



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 Gardosi MD FRCOG FRCSED

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

2 December 2010

**Perinatal & Infant Mortality - 2009 Unit Report:
ROYAL WOLVERHAMPTON HOSPITALS NHS TRUST**

This report provides the latest update of stillbirth, perinatal and infant mortality rates for your Trust, as well as for the West Midlands and England & Wales. The report is delayed because of the late release by ONS of the 2009 births and deaths extracts which we cross check our cases with, and the Vital Statistics national reference data, which became available only in November this year.

The report includes

- yearly rates and three-year moving averages, summarised for stillbirths and infant deaths, as well as early neonatal, neonatal and perinatal death rates for comparison with other sources;
- 'corrected' mortality rates, after exclusion of congenital anomalies and pre-viable births;
- main categories / causes of stillbirths and infant deaths for your unit and the West Midlands

Additional information relevant to your PCT's maternity population has been presented in the respective Cluster reports which have been sent out earlier this year, and are available on www.pi.nhs.uk/pnm/clusterreports

As always, specific information relating to your unit is available on request (www.pi.nhs.uk/data). In addition, we are currently completing development of a web based interactive tool, and will be able to display mortality rates and trends on-line in the New Year.

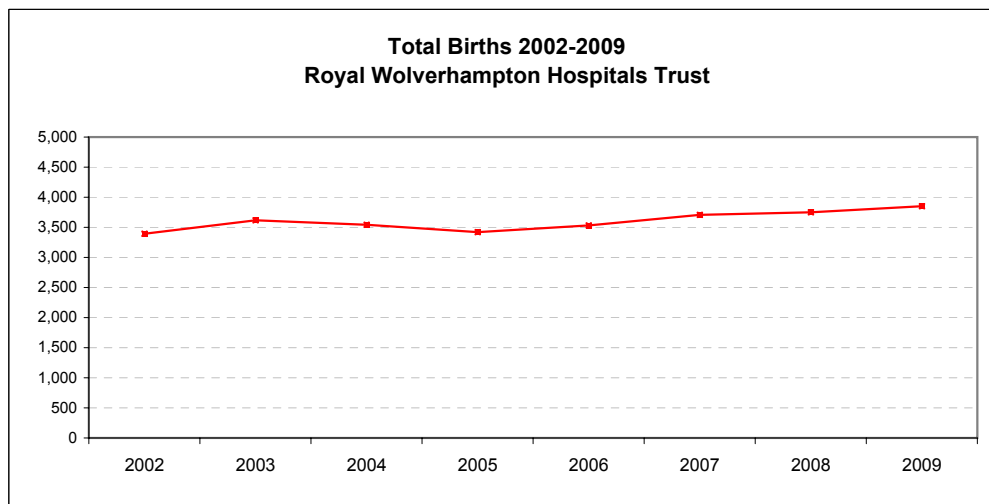
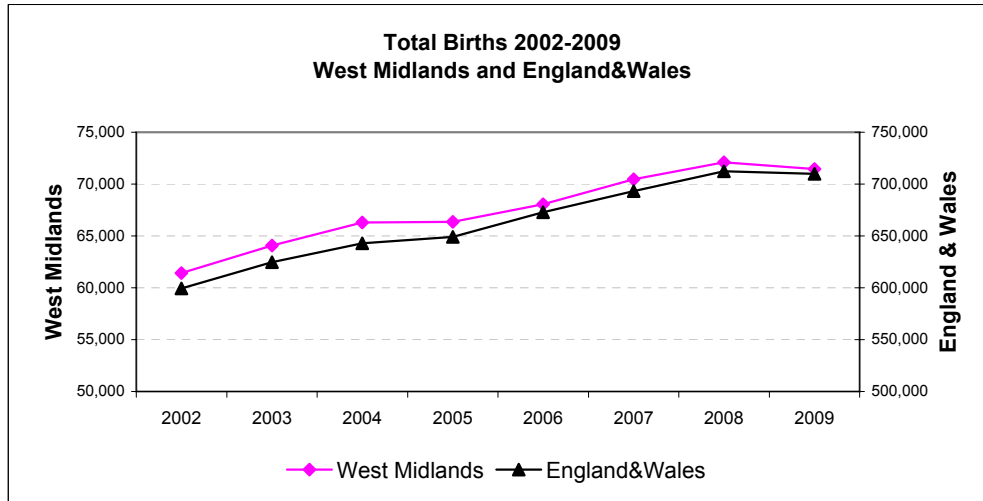
With sincere regards,

Professor Jason Gardosi
Director, Perinatal Institute

1. Births: Royal Wolverhampton Hospitals NHS Trust, WM and E & W 2002-2009

Source: ONS

	2002	2003	2004	2005	2006	2007	2008	2009
England&Wales	599,279	624,816	643,026	649,094	672,966	693,356	712,328	709,936
West Midlands	61,417	64,079	66,285	66,351	68,063	70,476	72,110	71,452
RWH-TR	3,392	3,617	3,542	3,420	3,533	3,708	3,751	3,852



2 A: Stillbirths 2002-2009

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	3365	3565	3517	3473	3590	3585	3617	3688
West Midlands	391	395	383	403	392	398	416	414
RWH-TR	29	24	19	16	24	22	22	33

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	5.2	5.0 - 5.4
West Midlands	6.4	6.2	5.8	6.1	5.8	5.6	5.8	5.8	5.3 - 6.4
RWH-TR	8.5	6.6	5.4	4.7	6.8	5.9	5.9	8.6	6.1 - 12.0

Still birth rates - 3 year moving averages - PDN

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales	5.6	5.5	5.4	5.3	5.2	5.1
West Midlands	6.1	6.0	5.9	5.8	5.7	5.7
RWH-TR	6.8	5.6	5.6	5.8	6.2	6.8

*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
RWH-TR	17	22	14	12	18	16	16	28

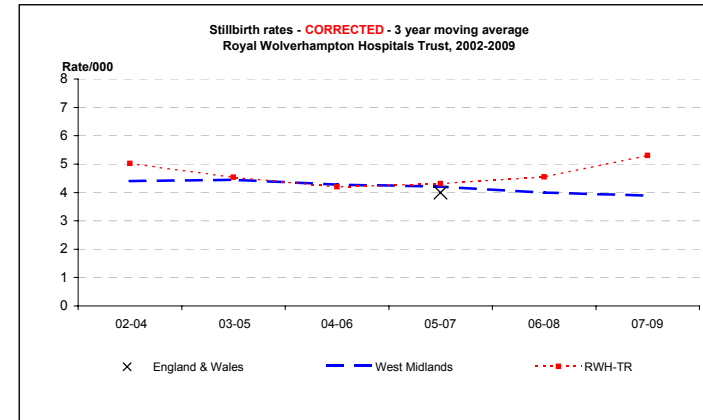
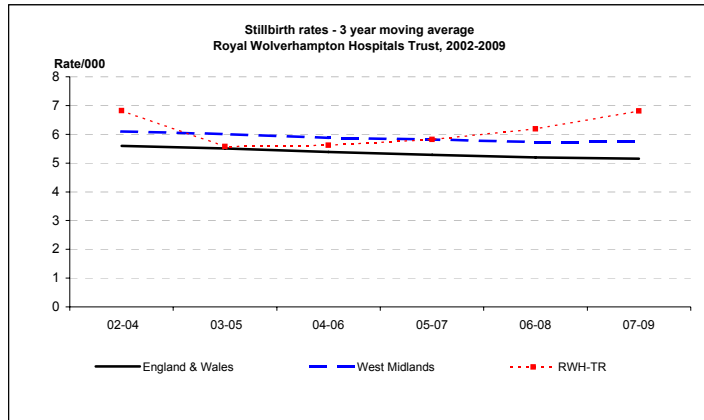
Rate/1,000

	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
RWH-TR	5.0	6.1	4.0	3.5	5.1	4.3	4.3	7.3	5.0 - 10.5

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
RWH-TR	5.0	4.5	4.2	4.3	4.5	5.3

**CEMACH

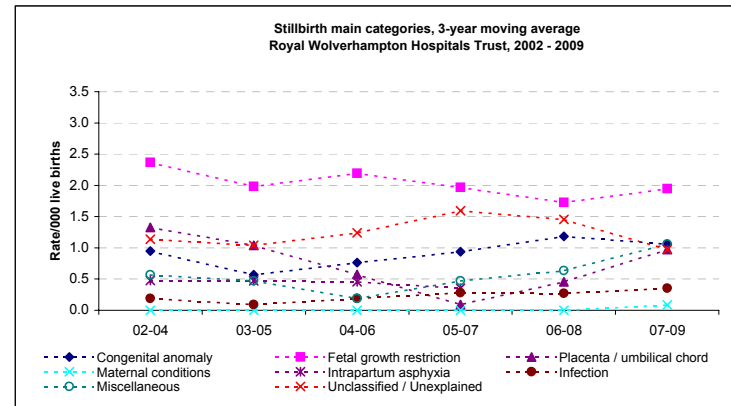


x = England & Wales 3 y adjusted average from CEMACH

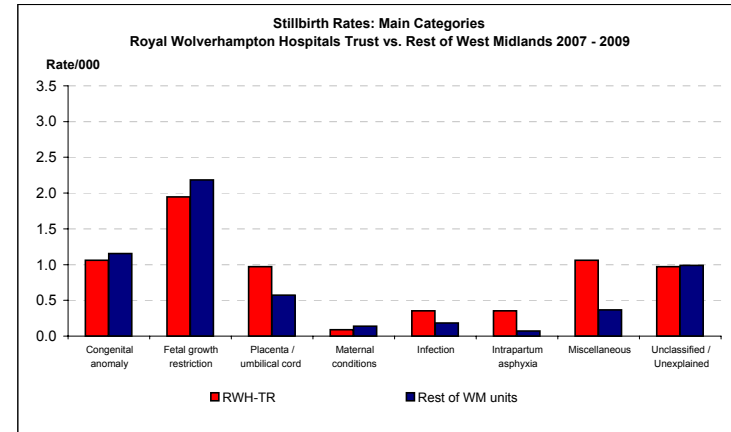
3. Stillbirths, 2002 -2009: Classification in main categories

Categories based on ReCoDe classification

	2002	2003	2004	2005	2006	2007	2008	2009
Births	3392	3617	3542	3420	3533	3708	3751	3852
RWH-TR								
MAIN CATEGORIES								
Numbers								
Congenital anomaly	6	2	2	2	4	4	5	3
Fetal growth restriction	11	7	7	7	9	5	5	12
Placenta/Umbilical chord	3	6	5	0	1	0	4	7
Maternal conditions	0	0	0	0	0	0	0	1
Infection	1	1	0	0	2	1	0	3
Intrapartum asphyxia	0	1	2	1	2	2	1	1
Miscellaneous	2	4	0	1	1	3	3	6
Unclassified / Unexplained	6	3	3	5	5	7	4	0
3-year moving averages		02-04	03-05	04-06	05-07	06-08	07-09	
Congenital anomaly		0.9	0.6	0.8	0.9	1.2	1.1	
Fetal growth restriction		2.4	2.0	2.2	2.0	1.7	1.9	
Placenta / umbilical chord		1.3	1.0	0.6	0.1	0.5	1.0	
Maternal conditions		0.0	0.0	0.0	0.0	0.0	0.1	
Infection		0.2	0.1	0.2	0.3	0.3	0.4	
Intrapartum asphyxia		0.3	0.4	0.5	0.5	0.5	0.4	
Miscellaneous		0.6	0.5	0.2	0.5	0.6	1.1	
Unclassified / Unexplained		1.1	1.0	1.2	1.6	1.5	1.0	



	RWH-TR		Rest of WM units	
	No.	Rate	No.	Rate
Births 2007-9	11,311		206,496	
MAIN CATEGORIES - 2007-9				
Congenital anomaly	12	1.1	238	1.2
Fetal growth restriction	22	1.9	451	2.2
Placenta / umbilical cord	11	1.0	118	0.6
Maternal conditions	1	0.1	29	0.1
Infection	4	0.4	38	0.2
Intrapartum asphyxia	4	0.4	15	0.1
Miscellaneous	12	1.1	76	0.4
Unclassified / Unexplained	11	1.0	204	1.0



4 A: Infant Deaths 2002-2009

Numbers

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales*	3144	3274	3234	3217	3329	3309	3369	3312
West Midlands	407	476	419	423	407	422	458	455
RWH-TR	24	30	36	21	24	28	33	28

Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
England and Wales*	5.3	5.3	5.1	5.0	5.0	4.8	4.8	4.7	4.5 - 4.9
West Midlands	6.7	7.5	6.4	6.4	6.0	6.0	6.4	6.4	5.8 - 7.0
RWH-TR	7.1	8.3	10.2	6.2	6.8	7.6	8.8	7.3	5.1 - 10.6

Infant death rates - 3 year moving average - PDN

	02-04	03-05	04-06	05-07	06-08	07-09
England & Wales	5.2	5.1	5.0	4.9	4.8	4.8
West Midlands	6.8	6.7	6.3	6.1	6.1	6.3
RWH-TR	8.6	8.3	7.8	6.9	7.8	7.9

*ONS

4 B: Infant deaths 2002-2009 - CORRECTED

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

Numbers

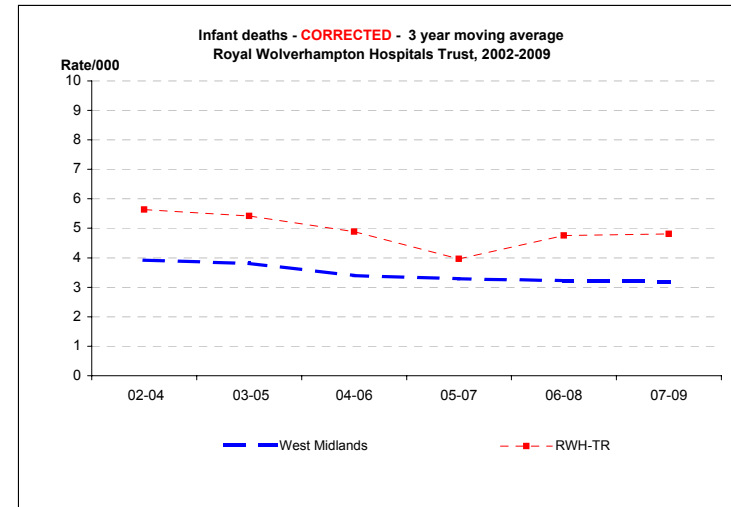
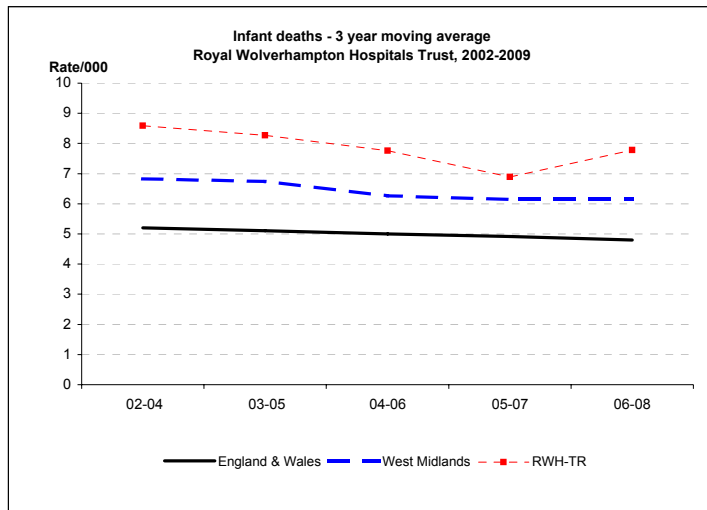
	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	238	274	236	235	208	228	240	211
RWH-TR	16	18	25	14	12	16	24	14

Rate/1,000

	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
West Midlands	3.9	4.3	3.6	3.6	3.1	3.3	3.3	3.0	2.6 - 3.4
RWH-TR	4.8	5.0	7.1	4.1	3.4	4.3	6.4	3.7	2.2 - 6.1

3 year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
West Midlands	3.9	3.8	3.4	3.3	3.2	3.2
RWH-TR	5.6	5.4	4.9	4.0	4.8	4.8



5. Infant Deaths, 2002-2009: main categories

Categories based on Fetal/Neonatal/Infant classification

Live Births	2002	2003	2004	2005	2006	2007	2008	2009
RWH-TR	3363	3593	3523	3404	3509	3686	3729	3819

MAIN CATEGORIES

Numbers

Congenital anomaly	5	5	6	4	8	8	5	4
Previabie	3	6	3	1	3	3	3	7
Pulmonary immaturity	9	12	20	10	11	10	18	16
Intrapartum asphyxia	0	3	0	3	2	3	1	2
Infection	3	4	2	3	1	2	7	1
SUDI	2	3	4	0	1	1	0	1
Miscellaneous	3	1	4	1	1	3	2	1
Unclassified	2	2	0	0	0	1	0	3

3-year moving averages

	02-04	03-05	04-06	05-07	06-08	07-09
Congenital anomaly	1.5	1.4	1.7	1.9	1.9	1.5
Previabie	1.1	1.0	0.7	0.7	0.8	1.2
Pulmonary immaturity	3.9	4.0	3.9	2.9	3.6	3.9
Intrapartum asphyxia	0.3	0.6	0.5	0.8	0.5	0.5
Infection	0.9	0.9	0.6	0.6	0.9	0.9
SUDI	0.9	0.7	0.5	0.2	0.2	0.2
Miscellaneous	0.8	0.6	0.6	0.5	0.5	0.5
Unclassified	0.4	0.2	0.0	0.1	0.1	0.4

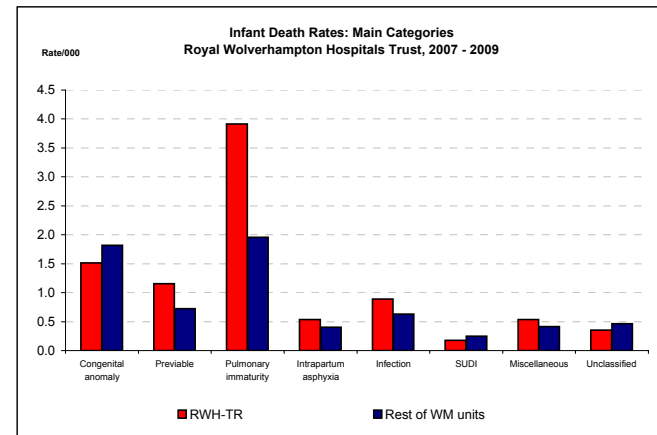
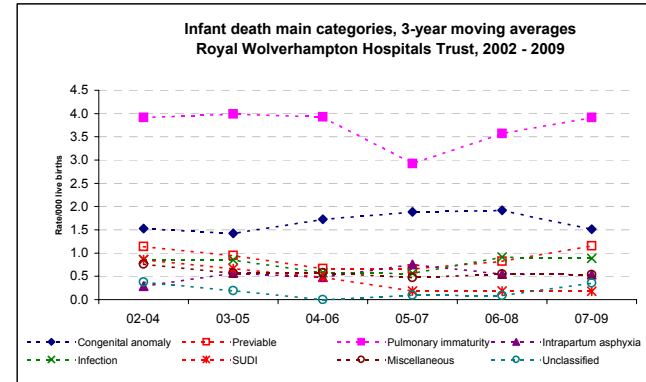
Live Births 2007-9-8

RWH-TR
11,234

Rest of WM units
205,369

MAIN CATEGORIES - 2006-8

	No.	Rate	No.	Rate
Congenital anomaly	17	1.5	373	1.8
Previabie	13	1.2	149	0.7
Pulmonary immaturity	44	3.9	402	2.0
Intrapartum asphyxia	6	0.5	83	0.4
Infection	10	0.9	129	0.6
SUDI	2	0.2	51	0.2
Miscellaneous	6	0.5	85	0.4
Unclassified	4	0.4	95	0.5



6 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	1715
West Midlands	234	266	255	270	245	268	258	246
RWH-TR	14	18	25	12	17	21	22	19

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	2.4	2.3 - 2.5
West Midlands	3.8	4.2	3.9	4.1	3.6	3.8	3.6	3.5	3.1 - 3.9
RWH-TR	4.2	5.0	7.1	3.5	4.8	5.7	5.9	5.0	3.2 - 7.8

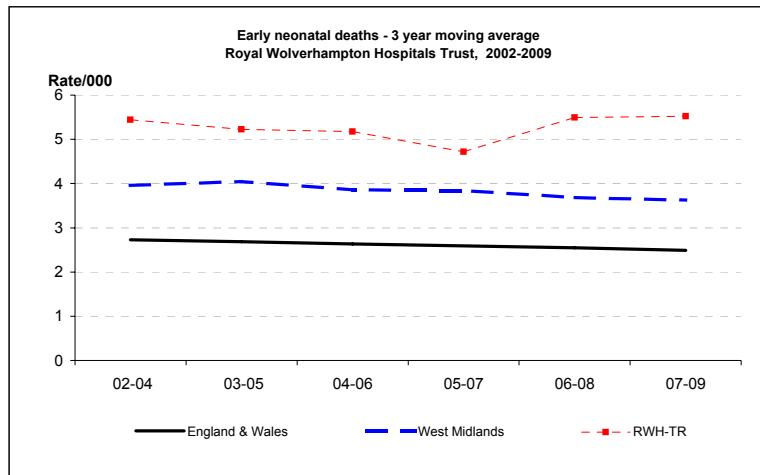
Live births - ONS; PDN

	2002	2003	2004	2005	2006	2007	2008	2009
England and Wales	595914	621251	639509	645621	669376	689771	708711	706248
West Midlands	61026	63684	65902	65948	67671	70078	71694	71038
RWH-TR	3,363	3,593	3,523	3,404	3,509	3,686	3,729	3,819

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	2.5
West Midlands	4.0	4.0	3.9	3.8	3.7	3.6
RWH-TR	5.4	5.2	5.2	4.7	5.5	5.5

*ONS



6 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
RWH-TR	8	10	16	6	7	12	16	9

Rate/1,000

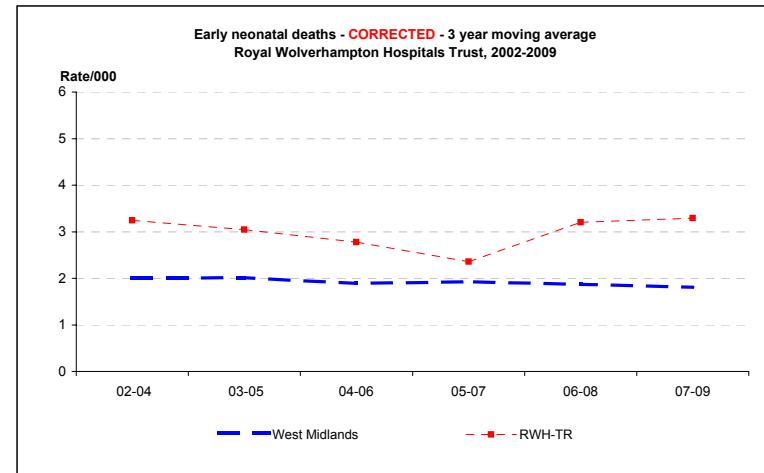
	2002	2003	2004	2005	2006	2007	2008	2009	2009 CI
West Midlands	1.9	2.1	2.0	2.0	1.7	2.1	1.8	1.5	1.3 - 1.9
RWH-TR	2.4	2.8	4.5	1.8	2.0	3.3	4.3	2.4	1.2 - 4.5

Live births - ONS; PDN

	2002	2003	2004	2005	2006	2007	2008	2009
West Midlands	61026	63684	65902	65948	67671	70078	71694	71038
RWH-TR	3363	3593	3523	3404	3509	3686	3729	3819

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
RWH-TR	3.2	3.0	2.8	2.4	3.2	3.3



7 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	2251
West Midlands	294	329	314	327	316	316	321	321
RWH-TR	16	21	31	16	20	25	28	25

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	3.2	3.1 - 3.3
West Midlands	4.8	5.2	4.8	5.0	4.7	4.5	4.5	4.5	4.1 - 5.0
RWH-TR	4.8	5.8	8.8	4.7	5.7	6.8	7.5	6.5	4.4 - 9.6

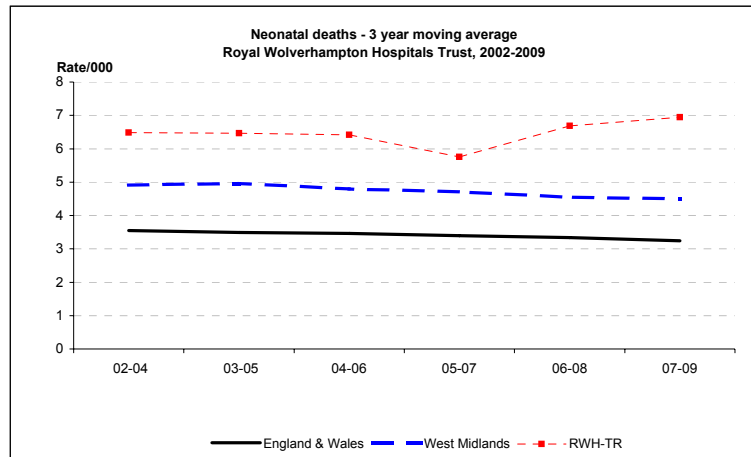
Live births - ONS; PDN

England and Wales	595914	621251	639509	645621	669376	689771	708711	706248
West Midlands	61026	63684	65902	65948	67671	70078	71694	71038
RWH-TR	3,363	3,593	3,523	3,404	3,509	3,686	3,729	3,819

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	3.2
West Midlands	4.9	5.0	4.8	4.7	4.6	4.5
RWH-TR	6.5	6.5	6.4	5.8	6.7	6.9

*ONS



7 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
RWH-TR	9	11	21	9	10	14	22	12

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
RWH-TR	2.7	3.1	6.0	2.6	2.8	3.8	5.9	3.1	1.8 - 5.5

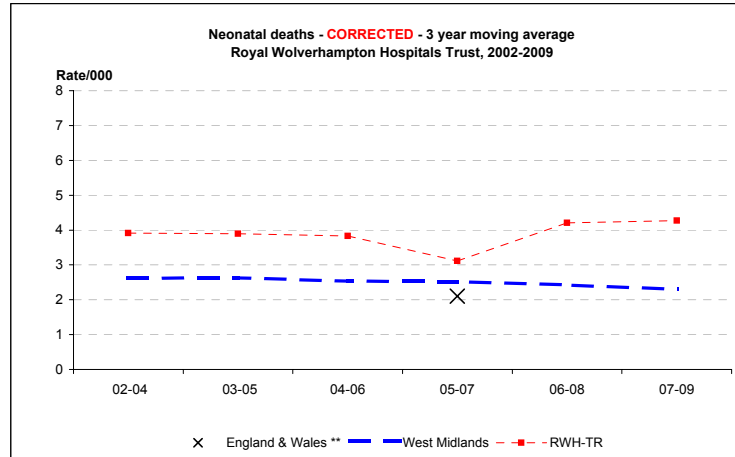
Live births - ONS; PDN

West Midlands	61026	63684	65902	65948	67671	70078	71694	71038
RWH-TR	3363	3593	3523	3404	3509	3686	3729	3819

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
RWH-TR	3.9	3.9	3.8	3.1	4.2	4.3

**CEMACH



x = England & Wales 3 y adjusted average from CEMACH

8 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	5403
West Midlands	625	661	638	673	637	666	674	656
RWH-TR	43	42	44	28	41	43	44	52

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	7.6	7.4 - 7.8
West Midlands	10.2	10.3	9.6	10.1	9.4	9.5	9.3	9.2	8.5 - 9.9
RWH-TR	12.7	11.6	12.4	8.2	11.6	11.6	11.7	13.5	10.3 - 17.7

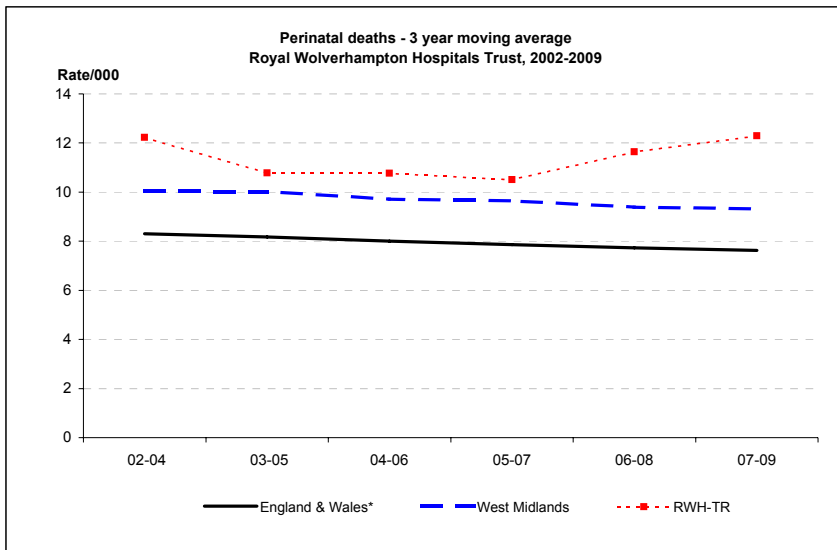
Birth - ONS

England and Wales	599279	624816	643026	649094	672966	693356	712328	709936
West Midlands	61417	64079	66285	66351	68063	70476	72110	71452
RWH-TR	3,392	3,617	3,542	3,420	3,533	3,708	3,751	3,852

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	7.6
West Midlands	10.0	10.0	9.7	9.6	9.4	9.3
RWH-TR	12.2	10.8	10.8	10.5	11.6	12.3

*ONS



8 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
RWH-TR	25	32	30	18	25	28	32	37

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
RWH-TR	7.4	8.8	8.5	5.3	7.1	7.6	8.5	9.6	7.0 - 13.2

Birth - ONS

West Midlands	61417	64079	66285	66351	68063	70476	72110	71452
RWH-TR	3,392	3,617	3,542	3,420	3,533	3,708	3,751	3,852

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
RWH-TR	8.2	7.6	7.0	6.7	7.7	8.6

