Birmingham Women's NHS
NHS Foundation Trust

# Birmingham Women's Hospital
# 37th Annual Clinical Report

*Over 37 years of reflective practice and external validation of caring for Women, Babies and Families across Birmingham and the West Midlands*

**April 2009—March 2010**

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# Editors and Assessors – 1973 - 2010

## *Editors of the Hospital Clinical Report (1973-2010)*

| | | | |
|---|---|---|---|
| 1973[‡]<br>1974[‡] | Miss E K Smith<br>Miss E K Smith | 1992/3 | Hospital Information Department* |
| 1975 | Mr H O Nicholson | 1993/4 | Mr H Gee |
| 1976 | Mr H O Nicholson | 1994/5 | Mr H Gee |
| 1977 | Mr H O Nicholson | 1995/6 | Mr H Gee |
| 1978 | Mr H O Nicholson | 1996/7 | Dr M E I Morgan |
| 1979 | Mr H O Nicholson | 1997/8 | Dr M E I Morgan |
| 1980 | Mr H O Nicholson | 1998/99 | Dr M E I Morgan |
| 1981 | Mr H O Nicholson | 1999/2000 | Dr M E I Morgan |
| 1982 | Mr H O Nicholson | 2000/01 | Dr M E I Morgan |
| 1983 | Mr R S Sawers | 2001/02 | Dr M E I Morgan |
| 1984 | Mr R S Sawers | 2002/03 | Mr K S Khan |
| 1985 | Mr R S Sawers | 2003/04 | Mr K S Khan |
| 1986 | Mr R S Sawers | 2004/05 | Mr K S Khan |
| 1987 | Mr R S Sawers | 2005/06 | Professor K S Khan |
| 1988 | Mr R S Sawers | 2006/07 | Professor K S Khan |
| 1989 | Mr R S Sawers | 2007/08 | Christine Yarnold |
| 1990/1 | Mr R S Sawers | 2008/09 | Mr P J Thompson |
| 1991/2 | Mr R S Sawers | 2009/10 | Mr P J Thompson |

We have compiled this list from records in our library. The information concerning editors is not always extrinsically recorded. There are Clinical Reports going back to 1967 (edited in 1970[=] and 1971[=] by Mrs P J M Watney, and in 1972[=] C J F Rowbotham), but it was in 1973 that external assessment of the Reports was first introduced.

* Catherine Griffiths the Unit General Manager wrote the introduction
[‡]Mr Henry Roberts was in charge of these

# Editors and Assessors – 1973 - 2010

## *Assessors of the Hospital Clinical Report (1973-2010)*

**1973 Professor M K O'Driscoll**
National Maternity Hospital Dublin

**1974 Dr R A Tennent**
Bellshill Maternity Hospital Lanarkshire

**1975 Dr D J Meagher**
National Maternity Hospital Dublin

**1976 Professor J McVicar**
Leicester Maternity Hospital Leicester

**1977 Mr J A Chalmers**
Ronkswood Hospital Worcester

**1978 Dr B S B Wood**
The Children's Hospital Birmingham

**1979 Dr N M Duignan**
Coombe Lying-In-Hospital Dublin

**1980 Dr C A J Macafee**
Leicester Maternity Hospital Leicester

**1981 Professor J M G Harley**
Royal Maternity Hospital Belfast

**1982 Dr G R Henry**
Rotunda Hospital Dublin

**1983 Dr N Patel**
Ninewells Hospital Dundee

**1984 Professor G V P Chamberlain**
St George's Hospital London

**1985 Mr J F Pearson**
University Hospital of Wales Cardiff

**1986 Professor A A Calder**
University of Edinburgh

**1987 Mr S Simmons**
Windsor Group of Hospitals

**1988 Mr R B Fraser**
Northern General Hospital Sheffield

**1989 Dr D McDonald**
National Maternity Hospital Dublin

**1990 Dr J B Scrimgeour**
Eastern General Hospital Edinburgh

**1991/2 Dr P Johnson**
John Radcliffe Hospital Oxford

**1992/3 Dr G Young**
GP Penrith Cumbria

**1993/4 Mrs J Robinson**
Consumer Representative (AIMS)

**1994/5 Professor M Kirkham**
Professor Midwifery Research Sheffield

**1995/6 Mr R Settatree**
West Midlands Perinatal Audit

**1996/7 Professor J Neilson**
University of Liverpool

**1997/8 Professor David Taylor**
Leicester

**1998/9 Mr R Atlay**
Liverpool Women's Hospital

**1999/00 Professor A Halligan**
Director of Clinical Governance
NHS Clinical Governance Support Team Leicester

**2000/01 Dr Sue Ibbotson**
Deputy Regional Director of Public Health NHS Executive West Midlands

**2001/02 Mr Nick Naftalin**
Consultant Obstetrician, Leicester Royal Infirmary

**2002/03 Professor James Drife**
Division of Obstetrics & Gynaecology University of Leeds

**2003/04 Dr Gwyneth Lewis**
Principal Medical Adviser – Women's Health. Department of Health

**2004/05 Professor James P Neilson**
Head or Reproductive & Developmental Medicine, University of Liverpool/ Liverpool Women's Hospital

**2005/06 Mr Gavin MacNab**
Clinical Director of Obstetrics & Gynaecology at Sunderland Royal Hospital.

**2006/07 Dr Rashmi Shukla**
Regional Director of Public Health/Medical Director at Government Office for West Midlands

**2007/08 Mr Steve Sparks**
Service Implementation Consultant, National Institute for Health & Clinical Excellence (NICE)

**2008/09 Professor Tina Lavender**
Professor of Midwifery & Women's Health at the University of Manchester & Consultant Midwife, Liverpool Women's Foundation Trust

**2009/10 Mr Simon Grant**
Consultant in Obstetrics & Fetal Medicine
Bristol NHS Trust

# Chief Executive's Report

**Welcome to the 37th Annual Clinical Report for this organisation. I have been Chief Executive of the Trust for a little over a year at the time of writing and it is with great pleasure that I introduce this clinical report.**

In my forward for the 36th report I noted that the report was a fine example of the organisation's commitment to provide information about the clinical services we offer, highlighting our achievements but also the challenges faced by our teams. This is a theme that runs throughout our culture, processes and public reporting whereby we want to be honest, open and transparent about our work and areas where we strive to improve upon.

In the year that has past the Trust has once again reported no MRSA bacteraemias or Clostridium Difficile infections. This is the 7th and 6th year respectively this has been achieved and reflects the hard work of clinical and non-clinical teams alike. The Care Quality Commission also carried out unannounced visits to check our compliance against the Hygiene Code and gave us a clean bill of health. We have again achieved an excellent rating for hospital cleanliness and food having been assessed by the national Patient Environment Action Team. We also received very good feedback through the national inpatient survey that both improved upon our ratings from the 2008 survey and placed the organisation in the top 20% of Trusts for 80% of the questions asked. Whilst we are proud of this record we are exploring more ways to receive feedback from our patients and to use this information to shape our services.

In 2009/10 the organisation continued to achieve the 18 week referral to treatment target despite rising referral rates thanks again to the commitment of our teams. During the year, we received our Annual Health Check results from the Care Quality Commission with a rating of 'good' for the quality of our services and 'excellent' for use of resources. The report contains a record of the teaching and research commitments and achievements which under scores a key role that as a specialist Trust we play. I would like to recognise work and dedication of a whole of staff that can go unnoticed but is nevertheless hugely important for the future in terms of a skilled workforce and medical/clinical advancements.

In terms of specific developments, work was completed on our brand new £7 million Neonatal Unit which has brought state of the art facilities for the care of premature babies, parents and our dedicated clinical team. We have also completed work on our mortuary facility improving clinical areas and facilities for bereaved parents.

Our plan for the year ahead will be to build upon our achievements in 2009/10 and our strategic goals. These goals are to:-

- Continue to provide services which offer high quality access and care to our local population
- Further develop as a lead provider of specialist care
- Continuously improve the efficiency of our organisation to make the best use of resources
- Build upon and enhance the positive patient experience
- Build upon and strengthen our excellent reputation as a teaching hospital with a focus on research and development

In the year 2010/11 we will be exploring a number of developments including a scheme to introduce an induction of labour suite and improved triage and day assessment facilities and an ambulatory care facility for gynaecology referrals.

The future is clearly going to be challenging as the financial constraints on public sector spending unfold, however, I genuinely feel that the organisation starts from a very firm base from which to make even greater improvements to the services we offer, cementing our position as a leading specialist provider and an important service to the populations we serve.

I would like to take this opportunity to thank teams across the organisation without whom the successes and achievements highlighted in this Clinical Report would clearly not have been possible. These successes demonstrate the dedication and excellence from individuals and teams that takes place within the organisation every single day. I am very proud to be leading such an organisation that makes such a huge difference to the people we provide services to.

***Steve Peak***
***Chief Executive***

# Foreword

***Peter Thompson, Medical Director and***
***Jane Owen, Director of Nursing, Midwifery, Infection Prevention& Control and Operations***

This last year has once more seen an increase in the complexity of cases managed in all areas of the Trust. This workload has been performed against a backdrop of improved efficiency with many "lean" projects being successfully introduced, with particular good examples being seen in pathology turnaround times. This has, in general, led to improved quality, which has been reported in our second year's Trust Quality Accounts. The Board has signed up to specific Quality Targets, and once again we have worked with the PCT to achieve our Commissioning for Quality and Innovation targets - CQUIN's.

We have now worked together for over a decade and throughout that time have seen our Trust evolve from its previous position of strength to one of even greater success, with future exciting developments already underway, including the opening of a new neonatal unit.

We have achieved high performance levels in external assessments and reviews, including;

- Patient Environment Action Team (PEAT) inspection
- Clinical Pathology Accreditation (CPA) visits
- Newborn Network assessment

The Women's Foundation Trust is proud to be a specialist organisation providing an exceptional service to patients and their families across the West Midlands and beyond. However being special is not just about the services we provide; the continued success of the Women's is a reflection of the people that work, visit and are treated here. Although we are rightly proud of all the achievements this year, it is the dedicated staff of the hospital who, strive to provide our patients with the best possible care that give us the greatest satisfaction.

We both feel proud and honoured to work amongst a group of individuals working towards this common goal.

**Malcolm Bowcock**
***Clinical Governance Manager***

As Clinical governance approaches the end of its first teenage year, it might be worth recalling that it was described by Prof Aiden Halligan, the national Director of Clinical Governance and external assessor of this report in 2000 as a 20 year journey for the NHS. It's resilience against a backdrop of constant change in the NHS has surprised some but here at the Women's, after some early teething problems, its provision of a system for providing safe, high quality woman centred care is fully embraced. The Department of Health 1997 definition, "a framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish", is still (re-)introduced to all new staff at their induction along explanations of how numerous groups and individuals across the Trust work together with patients to keep our framework robust and evolving.
At heart Clinical governance is about Improvement, something we all aspire to. Improvement is a continuing theme throughout this report, each section providing practical examples of clinical governance in action.

The clinical governance team has led, guided and contributed in a number of ways over the year:

Datix, our risk management tool has been improved and become accepted by its users, resulting in a steady increase in the number of incidents reported and a healthy increase in the number of risks identified and managed on the risk register. Over the year we started to shift beyond what we are putting into the database to focus on what we can get out of it.

The implementation of an Intranet and a document management system allows us to manage policies and guidelines more efficiently, a necessity not only for those using the policies but also to respond to the increasingly stringent demands of our numerous external assessors.

In May and November all Trusts were required to self assess against the Healthcare Commission's Standards for Better Health. These and the Annual Health Check were replaced by the Care Quality Commission's new regulations. This required further compliance assessment in close dialogue with the CQC prior to the Trust's registration without conditions. It involved a shift in focus from the process oriented Standards for Better Health to the more outcome (particularly patient-reported) focused regulations.

For NHSLA Acute and Maternity standards the Trust was at level 2. Considerable work, involving updating of many policies and preparation for informal assessments went into preparing for re-assessment next year against the new sets of increasingly rigorous standards.

The clinical governance committee (CGC) played its established coordinating and scrutiny role for clinical governance in partnership with its younger, non-clinical sibling, the Organisational Risk and Assurance Group. Over the year the CGC received over 100 pieces of external guidance on behalf of the Trust, not only from the obvious providers e.g. NICE, National Confidential Enquiries, NPSA, Safeguarding Board etc. but also from 18 other external sources. The CGC monitored quality and safety across the directorates via the quarterly quality indicator (QQI) reports which are summarised in the directorate sections to follow.

This was another active year for clinical audit. Over 100 audits were completed in the year. Major Maternity audits in Induction of Labour and Triage services (Funded by the Local Supervisory Authority) were completed. Audit workshops were resumed and well received. Credit is due to the Audit Co-ordinators in the directorates for the support they provided:

| Area covered | Audit Co-ordinators |
|---|---|
| Maternity Services | Mr Bill Martin, Paula Clarke |
| Gynaecology | Mr Matthew Parsons, Jacky Cotton |
| Neonatology | Dr Imogen Morgan |
| Clinical Genetics | Dr Carole McKeown, Nigel Coles |
| Clinical Support | Nigel Coles, Christine Roycroft |

Good progress was made with development of new Integrated Care Pathways (ICP) across the Trust, including Urogynaecology, Uterine Artery Embolisation for Fibroids, Supportive Care (Pan-Birmingham Palliative Care Network), Neonatal Palliative Care Pathway, Stillborn / Bereavement ICPs. Further improvements were made to the Normal Birth, Elective Caesarean Section, and Post Natal Care ICPs. Pathways made significant contributions to directorate audit programmes.

There were two Care Quality Commission national patient surveys in the year. The outpatients survey demonstrated a number of opportunities for improvement and the inpatient survey continued a long run in which the Trust has maintained its top 10% performance. The surveys are described in more detail in the Gynaecology section.

### *HEALTH INFORMATION CENTRE*
### *Helen Oxton, Health Improvement Specialist*

The Health Information Centre provides access to health information, education and support for patients, staff and visitors to enable informed choice on health issues.

A wide range of enquiries were received, an average of 73 a week, including information on specific conditions, healthier lifestyles – diet and exercise, specialist services within the hospital, referrals to local agencies e.g. benefits, sexual health, domestic violence, drug and alcohol support. Health Awareness Displays in the hospital included Breast Feeding, Child Safety, Sexual Health, Change 4 Life, Stress, Osteoporosis, Breast and Cervical Cancer, Smoking and Alcohol, Infection Control.

Visits to the community to promote healthier lifestyles, services the hospital provides and careers within the NHS, included City and South Birmingham Colleges, the Community Integration Project, Children's Centres, a Sahili Women's Group and International Women's Day events organised by Local Involvement Networks and Ashiana Housing. We were also present at the Baby Show Event at the National Exhibition Centre.

The Patient Information Group meets quarterly to ensure patient information meets the required national standards. Patient Information User representatives and User Group representatives were involved in reviewing patient information leaflets.

Improving Working Lives - The Staff Health Suite provides Occupational Health, Staff Support, Fast Track Physio – these are free of charge; Chiropody, Reflexology, Aromatherapy and Beauty Therapies – these are offered at reduced rates. A Staff Health Fair was organised in September promoting these services as well as the leisure facilities available at the Centre Club, Infection Control, flu vaccination, smoking cessation, diet, alcohol and men's health. Mini aromatherapy and reflexology sessions were also offered.

### *AUDIO PATIENT INFORMATION*
### *Shubhnam Bilkhu, Project Manager, Patient Information Needs*

The audio patient information service provides a library of audio tools to assist health professionals in delivering a service that reaches all patients effectively. The tools have been produced primarily for patients who have difficulty in understanding and communicating in English. They also cater for patients with visual impairments who may have difficulties in accessing written information provided. The Trust has responsibility for ensuring that patients understand why they are here and the procedures they will undergo, in order to make informed choices and consent decisions. The tools are designed to reinforce information given to them by health professionals and not to replace one to one advice.

This year's activity included a script update of four audio cassettes and now these are available as CD's. All the information available in audio format is now provided as CD format. It is planned for this information to be made available to patients via the Trust website during the following year. CD's are available on the following areas:

- The labour process
- Minor operations
- Tests for your baby / Antenatal screening
- The menopause
- Major operations
- Hysterectomy
- Genetics service
- Miscarriage.

They are produced in various languages including Arabic, Bengali, Gujarati, Mandarin, Punjabi, Somali and Urdu as well as in English.

The year saw the development of our ninth CD and this is our first tool with two tracks. The CD is titled 'Coming Into Hospital' and includes 'Having a baby' and 'Having an operation'. The aim of the CD is to better inform the patient about their time in hospital and what to expect during their stay as this can be a stressful and unsettling time for some patients

**Tracey Johnston**
***Clinical Director Maternity Services***

**Overview**
This has been a busy year for the Maternity Directorate, which has seen some significant changes. Cathy Garlick, our Directorate General Manager for the past four years departed south for promotion, and we welcomed Nick Reading as our new Directorate General Manager. We also said farewell to Harry Gee, Consultant Obstetrician, who had been a familiar and much loved figure in the Trust for over twenty-five years. Nina Johns started with us in March as his replacement and is also the Clinical Lead for Delivery Suite. Both Ellen Knox and Sam Pretlove have been appointed as consultant obstetricians, who will take up post in the new financial year. To reach compliance with the EWTD requirements of a 48 hour working week for medical staff, we appointed 4 new Trust grade doctors to the middle grade tier, all of whom have two sessions per week to pursue extra training in a special interest area to try and enable them to achieve a numbered training post in the future. The Trust was also successful in obtaining funding from the Deanery to enable us to offer places to two extra doctors undertaking training in General Practice.

In 2009 -10 we saw 16 new community midwifery posts created and funded by the PCT to reduce community caseloads to 1:110. Recruiting band 6 midwives to work in the community proved very challenging and to ensure vacant post were not left unfilled the Directorate made a decision to over-recruit junior midwives to grow and develop our own staff. From October 2010 we will see a large number of band 5 midwives move to band 6 positions as they complete their preceptorship year.

Throughout next year we will be training midwife sonographers in readiness for the implementation of 1st Trimester Screening which is planned for commencement in December 2010. We wish to thank the PCT for their support in this development.

**Activity**

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| **Hospital Registrable Births** | 7251 | 7183 | 7091 |
| **Home Births** | 94 | 105 | 80 |
| **Other delivery activity (SA, TOP, BBA)** | 98 | 100 | 112 |
| **Total delivery activity (excl. antenatal admissions)** | 7443 | 7388 | 7283 |
| **Bookings** | 7216 | 7279 | 7190 |
| **Numbers declined** | 285 | 622 | 554 |

**Women who gave birth at BWH**

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| **Nullips** | 2346 | 2357 | 2284 |
| **Multips** | 4939 | 4866 | 4798 |

*** data not available for small number of deliveries**

**Babies born at BWH**

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| **Singletons** | 7162 | 7106 | 6975 |
| **Twins** | 291 | 257 | 280 |
| **Triplets** | 3 | 9 | 6 |

In terms of activity, it became apparent that although we were still booking women to the same capping level and had declined 10% less women than the previous year (554 compared to 622), our number of deliveries for the year was less than expected. It would appear than this is due in part to our success in achieving early booking of almost 90% of our women by $12^{+6}$ weeks gestation. However, this in turn can mean that because women are booking early in their pregnancy (sometimes at 5 weeks), the likelihood of early stage miscarriages and drop-out from booking increases. The Directorate is working hard to rectify this shortfall, and further reduce the number of women we decline for booking at the Trust.

**Improving Quality**
The Directorate worked very closely with the commissioners in developing a Maternity Services Specification and agreed as a key performance indicator (KPI) achievement of 80% of bookings before the 12th week of pregnancy, which has been achieved. In 2010/11 there has been a 10% increase in the KPI and the target is set as 90%

As part of the National Contract for NHS Trusts, Schedule 3 of the contract (Performance Monitoring and Activity) requires the monitoring of both national and locally agreed performance indicators.

This year a number of significant performance measures were introduced together with improvement being shown against the previous year's standards. In addition the Directorate's "data completeness" was scored in a number of key areas so as to ensure the accuracy of the data being collected going forwards.

A highlight of these KPIs included:

- 75% women having a named midwife - achieved
- 75% continuity of carer by 2 midwives (target change from 2009/10) – not achieved
- Improved identification and referral of intrauterine growth restriction – not achieved but improvement on 2009/10
- Improving breastfeeding 2% year on year - achieved
- Referral of pregnant smokers to the Smoking Cessation Service in the PCT - achieved

Identification and referral of restricted growth has improved during this period however, more work is needed. The Trust has supported the Community Growth Scans (CoGs) study where by midwives can refer directly to midwife sonographers when a woman with a growth restricted pregnancy has been identified. The woman once risk assessed may stay under the care of the midwife but following agreed clinical pathways. The study is due to commence in May 2010.

Smoking at delivery has remained high (12%) despite the use of carbon monoxide testing and referral to the Smoking Cessation Service which is PCT led. In 2010/11 women will be automatically referred to the Team as part of the antenatal booking process and women who decline the service will be encouraged to attend by their midwife and re-referred. We hope that these interventions will help to reduce the number of women smoking during pregnancy and at delivery.

**Contract Performance Measures – "CQUINs"**
The Trust undertook new performance management arrangements in 2009/10 with the PCT following new nationally mandated incentives. The so named "CQUINs" (Commissioning for Quality and Innovation) which represented 0.5% of the Trust's contract value held with the PCT were developed in negotiation with the PCT commissioner and individual Directorates. The two CQUINs which applied to the Maternity Directorate specifically this year were:

**CQUINs**

**1. User Experience in Maternity Clinics:**

**Requirements:**
Namely, to develop a patient satisfaction survey to monitor patient experience with maternity clinics; map the patient journey and identify areas for improvement to deliver an improvement in the reported patient satisfaction when survey is repeated in quarter 4.

This included specific requirements throughout each quarter of the financial year:

- Submission of patient survey and baseline to commissioners
- Notification of priority areas for improvement
- Statement of compliance that the questionnaire has been undertaken
- Number of patients surveyed
- Reported response rate showing level of improvement.

**Results:**
This CQUIN was met with partial achievement. All aspects of the target were met successfully with the exception of the required % improvement following the user survey and reported response rate. (12% Improvement seen, but not the 20% increase required of the CQUIN).

**2. Early Booking: Increase the percentage of patients seen within 12 weeks**

**Requirements:**
This CQUIN was targeted at the early booking of pregnant women and an improvement in the uptake for hard to reach groups in particular.

Specifically, this target CQUIN required an increase the percentage of patients seen within 12 weeks as defined by the Vital Sign Target (VSBO6) from hard to reach communities, using performance of community midwifery teams as a proxy for measurement by ward, to ensure achievement of the Vital Signs target for early access to booking in all wards with BWNFT catchments areas. Patients living in all 6 wards were measured - the 4 SBPCT and 2 in HoB PCT (Sparkbrook and Sparkhill).

**Results:**
This CQUIN was successfully achieved in full with a performance of 87.7% which represented an increase in the performance from the previous year at 86.8% (*target:* maintenance of average outturn from 08/09)

## *MIDWIFERY CARE*
## *Jenny Henry, Head of Midwifery and Paula Clarke, Consultant Midwife*

The Trust is responsible for providing midwifery care to women and their families living in South Birmingham and its surrounding areas. It has been a busy year consolidating many of the national recommendations from the previous year.

**Good Performance Indicators**

- **Midwives continue to develop their scanning skills**

Our community midwifery led scan service continues to expand which enable more women to receive their initial dating scan close to their home. Midwives are also receiving additional training in first trimester ultrasound which includes nuchal fold translucency testing (screening for Down's syndrome).

Scanning remains a popular opportunity for midwives to further extend their role whilst improving choice and total care for women.

- **Acupuncture Service**
  We now have a midwife led acupuncture service available which has evaluated positively. An additional midwife has just successfully completed the training and will become the second midwife able to provide the service with the potential to extend the service.

**Community Activity**

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| **Antenatal Contacts** | 38778 | 40402 | 39495 |
| **Postnatal Contacts** | 23376 | 23886 | 23139 |

- **Diabetic Specialist Midwife**
  In the new financial year, we aim to appoint a diabetic specialist midwife to enhance our well established diabetic team. This recruitment will enable us to further improve our care pathway for diabetic women as well as our population of women accessing our service with a raised BMI. This appointment will be in line with national recommendations from NICE and CEMACE.

- **Antenatal Clinic**
  We continue to strive to improve the care for women who receive antenatal care in hospital which remains an on-going challenge due to the high activity. We have extended our service to provide a Saturday appointment option for women and we continue to work closely with radiology

- **Induction of Labour**
  Following a detailed Induction of Labour audit, we plan to change our drug of choice from Prostin to Propess in the new financial year. Our aims will be to improve our induction of labour service for women.

- **Website for Maternity Services**
  We have spent a significant amount of time with women, developing the trust website and enhancing the information available about our services.

## *SPECIALIST MATERNAL MEDICINE*
## *Dr TA Johnston, Consultant in Fetal Maternal Medicine*

The philosophy of the Trust is to provide midwifery led care for all low risk women, who are booked under a midwife and receive their care in the community. For those women from outside our catchment area, a core team of midwives provide low risk midwifery care in the hospital clinics. Women with obstetric risk factors are seen in the consultant led hospital based clinics. Over and above this, the hospital offers a comprehensive maternal medicine service, with joint care from a range of physicians from neighbouring trusts. These clinics consist of:

**Cardiology Clinic**
This provides a regional tertiary service to women from across the region with either congenital or acquired cardiac disease, and is provided by Dr Sarah Thorne, Consultant Cardiologist from UHB, and Mr Peter Thompson.

**Diabetes clinic**
The obstetric input into this service was taken over towards then end of the year by one of our newly appointed consultants, Dr Nina Johns, who runs the service in conjunction with Dr Jonathan Webber and the diabetes team from Selly Oak Hospital and the dietetic service. The service continues to expand with the rising numbers of Type 2 and gestational diabetes in the local population, and there is work in progress to expand the service by appointing a specialist diabetes midwife and develop an extra diabetes midwife / nurse led clinic to improve access and the patient experience.

**Drugs and Alcohol, Teenage Pregnancy, HIV**
Mr Alex Pirie provides specialist antenatal care to these groups of women along with a team of specialist midwives. These include Olive Robinson-Downer (Mental Health and Domestic Violence), Jo Mardell (Teenage Pregnancy) and Heather Gray (Drugs, Smoking Cessation and Alcohol).

**Endocrine Clinic**
This clinic provides care to women with other endocrine disorders, including thyroid, adrenal and pituitary disease, and is provided by Dr Shiao Chan, one of our clinical academics who has a research as well as a clinical interest in thyroid disease in pregnancy.

**Epilepsy Clinic**
Mr Alex Pirie, Dr Dougal McCorry, consultant neurologist from UHB, Dr Manny Bhagrey, Consultant Neuropsychiatrist and epilepsy nurse specialists Lynn Greenhill and Marion O'Donnell provide a comprehensive service to pregnant women with epilepsy.

**Obstetric Haematology**
Dr Will Lester, Consultant Haematologist and Pam Jordan, specialist midwife, provide a comprehensive service to women with the spectrum of haematological disorders in pregnancy, as well as co-ordinating the anticoagulant service.

**Obstetric Urology**
Mr Matthew Parsons provides obstetric support to women with pre-existing urological disorders along with the specialist physiotherapists in the Trust

**Perinatal Mental Health**
Professor Femi Oyebode, Consultant Psychiatrist and Ms Olive Downer, specialist midwife, provide a comprehensive antenatal mental health service, and link with the Mother and Baby Unit at the Mental Health Trust.

**Renal Clinic**
A tertiary, regional clinic provided by Dr Graham Lipkin, consultant renal physician from UHB, and Mr Alex Pirie and Dr Tracey Johnston, providing expert care to pregnant women with renal disease including transplants, as well as pre-conceptual counselling.

**Rheumatology Clinic**
This clinic provides a region wide tertiary service for women with rheumatological disorders in pregnancy, including SLE, rheumatoid arthritis and antiphospholipid syndrome. The service is provided by Professor Caroline Gordon, Consultant Rheumatologist from UHB, Dr Tracey Johnston and Mr Alex Pirie.

***ANTENATAL SCREENING***
***Alex Davidson, Antenatal Screening Coordinator***

The Antenatal screening department manages the routine antenatal screening tests offered to all women in pregnancy – screening for unusual types of haemoglobin (haemoglobinopathies), infectious diseases (HIV, hepatitis B, rubella non-immunity and syphilis and Down's syndrome and fetal anomaly.

Screening for haemoglobinopathies identifies those couples whose babies have a risk of inheriting a serious blood disorder. By finding this out in early pregnancy, couples can find out more about the disorder, treatments, outcome and options. The screening team work alongside the Birmingham Sickle cell and Thalassaemia centre and refer onwards to the clinical genetics unit.

Screening for HIV, hepatitis B, rubella non-immunity and syphilis is recommended for every pregnant woman. Identifying an infection in pregnancy enables early intervention, medication or treatment to improve the health of the mother and the baby. All babies born to hepatitis B infected mothers were vaccinated within 24 hours of birth in line with national policy. No babies born to women known to be HIV positive were found to have the infection and all women found to have syphilis infection were appropriately treated; no cases of congenital infection were identified. Women found not to be immune to German measles (rubella) are offered vaccination after they have given birth and 87% of these women were vaccinated before they left hospital.

All women are offered screening for Down' syndrome in the form of the triple test and for other fetal abnormalities at the 20 week scan. Around half of the women having their baby at Birmingham Women's Hospital choose to have Down's syndrome screening and those found to have an increased risk are given information about having a diagnostic test. 42 % of women in this situation who booked for care in 2009-10, opted to have an amniocentesis and 1 of the 8 cases of Down's syndrome diagnosed so far was identified this way.

Over the next year the screening department intends to participate in research looking at men's involvement in genetic screening, look at the patient's experience of screening by way of a patient questionnaire, implement first trimester screening for Down's syndrome and revise the staff training programme to utilise on line 'e-learning' resources.

| | Offered 07-08 (%) | Uptake 07-08 (%) | Cases Detected 07-08 | Offered 08-09 (%) | Uptake 08-09 (%) | Cases Detected 08-09 | Offered 09-10 (%) | Uptake 09-10 (%) | Cases Detected 09-10 |
|---|---|---|---|---|---|---|---|---|---|
| **Downs Syndrome** | 100 | 50.4 | 6 | 100 | 47 | 3 | 100 | 47 | 2 |
| **Hepatitis B** | 100 | 99.8 | 28 | 100 | 99.8 | 45 | 100 | 99.86 | 34 |
| **HIV** | 100 | 98.9 | 15 | 100 | 99.3 | 12 | 100 | 99.70 | 6 |
| **Syphilis** | 100 | 99.7 | 16 | 100 | 99.7 | 13 | 100 | 99.85 | 23 |
| **Rubella Immunity** | 100 | 100 | 201 | 100 | 100 | 232 | 100 | 100 | 262 |
| **Haemaglobinopathies** | 100 | 96.4 | 173 | 100 | 96.6 | 283 | 100 | 99.91 | 304 |
| **Rhesus Factor & FBC** | 100 | 100 | N/A | 100 | 100 | N/A | 100 | 100 | N/A |

## *FETAL MEDICINE CENTRE*
### *Professor Mark Kilby – Clinical Co-ordinator for Fetal Medicine and Veronica Donovan – Midwife Specialist*

The Fetal Medicine Centre continues to offer local, Regional and supra-regional service for prenatal diagnosis and fetal therapy, as well as pre-pregnancy and pregnancy loss clinics. The successful delivery of the service to patients both in South Birmingham and from other Primary Care Trusts is a credit to the hard work of our multidisciplinary team and its interaction with affiliated teams in neonatal paediatrics, surgery, cardiology and genetics.

In addition, the Centre continues to work with the Newborn Networks to deliver a 'seamless' service. Clinical governance is provided within the framework of the Foundation Trust and CQUIN returns, including a detailed report outlining fetal and perinatal outcomes is provided to the West Midlands Specialist Commissioning Team.

Service developments and achievements in 2009-10 have included an increase in the number of consultant led Fetal Cardiology sessions from 2 to 3, implementation of weekly multidisciplinary clinical case review meetings and the management of the training programme for nuchal translucency to support the implementation of 1st trimester screening at the Trust. We continue to train junior staff in Maternal / Fetal Medicine and this year have completed RCOG accredited training for two trainees (both appointed as Consultants) and initiated training in two others (one part-time). We have two visiting internal fellows.

**Activity**
There were 6640 Fetal Medicine examinations performed in 2009-2010 a slight decrease on the previous year. There were also 951 attendances to the pre-pregnancy counselling / loss clinics which equate to 496 patients. Activity is shown in Tables 1-3.

| | Activity (examinations) | | |
|---|---|---|---|
| | **07-08** | **08-09** | **09-10** |
| **West Midlands PCT** | 5963 | 6162 | 6161 |
| **Other region PCT** | 458 | 575 | 479 |
| **Total** | **6421** | **6737** | **6640** |

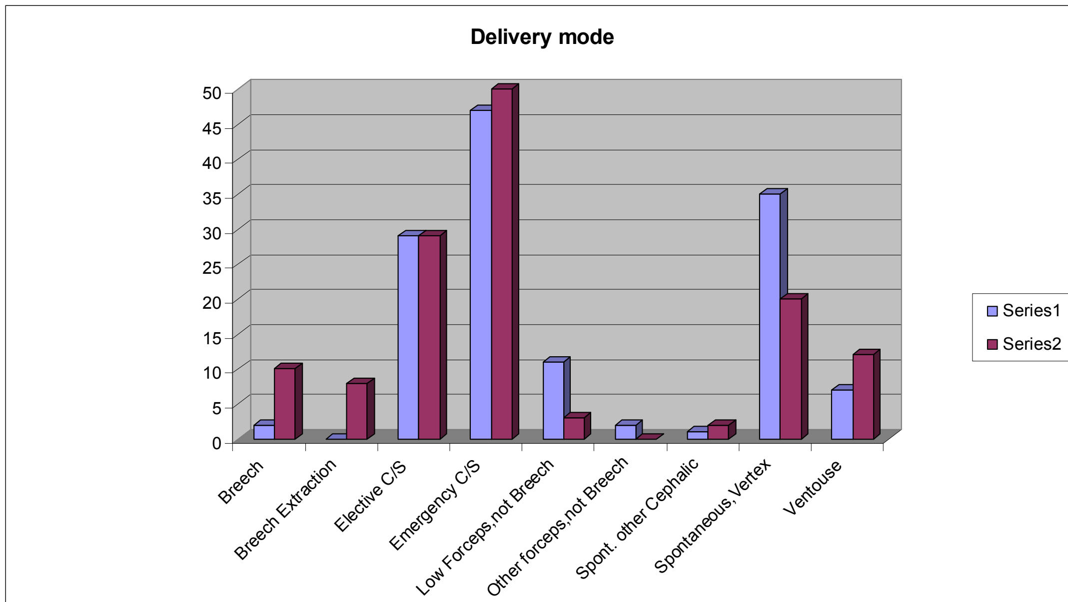
| Procedures | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| Amniocentesis | 332 | 301 | 264 |
| Amniodrainage | 13 | 12 | 6 |
| CVS / placental biopsy | 184 | 198 | 174 |
| Fetal Blood Sample | 41 | 55 | 32 |
| Fetal Blood Transfusion | 31 | 29 | 55 |
| Selective Reduction | 5 | 7 | 6 |
| Late Termination of Pregnancy | 39 | 42 | 34 |
| Drainage / shunt Procedures | 13 | 10 | 15 |
| Fetoscopic laser ablation | 25 | 50 | 51 |
| **Totals** | **683** | **704** | **637** |

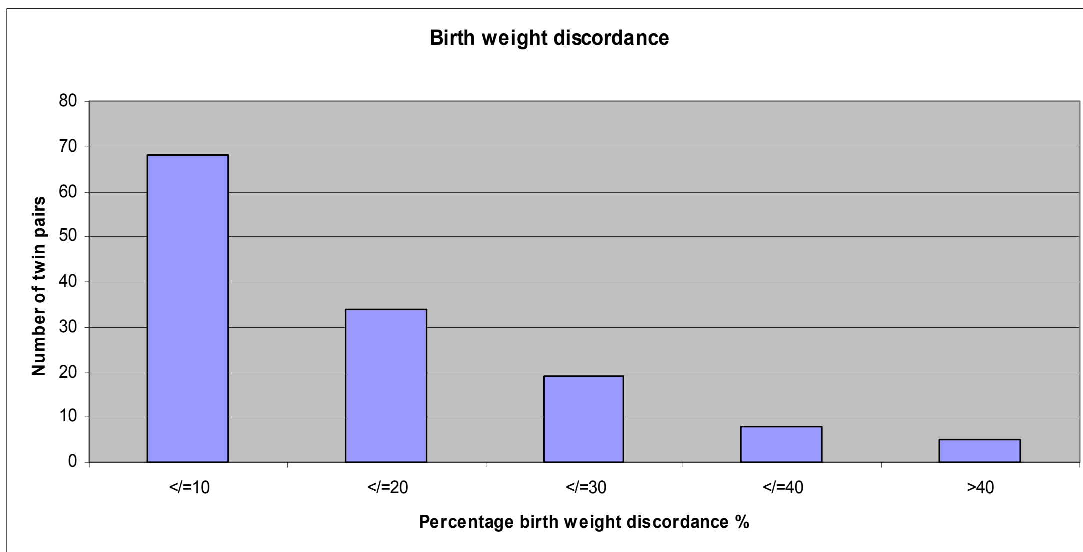
| Scans | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| Detailed scan | 3349 | 3764 | 3878 |
| Raised AFP Detailed | 82 | 50 | 32 |
| Detailed Rhesus scan | 207 | 164 | 220 |
| Cardiac Scan | 1110 | 1196 | 1147 |
| **Totals** | **4748** | **5174** | **5277** |

## *MULTIPLE PREGNANCY*
## *Ellen Knox, Consultant Obstetrician*

**Activity**
140 women were delivered with twins and 2 with triplets. This is consistent with previous years. Both sets of triplets were delivered at 34 weeks gestation, one by elective and one by emergency caesarean section. All were liveborn.

The outcome data for the twin gestations are provided in the tables below. Two hundred and eighteen twins (81%) were delivered over 32 weeks. The average gestation was 35 weeks. The commonest mode of delivery was by emergency Caesarean section (36%), followed by elective CS (21%) and by spontaneous vaginal delivery (20%) and. In 3 cases (2%) the second twin was delivered by caesarean section when the first was a vaginal delivery. The discordancy in birth weight shown below, but was less than 10% in half (50%), with marked discordancy (>40%) in less than 4% of twin pregnancies.
There were 4 deaths in the twin group. All were ante-partum stillbirths, 2 at 24 weeks gestation (one at a pre viable birth weight of 360g) and 2 at 28 weeks gestation.


Delivery mode
50
45
40
35
30
25
20
15
10
5
0
Breech
Breech Extraction
Elective C/S
Emergency C/S
Low Forceps,not Breech
Other forceps,not Breech
Spont. other Cephalic
Spontaneous,Vertex
Ventouse
Series1
Series2


Birth weight discordance
Number of twin pairs
80
70
60
50
40
30
20
10
0
</=10
</=20
</=30
</=40
>40
Percentage birth weight discordance %

## *DELIVERY SUITE/TRIAGE*
### *Justine Jeffery, Clinical Manager, Delivery Suite*

In 2009/2010 we saw a small decrease in the number of women who gave birth at BWH; however we continue to provide high risk care to women and their families with complex maternal and fetal conditions.

The department layout has not changed during this financial year and still has eleven delivery rooms, a modern twin theatre suite, a three bedded high dependency area, a two bedded bereavement suite and a triage department. It has been identified that the department requires expansion and refurbishment to improve services across the Directorate. It is proposed that the Triage Department and the Day Assessment Unit will merge and expand and an induction suite and new recovery area will be developed in the existing space previously occupied by the old obstetric theatre suite. Provisional plans have been approved and we look forward to the development of these plans throughout 2010.

The triage service continues to provide access to midwifery and medical management 24 hours per day. The results of the triage audit have been presented to the Directorate, staff and the Local Supervising Authority (LSA). This audit was funded by the LSA. There were a number of environmental issues that will be addressed following our refurbishment and some minor improvements for example; a vending machine and water dispenser have been installed into the waiting room. There were further recommendations made regarding documentation which have been addressed. An action plan has been developed with short, medium and long term goals, which will be monitored by the Directorate throughout 2010.

Plans to increase the number of theatre lists to perform the current volume of elective caesarean sections continue to be developed and subsequent resource identified via the anaesthetic service level agreement.

The modernisation of the water birth facility began in autumn 2008. The room was officially opened in 2009 following extensive manual handling risk assessments and a training plan for staff. Further guideline development will take place and the use of the pool promoted.

Continuous electronic fetal monitoring is an integral part of the management of women with complex maternal and fetal conditions. Traditionally monitoring has been performed using machines that attach to women via leads. Following a successful trial of the telemetry system, the Directorate has purchased two new telemetry units for fetal monitoring which will allow women to mobilise freely during labour and birth.

The Trust is preparing for an NHSLA assessment in 2011. Guideline development and audit have been completed with the assistance of additional administrative resource. We look forward to our assessment in January 2011.

**Onset of Labour**

| Type | 07-08 % | 08-09 % | 09-10 % |
|---|---|---|---|
| **Spontaneous** | 74 | 71 | 70 |
| **Induction** | 18 | 21 | 21 |
| **Elective Caesarean Section** | 8 | 8 | 9 |

**Mode of Delivery**

| Type | 07-08 % | 08-09 % | 09-10 % |
|---|---|---|---|
| **Spontaneous Vaginal Delivery** | 65 | 62 | 59 |
| **Forceps** | 5 | 8 | 7 |
| **Ventouse** | 7 | 7 | 6 |
| **Breech** | 1 | 1 | 1 |
| **Elective Caesarean Section** | 8 | 8 | 9 |
| **Emergency Caesarean Section** | 14 | 15 | 16 |

**Planned Home Birth/Unplanned Births outside of Hospital**

| Type | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| Home Births* | 94 | 105 | 80 |
| Outside Hospital Births | 28 | 23 | 24 |

## *HIGH DEPENDENCY UNIT*
## *Lynn Davies, Lead Critical Care Midwife*

The 3 bedded High Dependency Unit is one of the largest obstetric units in the UK and provides evidence based level 2 care to women who require more intensive monitoring and treatment. Specialised medical input from physicians, surgeons and intensivists at Queen Elizabeth Hospital Birmingham compliment our existing multidisciplinary team working ethos.

414 women were admitted to HDU between April 2009 and March 2010 (5.8% of all deliveries). 30% of these women had invasive monitoring (arterial line, central line or both). The transfer rate for specialist care including level 3 critical care was 1 per 1000 deliveries; the need for respiratory support being the most common reason for transfer. This year has seen a reduction by almost 50% for transfers to Critical Care.

Obstetric haemorrhage continues to be the commonest reason for admission to HDU followed closely by the hypertensive disorders of pregnancy. Among the non-obstetric causes for admission, maternal cardiac disease remains the most common indicator for prolonged monitoring.

A Lead Critical Care Midwife continues to provide competency based training to midwives and is also responsible for environmental monitoring within HDU. All Delivery Suite Core Midwives have attended the formal HDU study day. Other midwives both within and outside of the trust will be invited to attend an Obstetric Critical Care Symposium for Midwives commencing November 2010. Funding has been obtained to develop e-modules to enable us to deliver enhanced information and training, thus complementing our current teaching programme to directly impact upon practice and enhance patient care.

Education provision for student midwives at BCU is now established with regular lectures, practical scenarios and facilitation of examinations.

Emergency drill scenarios /PROMPT/ MEWS training are ongoing and the development of a link with intensivists at UHBFT regarding use of simulated training on SIM MAN is progressing well.

Clinical guidelines are reviewed and updated as necessary in line with external standards recommendations. Audits results of HDU admissions, Critical Care admissions, obstetric haemorrhage, eclampsia and severe pre-eclampsia are presented monthly to the Dashboard group with the aim to improve clinical care.

**Indications for admission to HDU**

| | 08-09 | 09 - 10 |
|---|---|---|
| PPH | 134 | 161 |
| Hypertensive disorders | 121 | 127 |
| Cardiac | 30 | 25 |
| Others | 120 | 101 |
| Total | 405 | 414 |

## *MIDWIFE LED BIRTH CENTRE*

### *Paula Clarke, Consultant Midwife, Fiona Heel, Birth Centre Manager and Community Midwives*

Our midwife led birth centre has been open for six years. Our well established unit remains one of the largest and most successful birth centres in the UK. Since opening in February 2004, a total number of 4889 women have given birth with us. Our aim remains to support 1200 women give birth per year on the birth centre

**Activity**

- Our births remain on an upward trend and 1184 women gave birth on the birth centre which equates to 16% of the total number of births in the trust.
- An additional 676 women received care on the birth centre but needed to transfer out for safety reasons. Our transfer out rate remains static but similar to other 'alongside' birth centres nationally at 35%. When women transfer, they have often received a significant number of hours care provided by birth centre midwives prior to transfer. The 3 main reasons for transfer remain the same as in previous years (which includes postnatal reasons): slow progress (25%); meconium liquor (19%) and abnormal fetal heart rate (16%).

**Good Performance Indicators**

Our figures show us that:

- Once a woman entered the birth centre and either gave birth or transferred out to the main delivery suite, she had an:

  82% chance of achieving a vaginal birth
  12% chance of an Instrumental delivery
  6% chance of a Caesarean Section

| | 07-08 | % | 08-09 | % | 09-10 | % |
|---|---|---|---|---|---|---|
| **Birth Centre Admissions** | 1746 | 100 | 1826 | 100 | 1860 | 100 |
| **Birth Centre Births** | 1039 | 62 | 1164 | 65 | 1184 | 64 |
| **LSCS Rate** | | 5.8 | | 5 | | 5.9 |
| **Transfers** | 707 | 40 | 662 | 36 | 676 | 36 |
| **Transfer Reason:** | | | | | | |
| Slow Progress (1st or 2nd stage) | 173 | 25 | 212 | 32 | 168 | 25 |
| Meconium liquor | 134 | 19 | 136 | 21 | 130 | 19 |
| Abnormal fetal heart rate | 68 | 10 | 94 | 14 | 108 | 16 |
| BC closed | 21 | 3 | 7 | 1 | 4 | 1 |
| Other | 310 | 44 | 213 | 32 | 266 | 39 |
| **Total** | 707 | 100 | 662 | 100 | 676 | 100 |
| **Birth following transfer:** | | | | | | |
| Normal | 395 | 56 | 320 | 48 | 339 | 50 |
| Ventouse | 116 | 16 | 115 | 17 | 91 | 13 |
| Forceps | 90 | 13 | 133 | 20 | 135 | 20 |
| EM LSCS | 102 | 14 | 93 | 14 | 110 | 16 |
| Vaginal Breech | 4 | <1 | 1 | <1 | 1 | <1 |
| LSCS Rate | | 5.8 | | 5 | | 5.9 |

- Women using water for pain relief has increased by 10% this year (28 – 38%). The number of women who gave birth in the pool has also increased from 10-15%.
- It is worth noting that we accept additional groups of women not generally accepted nationally such as women who require induction of labour for post dates..
- Minimal Closure of the birth centre remains our aim which has been maintained over this year.

We continually strive to improve upon:
The entry criteria and negotiate agreement for additional groups of women
Early transfers home to meet women's needs
Demonstrate good standards of midwifery practice
Benchmark our figures nationally

## *INFANT FEEDING*
## *Helena Stopes-Roe, Infant Feeding Co-ordinator*

**Overview**
The Infant Feeding Team comprises 5 members with a WTE of 0.7 at band 7 and 0.6 at band 6. The remit is for the Trust to achieve Baby Friendly Initiative (BFI) Status which will ensure that breast feeding is promoted and supported across all clinical areas

Infant feeding training is mandatory at all clinical levels. 12 pairs of training days were delivered, giving a total attendance of 96% of the midwives, midwifery assistants, neo-natal nurses and nursery nurses being trained. In addition 82% of paediatricians and 50% of obstetricians received their training.

26 antenatal infant feeding workshops were delivered with an average attendance of 15 mothers per session with 6 special breastfeeding sessions for mums pregnant with twins

**Action:**
Continue delivering the BFI training programme and prepare for Stage 2 assessment in July 2010

**Objectives for 2010/2011:** Achieve Baby Friendly Stage 2 Assessment. When this has been achieved, work will begin towards Baby Friendly Stage 3 Assessment.

**Breastfeeding at Birth**

| | % |
|---|---|
| **07-08** | 65% |
| **08-09** | 67% |
| **09-10** | 65% |

## *CLINICAL RISK FOR DELIVERY SUITE*
## *Coralie Rogers, Specialist Midwife Risk Management - Delivery Suite*

This year has been the first full year of using DATIX™ incident reporting system, and after an initial drop in the number of forms being completed, submission rates have once started to increase again – becoming closer to the levels of the old paper system.

A quarterly newsletter is produced for all Trust staff which provides an overview of the trends in reported within maternity, these can be found on the Trust 'U' drive in a folder called *'Maternity Clinical Reports'*
The table below highlights those incident that have features in the *'Top Ten'* over the year – the report also gives an overview of what work is being done by the directorate in response to the information received from incident reporting.

**The most commonly reported incidents 2010/11**

| Staffing |
|---|
| Delay in care / capacity |
| Communication/ documentation |
| IT/Lorenzo/CCL |
| Medication incidents |
| Failure to follow guideline / Take appropriate action |
| Staff injury |
| Admissions to the NNU |
| Sample errors |
| Equipment |
| Shoulder dystocia/third degree tears |
| Antenatal IUD |

This year has seen an increase in incidents reported to the PCT as serious incidents (SUI) and have been investigated using a Root Cause Analysis (RCA) tool. We believe this increase has partly been due to improved communication regarding risk management between the Maternity and Neonatal Directorates. Many RCAs are now undertaken jointly, and the recommendations are agreed, disseminated and monitored by both Directorates.

Changes as a result these RCA's have included:-

- Streamlining of patient pathways through specialist clinics, and the appointment of a specialist midwife for diabetes
- Further training sessions for assessment and monitoring of fundal height growth
- Midwives identified to train to undertake third trimester scanning – to improve rates of detection of intrauterine growth restriction.
- Midwifery staffing increased to provide a further 16 hours of cover for Triage on weekends.
- Changes in the neonatal documentation for the initial and first day checks of newborn babies.

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| Shoulder Dystocia | 61 | 61 | 72 |
| Admission to NNU*<br>*all admissions from Delivery Suite | 754 | 749 | 954 |
| Apgar <4 at 5 minutes | 82 | 86 | 88 |
| Unadjusted PMR /1000 | 12.5 | 12.6 | 8.4 |
| Adjusted PMR / 1000 | 8.2 | 5.8 | 6.5 |

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| 3rd Degree Tear | 140 | 133 | 168 |
| 4th Degree Tear | 7 | 4 | 10 |
| Massive PPH (>2 litres) | 6 | 16 | 29 |
| Peripartum hysterectomy.<br>Ruptured or inverted uterus | 13 | 13 | 11 |
| Maternal Death | 1 | 1 | 0 |

***MATERNITY SERVICES PREGNANCY LOSSES***
***Bill Martin, Consultant Obstetrician and Karen Henson, Bereavement Services Manager***

During April 2009 to March 2010 there were 7091 registrable births in BWNFT. From our catchment area of South Birmingham there were 3988 births. There were 54 stillbirths of which 8 had a fetal abnormality. Twenty-eight were from South Birmingham, and of these 6 had a fetal abnormality. The overall Stillbirth Rate (SBR) was 7.6/1000 births, and when corrected for fetal abnormality and weight <500g was 5.3/1000 births. For the South Birmingham population (the BWH standard patient) the SBR was 7/1000 births, corrected 5.5/1000 births.

As in previous years, intra-uterine growth restriction (IUGR) remains a major cause of stillbirth in our population. A prospective audit was performed in this year, which demonstrated that using our current antenatal assessment regimen more than half of cases of IUGR are missed. The Trust has developed new guidelines to improve consistency of care provided. In addition we are participating in a research project, Community Outpatient Growth Surveillance (COGS), to look at the use of ultrasound in patients designated as high risk of IUGR who would have previously not warranted antenatal ultrasound assessment.

A prospective Clinical Stillbirth Audit is ongoing having commenced in January 2009 with the intention of developing a data base and this will enable us to bench mark against similar units. Each case is reviewed in a multidisciplinary way to establish the standard of care provided, note deficiencies and remedy them through presentation at the monthly perinatal mortality meetings.

**Stillbirths**

| Cause | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| | | | |
| Fetal anomaly | | | 8 |
| TOP >24 weeks | 4 | 6 | 2 |
| <500g | | | 8 |
| South PCT<br>Crude rate/1000 births<br>Adjusted rate/1000 births | 34<br>8.5<br>7.2 | 27<br>6.7<br> | 28<br>7.0<br>5.5 |
| Total<br>Crude rate/1000 births<br>Adjusted rate/1000 births | 54<br>7.2<br>5.5 | 51<br>6.9<br>4.9 | 54<br>7.6<br>5.3 |

**Late Fetal Losses**

| | 07-08 | 08-09 | 09-10 |
|---|---|---|---|
| **Late fetal losses**<br>16 – 21+6<br>22 – 23+6 | <br>42<br>2 | <br>42<br>12 | <br>68<br>11 |
| **Total** | **44** | **54** | **79** |
| **Termination (TOP)**<br>14+6 – 21+6<br>22 – 23+6 | <br>27<br>2 | <br>20<br>8 | <br>12<br>5 |
| **Total** | **29** | **28** | **17** |

**Post mortem**

| | 08-09 | 09-10 |
|---|---|---|
| Offered | 51 | 54 |
| Full | 17 | 21 |
| Limited | 13 | 6 |
| Declined | 21 | 27 |

## *CLINICAL EDUCATION, DELIVERY SUITE*
## *Sue Smithson, Clinical Education Facilitator-Delivery Suite*

Support to newly qualified band 5 midwives continues to be offered in the form of 2 weeks supernumerary linked with an experienced midwife. There is also a 3 day induction programme for new midwives concentrating on delivery suite issues run with the Practice Development Midwife. Support is also provided to other midwives who have been away from the department for an extended period of time.

Participation in the PROMPT style emergency training with the Practice Development midwife continues and evaluates well by the midwives attending.

Support is offered to midwives who need to gain confidence and proficiency in skills such as perineal suturing and intravenous cannulation, this remains ongoing. In addition there have been several new pieces of equipment in clinical use and training has been provided for midwives to ensure they are conversant in their use.

Close links have been maintained with the Consultant Midwife and Birth Centre Manager to promote a normality focus on delivery suite. Midwives are encouraged to normalise the birth and birth setting as far as possible. Some delivery suite midwives have agreed to help lead on this development. This work is ongoing and will increase during the next year.

Links with BCU remain with participation in the OSCIs for student midwives and teaching in CTG interpretation and high risk intrapartum care.

### *PRACTICE DEVELOPMENT*
### *Wendy Burt, Practice Development Midwife*

Practice Development provides and administers a broad range of training and development opportunities for midwives and midwifery assistants.

Midwifery mandatory training continues to remains a high priority and we strive to maintain our overall good figures for attendance. The Directorate will continue to maintain current training programmes for midwifery assistants and provide placement support for newly qualified midwives, and qualified midwives who may require updating in a new area.

Practical Obstetric Multi-professional Training (PROMPT) has now been part of our multidisciplinary programme for 12 months and is consistently evaluating very well. The day mainly consists of practical applied skills in obstetric emergencies, which enable the learning environment to be more realistic, as well as promoting team working and team learning.

Within the Directorate we have also taken a more systematic approach to live emergency drills on Delivery Suite, and in the coming year we will also undertake live drills in other clinical areas in the Trust.

The Directorate continues to provide legal training for midwives in conjunction with the Trust Solicitors Bevan Brittain - this study day continues to prove invaluable and very popular.

Moving forward to 2010/11 we are currently updating our training programme for support staff and will continue to provide support, educational opportunities and development for maternity service staff of all bands.

## *SUPERVISION OF MIDWIVES*
## *Bernadette Earley, Contact Supervisor of Midwives*

Supervision of midwives is a statutory function which is over seen by the Local Supervising Authority. There are currently 21 Supervisors as we have just appointed three new supervisors. This results in a ratio of 1:17. We have successfully recruited two midwives to begin the course in September 2010 in order to achieve the LSA standard of 1: 15.
We continue to review and update the strategy which we developed last year, in order that the profile of supervision remains high within the trust and the women we care for. Supervisors have continued to strengthen the links with the service users, the maternity services liaison committee (MSLC), the NCT Parent Education teachers and the home birth group in order to improve communication, and hear the views of women in our care and inform them of our role and support.

## *INFECTION CONTROL*
## *Jenny Henry Head of Midwifery*

The Maternity Directorate lead for infection control sits with the Head of Midwifery and her senior team. Prevention of infection and infection control is everyone's responsibility. Within 2009-10 the Directorate continued to see some improvements in the clinical environment both in maintenance and cleanliness of wards and departments.

**Hand hygiene**

| | 08-09 | 09-10 |
|---|---|---|
| **Ward 1** | 79% | 87% |
| **Ward 3** | 94% | 93% |
| **Ward 4** | Combined with ward 3 | 89.5% |
| **Delivery Suite** | Data incomplete | 76% |

During 2009 -10 work has continued upgrading the bathroom and showers in the ward area's and on delivery suite which has had a positive impact on the woman's experience consistently scoring high in patient satisfaction surveys.

The named infection control links now have dedicated time to fulfil this role which has improved the monthly hand hygiene audits. However, more work is needed in raising awareness and improving practice to increase and maintain the % on delivery suite.

More resources have been identified to increase the number of housekeeping hours on delivery suite, this has been essential in maintaining cleanliness in a very busy department.

MRSA screening has been in place for 12 months for elective and high risk women. Cases identified have been community acquired and treated appropriately. An audit undertaken this year has shown the prevalence to be very low the Directorate is now reviewing the criteria to reduce the number of women who need to be screened.

**Development and changes in practice**

- Protected time for the infection control links
- Completion of replacement windows on delivery suite
- Completion of refurbishment of bathroom and toilets on the ward

***GYNAECOLOGY DIRECTORATE***
***Jacky Cotton, Head of Nursing / Philip Toozs-Hobson Clinical Director***

**Overview**
The Directorate continued to provide both elective and emergency inpatient and out patient gynaecology services for women. Community urogynaecology clinics introduced at the end of 08-09 were further developed at two local GP practices.

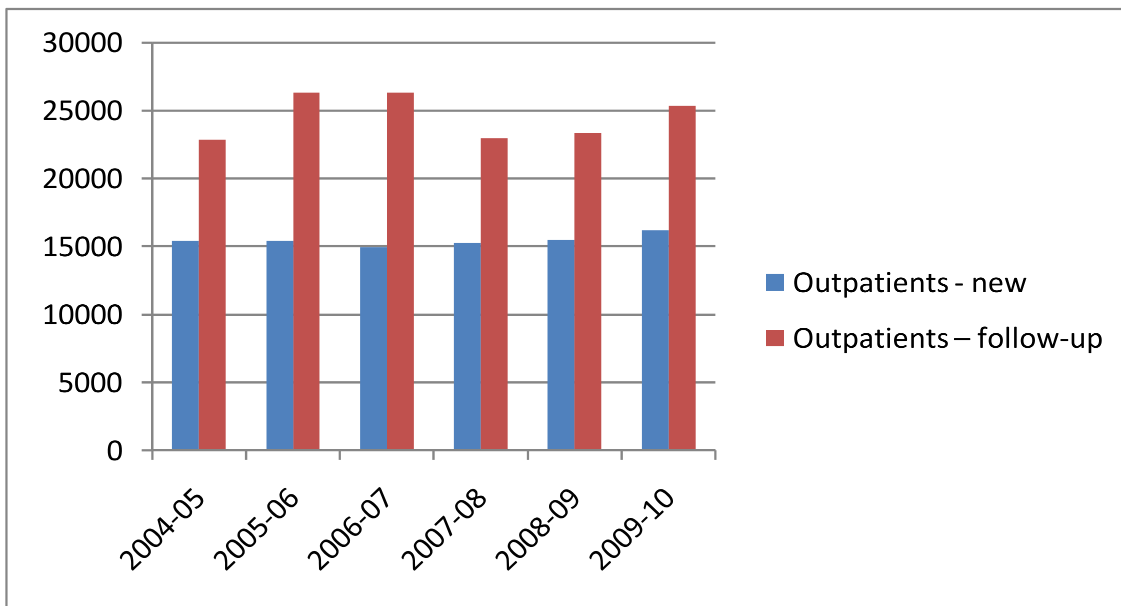
Activity across the Directorate was based on meeting contract targets and ensuring 18 weeks referral to treatment targets were met. The Directorate reviewed outpatient services to ensure sufficient capacity to meet a 7% increase in referrals. This resulted in major changes to clinic structures in November 2009.

Compliance with cancer waiting time standards was achieved throughout the year.

**Activity**
The Directorate had another challenging year to ensure activity targets were achieved. The actual numbers of patients seen are detailed in tables and graphs below.

**Out Patient Activity**

| Category | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|
| Outpatients - new | 15,416 | 15,424 | 14,925 | 15,275 | 15,490 | 16,170 |
| Outpatients – follow-up | 22,885 | 26, 328 | 26,309 | 22,951 | 23,367 | 25,379 |

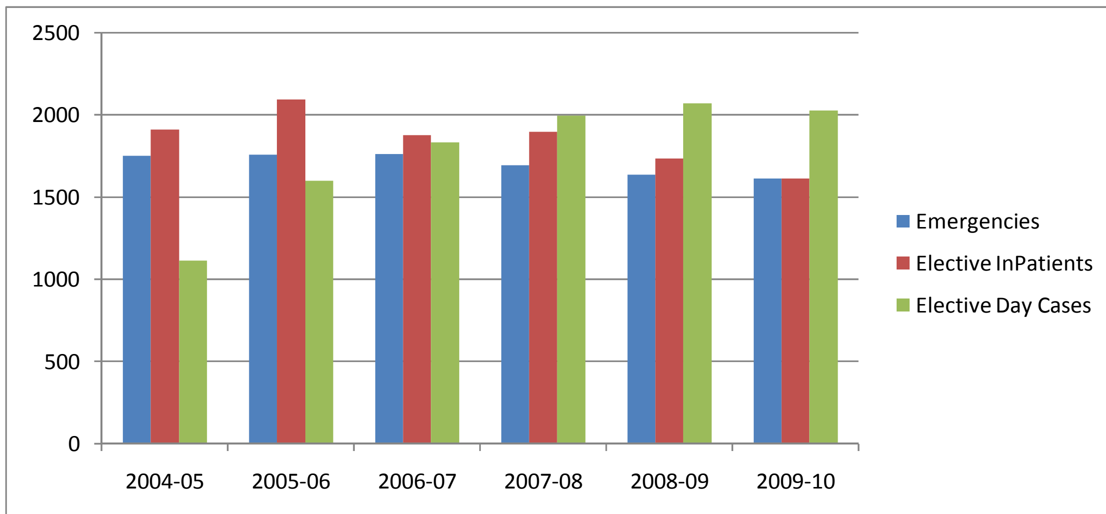


# Gynaecology Directorate

The target for 18 weeks referral to definitive treatment of 95% of non admitted patients was achieved. Performance as of 31st March was 97%.

**In Patient Activity**

| Category | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|---|---|---|---|---|---|---|
| **Emergencies** | 1751 | 1757 | 1762 | 1694 | 1637 | 1613 |
| **Elective Inpatients** | 1911 | 2093 | 1876 | 1897 | 1735 | 1613 |
| **Elective Day-cases** | 1115 | 1598 | 1833 | 1994 | 2071 | 2027 |




The target for 18 weeks referral to definitive treatment of 90% of admitted patients was also achieved. The performance at 31st March was 95.8%.

**Infection Control**
Clinical managers implemented systems to provide assurance both internally and externally of high standards of infection prevention and control. Several audits previously undertaken on a quarterly basis such as hand hygiene and patient environment were undertaken monthly in line with the Trust Infection Control annual audit programme. Monitoring of High Impact Interventions was commenced and further development is required.
No cases of clostridium difficile or MRSA bacteraemia were detected on the wards. MRSA screening of all emergency patients was introduced in February 2010 in addition to screening of all elective patients.

**Clinical Governance**
National guidance including relevant NICE guidance, NPSA safety alerts and reports from external bodies such as NCEOPD, RCOG were received into the Directorate, examined and implemented where appropriate. Action plans were developed and monitored through the Gynaecology Clinical Improvement Group (CIG).
Patient Safety Indicators were identified relating to inadvertent bowel injury and unexpected returns to theatre. Weekly reporting commenced on 7th January 2010.

Work was undertaken on implementing the WHO Safer Surgical Checklist. This was first introduced for specific gynaecology elective surgical patients and by the end of March had been implemented across all consultants' theatre lists.

An NCEPOD study was commenced looking at Perioperative Care that required data submission from the Directorate on all elective surgical cases during a defined time period.

The Gynaecology CIG continued to meet 6 weekly to address the increase in clinical governance work being undertaken. All elements of clinical governance including the dissemination of clinical practice updates and guidelines were discussed here.

Clinical guidelines were drafted for Bowel Preparation and Patient Observations in response to NPSA alerts and recommendations from the Productive Ward Initiative.

The Core Audit Programme was updated to reflect audits required for NHSLA assessments, Essence of Care, compliance with clinical guidelines and other key clinical indicators.

Processes for managing electronic incident reports were implemented by training ward and departmental managers in role of Local Incident Managers. The Head of Nursing and General Manager now act as Directorate Incident Managers, maintaining an overview of all incidents occurring in the Directorate ensuring they are managed appropriately.

There was a significant increase in the number of complaints received during the year but these continue to be of a varied nature with no significant trends identified.

Outcomes and lessons from incidents and complaints were disseminated across the Directorate via Quarterly Quality Indicators. An Annual Quality Indicator report is included at the end of this chapter.

## *ASSISTED CONCEPTION UNIT*
## *Sue Avery, Director of ACU and Madhurima Rajkhowa, Consultant Gynaecologist*

The Assisted Conception Unit provides a full range of Fertility Services from Ovulation Induction to Intracytoplasmic sperm injection. In 2009/10 the unit carried out over 900 treatment cycles. Success rates are consistently at or above the national average.

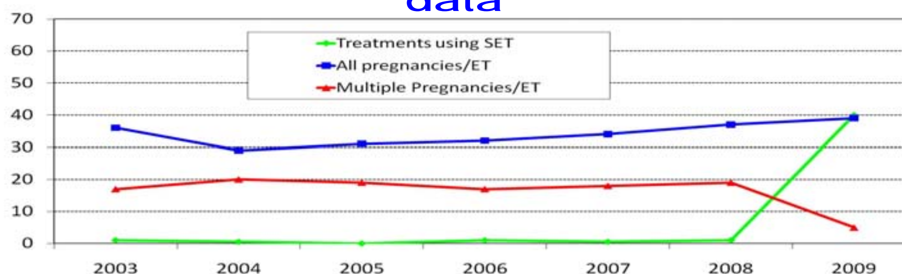
**Activity**
The Unit treats both NHS and self-funded patients and is planning to offer patients the option of private treatment in the forthcoming year. Dedicated consultant delivered service with restructuring of delivery of care has been implemented, with improved quality, safety and efficacy of service.
The clinical licence for pre-implantation genetic diagnosis has been granted and the first treatment cycles will commence in September 2010.

**IVF / ICSI Live birth rate 2008/9**

| | Per treatment cycle | Per embryo transfer |
|---|---|---|
| | | |
| **National** | 36% | 38% |
| **Fertility Centre** | 36% | 39% |

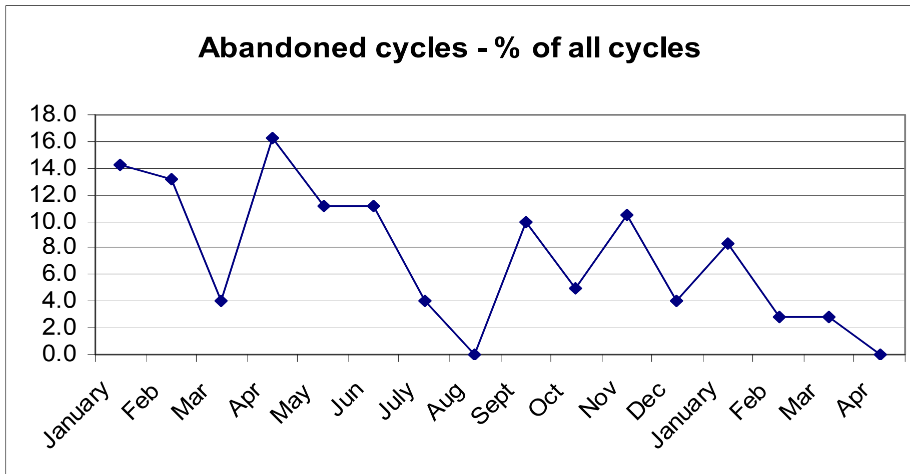
**Good Performance Indicators**
As a result of the single embryo transfer policy, the multiple birth rate has been reduced from 28% to 13%, with no impact on the overall pregnancy rates,

Birmingham Women's Fertility Centre data




FUTURE GENERATIONS

A review of the ovarian stimulation protocols has led to a significant reduction in both the number of abandoned cycles and the number of cases of ovarian hyperstimulation.




***COLPOSCOPY***

***Amanda Sutton, Clinical Nurse Manager & Najum Qureshi, Clinical Lead for Colposcopy***

**Specialty/Service**

The majority of women referred for Colposcopic assessment have abnormal cervical cytology, and referrals are triaged by the clinical nurse specialists in line with National QA standards, and the NHS cervical screening programme guidelines. The department also offers a specialist service for women with vulval conditions, and a nurse led cytology clinic.

This has been a challenging year of change and development for the Colposcopy service. A major service review was undertaken following recommendations from our three yearly Quality Assurance visit November 2008. This review was carried out in conjunction with Pan Birmingham Cancer Network and has had positive results in terms of streamlining certain aspects of service provision and optimising database utilisation. In order to achieve some of these initiatives a new role of Colposcopy Coordinator/Admin Manager has been implemented from June 2009, and a new clinical lead, Mr Qureshi came into post in October 2009.

**Activity**

| | |
|---|---|
| New patient referrals | 2037 |
| High grade (including clinical indication urgent) | 503 |
| Low grade (including clinical indication non-urgent) | 1533 |
| Other | 1 |
| Total clinic attendances | 4262 |

The referral rate has risen from last year as a result of a celebrity death and consequent screening awareness campaign via media coverage, which gave rise to increased cytology screening take up nationally. The unit is the largest Colposcopy service in the West Midlands region. Referral and attendance rates are shown in Figures 1-3 below.

Every patient was offered an appointment within QA recommendations.

The treatment of choice for high grade pre-invasive disease is Diathermy Loop Excision of the Cervix and this year 442 loop procedures were performed in Outpatients and 138 in theatre.

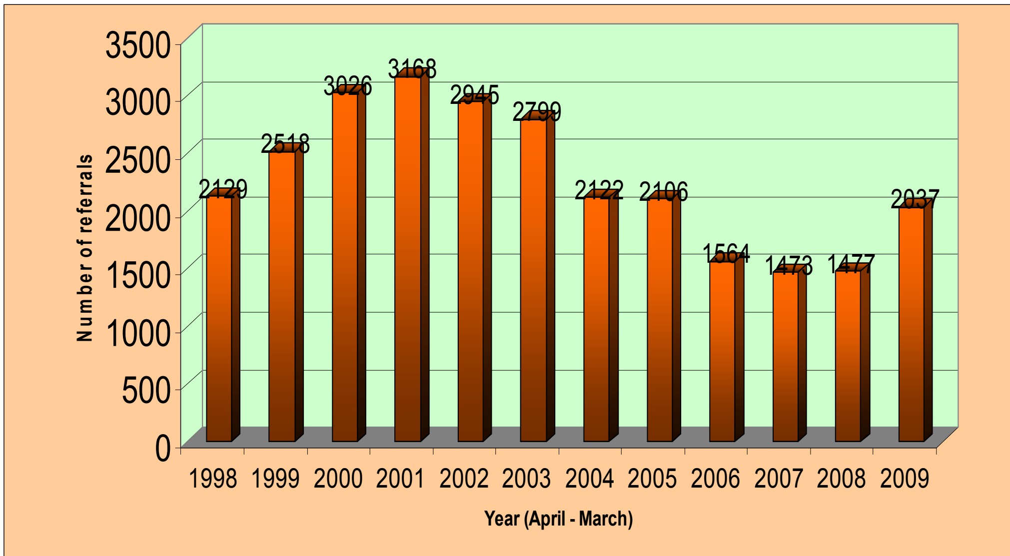



**Figure 1** –Colposcopy Referral rate for past decade

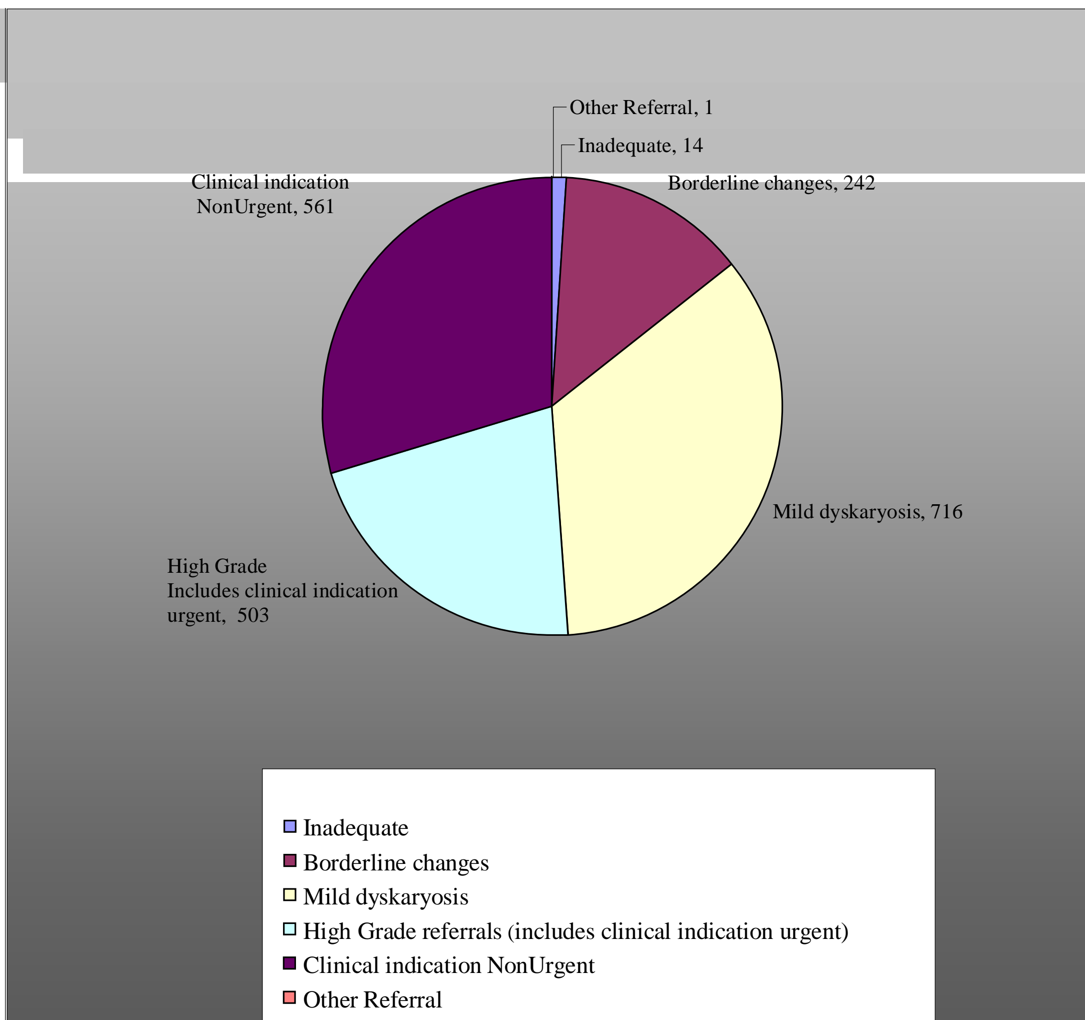



**Figure 2** – Colposcopy referrals by type: low grade – high grade 09/10

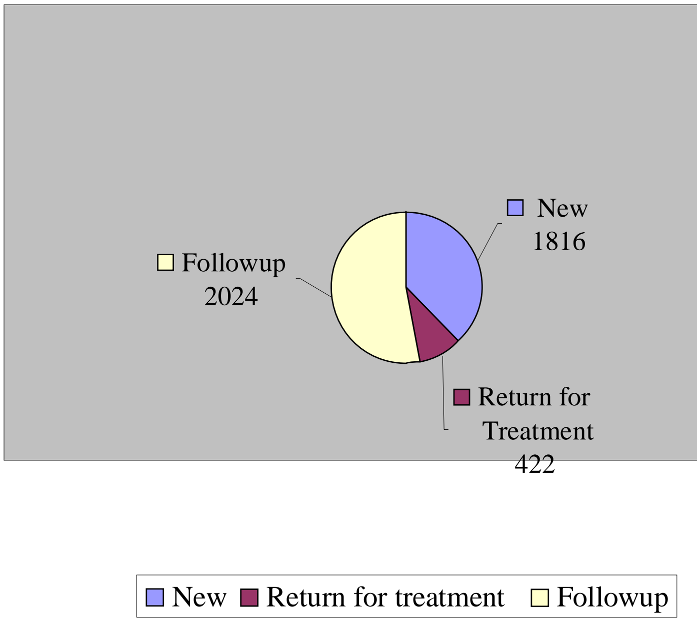



**Figure 3** –Colposcopy Attendance Summary 2009-10.

Demand for the vulva service remains significant with 265 new referrals and 506 follow ups seen within the service. It is planned to review capacity in 2010-11 to ensure full utilisation of Nurse vulvoscopy skills.

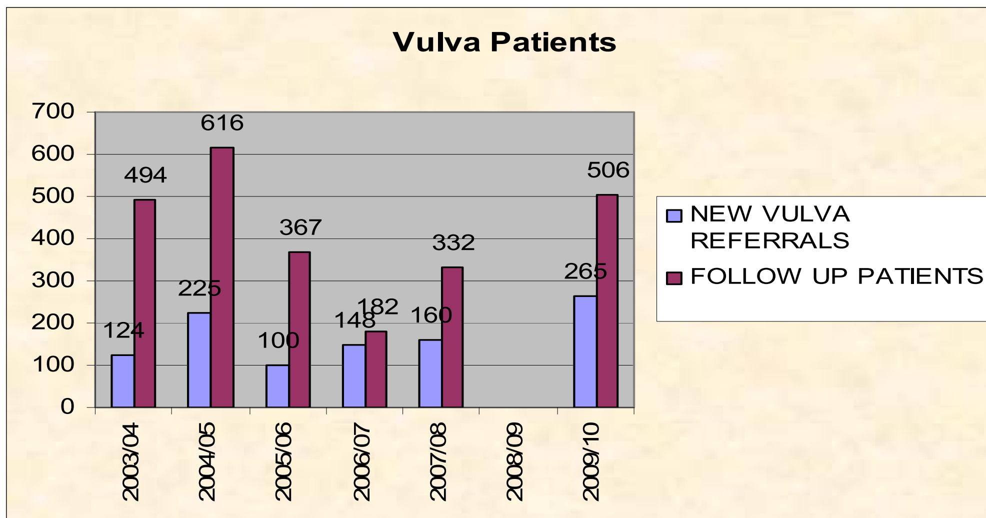



**Figure 4 – Graph of referral rates for the vulvoscopy service.**

**Clinical Governance**

Quarterly audits continue of Quality Assurance Standards in the form of KC65 reports. Unit data is benchmarked across the region by the QA Reference Centre, and whilst over all our figures are acceptable, audit shows our non-attendance (DNA) rate to be outside the 15% national standard for follow ups at 19.9% but within standard for new referrals at 10.4% (please refer to Figure 4)

Waiting time for high grade referrals remains well within standards at 95%
The standard for patients receiving their histology results is 90% within 4 weeks and currently BWH figure is at 98.7%. This is noted as a major achievement within the service due to a results management initiative instigated by the service review, whereby all results are now managed by the Nurse Colposcopists.

Monthly multidisciplinary meetings are held to discuss complex cases requiring team discussion and management planning, and approximately 180 cases are discussed in this forum annually.

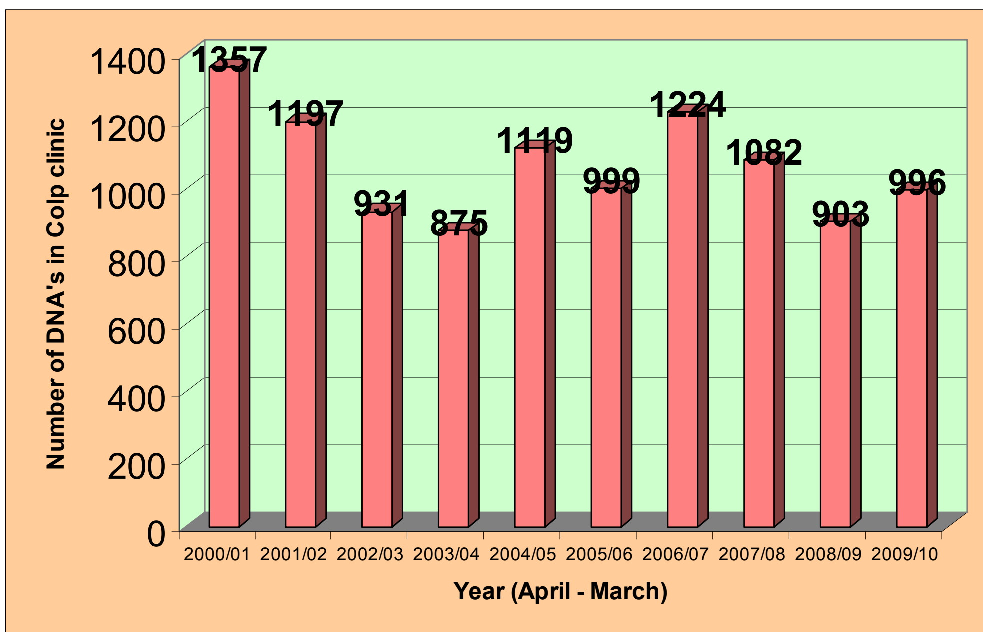



**Figure 5 –** Graph to show DNA numbers over past decade

**Achievements**
Service review completed looking at demand and capacity, clinic structure and provision of Colposcopy, and most of the recommendations have been implemented. However the medical staffing review is still ongoing.

QA standard requires 90% of patients referred with a high grade abnormality to be seen within 4 weeks. In Quarter 4, 100% of such referrals were seen within 4 weeks and in fact, 57.8% of patients referred with a high grade abnormality were actually seen within 2 weeks.

QA standard requires all patients referred with a low grade abnormality to be seen within 8 weeks. In Quarter 4, 99% of such referrals were seen within 8 weeks and in fact, 52.3% of patients referred with a low grade abnormality were actually seen within 4 weeks.

### *EARLY PREGNANCY AND ACUTE GYNAECOLOGY ASSESSMENT*
### *Mr Justin Clark Clinical Lead and Mrs Maureen Manion, Clinical Nurse Manager*

The diagnosis and management of miscarriage, ectopic pregnancies and other common early pregnancy related problems are managed within our EPAU which aims to provide a convenient, efficient and patient-centred service. The service is primarily nurse-led utilizing explicit protocols. Acute gynaecological presentations are also managed within the Unit and we have recently instigated a consultant-led, thrice weekly 'urgent gynaecological clinics' to offer rapid and efficient assessment utilizing ultrasound scan of severe, but non-life threatening gynaecological conditions.

The Unit plays a key role in the training of our junior doctors and medical students in core competencies in gynaecology and management of a wide range of acute early pregnancy and gynaecological problems.

**Services**

- Early pregnancy complications – Diagnosis (immediate ultrasound) and outpatient management including surveillance and follow up of medically managed miscarriage and pregnancies of unknown location / ectopics
- Counselling and support for early pregnancy loss
- Management of acute and urgent gynaecological conditions

**Activity**

There have been 6812 attendances in the EPAU 2009-10 of which 3685 were new and 3127 follow up appointments.

**Clinical Governance**

- An established multi-disciplinary EPAU committee which meets bi-annually
- Prospective audit of clinical activity as a basis for assessing key areas of performance such as the impact of changes in guidelines on specific clinical conditions and patient outcomes. Regular audits are provided in miscarriage and ectopic pregnancy on an annual basis as part of the BWH clinical audit programme

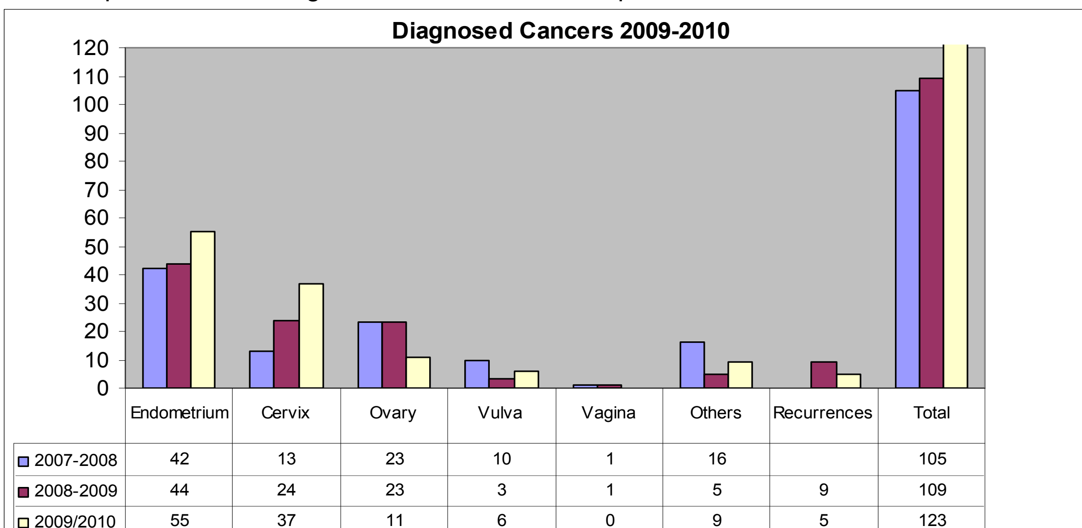
### *GYNAECOLOGICAL CANCER SERVICES*
### *Parveen Abedin, Unit Lead for Gynaecological Oncology, Miss Lisa Parton, Lead Cancer Nurse/MacMillan CNS, Mrs Jane Bennett, Lead Cancer Manager*

**Services**

The Gynaecology Oncology Service is dedicated to the care of women with suspected or confirmed malignancy by providing a comprehensive range of services and developing new initiatives to ensure that the women receive the best possible care within the network and national guidelines. The service underwent a Cancer Peer Review Self Assessment in November 2009 and achieved a Self Assessment score of 97%.

**Activity**

Between April 2009 and March 2010, 835 urgent GP referrals were received and 386 high grade cervical smear referrals were received via the National Screening Programme. The service also received 254 routine referrals.
118 new patients were diagnosed with cancer and 5 patients with recurrent cancer.




| | Endometrium | Cervix | Ovary | Vulva | Vagina | Others | Recurrences | Total |
|---|---|---|---|---|---|---|---|---|
| 2007-2008 | 42 | 13 | 23 | 10 | 1 | 16 | | 105 |
| 2008-2009 | 44 | 24 | 23 | 3 | 1 | 5 | 9 | 109 |
| 2009/2010 | 55 | 37 | 11 | 6 | 0 | 9 | 5 | 123 |

All Cancer Waiting Times Standards were met during 2009-10.

Miss Abedin was appointed as Lead Cancer Clinician for the Trust. Women with low grade cancers are operated on here at the Gynaecology Oncology Unit. Women with suspected or diagnosed high grade malignancy are referred to the Regional Cancer Centre at City Hospital in line with national guidance. Close working relationships with colleagues within the multi-disciplinary team ensures a seamless service of care. The Multidisciplinary Team meetings are attended by Miss Kavita Singh, Consultant Gynaecological Oncologist from the Cancer Centre.

Three Oncology clinics are held weekly supported by the Macmillan Nurse and Clinical Nurse Specialist, Ms Sue Elkin. Additionally, two psychosexual counselling sessions are held. The CNS's also provide a service to the Winfield Clinic at University Hospital Birmingham for patients undergoing pelvic radiotherapy.

**Service Development**

- Phased implementation of a new nurse led Drop-in Clinic is planned providing rapid access for patients with low grade cancers who have been discharged from clinic and have concerns or develop further symptoms.
- The Patient Satisfaction Survey 2009 identified the need to improve patients' access to high quality information regarding all aspects of their treatment trajectory. As recommended by the National Cancer Action Team, following participation in the pilot, the National Patient Information Prescriptions Programme will be implemented. A baseline audit has been undertaken and it is planned to initiate the programme as part of the third wave in 2011.
- Development of the Key Worker leaflet to address issues identified in the Patient Satisfaction Survey.
- Review and changes to administrative systems and the process for tertiary referrals has received positive feedback from our Regional Cancer Centre

**Summary of Clinical Governance**

- The Gynaecology Oncology Team participate in the development of network guidelines and compiling data for network audits.

- The Trust is represented on network groups for Specialist Palliative Care, Lead Cancer Managers, Lead Cancer Nurse Group and the Steering Group for Holistic Needs Assessment. Miss Abedin was appointed as Deputy Chair of the Gynaecology Network Site Specific Group in 2010.

## *PAEDIATRIC AND ADOLESCENT GYNAECOLOGY*
## *Pallavi Latthe, Consultant Obstetrician and Gynaecologist*

**Introduction**

The Paediatric and Adolescent Gynaecology Clinic is now in its 12$^{th}$ year and continues to meet the unique and special needs of girls under 18 with a wide and fascinating range of chromosomal endocrinological and gynaecological problems. The Disorders of Sexual Development clinic at the Children's Hospital, which is attended by Consultant paediatric surgeons, paediatric endocrinologists and clinical geneticists is unique, structured and meets every two months at the Children's Hospital with a multidisciplinary meeting held regularly beforehand where additional cases/other topics are discussed.

**Activity**

| | | |
|---|---|---|
| Numbers of New Patients | = | 80 |
| Numbers of Follow-ups | = | 80 |
| No. of operations | = | 12 |

**Achievements**

Referral pathways have been developed from Birmingham Children's Hospital which are running successfully. Gynaecologist specialising in Paediatric Gynaecology provide advice to medical staff at BCH and do joint operations on either site. A dedicated nurse specialist attends the specialist clinic to provide a more holistic care. We also have the regional preceptorship in this area for interested trainees in the West Midlands. Miss Latthe has been voted to sit on the national committee of Brit SPAG (2010-2013) and invited to lecture at national meetings in this area. The first publication was accepted in PAG in recent years.

**Plans for 2010/2011**

- Development of more patient information leaflets
- Audit of satisfaction with our services
- Develop a transition clinic to be run regularly along with endocrinologists.

## *MENOPAUSE SERVICE*
## *Elaine Stephens, Specialist Nurse and Dr Jenny Williamson, Associate Specialist*

**Service**
The menopause team consists of Dr Jenny Williamson, Associate Specialist and two specialist nurses, Elaine Stephens and Maureen Bristow.
The team provides:
- Two clinics per week
- A helpline service that provides advice and support to patients and healthcare professionals.
- An important resource for General practitioners and valuable support to other gynaecology specialties.

**Activity**
In 2009-10, approximately 300 new referrals were seen.
Referrals for women requiring specialist management are regional and the majority of women seen within the clinic require fall into the following categories:-
- Women who have specific medical problems or perceived contraindications to hormone therapy that require specialist advice concerning the use of HRT.
- Women who have an early menopause or who have their ovaries surgically removed.
- Women who are having difficulty finding a suitable HRT preparation.
- Women with a family history or personal history of breast cancer.

The team liaise and work with other gynaecology and endocrine specialties to provide continuity of care. They are currently involved in securing funds for 2010/2011 for a joint research study with the Endocrinology Department

Dr Williamson and Elaine Stephens are both council members of the British Menopause Society (BMS) and are responsible for running a local Menopause society which provides education and support for community based GPs nurses and other healthcare professionals.
Working with the BMS they are involved in the provision of educational courses and meetings that are local, national and international.

## *MINIMAL ACCESS SURGERY AND ENDOMETRIOSIS (MASE)*
## *Yousiri Afifi, Consultant Obstetrician & Gynaecologist with special interest in Minimal Access & Reproductive Surgery*

**Service**
The Minimal Access Surgery and Endometriosis (MASE) Unit provides minimal access surgery which allows shorter hospital stays and earlier return to normal activities than conventional “open” procedures which have benefits for patients, health care and society.
It is a tertiary referral unit providing the following services:
- Management of patients with chronic pelvic pain.
- Management of patients with severe endometriosis through multidisciplinary team work. The unit provides a tertiary service for endometriosis management to deal with advanced, infiltrative and recto-vaginal disease.
- Hysteroscopic management of intracavity uterine pathology
- Management of general gynaecological problems using minimal access surgery instead of conventional access.
- Provision of national training centre for advanced laparoscopic surgery. It provides the training site for advanced training skill modules in laparoscopic and hysteroscopic surgery.

The unit includes 3 consultants supported by junior staff. The service is supported by a specialist nurse and chronic pain management team.

**Activity**

- Large series of advanced laparoscopic surgeries were done including:

| Surgical Procedure | Number Performed |
|---|---|
| Hysterectomy | 64 |
| Endometriosis excision for advanced disease | 19 |
| Endometriosis excision for mild and moderate disease | 62 |
| Adnexal surgeries | 74 |
| Myomectomy | 19 |
| Cervical cerclage | 11 |
| Tubal fertility surgeries | 32 |

- Implementation of integrated pathway for chronic pelvic pain including specialised pain clinic implemented during the year.
- Ongoing cooperation with other specialties to integrate minimal access as a preferable access. This includes cooperation with the Infertility and Urogynaecology team.

- New services introduced including laparoscopic cerclage and myomectomy. Laparoscopic cerclage is offered to patients with recurrent pregnancy loss with failed or impossible vaginal cerclage. The referral is arranged with the obstetric team. Laparoscopic myomectomy for fibroids with uterine size less than 18 weeks and fibroid less than 12 cm in diameter and 4 in number.
- Four different types of advanced endoscopic courses have been provided. This is to be added to 3 basic, intermediate and special courses for postgraduate training.

**Clinical governance summary**

- Practice reviewed with the new NICE guidelines for Laparoscopic hysterectomy and cerclage.
- New Patient information leaflets have been arranged including national guidelines and local outcomes.
- Monthly Multidisciplinary minimal access meeting: includes in addition to MASE consultants and registrars, histopathology, radiology, pain, ano-rectal and urology consultants. The meeting discuss the complicated and severe cases of endometriosis.
- Clinical audits completed in 2009-2010 included:
    - Laparoscopic hysterectomy audit: This audit examined the outcome of LH including complications, hospital stay and patient satisfaction.
    - Laparoscopic entry : This audit examined the safety guidance for entry technique included distance of insertion for primary entry.
    - Laparoscopic cerclage

## *OUTPATIENT HYSTEROSCOPY*
## *Justin Clarke, Consultant Obstetrician and Gynaecologist*

The outpatient 'ambulatory' hysteroscopy service consists of seven weekly clinics (4 consultant-led, one Lecturer clinic, one GP specialist and one nurse hysteroscopist). The majority of clinics are 'see & treat' clinics, where diagnosis is made and where possible treatment instigated with the aim of providing a safe, efficient, patient-centred 'one stop' service. The ambulatory hysteroscopy unit is the largest in the UK and one of the very few who can offer therapeutic services. Innovating in this way has allowed increasing operating capacity, lessening the pressure on inpatient formal operating theatre facilities, whilst providing safety and convenience to our patients.

**Services**

- Menstrual Disorders Clinics
- Post-menopausal bleeding clinics
- Office hysteroscopic sterilisation
- Office Endometrial Ablation
- Retrieval of lost coils and contraceptive advice
- Investigation & treatment of reproductive problems (recurrent pregnancy loss and infertility)

During the year a CQUIN related to increasing the number of women who undergo hysteroscopy in an outpatient setting was achieved. By 31.3.2010, the proportion of women undergoing hysteroscopy in theatres had been reduced from 31% (March 09) to only 15%.

**Activity**
In 2009/2010 over 1500 women were seen via the hysteroscopy service, primarily with patterns of abnormal uterine bleeding. We also see women with reproductive, contraceptive and fertility problems. 80 endometrial ablations and 110 hysteroscopic sterilisations were performed in the office setting in 2009-10.

During the year a CQUIN related to increasing the number of women who undergo hysteroscopy in an outpatient setting was achieved. By 31.3.2010, the proportion of women undergoing hysteroscopy in theatres had been reduced from 31% (March 09) to only 15%.

**Research and training**
The two consultants running the service have pioneered the development of office hysteroscopy and have written the first book in this field (*Clark & Gupta, 20*05), continue to publish peer reviewed primary research articles and present at both national and international conferences. This along with the training of consultants across the UK and Europe and 'live surgery' demonstrations from the Unit, have given the Unit a national and international profile. The Unit currently holds research grants in excess of £2million running multi-centre clinical trials in abnormal uterine bleeding. The Unit has published widely in 2009-10 with articles in the BMJ, BJOG and a 'green top' hysteroscopy guideline for the RCOG.

We contribute to training nurse and SpRs in outpatient hysteroscopy as part of the ATSM in hysteroscopy. Two clinical research fellows work within the Unit in a clinical and research capacity.

**Good performance indicators**
- An audit of patient satisfaction with the PMB hysteroscopy service reported satisfaction rates in excess of 90%.
- All waiting targets for diagnosis of PMB within 31 Days from referral met
- 2:1 New : Follow up ratio
- >95% clinics covered (i.e. vacant, cancelled clinics <5%) due to innovative, flexible and multi-disciplinary working patterns

**Clinical Governance**
- Anonymised, encrypted electronic databases of activity allowing prospective, complete data for auditing clinical practice
- Bi-annual PMB pathway multidisciplinary meetings
- Review of all cases and histology results of patients seen in nurse-led clinic by lead clinician
- Compliance with regular reviews of research practices by R&D department

## *UROGYNAECOLOGY (PELVIC FLOOR MEDICINE)*
## *Phil Toozs-Hobson, Clinical Lead*

The department consists of 3 consultants, one subspecialty trainee, an ATSM trainee and 4 clinical nurse specialists. Pelvic floor medicine has had another successful year. In particular the success of the community clinics has been consolidated and there is planned expansion of these to include conservative therapies closer to home. Clinics have again increased in response to demand and in particular more nurse led services have been introduced. As a direct consequence, activity has again increased in terms of patient throughput. This again is in contrast to the national trend where demand is decreasing. High theatre throughput has been maintained.
Additionally a second "joint" clinic has been introduced where 2 of the consultants work side by side to enable smoother working, both in terms of keeping to time and also to junior supervision and training
The specialised diagnostics has been expanded by introducing an electronic bladder diary system.

**Other key developments and achievements**
- Increased multidisciplinary team meetings to twice a week
- Appointed first ATSM trainee
- Continue to be at the forefront of developments in the use of Botulinum toxin in pelvic floor medicine
- Have completed the POPPY study in conjunction with physiotherapy
- Secured major funding for a study of bladder wall ultrasound from the HTA
- Over 10 publications and several abstracts presented internationally
- Expanded the joint colorectal clinic and paediatric links
- Organised a 2 day region wide training day for SpR's in care of the elderly as part of raising standards in training

### *GYNAECOLOGY AUDIT*
### *Matthew Parsons, Clinical Audit Lead*

Matthew Parsons is the Clinical Lead for gynaecological audit, and works closely with Jacky Cotton, Head of Nursing to maintain a comprehensive audit programme that fulfils the Clinical Governance Agenda at the Trust. These maintain ongoing core and reactive audits for, amongst others, NICE, NHSLA, RCOG guidelines, and BSUG.

Consultant leads and specialist nurses, consistent with special interest work, undertake and supervise more junior members of staff in the completion of the necessary audits. A decision was taken that reactive audits for personal interest are not supported by the Trust until the central core audit need has been fulfilled.

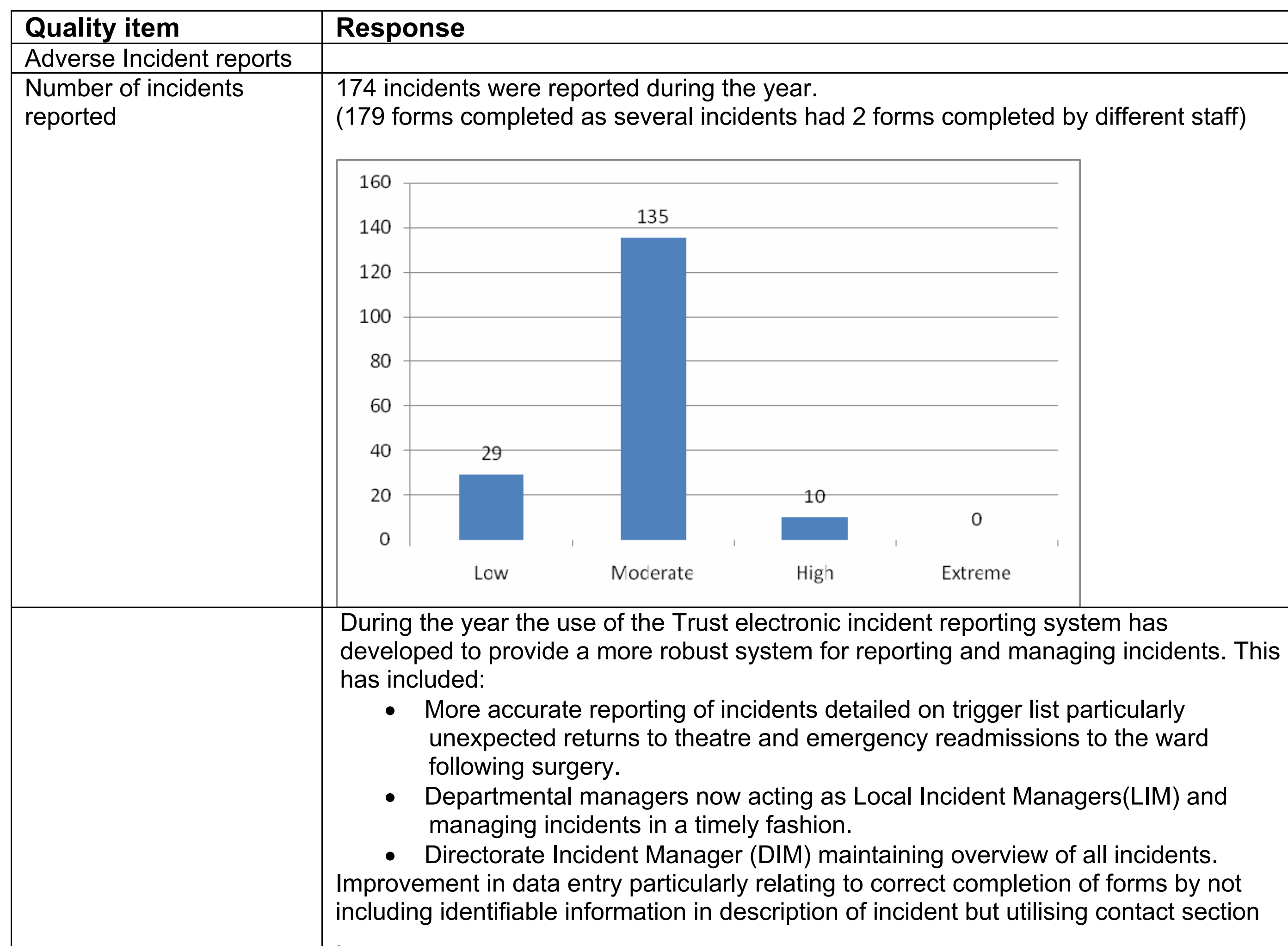
The audit programme is submitted to the CGC, and is available for review on the U-drive at U:\Clinical Governance\Clinical Audit\Directorate Audit Programmes\2010\Gynaecology. Each year, a report of the outcomes / progress against the planned audit activity is produced.

From 2010-11 it is planned to maintain quarterly updates.

### *CLINICAL GOVERNANCE QUALITY INDICATORS*
### *Jacky Cotton, Head of Nursing*

These Quality Indicators are produced on aquarterly basis. Initially they are discussed within the Directorate at the Gynaecology Clinical Improvement Group and are then presented at the Trust Clinical Governance Committee.

The following represents an amalgamation of the 4 quarterly reports from April 2009 – March 2010.

| Quality item | Response |
|---|---|
| Adverse Incident reports | |
| Number of incidents reported | 174 incidents were reported during the year.<br>(179 forms completed as several incidents had 2 forms completed by different staff)<br> |
| | During the year the use of the Trust electronic incident reporting system has developed to provide a more robust system for reporting and managing incidents. This has included:<br>• More accurate reporting of incidents detailed on trigger list particularly unexpected returns to theatre and emergency readmissions to the ward following surgery.<br>• Departmental managers now acting as Local Incident Managers(LIM) and managing incidents in a timely fashion.<br>• Directorate Incident Manager (DIM) maintaining overview of all incidents.<br>Improvement in data entry particularly relating to correct completion of forms by not including identifiable information in description of incident but utilising contact section<br>. |

| Quality item | Response |
|---|---|
| Summarise changes in practice resulting from incident reports | Several incidents reported by laboratories relating to poor labelling of specimens or request forms. All staff in Out Patient and Ward settings reminded of need to ensure all details on forms are completed appropriately and consent forms for disposal are sent with products of conception.<br><br>Incident forms completed where departments attendance at Resuscitation training fell below 85% enabling close monitoring of attendance by managers and action taken. |
| **Adverse health care event**[1] | |
| | During the year, particularly in Quarter 4, an increase in adverse health care events was noted. This included patients who unexpectedly had to return to theatre and patients readmitted to the ward with postoperative complications. This resulted in the Directorate undertaking internal investigation comprising of:<br>• In depth case note review by Clinical Director<br>• Audit of outcomes of LAVH surgery over previous 12 months<br>Results reported by Clinical Director to Medical Director. |
| Summarise improvements resulting from adverse health care events | Monthly gynaecology morbidity meetings to be implemented in 10-11 to examine adverse health care events by clinicians |
| **Near misses**[2] | |
| List new near misses | 1. 2 reports relate to 1 incident of violence from patient admitted for major surgery on day of operation. Removed from premises by police and later sectioned under Mental Health Act.<br>2. 2 reports relate to 1 incident whereby a specimen of a vulval wart was mislabelled. Consultant identified issue when received results as she knew the patient she had taken biopsy from and recognised results did not match that patient.<br>3. Patient readmitted to ward following subtotal hysterectomy with wound infection was not reviewed for over 24 hours following admission. Now formal complaint<br>4. Uncertainty about rhesus status of patient. Ward staff informed she was negative but when went to administer anti-D before discharge patient informed staff she was rhesus positive. Discrepancy due to sample being weak.<br>5. Misoprostol prescribed for patient admitted as threatened abortion before confirmation of non-viability of pregnancy by scan.<br>6. Difficulty contacting on-call haematologist. Cross-match required for emergency patient ?ectopic. Haematologist on site in Norton Court but problem with reception on mobile.<br>7. Patient fell whilst getting out of bed but no injury sustained<br>8. Obstetric patients 38 & 40/40 pregnant admitted to ward overnight due to lack of capacity in Maternity. No midwife on ward.<br>9. Patient transferred from Roberts Nursing Home for scan to check ?ovarian cyst. Accompanied by doctor and anaesthetist who did not hand over but left patient to be taken to EPAU by ambulance crew. Patient had ruptured ectopic and required resuscitation then taken directly to theatre.<br>10. Crash call submitted for patient with difficulty breathing. Team already dealing with incident on Delivery Suite. Medical staff had been summoned due to deterioration of patient so they managed patient until team members could be released. Patient managed appropriately & recovered.<br>11. Patient transferred from Selly Oak A&E late evening with nausea & vomiting in pregnancy. Medical staff unable to review her following admission overnight as required on Delivery Suite. Consultant on call contacted who arranged for patient to be assessed. |

<table>
<tr><td>Summarise changes in practice resulting from health care near misses</td><td>2. Two stage checking system implemented. First details are checked with patient then with clinician. Secondly log now kept of all specimens taken in Out Patients. Improved preparation and consideration of support services available when booking additional clinics<br>3. Nursing staff reminded to escalate up to consultant if difficulties experienced with availability of junior staff to review patients.<br>6. Switch board to use telephone extension in on call room from Norton Court if no reply on mobile.<br>7. Exceptional circumstances: agree strategy with Maternity Directorate for risk assessment including nursing staff if occurs in future.<br>8. Transfer policy reiterated to staff at Roberts Nursing Home</td></tr>
<tr><td>Root Cause Analyses</td><td>List the RCAs performed this year:<br>Mislabelling of Specimen in Gynae Out Patients</td></tr>
<tr><td>List the current year's RCA action plans and their start and end dates:</td><td>
<table>
<tr><td>RCA Title</td><td>Start date</td><td>End date</td><td>All actions signed off by Clinical Director as completed date</td></tr>
<tr><td>1. Mislabelling of specimen</td><td>31.12.09/x</td><td>31.12.09/x</td><td>Completed</td></tr>
</table>
</td></tr>
<tr><td></td><td>Summarise improvements made in response to RCA recommendations:<br>1 New checking procedure of specimens implemented in Out Patients<br>2. Log of specimens implemented</td></tr>
<tr><td>Patient Feedback</td><td></td></tr>
<tr><td>Main items of patient feedback</td><td>1. CQC Inpatient Survey for 2009<br>Trust performed extremely well with 80% of questions scored in highest 20% of Scoring Trusts.<br>2. CQC Out Patient Survey<br>Trust did not score so well with issues raised about waiting times and general issues about appointments<br>3. Waiting Times in Out Patients<br>4. Changes to appointments in Out Patients</td></tr>
<tr><td>Summarise improvements resulting from patient feedback</td><td>Out Patients: Major review of capacity was undertaken which resulted in rescheduling of clinics to improve capacity. Additional medical cover was provided by consultant locums and more stability was planned by appointing to substantive posts</td></tr>
<tr><td>Complaints</td><td></td></tr>
<tr><td></td><td>A total of 52 formal complaints were received during the year, a considerable increase on the previous year as seen from the graph below. In addition there were several complaints raised in other directorates that required gynaecology input and also PALS concerns that required full investigation and action.</td></tr>
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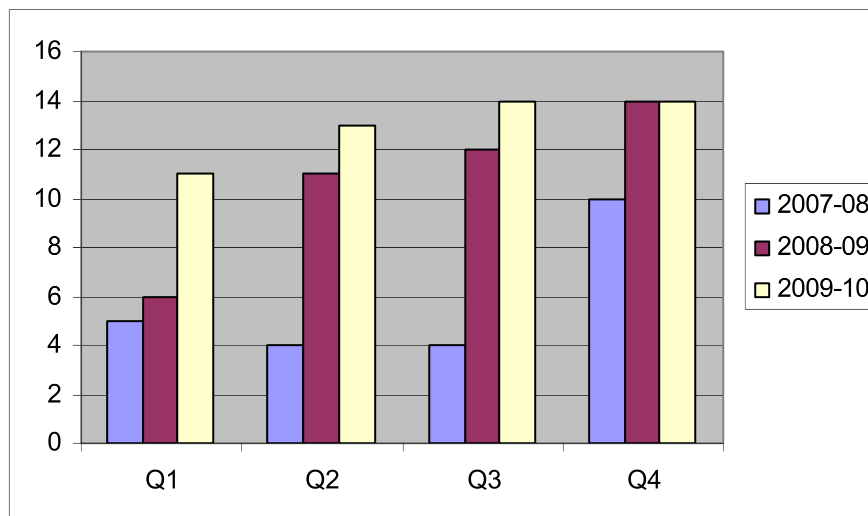
**Complaints**




During the year, changes in legislation resulted in several changes to Trust Policy. The main changes involved agreeing deadlines for responses with patient and where concerns covered several units, one Trust would act as co-ordinator for a single response. This proved challenging particularly in meeting agreed timescales.<br>
To improve performance, for 2010-11, Directorates have been set a target of ensuring 80% of responses are sent out on time.

Another change resulted in patient's being able to lodge a complaint at the same time as a legal claim which has resulted in duplication of work within the Directorate and Legal Department.

Although concerns were varied, the main themes included:

- Elements of surgical care
- Out Patient consultations with medical staff
- Administrative processes of outpatient appointments including booking, amending and informing patients and GPs of DNAs.
- Issues relating to eligibility for funding for fertility care

Several patients were dissatisfied with responses and required a lot of support in dealing with their concerns.<br>
One patient took their concerns to the Ombudsman but this was not upheld.<br>
The same patient reported 2 nurses to the NMC and outcome from that investigation still outstanding.<br>
One other patient who had submitted several letters of complaint also reported nurse to NMC and outcome from that investigation also still outstanding.

</td>
</tr>
<tr>
<td>Summarise improvements resulting from complaints</td>
<td>

For many of the complaints, explanation / understanding of the patient care pathway by the patient was insufficient so full explanations given.<br>
Other changes included:

- Transfer of care documentation developed.
- Improvements to communication processes following MDT meetings.
- Wound care advice leaflet produced for patients at time of discharge.
- Surgeons instructed not to put suture through Robinson's drain but to suture around tube so integrity of tubing is not affected.
- Administrative processes reviewed.

</td>
</tr>
</table>

| **Claims** | |
|---|---|
| Total claims in progress at 1.4.2009 | 5 |
| Total new claims | 10 All related to medical care |
| Total claims completed | 2 |
| Total claims in progress at 31.3.2010 | 13 |
| Summarise improvements resulting from claims | No recommendations received. |
| | |
| **Clinical Audit** | |
| Titles of Guidelines/Protocols reviewed / implemented | Guidelines reviewed:<br>Oral Bowel Cleansing Guidelines<br>Directorate Risk Management Strategy |
| Titles of audits in core audit programme | Directorate Annual Audit Plan available at: U:\Clinical Governance\Clinical Audit\2009\AuditKit 2009\Audit Plans\Gynae Audit Plans 2009-10.doc |
| Titles of Audits undertaken | 1. Several undertaken on ongoing basis as key performance indicators.<br>2. Surgical complications<br>3. Audit of outcomes of LAVH<br>Record Keeping Audit |
| Summarise improvements resulting from the completed audits | Stamps ordered for medical staff to use with signatures. |
| | |
| **Integrated Care Pathways** | |
| Please list ICPs already implemented | 1. Day case.<br>2. Continence<br>3. Menopause |
| List ICPs in development and target implementation date | Uterine Artery Embolisation 01/05/09<br><br>Elective Inpatient 2010/11 in computerised format |
| List barriers or problems experienced in implementing ICPs | Lack of dedicated staff in Directorate to work on pathways. However, lead / support from Michelle Walshe has progressed work greatly. |
| List ICPs already audited this year | 1. None |
| | |
| **Infection Control** | |
| Number of new MRSA cases | MRSA bacteraemia: 0<br>MRSA isolates: 19<br>Cases of C Difficile: 0<br><br>Location of detection of MRSA isolates:<br>• 15 at preoperative assessment screening<br>• 2 detected on admission to Ward 7,<br>• 1 patient who attended Gynae OPD<br>• 1 patient who was transferred from another unit<br>**Nursing staff commenced screening all emergency admissions from 1st February in advance of DH guidance deadline of 31.12.2010.** |

# Gynaecology Directorate

| | |
|---|---|
| Hand Hygiene Audits | Average results from July 2009 – March 2010<br><br>Ward 7 81.5 %<br><br>Ward 8 88.3% |
| Action taken | Graphs on display<br>Discussed at ward meetings.<br>Nursing staff to continue to challenge other staff groups particularly issues with not being bare below elbows and cleaning hands after contact with patient environment. |
| Number of inoculation injuries | 6 |
| | |
| **Standards for Better Health** | The Directorate undertook regular self assessments and considered it was compliant with SfBH.<br>However, there were several standards where it was felt there was Insufficient Assurance i.e. insufficient evidence available within Directorate. Directorate Action Plan developed.<br>These are listed below. |
| **Domains** | **Standards** |
| 1. Safety | C4a Medicines management IA<br>C4e Waste Management IA |
| 2. Clinical & Cost Effectiveness | C5b Clinical supervision & Leadership IA |
| 3. Governance | C7b Probity IA<br>C8b Organisational & personal development IA |
| | |
| **NICE Guidance** | |
| NICE Guidance implemented | 1. CG 74 Surgical site Infection – Gap analysis produced for Trust. Current practice within Gynaecology compliant with guidance<br>2. CG92 Venous thromboembolism: reducing the risk. Gap analysis in progress Trustwide |
| | |
| **National Confidential Enquiries: NCEPOD Reports** | (see table below) |

| **NCE Title** | Start date | End date | All actions signed off by Clinical Director as completed date |
|---|---|---|---|
| 1. Emergency Admission (2007) | 01.01.09 | 30.11.09 | Ongoing additional audit undertaken on post-take ward rounds |
| 2, Acute Kidney Injury | Oct 09 | 30.3.10 | |
| 3. Caring to the end? | Nov 09 | 1.7.10 | √ M Afnan |

| | |
|---|---|
| | |
| **Essence of Care Indicators** | |
| | Audit of all Indicators took place in September 2009 of care delivered to 20 patients on Ward 7 and 20 patients on Ward 8.<br><br>**Comparison to 2008 Audit**<br>**Nutrition** Improvement noted in assessment.<br>**Pressure ulcers** lower number of Waterlow score assessments on admission but majority were emergency admissions.<br>**Self care** lower % of assessment documented on admission but majority not assessed were emergency admissions.<br>**Record Keeping** marked decrease in fluid charts being labelled and completed correctly |

# Gynaecology Directorate

| Indicator | Findings |
|---|---|
| 1. Communication | 90% of the patients have documented evidence of communication needs and where appropriate a documented plan of care is evident<br>**Action:** Ensure needs are assessed for all patients.<br>Where English is not first language clearer documentation of language spoken and action taken. |
| 2. Continence | Initial assessment of continence needs is evident and action plans are present where needed. However there is no distinction between bowels and bladder.<br>**Action:** Remind staff to document both bladder and bowel assessment. |
| 3. Hygiene | 100% of patients were assessed for personal hygiene needs on admission. 100% of patients have individual documented plan of care. There is no evidence of assessment of oral hygiene.<br>**Action:** Review assessment to include oral hygiene.<br>Staff to be reminded to document oral hygiene assessment until opportunity arises to review documentation |
| 4. Nutrition | 100% of patients have a nutrition assessment tool completed on admission.<br>75% (1) patients are weighed on admission and any patient found to be at nutritional risk is referred to the dietician.<br>**Action:** Continue to ensure nutrition assessment completed.<br>Ensure all patients weighed on admission |
| 5. Pressure Ulcers | 55% of patients have Waterlow risk score documented on admission and where appropriate there is evidence that this has been reassessed and evaluated.(2)<br>**Action:** Ensure all patients have Waterlow risk score documented particularly emergency admissions. |
| 6. Environmental / Privacy and Dignity | When looking at the ward environment the audit was positive.<br>3 monthly environment audits are carried out.<br>Positive feedback is given via Patient TV questionnaires with regards to respect of privacy and dignity for both wards.<br>**Action:** None |
| 7. Record Keeping (3) | Where appropriate all monitoring charts were present and 100% of the observation charts were labelled with both patients name and unit number. However only 25% of fluid charts had both name and unit number.<br>37.5% of fluid charts were totalled up completely.<br>**Action:** Ensure all charts labelled correctly and totalled up |
| 8. Safety | 100% patients audited had an initial social assessment documented on admission including ADL.<br>55% patients have a falls assessment completed(4). No risks were identified on the sample group.<br>**Action:** Monitor usage of assessment tool. |
| 9. Self care | 90% of patients had and assessment of lifestyle on admission or at pre-operative clerking. No significant health risks were identified in the sample group.<br>**Action:** None |
| 10. Promoting Health | The amount of information for patients was limited but information on how to obtain this was available.<br>**Action:** Information available but may need to be more visible. Highlight where information can be obtained. |
| **References to above results:** | **Comments**<br>1) Patients not weighed were emergency admissions. Evidence is available that any patient admitted as an emergency who is deemed to be at risk is weighed. Assessment tool is very basic.<br>2) Some patients who did not have Waterlow score documented where emergency pregnancy related admissions however there were some elective admissions.<br>3) An extensive Audit of record keeping is carried out by the Directorate. This audit therefore only looked at monitoring charts used on the wards. All charts had patients name but few had hospital number.<br>4) Some of these omitted where emergency pregnancy related illness. |

# Gynaecology Directorate

| Directorate Specific Indicators: | |
|---|---|
| Emergency readmission rates within 28 days after surgery – Benchmark 5.28% | **Q1** 2.25%, **Q2** 2.29%, **Q3** 2.05%, **Q4** 1.68%<br>This continues to be significantly below the benchmark |
| Unplanned overnight stay rate<br>Benchmark 5% | **Q1** 6.31%, **Q2** 2.09%, **Q3** 3.57%, **Q4** 4.48%<br>This is now monitored closely on a monthly basis.<br>All overnight stays judged to be due to unavoidable clinical reasons. |
| Number of wound infections | Site specific surveillance for hysterectomy patients not undertaken this quarter. However any patient readmitted with wound infection is reported to Infection Control team for further investigation |
| Number of new pressure sores | Nil |
| Number of Deaths | 1 patient admitted for terminal care |
| | |

**Birmingham Women's Fertility Centre**

Clinical Pregnancy Rate, IVF +ICSI 2009/10

45
40
35
30
25
20
April May June July August Sept Oct Nov Dec Jan Feb March

| | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| Number of Egg collections (PR)* | 115 (37%PR*) | 135 (36% PR*) | 114 (38%) | 117 (36%) |
| Number of fresh embryo transfers (PR)* | 100 (42%PR*) | 109 (39%PR*) | 100 (41%) | 103 (41%) |
| Number of frozen embryo transfers (PR)* | 44 (32%PR*) | 43 (28%PR*) | 35 (34%) | 46 (35%) |
| Number of cancelled cycles (% of all cycles) | 10 (8%) | 13 (9%) | 10 (8%) | 8 (5%) |
| Number of OHSS | 2 (1.6%) | 2 (1.5%) | 2 (1.6%) | 2 (1.7%) |
| Number of admissions | 2 | 2 | 2 | 2 |

*PR= Clinical Pregnancy Rate as defined by presence of a fetal heartbeat on scan

| **Productive Ward Initiative** | Productive Ward implementation commenced in September 2009 with Ward 8 as showcase ward then rolled out to Ward 7.<br>Several modules now implemented on both wards.<br>Benefits realised include:<br>• Storage areas rationalised and de-cluttered.<br>• Reduction in stores held on ward<br>• Labelling standardised for supplies across Trust<br>• Increase in direct patient care time<br>• Patient Observation Guidelines developed.<br>• New White boards installed to support Patient Status at a Glance and reduce interruptions |
|---|---|
| **General feedback:** | |
| Trends | |
| Please list trends in items reported on this form<br>**Which are cause for concern** | 1. Increase in number of complaints although no obvious trends identified.<br>2. Increase in number of patient harm incidents – no obvious trends but several have resulted in formal complaints. |
| Which are cause for optimism | 1. Improvement in implementation of Datix within Directorate<br>2. Progress made with implementing Productive Ward. |
| Please make general comments about quality issues, initiatives in the Directorate | Changes to nursing practice and ward management in line with Productive Ward.<br>Plans to implement Monthly Morbidity meetings in 2010-11 |
| **Sharing Best practice** | |
| Give examples of best practice which you think would be useful to others | Systems implemented for ensuring all staff know cleaning status of medical equipment and bed spaces.<br>New storage and labelling systems for stores |

**Definitions from 'Organisation with a Memory';** London; The Stationery Office 2000; xii

**1. Adverse health care event**
An event or omission arising during clinical care and causing physical or psychological injury to a patient.

**2. Health care near miss**
A situation in which an event or omission, or a sequence of events or omissions, arising during clinical care fails to develop further, whether or not as the result of compensating action, thus preventing injury to a patient.

## *NEONATOLOGY*
## *Imogen Morgan, Consultant Neonatologist & Clinical Director for Neonatology*

**Overview of 2009/10**

This has been a very positive year for the Neonatal Service. The most obvious areas of progress have been the physical decant of the whole service to new premises in March 2009, with planning and handover of the new neonatal centre (OP clinics and meeting rooms 29th July 2010. Clinical area 8th September 2010) and the implementation of the first phase of joint working with BCH for the care of Neonatal Surgical patients with preparation for the staffing and equipping of extra cots to facilitate this service, and appointment of Alison Bedford Russell in December 2009.

As important has been the introduction of a robust and reliable clinical information system the Badger system, from April 2009. This has data input as far as possible in real time and will greatly increase options for service analysis as well as clinical audit, also allowing prompt transfer of patient information to other services and to primary care.

Nutritional care for all babies is a priority and is now guideline led. Gemma Holder started as Consultant Lead in September, and Julia Ackrill, Neonatal Dietician in June 2010.

Education and training for all staff has been enhanced by the appointment of a Consultant Lead in Education and Training, Rob Negrine, in March 2010. He and the Nurse Educator have developed an integrated teaching programme which should take us forward in many areas.

Appointment of over 20 new Nursing staff has led to development of new training courses, including implementation of equipment training, and appointment of a cot-side clinical teacher, Diana Young, benefiting established staff as well as new learners. We have a new nurse audit lead, Julie Harcourt, and a new discharge planning coordinator, Sally Lennon.

We have worked hard and efficiently to increase workload and turnover steadily, with a total of 1206 babies offered neonatal care. We had to turn away 96 in utero and 40 ex utero transfers. We anticipate the increased facilities offered by the new service will enable us, with appropriate support, to reduce this in future. We were sad to lose Mike Hocking's services this year, and wish him well for his retirement. We also gained and lost the great help of our two locum Consultants, Archana Mishra, and Anjum Deorukkhar, and are grateful to have Melanie Sutcliffe' s continued input in that role.

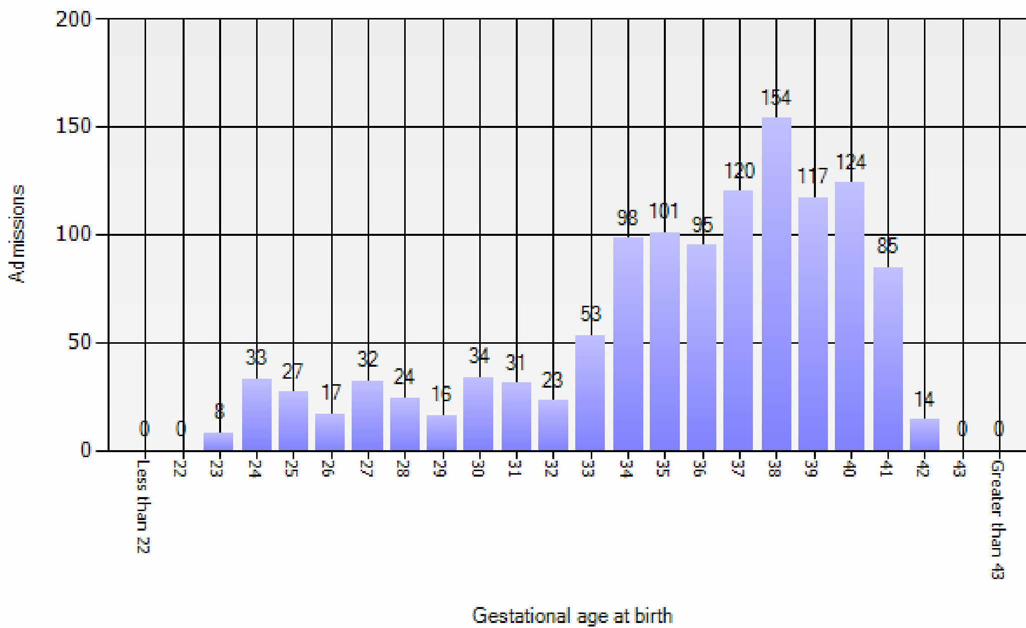
Future service developments anticipated this year include the new Clinical psychologist to provide support to parents and families and also to staff. We have also obtained a newborn simulation manikin which will facilitate a new "drills and skills" programme. We anticipate increased involvement in neonatal research, with 2 multicentre studies currently underway, and excellent nursing involvement.

The Surgical Scheme is not currently fully operational due to delays at BCH. We anticipate these being resolved during 2010/11 with continued increase in surgical workload across the sites.

**Activity**
The tables overleaf show clinical activity for the year 2009/10 as recorded using the Clevermed system which was implemented in this service from 1st April 2009.
**In Utero refusals:** Transfers are monitored monthly. In 2009/10 96 transfers were declined due to lack of NNU capacity.
**Ex Utero refusals:** Datix reporting indicated 40 documented cases refused, this represents a minimum figure. A better reporting system will be introduced during 2010/11.
Tables below relate to activity of the NNU service only. Outcome data here is not corrected for lethal congenital abnormalities or other lethal defects. Fourteen babies with lethal abnormalities were managed on the NNU.

**Neonatal Admissions: (NNU and TC) by gestation in weeks**

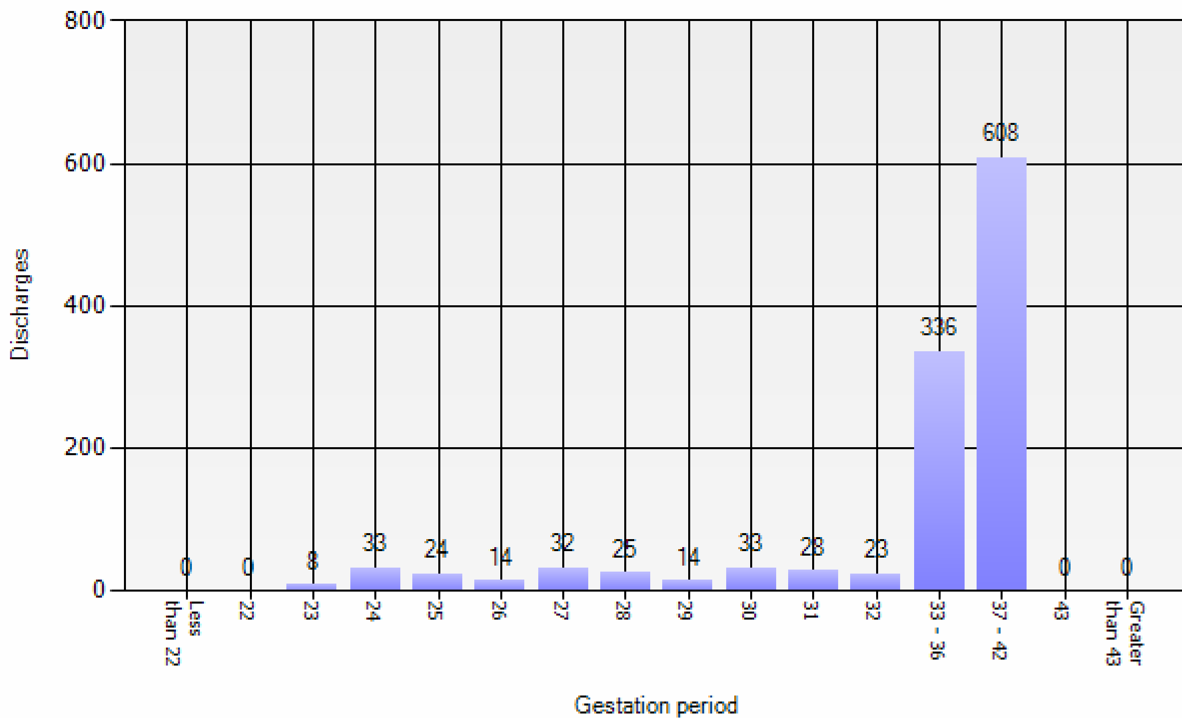
| Referral Type | Less than 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | Greater than 43 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cannot Derive | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | **9** |
| Home Admission | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 7 | 9 | 7 | 5 | 1 | 0 | 0 | 0 | **37** |
| Inborn - Booked | 0 | 0 | 2 | 10 | 11 | 7 | 16 | 13 | 12 | 28 | 18 | 16 | 40 | 87 | 93 | 80 | 101 | 132 | 105 | 110 | 77 | 14 | 0 | 0 | **972** |
| Inborn - Booked Elsewhere | 0 | 0 | 1 | 2 | 6 | 1 | 4 | 2 | 0 | 1 | 7 | 5 | 5 | 3 | 3 | 6 | 7 | 5 | 2 | 4 | 3 | 0 | 0 | 0 | **67** |
| Inborn - Unbooked | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| Postnatal Transfer In | 0 | 0 | 3 | 11 | 6 | 6 | 7 | 3 | 4 | 2 | 5 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 4 | 3 | 0 | 0 | 0 | **68** |
| Readmission | 0 | 0 | 2 | 10 | 4 | 2 | 4 | 4 | 0 | 3 | 1 | 0 | 5 | 3 | 4 | 1 | 2 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | **54** |
| **Total** | **0** | **0** | **8** | **33** | **27** | **17** | **32** | **24** | **16** | **34** | **31** | **23** | **53** | **98** | **101** | **95** | **120** | **154** | **117** | **124** | **85** | **14** | **0** | **0** | **1206** |




Seven babies admitted were from triplet pregnancies, and 186 from twin pregnancies. There were no quadruplets.

### Neonatal Unit Discharges and deaths by gestation in weeks

| Discharge type | Less than 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 - 36 | 37 - 42 | 43 | Greater than 43 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cannot Derive** | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 0 | 3 | 3 | 0 | 4 | 11 | 0 | 0 | **28** |
| **Died (< 7 Days)** | 0 | 0 | 1 | 6 | 2 | 1 | 2 | 4 | 1 | 0 | 0 | 1 | 5 | 5 | 0 | 0 | **28** |
| **Died (> 28 Days)** | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| **Died (7-28 Days)** | 0 | 0 | 3 | 4 | 6 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **16** |
| **Home** | 0 | 0 | 0 | 2 | 2 | 1 | 12 | 10 | 7 | 18 | 11 | 18 | 278 | 481 | 0 | 0 | **840** |
| **Transfer (cardiac care)** | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | **28** |
| **Transfer (continuing care)** | 0 | 0 | 2 | 6 | 8 | 6 | 7 | 7 | 5 | 10 | 11 | 4 | 24 | 13 | 0 | 0 | **103** |
| **Transfer (specialist care)** | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 5 | 13 | 0 | 0 | **24** |
| **Transfer (surgical)** | 0 | 0 | 1 | 10 | 5 | 1 | 3 | 3 | 0 | 1 | 2 | 0 | 14 | 33 | 0 | 0 | **73** |
| **Unknown** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| **Ward** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 28 | 0 | 0 | **33** |
| **Total** | **0** | **0** | **8** | **33** | **24** | **14** | **32** | **25** | **14** | **33** | **28** | **23** | **336** | **608** | **0** | **0** | **1178** |



# Neonatology Directorate

**Care Levels.**
For commissioning, costing and dependency reasons, Neonatal care is counted according to days of care at different levels of intensity and dependency. The highest level is intensive care, then high dependency, special and transitional. This count provides a baseline for future years as well as inter-unit comparison.

| Month | IC Days 2001 | HD Days 2001 | SC Days 2001 | TC days | | Unknown. |
|---|---|---|---|---|---|---|
| April 2009 | 172 | 135 | 590 | 259 | | **0** |
| May 2009 | 173 | 214 | 803 | 313 | | **0** |
| June 2009 | 158 | 231 | 733 | 310 | | **0** |
| July 2009 | 230 | 112 | 867 | 278 | | **0** |
| August 2009 | 236 | 172 | 696 | 292 | | **0** |
| September 2009 | 213 | 154 | 538 | 201 | | **0** |
| October 2009 | 210 | 74 | 682 | 289 | | **0** |
| November 2009 | 129 | 151 | 817 | 276 | | **0** |
| December 2009 | 266 | 146 | 752 | 247 | | **0** |
| January 2010 | 227 | 175 | 750 | 294 | | **0** |
| February 2010 | 186 | 166 | 817 | 282 | | **0** |
| March 2010 | 178 | 192 | 669 | 244 | | **0** |
| **Total** | **2378** | **1922** | **8714** | **3285** | | **0** |

**Respiratory Support**
One major indicator of dependency is the need for respiratory support. This count of days of care at varying levels of support gives us a baseline for future years as well as for inter-unit comparison.

| | Less than 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 - 36 | 37 - 42 | 43 | Greater than 43 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CPAP | 0 | 0 | 53 | 289 | 326 | 214 | 162 | 102 | 14 | 56 | 55 | 23 | 58 | 36 | 0 | 0 | **1388** |
| O2THERAPY | 0 | 0 | 89 | 438 | 477 | 308 | 420 | 336 | 57 | 91 | 101 | 23 | 128 | 226 | 0 | 0 | **2694** |
| VENTILATED | 0 | 0 | 84 | 309 | 252 | 103 | 103 | 74 | 31 | 26 | 43 | 8 | 55 | 132 | 0 | 0 | **1220** |
| Total | **0** | **0** | **226** | **1036** | **1055** | **625** | **685** | **512** | **102** | **173** | **199** | **54** | **241** | **394** | **0** | **0** | **5302** |

This year has seen an increase in the number of babies with surgical diagnoses who are cared for on the NNU. Data derived from the Clevermed system for babies with surgical diagnoses follows.

**Babies with surgical diagnoses (by cot days)**

| Care Level | Total | % of total | Sep-09 | Oct-09 | Nov-09 | Dec-09 | Jan-10 | Feb-10 | Mar-10 |
|---|---|---|---|---|---|---|---|---|---|
| **ITU** | 314 | 34.28% | 23 | 27 | 24 | 108 | 45 | 46 | 41 |
| **HDU** | 275 | 30.02% | 62 | 3 | 29 | 9 | 71 | 23 | 78 |
| **SCBU** | 327 | 35.70% | 21 | 15 | 42 | 54 | 43 | 112 | 40 |
| | 916 | | 106 | 45 | 95 | 171 | 159 | 181 | 159 |

**Perinatal Activity**
The Perinatal Survival and Activity table below reflects whole Trust activity including stillbirths, babies who died before leaving Delivery Suite, and well babies who were cared for outside the NNU. Data is not corrected for lethal congenital abnormalities or other lethal defects. Data is derived from the CCL clinical information system and from Lorenzo. There were 7161 births during 2009/10 in hospital, and 7257 births in total. There were 54 Stillbirths and 57 Neonatal deaths.

| Gestation | No of Babies | Still Births | Live Births | Early Deaths | Late Deaths | Infant Deaths | Total Deaths | Survived |
|---|---|---|---|---|---|---|---|---|
| **No Gest** | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| **<= 24** | 40 | 6 | 34 | 23 | 2 | 0 | 25 | 9 |
| **25:26** | 29 | 4 | 25 | 3 | 5 | 0 | 8 | 17 |
| **27:28** | 44 | 6 | 38 | 5 | 2 | 0 | 7 | 31 |
| **29:30** | 46 | 3 | 43 | 1 | 1 | 1 | 3 | 40 |
| **31:32** | 56 | 5 | 51 | 2 | 0 | 0 | 2 | 49 |
| **33:34** | 139 | 6 | 133 | 1 | 0 | 0 | 1 | 132 |
| **35:36** | 318 | 9 | 309 | 3 | 0 | 0 | 3 | 306 |
| **>= 37** | 6583 | 15 | 6568 | 8 | 0 | 0 | 8 | 6560 |
| **Total** | **7257** | **54** | **7203** | **46** | **10** | **1** | **57** | **7146** |

| Birth weight | No of Babies | Still Births | Live Births | Early Deaths | Late Deaths | Infant Deaths | Total Deaths | Survived |
|---|---|---|---|---|---|---|---|---|
| **No Bwt** | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 3 |
| **<= 499** | 28 | 6 | 22 | 16 | 0 | 0 | 16 | 6 |
| **500: 749** | 38 | 7 | 31 | 11 | 8 | 0 | 19 | 12 |
| **750: 999** | 39 | 6 | 33 | 3 | 1 | 0 | 4 | 29 |
| **1000:1249** | 40 | 1 | 39 | 1 | 0 | 1 | 2 | 37 |
| **1250:1499** | 41 | 2 | 39 | 1 | 1 | 0 | 2 | 37 |
| **1500:1749** | 50 | 3 | 47 | 2 | 0 | 0 | 2 | 45 |
| **1750:1999** | 92 | 4 | 88 | 0 | 0 | 0 | 0 | 88 |
| **2000:2249** | 150 | 3 | 147 | 2 | 0 | 0 | 2 | 145 |
| **2250:2499** | 271 | 3 | 268 | 1 | 0 | 0 | 1 | 267 |
| **>= 2500** | 6504 | 18 | 6486 | 9 | 0 | 0 | 9 | 6477 |
| **Total** | **7257** | **54** | **7203** | **46** | **10** | **1** | **57** | **7146** |

### Inborn neonatal deaths

There were 58 babies who died in BWH during 2009/10 and 8 who died elsewhere. There were 8 deaths of outborn babies in addition.

Causes of inborn neonatal deaths have been divided into the following categories:

| Category | Detail | Number |
|---|---|---|
| **Immaturity** | Non-viable, no resuscitation offered | 12 |
| | Extreme prematurity - resuscitation unsuccessful ∴ not admitted to NNU | 3 |
| | Complications of prematurity | 9 |
| | Infection (including NEC) | 10 |
| | Cardio-respiratory complications | 3 |
| | Abnormal cranial USS | |
| **Lethal congenital anatomical malformation (including pulmonary hypoplasia/hydrops)** | TOP | 2 |
| | TLC | 1 |
| | Unsuccessful treatment | 13 |
| **Infection** | | 1 |
| **TOP** | | 1 |
| **Lethal chromosomal/genetic abnormality** | | 3 |
| **Lethal inherited metabolic abnormality** | | 0 |
| **Birth asphyxia** | | 7 |
| **Birth Trauma** | | 0 |
| **Twin to twin transfusion syndrome** | | 1 |
| **Other/Not known** | | 0 |
| **Total** | | **66** |

**Care of Extremely Immature babies:**
This is monitored annually. For babies born alive at the borderline of viability, resuscitation is not invariably able to be offered, or may not be successful due to extreme immaturity. In 2009/10 resuscitation was offered to 100% of babies born alive above 23+0 weeks gestation, this was not successful in 3, however, who were not admitted to the NNU.

| Gestation | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Number | 1 | 0 | 2 | 0 | 5 | 4 | 0 | 0 | 12 |

**Good Performance indicators**

The QUIP requirement for 2009/10 for neonatal services was submission of data to the National Neonatal Audit Project. This Trust had not previously submitted data to this project. This was achieved due to the implementation of the Clevermed Clinical information system in April 2009. The same system was also implemented in all NNUs across the network and in the surgical ward at BCH allowing sharing of clinical information across all sites to follow the movement of babies. This has been a huge step forward in many respects.

**Clinical Governance**

- There was extensive review of clinical guidelines during 2009/10 largely led by the requirements of the NHSLA Standards for trusts. All new guidelines have been produced in the agreed format, and are compliant with National recommendations including NICE. Many are now available on the Intranet. The Staff Handbook is updated regularly and provides information for all staff on local procedures. It is available electronically to all staff. The Neonatal Formulary has also been upgraded and is available electronically. No drug prescribing off formulary is permitted.
- The main new Clinical Standard relevant to this service during 2009/10 was the Department of Health Toolkit for High Quality Neonatal Services, launched in November 2009. This will be followed by a related NICE Quality Standard for Neonatal Care later in 2010. There has been a NICE guideline on Milk Banks. This has been fully implemented, a new Guideline implemented, and procedures and donor information altered accordingly.
- There has been a NICE guideline for Neonatal jaundice. A local guideline based on this is in development and will be launched during 2010.
  There have been BAPM guidelines on Hypothermia for HIE, and for Palliative Care. A new local guideline for hypothermia has been produced and implemented, and a new Palliative Care Guideline is in development and will be launched during 2010.
- All new NPSA reports relevant to neonatal care have been reviewed and appropriate actions taken including changes in clinical practice. These are reviewed through the monthly Clinical Improvement Group meetings for the Directorate.
- The quality and service changes which have been implemented during 2009/10 which improve compliance with the Toolkit Principles are available in the full Neonatal Annual Report available on the Neonatal G Drive or via any member of the Directorate management team.

**Clinical Audit:**

- 28 clinical audits were completed during 2009/10, all were presented at monthly audit meetings and recommendations discussed and acted on appropriately. A number of clinical changes have resulted from the Audit programme. All junior medical staff complete at least one audit during their 6 month attachment and ANNPs and nursing staff also contribute regularly to the programme.
- Audit plans are based on new Guidelines (local, network or national), complaints or incidents, re-audit of important clinical quality of care issues, and parental concerns. A fuller summary of the audit programme and actions arising is available in the full Neonatal Annual Report available on the Neonatal G Drive or via any member of the Directorate Management Team.

**Care pathways**

- A new Neonatal palliative care pathway was introduced during 2009/10, formal guideline to follow.
- Network Surgical care pathways for a variety of specific conditions are under development.

**Infection Control**

There were no cases of systemic MRSA or C Diff infection during 2009/10 in the neonatal service. Several instances of colonisation of groups of babies with gram negative organisms have been successfully managed by cohorting affected babies, and no cots or sections of the NNU have had to be closed as a result. Personal Protective Equipment precautions are in place, all medical staff wear aprons and gloves for all baby contacts and nursing staff do so for all contacts which may involve contact with infected areas. There has been limited rooming isolation capacity in the decant ward but this will be resolved in the new Neonatal Unit where there are 6 single rooms available, (instead of one) Regular hand hygiene audits are undertaken, and the results have steadily improved throughout the year. It is planned to introduce surgical blues for medical staff during 2010 following move back to the new NNU.

**Risk management**

- There is an active Incident reporting system, and fortnightly Incident report meetings. Mrs Amrat Mahal was appointed as Neonatal Governance lead from 2008. Clinical Governance systems follow the Trust and local Risk Management Strategy procedures. The medical Clinical Governance Lead was Dr M Hocking.
- There is a fair blame incident reporting system in place, (Datix) with regular open meetings reviewing incidents and deriving learning threads, which are distributed by global email and newsletter. Incidents are reviewed at Directorate Clinical Improvement Group meetings held monthly, reporting to the Trust Clinical Governance group. 825 clinical incidents were reported during 2009/10.

Complaints are managed according to Trust procedures. There were 7 complaints during 2009/10. The main change in practice following these was implementation of tighter documentation and training in the neonatal clinical examination after birth. Serious Incidents are managed promptly according to Trust procedures, a summary of the SI review meeting is sent to CGC, and Action Plans deriving from learnt experience from these are monitored through the Directorate Clinical Improvement Group. There were 4 serious incident enquiries during 2009/10. Actions resulting from their review include cessation of use of non standard equipment, tightening of the rules around off formulary prescribing, training in the use of incident reporting, and review of monitor settings across the NNU.

## *CAUSES OF NEONATAL DEATHS*
## *Dr AK Ewer, Consultant Neonatologist*

| | |
|---|---|
| Inborn neonatal deaths - died in BWH | 58 |
| Inborn neonatal deaths - died elsewhere | 8 |
| Outborn neonatal deaths | 8 |
| Inborn neonatal deaths | 66 |

**Causes of inborn neonatal deaths have been divided into the following categories:**

| Category | Subcategory | Number |
|---|---|---|
| **Immaturity** | Non-viable, no resuscitation offered | 12 |
| | Extreme prematurity - resuscitation unsuccessful ∴ not admitted to NNU | 3 |
| | Complications of prematurity: | |
| | Infection (including NEC) | 9 |
| | Cardio-respiratory complications | 10 |
| | Abnormal cranial USS | 3 |
| **Lethal congenital anatomical malformation (including pulmonary hypoplasia/hydrops)** | TOP | 2 |
| | TLC | 1 |
| | Unsuccessful treatment | 13 |
| **Infection** | | 1 |
| **TOP** | | 1 |
| **Lethal chromosomal/genetic abnormality** | | 3 |
| **Lethal inherited metabolic abnormality** | | 0 |
| **Birth asphyxia** | | 7 |
| **Birth Trauma** | | 0 |
| **Twin to twin transfusion syndrome** | | 1 |
| **Other/Not known** | | 0 |
| **Total** | | **66** |

**Extreme prematurity**

Gestation of babies not offered resuscitation because of non-viability

| Gestation | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Total |
|---|---|---|---|---|---|---|---|---|---|
| Number | 1 | 0 | 2 | 0 | 5 | 4 | 0 | 0 | **12** |

**Neonatal Research and Publications:**
During the last year the research activity on the Neonatal Unit at BWH continued in a number of areas outlined below. We had 2 full time research fellows and 3 research active support nurses, A further 2 research fellows were appointed in Mar 10. In addition we have support from a MRCN funded neonatal trials support nurse. All medical staff SpR and above are encouraged to gain training in GCP in order to support recruitment to clinical trials. A number of clinical SpR trainees also undertook research projects during their clinical attachments (see presentations).

**Ongoing Research Projects**

**Follow-up of Pulse Ox Study** (Chief Investigator Dr AK Ewer) – this HTA funded multicentre study recruited over 20 000 patients between Jan 08 and Feb 09. One year follow-up of all patients was completed in Feb 10. Analysis is now complete and will be reported in October 10.

**Tissue Doppler assessment of PDA in preterm infants (**Investigators Dr R Parikh, Dr RJS Negrine, Dr SV Rasiah, Dr AK Ewer) X Babies were recruited to this study. Results have been presented at international and national meetings. Publication to be submitted.

**Effect of methadone on QT interval in newborn infants** (Investigators Dr R Parikh, Dr G Holder, Dr AK Ewer). 52 patients were recruited to this case control study between June 08 and August 09. Analysis was completed in early 2010 and the data has been presented and submitted to Arch Dis Child for publication.

**Outcome of gastroschisis** (Investigators Dr P Chandra, Dr SV Rasiah, Dr AK Ewer). Over 100 babies with gastroschisis were analysed to assess outcome. Presented at national meetings. Publication to be submitted

**BOOST II Study** (Principal Investigator Dr AK Ewer, Research support nurses M Dixie, M Thennatumadam, C Plummer, R Jackson). Recruiting centre to this national study. 28 patients recruited between 1/4/09 and 31/3/10. Recruitment is ongoing (current total 42 babies).

**New research projects**

**Tissue Doppler assessment of hypotension in preterm infants (**Investigators Dr A Singh, Dr RJS Negrine, Dr SV Rasiah, Dr AK Ewer). Project commenced Mar 2010 - ongoing.

**Outcome of antenatally diagnosed CNS malformations** (Dr A Walker, Dr SV Rasiah, Dr AK Ewer). Project commenced Mar 2010 - ongoing.

**Research income**
Pulse Ox study NHS Health Technology Assessment £ 940 787. Funding from Mar 07 - Feb 10.

**Research Output**
3 Peer reviewed papers (+ 2 in press)
3 presentations at international meetings
15 presentations at national meetings

## *CLINICAL SUPPORT DIRECTORATE*
## *Mrs Rosey Monaghan, Associate Director Clinical Support*

### Overview

Clinical Support Directorate has had another busy year in 2009/10 supporting and responding to the demands of the clinical directorates within the trust. The directorate has worked closely with the clinical teams to improve patient experience and support them to deliver the best care possible. We have also provided services to external organisations across the UK through service level agreements and contracts to meet their requirements. These services include direct access for GPs for ultrasound, and clinical chemistry services to North Thames Health Community.

Clinical Support directorate comprises 4 Operating Theatres, Radiology Services, Laboratories (Cellular Pathology, Microbiology, Haematology and Clinical Chemistry), Physiotherapy and Medical Physics.

There have been changes in the management in clinical support during the past year. I took over the substantive post in February 2010 having been preceded by an acting manager and an interim manager. The previous substantive manager left in July 2009.

All the laboratories in the trust are Clinical Pathology Accredited (CPA). In line with The Human Tissue Authority standards the trust has refurbished the mortuary facilities. Despite some setbacks, but through the hard work of Linda Bentley and the pathology team, the work will be completed in the summer of 2010.

Managing the clinical workload in radiology has been challenging. Some ultrasound work was outsourced but there has been a significant reduction in backlog of gynaecology scans. The department staffing has been restructured and the department is fully staffed with well qualified staff. Close working with the antenatal clinics have resulted in improved patient flow and better customer satisfaction.

The activity in gynaecology theatres continues to change as new procedures and practice developments come on stream.  Activity in obstetrics theatres has increased and is becoming more complex as a result of the success of the Artificial Conception Unit (ACU) and the Fetal Medicine Department.

The Quality Manager supports the laboratories with maintaining the required external inspections/standards. The Directorate has improved its reporting of internal risks and incidents using the web-based Datix incident reporting system.

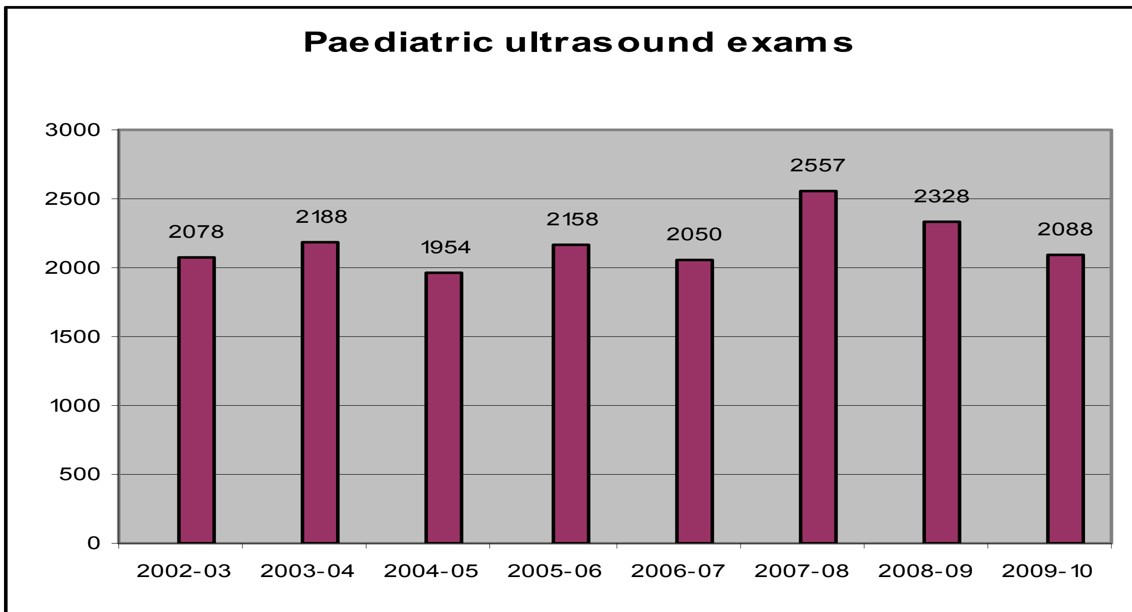
Infection Control standards have been maintained and work has taken place to improve standards within the directorate. The Infection Control team has been working across the directorate setting action plans where required and working with staff on  Hand Hygiene Audits and Work Place inspections to make words into actions.

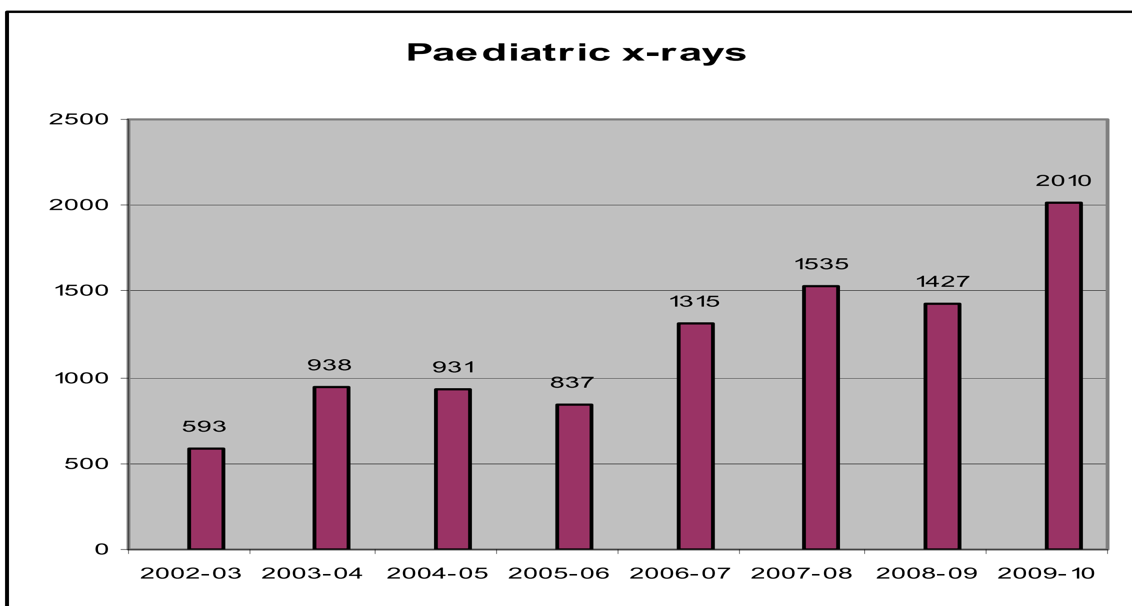
The activity levels in each area are demonstrated in the individual sections.

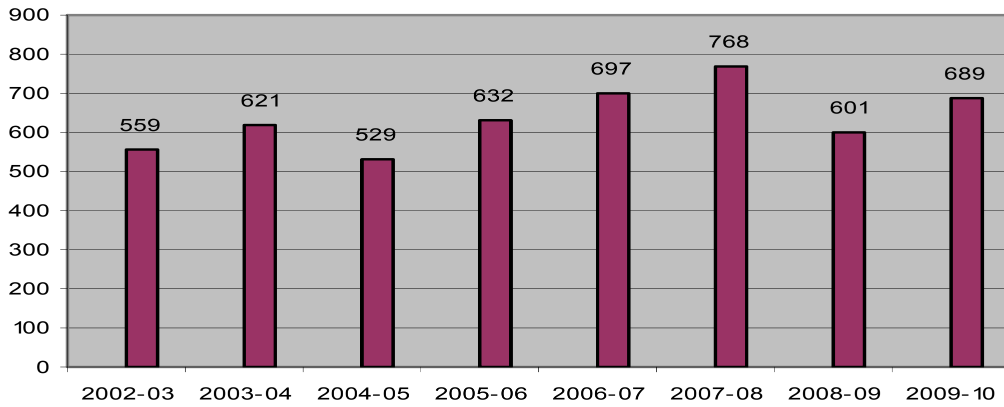
***RADIOLOGY AND ULTRASOUND***
***Dr Josephine McHugo Consultant Radiologist and Head of Speciality***

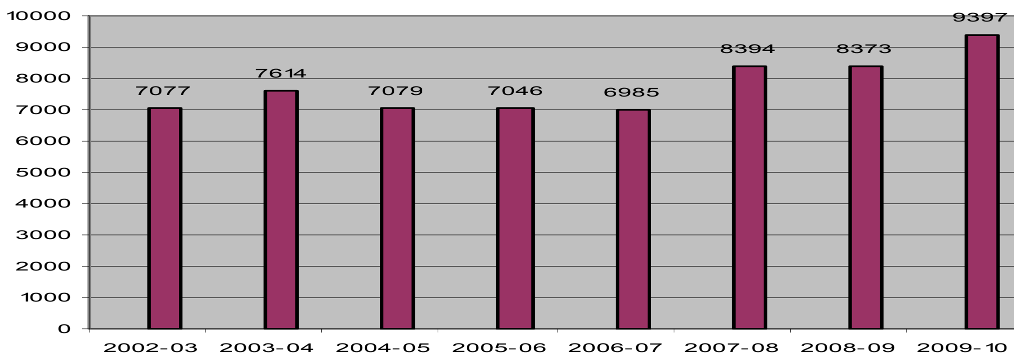
**Speciality/Service**

- The department provides a diagnostic imaging service to all patients groups within the Trust – obstetric, gynaecology and neonatology. In addition, it provides a direct access gynaecological ultrasound service to GPs.
- MRI and CT continue to be provided by our Consultant Radiologist at ROH and UHBFT
- This department provided 57,747 episodes of care last year, an increase of approx 6.5% from 2007-8 and 41% increase over a 5 year period from 40,850 to 57,747. This has been achieved with little increase in staff and an ongoing Consultant Radiologist vacancy.




Hystero-salpingograms-HSG'S
900
800
700
600
500
400
300
200
100
0
559
621
529
632
697
768
601
689
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10


Gynaecology Ultrasound
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
7077
7614
7079
7046
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8373
9397
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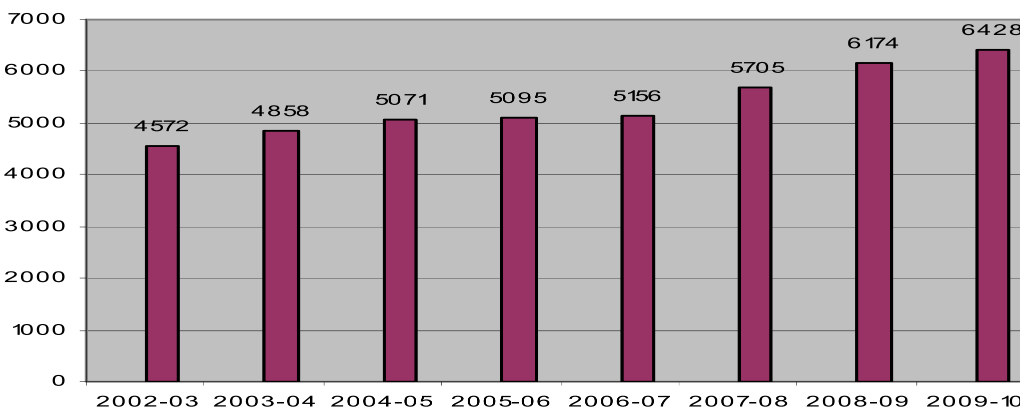
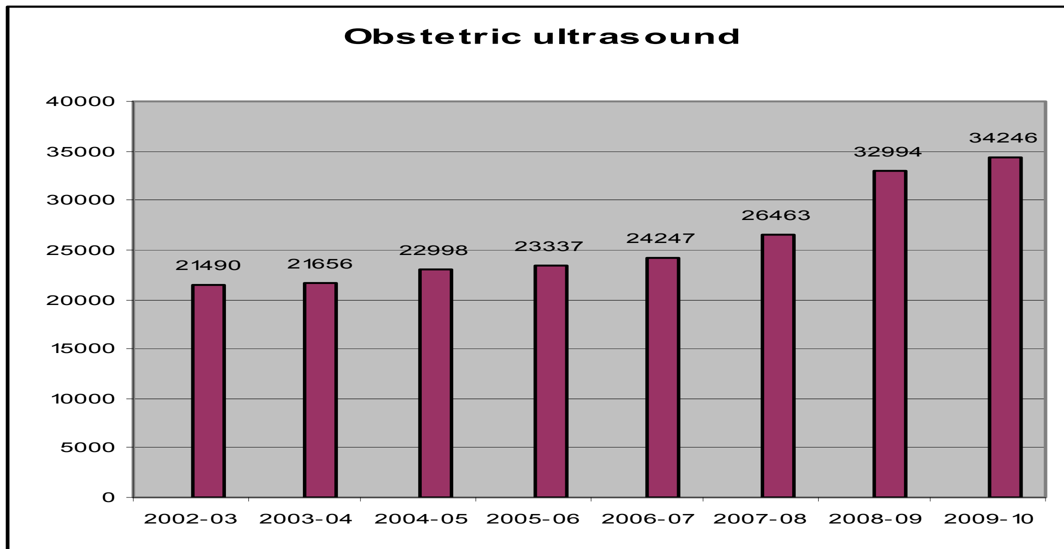
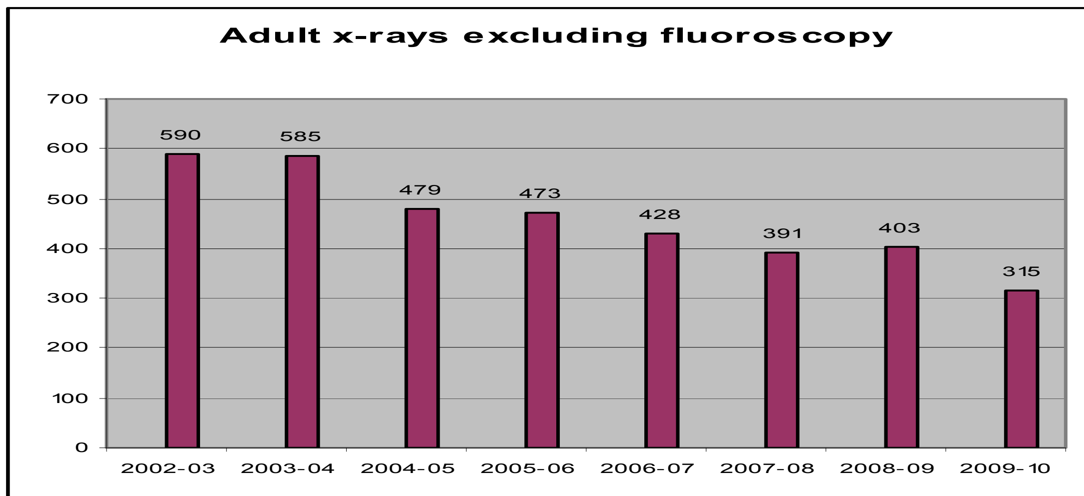
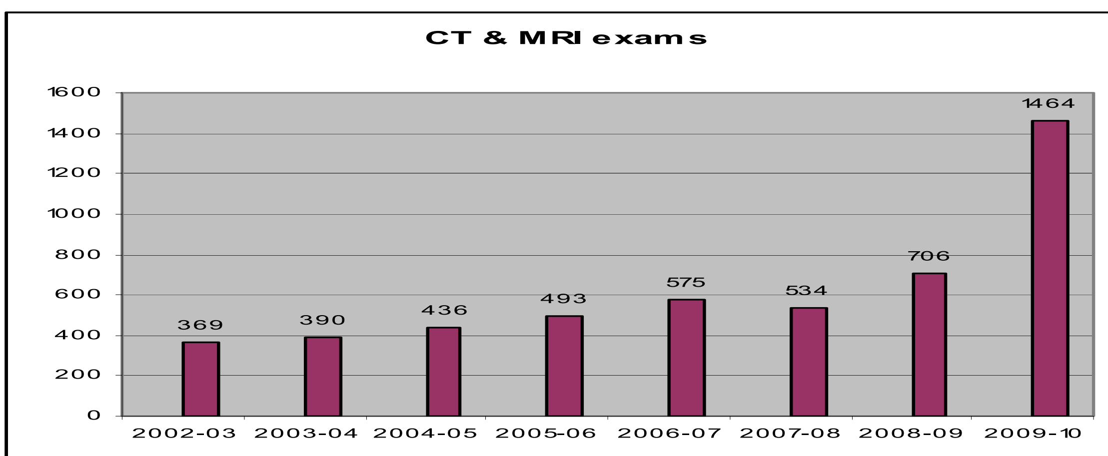
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10


Early pregnancy ultrasound
7000
6000
5000
4000
3000
2000
1000
0
4572
4858
5071
5095
5156
5705
6174
6428
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10



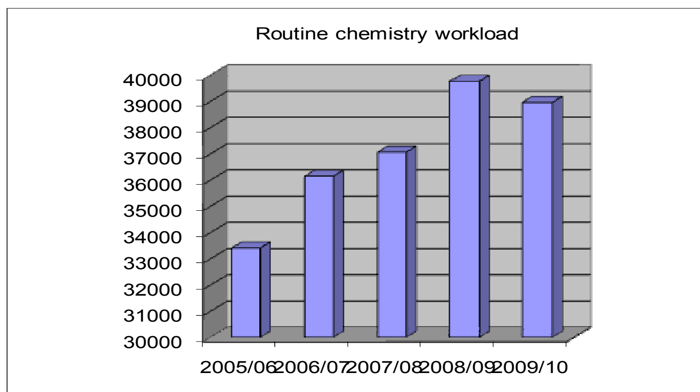

**Activity**
There has been an increase in the work load particularly obstetrics (+ 1252, 3.8% increase) early pregnancy (+254, 4%increase) gynae scan (+ 1024 12%increase) and MRI/CT (+758, 107% increase).
This increased activity, particularly in obstetrics, is not evenly spread over the week resulting in considerable waits for some mothers and overcrowded waiting areas, although the team are working to address these problems through service improvement.

**Plans 2010-2011**
Introduce national standards for Down's screening by nuchal translucency 20 week anomaly scan. Both of these standards will require an increase in the current scanning time allocated (currently 15 minutes for a booking scan and 20 minutes for an anomaly scan) This will require additional reconfiguration of the service. In addition recruitment of consultant radiology cover, Clinical Lead Sonographer and a Radiology Service Manager is planned.

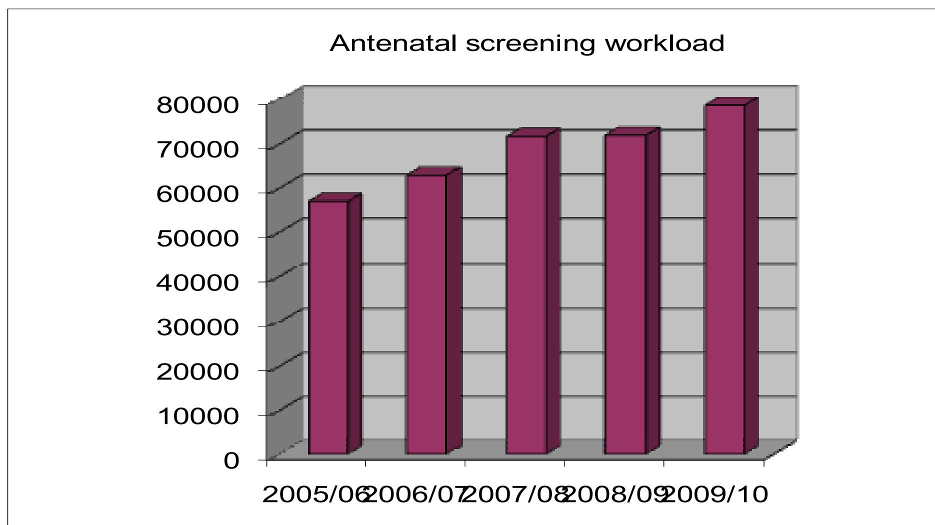
## *CLINICAL CHEMISTRY*
### *Selton Smith, Head Biomedical Scientist and Sarah Heap, Head of Department*

**Speciality/Service**
The department provides a general analytical service for Gynaecology, Obstetrics and the Neonatal unit to the Trust as well as being a regional and extra-regional centre for the Antenatal screening programme.

**Activity**
There was a decrease in routine laboratory clinical chemistry work (2.1%), due to increasing specimen analysis on blood gas analysers (BGA) (neonatal unit and delivery suite). Next year overall workload figures will include specimens analysed using the BGA.




We have seen an increase in antenatal screening workload (7.4%), a continuation of the upward trend during the last 7 years.



The department has maintained the high standard and quality of services it provides by the addition of new members of staff to key roles, including a Director of Antenatal Screening Services. We implemented a regional courier service for the antenatal screening programme which has been well received and reduced the time patients have to wait for results. An Inhibin A assay was successfully introduced. An upgraded BGA was obtained for delivery suite and training improved to decrease 'down time'. The glucose tolerance test (GTT) service was reviewed and changes identified to improve capacity and efficiency.

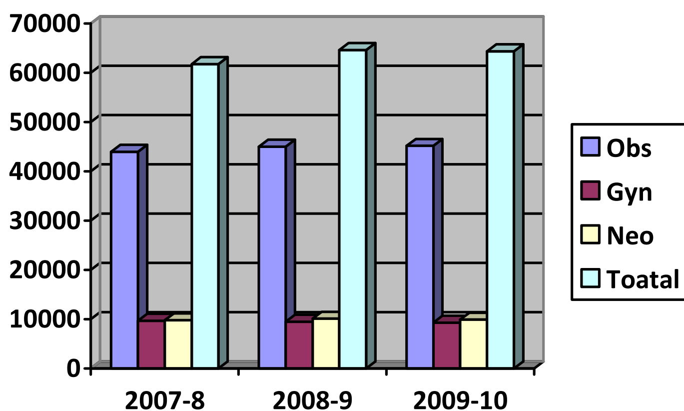
**Summary**
The department has retained its Clinical Pathology Accreditation (CPA) status. We are consistently improving our turn around times and actively looking at ways to work a more streamlined and efficient manner.

### *HAEMATOLOGY/BLOOD TRANSFUSION*
### *Ray George, Head Biomedical Scientist*

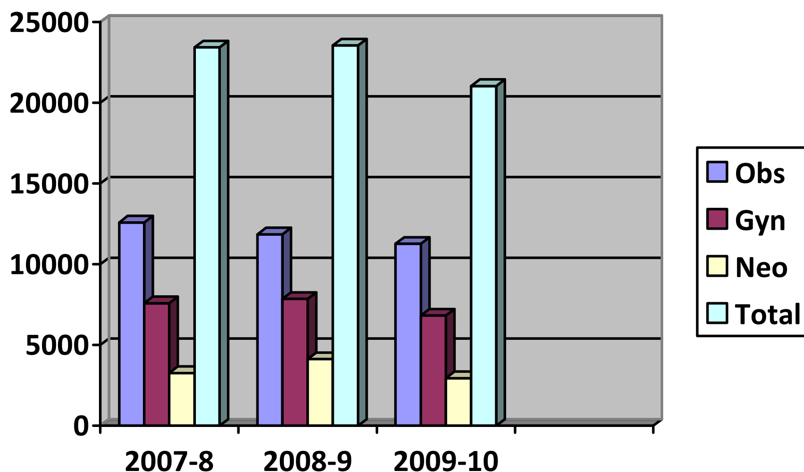
The Haematology and Blood Transfusion Department aims to provide efficient, effective and reliable clinical, consultative and laboratory services to the Obstetrics, Gynaecology and Neonatal directives of Birmingham Women's NHS Foundation Trust. The department seeks to achieve these goals by appropriate and ongoing investment in its staff and by maintaining high standards in quality and equipment.

**Activity**
The department was successful in achieving all but one of the objectives. Compliance with the EWTD is to be reviewed in 2010/11.

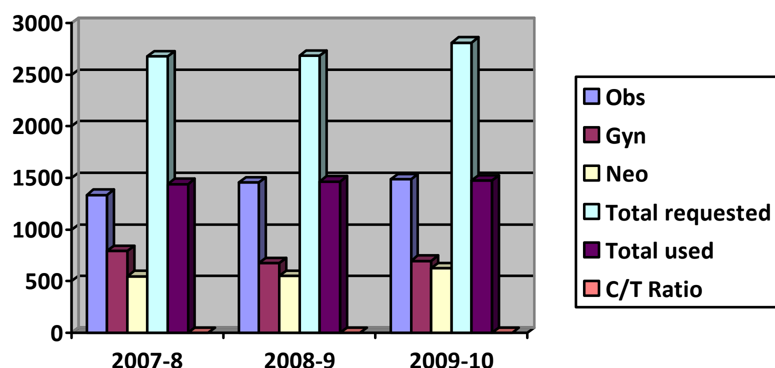
**Haematology Workload**




**Blood Bank Workload**



**Blood Products Requested and Transfused**




*C/T Ratio (Cross-match to transfusion ratio; currently 1.9 - Target region 1.5-2.0 or less).

Overall there has been an increase of about 4% for Haematology workload and 5% increase for provision of blood products from 2007-10. During this period stock management has improved to reduce wastage by 32%.

**Summary**
Staff continue to provide a 24/7 service for the Trust under challenging circumstances. All staff has made and continues to make significant contributions to the process of change and development of the Quality Management System following recent inspections from MHRA and CPA.

## *MICROBIOLOGY*
## *Dr Jim Gray, Consultant Microbiologist*

The Microbiology Department is a small department focused on providing a high quality state of the art service for the Trust. The Department has unconditional accreditation with Clinical Pathology Accreditation (CPA), and satisfactory performance in all relevant National External Quality Assurance Schemes was maintained. The Department continues to undertake extensive internal quality assurance and audit programmes.

Specimen totals - in house- 48,482
Specimen totals – work referred 7,985
This represents a slight increase in the amount of work processed in-house but a 4% increase in the work referred to other Trusts.
The department continues to meet the required turnaround times for all specimens received.
No adverse clinical incidents were reported during this period.

During 2009/10 the Vitek automated microbial identification and antibiotic sensitivity testing became operational, improving the speed and accuracy of results reporting. This has already proven to be of value on a number of occasions, by allowing earlier identification of neonates colonised or infected with antibiotic-resistant bacteria, facilitiating prompt interventions around infection control and antibiotic treatment. A replacement blood culture system was also installed during 2009/10.

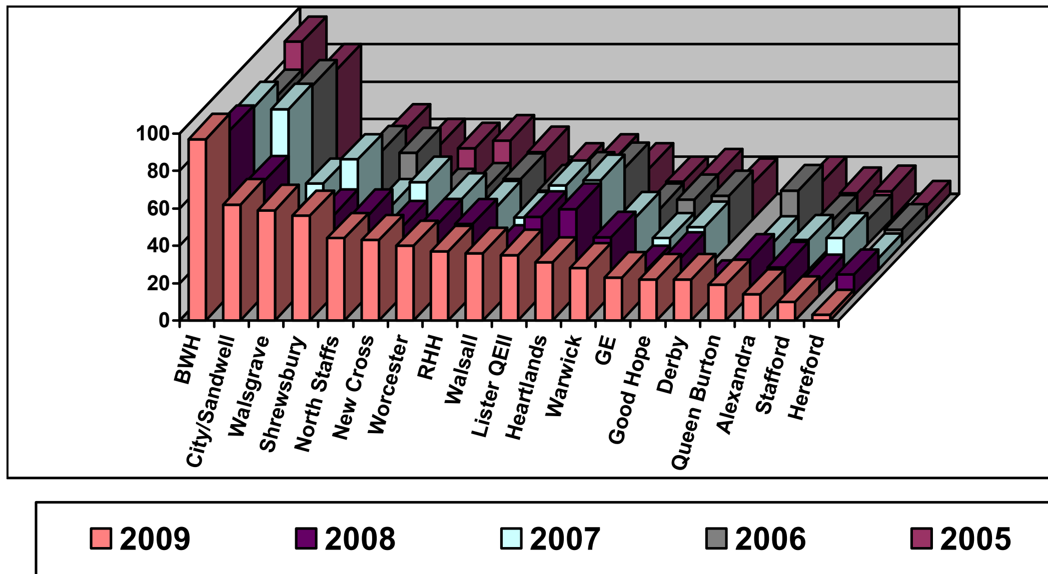
The Department was closely involved in planning to bring antenatal screening in-house. For Microbiology, this involves testing for immunity to rubella, and infection with syphilis, hepatitis B and HIV. New equipment was procured and commissioned, and staff training commenced, in the early months of 2009 to allow us to begin testing in the first quarter of 2009/10. As with other recent developments, we have absorbed this additional work through improving efficiency, and without extra Biomedical Scientist or Medical staff.

The introduction of new equipment described above has ensured that the laboratory has the facilities necessary to provide a high quality service with the shortest possible results turnaround times.

Clinical liaison is another important activity for microbiologists. The most important development during the year was production of new antibiotic prescribing guidelines for the Trust.

## *PERINATAL PATHOLOGY*
## *Dr Tamas Marton, Consultant Histopathologist*

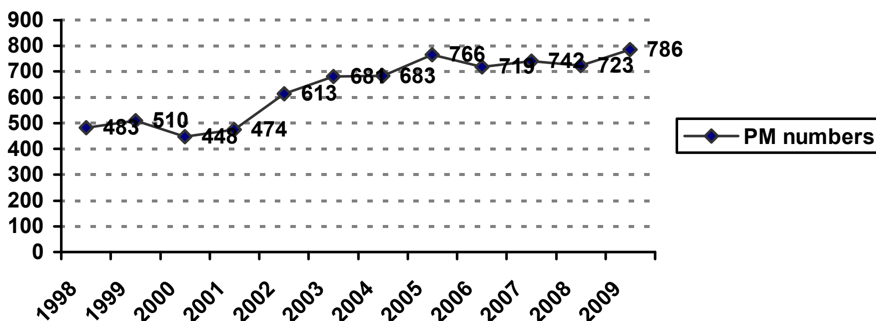
**Activity**
We provided the perinatal consent post mortem service to 18 hospitals in the West Midlands under a regionally commissioned contract. We have a separate SLA with 2 hospitals (1 trust) in Hertfordshire. (Figure 1). We also performed an increasing number of post mortem examinations for Derby Royal Hospital. In addition, we undertake Coronial paediatric post mortems for the 11 districts in the West Midlands and also for a number of Coroners in the South-West of England.




**Source of referrals 2009**

The number of post mortem examinations numbers plateaued at around 720 per year for 2006-7-8, but 2009 saw approximately 9% increase on the previous year with a record high of 786 post mortems.

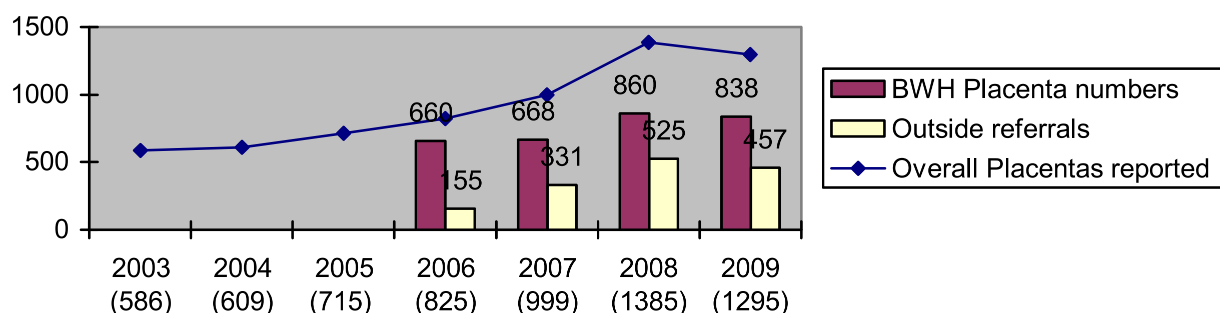
For post mortem examinations our policy is to issue the preliminary report within 4 working days of the autopsy. Our targets for final reports are a mean time from post mortem to report of 42 days with 95% reported within 10 weeks. In complex cases, however, when waiting for the results of complex tests or a second opinion delays the final report, we release an interim report to help our colleagues who counsel the patients. In 2009 again, we fell short of our intended target, and the post mortem to final report time was an average of 62.7 days with a median of 58.5 days; 70.5% of the cases were reported within 10 weeks. This result was worse than in the previous years. This was partly because of the increasing work load and other commitments and partly because of staff shortages in the mortuary and one of the consultants being on sick leave. Early signs for 2010 are for an improvement in turnaround times.




**Total PM Numbers (including Coroner’s cases), 1998-2009**

**Placenta reporting service**

As well as fetal/neonatal and Coronial post mortems we examine placentas from births at Birmingham Women's Hospital from live infants, following complicated pregnancy/labour, according to our placenta referral protocol. We also examine placentas of fetuses following pregnancy loss from the other units in the Region, when post mortem consent has not been given. This has shown steady growth over recent years.




**No of placentas reported**
In general there has been a steady increase in the number of placentas examined. From 2006-7 to 2009-10 the IUD placenta workload, that is performed under the regional contract, increased by 47%. In 2009 we examined **1295 placentas** (**57%** increase from 2006, of which **457 were outside referrals**. Out of the 1295 placentas 1013 were of live babies and 282 were of "no consent" babies. The 457 referred placentas represent an **8.3 fold increase from 2006.** For placentas from live babies the department charges the referring Trust a fee.

**Performance indicator**
A Customer satisfaction survey was carried out in late 2009 with regards to the post mortem and placenta reporting service. The survey was sent out to all main hospitals that refer cases to the BWH. We received 21 responses, mainly consultants (80%) and Bereavement officers (10%) and other professionals who deal with patients. Their responses are represented herewith

**Post mortem survey:**
1. Quality of post mortem reports: 75% very good; 25% good.
2. Usefulness of the comments/reports: 65% very useful; 35% useful.
3. Communication with the Pathologists: 45% very good; 55% good.
4. Turnaround time for final report: 0% very good; 63% good; 10.5% fair; 26.5% poor.
5. Overall are you satisfied with the service? 50% very satisfied; 50% satisfied.
6. Are you satisfied with body reconstruction? 46% very satisfied; 54% satisfied.

**Placenta survey:**
1. Quality of placenta reports: 59% very good; 41% good.
2. Usefulness of the comments/reports: 53% very useful; 47% useful.
3. Turnaround time for final report placenta reports: 6.3% very good; 62.5% good; 31.3% fair; 0% poor.
4. Are you satisfied with the service? 41% very satisfied; 53% satisfied; 6% sometimes satisfied.

It appears from the responses that there is a general satisfaction regarding both post mortem and placenta reports and majority of the consultants felt the reports useful or very useful. Our most severe criticism is about turnaround times. With post mortem reports 26.5% of respondents had the opinion that the turnaround time is poor and with placentas almost third of the consultants thought it was only fair. From the free text comments it is suggested that the long turnaround time resulted in lower rating of the service. Recently closer monitoring of the figures and new working practices were introduced especially in placenta reporting that hopefully will improve the turnaround time.

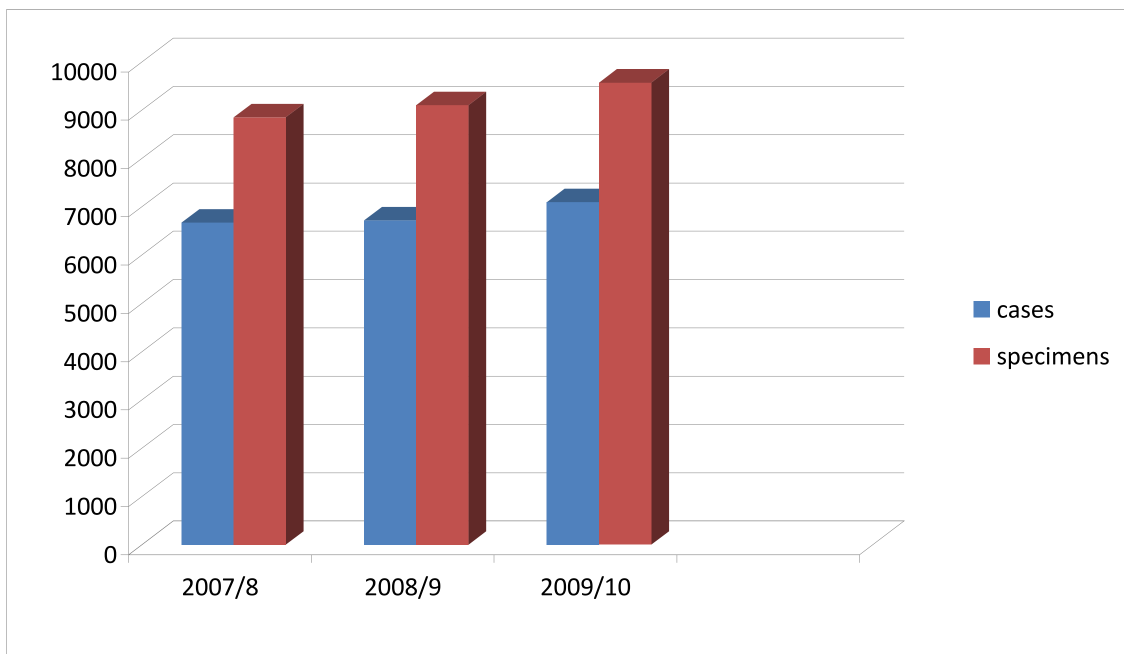
## *GYNAECOLOGICAL PATHOLOGY*
### *Dr Raji Ganesan, Consultant Histopathologist*

The department provides a diagnostic service for in-house routine surgery, for surgeons who are developing minimal access surgery and clinics including routine, rapid access and PMB clinics. The department also provides a SLA based service for all surgical specimens generated from the Oncology Centre based at City Hospital. The latter include complex resections specimens (including exenterations) that are generated from complicated cancer surgery. In addition, a regional review service to meet the Improving Outcomes Guidelines and a national referral service is provided.

**Activity**

| Period Apr - Mar | BWH + Referral Case Numbers | BWH + Referral Specimen Numbers | City Hospital Case Numbers | City Hospital Specimen Numbers | Total |
|---|---|---|---|---|---|
| **2007/2008** | 6257 | 7706 | 416 | 1144 | 6673 Cases<br>8850 Specimens |
| **2008/2009** | 6398 | 8063 | 321 | 1039 | 6719 Cases<br>9102 Specimens |
| **2009/2010** | 6699 | 8225 | 396 | 1347 | 7095 Cases<br>9572 Specimens |

**Workload figures 2007-2009**




**Workload figures 2007-2009**

There has been a steady rise in the workload in gynaecological pathology over the years and this has been greater in the numbers of specimens than in the numbers of cases, reflecting the increasingly complex surgery performed in treatment of cancers and chronic diseases such as endometriosis.

**Performance indicators**
All the consultant medical staff in gynaecological pathology performed well in the National Gynaecological External Quality Assurance Scheme. The department is a part of the NHS Improvement Pilot Scheme and our latest figures submitted to the NHS Improvement team shows that we achieved an impressive 70% of cases reported within 3 days – the best of all the trusts participating in the pilot. This has been due to a number of factors, some of which - good leadership within the laboratory and office, dedication of all staff, rapid improvement in the working within the office - all despite carrying sick and maternity absences.

**Histopathology – 3 / 7 day Turnaround Time**

| | 7 day TAT | | 3 day TAT | |
|---|---|---|---|---|
| | Baseline (Sept/Oct09) % | March 10 Current % | Baseline (Sept/Oct09) % | March 10 Current % |
| **University College London (UCL)** | 62% | 62%* | 17% | 24% |
| **North Middlesex** | 56% | 30% | 11% | 7% |
| **Musgrove Park** | 40% | 77% | 10% | 18% |
| **Leeds** | 7.7% | 10.1% | 0.5% | 1.3% |
| **Birmingham Women's** | 88.3% | 96% | 41% | 58% |
| **Whipps Cross** | 6% | 82% | 0.9% | 40% |
| **North Tees & Hartlepool** | 37.5% | 51% | 10.2% | 12% |
| **North West London Hospitals NHS Trust** | 50.5% | 50.5% | 21.8% | 21.8% |

**Turnaround times in national NHS Improvement Pilot**

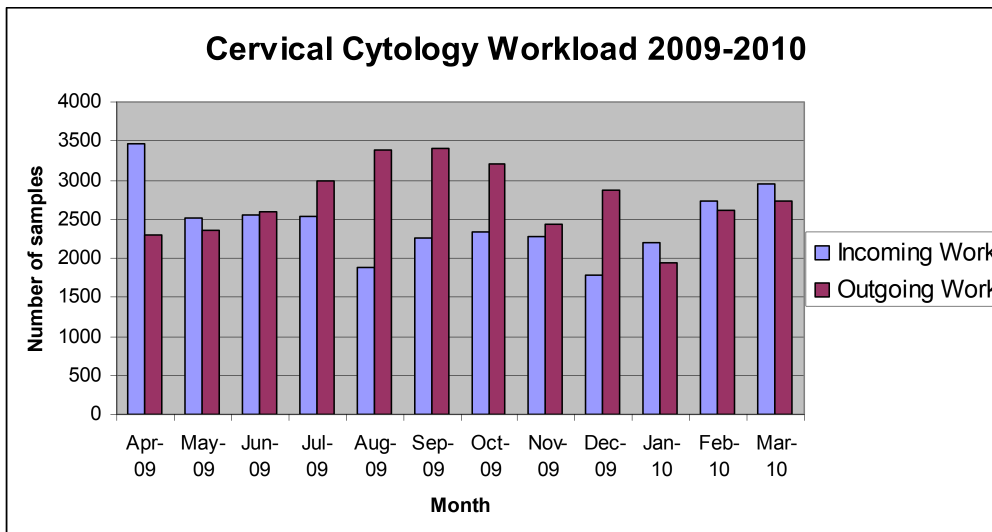
## *CYTOLOGY*
### *Ms Maureen Frost, Advanced Practitioner in Cervical Cytology, Hospital Based Programme Co-ordinator*

The department provides a cervical cytology screening service for hospital clinics and primary care for South Birmingham Primary Care Trust (PCT) and a proportion of Heart of Birmingham and East Birmingham PCT's. SurePath method liquid based cytology (LBC) is used to process the samples and the laboratory operates a failsafe system for women referred for assessment following abnormal results. In addition, a diagnostic non-cervical cytology service is provided for the Women's Hospital Gynaecology and Colposcopy services and City Hospital Cancer Centre.

Along with Histopathology, the Cytopathology laboratory contributes to the multi-centre NHS Cervical Screening Programme (NHSCSP) Sentinel Sites enquiry into introduction of HPV testing to the English cervical screening programme.

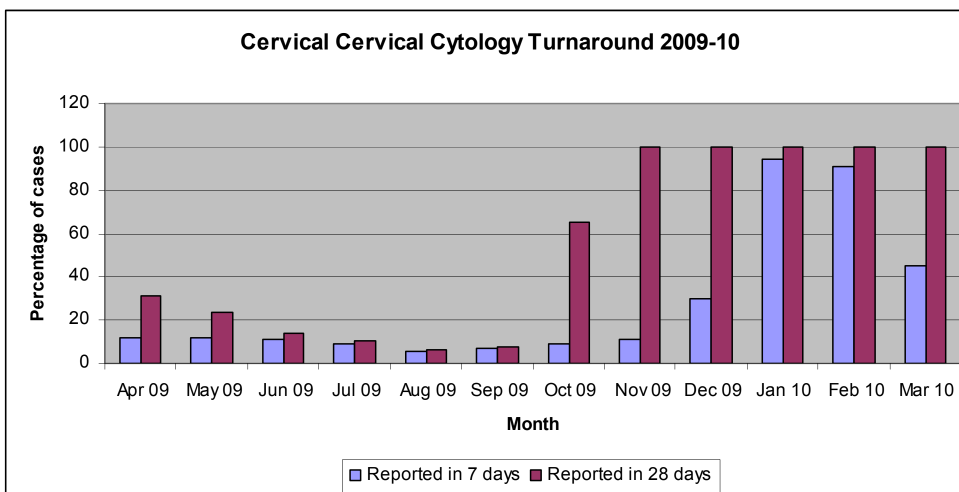
The department hosts the Cytology Training Centre which provides training for regional and extra-regional pathologists, biomedical scientists and cyto-screeners as well as medical and nursing staff in primary and secondary care involved in the NHS Cervical Screening Programme.

**Activity**
During the year 2009-10, the department received 29,481 cervical cytology requests and 471 non-cervical specimens including samples from City Hospital Gynaecology Cancer Centre. From the latter part of 2008, workload in cervical screening throughout the country had increased greatly owing to publicity relating to the death of Jade Goody from cervical cancer. At the Women's Hospital, incoming work outstripped the capacity of the laboratory with an additional 4,000 requests above the expected workload commissioned in 2008 - 09, resulting in a backlog This was addressed in part by the employment of locums and the adoption of "lean" working methods, but with loss of permanent screening and preparatory staff owing to relocation or maternity leave, incoming requests continued to exceed capacity




The cytology training centre (BCTC) ran 55 courses for 407 participants including five off-site courses. The microscope mounted camera was upgraded which will facilitate not only large group teaching but also Distance Learning activity when an internet link is established.

**Performance indicators**
The cytology laboratory is CPA accredited and routinely meets target set nationally with sensitivity to high grade disease at 99.8% comparing well with the minimum standard set at >95% and sensitivity for all grades at 96.8% - minimum standard set at >90%.




All the laboratory screening and reporting staff performed well in the External Quality Assurance rounds as required by the West Midlands Cancer Intelligence Unit. The 7 day laboratory turnaround needed to achieve 14 day turnaround target set for December 2010, was almost met in January and February 2010. However this has been impossible to maintain due to staff shortages and cessation of in-house overtime. However current NHSCSP target turnaround time within four weeks has been achieved and maintained since December 2009.

## *ANDROLOGY*
## *Dr Sue Avery, Clinical Lead for Andrology*

The Andrology laboratory provides a diagnostic semen analysis service for patients referred via the Assisted Conception Unit, from Local Primary Care Trusts and other local hospital fertility clinics. An appointment system is in place with patients attending the clinic and producing the sample in the bespoke procurement facilities.

**Activity**
The Andrology department performed seminal fluid analysis on 2,190 patients during 2009/10 and achieved 2 day turnaround for 75% of patients with a 4 day turnaround of 97%. See Table "Andrology Department Workload 2009-10".

| Andrology workload for Apr 09-Mar 2010 | | |
|---|---|---|
| **Total requests received** | **2190** | |
| **Andrology turnaround** | **Reported in 2 days** | **Reported in 4 days** |
| **Suggested department target** | 80% | 100% |
| **Turnaround for period** | 75%<br>Normal 92 %<br>Abnormal 53% | 97%<br>Normal 100%<br>Abnormal 9 % |

**Good Performance Indicators**

- The Andrology department is accredited by Clinical Pathology Accreditation (CPA) following an interim CPA assessment visit in February 2009.
- Andrology standard operating procedures and documents are held on the i-Passport Quality Management System and undergoes regular review.
- The Andrology Department takes part in a cross-Pathology Audit Calendar, with Andrology staff performing vertical and horizontal audits for other departments and vice versa.
- Performance is continually monitored by participation in the Andrology scheme for UK National External Quality Assessment Scheme.
- Staff undertake continuous professional development and attend national and international meetings to keep abreast of current trends.
- Clinic capacity utilization is maximized by liaison with the booking office to ensure that waiting time targets are not exceeded. Adjustments have been made to clinic codes to ensure that external referral appointments are accessible for uptake either via the booking office staff or by the patient using a direct referral code obtained from the GP or referring clinician.

**Infection Control**
The Andrology department operates to the highest standard of infection control with continuous monitoring of cleanliness and decontamination in both laboratory and patient areas.

**Risk Management**
Risk management is incorporated with that of the Cytology department and risk registers are monitored and updated on a regular basis.

**Development and Objectives**

- Completion of the implementation of the 'Telepath' laboratory computer system, to further improve the efficiency of the service.
- Maximise clinic appointment uptake by continued monitoring of waiting times and clinic availability.
- Further establish links with Informatics Department to monitor and reduce non-attendance/cancellation rates.

## *PHYSIOTHERAPY*
## *Nina Bridges, Physiotherapy Manager*

**Speciality /Service**

- In 2009-10 we had the retirement in December and February of two members of staff and in January we welcomed 2 new part-time physiotherapists.
- Urogynaecology out patient activity for physiotherapy continued to show an increase on 2008-09 figures and is the 4$^{th}$ year of increase.
- A total of 709 new patients were seen and 1836 follow up, a 9% increase in the number of new patients attending the department from 2008-09.
- A joint decision between the Maternity Directorate was made to withdraw the physiotherapy input from antenatal preparation group work and to invest the time in providing teaching to midwifery staff on management of respiratory patients; and freeing up time for more 1:1 slots for maternity out patients.
- 187 maternity out patients were seen with musculoskeletal and urinary conditions.
- 143 contacts were made across the gynaecology and maternity in patient wards with pregnancy related musculoskeletal problems, bladder retraining and post surgical management.

**Clinical Governance**

- In August 2009 we audited our out patient service by a postal questionnaire encompassing standards from Essence of Care, the C.S.P. and N.I.C.E.
- 50 questionnaires were sent out ,26 returned
- Extremely positive feedback was received from patients on the quality and professionalism of the service and the staff.
- The only negative feedback was on the limited space available in the reception waiting area.

## *ANAESTHETICS*
## *Dr Anthony Wilkie, Consultant Anaesthetist UHBFT*

Our clinical work includes preoperative evaluation, intraoperative care, provision of regional analgesia for labour, obstetric high dependency care and acute pain management plus anaesthesia for gynaecology and the Assisted Conception Unit. All obstetric patients who receive spinal, epidural or general anaesthesia are reviewed on a ward round the following day. Documentation of obstetric anaesthetic procedures has been markedly improved with the introduction of a new anaesthetic record.

The epidural rate during labour (23.3%) continues to increase from recent years but is still below the national average. 78% of mothers are satisfied with their regional analgesia during labour although the percentage of mothers having caesarean delivery with an epidural or CSE has increased. The dural tap rate has shown a welcome decrease to below the recommended target of 1% after 2 years above this figure. The post dural puncture headache rate after deliberate spinal anaesthesia has dropped below 0.5%. The regional rate for elective and emergency caesarean section has been staedy for some years. 104 spinals were given for caesarean section in mothers with an indwelling epidural and one of these led to a high block requiring intubation. Rates for conversion of spinal to GA are in line with national recommendations although the GA conversion rate for epidural and CSE remains slightly high. Satisfaction rates for spinal and general anaesthesia are very high. There were no cases of failed intubation, awareness or aspiration during general anaesthesia and no major sequelae from regional anaesthesia.

**Table 1: Epidural and Combined spinal epidural (CSE) during labour**

| | 2007-8 | 2008-9 | 2009-10 |
|---|---|---|---|
| **Total epidurals** | 1294 | 1373 | 1450 |
| **Total CSEs** | 122 | 149 | 75 |
| **Total spinals** | 1439 | 1421 | 1604 |
| **Total GAs** | 309 | 318 | 315 |
| | | | |
| **Regional uptake rate in labour** | 20.0% | 22.8% | 23.3% |

**Table 2: Satisfaction rates with epidural and CSE analgesia for pain relief during labour. Last year's figures in brackets.**

| | 2007-8 | 2008-9 | 2009-10 |
|---|---|---|---|
| **Satisfied** | 76.7% | 78.4% | 77.6% |
| **Helped** | 9.5% | 7.7% | 8.7% |
| **Late** | 5.1% | 2.4% | 2.7% |
| **Failed** | 2.2% | 4.9% | 3.1% |
| **Unknown** | 6.6% | 6.6% | 7.9% |

**Table 3: Mode of delivery with epidural and CSE analgesia. Last year's figures in brackets.**

| Mode of delivery | All mothers - numbers | % | Primig % |
|---|---|---|---|
| **Spontaneous** | 481(461) | 31.5(32.1) | 23.3(24) |
| **Straight Forceps** | 300(305) | 19.7(21.2) | 24.2(25.6) |
| **Rotational forceps** | 28(39) | 1.8(2.7) | 2.1(2.9) |
| **Ventouse** | 162(191) | 10.6(13.3) | 11.3(14.4) |
| **Breech** | 2(5) | 0.1(0.3) | 0(0.2) |
| **Total C/S** | 552(436) | 36.2(30.3) | 39(32.8) |

**Table 4: Postdural puncture headache**

| | 2007-8 | 2008-9 | 2009-10 |
|---|---|---|---|
| **Inadvertent dural taps** | 19 (1.32%) | 16 (1.06%) | 14 (0.92%) |
| **Blood patches** | 15 (1.04%) | 12 (0.8%) | 10 (0.66%) |
| **Post spinal headaches** | 11 (0.75%) | 11 (0.75%) | 6 (0.4%) |
| **Blood patches** | 4 (0.27%) | 7 (0.48%) | 2 (0.12%) |

**Table 5: Mode of anaesthesia for caesarean section**

| Category | Spinal | Epi / CSE | General Anaesthetic | Total | % Regional | | | RCA target |
|---|---|---|---|---|---|---|---|---|
| | | | | | 07-08 | 08-09 | 09-10 | |
| **Elective** | 577 | 37 | 26 | 640 | 94.3 | 95.4 | 95.9 | >95% |
| **Emerg** | 562 | 343 | 226 | 1131 | 79.4 | 79.0 | 80 | >85% |

**Table 6: Failures of regional anaesthesia for caesarean section**

| Category | 2007/8 | 2008/9 | 2009/10 | RCA Recommended |
|---|---|---|---|---|
| Epidural | 9.2% | 4.4% | 4.3% | <3% |
| Spinals | | | | |
| Elective | 0.72% | 0.73% | 0.35% | <1% |
| Emerg | 3.75% | 3.5% | 2.67% | <3% |

## *PHARMACY AND MEDICINES MANAGEMENT*
### *Mrs Anne Cope, Associate Director Pharmacy UHBFT*

Pharmacy services to the Trust are provided from University Hospitals Birmingham NHS Foundation Trust via a Service Level Agreement which is reviewed annually to ensure the Trust's needs relating to Medicines Management can be met.

The Drug and Therapeutics Committee (DTC) is a multidisciplinary forum which provides the Trust, through the Medical Director, with a mechanism to ensure corporate responsibility for the use of medicines across the organisation.

Medicines are managed within the Trust according to the three key strands identified by the Healthcare Commission in 2006 when auditing Medicines Management in Acute Trusts in England: clinical effectiveness, patient focus and efficiency and capability.

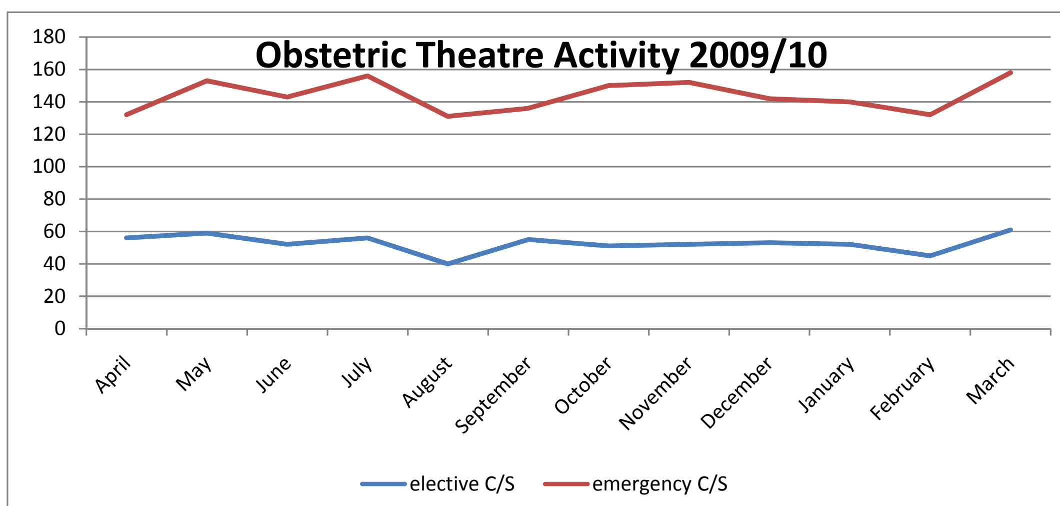
**Activities of the DTC**
In 2009/10, the DTC met quarterly in June, September, December 2009 and March 2010 and delivered the following outputs:

| Activities | Outputs |
|---|---|
| 1. Approval of Trust- wide policies relating to medicines | • Medicines Policy<br>• Non Medical Prescribing Policy<br>• Self Medication Guidelines<br>• Wound Management Guidelines<br>• Medicines Reconciliation Procedure |
| 2. Ensuring best practice in clinical and cost effective prescribing. | • Antibiotic Prescribing Policy<br>• Switch from granisetron to ondansetron |
| 3. Monitoring the clinical and cost effective use of medicines including managed entry of new medicines into the local health community. | • New drug request form and a new drug request form (single patient) – requiring Chairman's action.<br>• Review of new formulary drug requests – Uracyst, Proxymetacaine, Propess<br>• Request form for immunoglobulin |
| 4. Ensuring that identified risks relating to medicines are managed effectively. | • Regular review of MHRA Safety Bulletins,<br>• Actions taken in response to MHRA Drug Recalls<br>• Actions plans developed and implemented in relation to NPSA patient safety alerts<br>• Review of all Patient Group Directions (PGDs) and Standing Orders (SOs) |
| 5. Reviewing and auditing medicines management activities | • Missed doses audit (Oct 09)<br>• Audit of prescribing against standards in Trust Medicines Policy (Feb 10)<br>• Audit of insulin prescribing (Mar 10) |

## *OPERATING THEATRE DEPARTMENT*
## *Rosey Monaghan, Associate Director Clinical Support*

The department comprises 5 operating theatres: 2 used for gynaecological procedures, and 2 obstetric theatres which accommodate both elective and emergency surgery. There is a small theatre in the Birmingham Women's Fertility Centre to which the department provides Theatres Practitioner support.

**Obstetric Theatres Activity**
There are 5 x 4.5 hour operating lists funded per week for electives. Caesarean sections make up the majority of the activity in obstetric theatres: 632 elective sections and 1093 emergency sections were done, with 623 of the emergencies being carried out between 17.30 and 08.00.



**Gynaecology theatres activity**
There were 926 X 4 hour operating lists over the year with 2262 operations carried out. That represents an average of 2.9 operations per list. List utilisation was over 80%.

**Good practice Indicators**

- The department met the18 week target and did not exceed the target of no more than one patient cancellation per month on-the-day surgery for non clinical reasons.

- All patients who have had to return to theatre unexpectedly have their notes reviewed by clinicians. The Theatre Users Group, of which all clinical users are invited, meets on a monthly basis and all issues to do with theatres are discussed.

- The World Health Organisation surgical safety checklist is being used within the Gynaecology theatres with all surgical teams participating. This is seen as improving patient safety, improving team working and improving theatre efficiency..

- The trust continues to work with Braun who provide their decontamination services. This has been going through a period of service change, and active monitoring is in pace to ensure a high quality of services. Turnaround time reduced from 24 to 8 hours and the ability to track and trace our instrument sets with the introduction of IMS (Instrument Management System). Theatre staff participate in the ongoing work of the collaboration and have a clinical representative on the service review committee.

- Staffing the department has been challenging which has led to high costs to ensure that shifts are covered to deliver a safe service.

- The theatres department is supported by the Medical Physics team who provide vital cover ensuring that the anaesthetic and technical equipment is fit for use. They also maintain and repair the equipment working closely and participate in laser treatments with the fetal medicines team when carrying out procedures in theatre.

**Infection Control**

- Leads have been identified within the theatre department to work on Hand Hygiene audit. The theatres team is working closely with the Infection Control Team to improve and monitor infection control standards.

**Plans for 2010/2011**

- To continue to deliver a safe, high quality operating theatre environment for patients
- To commence implementation of ‘The Productive Theatre’ work.
- To continue to recruit to vacant posts
- To expand the WHO surgical checklist to Obstetrics theatres.
- To improve the efficiency and utilisation of both suites of theatres.

## *GENETICS SERVICE*
## *Val Davidson, Director for West Midlands Regional Genetics Unit*

**Overview of 2009/2010**
This was a challenging and rewarding year for both the Clinical and Laboratory Services. The Clinical service continued to achieve compliance with 18 weeks RTT despite large year on year increases in referrals, due to the exceptional efforts of all staff involved. The Commissioners recognised and supported the increased workload by agreeing to fund a limited number of new posts for 2009-10 but specifically including a Consultant Clinical Geneticist. Funding provided addressed the workload pressures and the need to comply with national targets but no developments were funded. The Specialised commissioners had been working with the directorate to develop a Regional strategy for Genetics that the PCT leads will be instrumental in delivering but this has halted in progress during 2009/10.

The Service continued to attract considerable external income to fund research and development and to deliver a substantial income generation plan.

Although one of the most progressive leading edge services in the UK, the genetics accommodation is limited and particularly for the clinical service is really not fit for purpose. As part of a plan to address this and also to facilitate further collaborations with the University of Birmingham there are plans to develop an Institute of Genomic Medicine. This will bring together all aspects of genetics including clinical, laboratory, academic, research and education into a single institution, virtual in the first instance but with the intention of attracting funding to co-locate in the future. This forms part of the academic planning for the Trust and the future development of genetics.

Overall the achievements and developments of the genetics service during 2009 /10 reflect our on-going commitment to ensuring that patients and their families continue to benefit from advances in genetics.

**Staffing**
As at 31 March 2010 the Directorate had 246 staff, an increase of 5 from the previous year mainly on staff appointed on externally funded projects. The skill mix of laboratory staff has begun to change to reflect workforce re-profiling. The biggest change being the increase in band 1 – 4 healthcare assistants.

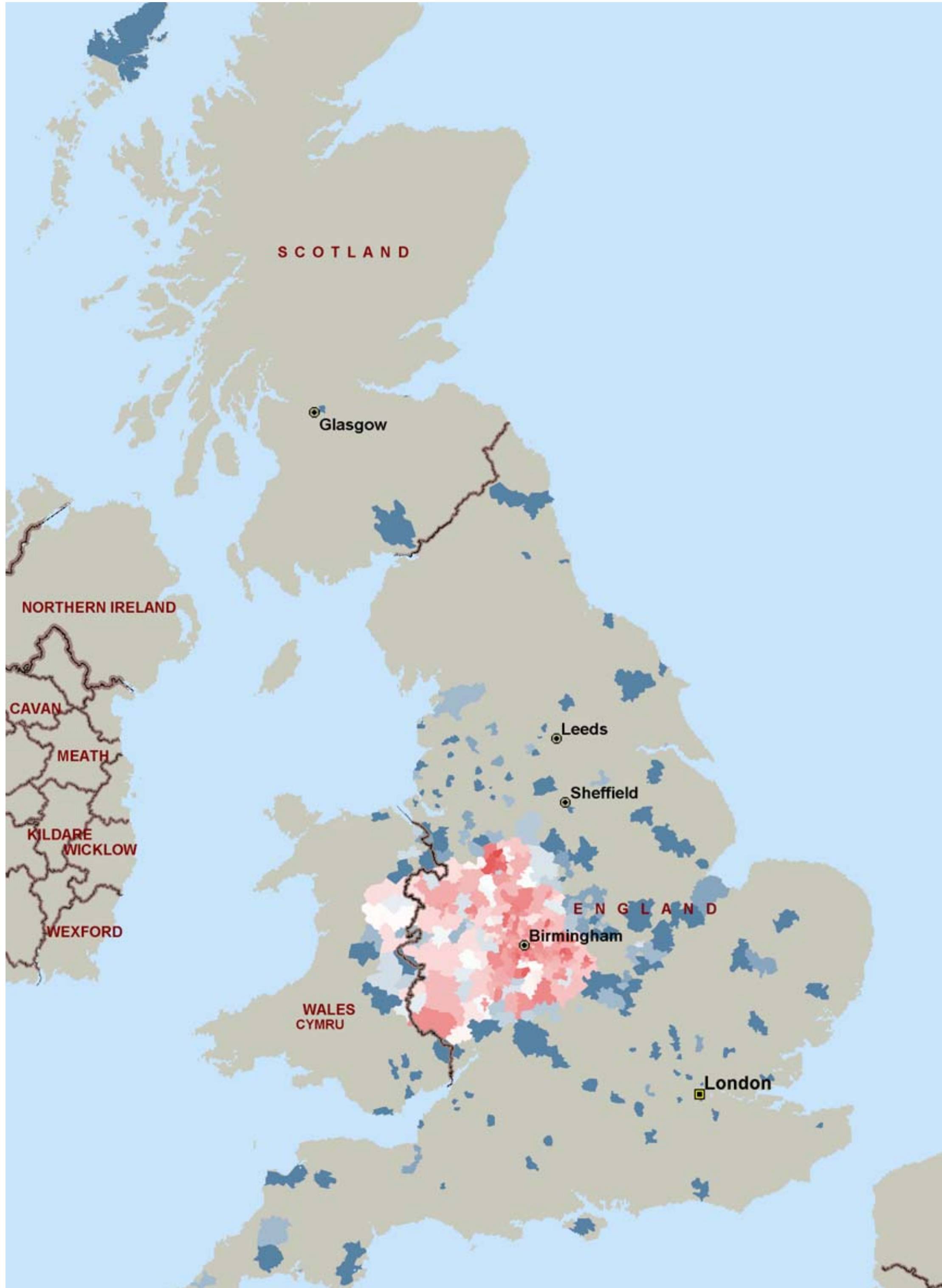
| Post | Laboratory Genetics | | Clinical Genetics | |
|---|---|---|---|---|
| | Number | WTE | Number | WTE |
| Clinical Director/Consultant Clinical Scientist | 1.0 WTE | | | |
| Directorate Manager | 1.0 WTE | | | |
| Chief ICT Manager | 1.0 WTE | | | |
| Business Manager | 1.0 WTE | | | |
| Quality Manager | 1 | 0.6 | | |
| Consultant Clinical Scientist (B8c-9) | 3 | 3 | | |
| Principal Clinical Scientists (B8a-b) | 20 | 18.62 | | |
| Clinical Scientists (B7) | 34 | 31.58 | | |
| Training Resource Manager | 1 | 0.8 | | |
| Clinical Scientists (B6) | 2 | 2 | | |
| Trainee Clinical Scientists (Supernumery) | 27 | 27 | | |
| Genetics Technologists (B7) | 2 | 2 | | |

| | | | | |
|---|---|---|---|---|
| Genetics Technologists (B2-6) | 41 | 39.57 | | |
| Trainee Genetics Technologists (Supernumery) | 11 | 11 | | |
| Administrative Support | 4 | 4 | | |
| Health Care Assistants (B1-4) | 9 | 8.67 | | |
| MSC Clin Sci STP B6 | 6 | 6 | | |
| MSC Technology PTP B5 | 4 | 4 | | |
| Consultant Clinical Geneticists | | | 14 | 13.6 |
| Specialist Registrar | | | 4 | 3.8 |
| Genetic Counsellors (B8a-c) | | | 18 | 19.82 |
| Manager B8a (EGSP project) | | | 1 | 1 |
| Genetic Counsellors (B7) | | | 8 | 7 |
| Nurse Specialists | | | 5 | 4.96 |
| Healthcare support worker | | | 1 | 0.8 |
| IT support (B6-7) | | | 2 | 1.9 |
| Medical Secretary's (B4-5) | | | 13 | 10.2 |
| WMFACS Strategy Officers (B4-5) | | | 6 | 6 |
| Other Admin (B2-3) | | | 5 | 5 |

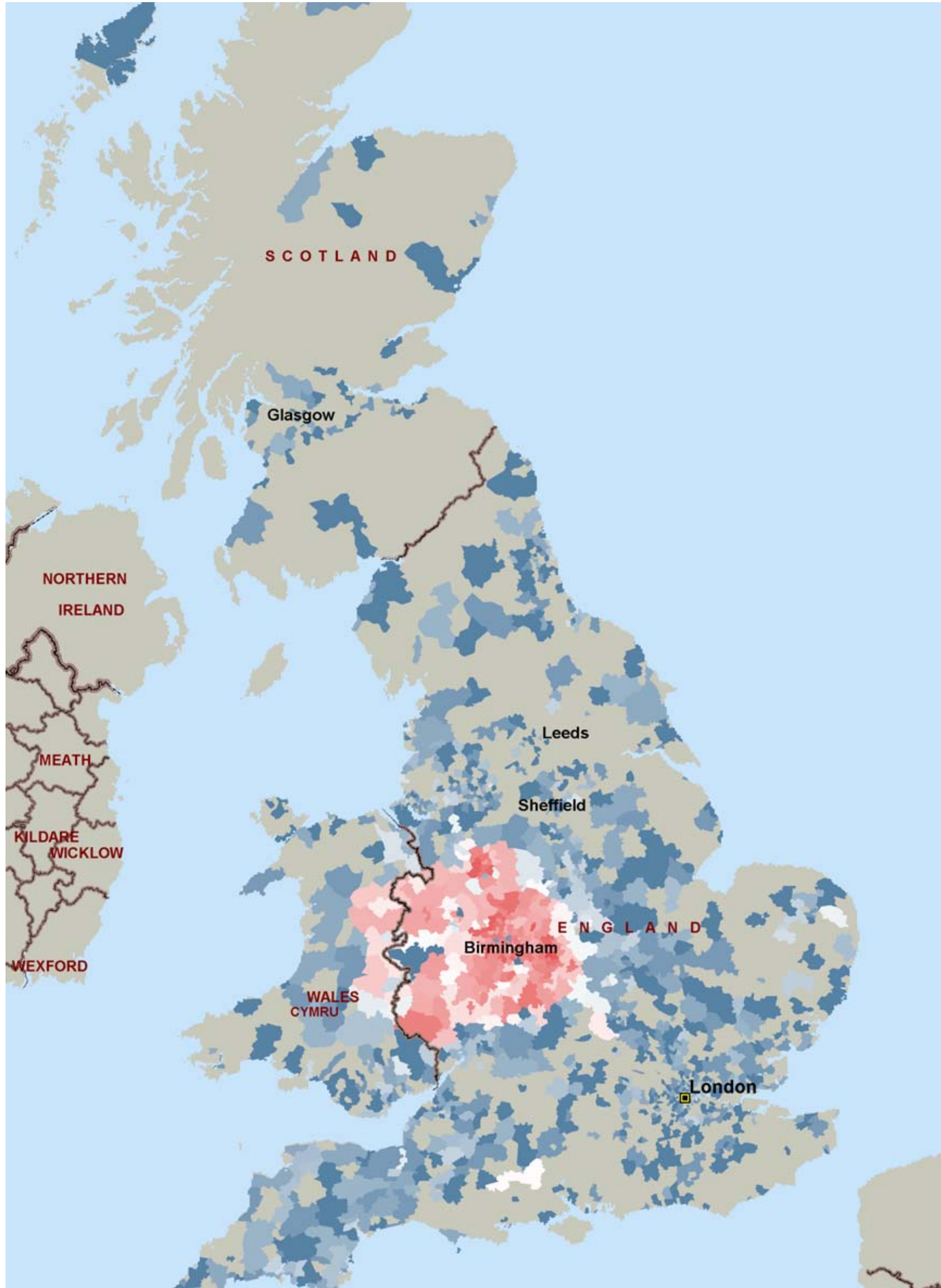
**Referral Patterns**

The service receives samples and referrals from across the West Midlands. The laboratory also receives samples from across the UK and beyond through contracts with other institutions or as ad-hoc requests to carry out tests. The following maps show the patterns of referrals and samples received across the UK, red indicating the highest number of referrals and dark blue likely to be a single referral.

**Clinical Genetics referrals 2009-2010**

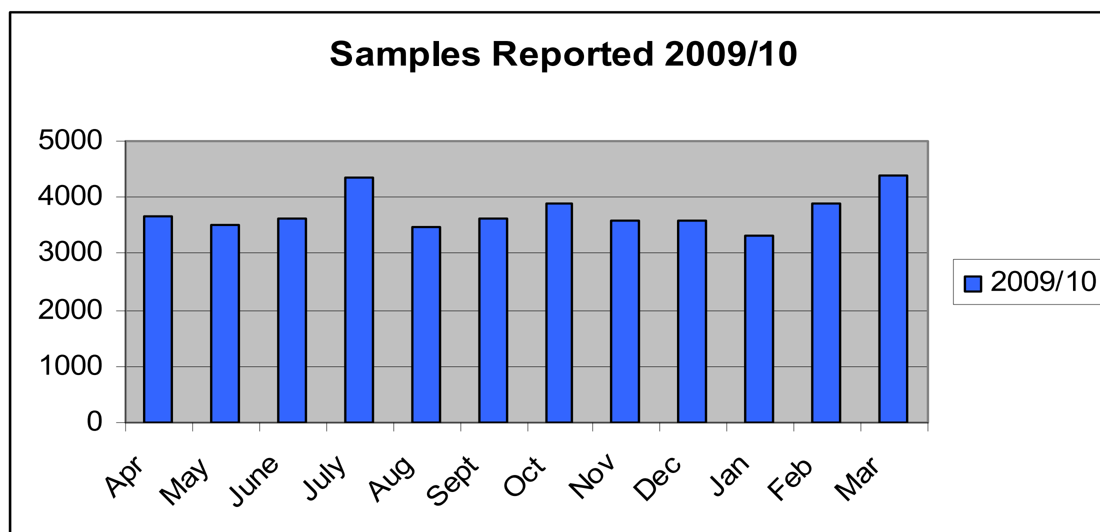


**UK Genetics Laboratory reports issued 2009-2010**



## *GENETICS LABORATORY*

**Activity**
During 2009-10 44845 samples were recorded as received within the laboratory. As a result of the implementing LEAN processes as widely as possible we have reduced the number of times a sample is entered onto the system but we need to ensure that all activity is captured when multiple tests are performed on a sample.




**Turnaround times for Laboratory Genetics Samples**
There are no formal national standards for turnaround times for the tests we carry out. However as a department we aim to fulfil the suggested reporting times in the professional best practice guidelines and the recommendations from the Department of Health. Our performance against these guidelines is reported to the Trust each month.

**Paediatric and adult referrals for chromosome analysis**
A total of 7331 blood samples, were received by the laboratory; of which 6861 (93.6%) were referred through the WMSHA. This represents a workload increase of 438 (6.4%) samples compared to the previous audit cycle; and a 31.4% increase in workload since 2005-2006. These samples represent 62 fetal bloods (of which 25 were from ongoing pregnancies), 874 urgent samples and 6395 'other' (routine) referrals. Within this audit cycle these samples represent 39.9% of the total number of samples received for chromosome analysis..

**Prenatal Diagnosis**
Samples received are primarily amniotic fluid or chorionic villous bipsies (CVB) for prenatal diagnosis and solid tissue samples folllowing pregnancy loss or miscarriage. In 2009/10 there were a total of 2190 samples received (1361 amniotic fluids, 400 CVB and 429 tissues). The referrals to this section have shown a decrease in number from three referall categories: serum screen positive samples and samples from patients with increased maternal age due to changes in recommendations for referral for amniocentesis and guidance from the National Screening committee that women should not be offered a diagnostic procedure based on age alone. Solid tissue referrals to the prenatal section have decreased due to a change in strategy from cytogenetic analysis to molecular analysis to improve reporting times and success rates.

**Haemato-oncology**
Samples received are blood samples, bone marrows and paediatric solid tumour samples. Around 50% of these are from diagnostic cases, with the remainder being referred for a wide range of ongoing surveillance, monitoring disease and response to drug treatment regimes. The results obtained assist in the diagnosis and classification of leukaemias, solid tumours and related disorders, provide prognostic information for use in risk stratification and enable assessment of disease status post treatment/transplantation. In 2009/10 6694 sample were referred to this section, which is comparable to the previous year. In recent years, significant effort has gone into increasing the repertoire of genetic tests available for these patients in order to provide the most relevant diagnostic and prognostic information.

**Molecular cytogenetics**
This section uses Fluorescence In Situ Hybridisation (FISH) and microarrayanalysis as a complementary technique to classical cytogenetics to accurately define cytogenetic abnormalities and to determine the copy number of a chromosomal region.

Microarray processing did not become “front-line” within the period of review 2009/10 and therefore turnaround times are not presented for routine referrals as these have not been processed in a systematic / date-of-receipt driven manner. Order of processing continues to be by individual clinical request and a large backlog still exists. The main objective for the coming financial year is to eliminate this backlog and move towards front-line testing for all patients with developmental disorders, beginning with those referred by Clinical Genetics. This will require both significant training input and expansion of technical throughput and these areas remain the focus for the coming year.

In 2009/10, the section received 3186 referrals.

**Molecular genetics**
The increase in the number of reports issued by the molecular genetics section as a whole (including molecular oncology and QF-PCR) has reduced during 09/10. There were 165 more reports for single gene disorders. Fragile X, SMA and deafness all showed increased number of referrals. Fragile X alone showed a 22% increase. Breast and Breast/ovarian cancer, FAP and familial phaeochromocytoma and paraganglioma all showed a decrease in referrals.

In recent years molecular testing has been introduced in several areas of prenatal testing to replace or add value to cytogenetic analysis. A rapid molecular test for detection of the common trisomies, trisomy 21, 13 and 18 as well as the sex chromosome trisomies (QF-PCR), is carried out as an adjunct to karyotyping. Molecular testing of products of conception has replaced karyotyping as it has a higher success rate due to the nature of the material received.

The section continues to work closely with the University Department of Medical and Molecular Genetics to translate new developments into clinical service to improve patient care.

**Research and Development**

**Molecular Prenatal Section of Laboratory**
Research and development in the Molecular Prenatal section is centred on the development and application of non-invasive prenatal diagnosis by free fetal DNA analysis. Areas of interest include fetal sexing, and detection of single gene disorders and aneuploidy.
Currently we offer fetal sexing by free fetal DNA analysis as a routine diagnostic service (see Prenatal AMR).

Ongoing projects:

- “To develop a universal fetal DNA marker for free fetal DNA assays (RASSF1A) and to use this marker to improve the quality of diagnostic ffDNA testing in the laboratory consumables funded by CPA bursary awarded April 2010 £2203.82.
- Ethical application accepted April 2010 (REC 10/H1207/16) “Long term storage of plasma samples for validation of free fetal DNA analysis of single gene disorders.” This application covers the storage of maternal plasma samples from women at risk of having a child with a single gene disorder. It is envisaged that these samples will be used in future for validation of methodology. We also aim to collaborate with the RAPID project (Reliable accurate non-invasive prenatal diagnosis) in the future. They have a large Biobank of clinical samples for similar studies.

**Microarray Section**
Research and development is an inherent facet of the microarray service as new syndromes and applications of the technology are frequently being described. The 2 key and very major RND successes for the period 2009-10 are:

- Successful Fetal Medicine/ WMRGL SPARKS grant application (200K) funding high resolution (Affy 2.7M) analysis of ~200 samples from abnormal scan pregnancies. Front-line low resolution BAC array analysis has been extended into a successful working diagnostic service.
- BCH Research Grant awarded (57K) for high resolution (Affy 2.7M) analysis of ~100 samples from patients with orofacial clefting and a 1 year band 6 post to carry out this work

**Central England Haemato-oncology Biobank (CEHRB)**
REC reference: 09/H0405/12

CEHRB stores excess material from blood, bone marrow and lymph nodes supplied from patients with leukaemia and lymphoma, at presentation and throughout their disease course for genetic analysis at the WMRGL. Any excess material may be used to store all or some of the following: fixed cell suspensions, viable cells, plasma, DNA and RNA/cDNA. 235 patients consented during 2009/10.

**Molecular Genetics**
**Enhanced Genetic Service Project (EGSP):**
The EGSP is funded by the Heart of Birmingham PCT. The aim of the study is to reduce the incidence of infant morbidity and mortality with in Birmingham. From the laboratory perspective, a clinical scientist has been appointed to develop services for rare recessive conditions and to offer these to families following appropriate genetic counselling. The aim is to develop services for 10 new genes per year.

**Genetic Cancer Prevention through Population Screening**
The pilot phase of the Ashkenazi Jewish screening project is nearing completion. To date all 513 patients referred to this laboratory have been successfully screened for the three common BRCA1 and BRCA2 gene mutations identifying pathogenic mutations in 20 individuals. Approximately 200 pilot phase patients are expected for analysis towards the end of 2010; these individuals were initially recruited to the pedigree arm of the project. Phase 2 of the project is expected to be funded from early 2011.

**Oncology**
Research and development in the Oncology section involves participation in a wide range of collaborative studies and clinical trials. We are also able to follow up some of our own particular areas of interest due to a Research Technical Post funded by Cure Leukaemia which has been renewed for the coming year. We have introduced developments to our clinical service using unrestricted grants from Pharmaceutical companies.

**Collaborations and Clinical Studies:**
1. Collaboration with Peter Campbell/Phil Stephens at the Sanger Centre, Cambridge
   Four CLL samples with a similar cytogenetic rearrangement (add(14q)) and also seven further acute leukaemia cases have been sent for end-paired next generation sequencing to detect novel or recurrent leukaemia gene rearrangements.
2. West Midlands Haematology Research Network prospective study of trough plasma imatinib levels in newly diagnosed chronic phase CML patients and its correlation with response.
   Recruitment packs are sent out with any new diagnostic CML reports, and plasma is collected and stored at WMRGL. The Data Co-ordinator at WMRGL ensures consent has been obtained and sends reminders when samples are due.

**Clinical Trials:**
The laboratory collects and processes samples, and also provides data for many ongoing Clinical Trials:
1. AML: MRC AML 16 and 17; Val/Aza and leukaemic stem cells study.
2. ALL: UKALL 2003 paediatric trial and UKALL 12 adult trial.
3. CML: SPIRIT 2 and trials for bosutinib; dasatinib; nilotinib.
4. BMT: Post-BMT monitoring of NK cells; RIC unrelated cord transplant.

**Other Projects and Developments:**
1. West Midlands CML Registry Project (funding provided by an educational grant from BMS).
2. Other projects to which the Cure Leukaemia Research Technician contributes:

   a. FLT3 /AID project: To determine FLT3-itd to FLT 3 wild-type allelic ratio, review expression levels and relate to clinical outcome. Study to be published.
   b. AML (5;11) NUP98/NSD11: To screen all paediatric AMLs for this cryptic rearrangement by PCR and extend study to FLT3 positive young adults who are refractory to treatment. Study to be published.
   c. Comparison of different genetic techniques for monitoring early treatment responses in CML. Paper in preparation.

## Achievements

- Continuing repatriation of tests adding Charcot Marie Tooth Type 2 and Noonan syndrome this year.
- December 2009 we introduced analysis of free fetal DNA. This enables the sex of a fetus to be determined at 8 to 9 weeks of pregnancy and reduces the need for invasive procedures in fetuses with at risk of sex linked disorders.
- The laboratory is a pilot site to implement the Modernising Scientific Careers (MSC) training programme.
- Val Davison, Clinical Director received the Chief Scientific Officers Award for Leadership for her work on MSC and was appointed to the Head of the National Healthcare Science School of Genetics at the SHA.
- Two laboratory staff received prestigious awards. Jo Mason was runner up for the Presidents Prize in Pathology, Royal Society of Medicine; and Eleanor Rattenberry received a CSO Fellowship to fund her PhD.
- Cure Leukaemia awarded the laboratory additional funding.
- The Directorate exceeded its target for income generation.

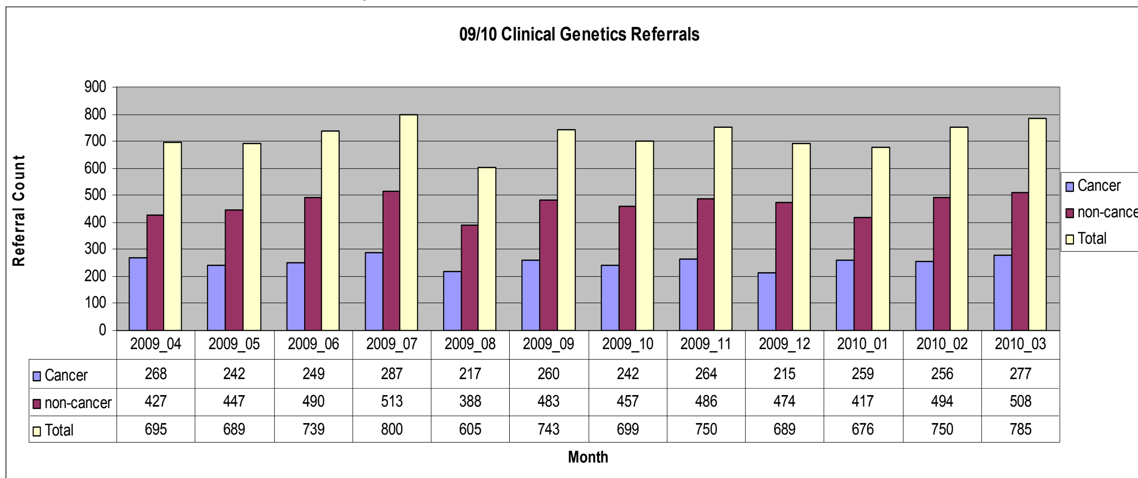
## Education and Training

The laboratory continues to be the largest training department in the UK and this year introduced new training regimes and successfully appointed 6 Healthcare Science and 4 Healthcare Science Practitioner trainees under the Modernising Scientific Careers pilot scheme.

## *CLINICAL GENETICS*

### Activity

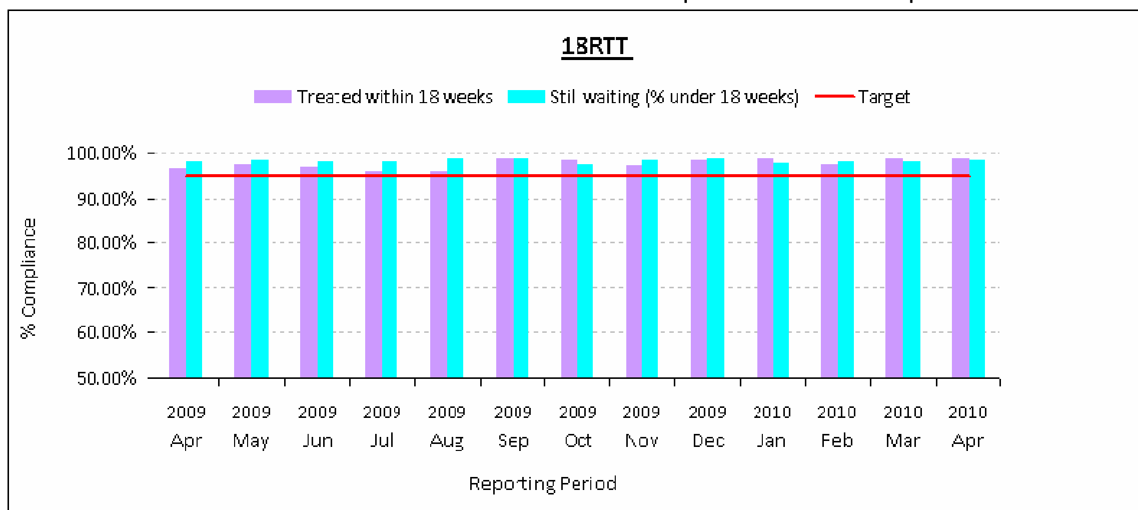
8620 referrals were received by the Clinical Genetics Unit.




| | 2009_04 | 2009_05 | 2009_06 | 2009_07 | 2009_08 | 2009_09 | 2009_10 | 2009_11 | 2009_12 | 2010_01 | 2010_02 | 2010_03 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cancer | 268 | 242 | 249 | 287 | 217 | 260 | 242 | 264 | 215 | 259 | 256 | 277 |
| non-cancer | 427 | 447 | 490 | 513 | 388 | 483 | 457 | 486 | 474 | 417 | 494 | 508 |
| Total | 695 | 689 | 739 | 800 | 605 | 743 | 699 | 750 | 689 | 676 | 750 | 785 |

### Compliance with 18 weeks Referral To Treatment (RTT) in Clinical Genetics

The Clinical Genetics Unit have continued to achieve compliance with the Department of Health's 18 week policy.



# Genetics Service

2009/2010 saw an increase in referrals which although would have a contributing effect on workload the 18 week RTT has remained above the 95% threshold for the full 12 months. The fact that the Unit has continued to achieve these targets is a credit to all the staff involved.

**Achievements**
Achieving and maintaining compliance with 18 weeks RTT.

Dom McMullan and Dr Jenny Morton successfully received a 1 year award from Birmingham Children's Hospital Research Foundation, examining the genetic basis of children presenting at BCH with orofacial-clefting using the latest high resolution genomic microarray technology.

Dr Chirag Patel and Professor Eamonn Maher were successfully awarded a Springboard Fellowship from the Birmingham Children's Hospital Research Foundation to ascertain the genes involved in familial congenital heart disease through the use of high resolution microarrays.

Clinical staff from across the Directorate presented at the British Society for Human Genetics Conference in Warwick

The Clinical Genetics Unit was revalidated as a Genetic Counsellor Training Centre and currently has two trainees for 24 months.

The Directorate negotiated a contract with Walsall to provide an enhanced genetic counselling and education service.

A Business Manager was successfully appointed, initially focusing on service re-design in Clinical Genetics.

Compliance with 18 weeks has been maintained throughout the year with the % compliance increasing.

**Clinical Governance**
Clinical quality standards are firmly embedded in our work. We have a dedicated Quality Manager post in the laboratory which has a very beneficial impact on the service we provide to patients. This year the laboratory lhad a very successful CPA acreditation visit and continues to maitain its full CPA status .

Across the Service there is:

- a local incident management policy which feeds into the Trust system and constantly reviews best practice
- a full audit programme actively reviewing the work of the department
- Clinical Improvement Group meet monthly to review all relevant aspects of the service including incidents, audit and quality issues
- Patient and User Satisfaction Surveys carried out and outcomes fed into service improvement .

**Laboratory:**

- Has full Clinical Pathology Accreditation (inspected October 2009)
- Participates in NEQAS external review programmes
- The molecular section submits data to the Clincial Molecular Genetics Society and the UK Genetic Testing Network on an annual basis
- The cytogenetics data are submitted to the Association of Clinical Cytogenetics and the UKGTN.

**Clinical Genetics Unit:**

- Standards of NICE and NSFs are incorporated into practice and adhered to
- Cancer clinic waiting times reduced to comply with external targets and removed from Trust risk register.
- Clinical department had two formal complaints during the period
- Compliant with both 18 week DH targets
- In association with SWOB we engage with other clinical genetic centres in regular peer review
- Securing funding for Specialist Nurse posts thus ensuring close working relationship between clinical genetics and mainstream medicine
- Numerous multi-disciplinary/joint clinics
- Developing the role of the genetic counsellor

**Risk Management**
All laboratory procedures have a full risk assessment in place.
The directorate Clinical Improvement Group reviews directorate risks monthly and reviews audit plans.

**Audits**

**Clinical Audits 2009-10**
- Cascade testing in Haemochromatosis
- Huntington's Disease Consortium
- Annual patient satisfaction survey
- Molecular testing in cardiomyopathy families
- Availability of notes in Coventry clinics
- Case note audit – Record Keeping
- Retinoblastoma National Audit
- Neurofibromatosis type 2

**Laboratory Audits 2009-10**
- An Audit into the Frequency of Monitoring CML Patients at the WMRGL - Post ELN Guidelines
- An audit to determine the cytogenetic abnormality type and rate for amniotic fluid and CVS referrals which include congenital diaphragmatic hernia in the referral reason; and also to assess the suitability of interphase FISH to look for possible tetrasomy 12p mosaicism for these cases
- Audit to determine if there is a correlation between chorionic villus sample (CVS) weight and the reporting time at the WMRGL.
- An audit of referrals for Fragile X Syndrome: Postnatal Cytogenetic and Molecular Studies
- Results of genetic testing of all HMSN referrals to the WMRGL up to July 2009.

## *NHS NATIONAL GENETICS EDUCATION AND DEVELOPMENT CENTRE*

Since 2004 Birmingham Women's Hospital (NHS Foundation Trust) has hosted the NHS National Genetics Education and Development Centre (NGEDC). Last year, following a successful tender to the Department of Health funds were identified to support a further five-year contract and whilst the funding has been limited, the Centre continues to deliver its objectives that were set by the NGEDC Steering Committee and closely monitored by the Department of Health. The limitation in funding has changed the way the NGEDC works with Regional Genetics Centres but its primary objective, to improve the understanding of genetics among all health professionals and its role in modern healthcare, is upheld.

The work-streams are delivered by a multi-disciplinary team of professionals and administrative staff, supported by lead professionals in Dietetics, Medicine, Nursing and Pharmacology. A formal collaboration with the University of Birmingham supports academic time to evaluate fully the activities of the Centre.

**Staffing at 31 March 2010:**

0.60 wte Centre Director
1.00 wte Associate Director
1.00 wte Education Development Specialist
1.00 wte Blended and E Learning Specialist
1.00 wte Education Specialist
1.00 wte Knowledge Manager
1.00 wte Communication Specialist
1.00 wte Information Specialist

3.00 wte Education Development Officers
1.00 wte Publications Specialist
1.00 wte Administrative Assistant & PA to Centre Director

**Activity during 2009/ 2010**
The Centre continues to work towards the integration of a continuum of genetics education into health professionals' learning, teaching and practice through awareness raising activities, development of educational resources and courses to support educators. This has been demonstrated by:

- Facilitating the inclusion of genetics into the revised Nursing and Midwifery Council Standards for education
- Providing 'Teaching Genetics' and 'Using PowerPoint ®' courses for genetics specialists
- Expanding the range of entries on the Telling Stories website
- Developing a competency framework for Non Invasive Prenatal Diagnosis, [Rapid Project].
- Publishing quarterly 'Genetics Education Centre Update' newsletters.

**Developments planned for 2010 / 2011**
Development of blended and e learning to support health professionals in clinical practice to understand and integrate genetics into clinical practice.

Review the content and delivery strategy of The Teaching Genetics Course to further expand its uptake by health professionals.

Work closely with Higher Education Institutions to champion the integration of genetics into revised curricula for undergraduate nurses and midwives and make available support for educators to facilitate the learning and teaching of genetics.

Collaborate with the United Kingdom Genetics Testing Network to develop educational resources about genetic testing.

### *INFECTION CONTROL*
### *Jim Gray, Consultant Microbiologist*

Once again we are pleased to report evidence of continuing high standards of Infection Prevention and Control at all levels within the Trust, together with completion of almost all objectives set in the Infection Control Annual Programme of Work. In July 2009 we underwent an unannounced inspection by the Care Quality Commission of our performance against The Health and Social Care Act 2008: no breaches of the Hygiene Code were found. The Annual Report of the Director of Infection Prevention and Control provides a full report of infection control performance during the year, and is available for public viewing on the Trust website.

For the seventh consecutive year there were no infections in any of the categories subject to Department of Health mandatory surveillance. However, mandatory infection surveillance encompasses only a small proportion of the overall burden of healthcare associated infections (HCAIs), and it is important to note that our much more extensive internal infection surveillance continues to show satisfactory performance in preventing a much broader range of HCAIs. This excellent performance is no reason for complacency. We continue to raise awareness of specific risks around HCAIs with our staff, and to promote and monitor good clinical practice to minimise the risk of HCAI for our patients. Key developments within the service during 2009/10 were

- Greater robustness of staffing. Dr Mitul Patel was appointed as Consultant Microbiologist at Birmingham Children's Hospital in August 2009, and is now sharing the on-site work at the Women's Hospital with Jim Gray. We also welcomed a regular on-site presence from Samantha Bullingham, Infection Control Nurse at the Children's Hospital, who works alongside Julie Suviste.

- MRSA screening of elective and emergency Gynaecology patients, all admissions to the Neonatal Unit, and high-risk Maternity cases introduced, making us compliant with the Department of Health Operation Guidance well ahead of the target date.

- The frequency and scope of audits of clinical practices was greatly increased, with particular emphasis on monitoring compliance with the Department of Health High Impact Interventions. We are also pleased to record continued improvement in performance in hand hygiene audits.

- The programme of regular multi-disciplinary environmental inspections introduced during 2008/09 was developed during 2009/10 to ensure that all clinical areas are visited at least once per year, and to ensure that any issues identified are responded to. This programme has been instrumental in ensuring that consistently high standards are maintained in all clinical areas.

## *RESEARCH AND DEVELOPMENT*

### *Professor Khalid Khan, Research & Development Director, Mrs Kelly Hard, Research and Development Manager*

Over the past year R&D has achieved a high level of stability, providing a stable number of staff working within the department, and securing funding from a variety of income sources.
2009-10 saw an increase in staff from 2.1wte to 6.5wte, this was due to demand and a change in strategy within the department. Staffs were employed to boost recruitment into NIHR portfolio projects, whilst taking extra pressures off recruitment from other directorates and clinicians. Other staffs were tasked with preparing and submitting grant applications in order to maximise the trust income, and research capabilities.

During 2009/10 the department received a number of national and international grants, including a Research for Patient Benefit Grant, a Health Technology Assessment grant a number of Well Being of Women Grants.

The department continues to host two of the most successful CLRN priority area lead networks in the region, REACH and Clinical Genetics. REACH is now lead by Mr Arri Coomarasamy whilst Clinical Genetics continues to be lead by Prof Eamonn Maher. In addition we have recently been successful in our application to host the Urogynaecological Priority Network which will be lead by Mr Phil Toozs-Hobson. Each of these networks is striving to increase the number of patients recruited into studies within the Birmingham and Black Country Region and also developing their own research projects for the future. In addition these networks aim to raise the profile of research, its translation into practice and continue the ongoing high quality research within the respective fields in our region, but especially within this trust.

**Good Performance Indicators**
This year the department has recruited 697 participants to NIHR Clinical Trials, this is a 157% increase on the previous year's recruitment, excluding band 1a studies*. This year the department has continued to improve and strengthen the relationship with the BBC CLRN in order to secure and maximise potential portfolio income and Research Management and Governance support costs. The Women's hospital has been one of the biggest recruiters into portfolio studies within the region.
* these studies are those which recruit over 1500 patients in any one CLRN and are deemed to be simple screening type studies.

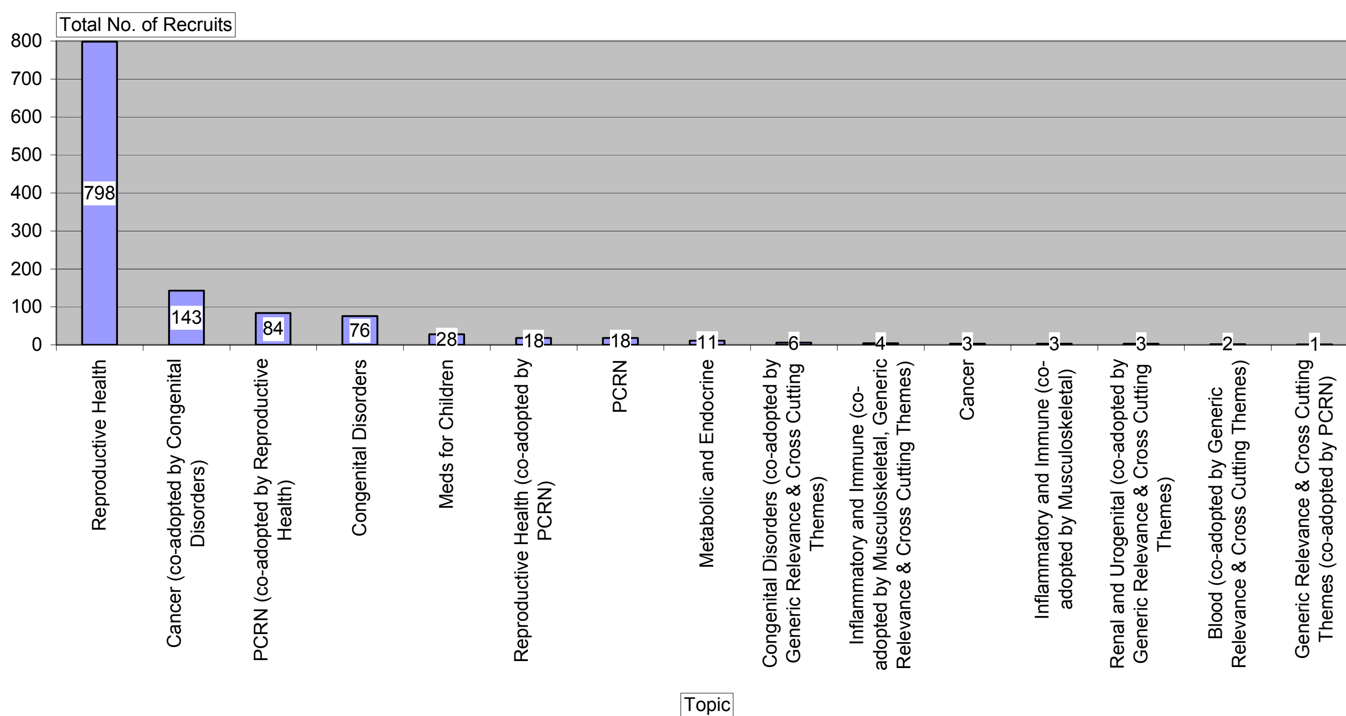
One of our other measures for good performance is time taken to provide NHS permission for research project. The BBC CLRN have set all trusts a target of 59 days from receiving a project to providing NHS permission. The target was to be met by October 2010; however our Trust had achieved this by the end of this financial year.

**Clinical Governance**
There were 2 reported incidents which were processed through the relevant processes and procedures already in place by the Department. Both matters were investigated as per normal procedures and are now closed. Lessons learned approach was taken with changes in process, policy and procedures as and where necessary.

**Activity**
At the end of the March 2010 there were 105 research studies being undertaken (or in the start up phase) across the Trust. These are summarised below:

| Area | Active | In set up | Total |
|---|---|---|---|
| **Gynaecology** | 31 | 1 | 32 |
| **Obstetrics** | 34 | 1 | 35 |
| **Genetics** | 26 | 0 | 26 |
| **Neonatal** | 9 | 0 | 9 |
| **Other** | 3 | 0 | 3 |
| **Total** | **103** | **2** | **105** |

**Graph of Recruitment across topic to NIHR portfolio studies.**




**R&D Output**

In 2009/10 research activity across the Trust was disseminated via 166 publications in National and International peer reviewed scientific Journals – see Publications section

## *EDUCATION*
## *Neil Savage, Director of Workforce and Organisational Development*

**Overview**
2009/2010 has again been a successful year for the Trust Education. Learning and development continues to develop as a key part of the Trust's business focus. Through the Learning and Development Agreement with the West Midlands Strategic Health Authority (SHA), the Trust receives circa £5.4 million per annum. This funding enables the Trust to deliver a breadth of quality clinical education, allocated to a variety of areas including:

- Service Increments for Teaching (SIFT) Medical Placements and Facilities - Birmingham Medical School
- Medical and Dental Education Levy (MADEL) and
- Learning Beyond Registration
- Nursing & Midwifery Salary Replacement
- Clinical Skills Centre
- Practice Placement Managers
- Scientist & Technicians Salary Replacement
- Library Strategy Funding

This chapter provides a summary of our past year's activity and performance in the delivery of education.

During the first half of 2010 the Trust has been involved in the regional and national reviews of future MPET funding. Although no final decision have been taken, there is an expectation that funding for MPET purposes within the Trust will be reduced by at least £0.5m over the next four years. A phased loss of this income over a four-year will be crucial to enable the Trust to adapt to the new funding aliquot. This will require a significant rethink about both the qualitative and quantitative delivery of medical education in the Trust.

**Activity**
Full details of Trust educational activity are included in the individual sub-specialty areas below.

**Good performance indicators**
Details of good performance indicators for Trust educational activity is included where appropriate in the individual sub-specialty areas in section 4 below.

## SUB-SPECIALTY AREAS

### *LEARNING BEYOND REGISTRATION*
### *Anne Marie Gaynor, Senior Nurse Education & Professional Development*

The NHS West Midlands budget for Learning Beyond Registration (LBR) consists of 2009/2010 allocation with a 2.7% uplift for inflation; amounting to an allocation of £58,443. In addition separate funding streams are provided for Non Medical Prescribing Programmes based on Trust demand. The Trusts LBR allocation is calculated on a per capita basis using staff in post figures which originate from the DOH Census data. The adoption of the Learning and Development Agreement LDA in 2009 set out clear contractual management and reporting arrangements for Trusts and the SHA for LBR funds. This agreement ensures that the management of education and related quality assurance measures are robust.

LBR funding is available to all professionally registered staff and is apportioned appropriately across the Trust. It is used to support staff to undertake post registration education at a variety of Higher Education Institutions and training providers. It supports staff opportunities for nursing, midwifery, AHP and HCS staff to enhance practice and professional development and provide a workforce fit for purpose. Learning and development needs of staff are identified during their PPR and linked to SHA strategies, Trust Strategies and service development needs as well as individual Personal Development Plans and KSF requirements.

Since the introduction of the NMC Standards outlining requirements for appropriately trained mentors, funding to support ongoing mentorship preparation is no longer included in pre-registration budgets and is now part of the LBR funds . This means that in gynaecology, maternity, neonatal and in clinical support, an increased proportion of the funds are allocated to support professionally registered staff in mentorship preparation programmes and ensure that the Trust has sufficient numbers of trained staff to support pre-registration students.

Particular developments included in LBR commissions this year have been the introduction of specialist roles such as the Advanced Scrub Pratitioner or further developemnt of specialist skills and training such as Obstetric Ultrasounds scanning for midwives undertaken to support continuity of care and easy access to services. In the NNU, requirements of the Neonatal Directorate Training and Workforce Strategy and the Tool Kit for high quality Neonatal Services (2009) means LBR funds increasingly being used to support staff in undertaking NNU pathway modules.

For all staff groups maintaining professional registration via CPD is crucial to practice and LBR activities and funding supports this.

The SHA has funded the introduction of a Preceptorship Facilitator Post for 12 months. This post will primarily be to support newly registered staff in their transition from student to registered practitioner.

The following outcome measures have been defined for this post over the coming 12 months:

- There will be systems in place to identify staff requiring preceptorship and the organization is able to demonstrate the application of the system.
- Preceptors have been trained and are in sufficient supply to meet the demand for preceptorship. The Trust is able to demonstrate this commitment through post graduate training contracts or other appropriate training arrangements.
- Each preceptorship programme satisfies professional regulatory body requirements (e.g. NMC Guidance on preceptorship for new registrants), mandatory training, Agenda for Change, Knowledge Skills Framework (KSF) 6-month assessment and 1st foundation gateway.

### *PRACTICE PLACEMENT*
### *Katie Joyce - Practice Placement Manager*

Clinical Placements form between 30-60% of each NHS funded undergraduate/pre-registration healthcare training course. Suitable and effective clinical placements aim to provide students with the opportunity to undertake practical assessment, supervised by an Assessor who has the appropriate knowledge and experience to form a judgement about a Student's competence/proficiency. The Trust provides clinical placements to undergraduate/pre-registration Midwives, Nurses, Operating Department Practitioners, Physiotherapists, Radiographers and Biomedical Science Students. This process is managed by the Practice Placement Manager (PPM).

In 2006 the Nursing and Midwifery Council (NMC) published 'Standards to Support Learning and Assessment in Practice.' It set out standards for Mentors in the form of a development framework which defined the knowledge and skills Nurses/Midwives need to apply in practice, when they support and assess students. The Trust has subsequently implemented these standards and has ensured staff are familiar with them.

Practice Placement developments and objectives we have worked towards in 2009 / 2010 have included:

- Maintaining a live database of Mentors through regular review and by adding or removing names of registrants as necessary

- Ensuring the appropriate preparation and continuous update of Mentors in accordance with the NMC criteria

- Ensuring appropriate levels of Mentors are available to support the increasing number of Students in training.

**Summary of Clinical Governance for Practice Placement**
During 2009 / 2010 the Trust has endeavoured to make certain that all Mentors are prepared, supported and continuously updated in line with the criteria of the standards to ensure students in training are provided with effective clinical placements.

Since September 2009 the NMC required that new Mentors can no longer be entered onto local registers by virtue of previous qualification or experience. New Mentors must undertake an NMC approved programme of preparation, for e.g. Supporting Learning and Assessment in Practice (SLAiP). LBR activity in 2009 / 2010 has supported this, with an increased number of Nurses, Midwives and AHPs enrolling on the SLAiP course. This has improved the number of Mentors/Sign-off Mentors within the Trust.

From April 2010 the NMC has required all Student Nurses undertaking their final Management and Sign-off placements to be supervised by a Sign-off Mentor. Sign-off Mentors have been receiving in-house training on their role and responsibilities as a Sign-off Mentor for Students on such placements.

In 2010 consultation with varying bodies finished and the decision to change Nursing to an all graduate profession was made. Changes to pre-registration Nursing programmes offered by HEIs within the West Midlands will be implemented in 2011 and by 2012 nationally, i.e. Prospective Students will no longer be offered Diploma courses as a route into Nursing.

## *THE EDUCATION RESOURCE CENTRE*
### *Diane Carter, Manager, Education Resource Centre*

The Education Resource Centre (ERC) has always supported the Trust Educational Policy in providing a professional workforce fit for purpose. The Centre's strategies revolve around access to information, from both electronic and conventional sources. High quality multi-disciplinary educational courses are organised, particularly in the areas of clinical skills and evidence based practice. The Centre also organises and hosts mandatory training programmes on behalf of the Postgraduate School of Obstetrics & Gynaecology.

In early 2010 Professor Khalid Khan, Clinical Tutor and Trust Lead for Postgraduate Education, took up a position at Bart's in London. Professor Khan had been an Associate Director of the ERC for many years and had been actively involved in the provision of Evidence Based Medicine, thus raising the profile of the ERC as a centre of excellence in this field. He had also been instrumental in the creation of the Masterclass Programme for Advanced Trainees in Obstetrics & Gynaecology which has now been running for the past 10 years with excellent evaluation. Following the departure of Professor Khan, Mr Yousri Afifi, the Trust's Royal College of Obstetricians & Gynaecologists (RCOG) Tutor, was appointed his successor as Chair of the Regional Advanced Training Committee in Obstetrics & Gynaecology will ensure the continuation and organisation of the programme by the ERC.

The Centre has expanded its multi-disciplinary activities and hosts courses for consultants, junior doctors, medical undergraduates and nursing and midwifery staff. Multidisciplinary Practical Obstetric Multi-Professional Training (PROMPT) training continues to be held. Further training continues in Basic Practical Skills, Newborn Life Support, Ectopic Pregnancy, Perineal Tear and Advanced Practical Skills training. All have received excellent evaluation and the Centre continues its reputation as a leading provider in skills training in the Region. In addition to this, demand for the use of the Clinical Skills Centre continues to grow and the Centre has also been instrumental in the delivery of the Trust mandatory programme in resuscitation training.

Following the retirement of Mr Harry Gee, Mr Richard Cartmill was appointed to the post of Head of Postgraduate School of Obstetrics & Gynaecology. He has confirmed that the continuation of management and administration of the School's work and finance is to be centred in the ERC and as such the Trust retains its status as the centre-point for postgraduate specialist training in Obstetrics & Gynaecology for all West Midlands Training. The Centralised programmes in Basic, Intermediate and Advanced training continues to be organised and hosted by the ERC on behalf of the School. Previous successful bids to the SHA have ensured the continuation of the provision of mandatory ultrasound training and attendance on mandatory Advanced Training Skills courses.

Following the establishment of Undergraduate Clinical Teaching Academies, Mr Justin Clark was appointed to the post of Head of the Clinical Teaching Academy for the Trust. His previous initiative on the appointment of a clinical lecture to improve undergraduate teaching continues.

The ERC continues its policy of developing and expanding its activities and is an income generator. As before the area met its CIP targets and was a contributor to the Trust financial position.

## *LIBRARY SERVICES*
## *Ann Daly, Librarian*

**Overview of service**
The Library and Information Service is available to all BWNFT employees and students. The service is staffed by a part-time clinical librarian and two fulltime para-professionals. Staff are available between 9am and 5pm Monday - Friday, and out of hours access is available 24 hours a day, seven days a week. We provide a range of traditional library services including print and electronic textbooks and journals, literature searching, interlibrary loans and medical database training. We also provide a more contemporary service that supports a culture of evidence based practice with the clinical librarian attending delivery suite teaching / ward round and managing the O&G Journal Club. This year, the library team held an Open Day that was attended by just over 100 Trust staff to whom demonstrations were provided on accessing e-journals and using healthcare databases. In addition, we conducted a library survey with over 80% of service users voting both the efficiency and helpfulness of library staff as being between excellent and very good. Finally, the clinical librarian was awarded *Chartership*, the gold standard qualification for library and information professionals.

**Library Service activities during 2009 / 2010 include:**

- Induction and library membership card to new staff
- Literature search and interlibrary loan service to ensure current and best evidence is used in clinical practice and research
- Relevant books, journals, and electronic resources
- Design and delivery of individual and group training programmes on accessing e-journals, searching medical databases and critical appraisal
- Library Road Show and Open Day to promote the library service
- Provision of a Current Awareness Service
- Library survey to ensure provision of a user-led service
- Attendance at delivery suite teaching / ward round and provision of a literature search service to provide best evidence to support patient care
- Management of the O&G Journal Club

**Supporting Clinical Governance**
The library supports Clinical Governance by ensuring the best research evidence is made available for clinical practice, research projects and to develop local guidelines. This is achieved by providing a quality literature search service whereby library staff use a hierarchical approach to searching that ensures all evidence is located and made available. We also provide a same day service for urgent interlibrary loans to ensure the immediate availability of research to support patient care.

**Library activities supporting Clinical Governance**

| Activity | 2009-10 | 2008-9 | 2007- 8 |
|---|---|---|---|
| Number of Trust staff receiving induction | 588 | 384 | 484 |
| Library staff hours spent on induction | 16 | 8 | 11 |
| Number of Trust staff receiving library education | 148 | 139 | 144 |
| Library staff hours spent on user education | 81 | 107 | 87 |
| Literature searches completed | 106 | 104 | 118 |
| Loans from stock (to own users) | 1575 | 1282 | 1191 |
| Interlibrary loans (ordered for our users) | 641 | 682 | 847 |

Number of inductions, literature searches and book loans has increased over the years, indicating good promotion of these services. Inter-library loans have decreased as service users are accessing e-journals for themselves (e-journal usage has increased). The number of Trust staff receiving library education has slightly increased although library staff hours spent delivering education has decreased but we'd hope to see an increase during the next 12 months.

**Library Business Plan 2010 – 2011**
The Plan ensures compliance with the Library Quality Assurance Framework (LQAF) to meet the knowledge and learning needs of the hospital community by providing helpful and knowledgeable library staff and the appropriate resources identified through customer and stakeholder engagement. In addition, the library will continue to support a culture of evidence-based practice through the availability of journal articles, and a literature search and clinical librarian service to support patient care.

## *UNDERGRADUATE EDUCATION*
## *Mr Justin Clark, Consultant and Head of Academy*

**Overview of Service**
The Trust is the main provider of under-graduate obstetric & gynaecological education for the University of Birmingham medical School. There are over 400 students currently studying at undergraduate level at the University of Birmingham. The teaching is co-ordinated from the Birmingham Women's Hospital. Over the course of a year in the final (5th) year, all students attend the Trust for academic in-days (lectures/problem based learning) and also for final examinations.

**Clinical Placement Activity for 2009-10**
The Trust has approximately 160 of the 400 students every year attending for obstetrics and gynaecological clinical placements. In addition to this the re-sit students (normally numbering around 40-50) attend the Birmingham Women's Hospital for remedial teaching and student placements during the course of the year. The current academic year has introduced significant changes in the undergraduate MB ChB programme. Student placements have now been reduced to 5 weeks from 6 weeks, but an additional 20 final year students now undertake student selected activities which involves a 5-week 'apprenticeship' where they are integrated onto a clinical firm an act in the capacity of a 'houseman' (FY1) to enable them to acquire generic, essential skills at FY1 level, hence preparing them for professional life immediately following qualification. In addition, the Trust provides a faculty of 10 trained 'senior clinical examiners' from our Consultant body for the newly developed student final examinations.

In addition to final year medical students, we cater for around 45 4th year students undertaking 2-week and 4-week "career tasters" which are student selective components of the curriculum. To accommodate these students we offer them experience in obstetrics & gynaecology in specialist fields of maternal medicine, fetal medicine and gynaecological surgery, as well as lab-based medicine (pathology/haematology/microbiology/cytology), genetics and neonatology. We also place around fourteen 4th year oncology medical students for one-week placements in oncology every year.

**Innovations and developments**
The Trust liaises closely with the Medical Education Unit at the University of Birmingham to develop the curriculum and student assessments. We have ring fenced resources to appointment a specific Teaching Lecturer in addition to Clinical Lecturers to deliver teaching in an academic setting (tutorials, problem-based learning, clinics and bed-side teaching). We are also piloting the use of gynaecological teaching associates to teach examination with a view to conducting a full scale randomised control trial in 2010 to assess the impact of this intervention against standard teaching methods.

**Future developments**
Following an excellent report following a Quality Assurance Visit by the University of Birmingham Medical Education Unit last year, the Birmingham Women's Hospital has been designated to become one of the new "Clinical Teaching Academies" of the University of Birmingham. We are in the process of developing our "Academy Implementation Plan" which involves developing a new teaching structure involving a greater input in undergraduate teaching from clinicians with an interest in education. These "Senior Academy Teachers and Tutors" will develop the clinical curriculum and offer more intense one to one interaction with our students in both an educational (including monitoring progress, feedback and assessment) and pastoral capacity. It is envisaged that all clinical and academic staff within the hospital will continue to deliver day to day teaching and provision of clinical material.

## *UNDERGRADUATE MIDWIFERY EDUCATION*
### *Alison Edwards, Senior Midwifery Lecturer – Placement Support and Wendy Burt Practice Development Midwife*

**Overview**
The undergraduate programme continues to ensures that students are fit for practice and purpose and meet the requirements for a BSc (Hons) in Midwifery and registration with the NMC.

**Activity**
The total number of student midwives supported by the Trust in 2009/10 was 39 on the 3 year direct entry midwifery programme and 10 on the 18-month midwifery programme.

**Service Development for 2009/2010**
The partnership between the clinical and academic team continues to develop with clinical midwives increased involvement in OSCE assessments. The NMC requirements relating to 'Essential Skills Clusters' and 'Grading Practice' have been incorporated into practice assessment.

Trust midwives and academic staff have worked towards incorporating NMC guidance on case holding practice for student midwives. Students will follow a woman from booking to birth and beyond. This will be a significant challenge. Clinical experience monitoring group meetings are held quarterly with trust student coordinators and link tutors to discuss issues pertaining to student's training.

**Summary of Clinical Governance**

- Students are made aware of all relevant, existing and new, documents, e.g. from local, national or professional sources, and are encouraged to participate in the development of local standards. All students have access to trust guidelines.

- Annual education audits continue to demonstrate supportive and effective clinical placements for students

- Clinical midwives from the Trust, academic staff and others, comprise a Profession Specific Group (PSG), initiated by the Quality Assurance Agency (QAA), which meets regularly to review quality issues related to the midwifery education programme. Recommendations form this meeting are reported to the Healthcare Quality Group which is a multi professional group with SHA representation.

- All student midwives have the support of a named Supervisor of Midwives especially when untoward clinical incidents occur.

**Governance**

- There are two main groups within the Trust to manage educational activity and quality – The Multi-professional Education, Learning and Development group (MELD) and the Training, Education and Development Committee (TED).

- TED meets regularly with good cross-directorate and multi-professional attendance. It manages operational training matters and reports in to MELD which meets on a quarterly basis.

**Risk Management**
The Trust continues to develop its robust risk management systems. Educational matters which fall into the clinical risk category are managed through the Clinical Governance Committee, chaired by Mr Peter Thompson, Medical Director. Educational matters which fall into the non-clinical risk category are managed through the Organisational Risk and Governance Committee, chaired by Neil Savage, Director of Workforce and Organisational Development. Both committees report directly to the Board of Directors.

***PATIENT EXPERIENCE***
***Jane Owen, Director of Nursing, Midwifery, Infection Prevention & Control and Operations***

***Overview 2009-2010***
The Corporate Directorate has continued to build on initiatives to improve patient experience and act on feedback. The services provided by the Safeguarding, bereavement and spiritual care teams all strive to deliver individualised high quality care, responsive to patient needs.

There is a continuing need to improve on parent feedback for those who have babies in the Neonatal Unit. Revised questionnaires have been designed and volunteers help parents to complete these forms

Clearly it is important to get a complete overview of patient experience rather than concentrating on what can be seen as the more negative feedback via PALS and complaints. To this end, in the forthcoming year there will be a complete review of the systems currently in use. This will be headed by a patient experience project lead to be appointed early autumn 2010

The Trust is keen to continuously improve quality. In the forthcoming year more needs to be done to ensure lessons are learnt from complaints, and shared across the organisation. In addition targets for the quality accounts include:

- To maintain being a top performer in the National Inpatient Survey.
- To achieve a minimum of 80% of all complaints answered on time.

## *COMPLAINTS*
## *Christine Yarnold, Complaints Manager*

**Activity**
During 2009-2010 there were 114 formal and 7 informal complaints received (informal complaints are ones not received within 12 months of the incident complained about). This was an increase on the previous year (2008-2009) when 99 formal complaints were received.

A patient-focused approach to the management of the complaint allowed the Trust to negotiate a response time proportionate and acceptable to the complainant. Through this approach 57% of the formal complaints were responded to within the agreed timescale for response.

**The main subjects of complaint which have emerged for 2009/2010 are:**

| Subject of Complaint | Number of Complaints received | Percentage |
|---|---|---|
| **Aspects of Clinical Treatment** | 40 | 35% |
| **Communication** | 18 | 15% |
| **Attitude of Staff** | 28 | 25% |
| **Appointment delay/cancellation** | 16 | 14% |

**Complaints by Profession:**

| Profession | Total Number of Complaints received |
|---|---|
| **Medical including surgical** | 42 |
| **Professions supplementary to medicine** | 16 |
| **Nursing, Midwifery and Health Visiting** | 32 |
| **Trust Administrative staff/members** | 17 |
| **Other – e.g. reimbursements requests** | 5 |
| **TOTAL** | **114** |

**Subject of Complaint:**

| Subject of Complaint | Total number of complaints received |
|---|---|
| Admissions, discharge and transfer arrangements | 4 |
| Appointments, delay/cancellation (outpatient) | 16 |
| Attitude of staff | 28 |
| All aspects of clinical treatment | 40 |
| Communication/information to patients (written and oral) | 18 |
| Consent to treatment | 1 |
| Patients' property and expenses | 3 |
| Personal records (including medical and/or complaints) | 1 |
| Failure to follow agreed procedures | 1 |
| Transport | 1 |
| Other | 1 |
| TOTAL | **114** |

**Complaints by Service Area**

| Service Area | Total number of complaints received | Concluded in agreed timescale | Late with consent from patient | Not concluded at 31.3.10. |
|---|---|---|---|---|
| Gynaecology Inpatient | 17 | 5 | 8 | 4 |
| Gynaecology Outpatient | 30 | 19 | 9 | 2 |
| Maternity Services | 43 | 21 | 20 | 2 |
| Other – Clinical Support/Genetics/NNU/Estates | 24 | 18 | 5 | 1 |

**Summary of Clinical Governance**

- The response time, subject of complaint, profession complained about and service area complained about is monitored by the Department of Health annually.
- The number of complaints and response times are monitored Quarterly by the Primary Care Trust

Changes in practice and lessons learnt from the complaint investigation are reported to:

- The Clinical Governance Committee – quarterly
- The Management Board – monthly
- The Board of Directors – monthly.
- Changes in service, protocols and procedures, made as a result of the complaint investigation, are reported back to the complainant.

## *SPIRITUAL & PASTORAL CARE SERVICES*
### *The Revd Dr. Mojalefa Khechane, Free Church Chaplain, Spiritual & Pastoral Care Services Manager*

The mission of the Spiritual and Pastoral Care Services (SPCS) is to promote spiritual health and initiate timely, competent, compassionate and confidential spiritual and pastoral support to patients, families and staff.

**Activity**

The main objective in the period under review was to increase chaplains' coverage Trust-wide. The SPCS made some adjustments in staffing with a view to increasing bedside coverage for minority religions; we introduced "Bank chaplaincy". We interviewed for Bank positions (Sikh, Hindu, Bhuddist, Christian, Muslim, Jewish and Bahai) but only one appointment was made. These positions have since been re-advertised; we continue to receive applications.

Through increased working ties with local educational institutions, and in pursuance of the Trust's work experience policy, we are now able to provide placements for theology students. This year we hosted two such students.

**New Roles**
Rakesh Bhatt, our Hindu Chaplain, who worked for us through our Service Level Agreement with the UHB, left the Trust after five years of service. Akm Kamruzzaman (Zaman) was appointed as Muslim Bank chaplain.

**Clinical Governance**
The SPCS continues to take an active role in such annual services as: "Still in our Hearts"— a non-religious ceremony of remembrance for people who have experienced pregnancy loss or the death of a baby; it takes place in May and "Celebrating Brief Lives"—a similar, but religious, ceremony held annually in October.

Perinatal loss remains a focus of spiritual and religious care; gynaecological funeral services for non viable fetus take place according to need. Services for the 'Respectful' Disposal of human remains take place within the hospital intermittently according to need.

The figures below illustrate some services and activities conducted during the period under review.

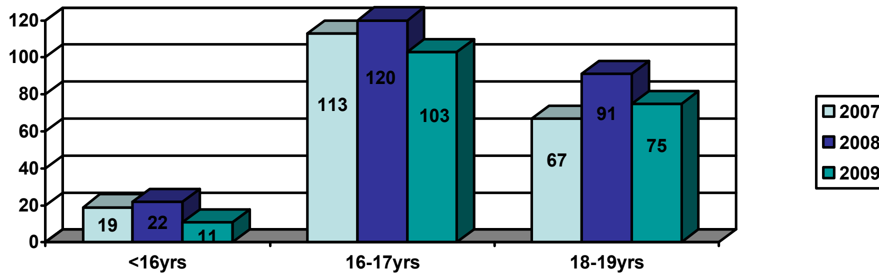
| Service/Activity | 2009/2010 |
|---|---|
| **Number of blessings performed** | 39 |
| **Number of baptisms performed** | 51 |
| **Number of patients visited** | 987 |
| **Number of funerals conducted** | 10 |
| **Number of members of staff seen** | 8 |
| **Number of Protestant worship services conducted** | 44 |
| **Number of Catholic Mass celebrated** | 32 |

## *SAFEGUARDING*
## *Elaine Giles, Lead Nurse/Midwife for Safeguarding Children*

**Safeguarding Team**
The Safeguarding Team provides specialist advice and support to all Trust staff and outside agencies and professionals on all matters relating to the safeguarding and protection of vulnerable children and adults.
The team consists of 5 WTE midwives.
In addition, the team work in collaboration with the hospital based social work team.

**Safeguarding Children**
- The Trust's Executive Lead for Safeguarding has recently become a member of Birmingham Safeguarding Children Board (BSCB).
- In line with national guidance, the Trust has a Named Nurse/ Midwife and a Named Doctor with protected time. This year the Trust appointed a new Named Doctor following the retirement of Dr Mike Hocking. They provide advice and expertise for colleagues both within health and other agencies, promoting good practice to safeguard and promote children's welfare. In line with national guidance, the roles are clearly defined within the job descriptions. The Named Professionals also represent the Trust at BSCB Forums.
- Executive Lead: Jane Owen, Director of Nursing and Midwifery
- Named (Lead) Nurse/ Midwife: Elaine Giles
- Named Doctor: Debbie Derbyshire, Consultant Neonatologist
- Additional frontline advice and support is also provided by a Specialist Nurse/Midwife for Safeguarding, Eleanor Newbold.
- Consistently, with the national picture, the number of referrals continues to escalate putting additional pressures on the capacity within the team.
- A recent combined Ofsted and CQC inspection of Safeguarding across the city gave an 'inadequate' feedback for health and social care services.

**Number of referrals where there have been identified Child Protection concerns.**

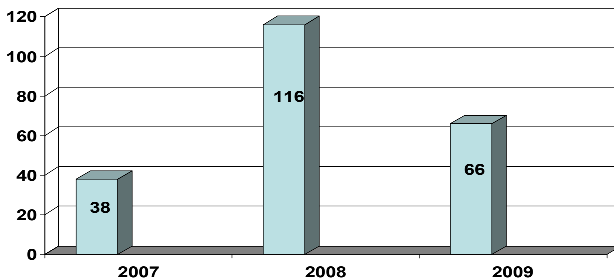



An increasing number of cases have identified social factors requiring intensive assessments and monitoring by the safeguarding team and community midwifery services. It is crucial that good communication is maintained between the professionals involved in these cases to ensure parents receive adequate support for them to be able to parent effectively.

Community midwives are providing early identification of social problems, using the hand-held pregnancy records and the Common Assessment Framework has been recently introduced for which midwives are undergoing training and a city –wide approach is being used to identify areas of risk.

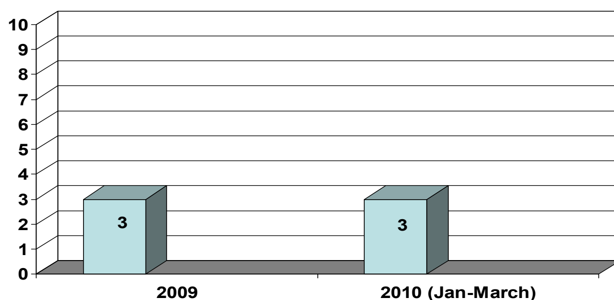
Number of referrals where there have been identified

Safeguarding Children Cause for Concern




**Number of Common Assessments undertaken.**

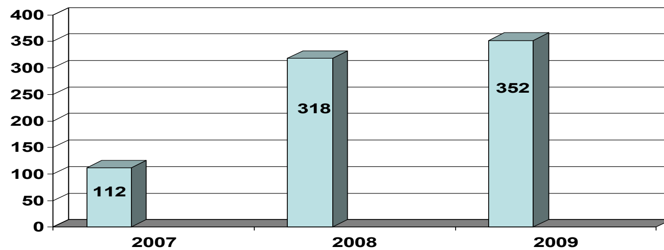
Common Assessment Framework



**Perinatal Mental Health Services**

Specialist Midwife Olive Downer-Robinson works in partnership with the psychiatric services from the Queen Elizabeth Psychiatric Unit and operates a joint clinic for pregnant women experiencing mental health concerns. The table below shows a predicted steady rise in the number of referrals to this service.

Perinatal Mental Health Services

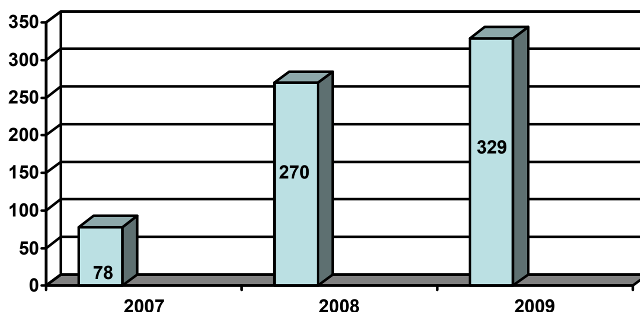



Concerns have been raised regarding the increasing capacity of this clinic and further developments are proposed to ease the pressure of this clinic including the development of a Perinatal Integrated Care Pathway and updated mental health guidelines.

**Domestic abuse**

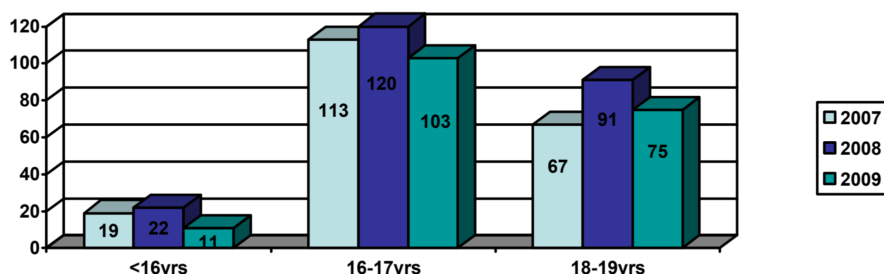
Specialist Midwife Olive Downer-Robinson provides advice and support to women experiencing domestic abuse. Guidance is given to staff providing care for this group of women. Midwives are encouraged to routinely ask pregnant women about domestic abuse during their pregnancy. This, together with an increased awareness by other agencies has increased the capacity of work for midwives and the safeguarding team. The Domestic Violence Working Party set up March 2010 is working towards guidelines and processes to assist staff dealing with this particular issue. We are working collaboratively with other external organisations. However, the increased awareness of the Violence Against Women Strategy, including Honour Crime, Forced Marriage, Female Genital Mutilation has resulted has increased the pressures on the team.

**Police reports of domestic abuse incidents received into the Trust by the Safeguarding Team**



**Teenage pregnancy**
The specialist midwife for teenage pregnancy, Joanne Mardell, has been working within the trust to support pregnant teenagers. She had a total of 233 referrals in 2008 compared to 99 referrals in 2007 giving a 17% increase.

**Pregnant Teenagers who gave birth at Birmingham Women's Hospital**




**New initiatives in 2009/10**

- Introduction of new teenage pregnancy guidelines
- Birth Centre lower age limit reduced from 17 years down to 16 years.
- Specialist midwife has completed Family Planning and Sexual Health Course.
- Young Parents to be group to include fathers.
- Teenage pregnancy audit.

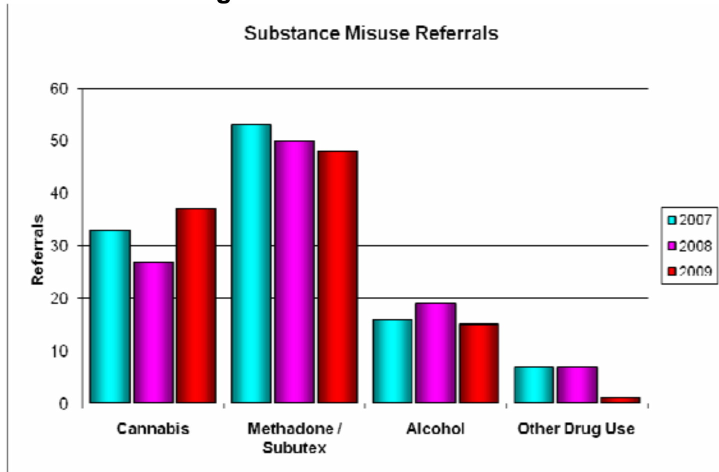
**Planned initiatives for 2010/11**

- Family Planning outreach clinic provided by BRASH (Birmingham Relationship and Sexual Health) within the antenatal specialist clinic.
- Family planning administration on the postnatal floor prior to transfer home.
- Randomised Control Trial of the Family Nurse Partnership providing intensive support for young Parents.

**Substance misuse**

- Midwife Heather Gray provides services for women affected by drug and alcohol misuse and also leads on smoking cessation.
- The number of women referred for substance misuse issues has remained fairly constant. The breakdown of drugs used has also remained very much the same. Although there appears to have only been a very slight increase in alcohol cases there has been a notable increase in severity and complexity of alcohol problems. More women have presented with current or previous alcohol dependence issues requiring input from community alcohol teams and other services plus closer monitoring in pregnancy.
- There has also been a notable increase from 11% to 20% in the number of babies who have required treatment for neonatal withdrawal and the number of cases with input from Children's Services has also shown a steady increase from 25% in 2007 to 43% in 2008.

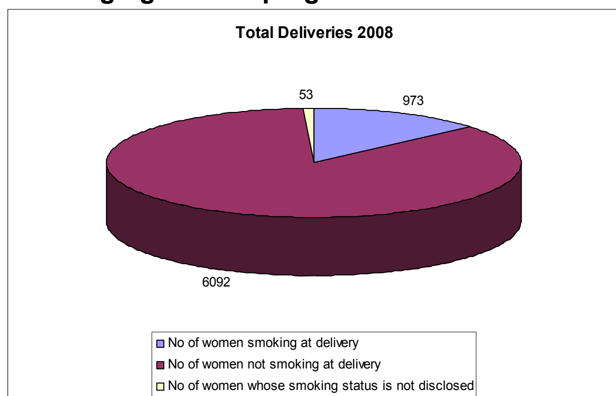
**Referrals for drug and alcohol misuse.**




**Smoking**

Community midwives are now using CO monitors when booking pregnant women to enhance the message of the risks of carbon monoxide and smoking to unborn babies.

**Smoking figures for pregnant women.**




**Risk management**

Failure to act in an appropriate and timely manner can have serious implications for children, their families and staff. The following areas have been highlighted as potential areas of risk within the area of safeguarding children in the Trust. Work to reduce the risk has been undertaken and continues to be addressed:

- The removal of babies from their mother's care immediately following birth.
- The increasing level of aggression facing Trust staff when involved in child protection issues.

Actions taken have included:

- The development of a multi-agency policy for the emergency protection of a child at birth which is waiting to be ratified.
- Clear child protection plans in place prior to birth.
- Closer partnership working with service users, health professionals and social care staff.

**Clinical Governance**

Following guidance in Working Together to Safeguard Children 2010, Safeguarding Children is firmly embedded within the clinical governance framework and continues to receive regular reports, including findings from Serious Case Reviews, recommendations and action plans to change practice.

## *BEREAVEMENT SERVICES*
## *Karen Henson, Bereavement Services Manager*

**Overview 2009/2010**
Focus continues to be on achieving the highest standard of care across Bereavement Services, and this is achieved by:

- Working in partnership with Medical, Nursing and Midwifery staff to ensure that families receive the best possible care
- Close liaison with other departments, including Mortuary, Histopathology/Pathology
- Ensuring that funeral arrangements for our families are carried out in a timely, dignified and sensitive manner
- A follow-up service that provides investigation, advice, support and information

**Activity**
During 2009/2010 there were 113 families seen on Delivery Suite, Neonatal Unit or Wards prior to discharge by a Bereavement Services Midwife

The Mortuary is undergoing a complete refurbishment, including a Family Quiet Room where baby viewings will now take place in a quiet and private environment. We have gratefully received a large donation from SANDs to help furnish the Quiet Room, and will have an official opening later in the year.

**Good Performance Indicators**
- Following the excellent site inspection in March 2009, when the Bereavement Service was praised for the high level of compliance and examples of good practice – particularly consent standards, we have been asked by the inspectors to share our knowledge and practices with other comparable hospitals. By exchanging/sharing information we can improve post-mortem training & consent for all families

- A Study Day was carried out by Bereavement Services team at the Birmingham Women's Hospital (BWH) in November 2009. 30 Bereavement Leads attended from across the region. The purpose was to share good practice in bereavement care, and to benchmark against others. All attendees completed an evaluation form, the feedback from which indicated that BWH provided an exceptionally high standard of care.
  A network of Bereavement Leads has now been created, and we have been invited to attend other hospitals to share our good practice.

- Bereavement Services have improved their own administrative processes by creating a 'pathway' to enable ease of auditing when and where parents are met, and to ensure regular and appropriate communications are in place

**Risk Management**
- The Bereavement Service continues to report all unexpected deaths on the Datix System and carries out investigations when necessary

- A second audit year on our stillbirth rate has been completed. We will be presenting our findings alongside last year's figures, although a date for the presentation has yet to be confirmed.

- The Bereavement Service continues to report all child deaths to the appropriate Child Death Overview Panels (CDOP), and an Information Sharing Protocol has been developed and agreed by the various panels

- It has been agreed from September 2010, proformas for all baby deaths are completed by Bereavement Services in close liaison with the Delivery Suite Consultant Clinical Lead. Any aspects of care raising concern will be reported to the necessary managers/clinicians

- All deaths are reported to CMACE

**Infection Control**

- The Bereavement Service endeavours to maintain excellent standards of infection control by attending appropriate training sessions, and maintaining a clean environment

**Clinical Governance**

- The Bereavement Service undertakes regular education/information sessions for Medical, Nursing and Midwifery staff to ensure that all have a basic knowledge of bereavement management and care, including post-mortem consent training

- The Postnatal Discharge document has been reviewed following feedback from community teams, with more information now being requested.

- The Checklist for Pregnancy Loss folder has been made more concise, informative and user-friendly.

## Research and Development Publication List

Aggelis V, Craven RA, Peng J, Harnden P, Calms DA, *Maher ER*, Tonge R, Selby PJ, Banks RE (2009) 'Proteomic identification of differentially expressed plasma membrane proteins in renal cell carcinoma by stable isotope labelling of a von Hippel-Lindau transfectant cell line model'. *Medical and Molecular Genetics, Proteomics*, 2009 Apr; 9(8):2118-30.

Al Olama AA, Kote-Jarai Z, Giles GG, Guy M, Morrison, J, Severi G, Leongamomiert DA, Tymrakiewicz M, Jhavar S, Saunders E, Hopper JL, Southey MC, Muir KR, English DR, Deamaley DP, Ardem-Jones AT, Hall AL, O'Brien LT, Wilkinson RA, Sawyer E, Lophatananon A, UK Genetic Prostate Cancer Study Collaboratorys/British Association of Urological Surgeons' Section of Oncology; UK Prostate testing for cancer and Treatment study (Protect Study) Collaborators, Horwich A, Huddart RA, Khoo VS, Parker CC, Woodhouse CJ, Thompson A, Christmas T, Ogden C, Cooper C, Donovan JL, Hamdy FC, Neal DE, Eeles RA, Easton DF (2009) 'Collaborators (525) Multiple loci on 8q24 associated with prostate cancer susceptibility'. *Nat Genet. 2009* Oct; 41(10):1058-60. *Epub 2009* Sept 20.

Aldridge F (2009). 'Effects of haemopoietic growth factors on cytogenetic cultures of MDS, AML and B-lineage acute lymphoblastic leukaemia' *ACC Spring Conference.*

Alrashdi I, Bano G, Maher ER, Hodgson SV (2010). 'Carney triad versus Carney Stratakis syndrome: two cases which illustrate the difficulty in distinguishing between these conditions in individual patients'. *Fam Cancer 2010 Jan 30.* (*Epub* : ahead of print).

Amitabha Majumdar, Ismail Hassan, Sepeedeh Saleh, Philip Toozs-Hobson (2010) 'Inpatient bladder retraining: is it beneficial on its own?' *Int Urogynaecol J epub* 30 jan 2010.

Amitabha Majumdar Pallavi Latthe Philip Toozs-Hobson 'Urodynamics prior to treatment as an intervention: A pilot study' *Neurourology and Urodynamics VL*: 29 4; 522-526 2010.

An Q, Wright SL, Moorman AV, Parker H, Griffiths M, Ross FM, Davies T, Harrison CJ, Strefford JC (2009). 'Heterogeneous breakpoints in patients with acute lymphoblastic leukaemia and the dic (9;20)(p11-13;q11) show recurrent involvement of genes at 20q11.21.' *Haematologica.* 2009 Aug;94(8):1164-9. *Epub* 2009 Jul 7.

Antoniou AC, Sinilnikova OM, McGuffog L, Healey S, Nevanlinna H, Heikkinen T, Simard J, Spurdle AB, Beesley J, Chen X; Kathleen Cuningham Foundation Consortium for Research into Familial Breast Cancer, Neuhausen SL, Ding YC, Couch FJ, Wang X, Fredericksen Z, Peterlongo P, Peissel B, Bonanni B, Viel A, Bernard L, Radice P, Szabo CI, Foretova L, Zikan M, Claes K, Greene MH, Mai PL, Rennert G, Lejbkowicz F, Andrulis IL, Ozcelik H, Glendon G; OCGN, Gerdes AM, Thomassen M, Sunde L, Caligo MA, Laitman Y, Kontorovich T, Cohen S, Kaufman B, Dagan E, Baruch RG, Friedman E, Harbst K, Barbany-Bustinza G, Rantala J, Ehrencrona H, Karlsson P, Domchek SM, Nathanson KL, Osorio A, Blanco I, Lasa A, Benítez J, Hamann U, Hogervorst FB, Rookus MA, Collee JM, Devilee P, Ligtenberg MJ, van der Luijt RB, Aalfs CM, Waisfisz Q, Wijnen J, van Roozendaal CE; HEBON, Peock S, Cook M, Frost D, Oliver C, Platte R, Evans DG, Lalloo F, Eeles R, Izatt L, Davidson R, Chu C, Eccles D, Cole T, Hodgson S; EMBRACE, Godwin AK, Stoppa-Lyonnet D, Buecher B, Léoné M, Bressac-de Paillerets B, Remenieras A, Caron O, Lenoir GM, Sevenet N, Longy M, Ferrer SF, Prieur F; GEMO, Goldgar D, Miron A, John EM, Buys SS, Daly MB, Hopper JL, Terry MB, Yassin Y; Breast Cancer Family Registry, Singer C, Gschwantler-Kaulich D, Staudigl C, Hansen TO, Barkardottir RB, Kirchhoff T, Pal P, Kosarin K, Offit K, Piedmonte M, Rodriguez GC, Wakeley K, Boggess JF, Basil J, Schwartz PE, Blank SV, Toland AE, Montagna M, Casella C, Imyanitov EN, Allavena A, Schmutzler RK, Versmold B, Engel C, Meindl A, Ditsch N, Arnold N, Niederacher D, Deissler H, Fiebig B, Suttner C, Schönbuchner I, Gadzicki D, Caldes T, de la Hoya M, Pooley KA, Easton DF, Chenevix-Trench G; CIMBA (2009). 'Common variants in LSP1, 2q35 and 8q24 and breast cancer risk for BRCA1 and BRCA2 mutation carriers'. *Hum Mol Genet.* 2009 Nov 15;18(22):4442-56. Epub 2009 Aug 5.

Antonis C Antoniou, Olga M Sinilnikova, Lesley McGuffog, Sue Healey, Heli Nevanlinna, Tuomas Heikkinen, Jacques Simard, Amanda B Spurdle, Jonathan Beesley, Xiaoqing Chen, The Kathleen Cuningham Foundation Consortium for Research into Familial Breast Cancer, Susan L Neuhausen, Yuan C Ding, Fergus J. Couch, Xianshu Wang, Zachary Fredericksen, Paolo Peterlongo, Bernard Peissel, Bernardo Bonanni, Alessandra Viel, Loris Bernard, Paolo Radice, Csilla I Szabo, Lenka Foretova, Michal Zikan, Kathleen Claes, Mark H. Greene, Phuong L. Mai, Gad Rennert, Flavio Lejbkowicz, Irene L. Andrulis, Hilmi Ozcelik, Gord Glendon, OCGN, Anne-Marie Gerdes, Mads Thomassen, Lone Sunde, Maria A Caligo, Yael Laitman, Tair Kontorovich, Shimrit Cohen, Bella Kaufman, Efrat Dagan, Ruth Gershoni Baruch, Eitan Friedman, Katja Harbst, Gisela Barbany-Bustinza, Johanna Rantala, Hans Ehrencrona, Per Karlsson, Susan M. Domchek, Katherine L. Nathanson, Ana Osorio, Ignacio Blanco, Adriana Lasa, Javier Benítez, Ute Hamann, Frans B. L. Hogervorst, Matti A. Rookus, J. Margriet Collee, Peter Devilee, Marjolijn J. Ligtenberg, Rob B. van der Luijt, Cora M. Aalfs, Quinten Waisfisz, Juul Wijnen, Cornelis E.P. van Roozendaal, HEBON, Susan Peock, Margaret Cook, Debra Frost, Clare Oliver, Radka Platte, D. Gareth Evans, Fiona Lalloo, Rosalind Eeles, Louise Izatt, Rosemarie Davidson, Carol Chu, Diana Eccles, Trevor Cole , Shirley Hodgson, EMBRACE, Andrew K. Godwin, Dominique Stoppa-Lyonnet, Bruno Buecher, Mélanie Léoné, Brigitte Bressac-de Paillerets, Audrey Remenieras, Olivier Caron, Gilbert M. Lenoir, Nicolas Sevenet, Michel Longy, Sandra Fert Ferrer, Fabienne Prieur, GEMO, David Goldgar, Alexander Miron, Esther M. John, Saundra S. Buys, Mary B. Daly, John L. Hopper, Mary Beth Terry, Yosuf Yassin, Breast Cancer Family Registry, Christian F Singer, Daphne Gschwantler-Kaulich, Christine Staudigl, Thomas v. O. Hansen, Rosa Bjork Barkardottir, Tomas Kirchhoff, Prodipto Pal, Kristi Kosarin, Kenneth Offit, Marion Piedmonte, Gustavo C. Rodriguez , Katie Wakeley, John F. Boggess, Jack Basil, Peter E. Schwartz, Stephanie V. Blank, Amanda E. Toland, Marco Montagna, Cinzia Casella, Evgeny N Imyanitov, Anna Allavena, Rita K. Schmutzler, Beatrix Versmold, Christoph Engel, Alfons Meindl , Nina Ditsch, Norbert Arnold, Dieter Niederacher, Helmut Deißler, Britta Fiebig, Christian Suttner, Ines Schönbuchner, Dorothea Gadzicki, Trinidad Caldes, Miguel de la Hoya, Karen A Pooley, Douglas F Easton and Georgia Chenevix-Trench on behalf of CIMBA (2009). 'Common variants in *LSP1*, 2q35 and 8q24 and breast cancer risk for *BRCA1* and *BRCA2* mutation carriers'. *Hum Molec Genet. 18;* 4442-4456.

Aralikatti AKV, Mitra A, Denniston AKO, Haque MS, Ewer AK, Butler L (2009). 'Is ethnicity a risk factor for sev retinopathy of prematurity?' *Arch Dis Child 2010*;95 F174-F176. Epub Nov 2009.

Aslam N, Blunt S, Latthe P (2010) 'Effectiveness and tolerability of levonorgestrel intrauterine system in adolescents'.*J Obstet Gynaecol 2010*;30 (5):489-91.

Barron DJ, Kilby MD, Davies B, Wright JG, Jones TJ, Brawn WJ (2009). 'Hypoplastic left heart syndrome'. *Lancet*. Aug 15;374(9689):pg551-64. Review. *PubMed* PMID: 19683641.

Bowles C, Mason J, Akiki S, Griffiths (2009). 'Identification and RQ-PCR monitoring of CML patients with rare variant BCR-ABL transcipts' *BSHG Conference* (2009)

Burton C, Webb S, Masood M, Parsons M, Radley S, Toozs-Hobson P (2009) 'What is the risk of a second obstetric anal sphincter injury after a previous injury?' *Int Urogynecol J* 20 S228.

Burton C, Toozs-Hobson P (2009) 'Has the new improved IUGA abstract format led to an improvement in the quality of abstracts reporting randomised controlled trials?'. *Int Urogynecol J* 20 S89

Cangul H, Ozdemir O, Yakut T, Okan M, Morgan NV, Baytan B, Kurian MA, Spielgel R, *Maher ER (2009)* ‚Pantothenate kinase-associated neurodegeneration (PKAN): molecular confirmation of a Turkish patient with a rare frameshift mutation in the coding region of the PANKS2 gene Turk J Pediatr'. *Mar-Apr* 51(2):161-5.

Christopher J Ricketts, Julia R Forman, Eleanor Rattenbury, Nicola Bradshaw, Fiona Lalloo, Louise Izatt, Trevor R Cole, Ruth Armstrong, V.K. Ajith Kumar, Patrick J Morrison, A Brew Atkinson, Fiona Douglas, Steve G Ball, Jackie Cook, Umasuthan Srirangalingam, Pip Killick, Gail Kirby, Simon Aylwin, Emma R Woodward, D. Gareth R Evans, Shirley V Hodgson, Vicky Murday, Shern L Chew, John M Connell, Tom L Blundell, Fiona MacDonald, Eamonn R Maher (2009). 'Tumour risks and genotype-phenotype-proteotype analysis in 358 patients with germline mutations in SDHB and SDHD'. *Human Mutation 31*; 41-51

Coccia M, Brooks SP, Webb TR, Christodoulou K, Wozniak IO, Murday V, Balicki M, Yee HA, Wangensteen T, Riise R, Saggar AK, Park SM, Kanuga N, Francis PJ, *Maher ER*, Moore AT, Russell-Eggitt IM, Hardcastle AJ (2009) 'X-linked cataract and Nance-Horan syndrome are allelic disorder'. *Hum Mol Genet. 2009* Jul 15; 18(14); 2643-55 *Epub* 2009 May 4.

Cole T, Parulekar M, Jenkinson H, O'Grady A, Ainsworth JR, Willshaw (2009). 'HE Role of linkage analysis in excluding risk for siblings and cousins in familial retinoblastoma' *International Congress of ocular oncology* (September 2009)

Cole T, Ainsworth J (2009). 'Management of Retinoblastoma'. *Eye Genetics Group*, City Hospital, Birmingham (October 2009)

Cole T (2010). 'Retinoblastoma not just a paradigm for cancer genetics but a possible window into the future of medical genetics' *Joint meeting of the UK Clinical Genetics Society and the Dutch Clinical Genetics Society* (March 2010)

Colman LK, Reali LJ, McKay, K, Larkins SA, Allen S, Davison EV (2009). 'Discordant results in 4 cases of monosomy X mosaicism detected at CVS by QF-PCR FISH and chromosomal analysis' *ACC Spring Conference* (2009)

Cooper N, Cole T, Rattenberry E, Rehal P, Stewart PM, Stewart S, Benn J (2009). 'SDHB: further evidence of the pathogenicity of the Ser163Pro variant associated with phaeochromocytoma and a Cowden-like phenotype' *BSHG Conference* (2009)

Cooper N, Smith P, Khan KS, Clark TJ 'Authors response to: Vaginoscopic approach to outpatient hysteroscopy: a systematic review of the effect on pain'. *British Journal of Obstetrics and Gynaecology* – in press.

Cooper N, Smith P, Khan KS, Clark TJ (2010). 'Vaginoscopic approach to outpatient hysteroscopy: a systematic review of the effect on pain'. *British Journal of Obstetrics and Gynaecology 2010*;117(5):532-9.

Cooper NAM, Clark TJ, Kremer C 'Best Practice in Outpatient Hysteroscopy'. *A guideline written for the British Society for Gynaecological Endoscopy and to be published in association with the RCOG as a green top guideline.*

Cooper NAM, Khan KS, Clark TJ (2010) 'Local anaesthesia for pain control during outpatient hysteroscopy: systematic review and meta-analysis'. *BMJ 2010*;340:1130.

Cooper NAM, Smith PS, Khan KS, Clark TJ 'A systematic review of the effect of the distension medium used on pain during outpatient hysteroscopy'. *Accepted for publication by Fertility and Sterility- in press.*

Cox H, Lucassen A, Rio M, Browne C, Renforth G, Craven L, Salmon T, Wilson DI (2009). 'Two children with subtelomeric 11q deletions: a description and interpretation of their clinical presentations and molecular genetic *findings' Clin Dysmorphol.* 2009 Apr;18(2):98-102.

Cox P, Marton T (2009). 'Pathological assessment of intrauterine growth restriction'. *Best Pract Res Clin Obstet Gynaecol. 2009* Dec;23(6):751-64. *Epub* 2009 Oct 23. *PubMed PMID*: 19854107.

Cox P, Silvestri E, Lazda E, Nash R, Jeffrey I, Ostojic N, Wigglesworth J (2009). 'Embolism of brain tissue in intrapartum and early neonatal deaths: report of 9 cases'. *Pediatr Dev Pathol. 2009* Nov-Dec;12(6):464-8. *PubMed PMID*: 19594200.

Croft L (2009). 'Assessment of the efficacy of Metasystems focus modes for the capture of bone marrow metaphase cells.' *ACC Spring Conference* (2009)

Crompton D, Rehal P, Kurian M, MacDonald F (2009). 'Extended analysis of possible PLA2G6 deletions in 2 patients with infantile Neuroaxonal Dystrophy' *BSHG Conference* (2009)

Crompton D, Rehal, PK, Macpherson L, Foster K, Lunt P, Hughes I, Brady AF, Pike MG, De Gressi S, Morgan NV, Hardy C, Smith M, Macdonald F, Maher ER, Kurian MA (2010). 'Multiplex Ligation-dependent Probe Amplification (MLPA)

Analysis is an Effective Tool for the Detection of Novel Intragenic PLA2G6 Mutations: Implications for Molecular Diagnosis' *Molecular Genetics and Metabolism.* Feb 2010 e-pub ahead of print

Crosby C, Perrott E, Clavering D, Ormshaw E, Borrow J, Mason J, Akiki S, Griffiths M (2009). 'An update on the BCR/ABL kinase domain mutation analysis service in CML patients at the West Midlands Regional Genetics Laboratory' *BSHG Conference* (2009)

Cullinane AR, Straatman-Iwanowska A, Zaucker A, Wakabayashi Y, Bruce CK, Luo G, Rahman F, Gürakan F, Utine E, Ozkan TB, Denecke J, Vukovic J, Di Rocco M, Mandel H, Cangul H, Matthews RP, Thomas SG, Rappoport JZ, Arias IM, Wolburg H, Knisely AS, Kelly DA, Müller F, Maher ER, Gissen P (2010) 'Mutations in VIPAR cause an arthrogryposis, renal dysfunction and cholestasis syndrome phenotype with defects in epithelial polarization' *Nat Genet*. 2010 Apr;42(4):303-12. Epub 2010 Feb 28

Dallol A, Hesson LB, Matallanas D, Cooper WN, O'Neill E, Maher ER, Kolch W, Latif F (2009) 'RAN GTPase is a RASSF1A effector involved in controlling microtubule organization'. *Curr Biol. 2009* Jul 28; 19(14):1227-32*. Epub* 2009 Jun 25.

Daniels J; Gray J, Pattison H, Roberts T, Edwards E; Milner P (2009) '*et al* Rapid testing for GBS during labour: a test accuracy study with evaluation of acceptability and cost-effectiveness'. *Health Technol Assess*; 13:pg 42.

Daniels J, Gray R, Hills RK, Buckley L, Gupta JK, Latthe P (2009) '*et al* on behalf of the LUNA Trial Collaboration A Randomized Controlled Trial to Assess the Effectiveness of Laparoscopic Uterosacral Nerve Ablation (LUNA) for alleviating Chronic Pelvic Pain'. *JAMA*; 302(9):pg955-961.

Dunwell TL, Dickinson RE, Stankovic T, Dallol A, Weston V, Austen B, Catchpoole D, *Maher ER,* Latif F (2009) 'Frequent epigenetic inactivation of the SLIT2 gene in chronic and acute lymphocytic leukaemia'. *Epigenetics 2009* May 4(4):265-9. *Epub* 2009 May 1.

Dunwell TL, Hesson LB, Pavlova T, Zabarovska V, Kashuba V, Catchpoole D, Chiaramonte R, Brini AT, Griffiths M, *Maher ER*, Zabarovsky E, Latif F (2009) 'Epigenetic analysis of childhood acute lymphoblastic leukemia'. *Epigenetics 2009* Apr; 4(3): 185093 *Epub* 2009 Apr 12.

Dunwell T, Hesson L, Rauch TA, Wang L, Clark RE, Dallol A, Gentle D, Catchpoole D, *Maher ER*, Pfeifer GP, Latif F (2010). 'A genome-wide screen identifies frequently methylated genes in haematological and epithelial cancer'. Department of Medical and Molecular Genetics. *Mol Cancer 2010 Feb 25*;9:44.

Eeles RA, Kote-Jarai Z, Al Olama AA, Giles GG, Guy M, Severi G, Muir K, Hopper JL, Henderson BE, Haiman CA, Schleutker J, Hamdy FC, Neal DE, Donovan JL, Stanford JL, Ostrander EA, Ingles SA, John EM, Thibodeau SN, Schaid D, Schleutker J, Hamdy FC, Neal DE, Donovan JL, Stanford JL, Ostrander EA, Ingles SA, John EM, Thibodeau SN, Schaid, D, Park JY, Spurdle A, Clements J, Dickinson JL, Maier C, Vogel W, Dork T, Rebbeck TR, Cooney KA, Cannon-Albright L, Chappuis PO, Hutter P, Zeegers M, Kaneva R, Zhang HW, Lu YJ, Foulkes WD, English DR, Leongamomlert D, Tymrakiewicz M, Morrison J, Ardem-Jones AT, Hall AL, O'Brient LT, Wilkinson RA, Saunders EJ, Page EC, Sawyer EJ, Edwards SM, Deamaley DP, Horwich A, Huddart RA, Khoo VS, Parker CC, Van As N, Woodhouse CJ, Thompson A, Christmas T, Ogden C, Cooper CS, Southey MC, Lophtananon A, Liu JF, Kolonei LN, Le Marchand L, Wahifors T, Tammela TL, Auvinen A, Lewis SJ, Cox A, FitzGerald LM, Koopmeiners JS, Kanyadi DM, Kwon EM, Steem MC, Corral R, Joshi AD, Shahabi A, McDonnel SK, Sellers TA, Pow-Sang J, Chambers S, Aitken J, Gardiner RA, Batra J, Kedda MA, Lose F, Polanowski A, Patterson B, Serth J, Meyer A, Luedeke M, Steffova K, Ray AM, Lange EM, Farnham J, Khan H, Slavov C, Mitkova A, Cao G (2009) 'UK Genetic Prostate Cancer Study Collaboratoros/British Association of Urological Surgeons' Section of Oncology: UK Protect Study Collaboratorys: PRACTICAL Consortium, Easton DF. Collaborators (622) Identification of seven new prostate cancer susceptibility loci through a genome-wide association study'. *Nat Genet 2009* Oct;41(10):1116-21. *Epub 2009* Sept 20.

Denny E (2009) "I don't know from one day to another how I will feel" 'Pain and uncertainty in women with endometriosis'. *Qualitative health Research* 19:7:285-95

Denny E. Earle S (eds) (2009) 'Sociology for Nurses, Cambridge'. *Polity Press* 2nd edn ISBN 978-0-7456-4624-4 (hb) 978-0-7456-4625-1 (pb)

Denny E, Earle S (eds) (2009). 'The Sociology of Long Term Conditions and Nursing Practice'. *Palgrave* ISBN 978-0-230-51646-5 (pb)

Esther Meyer, Manju Kurian, Shanaz Pasha, Richard Trembath, Trevor Cole, Eamonn Maher (2010). 'A novel PCFT gene mutation (p.Cys66LeufsX99) causing hereditary folate malabsorption'. *Molecular Genetics and Metabolism 99*; 325-328.

Foon R, Toozs-Hobson P, Latthe P, NUU 'Can Patients Benefit From Prophylactic Antibiotics Before urodynamics?' A Systematic Review.

Foster N, Paulsson K, Sales M, Cunningham J, Groves M, O'Connor N, Begum S, Stubbs T, McMullan DJ, Griffiths M, Pratt N, Tauro S (2010). 'Molecular characterisation of a recurrent, semi-cryptic RUNX1 translocation t(7;21) in myelodysplastic syndrome and acute myeloid leukaemia.' Br J Haematol. 2010 Mar;148(6):938-43. Epub 2010 Jan 11.

Fox CE, Chan BC, Cox P, Gornall A, Kilby MD (2009). 'Reversed twin-to-twin transfusion syndrome following successful laser therapy'. *Fetal Diagn Ther;*26(2):pg115-8. *Epub* 2009 Sep 11. *PubMed* PMID: 19752513.

Fox CE, Lash GE, Pretlove SJ, Chan BC, Holder R, Kilby MD (2010) 'Maternal plasma and amniotic fluid angiogenic factors and their receptors in monochorionic twin pregnancies complicated by twin-to-twin transfusion syndrome'. *Ultrasound Obstet Gynecol*. Jun;35(6):pg695-701. *PubMed* PMID: 20069664.

Fox CE, Pretlove SJ, Chan BC, Mahony RT, Holder R, Kilby MD (2009) 'Maternal serum markers of placental damage in uncomplicated dichorionic and monochorionic pregnancies in comparison with monochorionic pregnancies complicated by severe twin-to-twin transfusion syndrome and the response to fetoscopic laser ablation'. *Eur J Obstet Gynecol Reprod Biol*. Jun;144(2):124-9. *Epub* 2009 Apr 11. *PubMed* PMID: 19362410.

Fullston T, Brueton L, Willis T, Philip S, MacPherson L, Finnis M, Gecz J,Morton J. Ohtahara (2010). 'Syndrome in a family with an ARX protein truncation mutation(c.81C>G/p.Y27X)'. *Eur J Hum Genet. 2010;18:157-62.*

Garner CE, Ewer AK, Elasouad K, Power F, Greenwood R, Ratcliffe NM, de Lacy Costello B, Probert CS (2009). 'Analysis of faecal volatile organic compounds in preterm infants who develop necrotising enterocolitis: a pilot study'. *Journal of Pediatric Gastroenterology and Nutrition 2009;*49:559-565. *Epub* Aug 2009.

Geoghegan J, Daniels JP, Moore PAS, Thompson PJ, Khan KS, Gulmezoglu (2009) 'AM Cell Salvage at Caesarean Section: The need for an evidence based approach'. *BJOG* 116(6):pg743-7.

Geranmayeh F, Clement E, Feng LH, Sewry C, Pagan J, Mein R, Abbs S, Brueton L, Childs AM, Jungbluth H, De Goede CG, Lynch B, Lin JP, Chow G, Sousa C, O'Mahony O, Majumdar A, Straub V, Bushby K, Muntoni F (2010). 'Genotype-phenotype correlation in a large population of muscular dystrophy patients with LAMA2 mutations'. *Neuromuscul Disord. 2010 ;20:241-50.*

Glazener C1, MacArthur C2, Bain C, Dean N, Toozs-Hobson P, Richardson K, Lancashire R, Herbison P, Hagen S, Grant A, Wilson, D NUU 'Epidemiology Of Pelvic Organ Prolapse In Relation To Delivery Mode History At 12 Years After Childbirth: A Longitudinal Cohort Study'.

Gray J, Patwardhan SC, Martin (2010) 'Meticillin-resistant Staphylococcus aureus screening in obstetrics: a review'. *W. J Hosp Infect. 2010 Jun*;75(2):89-92. Epub 2010 Apr 9

Gurpreet Singh, Malcolm Lucas, Lucia Dolan, Stephanie Knight, Carmel Ramage, Philip Toozs Hobson (2010) 'Minimum standards for urodynamic practice in the UK' *Neurourology and Urodynamics Epub* April 2010.

Hagen S, Glazener C, Cook J, Herbison P, Toozs-Hobson P 'Further Properties Of The Pelvic Organ Prolapse Symptom Score: Minimally Important Change And Test-Retest Reliability '.

Hall G, Cooper-Charles L., Silcock L, James N, Morton J, Aligianis I, McMullan D, Davison V (2009) 'Identification of cryptic genomic imbalances in both de novo and familial blanced chromosome rearrangements using aCGH' *BSHG Conference* (2009)

Harris J (2009). 'Detection of copy number changes and loss of heterozygosity in CLL patients using Affymetrix 250K SNP arrays.' *ACC Spring Conference* (2009)

Hartley JL, Zachos NC, Dawood B, Donowitz M, Forman J, Pollitt RJ, Morgan NV, Tee L, Gissen P, Kahr WH, Knisely AS, Watson S, Chitayat D, Booth IW, Protheroe S, Murphy S, de Vries E, Kelly DA, Maher ER (2010) 'Mutations in TTC37 cause trichohepatoenteric syndrome (phenotypic diarrhea of infancy)' *Gastroenterology* 2010 Jun;138(7):2388-98, 2398.e1-2. Epub 2010 Feb 20.

Hassan I, López C, Gee H, Toozs-Hobson P (2009) 'Urinary ascites following caesarean section: An unusual presentation of bladder injury'. *Eur J Obstet Gynecol Reprod Biol.* 2009 Sep 17.

Hayward BE, De Vos M, Talati N, Abdollahi MR, Taylor GR, Meyer Ester, Williams D, *Maher ER,* Setna F, Nazir K, Hussaini S, Jafri H, Rashid Y, Sheridan E, Bonthron DT (2009) 'Genetic and epigenetic analysis of recurrent hydatidiform mole'. *Hum Mutat.* 2009 May 30(5): E629-39.

Henderson A, Douglas F, Perros P, Morgan C, Maher ER. 'SDHB-associated renal oncocytoma suggests a broadening of the renal phenotype in hereditary paragangliomatosis.' *Fam Cancer.* (2009) 8(3):257-60

Hesson LB, Dunwell TL, Cooper WN, Catchpoole D, Brini AT, Chiaramonte R, Griffiths M, Chalmers AD, Maher ER, Latif F (2009). 'The novel RASSF6 and RASSF10 candidate tumour suppressor genes are frequently epigenetically inactivated in childhood leukaemias.' *Mol Cancer.* 2009 Jul 1;8:42.

Hill VK, Hesson LB, Dansranjavin T, Dallol A, Bieche I, Vacher S, Tommasi S, Dobbins T, Gentle D, Euhus D, Lewis C, Dammann R, Ward RL, Minna J, Maher ER, Pfeifer GP, Latif F (2010). 'Identification of 5 novel genes methylated in breast and other epithelial cancers'. *Mol Cancer.* 2010 Mar 5;9:51.

Hitchcott C , Turner S, Cole T, Jenkinson H, Parulekar M, Willshaw H (2009). 'Outcome of Group A and B retinoblastomas in familial and non-familial cases' *International conference on ocular oncology* (2009)

Hoischen A, van Bon BW, Gilissen C, Arts P, van Lier B, Steehouwer M, de Vries P, de Reuver R, Wieskamp N, Mortier G, Devriendt K, Amorim MZ, Revencu N, Kidd A, Barbosa M, Turner A, Smith J, Oley C, Henderson A, Hayes IM, Thompson EM, Brunner HG, de Vries BB, Veltman JA (2010). 'De novo mutations of SETBP1 cause Schinzel-Giedion syndrome.' *Nat Genet.* 2010 Jun;42(6):483-5. Epub 2010 May 2.

Hoornaert KP, Vereecke I, Dewinter C, Rosenberg T, Beemer FA, Leroy JG, Björck E, Bonduelle M, Boute O, Cormier-Daire V, De Die-Smulders C, Dieux-Coeslier A, Dollfus H, Elting M, Green A, Guerci VI, Hennekam RCM, Hilhorts-Hofstee Y, Holder M, Hoyng C, Jones KJ, Josifova D, Kaitila I, Kjaergaard S, Kroes YH, Lagerstedt K, Lees M, LeMerrer M, Magnani C, Marcelis C, Martorell L, Mathieu M, McEntagart M, Mendicicno A, Morton J, Orazio G, Paquis V, Reish O, Simola K, Smithson SF, Temple K, Van Aken E, Bever Y, van den Ende J, Van Hagen JM, Willems P, Zelante L, Zordania R, De Paepe A, Leroy BP, De Buyzere M, Couck PJ, Mortier GR (2010). 'Stickler Syndrome Caused by COL2A1 Mutations: Genotype-Phenotype Correlation in a Series of 100 Patients' *Eur J Hum Genet (2010)* 18 872-880

Huber C, Delezoide AL, Guimiot F, Baumann C, Malan V, Le Merrer M, Da Silva DB, Bonneau D, Chatelain P, Chu C, Clark R, Cox H, Edery P, Edouard T, Fano V, Gibson K, Gillessen-Kaesbach G, Giovannucci-Uzielli ML, Graul-Neumann LM, van Hagen JM, van Hest L, Horovitz D, Melki J, Partsch CJ, Plauchu H, Rajab A, Rossi M, Sillence D, Steichen-Gersdorf E, Stewart H, Unger S, Zenker M, Munnich A, Cormier-Daire V (2009) 'A large-scale mutation search reveals genetic heterogeneity in 3M syndrome' *Eur J Hum Genet.* 2009 Mar;17(3):395-400. Epub 2008 Oct 29

Huber C, Fradin M, Edouard T, Le Merrer M, Alanay Y, Da Silva DB, David A, Hamamy H, van Hest L, Lund AM, Michaud J, Oley C, Patel C, Rajab A, Skidmore DL, Stewart H, Tauber M, Munnich A, Cormier-Daire V (2010) 'OBSL1 mutations in 3-M syndrome are associated with a modulation of IGFBP2 and IGFBP5 expression levels.' *Hum Mutat.* 2010 Jan;31(1):20-6.

# Publications

Huwyler M, Burton C, Renganathan A, Latthe P, Robinson D, Parsons M, Cardozo L, Toozs-Hobson P (2010). ‘Retrospective case modelling to assess the impact of early intervention for voiding dysfunction after retropubic tape. When is it best to intervene?’ *Int Urogynecol J* Pelvic Floor Dysfunct. 2010 Jul;21(7):823-7.

Jonathan Mathers, Sheila Greenfield, Alison Metcalfe, Trevor Cole, Sarah Flanagan, Sue Wilson. (2010). ‘Family history in primary care:understanding general practitioners’ resistance to clinical genetics: qualitative study’. *BJGP 60*;221-230.

Jones L, McMullan D, Ely A, Jeffries S, James N, Silcock L, Griffiths M (2009) ‘Development of a BAC-FISH test to detect FGFR1 rearrangements in patients with 8p11 Myeloproliferative Syndrome’ *BSHG Conference* (2009)

Jones N, Vogt S, Nielsen M, Christian D, Wark PA, Eccles D, Edwards E, Evans DG, Maher ER, Vasen HF, Hes FJ, Aretz S, Sampson JR (2009). ‘Increased colorectal cancer incidence in obligate carriers of heterozygous mutations in MUTYH’. *Gastroenterology 2009 Aug*; 137(2):489-94, 494, e1; quiz 725-6 *E pub* 2009 Apr 23.

Kleefstra T, van Zelst-Stams WA, Nillesen WM, Cormier-Daire V, Houge G, Foulds N, van Dooren M, Willemsen MH, Pfundt R, Turner A, Wilson M, McGaughran J, Rauch A, Zenker M, Adam MP, Innes M, Davies C, López AG, Casalone R, Weber A, Brueton L, Navarro AD, Bralo MP, Venselaar H, Stegmann SP, Yntema HG, van Bokhoven H,m Brunner HG (2009). ‚Further clinical and molecular delineation of the 9q subtelomeric deletion syndrome supports a major contribution of EHMT1 haploinsufficiency to the core phenotype’. *J Med Genet. 2009;46:598-606*.

Knox EM, Thangaratinam S, Kilby MD, Khan KS (2009). ‘A review of the methodological features of systematic reviews in fetal medicine’. *Eur J Obstet Gynecol Reprod’ Biol*. Oct;146(2):121-8. Epub 2009 Jun 9. Review. PubMed PMID: 19515478.

Kuiper RP, Vreede L, Venkatachalam R, Ricketts C, Kamping E, Verwiel E, Govaerts L, Debiec-RychterM, Lenut E, van Erp F, Hoogerbrugge N, van Kempen L, Schoenmakers EF, Bonne A, Maher ER, Geurts van Kessel A (2009) ‘The tumor suppressor gene FBXW7 is disrupted by a constitutional t(3;4)(q21;q31) in a patient with renal cell cancer’. *Cancer Genet Cytogenet. 2009 Dec*; 195(2):105-11.

Kurian M, Rehal P, Morgan NV, Gissen P, MacDonald F, Maher E (2009). ‘Phenotypic Spectrum of PLA2G6-related disorders: infantile, Childhood and Adult onset Presentation of Phospholiapase associated Neurodegeneration (PLAN)’ *BSHG Conference* (2009)

Kurian MA, Zhen J, Cheng SY, Li Y, Mordekar SR, Jardine P, Morgan NV, Meyer E, Tee L, Pasha S, Wassmer E, Heales SJ, Gissen P, Reith ME, Maher ER (2009) ‘Homozygous loss-of-function mutations in the gene encoding the dopamine transporter are associated with infantile parkinsonism-dystonia’. *J Clin Invest 2009* Jun;119(6): 1595-603. *Epub* 2009 May 26.

Latthe PM, Champaneria R, Khan KS (2010) ‘Systematic review of the accuracy of ultrasound as the method of measuring bladder wall thickness in the diagnosis of detrusor overactivity’ *Int Urogynecol J* Pelvic Floor Dysfunct. 2010 Apr 28. [Epub ahead of print]

Latthe P (2009). ‘Review: some evidence shows that pelvic floor muscle training reduces urinary incontinence in pregnant and postpartum women at </=12 months’. *Evid Based Med*. 2009 Apr; 14 (2):53.

Lim D, Rehal PK, Kirby GA, MacDonald F, Maher ER (2009). ‘The clinical, therapeutic and molecular genetic investigation of Birt-Hogg-Dube syndrome’ *BSHG Conference* (2009)

Lim DH, Rehal PK, Nahorski MS, MacDonald F, Claessens T, van Geel M, Gijezen L, Gille JJ, Giraud S, Richard S, van Steensel M, Menko FH, Maher ER (2010). ‘A new locus-specific database (LSDB) for mutations in the folliculin (FLCN) gene’. *Hum Mutat 2010 Jan*; 31(1): E1043-51.

Laugel V, Dalloz C, Durand M, Sauvanaud F, Kristensen U, Vincent MC, Pasquier L, Odent S, Cormier-Daire V, Gener B, Tobias ES, Tolmie JL, Martin-Coignard D, Drouin-Garraud V, Heron D, Journel H, Raffo E, Vigneron J, Lyonnet S, Murday V, Gubser-Mercati D, Funalot B, Brueton L, Sanchez Del Pozo J, Muñoz E, Gennery AR, Salih M, Noruzinia M, Prescott K, Ramos L, Stark Z, Fieggen K, Chabrol B, Sarda P, Edery P, Bloch-Zupan A, Fawcett H, Pham D, Egly JM, Lehmann AR, Sarasin A, Dollfus H (2010). 'Mutation update for the CSB/ERCC6 and CSA/ERCC8 genes involved in Cockayne syndrome'. *Hum Mutat. 2010 ;31:113-26.*

Li F, Shen Y, Köhler U, Sharkey FH, Menon D, Coulleaux L, Malan V, Rio M, McMullan DJ, Cox H, Fagan KA, Gaunt L, Metcalfe K, Heinrich U, Hislop G, Maye U, Sutcliffe M, Wu BL, Thiel BD, Mulchandani S, Conlin LK, Spinner NB, Murphy KM, Batista DA (2010) 'Interstitial microduplication of Xp22.31: Causative of intellectual disability or benign copy number variant?' *Eur J Med Genet.* 2010 Mar-Apr;53(2):93-9. Epub 2010 Feb 2.

Li-Wan-Po A, Farndon P, Craddock C, Griffiths M (2010) 'Integrating pharmacogenetics and therapeutic drug monitoring: optimal dosing of imatinib as a case-example.' *Eur J Clin Pharmacol.* 2010 Apr;66(4):369-74. Epub 2010 Jan 29.

Lim D, Bowdin SC, Tee L, Kirby GA, Blair E, Fryer A, Lam W, Oley C, Cole T, Brueton LA, Reik W, Macdonald F, Maher ER (2009). Clinical and molecular genetic features of Beckwith-Wiedemann syndrome associated with assisted reproductive technologies. *Hum Reprod. 2009;24:741-7.*

Lim DH, Rehal PK, Nahorski MS, Macdonald F, Claessens T, Van Geel M, Gijezen L, Gille JJ, Giraud S, Richard S, van Steensel M, Menko FH, Maher ER (2010). 'A new locus-specific database (LSDB) for mutations in the folliculin (FLCN) gene.' *Hum Mutat*. 2010 Jan;31(1):E1043 -51.

Lissauer DM, Piper KP, Moss PA, Kilby MD (2009) ‚Fetal microchimerism: the cellular and immunological legacy of pregnancy'. *Expert Rev Mol Med* Nov 12;11:e33. *PubMed* PMID: 19909558.

Loane K, Toozs-Hobson P (2009) 'Women's experiences of stress incontinence surgery'. *Neurourol and Urodyn 2009* vol 28(7) 581.

Lose G, Fynes M, Tegerstedt G, Toozs-Hobson P 'Durability Of Polyacrylamide Hydrogel (Bulkamid®) Injection For Female Stress And Mixed Urinary Incontinence: 2-Year Multicenter Study Results'.

Loubière LS, Vasilopoulou E, Bulmer JN, Taylor PM, Stieger B, Verrey F, McCabe, CJ, Franklyn JA, Kilby MD, Chan SY (2010) 'Expression of thyroid hormone transporters in the human placenta and changes associated with intrauterine growth restriction'. *Placenta*. Apr; 31(4):pg295-304. *Epub* 2010 Feb 18. *PubMed* PMID: 20167367.

Malin GL, Kilby MD, Velangi M. (2010) 'Transient abnormal myelopoiesis associated with Down syndrome presenting as severe hydrops fetalis: a case report'. *Fetal Diagn Ther* ;27(3):pg171-3. *Epub* 2010 Feb 16. *PubMed* PMID: 20160425.

Malin GL, Morris RK, Khan KS (2010) 'Does umbilical cord pH at birth predict perinatal and long term outcome? A systematic review and meta-analysis to evaluate strength of association'. *BMJ*;340:1471.

Malin GL, Morris RK, Khan KS (2009) **'**Mary Crosse Project: Systematic reviews and grading the value of neonatal test predicting long term outcomes'. *BMC Pregnancy and Childbirth*: 9:49.

Mathers J, Greenfield S, Metcalfe A, Cole T, Flanagan S, Wilson S (2010). 'Family history in primary care: understanding general practitioners' resistance to clinical genetics: qualitative study' *BJGP* (2010) 60;221-230

McCahon D, Holder R, Metcalfe A, Clifford C, Gill P, Cole T, Sleightholme HV, Wilson S (2009). 'General Practitioners attitudes to assessment of genetic risk of common disorders in routine primary care'. *Clinical Genetics 76*; 544- 51.

McCutcheon F, Dom J McMullan, Lisa Cooper-Charles, Lisa Reali, Simon Larkins, Chirag Patel, EV Davison (2009) 'Validation of BlueGnome's Constitutional Focus CytoChip for application to Prenatal Diagnosis' *European Cytogenetics Association Seventh European Cytogenetics Conference* (2009)

McMullan DJ, Bonin M, Hehir-Kwa JY, de Vries BB, Dufke A, Rattenberry E, Steehouwer M, Moruz L, Pfundt R, de Leeuw N, Riess A, Altug-Teber O, Enders H, Singer S, Grasshoff U, Walter M, Walker JM, Lamb CV, Davison EV, Brueton L, Riess O, Veltman JA (2009). 'Molecular karyotyping of patients with unexplained mental retardation by SNP arrays: a multicenter study.' *Hum Mutat.* 2009 Jul;30(7):1082-92.

McNeill A, Rattenberry E, Barber R, Killick P, MacDonald F, Maher ER (2009) 'Genotype-phenotype correlations in VHL exon deletions'. *Am J Med Genet A*. 2009 Oct; 149A(10):2147-51.

McRonald FE, Morris MR, Gentle D, Winchester L, Baban D, Ragoussis J, Clarke NW, Brown MD, Kishida T, Yao M, Latif F, *Maher ER* (2009) 'CpG methylation profiling in VHL related and VHL unrelated renal cell carcinoma'. *Mol Cancer* : 2009 Jun 3; 8-31.

Meadows J, Reali LJ, Cooper Charles L, McMullan D, Davison EV (2009) 'Characterisation of a prenatally ascertained unbalanced rearrangement of chromosome 2 using array CGH' *ACC Spring Conference* (2009)

Menko FH, van Steenset MA, Giraud S, Fris-Hansen L, Richard S, Ungari S, Nordenskjold M, Hansen TV, Solly J, Maher ER (2009) 'European BHD Consortium. Birt-Hogg-Dube syndrome: diagnosis and management'. *Lancet Oncol 2009* Dec10(12):1199-206.

Metcalfe A, Werrett J, Burgess L, Chapman C & Clifford C (2009) 'Cancer Genetic Predisposition: Information Needs of Patients Irrespective of Risk Level'. *Familial Cancer 2009* 8(4): 403-412.

Metcalfe A, Wilson S, McCahon D, Sleightholme HV, Gill P and Cole T (2009). 'Integrating genetic risk assessment for multi-factorial conditions into primary care'. *Primary Health Care Research & Development 10*: 200–209.

Meyer E, Kurian MA, Pasha S, Trembath RC, Cole T, Maher ER (2010). 'A novel PCFT gene mutation (p.Cys66LeufsX99) causing hereditary folate malabsorption'. *Mol Genet Metab 2010 Mar*; 99(3):325-8. *E pub* 2009 Nov. 16.

Meyer E. Rahman F, Owens J, Pasha S, Morgan NV, Trembath RC, Stone EM, Moore AT, *Maher ER* (2009) 'Initiation codon mutation in beta B1-crystallin (CRYBB1) associated with autosomal recessive nuclear pulverulent cataract'. *Mol Vis : 2009* May 18; 15:1014-9.

Meyer E, Ricketts C, Morgan NV, Morris MR, Pasha S, Tee LJ, Rahman F, Bazin A, Bessieres B, Dechelotte P, Yacoubi MT, Al-Adnani M, Marton T, Tannahill D, Trembath RC, Fallet-Bianco C, Cox P, Williams D, Maher ER (2010). 'Mutations in FLVCR2 are associated with proliferative vasculopathy and hydranencephaly-hydrocephaly syndrome (Fowler syndrome)'.*Am J Hum Genet. 2010 Mar 12*; 86(3):471-8, *E pub* 2010 Mar 4.

Mirjam Huwyler, Claire Burton, Arasee Renganathan, Pallavi Latthe, Dudley Robinson, Matthew Parsons, Linda Cardozo, Philip Toozs-Hobson 'Retrospective case modelling to assess the impact of early intervention for voiding dysfunction after retropubic tape. When is it best to intervene?'. *Int J Urogyn and pelvic floor dys* 21(7) 823-827.

Morgan NV, Morris MR, Cangul H, Gleeson D, Straatman-Iwanowska A, Davies N, Keenan S, Pasha S, Rahman F, Gentle D, Vreeswijk MP, Devilee P, Knowles MA, Ceylaner S, Trembath RC, Dalence C, Kismet E, Koseoglu V, Rossbach HC, Gissen P, Tannahill D, Maher ER (2010). 'Mutations in SLC29A3, encoding an equilibrative nucleoside transporter ENT3, cause a familial histiocytosis syndrome (Faisalabad histiocytosis) and familial Rosai-Dorfman disease'. *PLoS Genetic 2010 Feb 5*; 6(2):e1000833.

Morris MR, Hughes DJ, Tian YM, Ricketts CJ, Lau KW, Gentle D, Shuib S, Serrano-Fernandez P, Lubinski J, Wiesener MS, Pugh CW, Latif F, Ratcliffe PJ, Maher ER (2009) 'Mutation analysis of hypoxia-inducible factors HIF1A and HIF2A in renal cell carcinoma'. *Anticancer Res* 2009 Nov. 29(11):4337-43.

Morris MR, Ricketts C, Gentle D, Abdulrahman M, Clarke N, Brown M, Kishida T, Yao M, Latif F, Maher ER (2010) 'Identification of candidate tumour suppressor genes frequently methylated in renal cell carcinoma' *Oncogene* 2010 Apr 8;29(14):2104-17. Epub 2010 Feb 15.

Morris RK, Malin GM, Khan KS, Kilby MD (2009). ‘Antenatal ultrasound to predict postnatal renal function in conger lower urinary tract obstruction : Systematic review of test accuracy’. *BJOG* ;116 (10) 1290-1299.

Morris RK, Malin GL, Khan KS, Kilby MD (2010) ‘Systematic review of the effectiveness of antenatal intervention for the treatment of congenital lower urinary tract obstruction’. *BJOG* Mar; 117(4):pg382-90. Review. *PubMed PMID*: 20374578.

Mouritsen L, Gavind K, Moller Bek K, Toozs-Hobson P (2009) ‘Results after vaginal repair of recurrent prolapse with and without xenograft reinforcement- a randomised study’. *Int Urogynecol J*: 20 S173.

Natalie A.M. Cooper, T. Justin Clark ‘Advanced Training Skills Module book chapter: Management of vaginal bleeding in acute clinical setting’ In press.

Natalie A.M. Cooper, T. Justin Clark ‘Health Related Quality of Life with Menorrhagia’. In press.

Norman JE, Mackenzie F, Owen P, Mactier H, Hanretty K, Cooper S, Calder A, Mires G, Danielian P, Sturgiss S, MacLennan G, Tydeman G, Thornton S, Martin B, Thornton JG, Neilson JP, Norrie (2009). ‘Progesterone for the prevention of preterm birth in twin pregnancy (STOPPIT): a randomised, double-blind, placebo-controlled study and meta-analysis’. .*J. Lancet. 2009 Jun 13*;373(9680):2034-40

Olga M, Sinilnikova, Antonis C, Antoniou, Jacques Simard, Sue Healey, Mélanie Léoné, Daniel Sinnett, Amanda B. Spurdle, Jonathan Beesley, Xiaoqing Chen, kConFab, Mark H, Greene, Jennifer T, Loud, Flavio Lejbkowicz, Gad Rennert, Sara Dishon, Irene L, Andrulis, OCGN, Susan M, Domchek, Katherine L. Nathanson, Siranoush Manoukian, Paolo Radice, Irene Konstantopoulou, Ignacio, Blanco, Adriana Lasa Laborde, Mercedes Durán, Ana Osorio, Javier Benitez, Ute Hamann, Frans B.L. Hogervorst, Theo A.M. van Os, Hans J.P. Gille, HEBON, Susan Peock, Margaret Cook, Craig Luccarini, D. Gareth Evans, Fiona Lalloo, Rosalind Eeles, Gabriella Pichert, Rosemarie Davidson, Trevor Cole, Jackie Cook, Joan Paterson, Carole Brewer, EMBRACE, David J. Hughes, Isabelle Coupier, Sophie Giraud, Florence Coulet, Chrystelle Colas, Florent Soubrier, Etienne Rouleau, Ivan Bièche, Rosette Lidereau, Liliane Demange, Catherine Nogues, Henry T. Lynch, GEMO, Rita K. Schmutzler, Beatrix Versmold, Christoph Engel, Alfons Meindl, Norbert Arnold, Christian Sutter, Helmut Deissler, Dieter Schaefer, Ursula G. Froster, GC-HBOC, Kristiina Aittomäki, Heli Nevanlinna, Lesley McGuffog, Douglas F. Easton, Georgia Chenevix-Trench, Dominique Stoppa-Lyonnet, on behalf of the Consortium of Investigators of Modifiers of *BRCA1/2* (2009). ‘The *TP53* Arg72Pro and *MDM2* 309G>T polymorphisms are not associated with breast’. *BJC 101*; 1456-60.

Oley C, (2010) ‘CHARGE Syndrome In Cassidy SJ and Allanson’ J (Ed.), *Management of Genetic Syndromes - 3rd Edition (pp.157-168)* John Wiley &Sons, Inc

Ott CE, Leschik G, Trotier F, Brueton L, Brunner HG, Brussel W, Guillen-Navarro E, Haase C, Kohlhase J, Kotzot D, Lane A, Lee-Kirsch MA, Morlot S, Simon ME, Steichen-Gersdorf E, Tegay DH, Peters H, Mundlos S, Klopocki E (2010). ‘Deletions of the RUNX2 gene are present in about 10% of individuals with cleidocranial dysplasia’. *Hum Mutat.* 2010 Aug;31(8):E1587-93

Pallavi M, Latthe, Pinki Singh, Richard Foon, Philip Toozs-Hobson (2009) ‘Two routes of transobturator tape procedures in stress urinary incontinence: a meta-analysis with direct and indirect comparison of randomized trials’ *BJU International Published Online* : 12 November 2009.

Parajes S, Loidi L, Reisch N, Dhir V, Rose IT, Hampel R, Quinkler M, Conway GS, Castro-Feijóo L, Araujo-Vilar D, Pombo M, Dominguez F, Williams EL, Cole TR, Kirk JM, Kaminsky E, Rumsby G, Arlt W, Krone N (2010). ‘Functional consequences of seven novel mutations in the CYP11B1 gene: four mutations associated with nonclassic and three mutations causing classic 11{beta}-hydroxylase deficiency’. *J Clin Endocrinol Metab.* 2010 Feb;95(2):779-88. Epub 2010 Jan 20.

Patel C, Bowdin S, Foggensteiner L, Ball S, Hutchin T, Prothero J ‘MELAS masquerading as Alport Syndrome: A family with renal impairment and deafness in the presence of a MELAS (m.3243A>G) mutation

Patel C, Hardy G, Cox P, Bowdin S, McKeown C, Russell AB (2009). 'Mosaic trisomy 1q:The longest surviving case'. *Am J Med Genet A. 2009 Aug*;149A(8):1795-800. *PubMed PMID*: 19610079.

Patel C, Cox H, Maher ER (2010). 'Genetic Basis of Congenital Heart Disease' P*resentation at Wellcome Trust Clinical Research Facility* (February 2010)

Patel C, Mercer C, Harper N, Hastings H, Turner C, Cox H (2009). 'South West of Britain Audit of the Investigation and Management of Patients with 22q11 Deletion *BSHG Conference* (2009)

Pretlove SJ, Fox CE, Khan KS, Kilby MD. (2009) 'Noninvasive methods of detecting fetal anaemia: a systematic review and meta-analysis'. *BJOG* Nov;116(12):1558-67. *Epub* 2009 Aug 13. Review. *PubMed* PMID: 19681854.

Rattenberry E, Woodward R, Bradshaw N, Izatt L, Wren A, Aylwin S, Bell J, Rehal P, Maher E, MacDonald F (2009). 'MLPA analysis to detect large deletions and duplications of SDHB, SDHC nad SDHD: interesting findings since establishment of a diagnostic service' *BSHG Conference* (2009)

Rice GI, Bond J, Asipu A, Brunette RL, Manfield IW, Carr IM, Fuller JC, Jackson RM, Lamb T, Briggs TA, Ali M, Gornall H, Couthard LR, Aeby A, Attard-Montalto SP, Bertini E, Bodemer C, Brockmann K, Brueton LA, Corry PC, Desguerre I, Fazzi E, Cazorla AG, Gener B, Hamel BC, Heiberg A, Hunter M, van der Knaap MS, Kumar R, Lagae L, Landrieu PG, Lourenco CM, Marom D, McDermott MF, van der Merwe W, Orcesi S, Prendiville JS, Rasmussen M, Shalev SA, Soler DM, Shinawi M, Spiegel R, Tan TY, Vanderver A, Wakeling EL, Wassmer E, Whittaker E, Lebon P, Stetson DB, Bonthron DT, Crow YJ 92009). 'Mutations involved in Aicardi-Goutières syndrome implicate SAMHD1 as regulator of the innate immune response'. *Nat Genet. 2009;41:829-32*

Richard Foon, Philip Toozs-Hobson, Peter Millns, Mark Kilby (2010) 'Impact of anaesthesia and mode of delivery on the urinary bladder in the postnatal period'. *Int J of Obs & Gynaecol* vol 110 (2); 114-117.

Ricketts CJ, Forman JR, Rattenberry E, Bradshaw N, Lalloo F, Izatt L, Cole TR, Armstrong R, Kumar VK, Morrison PJ, Atkinson AB, Douglas F, Ball SG, Cook J, Srirangalingam U, Killick P, Kirby G, Aylwin S, Woodward ER, Evans DG, Hodgson SV, Murday V, Chew SL, Connell JM, Blundell TL, MacDonald F, Maher ER (2010). 'Tumor risks and genotype-phenotype-proteotype analysis in 358 patients with germline mutations in SDHB and SDHD'. *Hum Mutat. 2010 Jan*.31(1):41-51

Ricketts C, Zeegers MP, Lubinski J, *Maher ER* (2009) 'Analysis of germline variants in CDH1, IGFBP3, MMP1, MMP3, STK15 and VEGF in familial and sporadic renal cell carcinoma'. *PLoS One, 2009* Jun 24;4(6);e6037.

Russell LJ, Capasso M, Vater I, Akasaka T, Bernard OA, Calasanz MJ, Chandrasekaran T, Chapiro E, Gesk S, Griffiths M, Guttery DS, Haferlach C, Harder L, Heidenreich O, Irving J, Kearney L, Nguyen-Khac F, Machado L, Minto L, Majid A, Moorman AV, Morrison H, Rand V, Strefford JC, Schwab C, Tönnies H, Dyer MJ, Siebert R, Harrison CJ (2009). 'Deregulated expression of cytokine receptor gene, CRLF2, is involved in lymphoid transformation in B-cell precursor acute lymphoblastic leukemia.' *Blood*. 2009 Sep 24;114(13):2688-98. Epub 2009 Jul 29.

Shehmar M, Gupta JK. The influence of psychological factors on recovery from hysterectomy. *J R Soc Med* 2010: 103: 56-9

Shuib S, McMullan D, Rattenberry E, Barber RM, Rahman F, Zatyka M, Chapman C, MacDonald F, Latif F, Davison, V, Maher ER (2009) 'Microarray based analysis of 3p25-p26 deletions (3p-syndrome)'. *Am J Med Genet A* 2009 Oct; 149A(10):2099-105.

Silcock L (2009) 'XLMR patients screened using exon resolution X chromosome array CGH.' *ACC Spring Conference* 2009

Silcock, L. McMullan D, Brueton L, Lim D, Davison V (2009) 'XMLR patients screened using exon resolution X chromosome array CGH' *BSHG Conference* 2009

Silvia Parajes, Lourdes Loidi, Nicole Reisch, Vivek Dhir, Ian T Rose, Rainer Hampel, Marcus Quinkler, Gerard S Conway, Lidia Castro-Feijóo, David Araujo-Vilar, Manuel Pombo, Fernando Dominguez, Emma L Williams, Trevor R Cole, Jeremy M Kirk, Elke Kaminsky, Gill Rumsby, Wiebke Arlt, Nils Krone. (2010). 'Functional Consequences of Seven Novel Mutations in the *CYP11B1* Gene - Four Mutations Associated with Non-Classic and Three Mutations Causing Classic 11β-Hydroxylase Deficiency' *JCEM 95*;779-788.

Sinilnikova OM, Antoniou AC, Simard J, Healey S, Léoné M, Sinnett D, Spurdle AB, Beesley J, Chen X; kConFab, Greene MH, Loud JT, Lejbkowicz F, Rennert G, Dishon S, Andrulis IL; OCGN, Domchek SM, Nathanson KL, Manoukian S, Radice P, Konstantopoulou I, Blanco I, Laborde AL, Durán M, Osorio A, Benitez J, Hamann U, Hogervorst FB, van Os TA, Gille HJ; HEBON, Peock S, Cook M, Luccarini C, Evans DG, Lalloo F, Eeles R, Pichert G, Davidson R, Cole T, Cook J, Paterson J, Brewer C; EMBRACE, Hughes DJ, Coupier I, Giraud S, Coulet F, Colas C, Soubrier F, Rouleau E, Bièche I, Lidereau R, Demange L, Nogues C, Lynch HT; GEMO, Schmutzler RK, Versmold B, Engel C, Meindl A, Arnold N, Sutter C, Deissler H, Schaefer D, Froster UG; GC-HBOC, Aittomäki K, Nevanlinna H, McGuffog L, Easton DF, Chenevix-Trench G, Stoppa-Lyonnet D (2009) 'Consortium of Investigators of Modifiers of BRCA1/2. The TP53 Arg72Pro and MDM2 309G>T polymorphisms are not associated with breast cancer risk in BRCA1 and BRCA2 mutation carriers'.*Br J Cancer.* 2009 Oct

Slator R, Russell J, Bridges M, Tomlinson J, Cole A, Morton J (2009) 'Understanding cleft lip and palate. 1 An overview' *Journal of Family Health Care 2009*;19(3): 101-103.

Srirangalingam U, Khoo B, Matson M, Carpenter R, Reznek R, Maher ER, Chew SL, Drake WM (2010). 'SDHD-related chromaffin tumours: disease localisation to genetic dysfunction'. *Horm Res Paediatr 2010*; 73(2):135-0. *Epub* 2010 Feb 9.

Srirangalingam U, Khoo B, Walker L, MacDonald F, Skelly RH, George E, Spooner D, Johnston LB, Monson JP, Grossman AB, Drake WM, Akker SA, Pollard PJ, Plowman N, Avril N, Berney DM, Burrin JM, Reznek RH, Kumar VK, *Maher ER,* Chew SL (2009) 'Contrasting clinical manifestations of SDHB and VHL associated chromaffin tumours'. *Endocr Relat Cancer 2009* Jun;16(2):515-25. *Epub* 2009 Feb 10.

Stewart S (2009). 'Joint Bone Genetic Service for adults with Osteogenesis Imperfecta' *Brittle Bone Society magazine*, Issue No. 95, Autumn 2009

Stewart S, Ayuk J, Campbell C, Cole T (2010). 'Phaeochromocytoma/ paraganglionoma in joint endocrine genetic clinic setting' *British Endocrine Society Manchester* (March 2010)

Stewart S, Gittoes N, Stewart PM, Arlt W, Cole T (2009). 'Endocrine Genes – have we improved the fit? *BSHG Conference* (2009)

Stewart S, Watkinson J, Franklin J, Woodward E, Cole T (2009). 'Geneitcs in mainstream medicine – best practice review' *BSHG Conference* (2009)

Swati Jha, Robert Freeman, Philip Toozs-Hobson, David Richmond (2009) 'Urogynaecology training in the UK: past, present and future'. *Int J Urogynaecology 2009*; 20(4) 377-3802008.

Taibjee SM, Hall D, Balderson D, Larkins S, Stubbs T, Moss C (2009). 'Keratinocyte cytogenetics in 10 patients with pigmentary mosaicism: identification of one case of trisomy 20 mosaicism confined to keratinocytes.' *Clin Exp Dermatol.* 2009 Oct;34(7):823-9. Epub 2009 May 5.

Thomas ER, Walker LJ, Pullaperuma S, Cooper B, Brueton LA, Basile Gde S, Suri M, Brady AF (2009). Griscelli syndrome type 1: a report of two cases and review of the literature. *Clin Dysmorphol. 2009;18:145-8.*

Timmermans A, Opmeer BC, Khan KS, Bachmann LM, Epstein E, Clark TJ, Gupta JK, Bakour SH, van den Bosch T, van Doorn HC, Cameron ST, Giusa MG, Dessole S, Dijkhuizen FP, Ter Riet G, Mol BW. Endometrial thickness measurement for detecting endometrial cancer in women with postmenopausal bleeding: a systematic review and meta-analysis. *Obstet Gynecol* 2010; 116(1): 160-7

Tincello DG, Kenyon S, Slack M, Toozs-Hobson P, Mayne C, Jones D, Taylor D (2009) 'Colposuspension or TVT with anterior repair for urinary incontinence and prolapse: results of and lessons from a pilot randomised patient-preference study (CARPET 1)'. *BJOG*; Sep 14.

Tirumuru S, Al-Kurdi D, Latthe P (2010) 'Intravesical botulinum toxin A injections in the treatment of painful bladder syndrome/interstitial cystitis: a systematic review'. *Int Urogynecol J Pelvic Floor Dysfunct*. 2010 May 7. *[Epub ahead of print].*

Tower C, Ong SSC, Ewer AK, Khan K, Kilby MD (2009). 'Prognosis for the fetus with isolated gastroschisis and bo dilatation: a systematic review'. *Arch Dis Child 2009*;94:F268-74.

Van Nederveen FH, Gaal J, Favier J, Korpershoek E, Oldenburg RA, de Bruyn EM, Sieddens HF, Derkx P, Riviere J, Dannenberg H, Petri BJ, Komminoth P, Pacak K, Hop WC, Pollard PJ, Mannelli M, Bayley JP, Perren A, Niemann S, Verhofstad AA, de Bruine AP, *Maher ER*, Tissier F, Meatchi T, Badoual C, Bertherat J, Amar L, Alataki D, Van Marck E, Ferrau F, Francois J, de Herder WW, Peeters MP, van Linge A, Lenders JW, Gimenez-Roquepio AP, de Krijger RR, Dinjens WN, Department of Pathology, Josephine Nefkens Institute, Erasmus MC (2009) 'An immunohistochemical procedure to detect patients with paraganglioma and phaeochromocytoma with germline SDHB, SDHC, or SDHD gene mutations: a retrospective and prospective analysis'. *Lancet Oncol.* 2009 Aug: 10(8):764-71*. Epub* 2009 Jul 1.

Valencia M, Lapunzina P, Lim D, Zannolli R, Bartholdi D, Wollnik B, Al-Ajlouni O, Eid SS, Cox H, Buoni S, Hayek J, Martinez-Frias ML, Antonio PA, Temtamy S, Aglan M, Goodship JA, Ruiz-Perez VL (2009) 'Widening the mutation spectrum of EVC and EVC2: ectopic expression of Weyer variants in NIH 3T3 fibroblasts disrupts Hedgehog signaling'. *Hum Mutat*. 2009 Dec;30(12):1667-75

Van Bon BW, Koolen DA, Brueton L, McMullan D, Lichtenbelt KD, Adès LC, Peters G, Gibson K, Moloney S, Novara F, Pramparo T, Dalla Bernardina B, Zoccante L, Balottin U, Piazza F, Pecile V, Gasparini P, Guerci V, Kets M, Pfundt R, de Brouwer AP, Veltman JA, de Leeuw N, Wilson M, Antony J, Reitano S, Luciano D, Fichera M, Romano C, Brunner HG, Zuffardi O, de Vries BB (2010). 'The 2q23.1microdeletion syndrome: clinical and behavioural phenotype'. *Eur J Hum Genet. 2010;18:163-70.*

Van der Aa N, Rooms L, Vandeweyer G, van den Ende J, Reyniers E, Fichera M, Romano C, Delle Chiaie B, Mortier G, Menten B, Destrée A, Maystadt I, Männik K, Kurg A, Reimand T, McMullan D, Oley C, Brueton L, Bongers EM, van Bon BW, Pfund R, Jacquemont S, Ferrarini A, Martinet D, Schrander-Stumpel C, Stegmann AP, Frints SG, de Vries BB, Ceulemans B, Kooy RF (2009). 'Fourteen new cases contribute to the characterization of the 7q11.23 microduplication syndrome.' *Eur J Med Genet*. 2009 Mar-Jun;52(2-3):94-100. Epub 2009 Feb 26.

Varma R, Soneja H, Clark TJ, Gupta JK. Hysteroscopic myomectomy for menorrhagia using Versascopetrade mark bipolar system: Efficacy and prognostic factors at a minimum of one year follow up. *Eur J Obstet Gynecol Reprod Biol* 2009; 142: 154-9

Varma R, Gupta J. Tubal ectopic pregnancy. *Clin Evid (Online)* 2009; 20; pii: 1406.

Varma R, Soneja H, Samuel N, Sangha E, Clark TJ, Gupta JK. Outpatient Thermachoice Endometrial Balloon Ablation: Long-Term, Prognostic and Quality-of-Life Measures.
*Gynecol Obstet Invest* 2010; 70(3): 145-148

Vogt J, Morgan NV, Marton T, Maxwell S, Harrison BJ, Beeson D, Maher ER (2009) 'Germline mutation in DOK7 associated with fetal akinesia deformation sequence'*. J Med Genet*. *2009* May; 46(5): 338-40, *Epub 2009* Mar 3.

Walker JM, Russell LJ, Strachan M, Geddes N, Jeffries S Griffiths MJ (2009). 'A recurrent cryptic t(X;14)(p22;q32) IGH@ rearrangement in B lineage precursor ALL; a series of 4 patients' *ACC Spring Conference* (2009)

Watts RE, Glover KJ, Fews GA, Farndon P, Moore J, Davison EV (2009). 'Case report of an inverted X chromosome implicated in the disruption of the DMD gene' *ACC Spring Conference* (2009)

Williams D, Hodgetts V, Gupta J. Recurrent hydatidiform moles. *Eur J Obstet Gynecol Reprod Biol* 2010; 150(1): 3-7

Williams D, Patel C, Fallet-Bianco C, Kalyanasundaram K, Yacoubi M, Déchelotte P, Scott R, Bazin A, Bessières B, Marton T, Cox P. Fowler (2010). 'Syndrome-a clinical, radiological, and pathological study of 14 cases'. *Am J Med Genet A. 2010 Jan*;152A(1):153-60. PubMed PMID: 20014121.

Woodward ER, Skytte AB, Cruger DG, Maher ER (2010). ‘Population-based survey of cancer risks in chromosome 3 translocation carriers’. *Genes Chromosomes Cancer 2010 Jan*; 49(1): 52-8.

Young AC, Craven RA, Cohen D, Taylor C, Booth C, Harnden P, Cairns DA, Astuti D, Gregory W, Maher ER, Knowles MA, Yoyce A, Selby PJ, Banks RE (2009) ‘Analysis of VHL Gene Alterations and their Relationship to Clinical Parameters in Sporadic Conventional Renal Cell Carcinoma’. *Clin Cancer Res 2009:* Dec 15; 15(24):7582-7592.

# Abbreviations

| | |
|---|---|
| ACU | Assisted Conception Unit |
| AHP | Allied Health Professional |
| ALL | Acute Lymphocytic Leukaemia |
| ANP | Advanced Nurse Practitioner |
| ANNP | Advanced Neonatal Nurse Practitioner |
| APH | Ante-partum haemorrhage |
| ARC | Arthrogryposis-Renal dysfunction-cholestasis |
| BAGP | British Association of Gynae Pathologists |
| BAPM | British Association of Perinatal Medicine |
| BAUS | British Association of Urology Surgeons |
| BBC | Birmingham & the Black Country |
| BCH | Birmingham Children's Hospital |
| BFI | Baby Friendly Initiative |
| BGA | Blood Gas Analyser |
| BMFMS | British Maternal Fetal Medicine Society |
| BMS | Biomedical Scientist |
| BRASH | Birmingham Relationship & Sexual Health |
| BRIPPA | British Paediatric Pathology Association |
| BSCCP | British Society for Colposcopy & Cervical Pathology |
| BSUG | British Society of Uro-Gynaecologists |
| BWNFT | Birmingham Women's Hospital |
| C/S | Caesarean section |
| CAIG | Clinical Audit & Information Group |
| CAT | Critically Appraised Topics |
| CEMACH | Confidential Enquiry into Maternal & Child Health |
| CEPOD | Confidential Enquiry into Peri-Operative Deaths |
| CF | Cystic Fibrosis |
| CDOP | Clinical Death Overview Panel |
| CGH | Comparative Genomic Hybridisation |
| CGMP | Cyclic guanosine monophosphate |
| CHD | Coronary Heart Disease |
| CNST | Clinical Negligence Scheme for Trusts |
| CIG | Clinical Improvement Group |
| CIR | Clinical Incident Reporting |
| CLRN | Comprehensive Local Research Network |
| COREC | Central Office for Research Ethics Committees |
| CPA | Clinical Pathology Accreditation (UK) Ltd |
| CPAP | Continuous Positive Airway Pressure |
| CPD | Continuing Professional Development |
| CR | Computed Radiography |
| C/S | Caesarean Section |
| CSE | Combined spinal epidural |
| CSP | Chartered Society of Physiotherapy |
| CT | Computerised Tomography |
| CVP | Central venous pressure |
| CVS | Chorionic Villus biopsy |
| Cx. | Cervix |
| DH or DOH | Department of Health |
| DI | Donor Insemination |
| DNA | Did not attend |
| DOH | Department of Health |
| DREEM | Dundee Ready Education Environment Measure |
| DVT | Deep Vein Thrombosis |
| EBM | Evidence Based Medicine |
| EBP | Evidence Based Practice |
| ECV | External Cephalic Version |
| ELITE | Evaluation of Laparoscopic Intervention for the Treatment of Endometriosis |
| EPAQ | Electronic Patient Questionnaire |
| EPAU | Early Pregnancy Advisory Unit |
| ERC | Education Resource Centre |
| ERPC | Evacuation of Retrained Products of Conception |
| ES | Embryonic Stem |
| EWTD | European Working Time Directorate |
| FET | Frozen Embryo Transfer |
| GA | General Anaesthesia |
| GC | Genetic Counsellor |
| GCP | Good Clinical Practice |
| GMP | Good Manufacturing Practice |
| GOR | Gastro-oesphageal Reflux |
| GP | General Practitioner |
| GTT | Glucose Tolerance Test |
| Hb | Haemoglobin |
| HCA | Health Care Assistant |
| HCC | Health Care Commission |
| HCG | Human Chorionic Gonadotrophin |
| HDU | High Dependency Unit |
| HEC | Hospital Education Committee |
| HEI | Higher Education Institute |
| HFEA | Human Fertilization and Embryo Authority |
| HLA | Hospital Life Support |
| HLRCC | Hereditary Leiomyomatosis and renal cell cancer |
| HNPCC | Hereditary non polyposis colon cancer |
| HOB | Heart of Birmingham |
| HPV | Human Papilloma Virus |
| HR | Human Resources |
| HRQL | Health Related Quality of Life |
| HRT | Hormone Replacement Therapy |
| H & S | Health & Safety |
| HSG | Hysterosalpingogram |
| HTA | Human Tissue Act |
| IC | Intensive care |
| ICP | Integrated Care Pathways |
| ICSI | Intracytoplasmic sperm injection |
| IMS | Instrument Management System |
| IOL | Induction of Labour |
| IPPA | International Paediatric Pathologists' Association |
| IPPV | Intermittent Positive Pressure Ventilation |
| IR(ME)R | Ionizing Radiation (Medical Exposure) Regulations |
| IT | Information Technology |
| ITU | Intensive Treatment Unit |
| IUD | Intra Uterine Device |
| IUD | Intra-uterine Death |
| IVF | In-vitro fertilization |
| IUGR | Intrauterine Growth Restriction |
| IVU | Intravenous Urography |
| KPI | Key Performance Indicator |
| KSF | Knowledge & Skills Framework |
| LAVH | Laparoscopy Assisted Vaginal Hysterectomy |
| LBC | Liquid Based Cytology |
| LBR | Learning Beyond Registration |
| LDA | Learning & Development Agreement |
| LLETZ | Large Loop Excision of the Transformation Zone |
| LSA | Local Supervising Authority |
| LSCS | Lower Segment Caesarean Section |
| LUNA | Laparoscopic Utero Nerve Ablation |
| MASE | Minimal Access Surgery & Endometriosis |
| MCA | Maternity Care Assistant |
| MCQ | Multiple Choice Questions |
| MDS | Main Delivery Suite |
| MDT | Multidisciplinary Team |

MELD Multi-professional Education, Learning & Development
MEWS Maternity Early Warning Score
MHRA Medicines & Healthcare Regulatory Agency
MPET Multi-professional Education & Training
MPS Multiple pterygium syndrome
MRC Medical Research Council
MRI Magnetic resonance imaging
MROP Manual removal of placenta
MRSA Mehicillin resistant staphylococcus aureus
MSLC Maternity Services Liaison Committee
NBS National Blood Service
NEC Nectorising Enterocolitis
NCEPOD National Confidential Enquiry into Peri-Operative Disease
NCRN National Cancer Research Network
NCT National Childbirth Trust
NEQAS National External Quality Service
NGEDC National Genetics Educational & Development Centre
NHSLA National Health Service Legal Association
NHSCSP NHS Cervical Screening Programme
NICE National Institute for Clinical Excellence
NIHR National Institute for Health Research
NLH National Library for Health
NLS Newborn Life Support
NMC Nursing and Midwifery Council
NMET Non-Medical Education & Training
NPSA National Patient Safety Agency
NRT Nicotine Replacement Therapy
NSF National Service Framework
OAA Obstetric Anaesthetists Association
OASIS Obstetric Anal Sphincter Injuries
O & G Obstetrics & Gynaecology
OPD Out Patient Department
OQME Ongoing Quality Monitoring Enhancement
ORMIS Operating Room Management Information System
OSCE Objective Structured Clinical Examination
PACS Picture Archiving of Communication System
PALS Patient Advice and Liaison Service
PCA Patient Controlled Epidural Anaesthesia
PET Pre-eclamptic toxaemia
PCT Primary Care Trust
PGDIP Postgraduate Diploma
PLUTO Percutaneous Shunting for Lower Urinary Tract Obstruction
PMB Post Menopausal Bleeding
PMETB Postgraduate Medical Education Training Board
PN Post Natal
PNMR Perinatal Mortality Rate
POW Pregnancy Outreach Workers
PPH Post-partum haemorrhage
PPM Practice Placement Manager
PPR Professional & Personal Review
PREP Post Registration Education & Practice
PRODIGY Online Guidance used by Healthcare Professionals and Patients
PROMPT
QA Quality Assurance
QFPCR Quantitative Fluorescent Polymerase Chain Reaction
QIPP Quality Innovation Performance Prevention
QQI Quarterly Quality Indicator
R & D Research & Development
RAAD Rapid access ambulatory diagnosis
RCA Root Cause Analysis
RCGP Royal College of General Practitioners
RCOG Royal College of Obstetricians & Gynaecologists
RCT Randomised Controlled Trial
RITA Record of In-Training Assessment
ROH Royal Orthopedic Hospital
RPM Reducing Perinatal Mortality
RPOC Retained Products of Conception
RSI Repetitive Strain Injury
RTT Referral to Treatment
RUNXI Familial platelet disorder
SfBH Standards for Better Health
SBR Still Birth Ratio
SHA Strategic Health Authority
SHO Senior House Officer
SIFT Service Increment from Teaching
SIGN Scottish Intercollegiate Guidelines Network
SIM MAN Simulator Mannequin
SLA Service level agreement
SLAiP Supporting Learning & Assessment in Practice
SMACS Self Medication after Caesarean section
SPCS Spiritual & Pastoral Care Services
SpR Specialist Registrar
SSBCNN Staffordshire, Shropshire and Black Country Newborn Network
SST Sub-Specialty Training
SWMNN Southern West Midlands Newborn Network
TA Technical Assistant
TAH Total Abdominal Hysterectomy
TED Training & Education
TENS Transcutaneous electrical nerve stimulation
TOP Termination of Pregnancy
TTO To Take Out
TTTS Twin to twin transfusion syndrome
TWOC Trial Without Catheters
UCE University of Central England
UHBFTFT University Hospital Foundation Trust
UHNS University Hospital of North Staffordshire
UKCRN United Kingdom Clinical Research Network
UKCS UK Continence Society
UKGTN UK Genetics Testing Network
VEGF Vascular endothelial growth factor
VSD Ventricular septal defect
WHO World Health Organisation
WMFACS West Midlands Family Cancer Strategy
WTE Whole Time Equivalents
XLMR X Linked Mental Retardation