Crystal Court, Aston Cross
Birmingham, B6 5RQ

Telephone: 0121 687 3400
Facsimile: 0121 687 3401
E-mail: office@pi.nhs.uk
Website: www.pi.nhs.uk

Director
Professor Jason O Gardosi MD FRCOG FRCSED

16 February 2012

perinatal institute
for maternal and child health

NHS

Dear Colleague

Direct Line: 0121 687 3500
E-mail: jason.gardosi@pi.nhs.uk

Perinatal & Infant Mortality Report - 2010

This report covers the **Staffordshire NHS Cluster** and its constituent LAs and provider units in reference to the West Midlands (WM), and includes stillbirth, perinatal and infant mortality data up to 2010.

To put mortality rates within context of the characteristics of the population served, the report also includes results from the PEER regional maternity data collection, which was in place in all units during 2010 (Section 2).

The report also examines trends within the main subgroups. For the first time, we are including analysis of perinatal deaths from 30 weeks, to help us track some of the potentially avoidable deaths, at gestational ages where immaturity plays a lesser role (Section 8).

The results within each section can be summarised as follows:

Section		Main Finding
1.	Birth rate	Upward trend in Cluster, following WM and national trends
2.	Maternity population	Highlights high variation in deprivation rates within the Cluster, as well as in achievement of KPI targets
3.	Stillbirths	Overall downward trend (non-significant), but two of LAs are above upper prediction limit adjusted for social deprivation
4.	Stillbirth categories	Largest groups are fetal growth restriction and congenital anomalies
5.	Early neonatal & perinatal rates	Following regional and national trend
6.	Infant deaths	Overall trend is following that in WM and England & Wales but some LAs outside prediction interval adjusted for social deprivation
7.	Infant death categories	Largest group immaturity related, followed by congenital anomalies. No change in trend within main groups
8.	Perinatal deaths from 30+weeks	Largest group: fetal growth restriction; non-significant upward trend, in contrast to significant reduction in rest of WM.

More specific 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

METHODS & DEFINITIONS

- Mortality rates are calculated for deaths based on year of delivery.
- Mortality data are reported annually and for 3 year moving average.
- 'Previable' neonatal or infant deaths: <22 weeks gestation and/or <500g
- Cases allocated to trusts/units using place of birth, and to Cluster/PCT/LA using maternal postcode at birth
- Deliveries at home or elsewhere (e.g. born before arrival) allocated to intended place of delivery at booking
- Death classifications: ReCoDe - *BMJ*. 2005;331:1113-7 ; Fetal & Neonatal : *BJOG* 1986;93:1213-23.
- Fetal/Intrauterine Growth Restriction (FGR/IUGR): below 10th customised weight-for-gestation centile

- Deprivation scores for individual cases (births and deaths) are derived by linking maternal postcode at birth to area-based measures. Index of Multiple Deprivation (IMD 2007) is based on the ordering of deprivation scores for Lower Super Output Areas in England and Wales. Quintile 5 describes the most deprived 20% nationally.

ABBREVIATIONS

HES - Hospital Episode Statistics
ONS - Office for National Statistics
PEER - Perinatal Episode Electronic Record
SCB - Safeguarding Children's Board

DATA SOURCES

Deaths (numerator) - PI collects all fetal losses (from 20 weeks gestation including stillbirths) and infant deaths (up to 1 year of age) for the West Midlands. Cases are notified by co-ordinators from maternity and tertiary paediatric units, using perinatal death notifications (PDNs). In order to ensure high ascertainment, cases are cross-matched with ONS statutory notifications (stillbirth and death registrations), Safeguarding Children's Boards (SCB; infant deaths), pathology reports, and HES inpatient deaths.
NB Mortality rates will occasionally differ from ONS Vital Statistics because PI data are regularly updated with late ascertained cases.

Births (denominator; population-based) - ONS birth registrations are the denominators used in calculating mortality rates for Clusters, PCTs, or LAs.

Births (denominator; service-based) - PI collects annual denominator data from all West Midlands units through the Heads of Midwifery. These are used when calculating mortality rates for trusts or units.

PEER database. The Perinatal Episode Electronic Record was established under the regional Investing for Health (IfH) programme to provide standardised patient level data across the West Midlands. It uses a regularly updated regional dataset http://www.pi.nhs.uk/peer/peerdata_collection.htm which was version 1.7 during the period reported here (Jan-Dec 2010). PEER is quality assured through regular crosschecks and audits. It is used for unit, PCT and Cluster based standardised reports (www.pi.nhs.uk/peer/peerview) as well as bespoke data requests.

Key Performance Indicators (KPIs), as established and agreed under the SHA's IfH programme. Definitions are available here: http://www.pi.nhs.uk/rpnm/IfH_KPI_Evidence_Targets.pdf

AUTHORS / CITATION:

Abdel ElSheikh, Asad Malik, Jason Gardosi. Perinatal and Infant Mortality Report 2010: Staffordshire NHS Cluster. West Midlands Perinatal Institute, 2012

1. Births: Staffordshire 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
	Staffordshire NHS Cluster	11316	11879	11895	11934	12655	13025	12520	12602
LA/UA	Cannock Chase	1092	1095	1109	1173	1126	1144	1136	1154
	East Staffordshire	1231	1289	1275	1275	1405	1497	1462	1447
	Lichfield	965	916	992	992	1017	1003	981	1002
	Newcastle-under-Lyme	1221	1283	1245	1179	1238	1259	1194	1234
	South Staffordshire	865	942	912	932	924	867	855	912
	Stafford	1162	1258	1264	1290	1427	1394	1308	1284
	Staffordshire Moorlands	828	856	868	811	881	919	898	866
	Stoke-on-Trent	2987	3265	3337	3367	3621	3896	3651	3669
	Tamworth	965	975	893	915	1016	1046	1035	1034
Delivery Unit	Queens Hospital	3020	3456	3533	3571	3785	4050	3829	3891
	Stafford Hospital	2137	2274	2303	2379	2504	2478	2295	1947
	UHNS	5103	5396	5406	5382	5621	5934	5689	5758

Fig. 1 - Total Births 2003-2010
Staffordshire NHS Cluster
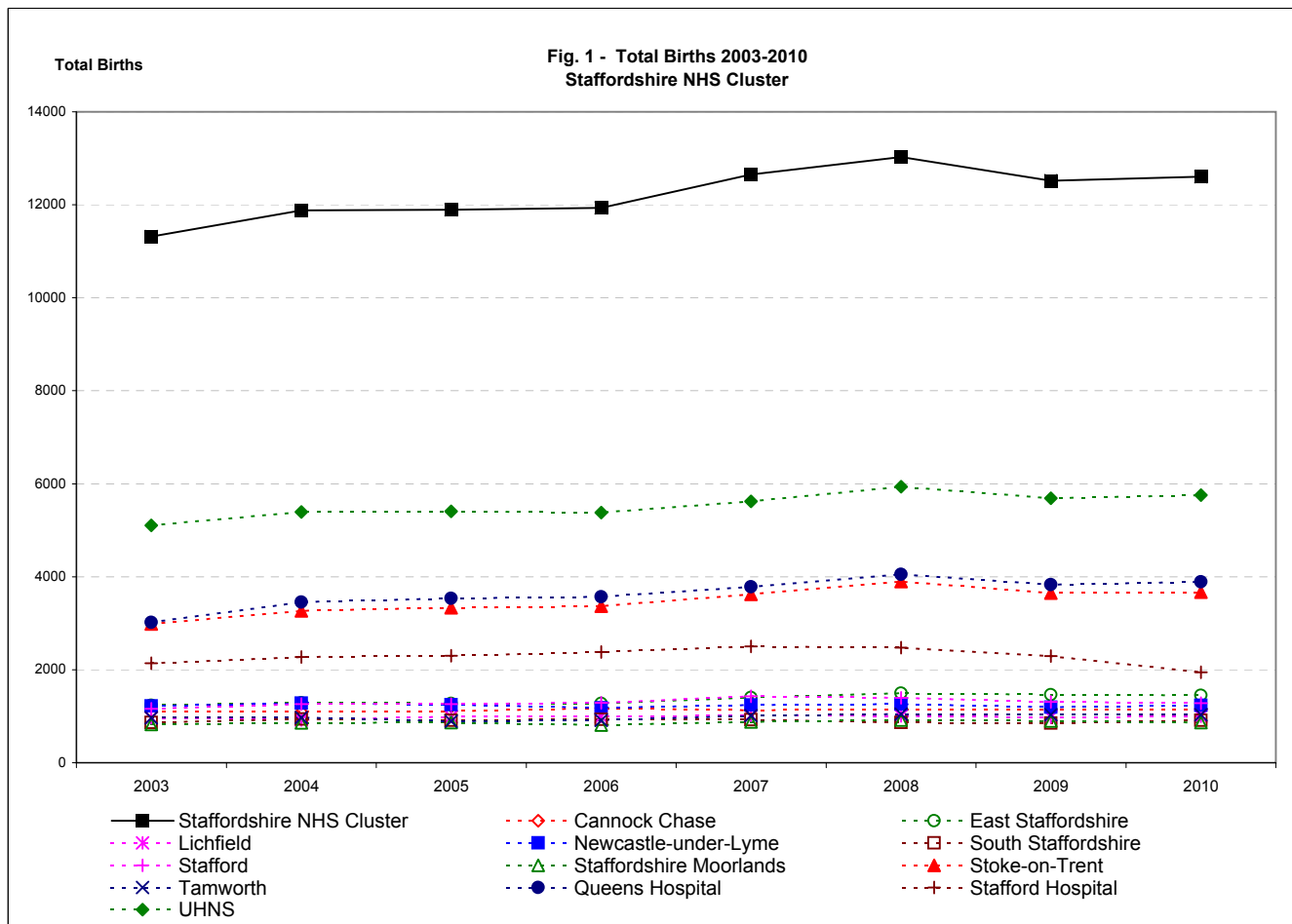
Comment:
The Table and Figure illustrate the birth rate trend in E&W, WM and Staffordshire Cluster, and its constituent LAs and units
(data up to 2010)

2. Demographics: Staffordshire, 2010

	West Midlands	Staffordshire NHS Cluster	Cannock Chase LA	East Staffs LA	Lichfield LA	Newcastle Under Lyme LA	South Staffs LA	Stafford LA	Staffordshire Moorlands LA	Stoke on Trent LA	Tamworth LA	Queens Burton	Stafford	North Staffs (UHNS)
Total Births:	72,459	12,602	1,154	1,447	1,002	1,234	912	1,284	866	3,669	1,034	3,891	1,947	5,758
Submissions:	58,718	11,260	1,096	1,240	916	1,124	800	1,237	538	3,381	929	3,634	1,986	5,322
% Submissions:	81.0	89.4	95.0	85.7	91.4	91.1	87.7	96.3	62.1	92.2	89.8	93.4	102.0	92.4
Deprivation - IMD Quintile														
1 (least)	8.6%	13.0%	10.5%	15.2%	24.9%	11.1%	32.9%	27.6%	8.0%	0.4%	11.7%	16.0%	20.9%	4.8%
2	12.7%	18.0%	16.8%	17.5%	32.5%	17.6%	29.0%	29.3%	40.7%	5.8%	18.4%	22.9%	21.7%	12.8%
3	16.5%	17.1%	22.8%	12.9%	23.7%	24.0%	17.9%	19.0%	18.4%	8.0%	29.5%	20.3%	19.3%	13.4%
4	21.2%	21.9%	33.8%	22.0%	18.9%	25.6%	20.3%	15.4%	24.5%	20.0%	18.0%	21.8%	26.7%	21.3%
5 (most)	41.0%	29.9%	16.1%	32.4%	0.0%	21.6%	0.0%	8.7%	8.4%	65.7%	22.4%	19.1%	11.4%	47.7%
Ethnic Origin														
African	3.5%	1.1%	0.4%	0.8%	0.2%	1.1%	0.4%	1.2%	0.2%	2.2%	0.1%	0.5%	0.7%	1.7%
African Caribbean	2.0%	0.3%	0.0%	0.4%	0.1%	0.1%	0.8%	0.4%	0.4%	0.4%	0.1%	0.3%	0.2%	0.4%
British European	67.9%	85.3%	95.9%	70.0%	90.6%	90.5%	93.5%	89.9%	96.4%	77.4%	90.3%	85.6%	92.6%	83.0%
Eastern European	3.7%	2.8%	0.6%	8.3%	2.1%	2.3%	0.9%	1.7%	0.8%	2.9%	3.4%	4.4%	1.4%	2.4%
Middle Eastern	1.1%	0.5%	0.0%	0.8%	0.0%	0.3%	0.3%	0.3%	0.0%	1.0%	0.2%	0.3%	0.2%	0.7%
South Asian	15.6%	5.8%	0.8%	15.3%	2.2%	1.4%	2.7%	2.0%	0.8%	10.9%	0.4%	5.9%	1.7%	7.4%
Bangladeshi	1.9%	0.4%	0.1%	0.4%	0.3%	0.4%	0.1%	0.2%	0.0%	0.9%	0.0%	0.2%	0.3%	0.7%
Indian	5.1%	1.0%	0.6%	1.3%	1.5%	0.8%	2.4%	1.4%	0.4%	0.9%	0.3%	0.9%	1.1%	0.9%
Pakistani	8.6%	4.3%	0.1%	13.6%	0.4%	0.3%	0.1%	0.3%	0.4%	9.1%	0.1%	4.8%	0.4%	5.8%
Other/Mixed	6.2%	4.2%	2.2%	4.5%	4.7%	4.3%	1.5%	4.4%	1.5%	5.2%	5.4%	3.0%	3.3%	4.5%
Migrants														
Non UK Born	20.6%	11.4%	2.8%	22.7%	6.3%	8.1%	3.6%	10.3%	3.4%	17.5%	6.7%	10.9%	7.3%	13.4%
Maternal Age														
< 16	0.2%	0.2%	0.1%	0.2%	0.2%	0.3%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%	0.2%	0.1%
< 18	1.9%	2.1%	2.5%	1.5%	1.7%	2.8%	1.8%	2.0%	1.5%	2.3%	2.3%	1.7%	2.4%	2.2%
< 20	6.9%	7.6%	8.9%	6.5%	6.0%	7.7%	6.9%	5.8%	5.2%	9.1%	8.4%	6.7%	7.8%	8.0%
20 - 24	22.4%	23.7%	26.2%	22.0%	17.4%	21.5%	20.4%	20.9%	19.7%	28.5%	23.7%	20.3%	23.2%	25.5%
25 - 29	29.2%	29.2%	28.6%	31.3%	23.4%	28.6%	25.9%	27.5%	26.4%	31.7%	31.2%	29.4%	27.5%	30.4%
30 - 34	25.4%	24.4%	22.4%	25.3%	32.7%	27.4%	27.0%	27.6%	28.1%	19.9%	20.9%	27.1%	24.9%	23.0%
35 - 39	13.1%	12.3%	11.5%	12.3%	16.5%	12.6%	16.0%	14.6%	16.5%	8.9%	12.6%	13.6%	13.3%	10.9%
35+	16.1%	15.1%	14.0%	14.9%	20.4%	14.8%	19.9%	18.2%	20.6%	10.8%	15.9%	16.5%	16.7%	13.1%
40+	3.0%	2.8%	2.5%	2.6%	3.9%	2.1%	3.9%	3.6%	4.1%	1.9%	3.3%	2.9%	3.3%	2.2%
Body Mass Index														
< 18.5	3.3%	3.3%	2.4%	3.4%	1.6%	3.8%	2.6%	4.2%	3.2%	3.5%	3.9%	2.6%	3.9%	3.5%
18.5 - 24.9	48.0%	49.3%	47.2%	50.3%	52.7%	47.8%	53.0%	56.7%	48.7%	46.5%	46.5%	49.3%	52.6%	47.4%
25 - 29.9	28.3%	27.4%	28.3%	26.7%	29.4%	26.3%	28.2%	25.6%	28.2%	27.5%	27.2%	28.8%	26.5%	27.3%
30 - 34.9	12.7%	12.6%	13.2%	11.7%	10.9%	13.0%	11.0%	10.0%	11.7%	13.7%	15.1%	12.4%	10.9%	13.2%
35 - 39.9	5.1%	4.9%	5.7%	5.4%	3.2%	6.0%	3.7%	2.4%	6.0%	5.6%	5.0%	4.4%	4.0%	5.7%
30+	20.4%	20.0%	22.1%	19.6%	16.3%	22.1%	16.2%	13.5%	19.9%	22.5%	22.4%	19.3%	17.0%	21.9%
35+	7.6%	7.5%	8.9%	8.0%	5.4%	9.0%	5.1%	3.5%	8.3%	8.8%	7.3%	7.0%	6.1%	8.6%
40+	2.5%	2.6%	3.3%	2.6%	2.3%	3.1%	1.4%	1.1%	2.3%	3.2%	2.3%	2.6%	2.1%	3.0%

contd.

	West Midlands	Staffordshire NHS Cluster	Cannock Chase LA	East Staffs LA	Lichfield LA	Newcastle Under Lyme LA	South Staffs LA	Stafford LA	Staffordshire Moorlands LA	Stoke on Trent LA	Tamworth LA	Queens Burton	Stafford	North Staffs (UHNS)
Prematurity														
< 37 Weeks	6.0%	6.2%	6.1%	6.6%	4.9%	6.7%	4.6%	6.0%	4.5%	7.3%	6.0%	5.8%	6.0%	6.7%
< 34 Weeks	1.8%	1.8%	1.2%	1.7%	1.3%	1.4%	1.4%	1.6%	1.7%	2.5%	1.7%	1.5%	1.5%	2.0%
Onset of Labour														
Induced	22.3%	23.4%	22.1%	27.3%	24.7%	22.7%	23.1%	19.7%	26.2%	23.6%	22.9%	26.8%	19.0%	23.9%
Mode of Delivery														
Forceps/Ventouse	10.6%	11.2%	11.6%	12.6%	13.3%	10.1%	12.9%	13.9%	8.5%	9.7%	10.7%	13.1%	12.6%	9.7%
Caesarean Section	23.0%	22.8%	16.6%	23.7%	22.5%	26.9%	23.5%	16.9%	24.7%	24.9%	23.0%	20.8%	14.8%	25.5%
Elective	9.2%	8.8%	5.3%	7.4%	9.7%	12.2%	9.2%	6.4%	10.5%	9.4%	9.1%	7.1%	4.9%	10.5%
Non-Elective	13.8%	14.0%	11.3%	16.3%	12.8%	14.7%	14.3%	10.5%	14.1%	15.5%	13.9%	13.7%	9.9%	15.0%
Outcome														
Apgar < 7 @ 5 Min.	1.4%	1.3%	1.3%	1.4%	1.1%	1.6%	1.3%	1.6%	1.0%	1.3%	1.0%	1.3%	1.8%	1.3%
NICU Admission (37+ Wks) [a]	2.3%	2.0%	3.4%	1.8%	2.3%	1.1%	3.0%	2.7%	1.5%	1.0%	2.3%	1.4%	3.8%	1.1%
Early Booking < 13 Weeks *														
Average	83.7%	87.9%	90.6%	79.2%	88.5%	90.0%	88.2%	91.3%	88.2%	87.9%	87.1%	84.9%	90.7%	88.4%
Range [b]	(63.1% - 90.7%)	(84.9% - 90.7%)												
Fetal growth restriction *														
Birthweight <10th cust. centile														
Average	13.8%	13.6%	14.2%	12.1%	9.8%	15.1%	13.3%	12.7%	13.9%	15.5%	11.2%	11.7%	13.7%	15.1%
Range	(10.3% - 16.4%)	(11.7% - 15.1%)												
FGR Detection														
Average	31.0%	36.2%	45.0%	35.7%	38.1%	36.4%	16.8%	41.8%	33.3%	37.2%	30.3%	32.8%	47.7%	36.8%
Range [b]	(11.5% - 48.3%)	(32.8% - 47.7%)												
Detection after referral for FH														
Average	61.5%	67.9%	74.4%	85.0%	76.0%	61.8%	50.0%	61.5%	75.0%	63.0%	71.4%	73.0%	71.1%	64.5%
Range [b]	(30.9% - 72.5%)	(64.5% - 73%)												
Smoking *														
At booking	18.8%	21.5%	23.2%	17.0%	16.2%	23.2%	14.7%	16.4%	19.2%	26.4%	23.9%	17.5%	21.1%	24.1%
Late in pregnancy	13.6%	16.4%	16.8%	12.6%	11.5%	19.1%	10.0%	9.9%	15.2%	21.8%	17.7%	12.5%	13.2%	19.8%
Ceased During Pregnancy	27.3%	23.3%	22.0%	30.0%	29.4%	20.5%	29.6%	30.4%	23.8%	19.5%	24.3%	31.1%	27.9%	20.1%
Range [b]	(15.4% - 61.4%)	(20.1% - 31.1%)												
Breastfeeding Initiation *														
Average	60.5%	57.8%	51.2%	49.3%	63.7%	59.9%	60.4%	67.0%	65.7%	56.6%	52.1%	52.4%	57.1%	59.4%
Range [b]	(43.1% - 78.0%)	(52.4% - 59.4%)												

Notes

* KPI - Definitions are available   here   ** Submission rate too low to calculate percentage   [a] Collected since 10/2010 only; 12 months data to 09/2011 shown

[b] Range based on annual average within WM or Cluster

Comment: This table compares the characteristics of the maternity population in the West Midlands overall with that in Staffordshire Cluster and its constituent LAs and maternity units. Overall ascertainment of data through PEER was above the regional average in 2010. Social deprivation rates vary substantially between the LAs and the provider units, as well as the proportion of mothers who are migrants. KPIs for early booking and antenatal detection of growth restriction are above regional average, while smoking and cessation rates as well as breastfeeding initiation are below the average achieved in the West Midlands.

3. Stillbirths 2003-2010

Staffordshire

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
	Staffordshire NHS Cluster	59	57	78	70	62	69	70	64
LA/UA	Cannock Chase	5	6	1	5	7	0	6	4
	East Staffordshire	8	4	5	8	8	13	12	10
	Lichfield	2	4	9	4	5	5	6	5
	Newcastle-under-Lyme	6	5	7	6	5	13	6	6
	South Staffordshire	5	5	4	7	1	2	4	4
	Stafford	5	6	10	6	10	7	6	4
	Staffordshire Moorlands	3	4	7	6	1	5	2	4
	Stoke-on-Trent	24	21	28	21	23	18	23	21
	Tamworth	1	2	7	7	2	6	5	6
Delivery Unit	Queens Hospital	17	14	18	19	11	21	26	23
	Stafford Hospital	8	13	10	8	17	8	10	6
	UHNS	30	27	42	30	28	35	32	33

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
	Staffordshire NHS Cluster	5.2	4.8	6.6	5.9	4.9	5.3	5.6	5.1	4.0 - 6.5
LA/UA	Cannock Chase	4.6	5.5	0.9	4.3	6.2	0.0	5.3	3.5	1.3 - 8.9
	East Staffordshire	6.5	3.1	3.9	6.3	5.7	8.7	8.2	6.9	3.8 - 12.7
	Lichfield	2.1	4.4	9.1	4.0	4.9	5.0	6.1	5.0	2.1 - 11.6
	Newcastle-under-Lyme	4.9	3.9	5.6	5.1	4.0	10.3	5.0	4.9	2.2 - 10.6
	South Staffordshire	5.8	5.3	4.4	7.5	1.1	2.3	4.7	4.4	1.7 - 11.2
	Stafford	4.3	4.8	7.9	4.7	7.0	5.0	4.6	3.1	1.2 - 8.0
	Staffordshire Moorlands	3.6	4.7	8.1	7.4	1.1	5.4	2.2	4.6	1.8 - 11.8
	Stoke-on-Trent	8.0	6.4	8.4	6.2	6.4	4.6	6.3	5.7	3.7 - 8.7
	Tamworth	1.0	2.1	7.8	7.7	2.0	5.7	4.8	5.8	2.7 - 12.6
Delivery Unit	Queens Hospital	5.6	4.1	5.1	5.3	2.9	5.2	6.8	5.9	3.9 - 8.9
	Stafford Hospital	3.7	5.7	4.3	3.4	6.8	3.2	4.4	3.1	1.4 - 6.7
	UHNS	5.9	5.0	7.8	5.6	5.0	5.9	5.6	5.7	4.1 - 8.0

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
	Staffordshire NHS Cluster	5.5	5.7	5.8	5.3	5.3	5.3	4.6 - 6.1
LA/UA	Cannock Chase	3.6	3.6	3.8	3.5	3.8	2.9	1.6 - 5.4
	East Staffordshire	4.5	4.4	5.3	6.9	7.6	7.9	5.7 - 11.0
	Lichfield	5.2	5.9	6.0	4.6	5.3	5.4	3.3 - 8.7
	Newcastle-under-Lyme	4.8	4.9	4.9	6.5	6.5	6.8	4.6 - 10.0
	South Staffordshire	5.1	5.7	4.3	3.7	2.6	3.8	2.1 - 7.0
	Stafford	5.7	5.8	6.5	5.6	5.6	4.3	2.7 - 6.8
	Staffordshire Moorlands	5.5	6.7	5.5	4.6	3.0	4.1	2.3 - 7.3
	Stoke-on-Trent	7.6	7.0	7.0	5.7	5.7	5.5	4.3 - 7.1
	Tamworth	3.5	5.7	5.7	5.0	4.2	5.5	3.4 - 8.7
Delivery Unit	Queens Hospital	4.9	4.8	4.4	4.5	5.0	5.9	4.7 - 7.5
	Stafford Hospital	4.6	4.5	4.9	4.5	4.8	3.6	2.4 - 5.3
	UHNS	6.2	6.1	6.1	5.5	5.5	5.8	4.7 - 7.0

Fig. 3.1 - Stillbirth rates - 3 year moving average Staffordshire NHS Cluster, 2003-2010
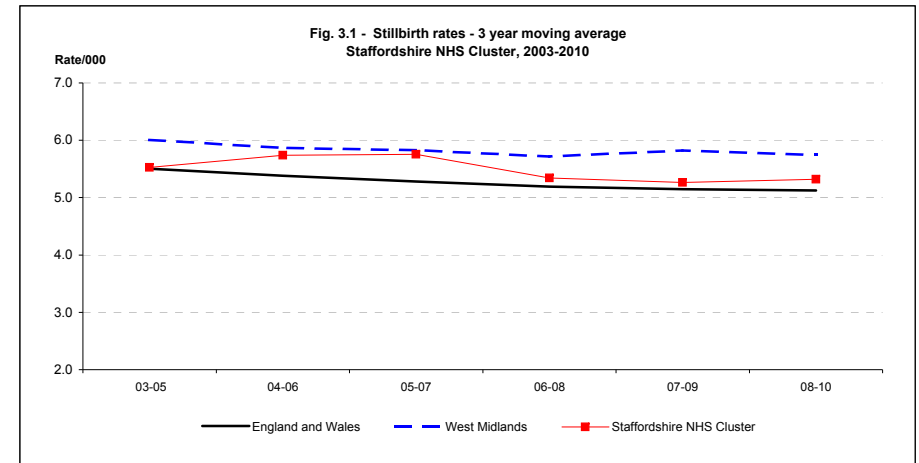
Fig 3.1 Stillbirth trend for Staffordshire NHS Cluster, West Midlands and England and Wales, 2003 - 2010.

Fig. 3.2 - Stillbirth and Deprivation Staffordshire NHS Cluster, 2008-2010
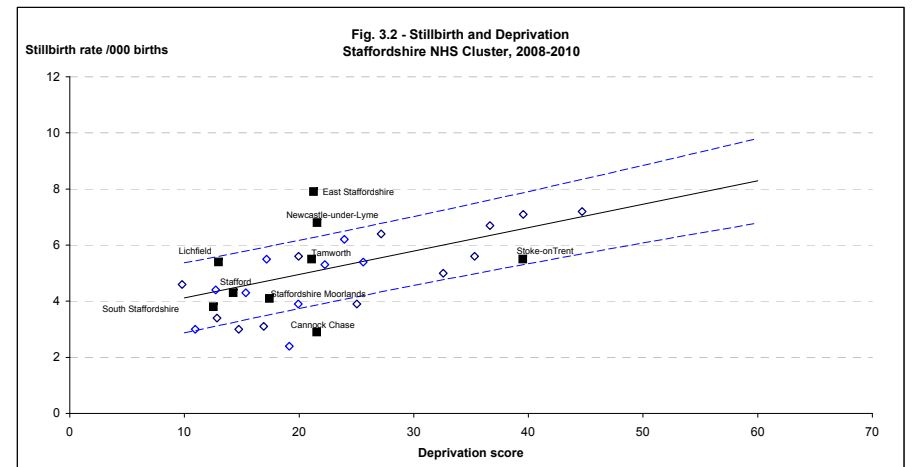
Fig 3.2 Stillbirth rates for last triennium (2008-10) for the Staffordshire NHS Cluster, plotted against each LA's deprivation score (IMD 2007). Regression lines represent 90% prediction intervals, based on WM 2002 - 2010.

Comments:

The tables present year on year numbers and rates of stillbirth for Cluster, LAs and provider units, as well as 3 year averages.

Figure 3.1 suggests a (non-significant) overall downward trend in stillbirth rates.

Figure 3.2 shows the LAs plotted according to their respective deprivation and stillbirth rate, and indicates those which are outside the prediction interval adjusted for social deprivation.

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

Groups based on ReCoDe classification

	Staffordshire NHS Cluster		Queens Hospital		Stafford Hospital		UHNS	
Births 2008-10	38147		11770		6720		17381	
MAIN GROUPS - 2008-10	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Congenital anomaly	28	0.7	11	0.9	3	0.4	12	0.7
Fetal growth restriction	78	2.0	26	2.2	10	1.5	40	2.3
Placenta / Umbilical chord	30	0.8	9	0.8	6	0.9	12	0.7
Maternal conditions	6	0.2	4	0.3	0	0.0	2	0.1
Infection	10	0.3	5	0.4	2	0.3	5	0.3
Intrapartum asphyxia	6	0.2	2	0.2	2	0.3	2	0.1
Miscellaneous	16	0.4	2	0.2	1	0.1	11	0.6
Unclassified / Unexplained	29	0.8	11	0.9	0	0.0	16	0.9

	2003	2004	2005	2006	2007	2008	2009	2010
Births	11316	11879	11895	11934	12655	13025	12520	12602

MAIN GROUPS
Staffordshire NHS Cluster
Numbers

Congenital anomaly	7	10	12	12	12	7	10	11
Fetal growth restriction	17	23	31	33	21	27	27	24
Placenta/Umbilical chord	8	4	4	8	4	11	11	8
Maternal conditions	3	3	3	0	4	4	1	1
Infection	2	0	1	2	1	5	2	3
Intrapartum asphyxia	2	0	2	3	1	1	2	3
Miscellaneous	4	4	3	3	9	6	6	4
Unclassified / Unexplained	16	13	22	9	10	8	11	10

3-year moving averages	03-05	04-06	05-07	05-08	07-09	08-10	08-10 C.I.
Congenital anomaly	0.8	1.0	1.0	0.8	0.8	0.7	0.5 - 1.1
Fetal growth restriction	2.0	2.4	2.3	2.2	2.0	2.0	1.6 - 2.6
Placenta/Umbilical chord	0.5	0.4	0.4	0.6	0.7	0.8	0.6 - 1.1
Maternal conditions	0.3	0.2	0.2	0.2	0.2	0.2	0.1 - 0.3
Infection	0.1	0.1	0.1	0.2	0.2	0.3	0.1 - 0.5
Intrapartum asphyxia	0.1	0.1	0.2	0.1	0.1	0.2	0.1 - 0.3
Miscellaneous	0.3	0.3	0.4	0.5	0.5	0.4	0.3 - 0.7
Unclassified / Unexplained	1.5	1.2	1.1	0.7	0.8	0.8	0.5 - 1.1
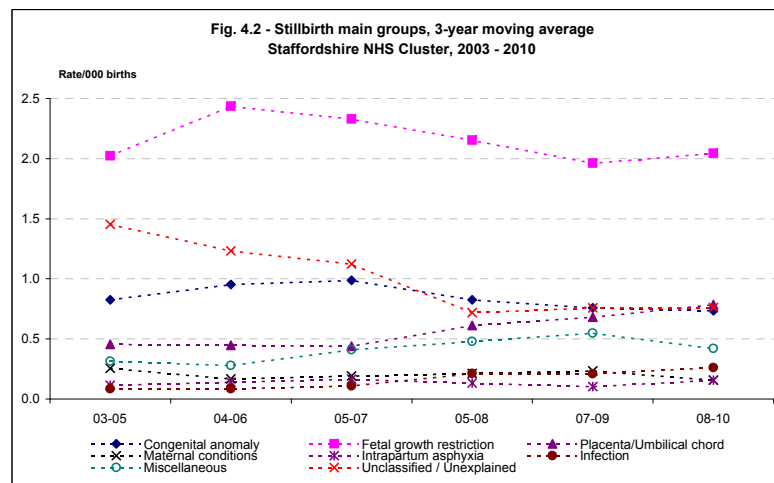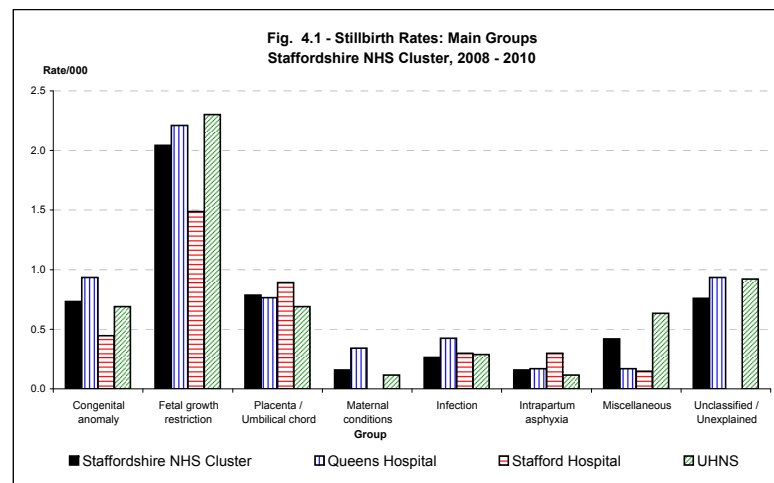
Comments:
Fig 4.1. shows the main categories of stillbirth within the Cluster and provider units. Although the proportions vary, the largest category is fetal growth restriction within each unit, followed by congenital anomaly.
Fig 4.2. shows 3 year moving average trends analysis - with no significant overall change in either group over this period. Interpretation within subgroups is limited by numbers.

Fig. 4.1 - Stillbirth Rates: Main Groups
Staffordshire NHS Cluster, 2008 - 2010

Fig. 4.2 - Stillbirth main groups, 3-year moving average
Staffordshire NHS Cluster, 2003 - 2010

5 A. Early Neonatal Deaths 2003-2010

Staffordshire

Numbers - PDNs

		2003	2004	2005	2006	2007	2008	2009	2010
	England and Wales*	1726	1714	1681	1750	1762	1763	1715	1675
	West Midlands	267	255	270	246	268	260	253	229
	Staffordshire NHS Cluster	52	43	50	44	56	44	42	43
LA/UA	Cannock Chase	4	5	5	3	7	2	2	3
	East Staffordshire	6	7	9	7	5	5	2	2
	Lichfield	5	3	2	2	2	5	6	3
	Newcastle-under-Lyme	4	2	5	2	11	12	5	5
	South Staffordshire	3	1	5	2	4	0	0	2
	Stafford	6	3	3	7	9	4	3	6
	Staffordshire Moorlands	3	2	0	1	3	1	4	4
	Stoke-on-Trent	18	17	19	16	9	11	13	16
	Tamworth	3	3	2	4	6	4	7	2
Delivery Unit	Queens Hospital	15	11	7	10	13	12	9	7
	Stafford Hospital	3	7	6	4	16	5	3	8
	UHNS	28	19	24	22	25	25	22	24

Rate/1,000

		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
	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
	Staffordshire NHS Cluster	4.6	3.6	4.2	3.7	4.4	3.4	3.4	3.4	2.5 - 4.6
LA/UA	Cannock Chase	3.7	4.6	4.5	2.6	6.3	1.7	1.8	2.6	0.9 - 7.6
	East Staffordshire	4.9	5.4	7.1	5.5	3.6	3.4	1.4	1.4	0.4 - 5.1
	Lichfield	5.2	3.3	2.0	2.0	2.0	5.0	6.2	3.0	1.0 - 8.8
	Newcastle-under-Lyme	3.3	1.6	4.0	1.7	8.9	9.6	4.2	4.1	1.7 - 9.5
	South Staffordshire	3.5	1.1	5.5	2.2	4.3	0.0	0.0	2.2	0.6 - 8.0
	Stafford	5.2	2.4	2.4	5.5	6.4	2.9	2.3	4.7	2.2 - 10.2
	Staffordshire Moorlands	3.6	2.3	0.0	1.2	3.4	1.1	4.5	4.6	1.8 - 11.9
	Stoke-on-Trent	6.1	5.2	5.7	4.8	2.5	2.8	3.6	4.4	2.7 - 7.1
	Tamworth	3.1	3.1	2.3	4.4	5.9	3.8	6.8	1.9	0.5 - 7.1
Delivery Unit	Queens Hospital	5.0	3.2	2.0	2.8	3.4	3.0	2.4	1.8	0.9 - 3.7
	Stafford Hospital	1.4	3.1	2.6	1.7	6.4	2.0	1.3	4.1	2.1 - 8.1
	UHNS	5.5	3.5	4.5	4.1	4.5	4.2	3.9	4.2	2.8 - 6.2

3 year moving averages

|		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.
	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
	Staffordshire NHS Cluster	4.2	3.9	4.1	3.8	3.7	3.4	2.9 - 4.0
LA/UA	Cannock Chase	4.3	3.9	4.4	3.5	3.2	2.0	1.0 - 4.2
	East Staffordshire	5.8	6.0	5.3	4.1	2.8	2.1	1.1 - 3.9
	Lichfield	3.5	2.4	2.0	3.0	4.4	4.7	2.8 - 7.9
	Newcastle-under-Lyme	2.9	2.4	4.9	6.8	7.6	6.0	4.0 - 9.1
	South Staffordshire	3.3	2.9	4.0	2.2	1.5	0.8	0.2 - 2.8
	Stafford	3.3	3.4	4.8	4.9	3.9	3.3	1.9 - 5.6
	Staffordshire Moorlands	2.0	1.2	1.6	1.9	3.0	3.4	1.8 - 6.4
	Stoke-on-Trent	5.7	5.3	4.3	3.3	3.0	3.6	2.6 - 4.9
	Tamworth	2.8	3.3	4.3	4.7	5.5	4.2	2.5 - 7.2
Delivery Unit	Queens Hospital	3.3	2.7	2.8	3.1	2.9	2.4	1.7 - 3.5
	Stafford Hospital	2.4	2.5	3.6	3.4	3.3	2.4	1.5 - 3.9
	UHNS	4.5	4.0	4.4	4.3	4.2	4.1	3.3 - 5.2
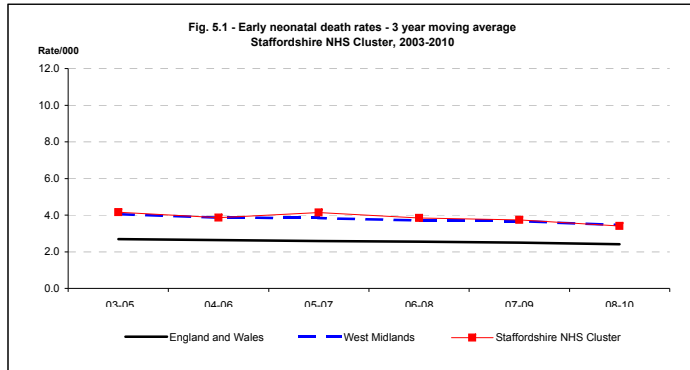
Fig. 5.1 - Early neonatal death rates - 3 year moving average
Staffordshire NHS Cluster, 2003-2010

5 B. Perinatal Deaths 2003-2010

Numbers - PDNs

		2003	2004	2005	2006	2007	2008	2009	2010
	England and Wales*	5291	5231	5154	5340	5347	5380	5403	5389
	West Midlands	662	638	674	637	667	674	686	623
	Staffordshire NHS Cluster	111	100	128	114	118	113	112	107
LA/UA	Cannock Chase	9	11	6	8	14	2	8	7
	East Staffordshire	14	11	14	15	13	18	14	12
	Lichfield	7	7	11	6	7	10	12	8
	Newcastle-under-Lyme	10	7	12	8	16	25	11	11
	South Staffordshire	8	6	9	9	5	2	4	6
	Stafford	11	9	13	13	19	11	9	10
	Staffordshire Moorlands	6	6	7	7	4	6	6	8
	Stoke-on-Trent	42	38	47	37	32	29	36	37
	Tamworth	4	5	9	11	8	10	12	8
Delivery Unit	Queens Hospital	32	25	25	29	24	33	35	30
	Stafford Hospital	11	20	16	12	33	13	13	14
	UHNS	58	46	66	52	53	60	54	57

Rate/1,000

		2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
	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
	Staffordshire NHS Cluster	9.8	8.4	10.8	9.6	9.3	8.7	8.9	8.5	7.0 - 10.2
LA/UA	Cannock Chase	8.2	10.0	5.4	6.8	12.4	1.7	7.0	6.1	2.9 - 12.5
	East Staffordshire	11.4	8.5	11.0	11.8	9.3	12.0	9.6	8.3	4.8 - 14.4
	Lichfield	7.3	7.6	11.1	6.0	6.9	10.0	12.2	8.0	4.1 - 15.7
	Newcastle-under-Lyme	8.2	5.5	9.6	6.8	12.9	19.9	9.2	8.9	5.0 - 15.9
	South Staffordshire	9.2	6.4	9.9	9.7	5.4	2.3	4.7	6.6	3.0 - 14.3
	Stafford	9.5	7.2	10.3	10.1	13.3	7.9	6.9	7.8	4.2 - 14.3
	Staffordshire Moorlands	7.2	7.0	8.1	8.6	4.5	6.5	6.7	9.2	4.7 - 18.1
	Stoke-on-Trent	14.1	11.6	14.1	11.0	8.8	7.4	9.9	10.1	7.3 - 13.9
	Tamworth	4.1	5.1	10.1	12.0	7.9	9.6	11.6	7.7	3.9 - 15.2
Delivery Unit	Queens Hospital	10.6	7.2	7.1	8.1	6.3	8.1	9.1	7.7	5.4 - 11.0
	Stafford Hospital	5.1	8.8	6.9	5.0	13.2	5.2	5.7	7.2	4.3 - 12.0
	UHNS	11.4	8.5	12.2	9.7	9.4	10.1	9.5	9.9	7.6 - 12.8

3 year moving averages

|		03-05	04-06	05-07	06-08	07-09	08-10	08-10 C.I.
	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
	Staffordshire NHS Cluster	9.7	9.6	9.9	9.2	9.0	8.7	7.8 - 9.7
LA/UA	Cannock Chase	7.9	7.4	8.2	7.0	7.0	5.0	3.1 - 7.9
	East Staffordshire	10.3	10.4	10.6	11.0	10.3	10.0	7.4 - 13.4
	Lichfield	8.7	8.3	8.0	7.6	9.7	10.0	7.0 - 14.3
	Newcastle-under-Lyme	7.7	7.3	9.8	13.3	14.1	12.7	9.6 - 16.9
	South Staffordshire	8.5	8.6	8.3	5.9	4.2	4.6	2.6 - 7.9
	Stafford	9.0	9.2	11.3	10.5	9.4	7.5	5.3 - 10.7
	Staffordshire Moorlands	7.4	7.9	7.0	6.5	5.9	7.5	4.8 - 11.5
	Stoke-on-Trent	13.2	12.2	11.2	9.0	8.7	9.1	7.5 - 11.0
	Tamworth	6.4	9.0	9.9	9.7	9.7	9.6	6.8 - 13.7
Delivery Unit	Queens Hospital	8.2	7.5	7.2	7.5	7.9	8.3	6.8 - 10.1
	Stafford Hospital	7.0	6.9	8.5	7.9	8.1	6.0	4.4 - 8.1
	UHNS	10.7	10.1	10.4	9.7	9.7	9.8	8.5 - 11.4
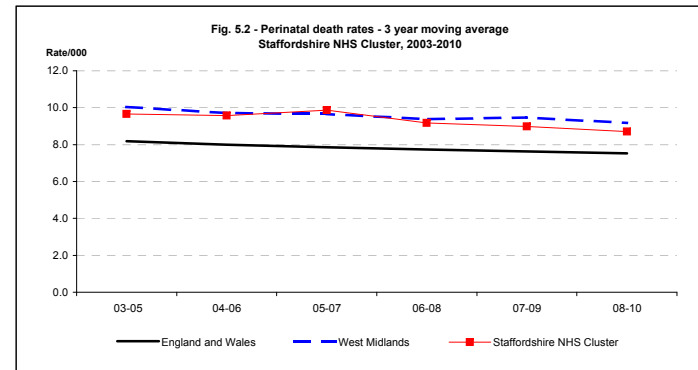
Fig. 5.2 - Perinatal death rates - 3 year moving average
Staffordshire NHS Cluster, 2003-2010

Comment:
The tables present annual numbers, rates and 3 year moving averages for early neonatal deaths (END; birth to day 7) and perinatal deaths (PMR; stillbirths and early neonatal deaths).
Figures 5.1 and 5.2 illustrate a gradual downward trend in both END and PMR rates, following the national trend.

6. Infant Deaths 2003-2010

Staffordshire

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
	Staffordshire NHS Cluster	86	68	73	69	80	66	84	75
LA/UA	Cannock Chase	6	6	8	5	9	2	4	5
	East Staffordshire	9	11	9	13	11	8	7	6
	Lichfield	11	5	7	3	3	5	9	5
	Newcastle-under-Lyme	7	6	6	3	14	13	11	9
	South Staffordshire	5	2	6	3	5	1	2	7
	Stafford	8	5	6	10	9	6	5	6
	Staffordshire Moorlands	4	3	1	2	3	2	8	4
	Stoke-on-Trent	28	26	28	24	19	22	27	28
	Tamworth	8	4	2	6	7	7	11	5
Delivery Unit	Queens Hospital	25	15	9	15	23	17	13	12
	Stafford Hospital	6	10	9	6	17	7	6	10
	UHNS	41	33	36	33	38	39	45	41

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
	Staffordshire NHS Cluster	7.6	5.8	6.2	5.8	6.4	5.1	6.7	6.0	4.8 - 7.5
LA/UA	Cannock Chase	5.5	5.5	7.2	4.3	8.0	1.7	3.5	4.3	1.9 - 10.1
	East Staffordshire	7.4	8.6	7.1	10.3	7.9	5.4	4.8	4.2	1.9 - 9.1
	Lichfield	11.4	5.5	7.1	3.0	3.0	5.0	9.2	5.0	2.1 - 11.7
	Newcastle-under-Lyme	5.8	4.7	4.8	2.6	11.4	10.4	9.3	7.3	3.9 - 13.9
	South Staffordshire	5.8	2.1	6.6	3.2	5.4	1.2	2.4	7.7	3.7 - 15.8
	Stafford	6.9	4.0	4.8	7.8	6.4	4.3	3.8	4.7	2.2 - 10.2
	Staffordshire Moorlands	4.8	3.5	1.2	2.5	3.4	2.2	8.9	4.6	1.8 - 11.9
	Stoke-on-Trent	9.4	8.0	8.5	7.2	5.3	5.7	7.4	7.7	5.3 - 11.1
	Tamworth	8.3	4.1	2.3	6.6	6.9	6.7	10.7	4.9	2.1 - 11.3
Delivery Unit	Queens Hospital	8.3	4.4	2.6	4.2	6.1	4.2	3.4	3.1	1.8 - 5.4
	Stafford Hospital	2.8	4.4	3.9	2.5	6.8	2.8	2.6	5.2	2.8 - 9.5
	UHNS	8.1	6.1	6.7	6.2	6.8	6.6	8.0	7.2	5.3 - 9.7

		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
	Staffordshire NHS Cluster	6.5	5.9	6.1	5.7	6.1	5.9	5.2 - 6.8
LA/UA	Cannock Chase	6.1	5.6	6.5	4.7	4.4	3.2	1.8 - 5.7
	East Staffordshire	7.7	8.6	8.4	7.7	6.0	4.8	3.1 - 7.3
	Lichfield	8.0	5.2	4.4	3.7	5.7	6.4	4.1 - 10.0
	Newcastle-under-Lyme	5.1	4.1	6.3	8.2	10.4	9.0	6.4 - 12.6
	South Staffordshire	4.8	4.0	5.1	3.3	3.0	3.8	2.1 - 7.0
	Stafford	5.2	5.5	6.3	6.1	4.9	4.3	2.7 - 6.8
	Staffordshire Moorlands	3.2	2.4	2.4	2.7	4.8	5.2	3.1 - 8.8
	Stoke-on-Trent	8.6	7.9	6.9	6.0	6.1	6.9	5.5 - 8.6
	Tamworth	5.0	4.3	5.3	6.8	8.1	7.4	5.0 - 11.1
Delivery Unit	Queens Hospital	4.9	3.7	4.3	4.8	4.6	3.6	2.7 - 4.8
	Stafford Hospital	3.7	3.6	4.5	4.1	4.1	3.4	2.3 - 5.1
	UHNS	7.0	6.3	6.6	6.5	7.1	7.2	6.1 - 8.6

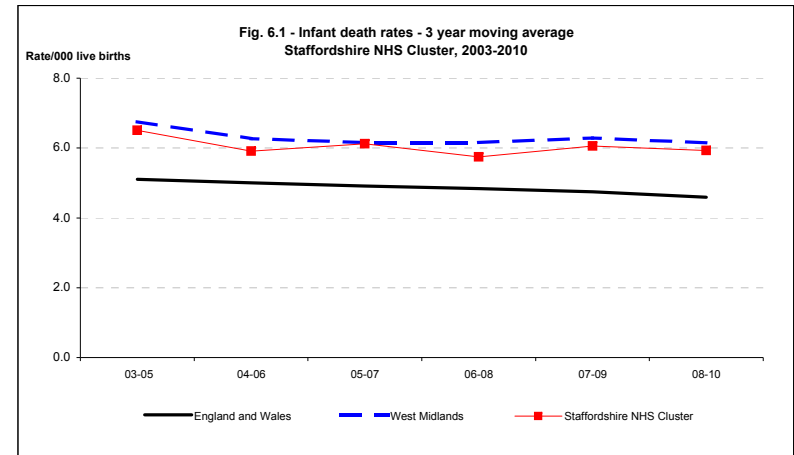Fig. 6.1 - Infant death rates - 3 year moving average
Staffordshire NHS Cluster, 2003-2010

Fig 6.1 Infant death trend for Birmingham & Solihull Cluster NHS, West Midlands and England and Wales, 2003-10

Fig. 6.2 - Infant death and Deprivation
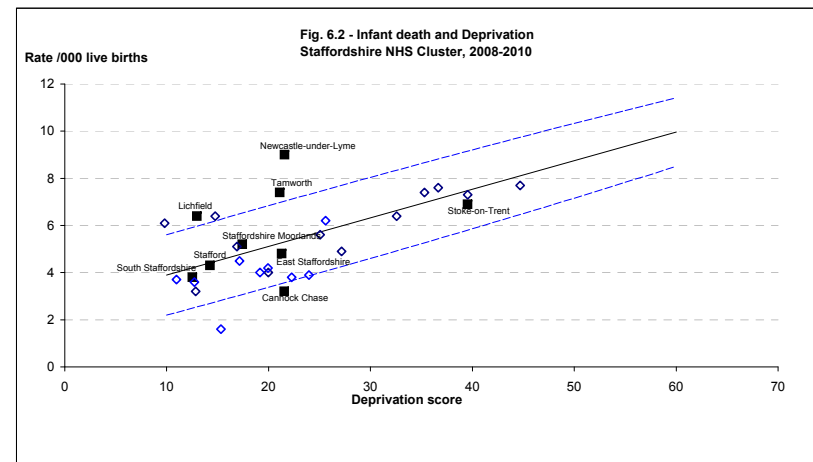Staffordshire NHS Cluster, 2008-2010

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

Comments:

The tables present year on year numbers and rates of infant deaths for the Cluster, LAs and provider units, as well as 3 year averages.

Figure 6.1 shows that the infant mortality rate follows the regional average.

Figure 6.2 shows the LAs plotted according to their respective deprivation and infant mortality rate, and indicates those which are outside the prediction interval adjusted for social deprivation.

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

Groups based on Fetal/Neonatal/Infant classification

	Staffordshire NHS Cluster		Queens Hospital		Stafford Hospital		UHNS	
Births 2008-10	37944		11700		6696		17281	
MAIN GROUPS - 2008-10	**No.**	**Rate**	**No.**	**Rate**	**No.**	**Rate**	**No.**	**Rate**
Congenital anomaly	59	1.6	11	0.9	6	0.9	32	1.9
Pre-viability	27	0.7	8	0.7	0	0.0	20	1.2
Pulmonary immaturity	89	2.3	15	1.3	9	1.3	53	3.1
Intrapartum asphyxia	15	0.4	5	0.4	5	0.7	4	0.2
Infection	18	0.5	3	0.3	1	0.1	9	0.5
SUDI	12	0.3	5	0.4	1	0.1	4	0.2
Miscellaneous	20	0.5	1	0.1	1	0.1	14	0.8
Unclassified	12	0.3	2	0.2	0	0.0	9	0.5

	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Live births	11257	11822	11817	11864	12593	12956	12450	12538

MAIN GROUPS
Staffordshire NHS Cluster
Numbers

	2003	2004	2005	2006	2007	2008	2009	2010
Congenital anomaly	17	20	14	23	15	21	21	17
Pre-viability	11	8	17	9	10	12	6	9
Pulmonary immaturity	33	24	37	24	35	28	32	29
Intrapartum asphyxia	2	0	2	2	3	1	8	6
Infection	13	8	7	8	14	8	3	7
SUDI	12	7	4	2	4	3	4	5
Miscellaneous	8	9	6	10	8	3	10	7
Unclassified/Undocumented	1	0	3	0	1	2	6	4

3-year moving averages	**03-05**	**04-06**	**05-07**	**05-08**	**07-09**	**08-10**	**08-10 C.I.**
Congenital anomaly	1.5	1.6	1.4	1.6	1.5	1.6	1.2 - 2.0
Pre-viablity	1.0	1.0	1.0	0.8	0.7	0.7	0.5 - 1.0
Pulmonary immaturity	2.7	2.4	2.6	2.3	2.5	2.3	1.9 - 2.9
Intrapartum asphyxia	0.1	0.1	0.2	0.2	0.3	0.4	0.2 - 0.7
Infection	0.8	0.6	0.8	0.8	0.7	0.5	0.3 - 0.7
SUDI	0.7	0.4	0.3	0.2	0.3	0.3	0.2 - 0.6
Miscellaneous	0.7	0.7	0.7	0.6	0.6	0.5	0.3 - 0.8
Unclassified	0.1	0.1	0.1	0.1	0.2	0.3	0.2 - 0.6

Comment:
The tables and **Fig 7.1**. show the main categories of infant deaths within the Cluster and the respective units. Immaturity related deaths represent the largest category, followed by congenital anomalies. **Fig 7.2**. shows 3 year moving average trend analysis, which indicates little change in the main categories, but small (non-significant) decrease in previable deaths.

Fig. 7.1 - Infant Death Rates: Main Groups
Staffordshire NHS Cluster, 2008 - 2010

Fig. 7.2 - Infant death main groups, 3-year moving average
Staffordshire NHS Cluster, 2003 - 2010
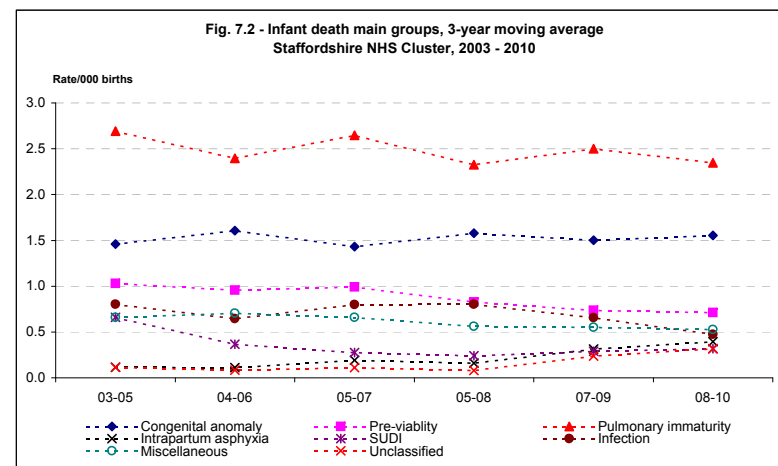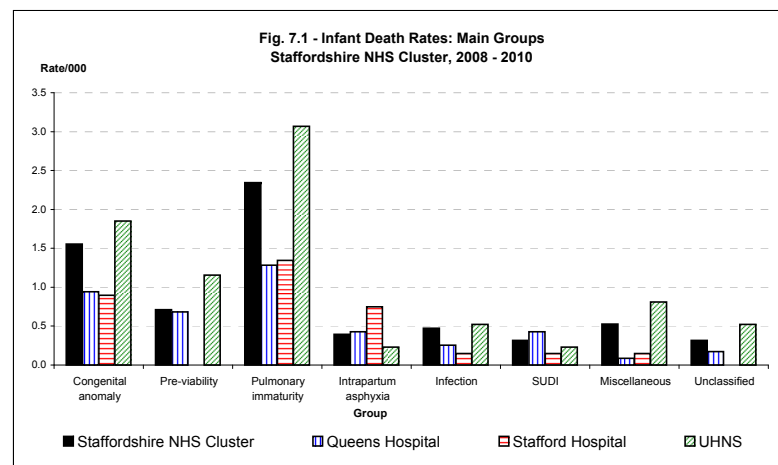
8. Perinatal deaths from 30 weeks - Staffordshire NHS Cluster, 2003-2010

MAIN GROUPS

Fig 8.1 - Perinatal Death (30+ weeks) Rates: Main Groups
Staffordshire NHS Cluster, 2003-2010

Rate/000 births

Group	Congenital anomaly	Fetal growth restriction	Placenta / Umbilical cord	Maternal conditions	Immaturity	Infection	Intrapartum asphyxia	Miscellaneous	Unclassified / Undocumented
No.	93	109	45	15	10	24	21	37	88
Rate	0.95	1.11	0.46	0.15	0.10	0.25	0.21	0.38	0.90
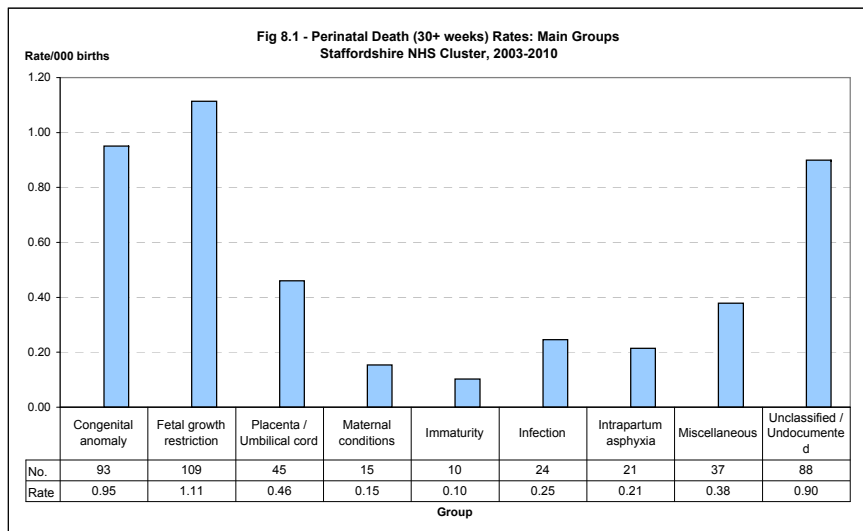
TRENDS IN PERINATAL DEATHS WITH FETAL GROWTH RESTRICTION

Numbers - PDN

	2003	2004	2005	2006	2007	2008	2009	2010	p
Rest of West Midlands									
Perinatal	87	97	99	79	87	89	88	81	**0.043**
Stillbirth	76	81	84	72	75	82	78	75	
Early Neonatal	11	16	15	7	12	7	10	6	
Staffordshire									
Perinatal	11	11	18	17	18	14	20	19	0.183
Stillbirth	10	10	17	16	14	14	19	17	
Early Neonatal	1	1	1	1	4		1	2	

Rate/1,000

	2003	2004	2005	2006	2007	2008	2009	2010	2010 C.I.
Rest of West Midlands									
Perinatal	1.65	1.78	1.82	1.41	1.50	1.51	1.49	1.35	1.1 - 1.7
Stillbirth	1.44	1.49	1.54	1.28	1.30	1.39	1.32	1.25	1.0 - 1.6
Early Neonatal	0.21	0.30	0.28	0.13	0.21	0.12	0.17	0.10	0.0 - 0.2
Staffordshire									
Perinatal	0.97	0.93	1.51	1.42	1.42	1.07	1.60	1.51	1.0 - 2.4
Stillbirth	0.88	0.84	1.43	1.34	1.11	1.07	1.52	1.35	0.8 - 2.2
Early Neonatal	0.09	0.08	0.08	0.08	0.32	0.00	0.08	0.16	0.0 - 0.6

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	1.75	1.67	1.57	1.47	1.50	1.45	1.28 - 1.64
Stillbirth	1.49	1.44	1.37	1.32	1.34	1.32	1.16 - 1.50
Early Neonatal	0.26	0.23	0.20	0.15	0.17	0.13	0.09 - 0.20
Staffordshire							
Perinatal	1.14	1.29	1.45	1.30	1.36	1.39	1.06 - 1.82
Stillbirth	1.05	1.20	1.29	1.17	1.23	1.31	0.99 - 1.73
Early Neonatal	0.09	0.08	0.17	0.13	0.13	0.08	0.03 - 0.23

Fig. 9.2 - Perinatal deaths with Fetal Growth Restriction
(from 30+ wks; excl congenital anomalies)
Staffordshire NHS Cluster, 2003-2010; 3 yma

Rate/000

Legend: Staffordshire Perinatal; Staffordshire Stillbirth; Staffordshire Early Neonatal; Rest West Midlands Perinatal; Rest West Midlands Stillbirth; Rest West Midlands Early Neonatal
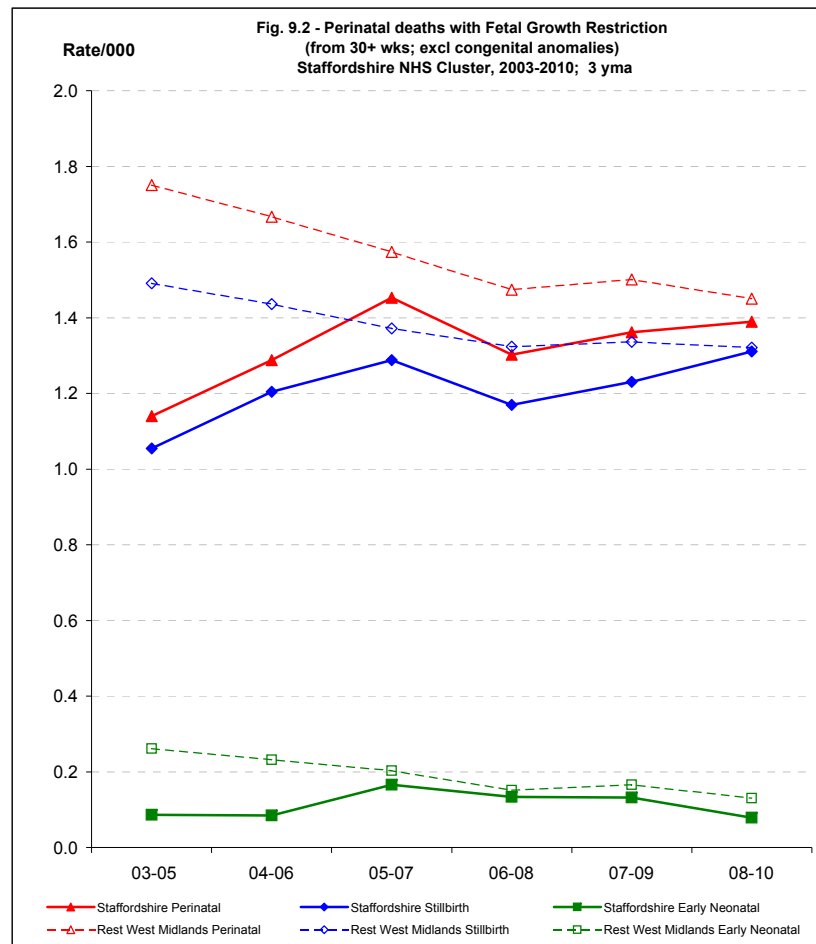
Comment:

This analysis looks at perinatal deaths from 30+ weeks gestation. The main categories are shown in **Fig 8.1.**; deaths associated with f**etal growth restriction** are the largest group.

Fig 8.2. shows the trend in perinatal deaths with fetal growth restriction. There is an increase in rate from 1.14 in 2003-5 to 1.39 per 1000 in 2008-10 (+22%) in Staffordshire (non-significant in trend analysis). In contrast, there was a significant drop in perinatal mortality rates in the rest of the West Midlands over the same period (p<0.05).