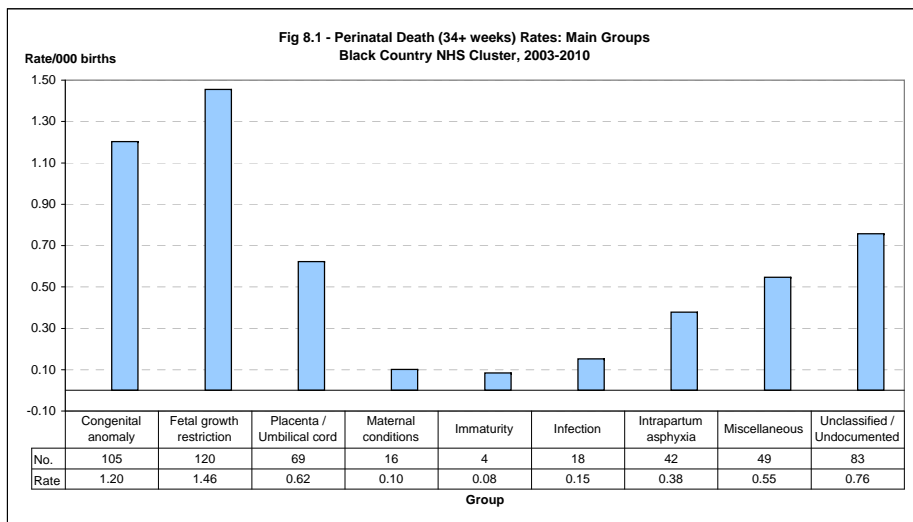


Comment:

The tables and Fig 7.1. show the main categories of infant deaths within Cluster and provider units. Immaturity related deaths are the largest category, with variation consistent with the level of the respective neonatal unit. Fig 7.2. shows 3 year moving average trend analysis. This shows a drop in immaturity related deaths in a early years of this period (non significant), and a significant increase in congenital anomalies related deaths (p=0.01).

8. Perinatal deaths from 30 weeks - Black Country NHS Cluster, 2003-2010

MAIN GROUPS



TRENDS IN PERINATAL DEATHS WITH FETAL GROWTH RESTRICTION

Numbers - PDN

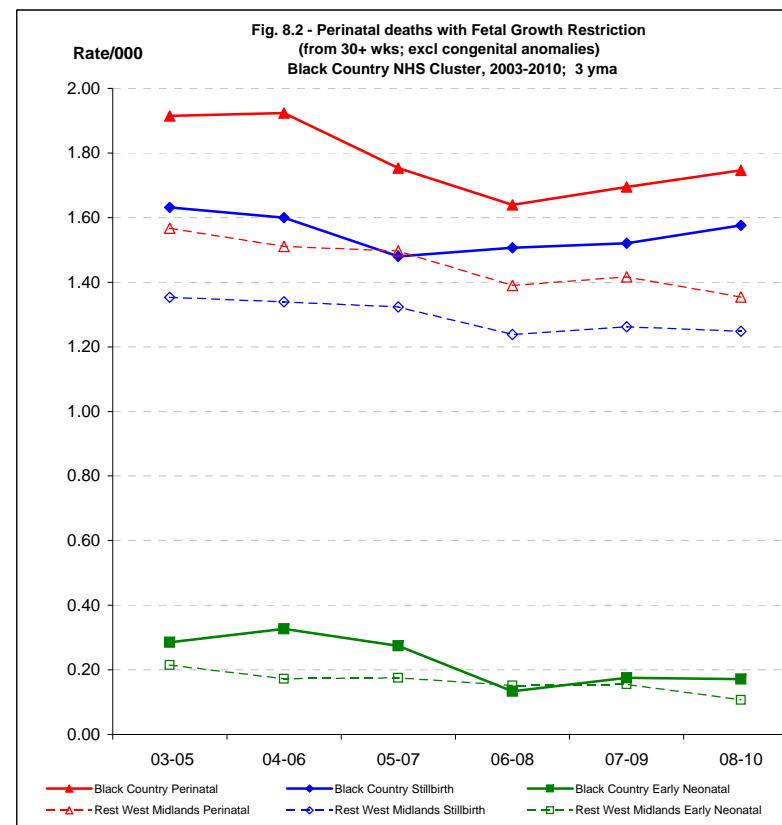
		2003	2004	2005	2006	2007	2008	2009	2010	p
Rest of West Midlands	Perinatal	74	83	85	70	86	74	78	77	0.237
	Stillbirth	63	70	76	65	72	68	72	71	
	Early Neonatal	11	13	9	5	14	6	6	6	
Black Country	Perinatal	24	25	32	26	19	29	30	23	0.521
	Stillbirth	23	21	25	23	17	28	25	21	
	Early Neonatal	1	4	7	3	2	1	5	2	

Rate/1,000

		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
Rest of West Midlands	Perinatal	1.47	1.59	1.63	1.31	1.55	1.31	1.39	1.36	10.9 - 17.0
	Stillbirth	1.25	1.34	1.46	1.22	1.30	1.20	1.29	1.26	10.0 - 15.8
	Early Neonatal	0.22	0.25	0.17	0.09	0.25	0.11	0.11	0.11	0.5 - 2.3
Black Country	Perinatal	1.74	1.76	2.23	1.78	1.27	1.86	1.94	1.45	9.6 - 21.7
	Stillbirth	1.67	1.48	1.74	1.57	1.14	1.80	1.61	1.32	8.6 - 20.2
	Early Neonatal	0.07	0.28	0.49	0.21	0.13	0.06	0.33	0.13	0.3 - 4.6

3 year moving averages

		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.
Rest of West Midlands	Perinatal	1.57	1.51	1.50	1.39	1.42	1.35	11.9 - 15.4
	Stillbirth	1.35	1.34	1.32	1.24	1.26	1.25	10.9 - 14.3
	Early Neonatal	0.21	0.17	0.17	0.15	0.16	0.11	0.7 - 1.7
Black Country	Perinatal	1.91	1.92	1.75	1.64	1.69	1.75	14.1 - 21.7
	Stillbirth	1.63	1.60	1.48	1.51	1.52	1.58	12.6 - 19.8
	Early Neonatal	0.29	0.33	0.27	0.13	0.17	0.17	0.9 - 3.4



Comment:

This analysis looks at perinatal deaths from 30+ weeks gestation. As Fig 8.1. illustrates, the largest contributor to mortality in this category are deaths associated with fetal growth restriction. Perinatal deaths in this category are higher compared to the rest of the West Midlands, although the neonatal deaths appear to have dropped to a level similar to the regional average (trend non significant).