Coombe Women & Infants University Hospital

Ospidéal Ollscoile Ban agus Naíonán an Chúim

Excellence in the Care of Women and Babies
Foirfeacht i gCúram Ban agus Naíonán

ANNUAL CLINICAL REPORT 2016

Dr Sharon Sheehan
Master/CEO

Ms Patricia Hughes *(until August)* / Ms Ann MacIntyre *(from August)*
Director of Midwifery Nursing

Professor Jan Miletin *(until September)* / Dr John Kelleher *(from September)*
Director of Paediatrics & Newborn Medicine

Dr Tom D'Arcy
Director of Gynaecology

Professor Michael Carey
Director of Perioperative Medicine

Professor John O'Leary
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Mr Patrick Donohue
Secretary & General Manager

Acknowledgements

Ms Laura Forde
Ms Mary Holden
Ms Emma McNamee
Ms Julie Sloan

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Welcome to this year's Annual Clinical Report

In this special centenary year, I would like to thank our wonderful staff, each of whom embodied the vision of the 1916 Proclamation, 'to cherish all the children of the nation equally'. "Excellence in the care of women and babies" is the mission of our Hospital and I would like to acknowledge the hard work and commitment that our staff displayed throughout the year, ensuring that we achieved this mission.

As a tertiary-referral university-teaching hospital, in 2016 we cared for 8941 mothers, 8421 infants weighing ≥500g and operated on 6330 women, making it one of the largest providers of women and infants healthcare in Europe. The corrected perinatal mortality rate was 2.6/1000.

Each member of the Coombe team played an essential role in 2016, to ensure that we delivered safe, high quality care to our women, babies and their families. There is no doubt that the year was filled with challenges and opportunities, with increased patient complexity, staff shortages, financial constraints and continued media focus on maternity services. These obstacles were faced head on and our staff rose to meet every challenge. I wish to acknowledge the dedication and commitment of our team of medical, midwifery and nursing, allied health professionals, support staff and administrative staff and to thank them for their unrelenting efforts.

The Senior Management Team play a pivotal role in ensuring the safe and smooth running of the Coombe and I wish to thank them for their commitment; Mr Patrick Donohue, Secretary and General Manager, Ms Patricia Hughes, Director of Midwifery and Nursing (until August), Ms Ann MacIntyre (from August) and Mr John Robinson, Financial Controller. Patricia Hughes resigned from her role during the year and I would like to acknowledge her enormous contribution not only to our hospital, our staff and our women and babies, but also to maternity care on a national and international level. I wish her every success as she embarks on a new path in maternity services. I would like to especially thank Ann MacIntyre, CMM3 Neonatal Centre, who took over the reins from Patricia, and to express my sincere thanks for her dedication, commitment, hard work and passion in her new role. I have always been extremely fortunate to be surrounded by such a dedicated and hard-working team and I cannot thank them enough for their support, encouragement and energy.

I would like to express my gratitude to Ms Laura Forde, my PA, for her hard work and support throughout the year. This Annual Clinical Report is only one part of the year's work that would not exist without Laura's assistance and I would like to thank her most sincerely for her dedication. I would also like to thank Ms Emma McNamee, Ms Mary Holden and Ms Julie Sloan for their commitment, diligence and attention to detail in providing so much of the data for the report and throughout the year. I am deeply indebted to each of them.

The Chairman, Mr John Gleeson, and members of the Board of Guardians and Directors, worked tirelessly throughout 2016, on a completely voluntary basis, advocating for women, infants and families, and supporting the Hospital in too many ways to list. I wish to extend my sincere thanks to each of them for their support and their expertise.

I also wish to acknowledge the huge support and commitment of the Management Executive, the Divisional and Departmental Heads and all of the members who serve on the various committees (both internal and external) which are central to the running of the Hospital.

I would like to sincerely thank our Clinical Risk Manager, Ms Susan Kelly, for her dedication and support in managing clinical risk within the Hospital and also for the assistance that she continues to provide to all staff in relation to clinical risk matters.

A number of new Consultant staff took up substantive posts in the Hospital during 2016 and I would like to congratulate and welcome each of them to the Coombe; Dr Aoife Mullally, Consultant Obstetrician & Gynaecologist (CWIUH & MRHP), Dr Niamh Maher, Consultant Obstetrician & Gynaecologist (CWIUH & MRHP), Dr Jana Semberova, Consultant Neonatologist (CWIUH, MRHP & OLCHC) and Dr Anne Doolan, Consultant Neonatologist (CWIUH, MRHP & OLCHC). I would also like to offer my congratulations to Dr Richard Deane who was appointed as Associate Professor and Consultant Obstetrician & Gynaecologist (TCD, CWIUH & AMNCH). It is hoped that he will commence in post in the New Year. I am also delighted that the Academic Council in UCD appointed Dr Chris Fitzpatrick as

Clinical Professor of Obstetrics and Gynaecology and I wish to offer Professor Fitzpatrick my warmest congratulations.

I would like to congratulate Dr Laurentina Schaeler, Dr Aine Lynch and Dr Fionan Donohoe who were appointed as Lead NCHDs throughout the year. It was a pleasure to work closely with these doctors and I wish to acknowledge the significant contribution each of them made in post.

The Hospital remains deeply indebted to Friends of the Coombe who continued to provide much-needed support to the Hospital during the year. I wish to thank the Chair, Ms Ailbhe Gilvarry, and all of the Board members for their commitment during 2016. I would also like to acknowledge the work of Coombe Care, a voluntary Committee which works closely with the Medical Social Workers of the Coombe Women & Infants University Hospital to provide much needed support to those mothers and families most in need of assistance.

In Memory

It was with deep sadness that we learned of the death of one of our distinguished colleagues, Gabriel Shannon, a highly respected and valued member of our Maintenance Department. Gabriel sadly passed away on 3rd March 2016 after a short illness. Our thoughts and prayers remain with his wife Ingrid, his sons Carl and Sean, his daughter Jessica, his extended family and friends.

Achievements and Challenges in 2016

I had the great privilege of launching the Hospital's 5-year strategy in 2016, which had been developed with the Board of Guardians and Directors and the Senior Management Team. This strategy sets the direction of the hospital, underpinned by our commitment to our mission of "excellence in the care of women and babies", and our values of excellence in everything we do, respect, progressive, woman and baby-centred, caring and pride in what we do, and our vision to be a "nationally and internationally recognised leader in healthcare for women, babies and their families".

Quality, Safety and Clinical Risk Management are essential parts of the Hospital, underpinning our commitment to continuous improvement. Our new Quality and Patient Safety Directorate was established this year, with the appointment of the Hospital's first ever Quality Manager, Ms Evelyn O'Shea, heading up this new Directorate, and Ms Carmel Tierney who commenced as Patient Advocacy Manager. All aspects of Quality, Safety and Risk Management will be incorporated into this new Directorate and it is hoped that next year will see further expansion in this area. I would like to thank both Evelyn and Carmel who hit the ground running. The QPS team set-about establishing a structured approach to engage with women, staff and leadership so as to commence the development, delivery, implementation and evaluation of a comprehensive quality, safety and risk programme to provide assurance regarding our delivery of person-centred high-quality care in the Hospital.

A number of quality improvements were undertaken within the Hospital throughout the year and with great results. The success of our staff in implementing LEAN methodology through the introduction of the Productive Ward in Our Lady's Ward and the LEAN improvement process to improve waiting times and the overall experience for patients and staff in the Outpatients Department extended to the Operating Theatre Department with the introduction of the HSE's Productive Operating Theatre Programme (TPOT). A number of our staff completed the IHI Open School Education Programme in Quality Improvement, with the Graduation Ceremony held in Farmleigh during the year. I would like to congratulate Ms Patricia Hughes, Director of Midwifery & Nursing, Dr Aoife Mullally, Locum Consultant Obstetrician & Gynaecologist, Ms Susan Kelly, Clinical Risk Manager, Ms Frances Richardson, Assistant Director of Midwifery & Nursing, Ms Vivienne Gillen, Hygiene Services Manager, and Ms Anitha Selvanayagam, Acting Clinical Midwife Manager 3 Maternity Floors, on their achievements.

The revised Quality & Safety Leadership Rounds undertaken by the Senior Management Team continued to provide an opportunity for frontline staff to identify and discuss any quality and safety concerns that they have within the hospital, and particularly within their specific department. The Leadership team comprises the Master, the Director of Midwifery and Nursing, the Secretary & General Manager, the Clinical Risk Manager and the Hygiene Services Manager. Other staff members were also invited to join the team throughout the year.

HIQA conducted an announced inspection of the Hospital in relation to Antimicrobial Stewardship in January. The inspection involved a series of staff and management interviews in addition to observations of practice and documentation. They visited the Pharmacy Department and the Neonatal Intensive Care Unit, where they met with staff and observed practices. I would like to acknowledge the hard work, dedication and commitment of the Antimicrobial Stewardship Team, Ms Úna Rice, Antimicrobial Pharmacist, the Pharmacy Department, the Senior

Management Team and all of the staff involved in preparing for the visit. Overall the inspectors were complimentary of Antimicrobial Stewardship within the Hospital and in particular of the staff they had met during the day.

Later in the year, HIQA conducted an unannounced inspection of the Hospital's Operating Theatre Department against the National Standards for the Prevention and Control of Healthcare Associated Infections. They identified good ownership and teamwork in relation to hygiene in general, and highlighted that the hospital had an effective system in place in relation to cleaning in the Operating Theatre Department. We endorsed HIQA's key finding that risks in respect of operating theatre infrastructure cannot be addressed without major capital investment, and acknowledged that the implementation of a major re-development will contribute to the quality and standards of service delivered in the Theatre Department. It was recognised that the Hospital had previously had extensive, ongoing engagement with the HSE concerning essential upgrading of the Theatre Department and a detailed Business Case for this work had been submitted to the HSE well in advance of the inspection. Following HIQA's visit, we received notification that approval had been granted to proceed to the Design and Planning phase of the Theatre Re-development Project. Quality Improvement Plans were developed to address the areas where risk could be mitigated in advance of the major theatre re-development plan. These included improving air circulation, decontamination facilities and sterile storage areas. Some of these interim works necessitated a period of Theatre closure to complete and are will run into the New Year.

In May, the Hospital introduced the administration of Routine Antenatal Anti-D prophylaxis (RAADP) to all suitable Rhesus D negative women (15% of all women) at 28-30 weeks gestation, as part of their routine midwifery and obstetric care. It is expected that it will help protect women & babies from rhesus isoimmunisation in current and future pregnancies. This has brought the Hospital in line with both national and international best practice. Since its rollout, the service has been working very well. Despite the submission of Business Cases to the HSE for funding of this service, only the actual Anti-D cost was approved. I would like to acknowledge all involved in establishing this much-needed service.

Following the introduction of the latest international guidance, the diagnosis of Gestational Diabetes has increased by more than 30%, resulting in a significant rise in the number of women attending the Diabetic Clinic. From June on, in order to enhance the services provided for women with Gestational Diabetes, all women with Gestational Diabetes who are diet controlled remained under the care of their own Obstetric/Midwifery services. The Clinical Midwife Specialists in Diabetes continued to monitor these patients' glucose measurements and link with the formal Diabetic Clinic Consultants to transfer care if their condition required more intensive monitoring or further therapy.

In October, the Hospital's Laboratory Department underwent its annual inspection by the Irish National Accreditation Board. The assessors commended the staff for the high-quality services provided and their robust systems and audit. I would like to acknowledge the hard work of all the staff throughout the year and to congratulate them on their success and continued accreditation.

The Hospital successfully maintained compliance with the European Working Time Directive (EWTD) in relation to the 24-hour maximum shift, with non-compliance threatening unaffordable financial penalties. Recruitment of additional NCHDs, changes to NCHD rosters, and further development of formal handovers helped to alleviate some of the challenges associated with achieving compliance with the 48-hour week limit. Staffing challenges (recruitment and retention) across all specialties (medical, midwifery and nursing) continued throughout the year, with similar patterns seen across the country. I would like to thank the NCHDs, Consultants, Midwives and Nurses who played a vital role in helping us achieve compliance while maintaining a safe and high-quality service for our patients.

In particular, staffing recruitment and retention across midwifery and nursing staff remained a major concern throughout the year. The Hospital continued to advertise on the website and in national and international journals and also attended Expos in both Dublin and abroad. A number of other measures were introduced to alleviate the midwifery and nursing staff pressures including periods of restriction on the levels of elective gynaecology surgery, the use of greater numbers of Healthcare Assistants, Portering staff, Administrative staff and additional Phlebotomy services. Close and continued monitoring of staffing levels across all sectors will continue in 2017.

In recognition of the ongoing need for investment in our infrastructure, a number of refurbishment and upgrading works were completed throughout the year. The dedication and teamwork displayed by all involved in these projects allowed us not only to complete the works on time, but to do so while maintaining a full and

safe service for our mothers and babies. Other areas of the Hospital, including St Patrick's Ward and the Operating Theatre Department have been prioritised for refurbishment and development and it is hoped that funding will be secured in 2017.

The HSE announced their audit plans to establish the level of governance in place in all Section 38 organisations and to confirm that the governance practices and procedures accord with those set out in their respective Annual Compliance Statements. An audit of the Hospital's compliance by Deloitte on behalf of the HSE began in October and was completed at the end of November. A draft report is now awaited.

Throughout the year, the three Dublin Maternity Hospitals continued to meet formally through the Joint Standing Committee of the Dublin Maternity Hospitals. I would like to thank Mr Don Thornhill, Chairman for his leadership and expertise.

We continued to work closely with the Dublin Midland Hospital Group throughout the year and I would like to sincerely thank Dr Susan O'Reilly, Group CEO, and our other colleagues in the Group and the HSE for their support to the Hospital.

I continued to attend the Trinity Health Ireland meetings which strengthen the links between the Coombe, St James's Hospital, Tallaght Hospital and Trinity College Dublin.

Our services

We continued to provide a most extensive surgical gynaecology service in 2016 and more than ever, due to increased demand for gynaecology services, it is essential that we expand our capacity in the Coombe. The Outpatient Waiting Lists for Gynaecology services remain at an unacceptable level, with demand exceeding capacity. Validation of waiting lists has made significant inroads in reducing unnecessary appointments, reducing DNA rates and overall freeing up much needed capacity.

The Senior Management Team have developed a multi-pronged strategy to address these waiting lists. In addition to validation, plans have been prepared which include the establishment of an Outpatient Hysteroscopy/Ambulatory Gynaecology Clinic, Consultant and Midwifery & Nursing expansion, a new Operating Theatre Department and the development of GP-provided clinics. It is planned to progress these in the New Year in conjunction with the DMHG as new funding is critical to the implementation and success of our strategy.

The major shift from open to minimal access surgery continued in 2016, with most operations performed laparoscopically. The Business Case for the re-development of the Operating Theatre Department which had been submitted to the HSE in 2015, received the approval of HIQA during an unannounced inspection. HIQA agreed that a re-development was required to fully address the existing deficiencies that we had previously flagged. It is hoped that we will get full approval to progress this development in the New Year. I wish to thank Dr Tom D'Arcy, Director of Gynaecology, Prof. Michael Carey, Director of Peri-operative Medicine, Professor John O'Leary, Director of Pathology, Ms Frances Richardson, Ms Alison Rothwell and all of the staff who continue to build our extensive gynaecology service.

The Coombe continued to provide services and vital education for the National Cervical Screening Programme (NCSS), thanks to our Colposcopy Unit, the Laboratory and the National Cytology Training Centre. The overall number of smear tests processed by the Laboratory in 2016 was in excess of 26,000. HPV triage for low grade abnormalities continued to expand and develop.

Patient complexity continued to increase in 2016, and I would like to express my gratitude to the Consultants, NCHDs, Midwives, Nurses, Allied Health Professionals, Support Staff and Administrative Staff who enabled the Coombe to meet the demands of complex care.

Our Hospital continued to provide the busiest dedicated consultant-provided Maternal Medicine Clinic in the country in 2016 with multidisciplinary specialists from the Coombe, St James's and Tallaght Hospitals providing a regional and national service to mothers with serious co-morbidities. The demand for maternal medicine input has increased and we will need to resource the services and personnel required to support a full service across our Hospitals. Our high-quality service is complimented by the new state-of-the-art HDU and ready access to the intensive care services in St James's Hospital.

In 2016, our Perinatal Ultrasound and Fetal Medicine departments continued to provide diagnostics of the highest quality, particularly for babies with complex congenital anomalies including cardiac disease because of our close proximity to Our Lady's Children's Hospital Crumlin and the all-island service, extending our services to include mothers and babies from the North of Ireland, which had been introduced in 2015, continued to flourish.

Women used the pool for labour and delivery as part of the Water Immersion Study (WIS) during the year,

with interim results expected next year.

The Hospital continued to provide highly specialised Neonatal Intensive Care in 2015 to the smallest and youngest babies born not just here in this hospital but who were transferred from other units around the country who did not have these facilities. We continued to partake in the National Neonatal Transport Service and looked after 114 very low birth weight infants (<1500g). I would like to thank Prof. Jan Miletin, Director of Paediatrics and Newborn Medicine (til September 2016), Dr John Kelleher, Director (from September 2016), Ms Bridget Boyd, Ms Ann MacIntyre and all of our Neonatal staff for their continued hard work and dedication.

As a leading hospital for research in all aspects of women and infants' healthcare, our focus on research and innovation continued in 2016. The Research Laboratory at the Coombe maintained its international reputation for cutting edge molecular medicine with grant income in this area exceeding €30 million over the past number of years. I wish to acknowledge the vital role that all of our Academic leaders and partners play in maintaining research and education high on the Hospital's agenda.

Important events in the Coombe Calendar

Cultural

We were delighted to welcome the Abbey Theatre for their special performance of Sean O'Casey's "The Plough and the Stars" in the Hospital in April. This play was the centrepiece of the National Theatre's 1916 Commemorative Programme. After its run in the Abbey, this star-cast production headed on tour around Ireland and the U.S. 'The Plough and the Stars' was hosted by the Hospital in association with local communities (St Teresa's Gardens, Dolphin House, Fatima, Charlemont), Dublin Simon and locally-based theatre company Outlandishtheatre who will also, on the same occasion, perform their one-act play 'YouTopia' in response to O'Casey's 1916 masterpiece.

The Hospital also hosted performances for the Dublin Fringe Festival and Culture Night in September. Outlandishtheatre Platform, the Hospital's resident theatre group was invited to present their most recent work Megalomaniac (Mother Ireland). Culture Night also took place in September with Outlandishtheatre Platform showing their short film Between Land and Water in the Hospital. These events showcased the multi-cultural and international ethos of the Coombe as well as the rich demographic heritage of this part of Dublin.

The particularly memorable highlight of the Coombe's cultural calendar in 2016 was our Annual Guinness Lecture Symposium. On the 11th November (Armistice Day) the hospital hosted a very special commemorative all-day Guinness Conference 'Fáinne Geal an Lae' that recognised the complexity of relations on the island of Ireland (and within Europe), the role the Hospital played during the momentous events of 100 years ago and the importance of reconciliation and moving forward into the future. I would like to congratulate Professor Chris Fitzpatrick on organising such an exciting conference and delivering such an inspirational lecture as the 44th Annual Guinness Lecturer, entitled 'We are such stuff as dreams are made on'.

As part of this commemorative event, a special digital exhibition of photographs and memorabilia was displayed of relatives of staff who took part in (or were witnesses to) the 1916 Easter Rising, the War of Independence, the Civil War or who were members of the Royal Irish Constabulary or the British, German, Austro-Hungarian Armed Forces or those of any other nation involved in the 1914-1918 Great War.

Education & Training

Education, one of the key pillars of the Coombe, remained a priority in 2016 with the Hospital hosting a number of conferences throughout the year.

The 9th Annual Essence of Midwifery Care Conference "Rediscovering Evidence Based Care in Pregnancy and Childbirth: Caring for the next generation" was held in the Coombe on International Day of the Midwife in May. The keynote speaker was Dr Michel Odent, Obstetrician, Researcher and Author. There was a full attendance, with attendees from all over the country, with excellent evaluation of the conference, topics and speakers.

A Maternal Medicine Conference "Reducing Maternal Morbidity - The Challenges of Obstetric Medicine" was also held in the Hospital in May. The theme of the conference was reducing maternal morbidity and the guest speaker was Professor Catherine Nelson Piercy, Professor of Obstetric Medicine, Guys and St Thomas' NHS Trust, London, who spoke about maternal mortality and the MBRRACE data. There was a full attendance with excellent feedback.

The Hospital hosted its 4th Annual Prematurity Awareness Symposium in November. The symposium represented a symbol of the Hospital's commitment

to World Prematurity Day. This year's symposium focused on palliative care and bereavement, from the time of diagnosis to the time of demise. One of our bereaved fathers bravely shared his experiences in the Coombe. Afternoon tea for parents and staff was held on World Prematurity Day in the Neonatal Unit.

We were delighted to host the Irish Perinatal Society meeting AGM which incorporated the Coombe Czech Lecture Series in October. Professor Marian Kacerovsky, Associate Professor of Obstetrics and Gynaecology, University Hospital Hradec Kralove, Czech Republic, presented on "Infection-related and inflammatory complications of preterm prelabor rupture of membranes", followed by Dr Pavla Pokorna, Consultant Paediatric and Neonatal Intensivist, Department of Paediatric and Adolescent Medicine, General University Hospital Prague, Czech Republic, who spoke about "Pharmacology in newborn infants treated for hypoxic-ischaemic encephalopathy".

The Hospital held a Study Day for General Practitioners during the year which focused on the management of Gynaecological problems.

Visitors to the Coombe

I was delighted to welcome the Minister for Health, Mr Simon Harris, TD, to the Hospital during the year. During the Minister's visit, he met with staff and visited the Operating Theatre Department, the Delivery Suite, the Neonatal Intensive Care Unit and the Pre-operative Assessment Clinic. He was very supportive of the Hospital's plans for the re-development of the Operating Theatre Department and emphasised the need for urgent funding.

The Nursing & Midwifery Board of Ireland (NMBI) also visited during the year to evaluate and audit the Clinical Practice Experience and the Clinical Learning Environment for student midwives in the CWIUH. A report is expected in the coming weeks. They praised the recent improvements brought about by the Positive Safety & Culture Group.

The State Claims Agency visited the Hospital in November to meet with the Senior Management Team, the Clinical Risk Manager, Department Heads and frontline staff. They also visited a number of clinical areas within the Hospital and commended the hospital for its clinical risk management function.

We were delighted to welcome a delegation from the Mozambique Ministry of Health and the Irish Embassy in Mozambique to the Hospital in November. Their visit was organised by Dr David Weakliam, HSE Lead for the Global Health Programme, who has been working with Mozambique to support Quality Improvement Initiatives. Their particular focus was to look at QI initiatives within the Coombe in relation to Health Care Associated Infections (HCAIs), medication management, Leadership for Quality, Measurement for Quality and morbidity and mortality rates within the Irish Maternity services. We hope to explore and develop further links in the future.

Health & Well-being

Raising awareness of the importance of Workplace Health and Well-being was a key focus of the Hospital in 2016. Starting with participation in RTE's Operation Transformation Workplace Challenge, supported by Healthy Ireland, the Hospital began the New Year with a focus on healthy eating and exercise. The Coombe lost in excess of 43 stone! The Inaugural National Workplace Well-Being Day was celebrated in the Hospital with a number of events arranged to encourage and support staff.

The efforts of the Coombe were rewarded at the DMHG Healthy Ireland Initiation Day at Farmleigh when they were awarded funding to progress their initiatives. I would like to thank and congratulate Ann Bowers, Eva Fitzsimons and Renee Dilworth, the Catering Department and Coffee Shop and the many staff who joined the Health and Well-Being Committee during the year for their enthusiasm, energy and determination.

Baked...by the Coombe evolved into an enormous success during the year. Teams across the Hospital competed to reach the finals showcasing their culinary talents. Guest judges included TV presenter Pamela Flood, Restaurateur Ronan Ryan, food critics Lucinda O'Sullivan and Sophie White, the Chairman of Bord Bia, Michael Carey, and a number of chefs from local restaurants.

The Grand Finale took place in May, with the Pharmacy Phoodies (representing the Pharmacy Department) competing against the Bakeologists (representing the Laboratory). Mr Patrick Guilbaud, two Michelin star chef, was on hand to judge the final and meet with staff on the day. A nail biting 760 main courses and 760 desserts later, Pharmacy Phoodies just grabbed the crown by a whisker from the Bakeologists. Thirteen teams overall delivered an array of wonderful food during the year and every team was deserving of praise for their culinary talents. I would like to congratulate each of the teams who competed and all of the staff for their tremendous support. I would also like to acknowledge the hard work of Lead NCHDs, Dr Laurentina Schaeler and Dr Aine Lynch, and Friends of the Coombe Executive Development Officer, Emer McKittrick for their assistance in organising the

competition. The recipes used in the competition are featured in the Coombe Cookbook, on sale in aid of Friends of the Coombe.

The Annual Friends of the Coombe Golf Classic, organised by Emer McKittrick, was held in Killeen Castle Golf Club. It was a most enjoyable and successful day.

The landings and stairwells of the Hospital were filled with the sounds of the Coombe Choir for Christmas Carols in December which was such a treat for staff and patients alike. I would like to thank the Choir for their beautiful and uplifting voices.

Annual Service of Remembrance

The Annual Service of Remembrance was held in April for the families of those who have been bereaved. I would like to thank all of the members of the Bereavement Team for their dedication and compassion in organising this event and in supporting families and indeed staff throughout the year.

National Context

National Maternity Strategy

Ireland's first ever National Maternity Strategy was launched in January 2016 by Dr Leo Varadkar, Minister for Health. As a member of the Steering Group, I was particularly encouraged by the Minister's commitment to fund its implementation. The Strategy focuses on driving improvements within the maternity services, to ensure safe, high quality care for women and their families.

Coombe and Midlands Regional Hospital Portlaoise

Work continued across the CWIUH/MRHP Steering Group and Operations Group which had been established last year to manage the proposed integration of the women and infants' services at the Midlands Regional Hospital Portlaoise as part of a Managed Clinical Network under the governance of the Coombe Women and Infants University Hospital. The groups met regularly to address the complex service modelling, resourcing, funding and clinical and corporate governance issues to be agreed between MRHP and CWIUH. There was also a focus on operational issues including information gathering, ICT, HR, Support Services, Equipment, Procurement and Communications. I would like to thank Dr Michael O'Connell, Mr Michael Knowles, Dr Susan O'Reilly, the staff on both sites, and Ms Laura Magahy and Mr Chris O'Keeffe from MCO Projects for their support and commitment throughout the year.

A number of new consultant posts that had been identified and agreed as being essential to the integration were approved and appointed during the year, with further applications to the Consultants Appointment Unit planned for 2017.

Towards the end of the year, HIQA published their report "Review of progress made at the Midland Regional Hospital, Portlaoise, in implementing recommendations following HIQA's investigation". The report set out the progress made to date in addressing the recommendations of the previous HIQA report. The report outlined how maternity services are now being provided in a safer and more sustainable way as a result of better leadership, increased investment and an improvement in the staff-to-birth ratio, but emphasised the significant fall in deliveries. HIQA also identified that many of the risks previously highlighted in 2015 in relation to critical care and emergency services remain unchanged.

Birthrate Plus

During the year, the HSE published the long-awaited report into midwifery staffing levels in the 19 maternity hospitals. The report highlighted the deficits nationally and outlined the need for 35 additional midwives in the Coombe to meet existing service demands. Similar deficits were seen across our sister Dublin maternity hospitals. It was recognised however that expanding our midwifery complement will prove extremely difficult given the national shortage of qualified midwives, and it was acknowledged that a comprehensive strategy must be developed. Thankfully, partial funding was received towards the end of the year and it is hoped that the remainder will be received in 2017.

National Children's Hospital and the Coombe

During the year planning permission was granted to build the new National Children's Hospital on the St James's Hospital site. By ultimately combining the specialties of the maternity, paediatric and adult hospitals in this tri-location, the quality of care for our women and babies will be greatly enhanced. We look forward to developing this model of healthcare excellence, ensuring a seamless continuity of care for our patients. There is no timeframe indicated for the move but we will continue to work with the relevant groups to ensure timely progression of this tri-location. During the year I attended the Oireachtas Joint Committee on Health and Children with the Children's Hospital Group to discuss the planned location of the New Children's Hospital on the St

James's Hospital campus.

Maternity Patient Safety Statement

Discussions regarding the Maternity Patient Safety Statement continued in 2016, centred on concerns in relation to the duplication of effort and over the possibility of misinterpretation of data, under-reporting and confidentiality. Further clarification and definitions from the HSE in relation to the Statement were sought.

Each of the three Dublin Maternity Hospitals continues to produce Annual Clinical Reports which are not only published but are peer-reviewed and assessed each year by an external assessor at the Annual Reports meeting organised by the Royal Academy of Medicine in Ireland (RAMI). In addition to the Annual Clinical Reports, each of the 19 maternity units submits data nationally relating to patient safety and quality of care to a number of agencies for review, including the State Claims Agency, the National Perinatal Epidemiology Centre and the Quality Assurance Programme of the HSE Clinical Care Programme in Obstetrics and Gynaecology.

National Standards

The National Standards for Bereavement Care following Pregnancy Loss and Perinatal Death were launched by the Minister for Health in Farmleigh in August. I would like to congratulate a number of Coombe staff members for the huge role they played in developing these standards, Ms Ann Bergin (Bereavement Care Standards Project Manager), Ms Brid Shine (Bereavement Care Standards Development Group Member), Dr Joanne Fenton (Bereavement Care Standards Development Group Member), Dr Mairead Kennelly (Bereavement Care Standards Development Group Member) and Professor Martin White (Bereavement Care Standards Development Group Member).

HIQA and Minister Simon Harris launched the National Standards for Safer Better Maternity Services on 21st December. The Standards cover eight areas (themes) and encompass the care of women and their babies from before pregnancy until six weeks post delivery. Each standard statement describes an "outcome" for women and babies receiving care. Safe, high-quality maternity care is provided to women and their babies when a service achieves these outcomes. Each standard statement also has a number of examples of good care, called "features" which describe what a maternity service is likely to be doing if it meets the standards.

Protection of Life During Pregnancy and the Eight Amendment

The debates surrounding termination of pregnancy in Ireland continued throughout the year and will undoubtedly continue into 2017.

Other Issues

The historical practice of Symphysiotomy in the 1950s and 1960s continued to feature in the media and in the courts during the year.

The threat of further spread of the Zika Virus dominated international media for much of 2016.

Awards

I would like to offer my congratulations to Dr Maria Farren, Bernard Stuart Fellow, winner of the Master's Medal 2015/2016 for her project entitled "The role of myo-inositol/D-chrio-inositol in a physiological ratio of 40:1 in preventing the onset of Gestational Diabetes Mellitus (GDM)". Dr Farren investigated if inositol in the combination of myo-inositol and D-chiro-inositol would prevent GDM in women with a family history of GDM. Her research concluded that it did not in fact prevent GDM and indeed may be associated with potential adverse neonatal outcomes. Dr Farren was also awarded First Prize at the Irish Perinatal Society Meeting in Drogheda during the year.

I would also like to congratulate Dr Nosheen Aktar, Dr Laurentina Schaeler and Dr Aine Lynch who also won prizes at the Master's Medal Competition for their work.

The winners of the Dr James Clinch Award for Audit 2016 were Ms Orla Cunningham and Dr Nikita Deegan and I would like to extend them my congratulations. Their audit was entitled "Audit of Adherence to Referral Pathway for Pregnant Women with History of Genital Herpes in CWIUH".

I am delighted to report that the Hospital has been awarded funding through the highly competitive Design and Dignity Grant Scheme run by the Irish Hospice Foundation and the HSE for the re-design and redevelopment of the existing Mortuary Chapel. The Master would like to thank Ms Brid Shine, Clinical Midwife Specialist in Bereavement, Professor John O'Leary, Consultant Pathologist and Head of the Laboratory, Mr Patrick Donohue, Secretary & General Manager, Mr Ronan Rose, Architect, and all of the End of Life Care Committee for their hard work on this project. This project will greatly enhance the

mortuary facilities for families, adding space, comfort, light and privacy at a most difficult time in their lives. A meeting of the Project Team will be held early in the New Year to agree project timelines and prepare the pre-planning application.

I would also like to congratulate Dr Niamh Daly who won the prestigious Walter Güder Pre-analytical Award at the European Federation of Clinical Chemistry and Laboratory Medicine Meeting in Poland in September. This is awarded bi-annually to a young scientist for his/her significant contribution to the improvement of the pre-analytical phase, and was based on her paper entitled "Impact of Implementing Pre-analytical Laboratory Standards on the Diagnosis of Gestational Diabetes Mellitus: A Prospective Observational Study". Dr Daly also won the Royal Academy of Medicine in Ireland Medal - Best Endocrinology Research Paper and the Royal Academy of Medicine in Ireland Medal - Best Oral Presentation during the year.

For the second year in a row, the Coombe won the much coveted Tri-Hospital Golf Trophy. Congratulations to Dr Carmen Regan, Dr Bridgette Byrne, Prof. Jan Miletin, Dr Michael O'Connell, Professor Sean Daly, Professor Bernard Stuart and Dr Niall Hughes.

Going forward in 2017

There is no doubt that 2017 will present us with a new set of challenges and opportunities, in addition to the current ones. Investment in our services, our staff and ultimately our women and infants, is essential. We must continue to advocate for the very best standards of care and surpass expectations.

The commitment to partial funding of Birthrate Plus is most welcome, but must be matched in 2017 to ensure that all midwifery and nursing shortages are addressed. Recruitment and retention of all healthcare staff must remain a priority at national level to guarantee the provision of high quality and safe care to women and infants, both next year and far beyond. Our highly-skilled and talented workforce rightly demands the very best standards. Recognition of the importance of education, training, research and innovation is essential and must form an integral part of clinical strategic planning and considerations.

The publication of Ireland's first ever National Maternity Strategy is not sufficient, the investment required to safeguard its implementation is critical to its success; investment in services and in our staff.

It remains my great privilege to serve as Master of the Coombe Women & Infants University Hospital and I again thank the Board and our staff for their support.

Dr Sharon Sheehan
Master/CEO

Awards

Awards

Dr Sharon Sheehan
Master

Master's Medal 2015/2016

Well done to Dr Maria Farren, winner of the Master's Medal for her presentation entitled ***The Role of myo-inositol/D-chiro-inositol in a physiological ratio of 40:1 in preventing the onset of Gestational Diabetes Mellitus.***

Walter Güder Preanalytical Award

Congratulations to Dr Niamh Daly, winner of the Walter Güder Preanalytical Award. This is awarded biannually to a young scientist for significant contribution to the improvement of the preanalytical phase, based on submission of a published paper.

Dr James Clinch Prize for Audit

Congratulations to Ms Orla Cunningham & Dr Nikita Deegan, winners of the Dr James Clinch Award for Audit 2016. Their audit was entitled ***Audit of Adherence to Referral Pathway for Pregnant Women with History of Genital Herpes in CWIUH' Aug 2015-Aug 2016. (Please see appendix VI)***

Awards to Midwives, Nurses and Students in 2016

Gold Medals

BSc 2011- 2015 - Maebh Ní Shúilleabháin
BSc 2012 - 2016 - Emma Feeley
H.Dip - Aisling O'Donnell

Silver Medals

BSc 2011-2015 - Jennifer O'Gorman
BSc 2012-2016 - Darry Reed
HDip - Elaine Small

T.M Healy Awards

T.M. Healy Award BSc 2011-2015 - Jennifer O'Gorman
T.M. Healy Award BSc 2012-2016 - Emer Curran
T.M. Healy Award H.Dip - Paula Fernandez Esteban

Best Clinical Educator Awards

Nora Vallejo
Michelle Walsh
Megan Sheppard

Clinical Lead Educator Award in Neonatal Education

Patricia O'Hara

Ann Louise Mulhall Scholarship Award

Paula Barry
Sarah Mahony

Congratulations to all of our Midwives, Nurses and Midwifery Students for their outstanding achievements during 2016.

Executive Summary

Executive Summary

Obstetrical activity

A total of 8941 mothers attended the Hospital in 2016, 8233 mothers delivering 8421 infants weighing ≥ 500g, including 177 sets of twins, 8 sets of triplets, and 104 infants ≤ 1500g.

Obstetrical demographics

31.1% of mothers who booked in the Hospital in 2016 were born outside the Republic of Ireland; (31.4% in 2015; highest in 2011: 31.6%). 21.5% of mothers were unemployed; a decrease from 24.3% last year (highest in 2010: 26.3%). Communication difficulties were reported in 5.7% of mothers at booking (6.9% in 2015). 0.6% of mothers were < 18 years (no significant change over the last 7 years); 6.9% of mothers were ≥ 40 years (highest in 7 years; lowest in 2010: 4.6%). Nulliparae accounted for 40.7% of mothers (highest in 2010: 421.2%). 27.6% of pregnancies were unplanned (lowest rate in the last 7 years); a worrying trend continued whereby 52.9% of mothers had not taken pre-conceptual folic acid prior to booking for antenatal care (> 50% were not taking folic acid over the last 7 years); 10.1% were current smokers; this was the lowest percentage over 7 years (highest in 2010: 14.5%) ; 1.0% reported consuming alcohol at the time of booking (highest in 2010: 3.5%); 0.2% were taking illicit drugs or methadone (range over 7 years: 0.2% - 0.8%); 8.0% had a history of previous drug use (similar trend over the last 7 years); 16.7% of mothers had a history of psychological/psychiatric disorders including 4.4% with a history of post-natal depression; 0.9% had a history of domestic violence (range over 7 years: 0.9% - 1.2%). At booking just over half (50.7%) were in the healthy weight range, 1.6% were underweight (BMI < 18.5) and 29.3% were defined as overweight (BMI 25-29.9). Overall 18.1% were obese (Class 1-3), with 1.8% defined as morbidly obese (Class 3). 12.7% had history of one previous Caesarean section at booking (range over the last 7 years: 11.7-13.8%) and 4.0% had a history of two or more sections (consistent over the last 3 years).

Obstetrical Interventions and Outcomes

The induction rate in 2016 was 33.9% (highest in 2012, 35.3%). The percentage of nulliparae having a spontaneous vaginal delivery was 38.9% (lowest rate over the last 7 years, highest in 2013: 43.2%). The percentage of parous mothers having a spontaneous vaginal delivery was 64.9% (highest in 2012: 69.4%). Since 2010 there has been a decline in forceps deliveries overall (7.7% in 2010; 5.3% in 2016), more marked amongst nulliparae, while overall rates of ventouse have remained more steady.

The rate of LSCS in 2016 (31.3%) was the highest rate in the last 7 years (lowest rate: 25.8% in 2010). The rate of LSCS in nulliparae (singleton with cephalic presentations) in spontaneous labour is 10.9%; induction in nulliparae significantly increased the risk of LSCS (36.0% in 2016). The overall VBAC rate for mothers with one previous LSCS continues to decline and was 27.6% in 2016 (highest in 2010: 35.8%). 63.7% of mothers with one previous LSCS (and no previous vaginal delivery) had an elective repeat LSCS (60.4% in 2015); the VBAC rate for mothers with one previous LSCS and at least one vaginal delivery was 49.0% (highest in 2012: 60.3%). There has been a marked decline in overall VBAC rates over the past 7 years.

The number of operative vaginal deliveries conducted in theatre this year compared to last year remained stable (91). There were 2 Classical Caesarean sections performed in 2016 (range over last 7 years: 2-7).

It is of note that 1471 mothers had their booking appointments completed in the community based clinics; this represents 17% of all bookings (15.6% in 2015). In 2010 the Early Transfer Home (ETH) Scheme was extended to Dublin 10 and 20; uptake in ETH areas continued to be high at 50.1% in 2016; the average length of stay for mothers availing of ETH was 1.5 days for those who had a spontaneous/operative vaginal delivery and 3.1 days for those delivered by Caesarean section; the calculated savings in bed-days in 2016 was 2968 days; the readmission rate for mothers was 0.6% and infants was 0.1% (0.2% and 0.5% in 2015). A DOMINO scheme, introduced in 2012, continued its expansion in 2013. 63.8% of women booked in the DOMINO scheme had a spontaneous vaginal delivery and the caesarean section rate was 20.8%.

Exclusive breastfeeding rates (38.2%) remain low by international standards and have significant socio-economic and ethnic patterns; an additional 22% of babies were fed by a combination of breast and formula; a comprehensive breastfeeding support service is available; educational programmes for health carers have been extended to include student nurses on obstetric placement, medical students and healthcare assistants.

Obstetrical Complications

Rates of primary post-partum haemorrhage (PPH) have risen dramatically over the past 7 years however 2016 saw a particularly sharp increase to 18.0%, despite the fall the previous year (13.7%). This worrying rise was evident across all categories. There was an increase in

the PPH incidence in spontaneous labour in nulliparae (15.1%; 12.0% in 2015) and an increase in the incidence in induced labour in nulliparae (25.3%; 20.1% in 2015). For all modes of delivery in nulliparae and parous women, the reported incidence of PPH was higher than the previous year. The most marked rise in PPH rates occurred in women delivered by caesarean section, rising to 38.0% overall compared to 26.9% in 2015. Emergency caesarean sections were associated with a higher rate of PPH compared to elective caesarean sections (43.7% and 32.7% respectively). The overall rate of PPH in twin deliveries was 46.9% (33.1% in 2015). The incidence of manual removal of the placenta reduced very slightly in 2016 (1.2%; 1.3% in 2015), however the percentage of women having a PPH increased in this group (67.4%; 53.7% in 2015). The percentage of admissions to HDU for obstetric haemorrhage was 37% in 2016 (25% in 2015), and 24% of the admissions were for hypertension / PET.

The method of measuring blood loss in theatre changed in 2010 during the ECSSIT Study and a more recent study in the Delivery Suite, the LABOR Trial, has resulted in more direct measurement of blood loss. This change in measurement may possibly account for some of the increase rates. While the rates of blood transfusion did increase in 2016 from 1.9% to 2.4%, some of these transfusions were in antenatal women. The rate of transfusion > 5 units was 0.06% and remains at a very acceptable level. PPH rates will have to be monitored closely.

The rate of severe maternal morbidity increased from 4.4/1000 in 2015 to 7.7/1000 in 2016 (63 women). Massive obstetric haemorrhage remains the leading cause of severe maternal morbidity. In 2016 there were 33 cases of Massive Obstetric Haemorrhage (19 in 2015) defined according to revised criteria (estimated blood loss > 2.5L and/or treatment of coagulopathy). There were five peripartum hysterectomies performed.

There were 198 obstetrical admissions to the High Dependency Unit (217 in 2015); 37% of these admissions were related to haemorrhage (25% in 2015) and 24% were due to hypertension (27% in 2015). Of note 41 patients were admitted for MgSO4 for fetal neuroprotection for anticipated premature delivery. There was one case of eclampsia. A total of 17 women were admitted to HDU with sepsis, and 2 cases of septic shock. There were no cases of uterine rupture. There were 3 mothers transferred to ICU in St. James's Hospital: cardiac arrest (1) MOH, peripartum hysterectomy and coagulopathy (1) and collapse during LSCS (1).

There were no maternal deaths.

There was a marked increase in the number of patients attending the Combined Clinic for Diabetes (737 in 2016, 695 in 2015). Increased BMI, demographic changes and revised diagnostic criteria have contributed to this increase. A number of service changes were made including the launch of a group education programme delivered by midwifery, dietetic and physiotherapy staff. Oral hypoglycaemic therapy (Metformin) was introduced in 2013 and has resulted in a reduction in the number of women requiring admission and Insulin therapy. A total of 694 mothers developed Gestational Diabetes; 230 were treated with Insulin, 230 with Metformin, 62 with Insulin and Metformin, and 284 with Diet alone. There was only a small increase in the number of infants born weighing ≥4500g in 2015 (144; 132 in 2015) despite the significant increase in the diagnosed incidence of Gestational Diabetes. The incidence of shoulder dystocia remains relatively unchanged over the last 7 years (0.6%).

The recorded incidence of third degree tears in vaginal deliveries fell slightly compared to the previous year (2.6%, 2.86% in 2015). A total of 11 (0.2%) fourth degree tears were reported (9 in 2015). A Quality Improvement Team has been established to focus on reducing these injuries.

In 2016 there were 364 new referrals to the multidisciplinary Medical Clinic. The consultant-led high risk service with a dedicated in-patient maternal medicine team was established in 2012 and has continued to provide a comprehensive service for CWIUH mothers and those referred from other units around the country. The most common indications for referral relate to thrombosis/haemorrhagic disorders (149), cardiac disease (46), renal/ hypertensive disease (69), cerebrovascular disease (22) and liver/GI disease (27). The number of women attending for preconceptual care was similar to the previous year (20 in 2016; 19 in 2015).

The Preterm Birth Clinic was established in 2014 by Professor Sean Daly for those women at risk of preterm delivery. There was a 27% increase in attendances at the clinic compared to last year. From 18 weeks, fetal fibronectin tests are used in conjunction with cervical length measurements to create individualised care plans in an attempt to prevent preterm birth and reduce the morbidity associated with prematurity. The clinic was established as part of a UK-based preterm birth network which seeks to expand the knowledge around this challenging area.

Early Pregnancy Assessment Unit (EPAU)

There were a total of 4128 visits to EPAU in 2016; 2376 new and 1752 return attendances. Dr Somaia Elsyaed continued her Clinical Fellowship in EPAU. A total of 1500 miscarriages were seen in the unit and of these, 31% were managed conservatively, 25% were managed medically and 44% were managed surgically. A total of 75 ectopic pregnancies were diagnosed in the unit with 72% requiring surgical management.

Fetal Medicine

The Fetal Medicine service has continued to see significant expansion in 2016 with a total of 29,828 scans performed. All mothers booked at CWIUH are offered both routine dating and a 20-22 week structural scan. 272 structural abnormalities and a total of 49 cases of aneuploidy were diagnosed. A total of 147 invasive prenatal procedures were performed (100 amniocenteses, 44 chorionic villus samples and 3 amnioreductions).

The weekly Combined Fetal Medicine/Paediatric Cardiology Clinic has grown significantly since its formal establishment in 2010 with referrals from units nationwide. It is now the largest national referral service for prenatal diagnosis of congenital heart disease in Ireland. Women are seen within one week of referral. A total 673 fetal echocardiograms were performed in 2016 (643 in 2015); 94 structural cardiac abnormalities were detected in addition to 12 major rhythm disturbances.

At the Multiple Birth Clinic, led by Dr Aisling Martin, a total of 192 multiple pregnancies were looked after in 2016; 182 sets of twins and 10 sets of triplets. 35% of twins were delivered at or beyond 37 weeks gestation. The preterm delivery rate in the multiple pregnancies overall was 65%.

In 2016 the Department also hosted two fellowship posts: the Bernard Stuart Fellow in Perinatal Ultrasound and the Rotunda/Coombe/Columbia Subspecialty Fellow.

Perinatal/Neonatal Outcomes

The overall Perinatal Mortality Rate (PMR) for infants born weighing ≥ 500g was 4.5/1000; the corrected PMR rate was 2.6/1000. 10 of the 15 normally formed stillbirths weighed ≤ 2500g, with 7 of these weighing ≤1500g; fetal thrombotic vasculopathy (4), placental insufficiency (2), cord accident (2) and infection (2) were the most frequent causes of death among the normally formed stillborn infants. There was one intra-partum death, due to placental abruption.

Congenital malformation (10) and prematurity (5) with respiratory problems were the main causes of early neonatal death (17); 7 of the 17 early neonatal deaths occurred in normally formed infants, with 5 of these babies weighing < 1000g. There were 6 late neonatal deaths; 4 of these occurred in normally formed babies, with 3 of these weighing less than 1000g.

There were 1156 admissions to the Neonatal Centre. 121 infants were reported to the Vermont Oxford Network in 2016. The overall survival for VLBW infants in 2016 was 85.1% and importantly survival of VLBW infants without specified morbidities was 66%. The low incidence of chronic lung disease at 36 weeks (13.5% v VON 23.2%) appears to correlate with the low rate of invasive ventilation. Patent Ductus Arterious (PDA) was identified in 7.5% of VLBW infants; with only one baby requiring ligation (0.9% v VON 3.7% ligation rate). The strategy of conservative PDA treatment, frequent use of point of care ultrasound and cardiology support from Dr Orla Franklin appears to have been particularly effective in this context. The VLBW cohort is continuing to show low incidence of severe intraventricular/periventricular (PIVH) haemorrhage (5.8%).

Three neonatal deaths occurred in normally formed infants born weighing ≥ 1000g: all Coroner's cases: Sudden infant death syndrome (1), placental abruption and HIE grade III (1), Coroner's report awaited (1).

Six inborn infants were classified with HIE grade II/III; all were treated by Total Body Cooling according to TOBY trial criteria; two infants died within the first 2 days of life. One infant had normal neurodevelopmental follow-up at 4 months of age; the other three infants had abnormal follow-up, ranging from some concerns regarding gross motor skills to confirmed Cerebral Palsy.

Gynaecology

In 2016 there were 5255 gynaecological operations performed (4990 in 2015). The gynaecology service provided by consultants based in the CWIUH across this hospital, St. James's Hospital and Tallaght Hospital continues to be the busiest surgical service in the state. Increasing caesarean section rates continue to put pressure on theatre capacity and thankfully the Emergency Obstetric Theatre on the Delivery Suite has helped to alleviate some of the infrastructural challenges posed.

There has been a marked increase in the number of minimal access surgeries performed in the hospital over the last seven years. While the overall number of laparoscopic hysterectomies (laparoscopic-assisted vaginal, total, subtotal and radical hysterectomy) fell slightly compared to the previous year (112; 130 in 2015), there was a continued decrease in the number of open hysterectomies (vaginal, total abdominal, subtotal and radical hysterectomy) from 57 in 2015 to 30 in 2016. Similar trends have been seen in tubal/ovarian surgeries over the past seven years, with a total of 823 procedures performed laparoscopically in 2016 compared to only 24 open procedures.

Urogynaecology operations remained prevalent in 2016 (365; 329 in 2015) with the expansion of treatment options for women with complex pelvic floor dysfunction continued – both vaginal and advanced laparoscopic interventions. Urogynaecology MDT meetings were held during the year and continue to be very beneficial. Intravesical hyaluronic acid instillations for bladder hypersensitivity, introduced in 2013, continued during

the year. There was an increase in the number of botox treatments for refractory Detrusor Overactivity (39; 22 in 2015).

There were 2064 first visit attendances at the Coombe Colposcopy Clinic in 2016, a 4% increase compared to 2015, and 3942 return visits, which represented an 11% decrease on the previous year. A total of 563 excisional procedures were performed in the clinic and 87 in theatre. In 2011, in accordance with the recommendations of the National Cancer Control Programme there was a strategic transfer of oncology patients and consultant sessions to SJH and a reciprocal transfer of patients with benign gynaecology disorders and sessions to the CWIUH. The National Cervical Screening Programme (NCSS) began sending GP smears and other NCSS designated clinic smears to the Cytopathology Department from April 2013. A total of 26,161 specimens were processed through the Laboratory in 2016, compared to 25,589 in 2015.

Gynaecological surgical complications during 2016 included bladder injury (4), bowel injury (1), uterine perforation (9), transfer to HDU (3), transfer to ITU (1). There was no reported incidence of blood transfusion > 5l.

Peri-operative Medicine

During 2016, 3112 epidurals were sited in labour; the epidural rate was 37.8%, the lowest rate in the last 7 years (highest in 2011, 45.2%); 98.6% of elective Caesarean sections and 94.7% of emergency Caesarean sections were performed under regional anaesthesia. The Emergency Obstetric Theatre on the Delivery Suite continued to cater for emergency cases between 08.00 and 17.00 hours. This has been a great advance in patient care, allowing for timely intervention without transfer delays.

The multidisciplinary Acute Pain Service led by the Department of Peri-operative Medicine continued to operate effectively in 2016; with almost all surgical patients reviewed within 24 hours of surgery. This service also includes a Pharmacist and a Physiotherapist. The introduction of electronic PCA pumps continues to enhance the monitoring of opiod requirements.

The Pre-operative Anaesthetic Assessment Clinic continued to ensure that all women scheduled for major surgery and day case surgery undergo an appropriate anaesthetic review; this continued to greatly facilitate same day admission for all major gynaecology patients. The DOSA (day of surgery admission) rate reached in excess of 98%. During the year, there was a 23% increase in attendances at the clinic from 2121 in 2015 to 2759 in 2016, reflecting the expansion to all obstetric patients scheduled for theatre.

The Chronic Pain Clinic has continued to be of huge benefit to both obstetrical and gynaecological patients with refractory pain.

Structured training and research programmes within the Department of Peri-operative Medicine, under the leadership of Prof. Michael Carey, have continued to attract anaesthetic trainees and the Hospital was selected by the College of Anaesthetist of Ireland as a pilot site to trial competency-based training for anaesthetic trainees.

Academic

To reflect the breadth and depth of both clinical and academic activity on the campus, in 2008 the Hospital changed its name to the Coombe Women and Infants University Hospital. In addition to providing tertiary maternal-fatal, neonatal, gynaecology and anaesthetic services both at a network and national level, the Hospital has a very significant academic portfolio in terms of academic appointments, research grant income and publications. Medical Students from the UCD and TCD attend the Hospital; the campus hosts the Centre for Midwifery Education for the Greater Dublin Area. In 2012 the new National Cytology Training Centre was completed; this unique centre will provide dedicated training and an MDT function for the National Cervical Screening Programme. The Hospital also supports research fellowships in Obstetrics, Peri-operative Medicine, Early Pregnancy Assessment, Perinatal Ultrasound and Pharmacology.

The Research Laboratory in the Hospital, under the leadership of Professor John O'Leary, has a grant portfolio of approximately €9.4m; in 2016 the Laboratory hosted 11 postgraduate students pursuing PhD/MD degrees. The Molecular Pathology Group published 12 peer reviewed journal articles with 32 published abstracts. The Laboratory has an international reputation for cancer stem cell biology and pregnancy proteomics and transcriptiomics. It also hosts two EU research consortia as well as being the co-ordinator for the Irish Cervical Cancer Screening Research Consortium (Cerviva). This Laboratory hosts researchers from TCD, UCD, RCSI, DCU, DIT and from other national and international third level institutions and has collaborative relationships with many biotechnology partners.

As evidenced in this year's Annual Clinical Report, the other Academic Departments under the leadership of Professor Michael Turner (UCD Centre for Human Reproduction), Dr Mairead Kennelly (UCD Centre for Human Reproduction and Perinatal Ireland), Professor Deirdre Murphy (TCD), Professor Sean Daly (TCD and Perinatal Ireland), Prof. Michael Carey (Peri-operative Medicine) and Prof. Jan Miletin (Paediatrics and Newborn Medicine) together with departmental researchers, have significantly expanded the research portfolio of the Hospital. The leadership role of Ms Triona Cowman (CME

Director) is also acknowledged in relation to the Centre for Midwifery Education for the Greater Dublin Area.

During 2016 the Hospital hosted/co-hosted a series of highly successful multidisciplinary conferences (see Introduction for details) including the 9th Annual Essence of Midwifery Care Conference, the Maternal Medicine Conference, the Prematurity Awareness Symposium, and the Guinness Lecture Symposium.

Dr Sharon Sheehan
Master / CEO

Hospital Overview

Members of the Board of Guardians and Directors – 2016

Board Members	Date of Election
John Gleeson	2013 *(Chair from January 2014)*
Prof Cecily Begley	2013
Carol Bolger	2013
Prof Michael Carey	2012
Anne Marie Curran	2016
Mary Donovan	2014
Eileen Gleeson	2007
Prof Robbie Gilligan	2016
Prof Linda Hogan	2010
Michael O'Neill	2014
Maura Quinn	2014
Dr Margaret Sheridan-Pereira	2006
Prof Michael Turner	2013

Ex-Officio Members

THE LORD MAYOR OF DUBLIN

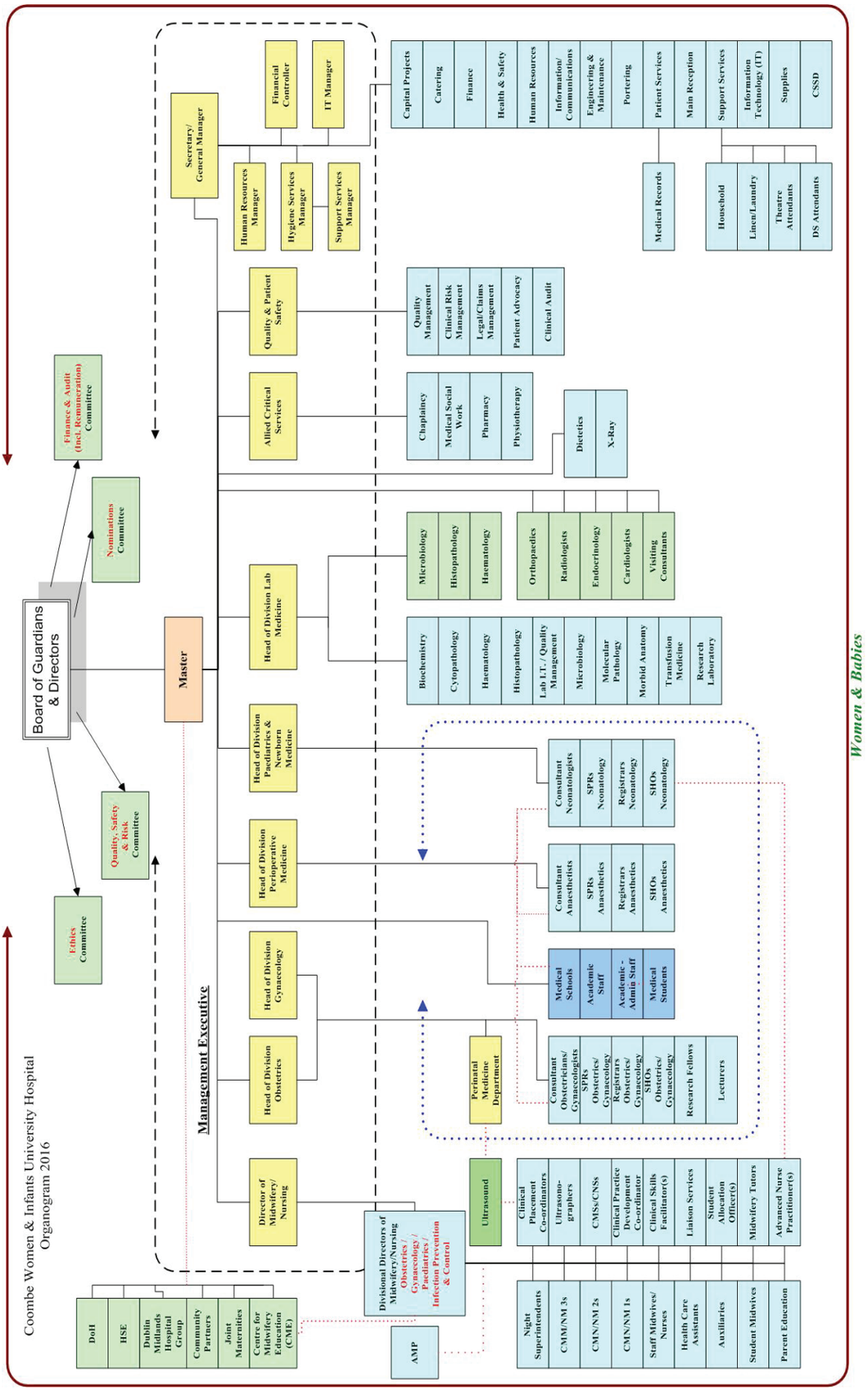
The Rt Hon Lord Mayor Cllr. Críona Ní Dhalaigh
(In office from June 2015 – June 2016)

The Rt Hon Lord Mayor Cllr. Brendan Carr
(In office from June 2016 – June 2017)

MASTER / CHIEF EXECUTIVE OFFICER

Dr Sharon Sheehan, from January 2013

Organisational Chart



MEMBERS OF STAFF

CONSULTANT OBSTETRICIANS/ GYNAECOLOGISTS

Dr Sharon Sheehan, Master/CEO

Dr Christopher Fitzpatrick

Professor Michael Turner

Dr Hugh O'Connor

Professor Sean Daly

Dr Noreen Gleeson

Dr Mary Anglim

Dr Bridgette Byrne

Dr Carmen Regan

Dr Thomas J D'Arcy

Professor Deirdre Murphy

Dr Michael O'Connell

Dr Gunther Von Bunau

Dr. Mairead Kennelly

Dr Cliona Murphy

Dr Aisling Martin

Dr Caoimhe Lynch

Dr Aoife O'Neill

Dr Nadine Farah

Dr Shobha Singh

Dr Waseem Kamran

Dr Aoife Mullaly

Dr Niamh Maher

CONSULTANT ANAESTHETISTS

Dr Michael Carey (Director of Perioperative Medicine)

Dr Niall Hughes

Dr Steven Froese

Dr Nikolay Nikolov

Dr Rebecca Fanning

Dr Terry Tan

Dr Sabrina Hoesni

Dr Siaghal Mac Colgáin

CONSULTANT NEONATOLOGISTS

Dr Jan Miletin (Director of Paediatrics & Newborn Medicine until September 2016)

Dr John Kelleher (Director of Paediatrics & Newborn Medicine from September 2016)

Professor Martin White

Dr John Kelleher

Dr Pamela O'Connor

Dr Jan Janota

Dr Anne Doolan

Dr Jana Semberova

CONSULTANT PAEDIATRICIAN IN PALLIATIVE MEDICINE

Dr Mary Devins

CONSULTANT RADIOLOGIST (ADULT)

Prof. Mary T. Keogan

Dr Mark Knox

CONSULTANT RADIOLOGIST (PAEDIATRIC)

Dr David Rea

Dr Clare Brenner

DIRECTOR OF PATHOLOGY

Professor John James O'Leary

CONSULTANT HISTOPATHOLOGIST

Dr Colette Adida

CONSULTANT MICROBIOLOGIST

Dr Niamh O'Sullivan

CONSULTANT HAEMATOLOGIST

Dr Catherine Flynn

Dr Kevin Ryan

CONSULTANT DIABETOLOGIST

Professor Brendan Kinsley

CONSULTANT ENDOCRINOLOGIST

Dr Rachel Crowley

CONSULTANT NEPHROLOGIST

Dr Catherine Wall

CONSULTANT CARDIOLOGIST

Dr John Cosgrave

CONSULTANT PSYCHIATRIST

Dr Joanne Fenton

Dr Ann O'Grady-Walsh*

CONSULTANT ORTHOPAEDIC SURGEONS

Dr Paula Kelly

Dr Jacques Noel

CONSULTANT OPHTHALMIC SURGEON

Dr Kathryn McCreery

NON-CONSULTANT HOSPITAL DOCTORS

SPECIALIST REGISTRARS IN OBSTETRICS/ GYNAECOLOGY

Dr Naomi Burke

Dr Zara Fonseca-Kelly

Dr Maria Kennelly

Dr Zbigniew Marchocki

Dr Aoife Morris

Dr Siobhan Corcoran

Dr Fionnvola Armstrong

Dr Anna Durand O'Connor

Dr Jennifer Hogan

Dr Niamh Joyce

Dr Brendan McDonnell

Dr Rupak Sarkar

Dr Emer O'Malley

REGISTRARS IN OBSTETRICS/ GYNAECOLOGY

Dr Awad Abdeen Elsayed Osman

Dr Olufoyeke Olatunbosun

Dr Marie Rochford

Dr Reem Magzoub

Dr Fionan Donohoe

Dr Zahrah Elsafty

Dr Tarannum Bano Mohd Ibrahim

Dr Catherine McNestry

Dr Sanchila Talukdar

JUNIOR REGISTRARS IN OBSTETRICS/ GYNAECOLOGY

Dr Nikita Deegan

Dr Alison Demaio

Dr Ciara McCormick

Dr Amy Fogarty

Dr Syed Farah Nazir

Dr Laurentina Schaler

Dr Laura O'Byrne

T.C.D./COOMBE LECTURERS/REGISTRARS IN OBSTETRICS / GYNAECOLOGY

Dr Ciara McCormick

Dr Nita Adnan

Dr Richard Deane

UCD LECTURERS/REGISTRARS IN OBSTETRICS/GYNAECOLOGY

Dr Niamh Daly

FELLOW IN MATERNAL MEDICINE

Dr Fatema Al Washahi

CLINICAL RESEARCH FELLOW IN EARLY PREGNANCY ULTRASOUND

Dr Somaia Elsayed

SENIOR HOUSE OFFICERS IN OBSTETRICS/GYNAECOLOGY

Dr Darin Ahmed
Dr Aimée Cooper
Dr Eimear McSharry
Dr Sarah McDonnell
Dr Marwa Mohamed
Dr Laura O'Byrne
Dr Laurentina Schaler
Dr Ailbhe Duffy
Dr Caitriona Joyce
Dr Ellen McMahon
Dr Amaliya Morgan Brown
Dr Daire Nevin-Maguire
Dr Emma Sheehan
Dr Aleksandra Sobota

SENIOR HOUSE OFFICERS IN GENERAL PRACTICE

Dr Katie O'Reilly
Dr Donal Wallace
Dr Peter Coffee
Dr Julie Hopkins
Dr Anna Neary
Dr Aoife Nic Shamhrain

THE BERNARD STUART RESEARCH FELLOWSHIP IN PERINATAL ULTRASOUND

Dr Maria Farren

VISITING CONSULTANTS

Dr Orla Franklin
Dr Enda McDermott
Dr Katherine McCreery
Dr Donal Brosnahan
Dr Thomas Lynch
Professor Andrew Greene
Dr Fiona Mulcahy
Dr Fiona Lyons
Dr Colm Bergin

SPECIALIST REGISTRARS IN PAEDIATRICS (provided by S. Murray)

Dr Helen Deeny
Dr Robert Kernan
Dr Aine Lynch
Dr Anna Stanzelova
Dr Aoibhinn Walsh
Dr Sarah Lewis
Dr Jane McMahon
Dr Niamh O'Cathain
Dr Eleanor Ryan
Dr Bryony Treston

REGISTRARS IN PAEDIATRICS

Dr Nosheen Akhtar
Dr Amna Ibrahim
Dr Nina Perusko Matasic
Dr Klara Skorkovska
Dr Nusrat Ali
Dr Sanusha Govender
Dr Saira Tabassum

SENIOR HOUSE OFFICERS IN PAEDIATRICS

Dr Muhammad Awais
Dr Heather Cary
Dr Sean Casey
Dr Jeanne Cloonan
Dr Airlin Costello
Dr Deirdre Foley
Dr Siobhan McCormack
Dr Connie O'Reilly
Dr Danielle Vincent
Dr Jalal Ud Din Ahmad Zafar
Dr Jennifer Cox
Dr Hassan Ejaz
Dr Irene Gorman
Dr Tim Hurley
Dr Ibtihal khair
Dr Gillian Maguire
Dr Robert McGrath

Dr Ali Raba

Dr Vasanthee Sundram

NEONATAL TUTOR IN PAEDIATRICS

Dr. Murwan Omer

RESEARCH FELLOW IN NEONATOLOGY

Dr Georsan Caruth

SPECIALIST REGISTRAR IN ANAESTHETICS

Dr Vandan Ward

Dr Robert French-O'Carroll

SENIOR REGISTRAR IN ANAESTHETICS

Dr Ashley Fernandez

Dr Matthew Leonard

Dr Peter Popivanov

REGISTRAR IN ANAESTHETICS

Dr Mahendar Kumar

Dr Gurmukh Das Punshi

Dr Vinod Kumar Talreja

Dr Senka Baranovic

Dr Lenka Cagova

INTERNATIONAL REGISTRAR IN ANAESTHETICS

Dr Fatima Al Hinai

SENIOR HOUSE OFFICERS IN ANAESTHETICS

Dr Gabriel Beecham

Dr Kate Fitzpatrick

Dr Jennifer McGrath

Dr Aisling Ní Eochagain

Dr Kate O'Donnell

Dr John Francis Ryan

Dr Alan Blake

Dr Peter McCauley

Dr Hishaam Saumtally

SPECIALIST REGISTRARS IN HISTOPATHOLOGY

Dr Aoife Doyle

SENIOR HOUSE OFFICER IN HISTOPATHOLOGY

Dr Ronan Doyle

MIDWIFERY & NURSING

DIRECTOR OF MIDWIFERY & NURSING

Patricia Hughes (until Aug 2016)

Ann MacIntyre (from Aug2016)

DIRECTOR OF CENTRE OF MIDWIFERY EDUCATION

Triona Cowman

ASSISTANT DIRECTORS OF MIDWIFERY & NURSING

Bridget Boyd, Assistant Director of Midwifery & Nursing with responsibility for Neonatal Centre and Ultrasound Department

Fidelma McSweeney, Assistant Director of Midwifery & Nursing

Frances Richardson, Assistant Director of Midwifery & Nursing with responsibility for Gynaecology, Theatre, OPD and Colposcopy Services

Shyla Jacob, Night Superintendent

Lucy More O'Ferrall, Night Superintendent

Ita Burke, Acting Night Superintendent

Ann Noonan, Night Superintendent

ADVANCED NURSE PRACTITIONER – NEONATAL NURSING

Anne O'Sullivan

INFECTION PREVENTION & CONTROL NURSE

Rosena Hanniffy

PRACTICE DEVELOPMENT CO-ORDINATOR

Ann Bowers – Acting

CLINICAL MIDWIFE / NURSE MANAGERS III

Ann Fergus, CMM III Delivery Suite

Bernadette Flannagan, CMM III, Community Midwifery

Ann MacIntyre, CMM3, NNC (until Aug 2016)

Ann Kelly CMM3, NNC (from Aug2016)

Anitha Selvanayagam & Joanne O'Riordan CMM III Maternity Wards

Elaine McGeady, CMM III, Fetal Medicine & Perinatal Ultrasound

Mary Nolan, CMM III OPD

Alison Rothwell, CNM III Theatres

Anitha Selvanayagam (Acting), CMM III Maternity Wards

MIDWIFE MANAGER FOR PPGs, AUDIT, STATISTICS & PERSONNEL

Anne Jesudason

MIDWIFERY EDUCATION

Ann Bowers, CPC – Acting Practice Development Co-ordinator

Gwen Baker, CPC

Sarah Lodola, CPC

Natasha Joyce, CPC

Susan O'Callaghan, Post Registration Programme Facilitator

Mary Rodgerson, CPC

Denise Kiernan, Allocations Liaison Officer, 0.5 WTE

Patricia O'Hara, Co-ordinator Post Graduate Diploma in Intensive Neonatal Nursing Programme

CLINICAL MIDWIFE / NURSE MANAGERS 2

Rhoda Billones, NNC

Vivienne Browning, Community Midwifery

Niamh Buggy, NNC

Ita Burke, Delivery Suite & Acting Night Superintendent

Helen Curley, DS

Carmel Healy, Maternity

Helen Curley, Delivery

Raji Dominic (Acting), St Patricks ward

Luisa Daguio - NNU

Suzanne Daly, Parent Education

Felicity Doddy, Perinatal Diagnosis Co-ordinator

Sinead Finn, Delivery Suite

Sinead Gavin, Delivery Suite

Fiona Gilsenan, Theatre

Janice Gowran, Early Pregnancy Assessment Unit

Mary Holohan, Community Midwifery

Breege Joyce, Community Midwifery

Elizabeth Johnson, (Acting), Delivery Suite

Deirdre Kavanagh, Delivery Suite

Ann Kelly, NNC (0.5 WTE) & ACMM III NNU

Bridget Kirby (Acting), St Gerard's Ward (0.8 WTE)

Kathleen Lynch, Gynaecology Day Ward

Suzi McCarthy, Delivery Suite

Olivia McCarthy, Colposcopy

Elaine McGeady, Ultrasound & CMM III

Mary McMorrow, St Joseph's

Gráinne McRory, Delivery Suite

Nicole Mention, Community Midwifery

Anne Moyne, Delivery Suite

Sangeetha Nagarajan, Acting CMM II St. Gerard's Ward

Raji Dominic (Acting), St Patrick's Ward

Elvecia Joby & Joanna Iwanska (Acting), Our Lady's Ward

Fiona Noonan, Delivery Suite

Ann O'Donnell, (Acting) Perinatal Centre

Mary O'Connor, NNC

Louise O'Halloran

Joanne O'Riordan (Acting), Our Lady's Ward & CMM3

Monica O'Shea, Delivery Suite

Sunita Panda (Acting), Delivery Suite & 1.09.16 – Career break for 3 years

Maureen Revilles, Delivery Suite & secondment to Portlaoise Hospital on 1.02.16

Patricia Ryan, Theatre

Mary Ryan, NNC (0.5 WTE)

Clare Smart, Gynaecology Services Co-Ordinator

Anitha Selvanayagam & Acting CMM III

Gráinne Sullivan, Delivery Suite

Fiona Walsh, Community

Sarah Ann Walsh, Theatre

HAEMOVIGILANCE OFFICER

Sonia Varadkar

MIDWIFE CO-ORDINATOR HIGH RISK MIDWIFERY TEAM

Catherine Manning

CMM II GYNAECOLOGICAL ONCOLOGY LIAISON

Aidin Roberts

CLINICAL MIDWIFE OR NURSE SPECIALISTS (CMS/CNS)

Sinead Cleary, CMS, Colposcopy

Ethna Coleman, CMS Diabetes

Jane Durkan Leavy, CMS US

Clíodhna Grady, CMM II, Diabetes

Aoife Kelly, CMS, Colposcopy

Christine McLoughlin, CMS designate, Ultrasound Department

Margaret Moynihan, CMS, Adult & Neonatal Resuscitation

Siobhán Ni Scannaill, CMS, US

Orla Phelan, CMS, Infectious Diseases

Meena Purushothaman, CMS, Lactation

Feena Sheeran, CMS, Ultrasound

Brid Shine, CMS designate (0.5 WTE) Perinatal Mental Health & (0.5 WTE) Bereavement

Mary Toole, CMS, Lactation

Barbara Whelan, CMS, Neonatal Transition Home Service

CLINICAL SKILLS FACILITATORS

Mary Ryan, Neonatal Nursing (0.5 WTE)

Pauline O'Connell, Neonatal Nursing (0.5 WTE)

Ann Kelly, Neonatal Nursing (0.5 WTE)

Ruth Banks, Delivery Suite

CLINICAL MIDWIFE / NURSE MANAGERS I

Violeto Basco

Jean Cousins

Geraldine Creamer Quinn

Grace Cuthbert

Helen Curley

Luisa Daguio

Maureen Doherty

Deborah Duffy

Marie Foudy

Minimol George

Carmel Healy

Bridget Kirby

Manju Kuzhivelil

Nova Lacondola

Ann Leonard & ACMM II

Mary McDonald

Sangeetha Nagarajan & ACMM II

Althea Noble

Alice O'Connor

Louise O'Halloran & CMM II

Marion O'Shaughnessy

Monikutty Rajan

Helen Saldanha Castelino

Anitha Selvanayagam

ON SECONDMENT to HEALTH SERVICE EXECUTIVE

Joan Malone, Quality and Patient Safety Directorate, Sept 2009 to 30th September 2012 & Maternity & Neonatal Clinical Management System (MN- CMS) in Maternity Units from 1st October 2012 to date

Judith Fleming – on secondment to CME from Oct 15 to present

ON SECONDMENT to TRINITY COLLEGE DUBLIN

Karen Hill, Midwifery Tutor from 15th April 2013

Ann O'Connor, Midwifery Tutor from 21st October 2013

HONORARY MIDWIFERY RESEARCH FELLOWS

Both completed

MIDWIFERY & NURSING SECRETARIAL SUPPORT

Sarah Bux

SECRETARIAL SUPPORT

Sarah Bux (To March 2016 and From December 2016)

Avril Phillips (From January 2016 to December 2016)

MEDICAL SOCIAL WORKERS

Rosemary Grant, Principal Medical Social Worker

Denise Shelly, Senior Social Work Practitioner

Tanya Franciosa, Medical Social Worker

Sarah Lopez, Medical Social Worker

Sorcha O'Reilly, Medical Social Worker

Mary Treacy, Medical Social Worker (To April 2016)

Kate Burke, Medical Social Worker

Gretchen Gaspari McGuirk, Temporary Medical Social Worker*

PHYSIOTHERAPISTS

Margaret Mason, Physiotherapy Manager

Julia Hayes, Senior Chartered Physiotherapist

Anne Graham (McCloskey), Senior Chartered Physiotherapist

Eibhlin Mulhall, Senior Chartered Physiotherapist (To December 2016)

Clare Farrell, Senior Chartered Physiotherapist

Roisin Phipps Considine, Senior Chartered Physiotherapist

Sarah Bevan, Senior Chartered Physiotherapist

Anna Chrzan, Temporary Chartered Physiotherapist (To March 2016)*

DIETICIAN/CLINICAL NUTRITIONIST

Fiona Dunlevy

PHARMACISTS

Peter Duddy, Chief Pharmacist I

Una Rice, Senior Pharmacist Antimicrobial

Gayane Adibekova, Pharmacy Technician

Orla Fahy, Senior Pharmacist

Joanne Frawley, Temporary Basic Grade Pharmacist*

CHIEF MEDICAL SCIENTISTS

Martina Ring, Laboratory Manager

Noel Bolger, Cytology (To December 2016)

Stephen Dempsey, Pathology Quality/IT

Catherine Byrne, Microbiology

Fergus Guilfoyle, Haematology/Blood Transfusion

Jacqui Barry O'Crowley, Histopathology

PRINCIPAL BIOCHEMIST

Ruth O'Kelly

SECRETARY & GENERAL MANAGER

Patrick Donohue

FINANCIAL CONTROLLER

John Robinson

HUMAN RESOURCES

AnneMarie Waldron, HR Manager
Bridie Horan, HR Business Partner
Stephen Dunne
Lindsay Cribben (Career Break from August 2016)
Gina Elliott
Sarah O'Shea (To July 2016)
Theresa Dempsey (From October 2016)
Lisa Hynes (From September 2016)
Sandra Plummer
Aisling Granahan (From August 2016)*

GENERAL SERVICES MANAGER / HOUSEHOLD SUPERVISOR

Jonathan Roughneen

PATIENT SERVICES MANAGER

Ann Shannon

DEPUTY PATIENT SERVICES MANAGER/ HEALTHCARE RECORDS MANAGER

Niamh McNamara

FREEDOM OF INFORMATION MANAGER

Siobhan Lyons

HYGIENE SERVICES MANAGER

Vivienne Gillen

ASSISTANT HOUSEHOLD SUPERVISOR

Arlene Kelly
Olive Lynch
Rita Greene

ENGINEERING OFFICER

Serge Panzu Nianga (From January 2016)

CLINICAL ENGINEER

Karl Bergin

CAPITAL PROJECT CO-ORDINATOR

Katrina Seery (Seconded to HSE April 2016)

RESEARCH PROJECT MANAGERS

Lean McMahon*
Karen Power*
Julia Anne Bergin (To October 2016)*

CLINICAL RISK MANAGER

Susan Kelly

SUPPLIES MANAGER

Robert O'Brien

CATERING MANAGER

Thomas Dowling

COMMUNICATIONS OFFICER

Mary Holden

INFORMATION TECHNOLOGY MANAGER

Tadhg O'Sullivan

HEALTH & SAFETY OFFICER

Tom Madden

P.A. TO MASTER/CEO AND TO SECRETARY & GENERAL MANAGER

Laura Forde

* Locum/Temporary position

Staff Retirements in 2016

Una Roche
Senior Staff Midwife

Monikutty Rajan
CMM I

Thomas Kelly
Porter

Mary Treacy
Medical Social Worker

Susan Dowling
Grade IV Officer

Anne Noonan
Assistant Director of Midwifery/Nursing

Mary Nolan
CMM III

Michael Healy
Painter

Margaret Fitzpatrick
Midwife

Mary McKeown
Medical Scientist

Nora Russell
Senior Staff Midwife

Derek Merrin
Senior Medical Scientist

Kathleen Lynch
CMM II

Noel Bolger
Chief Medical Scientist

On behalf of the Board of Guardians and Directors and the Management Executive of the Hospital, I would like to sincerely thank the members of staff who have retired from the Hospital in 2016 for their enormous contribution during their years of dedicated professional service.

Dr Sharon Sheehan

Master/CEO

Director of Midwifery and Nursing

Director of Midwifery & Nursing- Corporate Report

Head of Department

Ms Patricia Hughes, *Director of Midwifery & Nursing (until August 2016)*

Ms Ann MacIntyre, *Interim Director of Midwifery & Nursing (from August 2016) (Author)*

Title of Post	In post on 31st December 2016 (WTE)	In post on 31st December 2015 (WTE)
Director of Midwifery & Nursing	1	1
Assistant Director of Midwifery & Nursing	6.55	6.56
Advanced Nurse Practitioner-Neonatal Nursing	1	1
Midwifery & Nursing Practice Development Co-ordinator	1	1
Postgraduate Neonatal Programme Co-ordinator	1	1
Clinical Midwife/Nurse Manager 3	9	9
Clinical Midwife/Nurse Manager 2	37.84	41.7
Clinical Midwife/Nurse Specialists	14.45	13.5
Clinical Skills Facilitators	4.11	4.6
Haemovigilance Officer	0.77	0.77
Clinical Placement Coordinators	4.1	3.11
Post Registration Programme Facilitator	1	1
Allocation Liaison Officer	0.5	0.5
Clinical Midwife/Nurse Manager 1	14.14	16
Midwives & Nurses	219.91	220.29
Midwifery Students	11.5	9.5
NMPDU Research Posts	1	1
Total	**328.8**	**331.92**

Staff Complement

Total Complement for Midwives & Nurses as of 31st December 2016 was 367 WTE.

Key Performance Indicators

- Leadership and Direction to the Nursing and Midwifery staff working in partnership with the Multi-disciplinary Team.
- Ensure the best possible woman and family experience is delivered through high quality person centred, evidence based care and practice, in accordance with our Mission Statement *"Excellence in the Care of Women & Babies"*.
- Ensuring the development of Midwifery & Nursing research, audit and education.
- Workforce planning and development with a particular focus on recruitment and retention.
- Ensure that Midwifery & Nursing practice reflects and delivers the CWIUH strategy, National Maternity Strategy 2016-2026, National Standards for Safer Better Maternity Services (HIQA) and NMBI Standards for Nurses and Midwives.

Overview of Activities in 2016

The CWIUH underwent an unprecedented period of change in 2016 especially at Midwifery & Nursing Managerial level. These changes in conjunction with increasing pressures on staffing and resources resulted in a greater emphasis on recruitment and retention. The midwives, nurses and health care assistants continued to strive to ensure that their skilled and compassionate care for every woman infant and family focused on "Excellence in the care of women & babies". The achievements of 2016 listed in the various clinical reports would not have been possible without the dedication and commitment of all the staff.

The midwifery and nursing staff's openness to change and level of courage was admirable, they continued to advocate for women's choice and continuous improvement for high quality and safe care delivery.

We were delighted at the national focus on Maternity Care which advocated for the women, infants and families of Ireland. The National Maternity Strategy "Creating a Better Future Together" 2016-2026 was fully endorsed by Mr Leo Varadkar TD Minister for Health and was launched in January 2016. The document maps out how we can improve maternity and neonatal care in the years ahead ensuring that it is safe, standardised, of high quality and offer a better experience and more choice to women, babies and families.

The National Standards for Safer Better Maternity Services (HIQA) was launched in December by Mr Simon Harris TD, Minister for Health in Dublin Castle. These standards were developed to ensure that maternity care is safer and better and delivered to meet the needs of the women they are supposed to serve.

Workforce Planning

Recruitment and retention of midwives and nurses continued to be a top priority in 2016, and the development of the HR strategy in the CWIUH was very welcomed. The HR Department was a wonderful support in developing strategies and supporting midwifery and nursing recruitment and streamlining the process. The hospital hired a stand at the Healthcare Recruitment Fair in October in the RDS, Dublin and all vacancies were advertised on the hospital website and Jobs.ie. CWIUH staff were involved in the HSE recruitment campaign for midwives and nurses in December.

Nationally, the Chief Nursing Officer, Ms O'Halloran in the Department of Health called for input from the Directors of Midwifery & Nursing to establish the current obstacles to recruitment. A report was submitted on behalf of the CWIUH under the headings set out by the Chief DoN for the Dublin Midlands Hospital Group. A meeting took place on the 21st April.

The HSE published their long awaited report into midwifery staffing in the 19 Maternity Hospitals in April. The report called BirthRate Plus highlighted that the CWIUH needed 35 more Midwives to meet current service needs. Funding and approval was granted for 20 of the 35 midwives deemed to be required. It is hoped that the remaining 15 will be approved in 2017, as part of the HSE Service Plan.

Conciliation talks in the WRC with INMO reached agreement on recommencing internal rotation in February.

Midwifery/Nursing Education

A Midwifery Open Day was held in March with the intention of introducing the HDip in Midwifery Programme to Registered Nurses as there are currently 9 students on the programme for which there are 25 places. The Open Day was to showcase the work of a Midwife in the CWIUH and two CWIUH Student midwives gave a talk on their experiences. The national trend of reducing numbers of nurses seeking to undertake midwifery is a concern. This concern has been raised with the Department of Health.

Approval and funding from the NMPDU of almost €100K was secured for 29 midwives and nurses to continue/commence studies at Diploma/PgDip/MSc level and High Dependency Maternity Care.

Innovation funding from NMPDU was secured for the purchase of Computer on Wheels (COW) which is to ensure continued focus on the monitoring of quality midwifery care processes and also under the productive ward umbrella, the COW at the bedside will enhance continuous involvement of women in their care, in essence releasing more time to care.

Funding was also secured through Innovation Funding (NMPDU) for Research Midwife Paula Barry to lead out on a research study "Use of water immersion during labour and birth in a shared – care hospital setting-an organisational change project and prospective cohort study" – water immersion study (WIS).

The 9th Annual Essence of Midwifery Care Conference was held on the 5th May, International day of the Midwife. 140 attended and the keynote speaker was Dr Michael Odent, renowned Obstetrician, Researcher and Author. The conference was very positively evaluated.

The 4th Prematurity Awareness Symposium was held on the 14th November in the Rita Kelly Conference Centre. The theme was Parallel Care Pathways and the Neonatal perspective on National Standards for Bereavement Care with a very special input from bereaved parents who shared their experience in the CWIUH.

The first Irish Family Infant Neurodevelopmental Education (FINE) Level 2 – Practical skills commenced in the CWIUH. It is a twelve week programme which includes observations and reflective work and also includes working with the family also. Three Neonatal staff commenced the programme.

Staff attended the National Sepsis 6 launched by the HSE at a study day held in the CWIUH on March 30th. There was representation from almost all 19 Maternity Units.

Ms S Panda CMM2 in Deliver Suite was awarded €222k from Health Research Board to continue her PhD on the MAMMI study. We wish her the very best in her research.

The Nursing and Midwifery Board of Ireland (NMBI) had a site visit as a Midwifery Training Hospital on the 14th December, we await the report. They praised the recent improvements brought about by the Positive Safety & Culture group.

Quality Improvement/ Risk Issues

HIQA visited the CWIUH on the 7th January; their focus was on antimicrobial stewardship and observation of the medication management process including medication incident reporting. They met and interviewed a number of the Multidisciplinary Team. The Inspection Team were most impressed by the in depth knowledge and expertise of the CWIUH staff.

An unannounced HIQA visit in August of the Operating Theatre identified risks during the inspection in relation to infrastructure. These risks had already been escalated through the DMHG structure to the HSE and are currently awaiting capital finding. A quality improvement plan was formulated by the CWIUH Team to address other risks identified.

Four Staff including DoM&N and The Master attended a DMHG workshop on implementation of HIQA standards, to review the tool designed by the HSE to monitor and track progress.

Seven staff including four midwives successfully completed the Institute of Health Improvement (IHI) Open School education in Quality Improvement and were invited to a graduation ceremony in Farmleigh House in March.

Routine prophylaxis with Anti D was commenced for all Rhesus negative women between 28-30weeks gestation on the 9th May. It has been integrated as part of routine Midwifery & Obstetric care and it is expected that it will help protect women and babies from rhesus isoimmunisation in current and future pregnancies.

The DoM&N presented the National Maternity Strategy to Childhood Initiative (CDI) and Antenatal to Three Initiative (ATTI). The audience was composed of PHNs and other agencies working together in the community with vulnerable families in June.

There were two separate visits to Salford Royal NHS Foundation Trust in June and November by Senior Management Teams. Salford runs Quality Improvement Open Days with discussion on governance structure, QI strategy delivery and Nursing Assessment & Accreditation System followed by a tour of the wards. It was certainly very informative and enlightening.

Going forward into 2017 with both our CWIUH vision *"Nationally & Internationally recognised Leader in healthcare for women, babies & their families"* and our mission *"Excellence in the care of women & babies"* of which both are founded in our CWIUH values, let our values drive us forward to guide and support us in delivering holistic, quality and safe care to every woman, baby & family that we care for.

Women & baby centred – **C**reating a better future by embracing the National Maternity Strategy

Excellence in everything we do – **W**orking in collaboration with Women & their families

Progressive – **I**nnovation & Integrity by providing evidence based care, abide by clinical governance and ensure a culture of open transparency.

Respect – **U**nity, working together and respecting and supporting each other

Caring – **H**olistic, compassionate care for women, babies & families & staff, treating each other with kindness.

Ms Ann MacIntyre
Interim Director of Midwifery & Nursing

Activity Data

Dublin Maternity Hospitals – Combined Clinical Data

Dr. Sharon Sheehan, Master

The following tables have been agreed to form the common elements of the Three Dublin Maternity Hospitals Report.

1. Total Mothers Attending

Mothers delivered ≥ 500 grams	8233
Mothers delivered < 500 grams & miscarriages	589
Gestational Trophoblastic Disease	6
Ectopic pregnancies	113
Total mothers	**8941**

** Does not include all spontaneous miscarriages*

2. Maternal Deaths 0

3. Births ≥ 500g

Singletons	8048
Twins*	350
Triplets*	23
Quadruplets	0
Total	**8421**

**excludes babies <500g*

4. Obstetric Outcome (%)

Spontaneous vaginal delivery	54.5
Forceps	5.3
Ventouse	9.1
Caesarean Section	31.3
Induction	33.9

5. Perinatal Deaths ≥ 500g

Antepartum Deaths	19
Intrapartum Deaths	2
Stillbirths	21
Early Neonatal Deaths	17
Late Neonatal Deaths	6
Congenital Anomalies	18*

**6 SB, 10END, 2 LND*

6. Perinatal Mortality Rates ≥ 500g

Overall perinatal mortality rate per 1000 births	4.5
Perinatal mortality rate corrected for lethal congenital anomalies	2.6
Perinatal mortality rate including late neonatal deaths	5.2
Perinatal mortality rate excluding unbooked cases	3.9
Corrected perinatal mortality rate excluding unbooked	2.0

7. Age

Age (Years)	Nulliparous* N	Parous* N	Total N	Total %
< 20 yrs	161	12	**173**	**2.1**
20-24 yrs	461	244	**705**	**8.6**
25-29 yrs	733	793	**1526**	**18.5**
30-34 yrs	1201	1791	**2992**	**36.3**
35-39 yrs	587	1703	**2290**	**27.8**
40+ yrs	149	398	**547**	**6.7**

**nulliparous and parous refer to the maternal status at booking or at first presentation to the hospital;*
nulliparous = never having delivered an infant ≥ 500g; parous = having delivered at least one infant ≥ 500g

8. Parity

Age (Years)	Nulliparous N	Parous N	Total N	Total %
Para 0	3292		**3292**	**40.0**
Para 1		2881	**2881**	**35.0**
Para 2-4		1964	**1964**	**23.8**
Para 5+		96	**96**	**1.2**

9. Country of Birth & Nationality

Country	N	%
Ireland	5786	70.3
Britain	198	2.4
EU	989	12.0
EU Accession Countries 2007	211	2.6
Rest of Europe (including Russia)	117	1.4
Middle East	57	0.7
Rest of Asia	417	5.0
Americas	129	1.6
Africa	304	3.7
Australasia	15	0.2
Uncoded	10	0.1
Total	**8233**	**100**

10. Socio-Economic Groups

Socio-Economic Group	N	%
Higher Profession	733	8.9
Lower Profession	2631	32.0
Clerical	1174	14.3
Skilled	823	10.0
Semi-Skilled	558	6.8
Unskilled	324	3.9
Unemployed	1855	22.5
Unsupported	58	0.7
Military	7	0.1
Not Classified	60	0.7
Not Answered	10	0.1
Total	**8233**	**100**

11. Birth Weight

Grams	Nulliparous N	Parous N	Total N	Total %
500 – 999	26	24	50	0.6
1000 – 1499	28	26	54	0.6
1500 – 1999	63	62	125	1.5
2000 – 2499	171	168	339	4.0
2500 – 2999	524	649	1173	13.9
3000 – 3499	1155	1696	2851	33.9
3500 – 3999	1097	1682	2779	33.0
4000 – 4499	282	624	906	10.8
4500 – 4999	35	95	130	1.5
≥5000	4	10	14	0.2
Total	**3385**	**5036**	**8421**	**100**

12. Gestational Age

Weeks	Nulliparous N	Parous N	Total N	Total %
< 26	10	14	24	0.3
26 – 29 + 6 days	25	20	45	0.5
30 – 33 + 6 days	48	57	105	1.3
34 – 36 + 6 days	152	209	361	4.4
37 – 41 + 6 days	3019	4628	7647	92.9
42+	37	13	50	0.6
Not Answered	1	0	1	0.0
Total	**3292**	**4941**	**8233**	**100**

13. Perineal Trauma after Spontaneous Vaginal Delivery (SVD)

	Nulliparous		Parous		Total	
	N	%	N	%	N	%
Episiotomy	232	18.5	86	2.7	318	7.1
First degree tear	209	16.3	686	21.3	895	19.9
Second degree tear	575	44.7	1144	35.6	1719	38.2
Third degree tear	52	4.0	36	1.1	88	2.0
Fourth degree tear	2	0.2	2	0.1	4	0.1
Other	717	55.8	1271	39.5	1988	44.2
Intact	119	9.3	894	27.8	1013	22.5
Total Spontaneous Vaginal Deliveries	**1285**		**3214**		**4499**	

14. Third Degree Tears (n = 147)

	Nulliparous	Parous	Totals*	
	N	N	N	%
Occurring spontaneously	52	36	88	59.9
Associated with episiotomy	51	4	55	37.4
Associated with forceps	35	2	37	25.2
Associated with ventouse	17	0	17	11.6
Associated with ventouse + forceps	3	2	5	3.4
Associated with O.P. position	18	3	21	14.3
Total Third Degree Tears	**107**	**40**	**147**	**100**

** % of all third degree tears; tears may be recorded in > one category*

15. Perinatal Mortality in Normally Formed Stillborn Infants (N= 15)

	Nulliparous	Parous	Total
Cord accident	1	1	**2**
Fetal thrombotic vasculopathy	2	2	**4**
IUGR/Hypoxia	1	0	**1**
Uteroplacental insufficiency	2	0	**2**
Ruptured adrenal gland/Hypoxia	0	1	**1**
Infection	0	2	**2**
Hypoxia	1	0	**1**
Unexplained	1	0	**1**
Placental abruption	1	0	**1**

16. Perinatal Deaths in Infants with Congenital Malformation (N = 18)*

	Nulliparous	Parous	Total
Chromosomal	4	7	**11**
Hydrops	0	1	**1**
Neural tube defects	0	2	**2**
Congenital Diaphragmatic Hernia	0	2	**2**
Exomphalos	1	0	**1**
PCKD	1	0	**1**

** 6 SB, 10 END, 2 LND*

17. Neonatal Deaths ≥500g (N = 23)*

	Nulliparous	Parous	**Total**
Congenital	2	10	**12**
NEC	1	1	**2**
Extreme Prematurity	1	1	**2**
Extreme Prematurity / Pulmonary Hypoplasia	1	0	**1**
Extreme Prematurity / Infection	1	0	**1**
Extreme Prematurity / Pulmonary Hypoplasia / PPHN	0	1	**1**
Placental abruption	0	1	**1**
SIDS	0	1	**1**
Coroner's reports awaited	0	2	**2**

**17 END, 6 LND*

18. Overall Autopsy Rate 45.5%

19. Hypoxic Ischaemic Encephalopathy - Inborn (Grade II and III) 6

20. Severe Maternal Morbidity* (N=65, 63 women)

	Nulliparous	Parous	Total
Major Obstetric Haemorrhage	12	21	**33**
Peripartum Hysterectomy	1	4	**5**
Eclampsia	1	0	**1**
Renal / Liver Dysfunction	4	0	**4**
Pulmonary Oedema	1	1	**2**
PE	0	11	**11**
CVA	0	1	**1**
Septic Shock	0	2	**2**
ICU Admission	1	2	**3**
Acute Respiratory Dysfunction	0	3	**3**

** Some patients are included in more than one category*

21. Financial Summary at 31st December 2016

Does not include any deficit balances carried forward from previous years

Income	€,000	€,000
Department of Health Allocation 2015	54,119,263	
Patient Income	12,671,391	
Other	4,769,149	
		71,559,803
Pay		
Medical	9,741,900	
Nursing	19,850,120	
Other	26,859,556	
		56,451,576
Non Pay		
Drugs & Medicines	2,152,670	
Medical & Surgical Appliances	4,184,471	
Insurances	113,383	
Laboratory	2,348,701	
Other	5,407,305	14,206,531
Net Surplus 2016		901,696
Taxes paid to Revenue Commissioners Year ended 31st December 2016		
PAYE & USC		7,473,886
PRSI EE		2,027,943
PRSI ER		9,501,830
Withholding Tax		50,438

Statistical Summaries

Dr. Sharon Sheehan, Master

1. Mothers Attending Hospital

	2010	2011	2012	2013	2014	2015	2016
Mothers delivered ≥ 500 grams	8768	8536	8419	7986	8632	8220	**8233**
Mothers delivered < 500 grams and Miscarriages	663*	638*	627*	563*	632*	649*	**589***
Gestational Trophoblastic Disease	19	26	19	14	6	8	**6**
Ectopic Pregnancies	89	115	110	89**	124	124	**113**
Total Mothers	9539	9315	9175	8610	9344	9001	**8941**

** Does not include all spontaneous miscarriages*
*** method of collecting ectopic data changed in 2013*

2. Maternal Mortality

	2010	2011	2012	2013	2014	2015	2016
Maternal Deaths	1[1]	1[2]	3[3]	1[4]	1[5]	1[6]	**0**

[1] *AIDS related lymphoma*
[2] *Sudden unexplained death in epilepsy (SUDEP)*
[3] *Suicide, Sudden Adult Death Syndrome (SADS) and Amniotic Fluid Embolism*
[4] *Cardiac arrest brought about by hyperkalaemia*
[5] *Amniotic Fluid Embolism (cardiac collapse & disseminated intravascular coagulopathy following amniotic fluid escape into the maternal circulation)*
[6] *Ruptured giant internal carotid artery aneurysm with systemic Fibromuscular Dysplasia*

3. Births ≥ 500g

	2010	2011	2012	2013	2014	2015	2016
Singleton	8615	8371	8258	7810	8463	8042	**8048**
Twins	293	313*	309*	338*	336*	353*	**350**
Triplets	17	21	18	18	20*	9*	**23***
Quadruplets	0	4	0	4	0	0	**0**
Total	8925	8709	8585	8170	8819	8404	**8421**

**excludes babies <500g*

4. Obstetric Outcomes

	2010	2011	2012	2013	2014	2015	2016
Induction of Labour	32.0%	33.3%	35.3%	33.8%	30.9%	31.7%	**33.9%**
Episiotomy	16.0%	15.4%	14.0%	13.2%	13.2%	13.9%	**15.5%**
Forceps Delivery	7.7%	7.2%	6.4%	5.2%	5.2%	5.8%	**5.3%**
Ventouse Delivery	9.7%	7.8%	8.9%	8.5%	9.3%	9.0%	**9.1%**
Caesarean Section	25.8%	27.7%	27.1%	28.0%	27.8%	29.3%	**31.3%**

5. Perinatal Deaths ≥ 500g

	2010	2011	2012	2013	2014	2015	**2016**
Stillbirths	35	33	33	31	41	29	**21**
Early Neonatal Deaths	18	17	20	29	13	19	**18**
Late Neonatal Deaths	4	8	8	6	2	7	**6**
Total	57	58	61	66	56	55	**45**

6. Perinatal Mortality Rates (PNMR) ≥ 500 g per 1000

	2010	2011	2012	2013	2014	2015	**2016**
Overall PNMR	6.0	5.7	6.2	7.3	6.1	5.7	**4.5**
PNMR corrected for lethal malformation	3.9	3.7	3.7	4.7	4.3	3.2	**2.6**
PNMR including late neonatal deaths	6.5	6.7	7.1	8.1	6.4	6.5	**5.2**
PNMR excluding unbooked cases	5.6	4.9	5.0	5.6	5.3	4.8	**3.9**
Corrected PNMR excluding unbooked	3.5	3.3	3.3	3.0	3.8	3.1	**2.0**

7. Statistical Analysis of Obstetric Population

7.1 Age

Age (Years)	Nulliparous* N	Parous* N	Total N	Total %
<20	161	12	173	2.1
20 – 39	2982	4531	7513	91.3
40+	149	398	547	6.6
Total	3292	4941	8233	100

**nulliparous and parous refer to the maternal status at booking or at first presentation to the hospital; nulliparous = never having delivered an infant ≥ 500g; parous = having delivered at least one infant ≥ 500g*

7.2 Category

Patient Category	Nulliparous* N	Parous* N	Total N	Total %
Public	2576	3792	6368	77.4
Semi-Private	311	465	776	9.4
Private	405	684	1089	13.2
Total	3292	4941	8233	100

7.3 Birthplace

Mother's Country of Birth	N	%
Republic of Ireland	5786	70.3
EU	1398	17.0
Non EU	1039	12.6
Uncoded	10	0.1
Total	8233	100

7.4 Parity

	Nulliparous* N	Parous* N	Total N	Total %
Para 0	3292		3292	40.0
Para 1		2881	2881	35.0
Para 2-4		1964	1964	23.8
Para 5+		96	96	1.2

7.5 Birth Weight

	Nulliparous* N	Parous* N	Total N	Total %
500 – 999	26	24	50	0.6
1000 – 1499	28	26	54	0.6
1500 – 1999	63	62	125	1.5
2000 – 2499	171	168	339	4.0
2500 – 2999	524	649	1173	13.9
3000 – 3499	1155	1696	2851	33.9
3500 – 3999	1097	1682	2779	33.0
4000 – 4499	282	624	906	10.8
4500 – 4999	35	95	130	1.5
> 5000	4	10	14	0.2
Total	3385	5036	8421	100

7.6 Gestational Age

	Nulliparous* N	Parous* N	Total N	Total %
< 26 weeks	10	14	24	0.3
26-29 weeks + 6 days	25	20	45	0.5
30-33 weeks + 6 days	48	57	105	1.3
34-36 weeks + 6 days	152	209	361	4.4
37-41 weeks + 6 days	3019	4628	7647	92.9
42+ weeks	37	13	50	0.6
Not Answered	1		1	0.0
Total	3292	4941	8233	100

8. Statistical Analysis of Hospital Population, 2010 – 2016

8.1 Age, 2010 – 2016

Age at Delivery (Years)	2010 (n=8768)	2011 (n=8536)	2012 (n=8419)	2013 (n=7986)	2014 (n=8632)	2015 (n=8220)	**2016 (n=8233)**
<20	3.6%	3.9%	2.6%	2.1%	1.9%	1.9%	**2.1%**
20 – 24	13.2%	12.2%	11.7%	10.6%	9.3%	8.5%	**8.6%**
25 – 29	25.0%	24.8%	23.3%	22.7%	20.2%	19.9%	**18.5%**
30 – 34	32.1%	32.7%	34.4%	35.6%	36.1%	36.3%	**36.4%**
35 – 39	21.8%	22.2%	23.0%	23.4%	26.2%	27.3%	**27.8%**
>40	4.2%	4.1%	5.0%	5.6%	6.3%	6.1%	**6.6%**

8.2 Parity, 2010 – 2016

Parity	2010 (n=8768)	2011 (n=8536)	2012 (n=8419)	2013 (n=7986)	2014 (n=8632)	2015 (n=8220)	**2015 (n=8233)**
0	42.4%	40.6%	40.2%	38.7%	39.1%	38.5%	**40.0%**
1,2,3	54.3%	56.0%	56.5%	57.7%	57.7%	58.6%	**57.0%**
4+	3.3%	3.4%	3.3%	3.6%	3.2%	2.9%	**3.0%**

8.3 Birth Weight, 2010 – 2016

Birth Weight (grams)	2010 (n=8925)	2011 (n= 8709)	2012 (n= 8419)	2013 (n= 8170)	2014 (n= 8819)	2015 (n=8404)	**2016 (n=8421)**
500 - 999	0.6%	0.7%	0.7%	0.7%	0.6%	0.6%	**0.6%**
1000 – 1499	0.7%	1.0%	0.8%	1.0%	0.7%	0.6%	**0.6%**
1500 – 1999	1.6%	1.4%	1.4%	1.7%	1.5%	1.5%	**1.5%**
2000– 2499	3.5%	3.6%	4.3%	4.6%	4.3%	4.2%	**4.0%**
2500– 2999	13.2%	13.4%	13.8%	12.9%	13.9%	13.4%	**13.9%**
3000– 3499	34.6%	34.0%	33.4%	33.4%	34.0%	34.3%	**33.9%**
3500– 3999	32.5%	32.6%	33.0%	32.8%	32.9%	33.1%	**33.0%**
4000– 4499	11.3%	11.6%	10.7%	11.3%	10.4%	10.7%	**10.8%**
>4500	2.0%	1.7%	1.9%	1.6%	1.7%	1.6%	**1.5%**
Unknown	0%	0%	0.7%	0.0%	0.0%	0.0%	**0.2%**

8.4 Gestation, 2010 – 2016

Gestation (weeks)	2010 (n=8768)	2011 (n=8536)	2012 (n=8419)	2013 (n=8170)	2014 (n=8819)	2015 (n=8220)	**2016 (n=8233)**
<28 weeks	0.6%	0.7%	0.5%	0.6%	0.5%	0.5%	**0.5%**
28 – 36	6.1%	6.1%	6.0%	6.7%	6.2%	6.2%	**6.0%**
37 – 41	92.0%	92.6%	93.2%	92.3%	92.7%	92.8%	**92.9%**
42+	1.2%	0.5%	0.3%	0.4%	0.6%	0.4%	**0.6%**
Unknown	0.1%	0.1%	0%	0.0%	0.04%	0.1%	**0.0%**

9. In-patient Surgery, 2010 – 2016

	2010	2011	2012	2013	2014	2015	**2016**
Obstetrical	3185	3300	3239	3308	3630	3590	**3663**
Cervical	1062	1190	1034	838	882	752	**828**
Uterine	2683	2553	2668	2897	2696	2704	**2761**
Tubal & Ovarian	1036	936	1051	1032	916	844	**847**
Vulval & Vaginal	437	400	367	522	408	361	**423**
Urogynaecology	261	226	224	336	328	329	**365**
Other	86	47	60	47	31	38	**31**
Total	8733	8652	8650	8980	8891	8618	**8918**

10. Out-patient Attendances, 2010 – 2016

	2010	2011	2012	2013	2014	2015	**2016**
Paediatric	9027	9075	9378	8690	8587	6829	**6572**
Obstetrical / Gynaecological	93796*	99228*	101448*	111204*	110985*	109201*	**105521**

**excludes Colposcopy and Perinatal Centre*

11. In-patient Admissions*, 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
Obstetrics	17051	17342	17185	16746	17637	16398	**17006**
Gynaecology	1127	1015	1082	1182	1028	966	**943**
Paediatrics	1095	1023	1057	1124	1106	1052	**1424**

**Figure based on discharges*

12. Bed Days (Overnight admissions), 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
Infants	12035	12497	12653	12200	11765	12673	**14206**
Adults	46046	46492	45626	43530	41198	40695	**42329**

13. Day Case Admissions, 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
Obstetrical	9828	12222	12741	10092	12268	12453	**12841**
Gynaecological	7432	8148	8045	11997	9850	8510	**8495**
Total	**15260**	**20370**	**20786**	**22089**	**22136**	**20963**	**21336**

14. Adult Emergency Room (ER) & Early Pregnancy Assessment Unit (EPAU), 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
ER	7168	7346	7802	8,136	9,457	9,573	**9026**
EPAU	3687	2381	4293	4,368	4654	5,106	**4460**

15. Perinatal Day Centre attendances (PNDC) & Perinatal Ultrasound (PNU)*, 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
PNU	25164	27781*	28701*	27732*	26039*	28161*	**28913**
PNDC	10112	11841**	12372**	11534**	12217**	13012**	**12471**

** refers only to scans performed in the Perinatal Ultrasound Dept.* *** excludes all telephone consultations with Diabetic patients.*

16. Laboratory Tests, 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
Microbiology	44185	44535	44672	44672	44514	42573	**41639**
Biochemistry	108102	203818*	172734*	162045 *	205475*	218565*	**216849***
Haematology	45173	45546	45718	46877	50717	53961	**55111**
Transfusion	24406	22011	22076	22866	25273	26537	**26328**
Cytopathology	13604	12409	10428	16774	27355	25589	**26161**
Histopathology	5843	5036	5606	5696	5877	6001	**6331**
Post mortems	45	34	40	41	50	35	**33**
Phlebotomy	17466	18732	19394	19931	21084	23641	**25250**

** includes POCT tests*

Perinatal Mortality and Morbidity

Dr. Sharon Sheehan, Master
Dr John Kelleher, Director of Paediatrics and Newborn Medicine
Mrs Julie Sloan, Research Midwife

A. Overall Statistics

1. Perinatal Deaths ≥ 500g

Antepartum Deaths	19
Intrapartum Deaths	2
Stillbirths	21
Early Neonatal Deaths	18
Late Neonatal Deaths	6
Congenital Anomalies	18*

** 6 SB, 10 END, 2 LND*

2. Perinatal Mortality Rates ≥ 500g

Overall perinatal mortality rate per 1000 births	4.51
Perinatal mortality rate corrected for lethal congenital anomalies	2.62
Perinatal mortality rate including late neonatal deaths	5.23
Perinatal mortality rate excluding unbooked cases	3.92
Corrected perinatal mortality rate excluding unbooked	2.02

3. Perinatal Mortality by Mother's Age

Mother's Age at Delivery	Perinatal Deaths N	Perinatal Deaths %	PMR	Total Births N
<20 years	1	2.6	5.7	174
20-24 years	5	13.2	7.0	711
25-29 years	4	10.5	2.6	1543
30-34 years	13	34.2	4.2	3064
35-39 years	12	31.6	5.0	2359
≥40 years	3	7.9	5.3	570
Total	**38**	**100**	**4.51**	**8421**

4. Perinatal Mortality by Mother's Parity

Mother's Parity at Booking	Perinatal Deaths N	Perinatal Deaths %	PMR	Total Births N
Para 0	18	47.4	5.3	3385
Para 1	12	31.6	4.1	2934
Para 2-4	8	21.1	4.0	2004
Para 5+	0	0	0	98
Total	**38**	**100**	**4.51**	**8421**

5. Perinatal Mortality by Birthweight

Birthweight	Perinatal Deaths N	Perinatal Deaths %	PMR	Total Births N
500-999g	12	31.6	240.0	50
1000-1499g	4	10.5	74.1	54
1500-1999g	4	10.5	32.0	125
2000-2499g	4	10.5	11.8	339
2500-2999g	2	5.3	1.7	1173
3000-3499g	9	23.7	3.2	2851
3500-3999g	2	5.3	0.7	2779
4000-4499g	1	2.6	1.1	906
4500-4999g	0	0	0	130
5000g +	0	0	0	14
Total	**38**	**100**	**4.51**	**8421**

6. Perinatal Mortality by Gestational Age

Gestation	Perinatal Deaths N	Perinatal Deaths %	PMR	Total Births N
<26 weeks	10	26.3	416.7	24
26-29+6 weeks	3	7.9	66.7	45
30-33+6 weeks	4	10.5	38.1	105
34-36+6 weeks	7	18.4	19.4	361
37-41+6 weeks	14	36.8	1.8	7647
42 + weeks	0	0	0	50
Not Answered	0	0	0	1
Total	**38**	**100**	**4.51**	**8421**

7. Perinatal Mortality in normally formed babies ≥34 weeks and ≥2.5kg

Normally formed babies ≥34 weeks and ≥2.5kg	7790
Perinatal Deaths	8
PMR	1.03

8. Perinatal Mortality in Normally Formed Stillborn Infants (N=15)

	Nulliparous	Parous	Total
Cord accident	1	1	**2**
Fetal thrombotic vasculopathy	2	2	**4**
IUGR	1	0	**1**
Uteroplacental insufficiency	2	0	**2**
Ruptured adrenal gland/Hypexia	0	1	**1**
Infection	0	2	**2**
Hypoxia	1	0	**1**
Unexplained	1	0	**1**
Placental abruption	1	0	**1**

9. Intrapartum Deaths ≥500g (n=2)

32yo, Para 0^{+0}, uneventful antenatal course, SOL at 40^{+2} weeks gestation, fetal bradycardia at 1cm dilated, emergency LSCS, stillborn male infant **3355g**, Apgars 0^{1}, 0^{5}, 0^{10}. Full CPR at delivery but no signs of life. Large retroplacental clot.
43yo, Para 1^{+5}, pain and pv bleeding at 21^{+1} weeks gestation, PPROM at 21^{+4} weeks gestation, Rx klacid and metronidazole (bv on HVS), commenced insulin for GDM as 22^{+2} weeks. Possible chorioamnionitis at 22^{+6} weeks, IV antibiotics. Sol at 23+5 weeks, breech, fetus in vagina, MGS04, oxytocin, forceps to after coming head, stillborn male infant, 600g. Extreme prematurity, chorioamnionitis, complex vaginal breech delivery.

10. Perinatal Deaths in Infants with Congenital Malformation (N= 18)*

	Nulliparous	Parous	Total
Chromosomal	4	7	**11**
Hydrops	0	1	**1**
Neural tube defects	0	2	**2**
Congenital Diaphragmatic Hernia	0	2	**2**
Exomphalos	1	0	**1**
PCKD	1	0	**1**

**6 SB, 10 END, 2 LND*

11. Neonatal Deaths ≥500g (N= 23)*

	Nulliparous	Parous	**Total**
Congenital	2	10	**12**
NEC	1	1	**2**
Extreme Prematurity	1	1	**2**
Extreme Prematurity/Pulmonary Hypoplasia	1	0	**1**
Extreme Prematurity/Infection	1	0	**1**
Extreme Prematurity/Pulmonary Hypoplasia/PPHN	0	1	**1**
Placental abruption	0	1	**1**
SIDS	0	1	**1**
Coroner's reports awaited	0	2	**2**

** 17 END, 6 LND*

12. Overall Autopsy Rate 45.5%

13. Hypoxic Ischaemic Encephalopathy - Inborn (Grade II and III) 6

B. Case Reports: Perinatal Mortality and Morbidity

Antepartum deaths in normally formed infants and infants without lethal / potentially lethal congenital malformations

(N=13)

Obstetrics 32 years, Caucasian. Non-smoker, BMI 23.0, Para 0^{+0}. USS at booking = 9 weeks. USS at 19 weeks = low-lying anterior placenta. USS at 30 weeks = upper placenta, SGA, EFW on 10th centile, normal dopplers and AFI. RFMF at 30^{+3} weeks. USS = IUD confirmed. Mifepristone/Misopristol IOL, SVD.
Stillborn female infant, **1315g**.

IUD Bloods Normal

Microbiology NAD

Placental histology Impaired fetal circulation, evidence of intrauterine hypoxia, perivillous and intervillous fibrinoid deposition.

Karyotype 46XX

Post-mortem Normally formed infant, maceration > 48 hours, evidence of hypoxia, evidence of impaired fetal circulation and terminal villus deficiency syndrome.

Conclusion Placental insufficiency

Obstetrics 26 years, African. BMI 22.9, Para 0^{+0}. USS at booking = 13 weeks. USS at 21 weeks = normal anatomy. Uterine fibroids x 2. RFMF at 31 weeks, USS = IUD confirmed. Mifepristone/Misoprostol IOL, SVD. Stillborn male infant, **1300g**.

IUD Bloods NR

Microbiology Group B Strep (Baby)

Placental histology Marginal retroplacental haemorrhage

Karyotype Cytogenetics not possible. Chromosome probe assay normal male component.

Post-mortem Normally formed infant, severe maceration change. Very low birth weight.

Conclusion Unexplained, IUGR.

Obstetrics 30 years, Caucasian, non-smoker. Hx of recurrent UTIs. Para 0^{+0}, BMI 21.9. USS at booking = 11 weeks. USS at 20 weeks = normal anatomy. Regular ANC attendances. RFMF at 34 weeks, USS = IUD confirmed. Mifepristone / Misoprostol IOL, vaginal breech delivery. Stillborn female infant, **2020g**.

IUD Bloods mildly elevated TSH

Microbiology NR

Placental histology Evidence of ascending infection, impaired fetal circulation, intra-uterine hypoxia, focal accelerated villous maturation, retroplacental haemorrhage

Karyotype 46XX

Post-mortem Normally formed infant. Maceration > 72 hours, evidence of hypoxia and intra-uterine stress. Fetal thrombotic vasculopathy.

Conclusion Fetal thrombotic vasculopathy.

Obstetrics 23 years, Black African. Non-smoker, BMI 21.3. Para 0^{+0}, USS at booking = 13 weeks. Admitted with Hyperemesis Gravidarum at 15 weeks. USS at 24 weeks = normal anatomy. Regular antenatal care. Pains x 3 days at 36^{+6} weeks, good FM reported, USS = IUD confirmed. SOL, SVD. Stillborn male infant, **1390g**.

IUD Bloods NAD

Microbiology NAD

Placental histology In utero stress, infarction, intervillous fibrin thrombosis, moderate perivillous and intervillous fibrinoid deposition.

Karyotype 46XY normal

Post-mortem Declined

Conclusion IUGR, Hypoxia

Obstetrics 31 years, Caucasian. Ex-smoker. BMI 22.8. Para 0^{+0}. USS at booking = 12 weeks. USS at 21 weeks = BPD and HC <5th centile, increased nuchal fold. Harmony performed = low risk. FHR not detected at 26 week visit to ANC. USS confirmed IUD. Mifepristone / Misoprostol administered, SVD. Stillborn female infant, **750g**.

IUD Bloods raised TSH

Microbiology NR

Placental histology Fetal thrombotic vasculopathy, impaired fetal circulation, impaired placental perfusion.

Karyotype Female profile, no autosomal or sex chromosomal aneuploidies detected.

Post-mortem Normally formed infant, in utero stress.

Conclusion Fetal thrombotic vasculopathy.

Obstetrics 30 years, Caucasian, ex-smoker. BMI 21.9. Para 1^{+0} (LSCS). USS at booking = 12 weeks. Normal anatomy scan at 21 weeks. Attended for combined care. Seen in ANC at 15, 30, 34, 36 weeks. Uneventful pregnancy. Attended GP at 37^{+6} weeks with no FM, referred for USS = confirmed IUFD. Mifepristone / Misoprostol IOL, SVD. Stillborn female infant, **3380g**, nuchal cord x 2 noted at delivery.

IUD Bloods NAD

Microbiology NAD

Placental histology Non-inclusive fibrin thrombus of umbilical cord, intramembranal haemorrhage, retroplacental haemorrhage.

Karyotype 46XX

Post-mortem Normally formed infant, severe maceration >48 hours, possible indentation mark around neck, hypoxia.

Conclusion Cord accident.

Obstetrics 19 years, Caucasian, cigs 10 – 15 per day. BMI 31.8. Para 0^{+0}. USS at booking = 12 weeks. USS at 22 weeks = normal anatomy scan. Regular antenatal attendances. Attended for routine antenatal visit at 28^{+2} weeks, USS = IUD confirmed. Mifepristone / Misoprostol IOL, vaginal breech delivery of stillborn male infant, **650g**.

IUD Bloods Increased Factor VIII

Microbiology Strep milleri (Placenta & HVS)

Placental histology Multiple infarctions, villous oedema, large retroplacental haemorrhage, accelerated villous maturation.

Karyotype Culture failed to grow. DNA extracted from placental tissue confirmed male profile with no autosomal or sex chromosome aneuploidies.

Post-mortem Declined.

Conclusion Chronic uteroplacental insufficiency.

Obstetrics 36 years, Caucasian, ex-smoker, BMI 24.8. Para 1^{+0}. USS at booking = 13 weeks. USS at 23 weeks = normal anatomy, polyhydramnios with normal stomach bubble. GTT normal. Fortnightly surveillance and regular attender. USS at 27, 29 and 31 weeks = gross polyhydramnios, USS at 34 weeks = polyhydramnios significantly improved with normal dopplers and good interval growth. USS at 37 weeks = IUD confirmed with scalp oedema and pleural effusions. Mifepristone / Misoprostol, IOL, SVD stillborn male infant, **2320g**, meconium stained liquor noted.

IUD Bloods Lupus anticoagulant negative.

Microbiology Enterococcus Faecalis, proteus mirabilis, E. Coli (HVS). Proteus mirabilis, Enterococcus Faecalis (placenta).

Placental histology Meconium phagocytosis, acute choriodeciduitis, impairment of fetal circulation (focal villous oedema, villous fibrosis), accelerated villous maturation, focal intervillous haemorrhage.

Karyotype 46XY

Post-mortem Evidence of maceration >48 hours, evidence of hypoxia / intra-uterine stress.

Conclusion Fetal thrombotic vasculopathy.

Obstetrics 37 years, Caucasian, cigs 5 per day, recent cannabis use. Fam hx DVT/PE. BMI 22.6. Para 1^{+0}. USS at booking = 12 weeks. USS at 22 weeks = normal anatomy. Regular attender combined care. GTT normal, USS at 32 weeks = polyhydramnios with normal growth, normal stomach bubble. USS at 36 weeks = polyhydramnios, normal growth and dopplers. RFMF at 38^{+5} weeks. USS = IUD confirmed. Mifepristone / Misoprostol IOL, SVD stillborn female infant, **3000g**.

IUD Bloods NAD

Microbiology NAD

Placental histology Fetal vascular malperfusion. Segmental hypoperfused chorionic villi and rare avascular villi. Fetal haemorrhagic endovasculosis.

Karyotype 46XX

Post-mortem Evidence of hypoxia / intra-uterine stress.

Conclusion Fetal thrombotic vasculopathy.

Obstetrics 22 years, Black African, non-smoker. Hx FGM. BMI 18.1. Para 0^{+0}. Booked in another hospital, transferred here at 17 weeks. USS = 17^{+2} weeks, DCDA twin pregnancy. USS at 22 weeks = normal anatomy. Regular ANC attendance. Attended medical clinic with thromobocytopaenia. All investigations normal. USS at 26, 29, 31, 33, 35 weeks = normal growth. USS at 35 weeks = fall off in growth of Twin II. RFMF at 36 weeks. USS = IUD confirmed Twin II with ascites. LSCS at 36^{+2} weeks for breech presentation.

Twin I liveborn male infant **2690g**, apgars 9^{1}, 10^{5}.

Twin II stillborn female infant, **2260g**.

IUD Bloods NAD

Microbiology NAD

Placental histology Evidence of hypoxia, impairment of fetal circulation, villous fibrous, villous oedema.

Karyotype 46XX

Post-mortem Normally formed infant. Evidence of maceration > 48 hours, chronic hypoxia.

Conclusion Intrauterine hypoxia.

Obstetrics 32 years, Caucasian, cigs - 10 per day. Hx Asthma on inhaler, Fam Hx hypertension, BMI 31.1. Para 3^{+2} – SVD x 2, (miscarriages at 6 weeks and 19 weeks). USS at booking = 10 weeks. USS at 15 weeks = cervical length 25mm. USS at 18 weeks = 27mm at 18 weeks with no evidence of funnelling. PV bleed at 20^{+4} weeks. Admitted. Cervical cerclage inserted, discharged on PO antibiotics. Emergency admission via another hospital at 23 weeks. USS = IUD confirmed, maternal pyrexia, raised CRP. IV antibiotics commenced, cervical cerclage removed. Mifepristone / Misoprostol IOL. Maternal condition deteriorated, CRP 122.2, IV Benzylpenicillin and Meropenem given, arterial line inserted. IV Syntocinon given, SVD stillborn female infant, **520g**. Maternal condition improved following delivery. Blood cultures confirmed E. Coli sepsis.

IUD Bloods NAD

Microbiology E. Coli Sepsis.

Placental histology Acute choriodeciduitis with acute amnionitis. Impairment of fetal circulation. Small retroplacental haemorrhage.

Karyotype 46XX

Post-mortem Declined.

Conclusion E. Coli Sepsis.

Obstetrics 35 years, Caucasian, non-smoker. Para 0^{+0}, BMI 25.7. USS at booking = 12 weeks, USS at 20 weeks = normal anatomy, low-lying placenta. Regular antenatal attendances. Itch at 27 weeks = normal bile acids. USS at 34 weeks = low-lying placenta, 1.77cm from internal os. USS at 37 weeks = upper posterior placenta, AC and BPD > 90th centile, EFW on 79th centile. USS at 41^{+1} weeks = Oligohydramnios, normal UAD, oblique. Fall off in growth since last exam but optimum AC measurements difficult to obtain. Admitted. Planned for LSCS at 41^{+2} weeks as nil in pelvis. No FH detected prior to LSCS. USS = IUD confirmed. Vaginal anomaly detected on VE – septum. Unsuitable for IOL. LSCS performed. Stillborn male infant, **3525g**. Heart shaped uterus, partial septum.

IUD Bloods raised TSH, low Protein S

Microbiology NAD

Placental histology In-utero stress, impaired fetal circulation, impaired placental perfusion, intervillous haemorrhage, moderate to focal severe perivillous and intervillous fibrinoid deposition, geographical infarction.

Karyotype 46XY

Post-mortem (Coroner's) Normally formed infant, indentation marks on chest and upper limbs, length of cord (41cm) associated with sign of chronic hypoxia, also the probability of a cord accident.

Conclusion Probable cord accident.

Obstetrics 36 years, Caucasian, Hx of infertility and depression, Fam hx of PE, ex-smoker. BMI 22.7, Para 1^{+3} (LSCS). IVF pregnancy. USS at booking = 15 weeks. USS at 21 weeks = normal anatomy. USS at 34 weeks = EFW >90th centile, Normal GTT. Regular antenatal attendances. No FMF at 39 weeks. USS = IUD confirmed. Mifepristone/Misoprostol IOL, SVD stillborn female infant **3570g**

IUD Bloods NAD

Microbiology light growth E. Coli (placenta)

Placental histology Infarction (less than 5% incidental). Small retroplacental haemorrhage, impairment of fetal circulation, evidence of ascending infection.

Karyotype 46XX

Post-mortem Haematoperitoneum secondary to ruptured left adrenal gland, significant bilateral adrenal haemorrhage, cardiac ischaemia, in utero stress.

Conclusion Haematoperitoneum secondary to ruptured left adrenal gland, significant bilateral adrenal haemorrhage, hypoxia.

Antepartum deaths in infants with lethal congenital malformations (N=6)

Obstetrics 33 years, Caucasian, ex-smoker. BMI 24.1, Para 0^{+0}. USS at booking = 12 weeks, Cystic Hygroma noted. CVS at 13 weeks = Turner Syndrome. USS at 18 weeks = pleural effusions, ascites, skin thickening. USS at 19 weeks = worsening cardiac failure. USS at 20 weeks = VSD, severe ascites. USS at 21 weeks = Oligohydramnios, declining cardiac failure. USS at 22^{+5} weeks = IUD confirmed. Mifepristone/Misoprostol IOL, breech. Stillborn female infant, **500g**.

IUD Bloods NR

Microbiology NR

Placental histology NR

Karyotype 45 XO

Post-mortem Declined

Conclusion Turner's Syndrome – cardiac failure

Obstetrics 22 years, Caucasian, ex-smoker. BMI 22.1, Para 0^{+0}. USS at booking = 12 weeks. Bladder megacystis 7 – 15mm and small exomphalos. CVS = Trisomy 18. USS at 17, 21, 25, 26, 29, 32 weeks. USS at 33 weeks = IUFD confirmed, polyhydramnios. Mifepristone/Misoprostol IOL = vaginal breech delivery. Stillborn male infant, **1650g**.

IUD Bloods NR

Microbiology NR

Placental histology NR

Karyotype Trisomy 18

Post-mortem Declined

Conclusion Trisomy 18

Obstetrics 23 years, Caucasian. Para 0^{+0}. Booked at another hospital. Referred to this hospital at 16 weeks – suspected anterior abdominal wall anomaly. Exomphalos confirmed on USS and possible cardiac anomaly. Amniocentesis declined. Attended privately for panorama test = inconclusive. Admitted from same hospital at 20 weeks, abdominal pain and PROM. USS showed absent FH. Mifepristone/Misoprostol given, IOL. Stillborn female infant, **550g**. Dysmorphic features noted.

IUD Bloods NR

Microbiology NAD

Placental histology Confirmed presence of a twin pregnancy defined by two cell lines. One was a complete hydaditiform mole, the other a genetically normal 46XX female with clinically obvious dysmorphism exemplified by the exomphalos.

Karyotype 46XX

Post-mortem Declined

Conclusion Twin pregnancy with one twin a complete mole. Other twin exomphalos (liver and bowel), dysmorphism. Patient referred to Gynae Oncology MDT.

Obstetrics 41 years, Caucasian. BMI 22.9, Para 1^{+2} (LSCS), non-smoker. Hx of thyroidectomy, now hypothyroidism on Eltroxin. Attended Endocrine Clinic at 7 weeks. USS at booking = 10 weeks. Seen at regular intervals throughout pregnancy. USS at 21 weeks = slightly dilated CSP. Fetal echo = DORV, Aortic Stenosis. Amniocentesis performed, Karyotype = 46XY + 18. USS at 22, 26, 32, 36 weeks. Regular ANC attendance. Admitted 37^{+5} weeks with raised BP, commenced on Labetolol, PET bloods normal. Discharged home. Reattended at 38^{+4} weeks. USS = IUD confirmed. Mifepristone / Misoprostol, IOL, SVD stillborn male infant, **1710g**.

IUD Bloods NR

Microbiology NR

Placental histology Accelerated villous maturation, retroplacental haemorrhage, impaired fetal circulation, in utero stress

Karyotype Trisomy 18

Post-mortem Declined

Conclusion Trisomy 18

Obstetrics 35 years, Caucasian. BMI 23.7, Para 1^{+0} (male 3.2kgs cleft lip and palate), non-smoker. Fam hx of hypertension, USS at booking = 10 weeks. USS at 14 weeks = Cystic Hygroma. CVS performed. Karyotype = 45XO. USS at 17 weeks = non-immune hydrops. Seen at regular intervals in view of anomaly. USS at 22 weeks = IUD confirmed. Mifepristone / Misoprostol, IOL, SVD stillborn female infant, **846g**.

IUD Bloods NR

Microbiology NR

Placental histology Diffuse villous oedema.

Karyotype 45XO

Conclusion Turner's Syndrome.

Obstetrics 26 years, Caucasian, ex-smoker. Hx of abnormal smears. BMI 23.1. Para 0^{+0}. USS at booking = 11 weeks. USS at 22 weeks = normal anatomy. Regular attender combined care. USS at 21 weeks = normal anatomy. Attended for CANC, attempted ECV for breech presentation at 38 weeks = unsuccessful. Booked for LSCS at 39^{+3} weeks. Presented at 38^{+5} weeks with reduced FM, USS = IUD confirmed with oligohydramnios. Mifepristone / Misoprostol IOL, forceps for vaginal breech, stillborn male infant, **3400g**, nuchal cord x 2.

IUD Bloods NR

Microbiology NR

Placental histology Male profile with Trisomy 21.

Karyotype Trisomy 21

Post-mortem Coroner's PM awaited

Conclusion Coroner's Report awaited.

Intrapartum deaths in normally formed infants and infants without lethal / potentially lethal congenital malformations

(N=2)

Obstetrics 43 years, Caucasian, ex-smoker. BMI 22.0, hx asthma, gestational diabetes, Para 1^{+5} (LSCS). USS at booking = 12 weeks. USS at 21 weeks = normal anatomy. PV bleeding and pain at 21^{+1} weeks. USS = breech. Cervix 1-2 cms dilated. Rx Klacid. Admitted. SROM at 21^{+4} weeks, HVS: bacterial vaginosis, Rx Metronidazole Developed GDM, commenced on insulin at 22^{+2} weeks. Elevated CRP/WCC at 22^{+6} weeks, possible chorioamnionitis. Commenced on IV antibiotics. WCC normal at 23^{+2} weeks, CRP reduced. Steroids given at 23^{+5} weeks. SOL, breech presentation, fetus low in vagina. Oxytocin commenced. MgSO4 given, assisted forceps delivery. Male infant, intrapartum IUD, **600g**.

IUD Bloods NR

Microbiology NAD

Placental histology Evidence of ascending infection. Impaired fetal circulation, impaired placental perfusion.

Karyotype Normal

Post-mortem Declined

Conclusion Extreme prematurity, chorioamnionitis, complex vaginal breech delivery.

Obstetrics 32 years, Caucasian, non-smoker. BMI 25.9, hx PCOS, Para 0^{+0}. IVF pregnancy. USS at booking = 12 weeks. USS at 21 weeks = normal anatomy. Regular antenatal attendances. Pains at 40^{+2} weeks, VE – NIEL. CTG commenced, fetal bradycardia. Category I LSCS under GA. Delivery of stillborn male infant, **3355g**, blood stained liquor noted, large retroplacental clot and nuchal cord x 1. Cord pH (a) 6.980, BE -14.7 (v) 7.193, BE -7.2.

Paediatrics Newborn male born at 40^{+2} weeks gestation. Bag and mask positive pressure ventilation followed by endotracheal intubation. Meconium aspiratory used in delivery room to remove thick meconium from newborn intubated airway. Emergency umbilical venous line placed. 1st newborn blood gas pH 6.59 an $dpCO_2$ 20.22. Newborn heart rate never detected. CPR for 21 minutes including four IV adrenaline and two normal saline boluses. Apgar scores 0^{1}, 0^{5}, and 0^{10}.

IUD Bloods NAD

Microbiology Strep Milleri (HVS)

Placental histology Retrocord haemorrhage, evidence of ascending infection, moderate retroplacental haemorrhage.

Karyotype 46XY

Post-mortem (Coroner's) Acute Hypoxia / Ischaemia.

Conclusion Placental abruption.

Early Neonatal Deaths In Normally Formed Infants And Infants Without Letal / Potentially Lethal Congenital Malformations

(N = 7)

Obstetrics 36 years, Caucasian. Para 0^{+2}, IVF pregnancy. DCDA Twins, initially triplet pregnancy. Booked in another hospital. Transferred to this hospital at 24^{+2} weeks. PPROM Twin I at 15 weeks. PPROM Twin II at 21 weeks. Rx Steroids, IV Antibiotics. MgSO4. Suspected chorioamnionitis and reduced variability. Emergency LSCS under GA at 24^{+2} weeks.

Twin I male infant, **780g**, breech. Apgars 2^{1}, 5^{5}, 6^{10}, 7^{15}. Cord PH (a) 7.349, BE – 5.7, (v) 7.371, BE -3.4.

Twin II: Female infant, **680g**, transverse lie. Apgars 2^{1},4^{5},8^{10}. Cord PH (a) 7.373, BE 0.7, (v) 7.357, 1.7.

Paediatrics Twin I male intubated and ventilated with surfactant in theatre. Admitted to NICU. Respiratory distress syndrome with severe pulmonary hypoplasia and pulmonary hypertension. Managed with high frequency oscillatory ventilator support and inhaled nitric oxide. Cardiovascular support included IV adrenaline, milrinone, dobutamine and multiple normal saline boluses for poor cardiac contractility on point of care echocardiogram. IV antibiotics administered. Cardiorespiratory arrest at 10 hours of age with CPR for 8 minutes. Due to refractory respiratory acidosis, decision made with parents present to withdraw intensive care support with R.I.P. at 12 hours of age.

IUD Bloods NAD

Microbiology NAD

Placental histology Twin placentation. Evidence of ascending infection. Impaired fetal circulation. Twin I – retro-cord haemorrhage. Twin II – acceleration villous maturation.

Karyotype Normal male karyotype and aCGH.

Post-mortem Declined

Conclusion Extreme prematurity, pulmonary hypoplasia

Obstetrics 33 years, Caucasian, ex-smoker. BMI 21.3. Para 0^{+0}. USS at booking = 11 weeks. USS at 20 weeks = normal anatomy. Pv spotting and abdominal pain at 23^{+1} weeks. Bulging membranes. SOL at 23^{+2} weeks, Vaginal breech delivery. Male infant, **560g**. Apgars 1^{1}, 1^{5}, 1^{10}. Comfort care given. RIP in Delivery Suite.

Paediatrics Comfort care. Baby R.I.P on delivery suite at 1 hour and 52 minutes of age.

Microbiology NAD

Placental histology Evidence of ascending infection, impaired fetal circulation.

Post-mortem Declined.

Conclusion Extreme prematurity, likely infective cause of preterm delivery.

Obstetrics 35 years, Caucasian, smoker (5 cigs per day). Previous GDM, recurrent UTIs. Para 3^{+1} (LSCS x 1). Currently on Diazepam, Methadone. BMI 30.1. USS at booking = 12 weeks. Poor attender antenatally – DNA x 5 appointments. Normal anatomy scan at 21 weeks. SOL at 23^{+3} weeks prior to arrival at hospital. Footling breech delivery by ambulance staff. Male infant, **520g**. Apgars 0^{1}, 2^{5}, 2^{10}. Brought to NICU approximately 4 minutes of age. RIP at 44 minutes of life.

Paediatrics Extremely premature male newborn. Intubated and managed on conventional ventilator. Surfactant administered. Profoundly bradycardic with extensive resuscitation. Pulmonary hypoplasia. Withdrawal of intensive care with R.I.P. at 44 minutes of age.

IUD Bloods raised Protein S, low Protein C

Microbiology Heavy growth mixed anaerobes (placenta).

Placental histology Evidence of ascending infection, large retroplacental haemorrhage.

Karyotype 46XY

Post-mortem (Coroner's) Normally formed male infant, extensive maceration of lower limbs (>48 hours), evidence of hypoxia / intrauterine stress, evidence of congenital pneumonia, diffuse in both lungs, lung hypoplasia.

Conclusion Placental abruption, sepsis, lung hypoplasia 2° to extreme prematurity.

Obstetrics 36 years, Caucasian, non-smoker. Recurrent UTIs, previous hx of GDM. BMI 37.4, para 4^{+0}. USS at booking = 12 weeks. Developed GDM at 24 weeks – commenced on Metformin. USS at 21 weeks = normal anatomy scan. Seen at 16, 24, 26, 28, 32, 34, 36 weeks. DNA x 2. SOL at 38^{+3} weeks. VE = Cx 8cms dilated, ARM to bulging membranes, difficulty recording FH following same. Active second stage of labour. SVD male infant, **3230g**. Apgars 0^{1}, 0^{5}, 0^{10}, 4^{15}. Cord pH (a) 7.102, BE -10.4, (v) 7.420, BE -0.7. RIP day 1 of life.

Paediatrics Pale and apnoeic at birth with no detectable heart rate on exam. Paediatric team attended for resuscitation. Intubated and ventilated at 3 minutes of life. Emergency umbilical venous line placed and received 4 doses of IV adrenaline and two saline bolus in delivery suite. First baby venous gas showed pH 6.8 and Hemoglobin of 6.4g/dl. Emergency blood transfusion administered. Admitted to NICU and commenced on therapeutic hypothermia and attached to cerebral function monitoring. Poor cardiac contractility on point of care echocardiogram. Refractory systemic hypotension managed with IV adrenaline, noradrenaline, hydrocortisone, milrinone. Severe burst suppression on aEEG. Point of care cranial ultrasound showed severely reduced cerebral blood flow. Severe newborn encephalopathy. After discussion with family regarding likely poor prognosis there was withdrawal of intensive care support. R.I.P at 18 hours of age.

Placental histology Marginal cord insertion. Chorionic tear in vein. Large haematoma beneath amnion.

Karyotype 46XY

Post-mortem Coroner's PM awaited.

Conclusion Coroner's report awaited.

Obstetrics 31 years, Caucasian, non-smoker. Hx of pericarditis, anxiety / depression, on Prozac. On Eltroxin for hypothyroidism. BMI 26.4, Para 1^{+0} (IOL for eclampsia). USS at booking = 8 weeks. USS at 20 weeks = normal anatomy. CANC – regular attender. USS at 35 weeks = marcrosomia and polyhydramnios GTT normal. Pregnancy induced thrombocytopaenia at 31 weeks. On PO Galfer B.D. for low ferritin. Platelets checked weekly. SROM out-ruled at 35^{+5} weeks. Admitted with hypertension, headache and vomiting at 39 weeks. Stat dose of labetolol. IOL at 39^{+5} weeks, FBS in labour pH 7.253, BE -2.7 at 8cms dilatation. Repeat FBS at 9cms dilated: pH 7.31, BE-2.6. Nausea and vomiting during second stage of labour, maternal tachycardia and low grade pyrexia. Difficult to auscultate FH. Forceps delivery, female infant **4490g**. Apgars 0^{1}, 0^{5}, 0^{10}, 3^{20}. Cord pH (a) 6.550, BE - 24.8 (v) 6.610, BE n/a. RIP at 36 hours of age.

Paediatrics: No detectable heart rate at birth. Positive pressure ventilation via bag and mask initiated after delivery with CPR commenced at 3 minutes of age. Endotracheal intubation at 12 minutes of age followed by emergency umbilical venous line placement and 4 doses of IV adrenaline, IV normal saline bolus and IV sodium bicarbonate. First baby blood venous blood gas showed pH 6.55, pCO2 > 25. Admitted to NICU with cerebral function monitoring and therapeutic hypothermia. IV adrenaline for blood pressure support. Evidence

of acute hepatic and renal injury. Seizures noted and IV phenobarbitone and morphine administered. Very suppressed cerebral function monitor continuous trace noted. Cranial ultrasound showed bilateral echogenicity in peri-rolandic regions. Very abnormal neurological examination with marked hypotonia and unresponsiveness. Decision made to withdraw intensive care support including discontinuation of therapeutic hypothermia. R.I.P. at 36 hours of age.

Microbiology NR

Placental histology Large marginal haemorrhage. Acute abruption placenta.

Karyotype Not possible

Post-mortem (Coroner's) HIE and multi-organ injury due to intra-uterine hypoxia due to placental abruption. Normally formed infant. No evidence of pre-disposing placental abnormality.

Conclusion Placental Abruption. HIE stage III.

Obstetrics 31 years, Caucasian, non-smoker. BMI 27.5, para 0^{+1}, previous miscarriage at 16 weeks. USS at booking = 12 weeks. Cervical shortening 14mm at 16 weeks, cervical cerclage inserted. USS at 21 weeks = normal anatomy. Admitted from ANC at 22^{+2} weeks with abdominal pain, pv bleeding slight. Cyclogest BD. Seen in Preterm Birth Clinic. Remained as inpatient. SROM at 22^{+5} weeks, po Klacid commenced. Pv bleed 400mls at 22^{+6} weeks, on IV Augmentin, cervical cerclage removed with epidural in situ. Cervix 3 cm dilated. IV Syntocinon given – breech delivery of liveborn female infant, **560g**. 2^{1}, 0^{5}, RIP on Delivery Suite.

Paediatrics Comfort care. Baby R.I.P on delivery suite at 10 minutes of age.

IUD Bloods low protein S, raised Factor VIII

Microbiology Group B Strep (placental and HVS)

Placental histology Acute diffuse choriodeciduitis with acute amnionitis. Large retroplacental clot.

Karyotype 46XX

Post-mortem Declined

Conclusion Extreme prematurity – chorioamnionitis.

Obstetrics 25 years, Romanian, non-smoker. BMI 22.9, Para 1^{+0}, Fam Hx Type 2 Diabetes. USS at booking = 18 weeks DCDA Twin pregnancy, spontaneous conception. USS at 21 weeks = normal, borderline Polyhydramnios in Twin II. USS at 23 weeks = Twin I Olygohydramnios, SGA fall off in growth. Twin II normal growth with Polyhydramnios. SROM at 24 weeks. PO Klacid, A/N Betamethasone given. Settled, draining clear liquor. SOL at 25^{+1} weeks, cord prolapse in labour – category 1 LSCS.

Twin I liveborn male infant **680g**. Apgars 2^{1}, 2^{5}, cord pH (a) 7.261, BE -9.2, (v) 7.340, BE -3.1. RIP Day 1 of life.

Twin II liveborn male infant **940g**. Apgars 1^{1}, 2^{5}, cord pH (a) 7.356, BE -3.9, (v) 7.333, BE -4.9.

Paediatrics: Twin 1 male newborn extremely premature was resuscitated at birth including endotracheal intubation and surfactant administration in theatre and admitted to NICU. Commenced on high frequency oscillatory ventilation and inhaled nitric oxide for severe respiratory distress syndrome. Second dose of surfactant administered. IV adrenaline infusion commenced for worsening systemic hypotension. Peripheral arterial line placed for monitoring the same but had to be removed because of poor peripheral perfusion. IV antibiotics were commenced due to suspected sepsis. Severe pulmonary hypertension of newborn was progressive and marked systemic hypotension. Decision made to withdraw intensive care support. R.I.P. at 21 hours of age.

Microbiology Strep milleri, mixed anaerobes (placenta)

Placental histology Impaired fetal circulation, impaired placental perfusion

Karyotype None performed.

Post-mortem Declined

Conclusion Cord prolapse, pulmonary hypoplasia and pulmonary hypertension of the newborn.

Early Neonatal Deaths in infants with lethal congenital malformations

(N = 10)

Obstetrics 34 years, Caucasian, non-smoker, recurrent UTIs. Para 3^{+0}. BMI 31. Booked in another hospital. Anatomy scan at 23 weeks = diaphragmatic hernia. Referred to another hospital, then this hospital with confirmed USS findings of left Diaphragmatic Hernia and hypoplastic left heart. Amniocentesis = normal Karyotype. MDT discussion for palliative care. Regular follow up. Fetal echo = HLH with aortic and mitral atresia, small pericardial effusion. CDH. Counselled re poor prognosis. IOL at 39 weeks. SVD, male infant, **3340g**. Apgars 6^{1},8^{5}, RIP on Delivery Suite. Hypospadias noted at delivery.

Paediatrics Comfort care. Baby R.I.P on delivery suite at 3 hour and 30 minutes of age.

IUD Bloods NAD

Microbiology NAD

Placental histology NR

Karyotype 46XY. Microarray: gain of approx 88kb in long arm of x chromosome at band q28. Uncertain significance.

Post-mortem Declined.

Conclusion Hypoplastic Left Heart syndrome, Left sided Congenital Diaphragmatic hernia.

Obstetrics 32 years, Caucasian, non-smoker. Para 2^{+0}. BMI 21.3. USS at booking = 15 weeks. Anomaly scan at 21 weeks = Occipital Encephalocele, hypoplasia, anhydramnios, bilateral abnormal kidneys, bladder not visible, thickened nuchal fold. CVS = 46XX. USS at 26 weeks = Echogenic kidneys, ascites, anhydramnios, possible encephalocele. SOL at 32 weeks, SVD female infant, **3090g**. Apgars 2^{1}, 1^{5}. Comfort care. RIP on Delivery Suite. Hydropic in appearance, grossly oedematous. Dysmorphic features noted.

Paediatrics Postnatal findings in keeping with the antenatal diagnosis. Comfort care provided. Baby R.I.P on delivery suite at 3 hour and 58 minutes of age.

Microbiology NR

Placental histology Intra-cord haemorrhage. Retromembranal haemorrhage, retroplacental haemorrhage.

Karyotype 46XX. Microarray: arr15q13.1 (29, 085,844-29, 482,233) x 3.

Post-mortem Polydactyl both hands with likely regressive encephalocele at right posterior occiput. Large bilateral kidneys with multi-cystic renal disease. Ureter and bladder agenesis. Lung hypoplasia, intrauterine hypoxia.

Conclusion Bardet-Biedl variant overlapping Meckel-Gruber Syndrome.

Obstetrics 39 years, Caucasian, non-smoker. Hx of PCOS, Depression. Previous LLETZ. Para 3^{+1} (prev LSCS). BMI 25.2. USS at booking = 9 weeks. NIPT and FTS = high risk for Trisomy 13. Amniocentesis at 16 weeks = Trisomy 13. SGA at 18 weeks, 22 weeks. AEDF at 23^{+5} weeks. Regular antenatal attendances and US scans. Elective LSCS at 35 weeks. Female infant, **1890g**. Apgars 7^{1}, 8^{5}. Transferred to ward for comfort care.

Paediatrics Postnatal findings in keeping with the antenatal diagnosis. Comfort care provided. Baby R.I.P on ward at 32 hours of age.

IUD Bloods NR.

Microbiology NR.

Placental histology Infarcted villi. Focal accelerated villous maturation.

Karyotype Trisomy 13.

Post-mortem Declined.

Conclusion Trisomy 13.

Obstetrics 39 years, Caucasian, non-smoker. Hx of polycystic kidney disease Para 0^{+0}. BMI 24.7. USS at booking = 12 weeks. Referred to Medical Clinic, normal renal function. USS at 21 weeks = enlarged NF, bilateral enlarged kidneys. Declined invasive testing. USS at 29 weeks = anhydramnios, gross enlargement of kidneys. MRI Scan confirmed bilateral renal enlargement. LSCS at 33^{+5} weeks, liveborn male infant, **2950g**. Apgars 5^{1}, 7^{5}, cord pH (a) 7.316, BE 0.3, (v) 7.032, BE -8.6.

Paediatrics: Intubated and ventilated at 4 minutes of age. Surfactant administered. Transferred to NICU. Umbilical venous and arterial lines placed. Placed on high frequency oscillatory ventilator and inhaled nitric oxide for management of pulmonary hypertension. Chest drains placed for bilateral pneumothoraxes. IV milrinone, noradrenaline and hydrocortisone. IV antibiotics administered. Urethral catheter placed. Oliguria. Renal ultrasound extensive and marked renal enlargement. Paediatric consultant nephrologist consulted in person. Diagnosis of polycystic kidney disease with severe pulmonary hypoplasia. Poor prognosis discussed with family and decision to withdraw intensive care support was made. R.I.P at 81 hours of age.

Microbiology NR

Placental histology Retromembranal haemorrhage, impairment of fetal circulation – villous oedema, intervillous haemorrhage.

Karyotype Not performed to date but sample in storage for future analysis.

P**ost-mortem** Declined.

Conclusion Polycystic Kidney Disease.

Obstetrics 36 years, Caucasian, non-smoker. Para 1^{+0}. BMI 23.4. Spontaneous conception DCDA Twins. USS at booking = 10 weeks. USS at 20 weeks = normal anatomy in Twin I, Twin II abnormal cardiac view, DORV, Hypospadias, bilateral overlapping finger. Amniocentesis confirmed suspicion of Trisomy 18. Regular scans 26, 30, 33 weeks when AEDF noted on Twin II. SOL at 35^{+2} weeks, breech presentation in Twin I. LSCS.

Twin I liveborn male infant, **2280g**. Apgars 9^{1}, 10^{5}.

Twin II liveborn male infant, **1280g**. Apgars 6^{1}, 9^{5}. Comfort care given, RIP day 5 of life.

Paediatrics: Postnatal findings in keeping with the antenatal diagnosis. Comfort care provided. Baby R.I.P on ward at 4 days of age.

Microbiology NR

Placental histology Velamentous insertion of cord. Mild impairment of fetal circulation, villous oedema. Mild to moderate perivillous and intervillous fibrinoid deposition.

Karyotype 46, XY + 18

Post-mortem Declined.

Conclusion Trisomy 18

Obstetrics 32 years, Caucasian, non-smoker. Recurrent UTIs, para 2^{+0}. BMI 29.9. Booked at another hospital. Transferred to this hospital at 24 weeks – severe fetal hydrops, mediastinal shift, diaphragmatic hernia / CCAM. Declined amniocentesis. Polyhydramnios. Perinatal palliative care planned. USS at 25 weeks = ascites, fetal hydrops, cystic thoracic lesion noted. AEDF at 27 weeks. Admitted with pain and pyrexia at 28^{+3} weeks. IV antibiotics given, maternal mirror syndrome noted. SOL, SVD male liveborn infant, **2640g**. Apgars 5^{1}, 5^{5}. Comfort care given, neonatal death at 95 minutes. MROP, extreme hydrops.

Paediatrics: Postnatal findings in keeping with antenatal diagnosis. Comfort care provided. Baby R.I.P on delivery suite at 95 minutes of age.

Microbiology NAD

Placental histology Retroplacental haemorrhage, impairment of fetal circulation.

Karyotype 46 XY, homozygous for Delta 5O8, CF mutation.

Post-mortem Declined.

Conclusion Severe fetal hydrops, superior vena cava obstruction 2° to cystic lung lesion in newborn with cystic fibrosis.

Obstetrics 39 years, Caucasian, non-smoker. Hx infantile seizures, FHx hypothyroidism. Para 3^{+1}. BMI 20.6. USS at booking = 9 weeks. USS at 21 weeks = normal anatomy. Uneventful pregnancy. Presented at 39^{+5} weeks in established labour. SVD liveborn male infant, **3050g.** Apgars 6^{1}, 6^{5}, cord pH (a) 7.274, (v) 7.413, BE (a) -3.0, (v) -2.1. Baby transferred to NICU. RIP day 2 of life.

Paediatrics Non-vigorous and clinical respiratory distress noted at birth in delivery room. Clinical features of Down Syndrome. Commenced nasal CPAP and transferred on 100%O2 to NICU. Intubated and ventilated in NICU. Received surfactant. Evidence of severe pulmonary hypertension, right ventricular hypertrophy, PDA, and poor left ventricular function on echocardiogram performed by consultant paediatric cardiologist. Right sided pleural effusion managed with chest drain. Umbilical arterial and venous lines placed. IV sildenafil, milrinone and epoprostenol for pulmonary hypertension. IV adrenaline, noradrenaline, hydrocortisone and finally vasopressin and adenosine treatments. Oliguria and metabolic acidosis managed with urethral catheterization, sodium bicarbonate, and normal saline boluses. Two trials of high frequency oscillatory ventilation. Due to refractory systemic hypotension and worsening respiratory failure a decision was made to withdraw intensive care support. R.I.P at 41 hours of age.

Microbiology NR

Placental histology Acute choriodeciduitis infarction, accelerated villous maturation, retroplacental haemorrhage.

Karyotype 46 XY + 21

Post-mortem Declined.

Conclusion Trisomy 21, severe pulmonary hypertension of the newborn, right ventricular hypertrophy.

Obstetrics 33 years, Caucasian, smoker (6 – 10 cigs per day). Para 2^{+1}. BMI 26.1. USS at booking = 13 weeks, no pre-conceptual folic acid. USS at 21 weeks = lemon shaped head, ventriculomegaly, left multicystic dyplastic kidney, bilateral talipes, spina bifida, AVSD, Oligohydramnios. A/N amniocentesis performed = Karyotype 46XY. Referral to Neonatology team – palliative care planned. USS at 26 weeks = lumbar sacral spina bifida, left MCDK, right kidney not visible, absent bladder, 2 vessel cord. Seen at 16, 22, 25, 26, 29, 34, 37, 38, 39 weeks ANC. Presented in labour at 39^{+4} weeks. SVD liveborn male infant, **2190g**. Apgars 3^{1}, 2^{5}. RIP at 32 minutes of life.

Paediatrics Postnatal findings in keeping with the antenatal diagnosis. Physical features in keeping with diagnosis of Potter's sequence. Comfort care provided. Baby R.I.P on delivery suite at 32 minutes of age.

Microbiology Group B Strep (HVS and placenta)

Placental histology Amnion nodosum of amniotic membranes, retromembranal haemorrhage, retroplacental haemorrhage.

Karyotype 46 XY

Post-mortem Spina bifida and severe lumbar sacral dysraphism with disruption sequence. Adjacent developmental field defect and malformation / disruption sequence causing hydrocephalus, renal and urothelial defects, oligohydramnios and deformation sequence.

Conclusion Spina bifida and severe lumbar sacral dysraphism with disruption sequence. Adjacent developmental field defect and malformation / disruption sequence causing hydrocephalus, renal and urothelial defects, oligohydramnios and deformation sequence.

Obstetrics 24 years, Indian, consanguineous relationship. Non-smoker, family Hx of IDDM. Para 0^{+0}, BMI 19. USS at booking = 13 weeks. USS at 21 weeks = normal anatomy. GTT normal at 28 weeks. USS at 34 weeks = AC < 5^{th} centile, EFW 1958g (8^{th} centile), normal doppler. Polyhydramnios, some cranial structures

prominent – VP choroid plexus, behind vemis of cerebellum. Admitted at 36 weeks from ANC, increased BP, SGA with Polyhydramnios. PET bloods normal. CTG reduced variability, Em LSCS, liveborn female infant, **1880g**. Apgars 3^{1}, 3^{5}, cord pH (a) 7.350, (v) 7.385, BE (a) 0.1, (v) 0.8. RIP day 4 of life.

Paediatrics Apneaic and non-vigorous at birth requiring intubation and ventilation followed by admission to NICU. Central arterial and venous lines inserted. Cranial ultrasound and head MRI showed evidence of complete agyria, micro cortex, and cerebellar atrophy. Retinal exam showed micro-ophthalmia with corneal pacification. Echocardiogram showed VSD and PDA. After discussion with parents a decision was made to extubate and not to re-intubate for subsequent worsening respiratory distress and apnea. R.I.P on day 3 of age.

Microbiology NR

Placental histology Impairment of fetal circulation, impairment of placental perfusion, retroplacental haemorrhage.

Karyotype aCGH showed variant of PEX1 gene.

Post-mortem Ventricular sub-ependymal cyst. Cerebellar atrophy with cortical microlissencephaly.

Conclusion Variant of PEX1 gene is associated with autosomal recessive perioxisomal diseases. Cerebellar atrophy with cortical microlissencephaly. Respiratory failure.

Obstetrics 41 years, Caucasian, ex-smoker, Hx of anti-cardiolipin antibody, hypothyroidism on Eltroxin. IVF pregnancy, on clexane and aspirin to 12 weeks gestation, Para 1^{+3}, (female infant, 2.9kg choanal atresia – surgery for same, first trimester miscarriages x 2). USS at booking = 10 weeks. USS at 20 weeks = mediastinal shift to the left and enlarged right lung field. Impression of a mass effect, not typical of CCAM. Repeat USS = Congenital Diaphragmatic Hernia with liver, ECHO = heart pushed to the left but appears normal. Karyotype 46XX, normal microarray. Fetal MRI and paediatric review. MRI at 26 weeks supported USS findings. Parents travelled to Belgium to consider the FETO procedure (Fetoscopic Endoluminal Tracheal Occlusion). USS at 27 weeks = severe ascites, hydrothorax, meconium peritonitis. FETO cancelled due to bowel perforation and meconium peritonitis. USS at 31 weeks = large ascites with particulate matter present – amniotic fluid drainage 2500ml, 950ml drained from fetal abdomen. Admitted at 31^{+6} weeks with pains. SROM at 34^{+2} weeks, LSCS delivery of liveborn male infant, **3260g**. Apgars 1^{1}, 3^{5}, 3^{10}, cord pH (a) 7.297, (v) 7.304, BE (a) -3.7, (v) -3.4. Transferred to NICU. RIP day 1 of life.

Paediatrics Intubated and ventilated at birth. Profound difficulty to oxygenate and ventilate in theatre. Initial baby venous blood gas showed pH 6.9, pCO2 12. Emergency umbilical venous line placed. Surfactant administered. Four IV adrenaline doses. Chest compressions for 3 minutes. Therapeutic paracentesis. IV normal saline and sodium bicarbonate administered. Admitted to NICU. Severe pulmonary hypertension and respiratory failure. Inhaled nitric oxide and high frequency oscillatory ventilation. IV adrenaline, milrinone infusions. Severe disseminated intravascular coagulopathy treated with plasma and platelets administration. Multisite bleeding difficult to control. IV antibiotics. Severe respiratory acidosis with difficulty in ventilation. Decision to withdraw intensive care support. R.I.P at 7 hours of age.

Microbiology Possibility of bacterial vaginosis (HVS)

Placental histology Evidence of retroplacental haemorrhage with significant intervillous haemorrhage extension

Karyotype 46XX

Post-mortem Declined

Conclusion Right sided Congenital Diaphragmatic Hernia.

Late neonatal deaths in normally formed infants and infants without lethal / potentially lethal congenital malformations

(N = 4)

Obstetrics 40 years, Caucasian, Para 2^{+3} (previous late NND suspected cardiac defect), BMI 25.8, ex smoker. Hx of ulcerative colitis, on steroids, USS at booking = 14 weeks. USS at 22 weeks = normal anatomy. Fetal ECHO at 22 weeks = normal. Raised BP at 26 weeks, normal 24 hour urine protein, Rx Labetolol. USS = SGA, increased resistance on doppler, EFW on 8th centile. USS at 27 weeks = increased resistance. USS at 29 weeks = IUGR, no interval growth, REDF. Emergency LSCS, breech female infant, **750g**. Apgars 5^{1}, 7^{5}. Cord pH (a) 7.316, BE -3.7 (v) 7.345, BE 3.2.

Paediatrics Extremely premature female newborn at 29^{+1} week gestation. Growth restricted. Nasal CPAP commenced in theatre and transferred to NICU. In room air on nasal CPAP for first 3 days of life followed by discontinuation of CPAP. Acute deterioration secondary to necrotising enterocolitis on day 25 of life requiring endotracheal intubation and ventilation. Managed on high frequency oscillatory ventilation and inhaled nitric oxide. Systemic hypotension requiring five IV normal saline boluses, IV infusions of adrenaline, noradrenaline and hydrocortisone. IV antibiotics administered. Transfused plasma. Intestinal perforation on day 25 requiring peritoneal drain placement by consultant

paediatric surgeon at CWIUH. Progressive multi-organ failure with decision to withdraw intensive care support. R.I.P on day 25 of age.

IUD Bloods NR

Microbiology NR

Placental histology Multiple geographic infarctions. Intervillous thrombosis.

Karyotype 46XX

Post-mortem Normally formed infant. Necrotising enterocolitis predominantly on ileum and proximal colon with areas of perforation. Neonatal hepatitis with cholestasis. Evidence of hypoxia.

Conclusion Necrotising enterocolitis, severe IUGR.

Obstetrics 32 years, Caucasian. Para 2^{+0}. BMI 24.3, non-smoker. USS at booking = 12 weeks. USS at 22 weeks = normal anatomy. Recurrent small PV bleeds. PV bleeding at 22 weeks, admitted. Seen by Paediatric Team at 23 weeks, EFW 544g, steroids given. USS at 24 weeks = oligohydramnios, breech presentation, recurrent small APH. Possible PPROM. Rx po Klacid. SOL at 24^{+1} weeks, MgSO4 given, vaginal breech delivery. Male infant, **690g**. Apgars 5^{1}, 7^{5}, cord ph (a) 7.342, BE -4.7, (v) 7.464, BE -3.4. Transferred to NICU.

Paediatrics Extremely preterm male newborn at 24^{+1} weeks' gestation. Meconium noted to be present at delivery. Intubated and ventilated with surfactant administration at 15 minutes of age with subsequent transfer to NICU. Umbilical arterial and venous lines placed. Two further doses of surfactant in NICU. Conventional ventilation. Pulmonary hypertension on point of care echocardiogram. Managed with inhaled nitric oxide. IV adrenaline, noradrenaline, dobutamine, milrinone until day 5 of age. IV antibiotics. Cranial ultrasound showed left grade III and right grade IV intraventricular hemorrhages. Progressive midline shift and mass effect on subsequent cranial ultrasound scan. In view of severe pulmonary hypertension, systemic hypotension and severe bilateral intraventricular hemorrhages a decision was made to withdraw intensive care support. R.I.P on day 8 of life.

IUD Bloods NR

Microbiology Light growth, mixed anaerobes (HVS and placenta)

Placental histology Severe and diffuse choriodeciduitis and chorioamnionitis. Retroplacental haemorrhage.

Karyotype 46XY.

Post-mortem Declined.

Conclusion Extreme prematurity

Obstetrics 36 years, Caucasian. Para 2^{+0}, previous hx cardiac murmur, LLETZ. BMI 20.2, smoker (cigs 6-10 per day). Past hx of drug misuse. USS at booking = 16 weeks. USS at 24 weeks = normal anatomy. Combined care with GP. SOL at 38 weeks, SVD. Female infant, **2690g.** Apgars 2^{1}, 8^{5}. Transferred to NICU.

Paediatrics Admitted to NICU on first day of life from delivery room due to transient tachypnea of the newborn. Blood culture performed that was sterile to date and treated with IV antibiotics for 48 hours. On day of life two was transferred to postnatal ward feeding well. Paediatric review and discharge home with family on day of life three. On day of life 18 mother noted her newborn daughter to be pale and lifeless in her bed. Co-sleeping with mother and other sibling. Parent telephoned General Practitioner. Newborn declared R.I.P by General Practitioner at the scene.

IUD Bloods NR

Microbiology NR

Karyotype 46XY

Post-mortem Normally formed infants. Sudden Infant Death.

Conclusion SIDS

Obstetrics 25 years, Caucasian. Para 0^{+0}, Hx of depression and bulimia nervosa, LLETZ. BMI 21.3. USS at booking = 12 weeks. Referral to Mental Health Clinic, reviewed antenatally. Attended ER at 15 weeks with gastroenteritis, 16 weeks and 18 weeks with second trimester PV bleeding – same settled. History of DV at 12 weeks, abdominal pain, no PV loss. Anxious throughout pregnancy – referred to Medical Social Worker. PV bleed at 19 weeks, amnisure negative. RFMF at 23 weeks, palpable contractions, effacing cervix, admitted for observation. EFW 732g. Betamethasone and Tractocile given, PROM at 23 weeks, commenced on IV Clindamycin and Gentamycin. SOL at 23^{+3} weeks, SVD male infant, liveborn **640g**. Apgars 4^{1}, 7^{5}, meconium stained liquor.

Paediatrics Extremely premature newborn at 23^{+3} weeks gestation. Intubated at 2 minutes of age and received surfactant. Transferred to NICU intubated and ventilated on conventional ventilation. Signs of evolving chronic lung disease and some failed extubations. Received steroids for bronchopulmonary dysplasia management. Remained ventilated until day of life 14 when was electively extubated. Clinical deterioration from day of life15. Reintubated and ventilated with high ventilator requirements including high frequency oscillatory ventilation, inhaled nitric oxide. Developed necrotising enterocolitis with intestinal perforation day 16 with multi-organ failure. IV antibiotics were commenced Severe pulmonary hypertension progressed, became anuric and severe systemic hypotension. Perfusion remained poor requiring multiple inotropic support

including IV dopamine, adrenaline and milrinone. Late onset sepsis with culture positive for Klebsiella pneumonia. Progressive deteriorating clinical condition refractory to all therapies. A decision was made to withdraw intensive care support. R.I.P on day of life 18.

Microbiology Streptococcus Group B (HVS)

Karyotype 46XY

Placental Histology Ascending infection, impairment of fetal circulation.

Post-mortem Declined.

Conclusion Necrotising Enterocolitis with multi-organ failure.

Late neonatal deaths in normally formed infants and infants with lethal / potentially lethal congenital malformations

(N = 2)

Obstetrics 36 years, Caucasian, non-smoker. Para 4^{+1}. Consanguineous relationship. Booked in another hospital. Referred to this hospital at 37 weeks – Polyhydramnios, suspected fetal anomaly. USS at 37^{+4} weeks = Polyhydramnios. EFW < 5^{th} centile. Bilateral overlapping fingers, possible rockerbottom feet. Amniocentesis = normal karyotype. USS at 38 weeks = increased resistance on doppler, SGA. IOL, SVD. Male infant **1910g**. Apgars 5^{1}, 5^{5}, 7^{10}, cord pH (a) 7.355, BE - 5.2 (v) 7.361, BE -3.6.

Paediatrics Term newborn with no respiratory effort at birth and marked hypertonia. Received positive pressure ventilation in delivery room initially and the commenced on nasal CPAP. Admitted to NICU. Intubated and ventilated for prolonged apnoea shortly after admission. Normal point of care echo of heart. Abnormal neurological exam with extensor posturing and hypertonia of all four limbs with contractures. MRI showed white matter loss and abnormal gyri pattern. EEG showed severe global cerebral dysfunction with increased epileptogenicity in absence of any clinical seizure. Evolving hepatomegaly. Metabolic investigations showed increased in methyl-glucoronic acid and methyl-glutarate (MEGCANN) which was consistent with diagnosis of 3-Methylglutaconic aciduria as confirmed by consultations with metabolic consultant and geneticist. Clinical deterioration after MRI under GA and in view of lethal diagnosis intensive care support was discontinued. R.I.P day of life 16.

Microbiology NAD

Placental histology Evidence of ascending infection. Impaired fetal circulation. Perivillous fibrin deposition. Fresh retroplacental haemorrhage.

Karyotype 46XY with whole exome analysis performed.

Post-mortem Declined

Conclusion 3 – Methylglutaconic Aciduria (Autosomal recessive mitochondrial disorder).

Obstetrics 36 years, Caucasian, ex-smoker. Asthma in childhood. Hx of White Coat Hypertension, BMI 34.9, Para 1^{+0} (LSCS). Pre-conceptual folic acid. USS at booking = 12 weeks. USS at 20 weeks = banana shaped cerebellum, lumbar spina bifida, bilateral rocker-bottom feet. Neurosurgery review at 23 weeks. Normal fetal Echo. Seen at regular intervals in ANC and for USS. Admitted with elevated BP at 33 weeks. Commenced on PO Labetolol, PET bloods normal. Elective LSCS at 39^{+1} weeks, liveborn female infant, **3105g**. Apgars 4^{1}, 9^{5}. Transferred to NICU. Baby late NND in TSH Day 20 of life.

Paediatrics Term female newborn with myelomeningocele confirmed upon examination. No other dysmorphic features. Positive pressure via bag and mask required in theatre. Vigorous soon thereafter but required nasal CPAP due to transient tachypnea of the newborn. Transferred to NICU. IV antibiotics.

Transferred to PICU at Temple St. hospital for further neurosurgery management on day of life 2. Recurrent apneas and bradycardias pre-operatively with concern regarding bulbar palsy. Required intubation and ventilation on day of life 3. External ventricular drain and myelomeningocele corrective surgery on day of life 7. Ventriculomegaly noted upon subsequent cranial imaging. Clinical seizures. Ventriculo-peritoneal shunt placed day of life 15. Recurrent apneas unrelated to seizures despite mechanical ventilation. Decision made to withdraw intensive care support with R.I.P on day of life 20 at Temple St. PICU.

Microbiology NAD

Karyotype 46XX

Post-mortem: Declined

Conclusion Myelomeningocele, suspected bulbar palsy.

Grade II – III Hypoxic Ischaemic Encephalopathy (n=6)

Obstetrics 33 years, Caucasian, Hx of neurofibromatosis, childhood asthma, ex-smoker. BMI 31.5, Para 0^{+0}. USS at booking = 11 weeks. USS at 20 weeks = normal anatomy. Raised BP at booking. PET bloods NAD. Regular attendance antenatally. USS at 21, 25, 28, 31, 34 weeks. Attended for review following fall and impact to abdomen at 34^{+2} weeks. CTG and USS normal, discharged home. RFMF at 40 weeks. CTG showed reduced variability, reviewed, deemed suitable for IOL.

Grade 2 meconium noted on ARM. Proceeded to LSCS. Liveborn female infant delivered, **3270g**.

Apgars 5^{1}, 9^{5}, 10^{10}. Cord pH (a) 7.028, BE -14.7 (v) 7.13, BE -12.8.

Paediatrics Term newborn noted to be pale and non-vigorous in theatre. Bag and mask positive pressure ventilation followed by nasal CPAP. Transferred on nasal CPAP to NICU. Intubated and ventilated at 5 hours of age for recurrent seizures, therapeutic hypothermia and IV phenobarbitone and phenytoin. Cerebral function monitor and EEG showed burst suppression. Clinical signs of encephalopathy. Initial Haemoglobin of 4 g/dl. Umbilical venous line placed and emergency blood transfusion of red blood cells in NICU. Brain MRI on day of life 6 showed extensive ischemic changes within brain along with bilateral parenchymal hemorrhages. Transferred to OLCHC on day of life 18 with subsequent discharge home soon thereafter.

Microbiology NR

Placental Histology Accelerated villous maturation, intervillous haemorrhage, retroplacental haemorrhage.

Conclusion Fetomaternal hemorrhage with HIE Stage III. Spastic quadriplegic cerebral palsy at 13 month developmental assessment with gastrostomy feeding tube in place.

Obstetrics 22 years, Caucasian, Hx recurrent UTIs, STIs. Non-smoker. BMI 20.7, Para 0^{+0}. USS at booking = 10 weeks. USS at 21 weeks = normal anatomy. Group B Strep on MSU at 21 weeks, for prophylactic antibiotics in labour. USS at 37 weeks = macrosomia and polyhydramnios, GTT negative. Booked for IOL at term. ARM/Syntocinon induction. CTG showed early decelerations, Cx 3 cms dilated. Closely observed, good variability. 1 hour later, persistent fetal bradycardia, Category I LSCS, liveborn male infant, **3850g.** Apgars 2^{1}, 5^{5}. Cord pH (a) 6.84, BE -15.4, (v) 7.30, BE -4.7. Loose nuchal cord x 1.

Paediatrics Non-vigorous term male newborn in theatre. Received bag and mask positive pressure ventilation for 4 minutes followed by nasal CPAP. Transferred to NICU on nasal CPAP. Noted to have encephalopathy on clinical examination. Therapeutic hypothermia commenced at 4 hours of age with seizure noted on cerebral function monitor. Seizure treated with IV phenobarbitone. Umbilical venous and arterial lines placed. IV antibiotics administered. Normal brain MRI on day 8 of life.

Microbiology NR

Placental Histology Marginal placental haemorrhage, retromembranal haemorrhage, impaired placental perfusion, moderate to severe focal perivillous and intervillous fibrinoid deposition.

Conclusion HIE stage II. Discharged home on day 9 of life. Normal developmental progress at 4 months of age.

Obstetrics 18 years, Caucasian, Hx depression, ex-smoker. BMI 37.3, Para 0^{+0}. USS at booking = 12 weeks. USS at 21 weeks = normal anatomy scan. Admitted with increased BP at 39 weeks. PET Bloods NAD. Commenced on po Labetolol. USS = AC on 12^{th} centile, EFW 23^{rd} centile, normal doppler and liquor volume. PGE_2 gel given, reassessed, CTG showed reduced baseline rate, reduced variability, proceeded to LSCS Category I. Liveborn female infant delivered, **2480g**. Apgars 3^{1}, 7^{5}, 7^{10}. Cord pH (a) 6.566, BE -31.4,(v) 6.755, BE -26.7. Large retroplacental clot noted at time of Caesarean Section.

Paediatrics Pale, apneic and non-vigorous at birth. Bag and mask positive pressure ventilation followed by endotracheal intubation at 15 minutes of age. Admitted to NICU. Umbilical arterial and venous lines placed. IV antibiotics and acyclovir commenced. Therapeutic hypothermia commenced. One possible clinical seizure requiring IV phenobarbitone. Normal EEG. MRI brain on day of life 8 showed subtle signal abnormality in right frontal lobe suggestive of cortical dysplasia.

Microbiology NAD

Placental Histology Geographical infarction, retroplacental haemorrhage consistent with abruption, impaired fetal circulation, accelerated villous maturation.

Conclusion HIE stage II with discharge home on day of life 10. Neurodevelopmental outcome at 11 months of age with some concerns regarding gross motor skills.

Obstetrics 28 years, Romanian, Hx of Anaemia, palpitations. All cardiac investigations NAD, Fam Hx Hypertension and Myocardial Infarction. Non-smoker, Para 0^{+0}. USS at booking = 12 weeks. Spontaneous conception of DCDA twins. USS at 27, 29, 32 weeks (Twin 1 AC 20^{th} centile, fall off in growth, Polyhydramnios, doppler normal), 33 weeks (normal dopplers). USS at 34 weeks = Twin I – some interval growth, EFW 39^{th} centile. Twin II fall off in growth, EFW 26^{th} centile. Increased resistance on doppler at 36 weeks. Admitted for IOL, failure to advance first stage, proceeded to LSCS (T-incision). Difficult breech extraction.

Twin I: Liveborn male infant, **2030g**. Apgars 5^{1}, 9^{5}, cord pH (a) 7.163, BE -3.0 (v) 7.233, BE -1.9.

Twin II: breech extraction male infant, **2620g**. Apgars 2^{1}, 3^{5}, cord pH (a) 7.176, BE n/a

Paediatrics Twin delivery. Twin 2 male newborn noted to be apneic and non-vigorous at birth. Bag and mask positive ventilation then endotracheal intubation at 16 minutes of age. Extensive bruising of limbs noted. Admitted to NICU. Abnormal neurological examination with encephalopathy noted. Umbilical venous and arterial lines placed. IV antibiotics. Coagulopathy treated with multiple boluses of IV plasma. Therapeutic hypothermia commenced at 90 minutes of age. Seizure

day of life 2 treated with IV phenobarbitone. Brain MRI on day of life 5 showed subdural hemorrhages, multiple hemorrhages throughout bilateral parietal-occipital and frontal lobes of the brain. Discharge home day of life 12 with full enteral feeds by mouth.

Microbiology NR

Placental Histology Infarction (Twin I), Focal accelerated villous maturation (Twin I & II), Perivillous fibrinoid deposition (Twin II), Villous maturation (Twin II).

Conclusion HIE stage II. Subsequent readmission to OLCHC with seizures. Noted to have significant global developmental delay and microcephaly. Motor delay with likely evolving cerebral palsy at 4 month developmental assessment. Currently full enteral feeds.

Obstetrics 31 years, Caucasian, non-smoker. Hx of pericarditis, anxiety / depression, on Prozac. On Eltroxin for hypothyroidism. BMI 26.4, Para 1^{+0} (IOL for eclampsia). USS at booking = 8 weeks. USS at 20 weeks = normal anatomy. CANC – regular attender. USS at 35 weeks = marcrosomia and polyhydramnios GTT normal. Pregnancy induced thrombocytopaenia at 31 weeks. On PO Galfer B.D. for low ferritin. Platelets checked weekly. SROM out-ruled at 35^{+5} weeks. Admitted with hypertension, headache and vomiting at 39 weeks. Stat dose of labetolol. IOL at 39^{+5} weeks, FBS in labour pH 7.253, BE -2.7 at 8cms dilatation. Repeat FBS at 9cms dilated: pH 7.31, BE-2.6. Nausea and vomiting during second stage of labour, maternal tachycardia and low grade pyrexia. Difficult to auscultate FH. Forceps delivery, female infant **4490g**. Apgars 0^{1}, 0^{5}, 0^{10}, 3^{20}. Cord pH (a) 6.550, BE - 24.8 (v) 6.610, BE n/a. RIP day 1 of life.

Paediatrics No detectable heart rate at birth. Positive pressure ventilation via bag and mask initiated after delivery with CPR commenced at 3 minutes of age. Endotracheal intubation at 12 minutes of age followed by emergency umbilical venous line placement and 4 doses of IV adrenaline, IV normal saline bolus and IV sodium bicarbonate. First baby blood venous blood gas showed pH 6.55, pCO2 > 25. Admitted to NICU with cerebral function monitoring and therapeutic hypothermia. IV adrenaline for blood pressure support. Evidence of acute hepatic and renal injury. Seizures noted and IV phenobarbitone and morphine administered. Very suppressed cerebral function monitor continuous trace noted. Cranial ultrasound showed bilateral echogenicity in peri-rolandic regions. Very abnormal neurological examination with marked hypotonia and unresponsiveness. Decision made to withdraw intensive care support including discontinuation of therapeutic hypothermia. R.I.P. at 36 hours of age.

Microbiology NR

Placental histology Large marginal haemorrhage. Acute abruption placenta.

Karyotype Not possible

Post-mortem (Coroner's) HIE and multi-organ injury due to intra-uterine hypoxia due to placental abruption. Normally formed infant. No evidence of pre-disposing placental abnormality.

Conclusion Placental Abruption. HIE stage III. Early neonatal death.

Obstetrics 36 years, Caucasian, non-smoker. Recurrent UTIs, previous hx of GDM. BMI 37.4, Para 4^{+0}. USS at booking = 12 weeks. Developed GDM at 24 weeks – commenced on Metformin. USS at 21 weeks = normal anatomy scan. Seen at 16, 24, 26, 28, 32, 34, 36 weeks. DNA x 2. SOL at 38^{+3} weeks. VE = Cx 8cms dilated, ARM to bulging membranes, difficulty recording FH following same. Active second stage of labour. SVD male infant, **3230g**. Apgars 0^{1}, 0^{5}, 0^{10}, 4^{15}. Cord pH (a) 7.102, BE -10.4, (v) 7.420, BE -0.7. RIP day 1 of life.

Paediatrics: Newborn pale and apnoeic at birth with no detectable heart rate on exam. Paediatric team attended for resuscitation. Intubated and ventilated at 3 minutes of life. Emergency umbilical venous line placed and received 4 doses of IV adrenaline and two saline bolus in delivery suite. First baby venous gas showed pH 6.8 and Hemoglobin of 6.4g/dl. Emergency blood transfusion administered. Admitted to NICU and commenced on therapeutic hypothermia and attached to cerebral function monitoring. Poor cardiac contractility on point of care echocardiogram. Refractory systemic hypotension managed with IV adrenaline, noradrenaline, hydrocortisone, milrinone. Severe burst suppression on aEEG. Point of care cranial ultrasound showed severely reduced cerebral blood flow. Severe newborn encephalopathy. After discussion with family regarding likely poor prognosis there was withdrawal of intensive care support. R.I.P at 18 hours of age.

Placental histology Marginal cord insertion. Chorionic tear in vein. Large haematoma beneath amnion.

Karyotype 46XY

Post-mortem Coroner's PM awaited.

Conclusion Coroner's report awaited.

Conclusion HIE stage III. Early neonatal death.

Division of Obstetrics

General Obstetric Report – Medical Report

Head of Division

Dr Sharon Sheehan, *Master*

1. Maternal Statistics

	2010	2011	2012	2013	2014	2015	**2016**
Mothers booking	9262	9113	8761	8554	9333	8933	**8647**
Mothers delivered ≥ 500g	8768	8536	8419	7986	8632	8220	**8233**

2.1 Maternal Profile at Booking – general demographic factors (%)

	2010	2011	2012	2013	2014	2015	**2016**	**N=8647**
Born in RoI	69.3	68.4	69.2	69.9	71.6	69.6	**68.9**	**5956**
Born in rest of EU	16.2	17.0	16.8	16.9	15.9	17.7	**17.6**	**1526**
Born outside EU	14.4	14.3	13.8	13.2	12.5	12.6	**13.3**	**1150**
Country not known	0.2	0.3	0.2	0.01	0.0	0.1	**0.2**	**15**
Resident in Dublin	66.4	67.2	65.9	65.7	64.6	63.7	**63.3**	**5472**
< 18 years	0.9	0.7	0.6	0.5	0.5	0.5	**0.6**	**49**
≥ 40 years	4.6	4.8	5.7	5.7	6.3	6.4	**6.9**	**595**
Unemployed	26.3	26.0	25.5	21.5	23.0	24.3	**21.5**	**1858**
Communication difficulties reported at booking	6.6	6.0	7.1	7.8	6.4	6.9	**5.7**	**497**

2.2 Maternal Profile at booking – general history (%)

	2010	2011	2012	2013	2014	2015	2016	N = 8647
BMI Underweight: <18.5	1.9	1.6	1.8	2.1	2.0	2.0	**1.6**	**143**
BMI Healthy: 18.5 – 24.9	51.3	52.1	53.3	51.6	52.5	51.6	**50.7**	**4387**
BMI Overweight: 25-29.9	29.8	29.1	28.2	28.9	26.8	29.2	**29.3**	**2533**
BMI Obese class 1: 30-34.9	11.4	11.3	11.1	11.0	9.9	10.8	**11.9**	**1029**
BMI Obese class 2: 35 – 39.9	3.9	4.0	3.7	4.3	3.9	4.2	**4.4**	**379**
BMI Obese class 3: ≥ 40	1.4	1.8	1.6	1.8	1.5	1.7	**1.8**	**156**
Unrecorded	0.3	0.1	0.3	0.3	3.5	0.4	**0.2**	**20**
Para 0	41.2	40.8	39.4	39.1	38.6	38.9	**40.7**	**3519**
Para 1-4	57.3	57.9	59.1	59.3	60.0	59.9	**57.8**	**5002**
Para 5 +	1.5	1.3	1.5	1.6	1.4	1.2	**1.4**	**126**
Unplanned pregnancy	31.5	30.9	30.5	31.2	27.7	28.9	**27.6**	**2388**
No pre-conceptual folic acid	56.1	56.6	56.5	56.6	52.6	54.1	**52.9**	**4573**
Current Smoker	14.5	14.2	13.5	12.8	10.5	11.1	**10.0**	**869**
Current Alcohol Consumption	3.5	2.6	1.5	1.4	1.5	1.1	**1.0**	**83**
Taking illicit drugs / methadone	0.6	0.7	0.8	0.7	0.5	0.3	**0.2**	**18**
Illicit drugs/Methadone ever	7.1	7.8	7.9	8.7	8.3	8.2	**8.0**	**688**
Giving history of domestic violence	1.2	1.1	1.0	0.9	1.0	1.0	**0.9**	**79**
Cervical smear never performed	22.5	22.4	20.7	21.7	18.7	19.9	**19.1**	**1649**
History of psychiatric / psychological illness /disorder	12.3	13.0	15.4	18.0	16.6	15.5	**16.7**	**1441**
History of postnatal depression	4.7	4.0	4.7	4.0	4.7	4.5	**4.4**	**380**
Previous perinatal death	1.6	1.5	2.1	1.7	2.3	1.6	**1.5**	**132**
Previous infant < 2500g	5.4	5.1	5.5	5.5	6.5	5.2	**4.7**	**411**
Previous infant < 34 weeks	2.5	2.3	1.3	2.7	2.7	2.4	**2.1**	**185**
One previous Caesarean section	12.4	11.7	12.2	12.6	13.8	12.9	**12.7**	**1094**
Two or more previous Caesarean sections	3.0	3.4	3.7	3.4	4.0	4.0	**4.0**	**348**

2.3 Maternal Profile in index pregnancy (Mothers delivered ≥ 500g) (%)

	2010	2011	2012	2013	2014	2015	2016	N = 8233
Pregnancy Induced Hypertension	7.3	8.5	7.5	7.7	7.5	6.7	**7.3**	**601**
Pre-eclampsia	4.6	4.1	3.8	2.8	3.3	2.9	**2.8**	**233**
Eclampsia	0.02	0.0	0.01	0.06	0.00	0.02	**0.05**	**2**
Pregestational Type 1 DM	0.3	0.5	0.5	0.38	0.3	0.35	**0.3**	**26**
Pregestational Type 2 DM	0.2	0.4	0.2	0.23	0.17	0.32	**0.2**	**17**
Gestational DM	3.0	4.7	6.6	4.4	7.8	7.8	**8.4**	**694**
Placenta praevia	0.5	0.4	0.4	0.4	0.4	0.5	**0.4**	**36**
Abruptio placentae	0.1	0.1	0.2	0.3	0.2	0.4	**0.2**	**20**
Antepartum haemorrhage	1.1	1.3	4.4	5.6	6.6	5.3	**5.7**	**468**
Haemolytic antibodies	0.5	0.3	0.5	0.5	0.5	0.5	**0.6**	**47**
Hep C +	0.7	0.9	0.8	0.6	0.5	0.5	**0.4**	**31**
Hep B +	0.5	0.7	0.5	0.6	0.4	0.5	**0.4**	**30**
HIV +	0.3	0.3	0.2	0.3	0.2	0.3	**0.2**	**15**
Sickle cell trait	0.4	0.4	0.4	0.4	0.3	0.3	**0.4**	**31**
Sickle cell anaemia	0.02	0.01	0.1	0.02	0.1	0.02	**0.05**	**4**
Thalassaemia trait	1.3	0.7	0.6	0.4	0.3	0.5	**0.3**	**25**
Delivery < 28 weeks	0.6	0.7	0.6	0.6	0.5	0.5	**0.5**	**40**
Delivery < 34 weeks	2.3	2.5	1.3	2.7	2.2	2.2	**2.1**	**174**
Delivery < 38 weeks	13.1	13.5	14.3	13.9	13.6	14.3	**13.9**	**1142**
Delivery < 1500g	1.4	1.5	1.5	1.4	1.2	1.3	**1.3**	**105**
Delivery < 2500g	6.7	6.1	6.5	6.9	6.4	7.2	**6.1**	**505**
Unbooked mothers	1.8	1.8	1.7	1.3	1.6	0.9	**0.7**	**55**
LSCS	25.8	27.7	27.1	28.0	28.7	29.3	**31.3**	**2576**
Admissions to HDU	1.6	1.9	1.5	2.1	2.0	2.6	**2.0**	**163**
Severe Maternal Morbidity	0.4	0.5	0.5	0.5	0.5	0.4	**0.8**	**63**
Maternal Deaths (N)	1[1]	1[2]	3[3]	1[4]	1[5]	1[6]	**0**	**0**

[1] *AIDS related lymphoma*

[2] *Sudden unexplained death in epilepsy (SUDEP)*

[3] *Suicide, Sudden Adult Death Syndrome (SADS) and Amniotic Fluid Embolism*

[4] *Cardiac arrest brought about by hyperkalaemia*

[5] *Amniotic Fluid Embolism (cardiac collapse and disseminated intravascular coagulopathy following amniotic fluid escape into the maternal circulation)*

[6] *Ruptured internal carotid artery aneurysm with Systemic Fibromuscular Dysplasia*

3.1 Induction of Labour 2016

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Inductions	1409	42.8	1380	27.9	**2789**	**33.9**

3.2 Induction of Labour 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	**2803**	2846	**2969**	**2696**	**2664**	2608	**2789**
%	**32.0%**	33.3%	**35.3%**	**33.8%**	**30.9%**	31.7%	**33.9**

4.1 Epidural Analgesia in Labour 2016

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Epidural Analgesia	1836	55.8	1276	25.8	**3112**	**37.8**

4.2 Epidural Analgesia in Labour 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	3906	3855	3744	3357	3530	**3491**	**3112**
%	44.5	45.2	44.5	42.0	40.9	**42.5**	**37.8**

5.1 Fetal Blood Sampling in Labour 2016

	N=
< 7.20	74
> 7.20	818
Total	892

5.2 Fetal Blood Sampling in Labour 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	993	986	758	689	756	783	**892**
%	11.3	11.5	9.0	8.6	8.8	9.5	**10.8**

6.1 Prolonged Labour 2016

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Prolonged Labour	241	7.3	43	0.9	**284**	**3.4**

6.2 Prolonged Labour 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	254	266	287	277	316	320	**284**
%	2.9	3.1	3.4	3.5	3.7	3.9	**3.4**

7.1 Mode of delivery (%) – Nulliparae 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
SVD	40.8	41.8	41.1	43.2	41.1	40.8	**38.9**
Vacuum	16.8	14.4	16.2	16.1	18.2	17.7	**16.9**
Forceps	14.9	15.0	13.6	11.4	11.2	13.0	**11.5**
LSCS	27.7	29.3	29.5	29.6	29.7	28.4	**33.2**

7.2 Mode of delivery (%)- Parous 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
SVD	69.1	68.5	69.4	68.1	67.1	65.9	**64.9**
Vacuum	4.5	3.3	3.9	3.6	3.6	3.2	**3.9**
Forceps	2.4	1.8	1.7	1.4	1.3	1.4	**1.2**
LSCS	24.4	26.6	25.5	26.9	28.1	29.8	**30.0**

7.3 Mode of delivery (%) – all mothers 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
SVD	57.1	57.7	58.0	58.5	57.0	56.2	**54.5**
Vacuum	9.7	7.8	8.9	8.5	9.3	9.0	**9.1**
Forceps	7.7	7.2	6.4	5.2	5.2	5.8	**5.3**
LSCS	25.8	27.7	27.1	28.0	28.7	29.3	**31.3**

8. Episiotomy (%) 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
Nulliparae	30.3	30.0	28.1	27.7	27.8	29.6	**32.0**
Parous	5.5	5.5	4.5	4.0	3.9	4.0	**4.4**
Overall	16.0	15.4	14.0	13.2	13.2	13.9	**15.5**

9.1 Shoulder Dystocia (SD) 2016

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Shoulder Dystocia	25	0.8	28	0.6	**53**	**0.6**

9.2 Shoulder Dystocia (SD) & Birth Weight

	Mothers of babies < 4kg		Mothers of babies ≥ 4kg	
	N	%	N	%
Shoulder Dystocia	32	0.4	21	2.0

9.3 Shoulder Dystocia 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	74	66	87	64	53	56	**53**
%	0.8	0.8	1.0	0.8	0.6	0.7	**0.6**

10.1 Third Degree Tears

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Third Degree Tears (overall)	107	3.3	40	0.8	147	1.8
Third Degree Tears (vaginal deliveries)	107	4.9	40	1.2	147	2.6

10.2 Third Degree Tears 2010 - 2016 (Mothers delivered vaginally)

	2010	2011	2012	2013	2014	2015	2016
N	87	160	130	145	160	166	**147**
%	1.3	2.6	2.1	2.5	2.6	2.9	**2.6**

11.1 Fourth Degree Tears 2016

	Nulliparous		Multiparous		Total	
	N	%	N	%	N	%
Fourth Degree Tears (overall)	9	0.3	2	0.04	**11**	**0.1**
Fourth Degree Tears (vaginal deliveries)	9	0.4	2	0.06	**11**	**0.2**

11.2 Fourth Degree Tears 2010 - 2016 (Mothers delivered vaginally)

	2010	2011	2012	2013	2014	2015	2016
N	8	10	6	7	8	9	**11**
%	0.1	0.2	0.1	0.1	0.1	0.1	**0.2**

12.0 Primary Post Partum Haemorrhage (1° PPH) 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
N	542	850	1160	1256	1256	1127	**1483**
%	6.2	10.0	13.8	15.7	14.6	13.7	**18.0**

12.1 1° PPH – Spontaneous Labour

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	6.9	9.4	11.4	11.6	12.0	12.0	**15.1**	**1475**
Parous	5.8	5.4	6.2	8.3	7.4	8.3	**8.4**	**2324**
Overall	6.3	7.0	8.2	9.6	9.1	9.6	**11.0**	**3799**

12.2 1° PPH – Induced Labour

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	8.6	16.4	19.1	26.2	22.5	20.1	**25.3**	**1409**
Parous	6.4	7.3	8.9	10.8	9.6	10.9	**10.9**	**1380**
Overall	7.5	11.8	13.8	18.1	16.0	15.3	**18.2**	**2789**

12.3 1° PPH – SVD

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	5.0	5.5	6.7	7.6	7.9	7.5	**10.2**	**1285**
Parous	5.3	4.3	5.0	6.2	5.7	6.9	**6.3**	**3214**
Overall	5.2	4.7	5.5	6.6	6.3	7.1	**7.4**	**4499**

12.4 1° PPH – Ventouse

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	7.3	12.6	10.2	9.4	10.9	8.3	**13.3**	**555**
Parous	6.1	5.9	6.0	9.5	5.3	8.7	**8.7**	**195**
Overall	7.0	10.9	9.1	9.4	9.6	8.4	**12.1**	**750**

12.5 1° PPH – Forceps

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	11.9	16.7	17.6	21.9	18.6	18.2	**19.4**	**377**
Parous	10.8	5.3	11.9	19.1	17.6	22.9	**21.3**	**61**
Overall	11.7	14.9	16.8	21.5	18.4	18.9	**19.6**	**438**

12.6 1° PPH – Caesarean Section by parity

	2010 %	2011* %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	7.5	21.0	33.2	44.0	38.2	33.4	**43.2**	**1093**
Parous	5.4	18.1	23.8	30.2	27.7	23.1	**34.1**	**1483**
Overall	6.4	19.4	28.0	35.8	31.9	26.9	**38.0**	**2576**

** Method of measuring blood loss in theatre changed - 2010*

12.7 1° PPH – with Caesarean Sections (by priority status)

	2010 %	2011 %	2012* %	2013 %	2014 %	2015 %	2016 %	2016 N
Elective	1.1	13.3	21.3	27.0	26.5	19.6	**32.7**	**1347**
Emergency	12.6	24.6	34.5	43.7	36.9	35.4	**43.7**	**1229**
Overall	6.4	19.4	28.0	35.8	31.9	26.9	**38.0**	**2576**

12.8 1° PPH – Twin Pregnancy

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	2016 %	2016 N
Nulliparae	14.7	31.2	35.3	59.1	50.0	46.0	**50.6**	**87**
Parous	7.6	13.6	24.1	25.3	43.6	23.5	**43.3**	**90**
Overall	10.9	22.1	29.0	39.4	56.4	33.1	**46.9**	**177**

13.0 Manual Removal of Placenta (%) 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
N	111	106	102	135	94	108	**95**
%	1.3	1.2	1.2	1.7	1.1	1.3	**1.2**

13.1 1° PPH in Manual Removal of Placenta 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
N	56	64	63	82	59	58	**64**
%	50.5	60.4	61.8	60.7	62.8	53.7	**67.4**

14.0 Mothers Transfused 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
N	189	176	148	181	169	155	**200**
%	2.2	2.1	1.7	2.3	2.0	1.9	**2.4**

14.1 Mothers who received Massive Transfusions (> 5units RCC) 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
N	14	15	15	7	4	4	**5**
%	0.2	0.2	0.2	0.1	0.05	0.05	**0.06**

15. Singleton Breech Presentation 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
Number of breech in nulliparae	152	165	174	150	151	144	**180**
% LSCS for breech in nulliparae	93.4%	94.5%	96.0%	96.0%	98.7%	97.9%	**93.9%**
Number of breech in parous	133	151	159	171	167	174	**167**
% LSCS for breech in parous	93.2%	96.0%	93.1%	93.0%	95.2%	91.9%	**91.0%**
Total number of breech	285	316	333	321	318	318	**347**
Total % LSCS	93.3%	96.5%	94.6%	94.4%	96.8%	94.6%	**92.5%**

16. Twin Pregnancy 2010 – 2016

	2010	2011	2012	2013	2014	2015	**2016**
Number of Twin pregnancies in Nulliparae	68	77	68	71	76	76	**87**
% LSCS in Nulliparae	70.6%	53.2%	66.2%	78.9%	77.6%	68.4%	**69.0%**
Number of Twin pregnancies in Parous	79	81	87	99	94	102	**90**
% LSCS in Parous	51.9%	50.6%	49.4%	51.5%	60.6%	52.9%	**62.2%**
Total number of Twin pregnancies	147	158	155	170	169	178	**177**
Total % LSCS in Twin pregnancy	60.5%	51.9%	56.8%	62.9%	68.2%	59.6%	**65.5%**

17. Operative Vaginal Delivery in Theatre 2010 - 2016

	2010	2011	2012	2013	2014	2015	**2016**
Operative Vaginal Delivery in Theatre	83	103	111	88	89	83	**91**

18. Classical Caesarean Section, Ruptured Uterus, Hysterectomy in Pregnancy 2010 - 2016

	2010	2011	2012	2013	2014	2015	**2016**
Classical Caesarean Section	4	7	2	4	3	6	**2**
Ruptured Uterus	3	3	1	0	2	0	**0**
Hysterectomy in pregnancy	3	6	2	2	0	2	**5**

19.1 Categories of Caesarean Section (Robson)

	Groups	Number of CS	Number in group	Contribution to total population	% CS
1	Nulliparous, single, cephalic, ≥ 37 wks, in Spontaneous Labour	148	1359	16.5%	10.9%
2	Nulliparous, single, cephalic, ≥=37 wks, induced and CS before labour	657	1512	18.4%	43.5%
A.	Nulliparous, single, cephalic, ≥=37 wks, induced	481	1336	16.2%	36.0%
B.	Nulliparous, single, cephalic, ≥ =37 wks, CS before labour	176	176	2.1%	100.0%
3	Multiparous (excl. prevCS) single, cephalic, ≥ =37wks, in Spontaneous Labour	32	1891	23.0%	1.7%
4	Multiparous (excl. prevCS) single, cephalic, ≥ =37 wks, induced and CS before labour	199	1362	16.5%	14.6%
A.	Multiparous (excl. prevCS), single, cephalic, ≥ =37 wks, induced	64	1227	14.9%	5.2%
B.	Multiparous (excl. prevCS), single, cephalic, ≥=37 wks, CS before labour	135	135	1.6%	100.0%
5	Previous CS, single, cephalic, ≥= 37wks	945	1219	14.8%	77.5%
6	Nulliparous, single, breech	169	180	2.2%	93.9%
7	Multiparous, single, breech (incl. prevCS)	152	167	2.0%	91.0%
8	Multiple pregnancies (incl. prevCS)	124	185	2.2%	67.0%
9	Abnormal Lies, single (incl. prevCS)	12	12	0.1%	100.0%
10	Preterm, single, cephalic (incl. prevCS)	138	344	4.2%	40.1%
	Gestation Not Answered	0	2	0.0%	0.0%
N	**Total CS/Total Mothers Delivered**	**2576**	**8233**	**100%**	**31.3%**

19.2 Vaginal Birth (%) after a single Previous Lower Segment Caesarean Section (VBAC) 2016

	Para 1	Para 1+	Total
VBAC	19.7	49.0	**27.6**
Elective LSCS	63.7	37.8	**56.7**
Emergency LSCS	16.6	13.2	**15.7**

19.3 Vaginal Birth (%) after a single Previous Lower Segment Caesarean Section (VBAC) 2010 – 2016

	2010 %	2011 %	2012 %	2013 %	2014 %	2015 %	**2016 %**	**2016 N**
Para 1	25.0	23.0	21.6	24.1	19.9	19.8	**19.7**	**799**
Para 1+	59.5	55.1	60.3	58.6	58.5	51.5	**49.0**	**296**
Overall	**35.8**	**33.3**	**32.5**	**34.1**	**29.7**	**27.7**	**27.6**	**1095**

19.4 Caesarean Sections (%) 2010 – 2016

	2010	2011	2012	2013	2014	2015	2016
Nulliparae	27.7%	29.3%	29.5%	29.6%	29.7%	28.4%	**33.2%**
Parous	24.4%	26.6%	25.5%	26.9%	28.1%	29.8%	**30.0%**
Total	25.8%	27.7%	27.1%	28.0%	28.7%	29.3%	**31.3%**

20. Apgar score < 7 at 5 mins 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	84	82	98	97	74	70	**67**
%	1.0	1.0	1.2	1.2	0.9	0.8%	**0.8%**

21. Arterial Cord pH < 7 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	50	36	21	37	41	35	**45**
%	0.6	0.4	0.3	0.5	0.5	0.4%	**0.5%**

22. Admission to SCBU/NICU at 38 weeks+ 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	470	412	454	454	474	423	**551**
%	5.4	4.8	5.4	5.7	5.5	5.0%	**6.7%**

23. Born Before Arrival 2010 - 2016

	2010	2011	2012	2013	2014	2015	2016
N	27	22	22	31	36	29	**28**
%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	**0.3%**

24. Antepartum Haemorrhage (APH)*

	N=	PPROM	Preterm Labour	Preterm Delivery	Perinatal Deaths
Placental Abruption	12	0	0	5	0
Placenta Praevia	13	1	1	10	0
Other	448	17	33	64	1
Total**	**468**	**18**	**34**	**77**	**1**

** table only includes women who presented with an APH*

*** patients may be included in one or more group*

Addiction & Communicable / Infectious Diseases

Head of Department

Dr. Michael O'Connell, *Consultant Obstetrician & Gynaecologist*

Staff Complement

Orla Cunningham, *CMS Infectious Diseases (0.77 WTE)*

Deirdre Carmody, *CMS, Drug Liaison Midwife, HSE Mid Leinster*

Dr. Nikita Deegan, *Registrar (Jan-Jul 2016)*

Dr. Catherine Mc Nestry, *Registrar (Jul-Dec 2016)*

Tanya Franciosa, *MSW*

Genitourinary Medicine (St James's Hospital)

Prof. Fiona Mulcahy

Dr. Fiona Lyons

Sinead Murphy *(HIV Liaison nurse)*

Dept. Of Hepatology (St James's Hospital)

Prof. Suzanne Norris & Team

Rainbow Team (Our Lady's Children's Hospital)

Prof. Karina Butler & Team

Total Attendees in 2016: 320 women attended Team A Dr O'Connell, the majority of whom were provided with full antenatal care & postnatal follow up. In addition a number of both antenatal and gynae patients attended for consultation and follow up regarding positive STI screening.

Key Performance Indicators

Infectious Diseases (Hepatitis B & C, HIV and Treponema pallidum):

- 27 women booked for antenatal care in 2016 tested positive for Hepatitis B, of whom 2 were newly diagnosed on antenatal screening. 37% had a birth place in Eastern Europe, 26% were from Asia & the same percentage from Africa.
- 28 antenatal women tested positive for Hepatitis C, of whom 10 were newly diagnosed on antenatal screening. Of the 28: 21 were PCR positive and 7 were PCR negative. Of the 10 new diagnoses, 4 women originated from Ireland, 4 from Eastern Europe and 2 from Indian Subcontinent.
- 23 antenatal women tested HIV positive, none of whom were newly diagnosed. 15 women originated from Africa, 4 from Eastern Europe and 2 from Ireland. 1 woman was co-infected with HBV. No women were co-infected with hepatitis C or syphilis.
- 63 antenatal women attended the clinic with a history or outbreak in pregnancy of genital herpes virus. 35 women had positive PCR/antibody for HSV 1, 27 women had positive PCR/antibody for HSV 2, and 1 woman had a sample that could not be typed.
- 5 women confirmed positive for Treponema pallidum. Only 1 woman required treatment in pregnancy, as a new diagnosis. The remaining had been appropriately treated previously.
- 81 antenatal women required follow up +/- repeat testing due to indeterminate serology attributed to cross-reactivity in pregnancy.
- No recorded incidence of mother to child transmission in 2016*.

Diagnosis and management of an Infectious disease in pregnancy challenges the healthcare provider with a myriad of complexities in the provision of antenatal and follow up care. The clinic is specifically designed to ensure individualised education & care-planning, specialised counselling as well as disclosure and support services. Women are provided with a specific pathway into specialist on-going care, ensuring treatment and monitoring thereby often preventing disease progression, mother to child transmission and significantly reducing future healthcare costs in this high risk patient cohort.

Addiction

- 48 women linked with the DLM and attended the ancillary clinic in the CWIUH in 2016.
- 31 women delivered live babies in the CWIUH who were linked with the DLM.
- 19% born preterm (less than 37 weeks gestation).
- 16 babies admitted to ICU/HDU/SCBU and of these 12 babies needed pharmacological treatment for neonatal abstinence syndrome (NAS).
- The mean stay in the baby unit was 23 days, ranging from 1 to 43 days. The mean length of stay in the baby unit for babies who received pharmacological treatment for NAS was 28 days, ranging from 16 to 43 days.

The Medical Social Worker meets with all patients who attend the hospital with current drug or alcohol addictions. This allows for a focused, specialist service for all patients. The role of the Medical Social Worker is to provide assessment and support to all patients throughout their pregnancy.

Additional KPIs

- 45 women with high-risk pregnancies also attended this service for specialist care e.g. Current STI, cardiac history, fetal diagnosis of life-limiting conditions, PET, sero-discordant couples.
- Couples continue to be seen in our Conception Clinic, which provides fertility investigations for both seropositive & sero-discordant couples attempting to optimise conception, while safeguarding risk of transmission of HIV.
- The team continue to be actively involved in undergraduate & postgraduate education, providing speciality conferences at hospital level and national level.

Achievements in 2016

- Combined retrospective and prospective audit undertaken to determine adherence to referral pathway for pregnant women with history of Genital Herpes, since introduction of our new HSV guideline in 2015.
- Winners of Dr James Clinch Prize for Audit 2016, 'Audit of Adherence to Referral Pathway for Pregnant Women with History of Genital Herpes in CWIUH. Aug 2015 – Aug 2016'. Prizes presented by Dr Sharon Sheehan, Master of CWIUH at the 2016 Guinness Lecture Symposium.
- CMS Infectious Diseases participated in National Hepatitis C Screening Guideline Development Committee (on-going).
- Poster Presentation 'Mindfulness and Self Compassion for Women with High Risk Pregnancies' at NMPDU DSKW September 2016 Conference.
- On-going audit of Infectious Diseases in Pregnancy & data submission used as part of both National & International surveillance programmes (NSHPC & HPSC).
- Our team entered the inaugural 'Coombe Bake Off' as evidenced by our delicious recipes published in the 'Baked by the Coombe 2016' recipe book!
- Our Drug Liaison Midwife provides a combined hospital & community week-long placement for student midwives, which also includes a clinic session with the CMS Infectious Diseases.
- The Medical Social Worker is present at the weekly antenatal clinic. This has been successful in promoting the role of the Medical Social Worker within the MDT, profiling the role of the MSW and increasing accessibility of the patient to the Medical Social Work service.
- The Medical Social Worker provided ongoing education to nursing/midwifery staff regarding working with women with current drug addictions.
- The Medical Social Worker is involved in the training of undergraduate social work students by regularly supervising students on practice placements. These students perform to a high standard and achieve high grades under the guidance and supervision of the Medical Social Worker attached to the specialist clinic.

Opportunities for 2017

- Joint application has been made with Prof Suzanne Norris, Consultant Hepatologist, SJH, for a co-located consultant hepatology post to provide on-site expert hepatology input for pregnant women in CWIUH.
- Plan for a shared care approach for some of our high risk women, so they can attend Portlaoise Hospital / GP services for part of their care.
- To highlight the role of the Medical Social Worker within the specialist Antenatal Clinic for women with current drug addictions, to local Public Health Nurses and local Tusla Social Work Department.
- To use Medical Social Work statistics to highlight the trends in the level of Tusla involvement and alternate care discharge plans for our patients.
- To highlight and pursue the need for a dedicated Medical Social Worker to work with patients with infectious diseases.
- To continue to provide Addiction, Child Protection & Infectious Diseases training to the NCHDs in the hospital and at specialist training days & to the wider midwifery & nursing staff via the Centre for Midwifery Education.
- Client-led changes to service provision.

**Babies born to mothers who booked late in 2016 will not have testing completed at time of report.*

Community Midwife Service

Head of Department

F McSweeney, *Assistant Director of Midwifery & Nursing*
B Flannagan, *CMM III*

Staff Complement

1 WTE CMM3
2.19 WTE CMM2
13 WTE Midwives
2 WTE Clerical Support

Key Performance Indicators

- To deliver high quality antenatal and postnatal midwifery care to women in the Early Transfer Home (ETH) catchment area.
- To increase the number of women at community based antenatal clinics.
- To promote the uptake of the ETH Service.

Activity in 2016

- Outcome for women booked for the Coombe Domino Service were: SVD=63.8%, Instrumental birth = 15.4%, Caesarean Section = 20.8%.
- Community Midwives supported the provision of Hypnobirthing courses.
- Gained additional office accommodation and IT facilities.
- The service had a 2% reduction in attendances during 2016.

Challenges for 2017

- Staffing all aspects of Community Services will continue to be a challenge for 2017.
- To increase the uptake of the Coombe Domino Service.
- To increase the number of women attending community midwife clinics.
- To support the introduction of Routine Antenatal Anti-D Prophylaxis.
- To support women to initiate and continue breastfeeding.
- To recognise women and babies with additional health needs and referring them to specialist services as required.
- To support women's emotional wellbeing in pregnancy and after the birth.
- To support ongoing training and education for midwives.

Table 1: Trends in Activity 2013-2016

	2013	2014	2015	2016
Number of women booked	1460	1461	**1428**	**1471**
Number of follow up appointments seen	6249	7443	**6560**	**5727**
ETH women who availed of the service	2351	2512	**2340**	**2236**
% uptake of ETH in areas where it is available	51.4%	49.7%	**50%**	**50.1%**
Average length of stay (days): all ETH women	1.9	1.8	**1.8**	**1.9**
Average length of stay (days): SVD and Instrumental birth	1.5	1.4	**1.4**	**1.3**
Average length of stay (days): C/Section	3	2.9	**3**	**3**
Number of bed days saved	2875	3253	**2995**	**2968**
Readmission rate: women	0.8%	0.2%	**0.5%**	**0.6%**
Readmission rate: babies	0.4%	0.5%	**0.3%**	**0.1%**
Breastfeeding rate at Day 5	41.4%	37.8%	**41.4%**	**49%**
Women booked for Coombe Domino Service	157	263	**247**	**249**
Births in Coombe Domino Service	32	42	**47**	**43**

Diabetic Service

Head of Department

Professor Sean Daly, *Consultant Obstetrician & Gynaecologist*

Professor Brendan Kinsley, *Consultant Endocrinologist*

Staff Complement

2 WTE Clinical Midwife Specialists (E. Coleman & C.Grady)

1 WTE Staff Midwife (G. Cannon)

1 WTE Dietitian (F. Dunlevy)

Phlebotomy, Laboratory and Administrative Staff

The diabetic/endocrinology clinic was very busy in 2016. The midwifery clinic was developed further and continues to work in conjunction with the multi disciplinary clinic which sees women on a Tuesday morning. There were 3954 appointments but the DNA rate was again high at 12.9%. On average there were 69 women attending each clinic.

There were 218 women attending with non diabetic endocrinology problems.

Over 90% of these had disease related to the thyroid gland with the majority of women being managed having hypothyroidism.

It is planned to allow women who develop Gestational Diabetes to remain with their original Obstetric teams as long as their diabetes is controlled with life style and dietary change. They will continue to have their gestational diabetes managed by the diabetic midwives and all women with GDM will have an ultrasound examination at 37-38 weeks to check for fetal macrosomia and polyhydramnios. If either of these complications of GDM is present delivery will be recommended. If women fail diet and lifestyle they will be seen at the MDT clinic as usual.

Numbers attending the service in 2016 who delivered in the CWIUH

	N=
Type 1 DM	26
Type 2 DM	17
GDM	694
Total	**737**

Parity

Parity	N	%
P0	245	33.2
P1-4	468	63.5
P5+	24	3.3

Type of Pregnancy

	N =	%
Singleton Pregnancies	697	92.2
Twin Pregnancies	55	7.4
Triplet Pregnancies	3	0.4

Obesity

	N =	%
Type 1	7	27
Type 2	9	53
GDM	333	48

Treatment

	Type 1	**Type 2**	**GDM**
Diet	0	0	284
Diet + Metformin	0	5	230
Diet + Metformin + Insulin	0	1	62
Diet + Insulin	26	11	118

Diagnosis

	Type 1 DM	Type 2 DM
N =	40	29
Delivered CWIUH	26	17
Delivered Elsewhere	1	5
Miscarriage	8	6
Undelivered 2016	0	0
Perinatal Deaths	0	0

Diagnosis N (%)	Type 1 DM	Type 2 DM	GDM
Preterm Delivery	5 (19.2)	3 (17.6)	91 (13.1)

P = 0.58

Mode of Delivery Total Group

	N	%
SVD	327	44.4
OVD	73	9.9
Breech	2	0.3
Non Elective CS	136	18.4
Elective CS	199	27
Total	**737**	**100**

Mode of Delivery of GDM Group

	N	%
Elective CS	188	27.0
Emergency CS	126	18.2
SVD	311	44.8
Breech	1	0.1
Operative VD	68	9.9
Total	**694**	**100**

Women presenting in Spontaneous Labour

	N	%
SVD	125	77.2
Operative vaginal delivery	20	12.3
Breech Delivery	2	1.2
Emergency CS	15	9.3
Total	**162**	**100**

Induction of Labour

	N=	%
Failed Induction CS	7	2.1
Emergency CS	75	22.3
SVD	201	59.8
Operative Vaginal Delivery	53	15.8
Total	**336**	**100**

- Among the GDM Population there was one stillbirth (delivered at 23 weeks and weighing 600g) and one neonatal death at term and weighing 3230g
- There were 8 cases of shoulder dystocia among the 402 babies delivered vaginally (2%).
- Among the 402 women who delivered vaginally 4 women had a 3rd degree tear (1%) and one woman had a 4th degree tear.
- A total of 661 (89.7%) babies were transferred directly to the post natal ward and 75 (10.2%) were admitted to the NICU. One baby remained on the delivery suite.

Hypertensive Disease

Diagnosis	Normotension	PET	PIH	Total
GDM	652	13	29	694
Type 1	24	2	0	26
Type 2	15	1	1	17

P = 0.18

Birthweight (g)	
Mean	3305
Median	3370
SD	622
>4kg	78 (10.5%)

Diagnosis	Baby <4kg	Baby >4kg	Total
GDM	623	71	**694**
Type 1	19	7	**26**
Type 2	17	0	**17**

P=0.009

There were 400 (54.2%) male infants and 337 (45.8%) female infants

Delivery Suite

Head of Department

Ms. Ann Fergus, ***CMM 3 Delivery Suite [Author]***

Dr. Aoife Mullally, ***Lead Obstetrician***

Ms. Fidelma Mc Sweeney ***Asst. Director of Midwifery & Nursing***

Staff Complement

Total Midwifery WTE: 46.1

CMM 3 – 1 WTE

CMM 2 – 10.64 WTE

CMM 1 - 1 WTE

Clinical Skills Facilitator – 1 WTE

Staff Midwives – 34.46 WTE

BSc 4th year Midwifery Interns and Higher Diploma Midwifery Students

[Dependent on college commitments]

HCAs – 6 WTE

Auxiliary staff – 1 WTE

Porter/Attendant Staff – 2.5 WTE

Clerical Staff

Key Performance Indicators

- Spontaneous vaginal delivery rate was 65.23% (excluding elective caesarean sections).
- Episiotomy rate with spontaneous vaginal births was 7.1%.
- Epidural overall rate was 37.8%. This breaks down as a rate of 55% in Primips and 26% in Multips. This is a drop in the overall rate from 2015 of 4.7%.
- 3rd degree tear rate for all vaginal births was 2.59% compared with 2.86% in 2015.
- Skin to skin rate was 90.5% compared with a rate of 87.9% in 2015.

Achievements in 2016

- 8421 registerable births over 500g.
- HDU admissions 198. This included 41 women receiving a Magnesium Sulphate Infusion for fetal neuroprotection for fetal concerns only. This showed an increase in women who received a Magnesium Sulphate Infusion for Fetal Neuro Protection (28 in 2015).
- Perineal Suturing training for midwifery staff continued with an average of 50% of midwives currently carrying out perineal suturing.
- WIS or Water Immersion Study commenced in January 2016 and is ongoing. It is a comparative research study for Birthing Pool use for labour and/or birth for low risk women in spontaneous labour. Paula Barry is the Research Midwife working on the study. Women who wish to use the Birthing Pool must consent to be part of the study. Birthing Pool was used by 85 women, with 32 of those having a water birth. (All part of the wis study).
- A multidisciplinary HDU group meet at regular intervals to discuss optimising education, communication and patient care in the HDU.
- A guideline was developed to facilitate women with SROM (Spontaneous rupture of membranes) at term and low risk pregnancies to be allowed home for 18 hours, rather than remaining in hospital awaiting spontaneous labour or induction. This facilitates women being at home and also reduces time spent in hospital.
- The establishment of a quality improvement team to focus on prevention of obstetric anal sphincter injuries (OASI's).
- 'Promoting a Positive Culture' within our Delivery Suite is being championed by two of our CMM IIs, Lou O Halloran and Noirin Farrelly. Having attended training sessions in TCD, 'quotes of the week', positive imagery and a 'Thank You' board display have brought many a smile on a long day!!

Midwifery Education

- 1 Midwife is pursuing a Masters in Midwifery.
- 5 Midwives successfully completed H.D.U. Course in Maternity at N.U.I.G. Galway. We now have 10 midwives who have done this course which is approaching 25% of our midwifery compliment.
- 1 Midwife continuing studies for Diploma in Nutritional Studies.
- 2 Midwives from Delivery Suite had completed Hypnobirthing Course.

Challenges for 2017

- Midwifery staffing retention and recruitment remains a challenge for 2017. Our midwifery staff is key to the service we provide to women and their babies. We strive to give one to one care to women in labour on

our Delivery Suite. However this is becoming increasingly more challenging due to the shortage of midwives both nationally and internationally. We highly value our midwives and the exceptional care they give to women and their babies and appreciate their dedication to the midwifery profession and to the hospital.

- Birth preferences for women with complex obstetric or medical histories have raised challenges for us in 2016 and will continue to do so in 2017. Safety of mother and baby are paramount while at the same time striving to accommodate the wishes of a woman and her partner. Communication and time are two elements needed in these cases.
- Women with complex medical histories, older women having their first babies, and women who have had assisted reproduction, are increasingly booking for care and may present with issues that need higher dependency care during their pregnancy. A course was established in 2016 within the Centre of Midwifery Education (CME) to further educate midwives on the care of the Critically Ill Women.
- Monitoring our rate for induction of labour and continuously review and optimise the frequency of this intervention.
- Continuation of Water Immersion Study (WIS) to compare water to land for labour and/or birth for healthy pregnant women with uncomplicated pregnancies.
- To continue to see pregnancy and birth as a physiological process for most women.
- To maintain an atmosphere on the Delivery Suite that woman and their partners feel comfortable and confident in. To continue to offer choices including mobility, birthing aids, hydrotherapy and choices in methods of pain relief.
- To continue to review our Clinical Incidents in order to promote a shared awareness of the importance of women and babies safety. To share learning points and thus continuously review our practice and improve the quality of service we provide for women and their families.

Early Pregnancy Assessment Unit

Head of Department

Dr Mary Anglim, *Consultant Obstetrician/Gynaecologist*

Consultant Staff

Dr Nadine Farah, *Consultant Obstetrician/Gynaecologist*

Clinical Research Fellow

Dr Somaia Elsayed

Clinical Midwife Manager II

Janice Gowran & Nicole Mention

Secretary

Carol Devlin

Achievements in 2016

- As part of her MD, Dr Somaia Elsayed (Clinical Research Fellow) has completed recruitment for her prospective cohort study in the unit looking at the management and outcomes of miscarriage.
- Dr Somaia Elsayed continued to undergo training in the UCD Fetal Wellbeing module.
- The unit provided training for NCHDs in transvaginal and early pregnancy ultrasound and facilitated training for 2 midwives doing the UCD EPAU module and 1 midwife completing Masters in Ultrasound.
- 5 poster presentations were submitted and accepted for the JOGS meeting

Acknowledgement

- Claire Drumm; RCSI medical student who kindly helped to collate the data for EPAU.

Key Performance Indicators

	TOTAL		NEW		RETURN	
EPAU visits*	4128		2376	(57.6%)	1752	(42.4%)
Ongoing pregnancy	1168	(35.0%)	831	(35.0%)	337	(19.2%)
Pregnancy of uncertain viability	631	(15.3%)	495	(20.8%)	136	(7.8%)
Miscarriages	1500	(36.3%)	457	(19.2%)	1043	(59.5%)
Pregnancy of unknown location	641	(15.5%)	529	(22.3%)	112	(6.4%)
Ectopic pregnancy**	75	(1.82%)	38	(1.59%)	37	(2.11%)
Molar pregnancy***	35	(0.84%)	1	(0.04%)	34	(1.94%)
Gynaecological scans	55	(1.33%)	19	(0.8%)	36	(2.1%)

**This number includes patients who had more than one visit to EPAU*
***This reflects number of patients with ectopic pregnancy irrespective of number of visits by that patient and excludes patients who were admitted directly to theatre from the emergency room or who were diagnosed with an ectopic pregnancy outside normal working hours*
****This number includes patients who had consultations for query molar pregnancy (awaiting SISH)*

Management of Miscarriage**	
Conservative Management	288 (31.2%)
Medical Management	232 (25.1%)
ERPC	404 (43.7%)
Total	**924**

Management of Ectopic pregnancy	
Laparoscopy	54 (72.0%)
Medical Management (Methotrexate)	13 (17.3%)
Conservative Management	8 (10.6%)
Total	**75**

*** Excluding complete miscarriages*

Fetal Medicine and Perinatal Ultrasound Department

Including Fetal Cardiology, Multiple Births, Hemolytic Disease of the Newborn

Members of Staff

Dr Aisling Martin, *Director of Perinatal Ultrasound /Fetal Medicine*

Professor Sean Daly, *Fetal Medicine Specialist*

Professor Mairead Kennelly, *Fetal Medicine Specialist*

Dr Caoimhe Lynch, *Fetal Medicine Specialist*

Dr Carmen Regan, *Fetal Medicine Specialist*

Dr Orla Franklin, *Visiting Paediatric Cardiologist (OLCHC)*

Dr Hala Abu, *Subspecialist Fellow in MFM (Rotunda/ Coombe/Columbia)*

Elaine McGeady, *Clinical Midwife Manager 3*

Felicity Doddy, *Prenatal Diagnosis Coordinator (CMM2)*

Christina McLoughlin, *Clinical Midwife Specialist in Ultrasound*

Feena Sheerin, *Clinical Midwife Specialist in Ultrasound*

Jane Durkin, *Clinical Midwife Specialist in Ultrasound*

Siobhan Ni Scanaill, *Clinical Midwife Specialist in Ultrasound*

Ciara Caldwell, *Clinical Midwife Specialist in Ultrasound*

Edwina Quinlan, *Specialist Radiographer*

Aoife Metcalfe, *Midwife Sonographer*

Sinead Gavin, *Midwife Sonographer*

Nicole Menton, *Midwife Sonographer*

Louise Rafferty, *Midwife Sonographer*

Emma Doolan, *Midwife Sonographer*

Aisling Clynch, *Midwife Sonographer*

Eileen Kenny, *Midwife Sonographer*

Contact Details

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Clinical Activity and Service Expansion

In 2016 as in the previous few years all patients attending the Coombe were offered a routine dating scan and a routine 20-22 week structural anatomy scan. Again this year there has been expansion in the perinatal ultrasound/fetal medicine service with 29,828 scans performed up 744, on 2015.

Table 1. Indications for Ultrasound 2016

First trimester/Dating scans (excludes scans in EPAU)	**7722**
Structural Anatomy Scans	**8419**
Fetal growth/assessment/ Doppler/BPP	**10582**
Cervical Length	**447**
Placental Site	**665**
Single umbilical artery	**28**
Pyelectasis	**18**
Fetal Echo	**673**
First Trimester Screening	**230**
Naas Scans (Dating, Anatomy, Growth, BPP)	**897**
Ultrasound performed prior to invasive procedures	**147**

Total Scans in Ultrasound Department in Coombe **28,931**

Total number of scans performed in 2016 including satellite clinic in Naas **29,828**

Cystic Hygromas Diagnosed before 20 Weeks

There were 41 cystic hygromas diagnosed in 2016

Table 2. Outcomes for babies diagnosed with Cystic Hygromas

Chromosomal abnormality	**21**
Cardiac abnormality	**2**
Miscarriage	**4**
Stillbirth (born in Kilkenny)	**1**
Normal at birth	**9**
Termination of pregnancy without invasive testing	**4**
Total	**41**

Table 3. Invasive Procedures

CVS	44
Amniocentesis	100
Amniodrainage	3
Total	**147**

In 2016 despite more patients availing of NIPT (non-invasive prenatal testing) we performed slightly more invasive procedures than in the previous two years. The majority of these invasive tests were performed as a result of abnormalities detected on ultrasound.

Table 4. Chromosomal abnormalities detected antenatally

Trisomy 21	21
Trisomy 18	12
Trisomy 13	8
Monosomy X	5
Triploidy	1
Trisomy 2	1
Klinefelters syndrome 47XXY	1
Total	**49**

Table 5. Diagnosis of Chromosomal anomalies

Chromosomal Anomaly	Indication for Invasive Testing and Outcome	
T21	Cystic Hygroma	6
	Increase NT	3
	High Risk NIPT	11
	Low Risk NIPT	1
	Travelled for TOP	14
	Liveborn Infants	5
	Miscarriages	2
T18	Cystic Hygroma	4
	Other Anomalies	3
	High Risk NIPT	5
	Travelled for TOP	5
	Miscarriage	1
	IUD	4
	Liveborn Infants	2
T13	Cystic Hygroma	3
	Other Anomalies	3
	High Risk NIPT	2
	Travelled for TOP	5
	Miscarriage	1
	Liveborn Infants	2
Monosomy	Cystic Hygroma	5
	Travelled for TOP	2
	Miscarriage	2
	IUD	1
Triploidy	IUGR	1
	Travelled for TOP	1
Trisomy 2	Symmetrically small baby	1
	Travelled for TOP	1
Kleinefelters Syndrome (47XXY)	High Risk NIPT	1
	Liveborn Infant	1

Table 6. Structural Fetal Abnormalities detected antenatally

CNS Abnormalities excluding NTDs and CPCs	12
Neural Tube Defects	10
Spina Bifida	6
Anencephaly	4
Cystic hygroma	41
Face	9
Cardiac	131
Structural cardiac abnormalities	121
Cardiac arrhythmia	10
Thorax	4
Abdominal wall defect	8
Gastroschisis	4
Omphalocoele	4

Renal	34
Skeletal	4
Extremities	13
Multiple abnormalities	6
Total	**272**

RESEARCH AND TRAINING

Again in 2016 there was a comprehensive portfolio of research undertaken in the Coombe.

Dr Maria Farren (Bernard Stuart Fellow) completed her research project towards her MD, investigating the role of a food supplement in those at risk of developing Gestational Diabetes. Dr Hala Abu was attached to the Perinatal Ultrasound Department as the Rotunda/ Coombe/Columbia Subspecialist Fellow and attended the Fetal Cardiology Clinic in the Coombe on a weekly basis. Graduate certificate training modules in Obstetric ultrasound were provided in the perinatal ultrasound department in addition to the MSc under the auspices of UCD.

MDT MEETINGS

During 2016 Felicity Doddy (prenatal diagnosis coordinator) ran quarterly multidisciplinary meetings with fetal medicine, neonatology, palliative care, bereavement, social work and physiotherapy departments. At these meetings we discussed all ongoing fetal medicine cases and set out an individualized care plan for the pregnancy, delivery and the postnatal period. The monthly tri-hospital Fetal Medicine meetings continued rotating between the three Dublin Maternity Hospitals. High risk and challenging cases were presented and discussed among specialists in the field with input from fetal medicine, neonatology, radiology, genetics and various paediatric specialists. These meetings have proved to be informative and very useful in the care of often highly complex cases.

A quarterly MRI MDT was held in conjunction with the Radiology Department in OLCHC and was attended by Fetal Medicine, Neonatology and Radiology.

ACKNOWLEDGEMENTS

2016 was another challenging year in the perinatal ultrasound department with a huge workload and diminished staffing levels due to sick leave and maternity leave. I would like to sincerely thank all of the staff – the midwife sonographers, radiographers, the fetal medicine consultants and Dr Orla Franklin for their hard work and dedication, ensuring that we provided the highest quality of care to the women and their babies. I would like to welcome our newly recruited midwife sonographers and wish them well in their new roles. We are delighted to have them. I would like to specially thank Felicity Doddy our prenatal diagnosis coordinator for all her hard work caring for the parents who have received often distressing diagnoses and coordinating prenatal consults for them both in the Coombe and in OLCHC. I would like to also give a special word of thanks to Elaine McGeady (CMM3) our clinical midwife manager who is responsible for the running of the ultrasound department and through her contribution and organization ensures that the department is run efficiently.

Dr Aisling Martin

Head of Fetal Medicine and the Perinatal Ultrasound Department

Fetal Cardiology

Heads of Department

Dr Orla Franklin, *Consultant Fetal and Paediatric Cardiologist*

Dr Caoimhe Lynch, *Consultant Obstetrician and Fetal Medicine Specialist*

Midwifery Lead

Felicity Doddy, *CMMII Prenatal Diagnosis Coordinator*

The Department of Fetal Cardiology is a national referral service receiving referrals from 18 external referral centres including Northern Ireland. 263 women were scanned in the clinic with 45% (118/263) referred from external centres. Cardiac anomalies were identified in 100 pregnancies. Significant structural anomalies were identified in 94 women with abnormalities of cardiac rhythm detected in a further 12 pregnancies. 54% (47/94) of pregnancies in which a structural abnormality was confirmed were originally booked to deliver outside the CWIUH. In cases where the lesion was predicted to be duct-dependent, delivery of the baby was scheduled to take place in CWIUH with shared prenatal care with local teams. A prenatal diagnosis of a chromosomal anomaly was detected in 20 pregnancies, all of whom had congenital heart disease.

The referral pathway for pregnancies of Northern Irish women continued with further expansion of the range of prenatal diagnoses covered by the Service Level Agreement predicted in 2016.

This is a diagnostic clinic that serves to define a diagnosis of congenital heart disease that has typically primarily been made in one of our many referring units. As such we would like to acknowledge the contribution of fetal medicine specialists and obstetric sonographers from all over Ireland who contribute to the ongoing success of this clinic.

Table 1 – Lesions Detected

Lesion	2016
Hypoplastic Left Heart Disease	10
Hypoplastic Right Heart disease	1
Complete Atrioventricular Septal Defect	11
Ventricular Septal Defect	44
Tetralogy of Fallot	7
Transpostion +/- VSD	7
Coarctation	1
Outlet lesions (Aortic and Pulmonary stenosis)	6
Interrupted Aortic Arch	2
Rhabdomyomata	1
Ebstein's Anomaly of the Tricuspid Valve	2
Cardiac Failure secondary to extracardiac AVM	1
Polyvalvular dysplasia	1
Total	94

Table 2 – Arrhythmias Detected

Arrhythmia	2016
Supraventricular Tachycardia (Inc Atrial Flutter)	2
Congenital Complete Heart Block	3
Atrial Ectopics	7
Total	12

Multiple Birth Clinic

Head of Department

Dr Aisling Martin, *Consultant Obstetrician and Fetal Medicine Specialist*

There were 192 multiple pregnancies delivered in the Coombe in 2016 compared to 183 in 2015. There were 182 sets of twins and 10 sets of triplets, one of which delivered in Scotland at 29^{+3} weeks gestation and one in which there was in utero demise of one of the babies at 19 weeks gestation. There were 154 sets of dichorionic diamniotic (DCDA) twins and 28 sets of monochorionic diamniotic (MCDA) twins. Two sets of MCDA twins miscarried, one who presented at 16 weeks gestation with double in utero demise in whom a diagnosis of Trisomy 21 was made from a placental biopsy and the second in whom a TRAP sequence was diagnosed at 11 weeks and she presented with a double demise at 14^{+5} weeks gestation. We had ten sets of triplets. Three spontaneous conceptions (all DCTA) three IVF (all DCTA) and two following clomiphene citrate, one following HCG and one following IUI (all TCTA).

Gestational Age at Delivery for all Multiples

Overall 63 of 182 (34.7%) of all twin pregnancies delivered at or beyond 37 weeks of gestation, with 119 of 182 twin pregnancies delivering prior to 37 weeks, giving a preterm delivery rate of 65.3%. All triplets were electively delivered if reached $33\text{-}34^{+0}$ weeks.

GA at Delivery (wks)	All Twins N=182	DCDA N=154	MCDA N=28	MCMA N=0	Triplets N=10 4 TCTA, 6 DCTA
≥37	63 (34.7%)	61 (39.6%)	2 (7.1%)		0
34 - 36+6	83 (45.6%)	68 (44.1%)	15 (53.6%)		2 (20%)
32 - 33+6	21 (11.5%)	14 (9.1%)	7 (25%)		3 (30%)
28 - 31+6	3 (1.6%)	2 (1.3%)	1 (3.6%)		4 (40%)
23 - 27+6	9 (5%)	7 (4.6%)	2 (7.1%)		0
<23	3 (1.6%)	2 (1.3%)	1 (3.6%)		1 (10%)

Mode of Delivery at >23/40

Mode of Delivery	All Twins N=179	DCDA N=152	MCDA N=27	MCMA N=0	All Triplets N=9
SVD/SVD	32 (17.9%)	27 (17.8%)	5 (18.5%)	0	0
SVD/Breech	11 (6.2%)	11 (7.2%)	0	0	0
Breech/SVD	0		0	0	0
Breech/Breech	0		0	0	0
Instrumental	22 (12.3%)	16 (10.5%)	6 (22.2%)	0	0
Vaginal Delivery of Both babies	65 (36.3%)	54 (36.1%)	11 (40.7%)	0	0
El LSCS	64 (35.7%)	57 (37.5%)	7 (26%)	0	4 (44.4%)
Em LSCS	49 (27.4%)	40 (26.3%)	9 (33.3%)	1	5 (55.6%)
Vag/Em LSCS	1	1 (0.7%)		0	0
CS for one or both babies	114 (63.7%)	90 (64.5%)	16 (59.3%)	0	9 (100%)

Monochrionic Twins

There were 28 sets of monochorionic twins. Three babies died in this group. One set of twins had a double IUD at 16 weeks, secondary to probable acute TTTS. Placental biopsy revealed a karyotype of Trisomy 21 in both babies. There was also in utero demise of the donor twin in a set of twins that developed Stage 3 TTTS and had a laser in the Rotunda at 20 weeks gestation and then developed TAPS and an IUD. There were five sets of monochorionic twins that developed twin to twin transfusion syndrome (TTTS), three requiring laser ablation of placental anastomoses which were carried out in the Rotunda Hospital. There was one MCDA twin pregnancy with TRAP sequence which has not been included in the figures due to early demise but will be discussed below.

Twin to Twin Transfusion Syndrome

CASE 1

37yo, G3P2, spontaneous conception of MCDA twins. Stage 1 TTTS was diagnosed at 19^{+4} weeks gestation and the patient was referred to the Rotunda where when seen 3 days later had progressed to Stage 3 TTTS. Laser ablation of the placental anastomoses was performed. The Donor continued to have abnormal Dopplers post laser. The appearances were consistent with TAPS (Twin Anaemia Polycythaemia Sequence). The situation continued to deteriorate and steroids were given at 24 weeks. At 25^{+0} weeks there was REDF in the UA of the Donor and raised MCA PSV, suggestive of anaemia. She was referred back to the Rotunda for consideration of an IUT (in utero transfusion) however following counselling with the parents this was not performed and the patient returned to the Coombe two days later at 25^{+2} weeks gestation when inutero demise of the Donor was diagnosed. The surviving recipient initially had AEDF in the UA Doppler but over time this reverted to normal. The patient presented with PPROM of the dead twin at 35^{+1} and was induced the following day and had a spontaneous vaginal delivery (SVD) of a liveborn female weighing 2480g and a stillborn female weighing 370g. The live baby (recipient) went to the ward with the mother and no neonatal care was required. The baby was followed up by the neonatal team in view of her co-twin's demise.

CASE 2

34yo,G3P1^{+1}, spontaneous conception of MCDA twins. At 16 weeks had Stage 1 TTTS and was followed and by 17^{+2} had Stage 2-3 TTTS and was referred to the Rotunda for a laser. Ths was performed at 18^{+4} weeks gestation. The patient was followed with regular scans and the laser was successful and the TTTS resolved. The patient presented in spontaneous labour at 34^{+0} weeks and had SVDs of two liveborn female infants weighing 2100g and 2260g. The babies were admitted to NICU for a short period of time and were discharged home well.

CASE 3

38yo, G3P2, spontaneous conception of MCDA twins. At 16 weeks Stage 1 TTTS was diagnosed and regular ultrasound surveillance was performed. The TTTS didn't progress beyond Stage 1 so no laser was required. Steroids were given at 24 weeks. She developed preeclampsia at 28 weeks gestation and AEDF in the umbilical artery (UA) Doppler of twin 1 (the original Donor) at 29^{+5} and that baby was small. At 30^{+6} she had REDF in the UA of that baby and was given magnesium sulphate for fetal neuroprotection and was delivered by Caesarean section. She had two liveborn male infants weighing 1080g and 1200g respectively. Both went to NICU and did well.

CASE 4

38yo, G3P0+2, IVF pregnancy (own eggs), resulting in MCDA twins. At 18^{+5} weeks gestation there was Stage 1 TTTS. This persisted until 25^{+5} when it appeared to resolve however polyhydramnios around the recipient persisted throughout the pregnancy. The Donor baby remained smaller but growing until 35^{+5} when there was a fall off to below the 5th centile. A rescue dose of steroids was administered and a LSCS was performed at 36^{+6}; two male infants were delivered weighing 1960g and 2620g respectively. Twin 1 went to NICU but did well while Twin 2 went to the ward with the mother.

TTTS in DCTA TRIPLETS

Case 1

37yo, G3P1+1. DCTA triplets conceived through IVF. At 16^{+2} there was Stage 2 TTTS. The patient was referred to the Rotunda for consideration for laser. She was reviewed and it was felt that laser was not indicated at this stage and that she should continue to be monitored. When the woman returned to the Coombe for a scan at 19 weeks unfortunately there was an IUD in the Donor. The pregnancy continued as a DCDA twin pregnancy and the recipient thankfully appeared unaffected by the co-twin demise. At 36 weeks there was a fall off in growth in Twin 1 so steroids were administered and an elective LSCS was performed at 36^{+2}; two male infants were delivered weighing 2380g and 2300g respectively. Both did well and went to the ward with the mother and were discharged home well.

Case 2

37yo, G1P0, DCTA triplets conceived through IVF. Unfortunately stage 2 TTTS was diagnosed at 15 weeks gestation. The patient was referred to the Rotunda and had a laser performed at 15^{+6} weeks. Unfortunately the signs of TTTS persisted following the laser. The case was discussed with a view to consideration of repeat laser.

The patient however presented just prior to review in the Rotunda, at 18 weeks with PPROM of T1, the singleton, and there was now Stage 3 TTTS in the MCDA pair. Consideration of repeating the laser was no longer an option and the prognosis was extremely poor for all three babies. At 18^{+6} there was a cord prolapse in T1 and 2 days later an IUD. The patient went on to deliver this baby at 19^{+2} weeks. Unfortunately the following day she developed signs and symptoms of chorioamnionitis and was induced and delivered the MCDA twin pair.

TRAP Sequence

33yo, G2P1, spontaneous conception of MCDA twins. TRAP sequence was diagnosed at 11^{+4} weeks with a pump twin and an acardiac twin. At 14^{+5} weeks gestation the patient presented with no fetal heart in the pump twin and a double demise was diagnosed.

Deaths In Monochorionic Twins

Four babies died in this group. One was a double demise at 16^{+5} likely secondary to acute TTTS, karyotype incidentally found to be Trisomy 21.

CASE 1

See case 1 of the TTTS cases where there was demise of the Donor following laser for Stage 3 TTTS.

CASE 2

22yo, G1P0 spontaneous conception of MCDA twins. At 16 weeks there was some evidence of Stage 1 TTTS and then at 20 weeks a cardiac anomaly and possible CHAOS syndrome in T2. At 24 weeks an IUD was diagnosed in that baby and the pregnancy continued to 33^{+6} when delivered by LSCS of a liveborn male infant weighing 2210g and a stillborn male weighing 105g.

Dichorionic Twins

There were six babies >23 weeks gestation that died in this group. One baby died in utero and was stillborn, and three were early neonatal deaths and two late neonatal deaths.

Intrauterine Deaths

CASE 1

23yo, G1P0, spontaneous conception of DCDA twins. Unfortunately there was an unexplained in utero demise of twin 2 at 36 weeks of gestation. This woman was admitted for steroids and monitoring and was delivered by elective Caesarean section for breech two days later of a liveborn male weighing 2690g and a stillborn female weighing 2260g.

Neonatal Deaths (Early and Late) and Infant Deaths

CASE 2

36yo, G2P1, spontaneous conception of DCDA twins. Twin 2 was found to have multiple anomalies and had an amniocentesis which confirmed a diagnosis of Trisomy 18. Twin 1 was normal. She had a spontaneous onset of labour at 35^{+4} weeks gestation and underwent an emergency Caesarean section for breech presentation. Both babies were liveborn but there was an early neonatal death of twin 2 with Edward's Syndrome on day 4 of life.

CASE 3

36yo, G3P0^{+2}, DCDA twins conceived through IVF. The patient was transferred from another unit with PPROM at 24 weeks gestation. The following day the patient developed signs and symptoms of chorioamnionitis and was delivered by emergency Caesarean Section. Twin 1 was a liveborn male weighing 780g. The baby was transferred to NICU but sadly passed away the following day. Twin 2 was a liveborn female infant weighing 680g. The baby was transferred to OLCHC on Day 11 of life.

CASE 4

25yo, G2P1, spontaneous conception of DCDA twins. Presented with cord prolapse at 25^{+1} weeks gestation and had an emergency Caesarean section. Twin 1 was a liveborn male weighing 680g and was transferred to the NICU but sadly passed away the following day. Twin 2 was also a liveborn male weighing 940g and was transferred to NICU. He had multiple complications of prematurity including bilateral IVHs grade 3 and 4 and subsequently porencephaly. He had perforated necrotising enterocolitits and was transferred to CUH on day 80 of life and sadly passed away there.

Case 5

19yo, G1P0, spontaneous conception of DCDA twins. From before 20 weeks there was IUGR and AEDF in the umbilical artery of Twin 2. As the pregnancy progressed that baby grew very little and had REDF in the UA Doppler and the patient was counselled that in utero demise was likely. However the baby survived to delivery. There was a spontaneous onset of preterm labour at 33^{+0} weeks and an emergency Caesarean section was performed for breech presentation. Twin 1 was a liveborn male weighing 1960g and the baby went to NICU and had an uneventful course and was discharged home on day 29 of life. Twin 2 was also a liveborn male weighing 410g. The baby was admitted to the NICU but passed away on day 10 of life.

Anomalies In Twins

- There were seven babies born alive with congenital anomalies which had been diagnosed antenatally.
- There was a DCDA twin pregnancy where one twin had an imperforate anus and a bowel atresia operated on in OLCHC shortly after birth.
- There was a DCDA twin pregnancy in which one baby had microcephaly and was diagnosed with congenital CMV postnatally, the second baby was fine.
- There were two sets of DCDA twins where one baby had bilateral talipes diagnosed on the anatomy scan and confirmed postnatally.
- There was a DCDA twin pregnancy were one baby had coarctation of the aorta suspected at the anatomy scan and confirmed postnatally.
- There was a DCDA pregnancy where one twin had multiple severe anomalies felt not to be compatible with life and the baby died shortly after birth, as discussed above.
- There was one DCDA twin pregnancy were one baby was diagnosed with a bowel obstruction antenatally and this was confirmed postnatally.
- There was one baby in a DCDA twin pair diagnosed with Trisomy 21 at birth in a 39 year old primigravida. The baby had a small VSD but no other structural abnormalities and was not diagnosed antenatally.

Triplets

We had ten sets of triplets in 2016. Four were trichorionic triamniotic (TCTA) and the other six were dichorionic triamniotic, with a monochorionic twin pair. Three were spontaneous conceptions, three were IVF, one IUI, two resulted from treatment with clomiphene citrate and one with HCG. The spontaneous and IVF cases resulted in the DCTA pregnancies while the other treatments resulted in TCTA triplets.

TTTS developed in two of the DCTA triplets and are described above. Sadly in one case this resulted in the loss of the donor at 19 weeks but the other two babies continued and were delivered at 36^{+2} weeks gestation. In the other case unfortunately all three babies delivered at 19^{+2} weeks gestation.

Of the remaining eight cases two delivered at 29^{+3} weeks, one at 30^{+4} weeks, 31^{+4},32^{+4}, 33^{+2}, 33^{+4} and 34 weeks gestation and all were discharged home well from the NICU. All received a full course of steroids antenatally and those that delivered before 32 weeks gestation also received magnesium sulphate prior to delivery.

Hemolytic Disease of Fetus and Newborn

Staff complement

Dr Carmen Regan, *Consultant Obstetrician and Gynaecologist*

Ms Catherine Manning, *CMM II, High Risk Service Liaison Midwife*

In 2016 a new guideline for referral of isoimmunised patients was devised to streamline the use of the service. Using this pathway low risk patients were monitored using serial antibody levels in their team clinics and reviewed at the Rhesus clinic if levels reached the threshold for developing significant fetal anaemia. Previously affected and at risk mothers were managed in the clinic. In 2016 we adopted routine antenatal anti D prophylaxis at 28 weeks for all rhesus negative women. We anticipate that this will reduce on the incidence of silent isoimmunisation in the third trimester.

47 patients were referred to the Rhesus Clinic in 2016. Of these, 37 were diagnosed with red cell antibodies for the first time. 7 patients were diagnosed with multiple red cell antibodies.

Outcome of pregnancies with RCA

Intrauterine transfusion of HDFN: 1

(1 patient had 2 IUTs)

Table 1 – Neonatal Outcomes

Affected neonates (DCT positive at birth)	18
SCBU admissions	8
Phototherapy only	5
Phototherapy, IVIG and RCC transfusion	2
Phototherapy and IVIG	1

Table 2 – Red Cell Antibodies (N=47)

Antibody	Number of Patients Affected	DCT Positive	DCT Negative
Anti D	8	7	1
Anti c	5	2	1
Anti K	1		1
Anti Fya	4	1	3
Anti F	1		1
Anti Cw	2		2
Anti S	1		1
Anti E	11	3	8
Anti M	4		4
Anti G	1		1
Anti C	2		2
Multiple antibodies	7		
C&e	1	1	
c&E	2	2	
E&Fya&Cw	2	1	1
D&E	1	1	
D&M	1		1

Infant Feeding

Head of Department

Ms. Ann Macintyre, *Acting Director of Midwifery & Nursing*

Staff Complement

Mary Toole, *WTE Clinical Midwife Specialist*
Meena Purushothaman, *WTE Clinical Midwife Specialist*

Key Performance Indicators

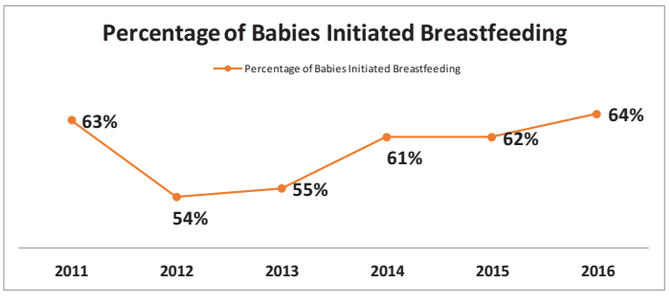
- Compliance to the standards of the Baby Friendly Health Initiative (BFHI).
- Reduction in re-admission with breastfeeding problems.
- Maximizing the provision of human milk to all babies.
- Empowered staff to deliver optimum care in Baby Friendly Practices.
- Antenatal identification of potential lactation risks & pro active preparation.

Achievements in 2016

- Promoting and supporting evidence based practice in Infant feeding in line with HSE/National Infant Feeding Policy through structured action plans and support of Infant Feeding Steering Group.
- Improved antenatal identification and follow up of women with high risk of lactation challenges through comprehensive frame work.
- Provision of skills workshops and inter-departmental education sessions for all staff including, doctors, midwives, health care assistants and non-clinical staff.
- All staff are empowered to deliver excellence in infant feeding in line with best practice and BFHI standards.
- Completion and display of "Parents' Guide to Infant Feeding Policy" & development of Infant feeding information leaflet in the pregnancy pack.
- Continued inter-departmental collaboration to maximize the availability of human milk for high risk babies.
- Provision of structured & impromptu education sessions in CWIUH & Trinity College Dublin to facilitate staff & student development to improve infant feeding outcomes.
- Implemented strategies for effective use of the National Antenatal Infant Feeding Checklist, promoting the capacity of pregnant women to obtain, process, and understand information and services needed to make appropriate infant feeding decisions.
- Active participation on the joint Infant feeding management programmes in collaboration with the three Dublin maternity hospitals under the auspices of Centre for Midwifery Education.
- Formalised pathway for referral of babies for assessment and division of anterior ankyloglossia.
- Prevention of violations to the code of marketing breast milk substitutes through provision of all scientific information sessions on formula by the dieticians.

Table 1: Infant feeding Statistics 2011 - 2016 (see next page)

Figure1: Percentage of babies Initiated breastfeeding



** Data collection methods changed in 2012*

Figure 2: Breastfeeding Rates

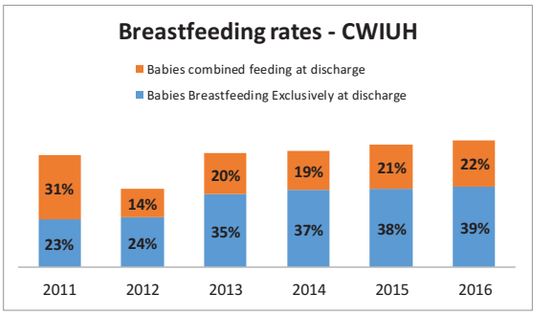
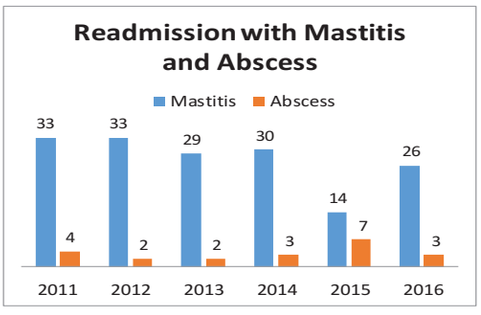


Figure 3: Readmission Rates



Challenges in 2017

- To achieve Baby Friendly Health Initiative Accreditation.
- Increase in the demand for review and support of infants with suspected ankyloglossia and subsequent patient dissatisfaction.

Table 1: Infant feeding Statistics 2011-2016

	2011	2012	2013	2014	2015	2016
	N (%)	N (%)	N (%)	N (%)	N (%)	**N (%)**
Total number of live births	8668	8599	8150	8781	8230	**8244**
Babies initiated breastfeeding	5498 (63%)	4610 (54%)	4489 (55%)	5379 (61%)	5094 (62%)	**5253 (64%)**
Babies breastfeeding exclusively at discharge	1978 (23%)	2097 (24%)	2873 (35%)	3211 (37%)	3145 (38%)	**3206 (39%)**
Babies feeding combined feeding at discharge	2719 (31%)	1192 (14%)	1616 (20%)	1679 (19%)	1706 (21%)	**1834 (22%)**

Maternal Mortality 2000-2016

Year	No of Maternal Deaths	Total Number of Mothers
2000	0	7958
2001	0	8132
2002	1	7982
2003	0	8409
2004	0	8523
2005	0	8546
2006	0	8633
2007	1	9088
2008	1	9110
2009	0	9421
2010	1	9539
2011	1	9315
2012	3	9175
2013	1	8610
2014	1	9344
2015	1	9001
2016	0	8941
Total	11	149,727
Maternal Mortality Rate	0.0073%	

2002 Steven Johnson Syndrome and Liver Failure secondary to Nevirapine (HIV+)

2007 RTA

2008 Metastatic Carcinoma of the Colon

2010 AIDS-related Lymphoma

2011 Sudden Unexplained Death in Epilepsy (SUDEP)

2012 Suicide, Sudden Adult Death Syndrome, Amniotic Fluid Embolism

2013 Cardiac Arrest

2014 Amniotic Fluid Embolism

2015 Ruptured Giant Internal Carotid Artery Aneurysm, Systemic Fibromuscular Dysplasia

Maternity Wards

Head of Department

Ms F Mc Sweeney, *Assistant Director of Midwifery and Nursing (Author)*

Staff Complement

55.92 WTE
1 WTE CMM3
3.87 WTE CMM2
4.56 WTE CMM1
1 WTE Clinical Skills Facilitator
45.49 WTE Staff Midwives
13.35 WTE HCAs
3.5 WTE Clerical Staff

Student Midwives

BSc Midwifery 4th year Intern students and Higher Diploma Midwifery students are included in the staffing levels, which varies throughout the year depending on college/clinical commitments.

Key Performance Indicators

- Leading, developing and managing midwifery staff, who are qualified in the delivery of safe, effective and evidence-based care, to our women and babies.
- Providing services that encompass and are mindful of our multicultural patient population.
- Close partnership with Community Midwife Service for the uptake of Early Transfer Home (ETH) by women living in the catchment areas of the Community Midwifery Service. Under this service the average length of stay for women that had a SVD/Instrumental delivery was 1.5 days, and 3.1 days for women that had a caesarean delivery.

Achievements in 2016

- Our journey with "Productive Ward: Releasing Time to Care" through 2016 continued to be successful. All improvements were led by different members of the ward teams. Productive Ward training sessions were carried out bi-annually incorporating an MDT attendance.

What was measured/achieved:

- Increased Midwifery direct Time to Care: 41% in 2012, 54% in 2013, 72% in 2014, 82% in 2015. There was a reduction to 76% in 2016. Efforts have been put in place to increase better Direct Patient Care Time.
- Increased HCA direct Time to Care: 51% in 2012, 65% in 2013, 69% in 2014, 75% in 2015 and 74% in 2016.
- The continued allocation of Health Care Assistants to night duty has been an invaluable additional resource.

Major Achievements

- We continued to use Propess® for induction of labour in 2016 which has the benefits for women of reducing the amount of vaginal examinations and repeated CTG monitoring. Additionally this has assisted in the reduction of workload for both midwives and obstetricians as a whole.
- Achieved funding for additional clinical equipment and continuous professional development.

Challenges for 2017

It is well documented that there is a shortage of midwives nationally and internationally. Midwifery staffing retention and recruitment has become a significant challenge for 2016. Our midwifery & HCA staff play a pivotal role in the provision of high quality care to the mothers and babies that we care for. Both disciplines are very much a valued part of the multidisciplinary team, where their dedication and professionalism is very much appreciated.

- Staff Retention: Facilitating Continuous Professional Development within the current climate of budgetary constraints.
- Sustain achievements.
- To facilitate clinical audits and reflective practice to improve the provision of safe high quality care/improvement of KPIs.
- To promote a shared multi-departmental perception of the importance of patient safety through continuously reviewing clinical incident reports and disseminating the learning points.
- Improve team approach with staff.
- Promote & facilitate expansion of role of the midwife to include the administration of Propess® pessary by midwives with clear advantages to the woman, midwife and organisation.
- Review home versus hospital management of healthy low risk women at term with Spontaneous Rupture of Membranes.
- Further development of the role of Health Care Assistant.
- Roll out Productive Ward to other wards.

- Continued support from Senior Management.

I would like to take this opportunity to thank all members of staff for your hard work dedication and commitment to mothers and babies that we care for.

Medical Clinic

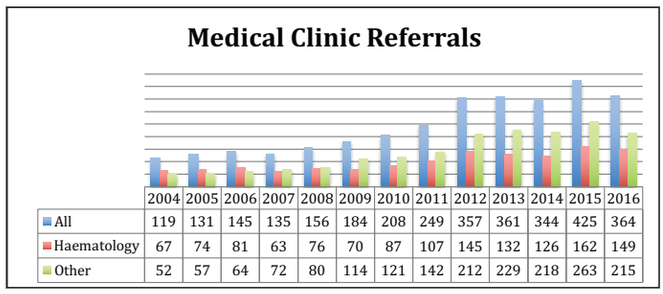
Head of Department

Dr Bridgette Byrne
Dr Caoimhe Lynch
Dr Carmen Regan (Author)

Staff Complement

Dr Carmen Regan, *Consultant Obstetrician and Gynaecologist*
Dr Bridgette Byrne, *Consultant Obstetrician and Gynaecologist*
Dr Caoimhe Lynch, *Consultant Obstetrician and Gynaecologist*
Ms Catherine Manning, *CMM II, High Risk Service Liaison Midwife (Co-Author)*
Dr Hala Abu, *Fellow in Maternal Fetal Medicine, Rotunda Hospital and CWIUH/Columbia University NYC*
Dr Fatima Al Washahi, *RCPI International Clinical Fellow in Maternal Medicine*
Dr Catherine Wall, *Consultant in Renal Medicine*
Dr Kevin Ryan, *Consultant Haematologist (Thrombosis/ Haemostasis)*
Dr Catherine Flynn, *Consultant Haematologist (General Haematology)*
Dr Emma Tuohy, *Consultant Haematologist (General Haematology/Sickle Cell/ Thalassaemia)*
Dr John Cosgrave, *Consultant Cardiologist, St James Hospital*
Dr Terry Tan, *Consultant in Perioperative Medicine*
Mr Fergus Guilfoyle, *Chief Medical Scientist, Blood Transfusion*
Ms Orla Fahy, *Pharmacy*

Medical Clinic Attendees (Haematology and others) by year of referral



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All	119	131	145	135	156	184	208	249	357	361	344	425	364
Haematology	67	74	81	63	76	70	87	107	145	132	126	162	149
Other	52	57	64	72	80	114	121	142	212	229	218	263	215

The Medical Clinic is an established referral clinic for complex medical disorders in pregnancy and is the largest of its kind in Ireland.

In 2016 we had three hundred and sixty four new referrals. Almost three thousand high risk mothers have attended since the inception of the clinic in 2004. Our comprehensive service provides a model of care for mothers with complex medical conditions in pregnancy. It facilitates rapid access and assessment of women with pre-existing medical disorders in pregnancy in order to optimize care and to provide a platform for multidisciplinary input into their management. It is comprised of three maternal medicine consultants, a high risk midwife, a maternal fetal medicine fellow, a specialist registrar and a multidisciplinary team including haematology, cardiology, renal medicine, pharmacology, blood transfusion and perioperative medicine.

Key Performance Indicators

- Continued haematological and non haematological external referrals.
- In 2016 we had 364 new referrals to our clinic.

Achievements in 2016

- Appointments of Dr Emma Tuohy (Haematology/ Sickle Cell disorders, St James Hospital) and Dr John Cosgrave (Cardiology, St James Hospital and CWIUH) to our multidisciplinary team.
- Development of care pathways for common medical conditions such as sickle cell disease and systemic lupus erythematosus
- Streamlining of referral pathways for outpatient echocardiography.
- Co-development of a quarterly multidisciplinary Maternal Medicine meeting in collaboration with our sister Dublin maternity hospitals. These meetings are attended by those providing obstetric and medical care for high risk mothers and is a forum which allows discussion of topics and exchange of experience and expertise with other disciplines.
- In May 2016 we held our biennial Maternal Medicine which was entitled "Reducing Maternal Morbidity, The Challenges of Obstetric Medicine". We were very honoured to have as guest speaker Prof Catherine Nelson Piercy who gave a state of the art lecture on "Medical causes of maternal death and the importance of MBRRACE". The meeting was once again highly successful and attended by delegates from all over Ireland.
- Recognition of Medical clinic as key element in structured training for Maternal Medicine Fellowship (Coombe Women and Infants Hospital / Rotunda Hospital / Columbia University, NY).

Challenges for 2017

- Caring for complex patients requires input from multiple disciplines and is often across more than one hospital site. A team approach with optimum communication with other disciplines is the cornerstone of care in these complex cases. Co-ordination of this service would benefit from a maternal medicine presence in St James's Hospital. We plan to progress the development of such a post in the coming year.

Publications

Two case reports of generalized pustular psoriasis of pregnancy: Different outcomes. Flynn A, Burke N, Byrne B, Gleeson N, Wynne B, Barnes L.
Obstet Med. 2016 Jun;9(2):55-9.

Maternal near miss: what lies beneath? O'Malley EG, Popivanov P, Fergus A, Tan T, Byrne B.
Eur J Obstet Gynecol Reprod Biol. 2016 Apr;199:116-20

Diagnoses of new patients referred to the Medical Clinic

In 2016 there were 364 New Referrals to the Medical Clinic

HAEMATOLOGICAL DISORDERS:

THROMBOSIS/THROMBOPROPHYLAXIS	**74**
PULMONARY EMBOLISM (CURRENT PREGNANCY)	9
HISTORY OF PULMONARY EMBOLISM	13
HISTORY OF DEEP VENOUS THROMBOSIS	9
HISTORY OF VTE'S	23
HISTORY OF CEREBRAL SINUS THROMBOSIS	1
FAMILY HISTORY VENOUS THROMBOSIS/ EMBOLISM	18
SEVERE THROMBOPHLEBITIS	1
CLOTTING FACTOR DEFICIENCIES	**32**
BLEEDING DISORDER UNKNOWN AETIOLOGY	11
FACTOR XI DEFICIENCY	1
FACTOR XII DEFICIENCY	1
VON WILLEBRANDS DISEASE	10
SEVERE HAEMOPHILIA CARRIER	5
FAMILY HISTORY HAEMOPHILIA	3
PARTNER WITH VON WILLEBRANDS DISEASE	1
THROMBOPHILIA	**9**
APLS	1
PROTEIN S DEFICIENCY	3
PROTEIN C DEFICIENCY	2
FACTOR V LEIDEN	1
UNDER INVESTIGATION FOR THROMBOPHILIA	1
ANTI THROMBIN 3 DEFICIENCY	1
PLATELET DISORDERS	**27**
ITP	8
GESTATIONAL THROMBOCYTOPENIA	14
PLATELET FUNCTION DEFECT	3
THROMBOCYTOSIS	2
RED CELL DISORDERS	**4**
THALASSEMIA	2
HEREDITARY SPHEROCYTOSIS	1
NON IMMUNE HAEMOLYTIC ANAEMIA	1
WHITE CELL DISORDERS	**3**
HX LEUKAEMIA	1
CHRONIC NEUTROPENIA	2

HYPERTENSIVE DISEASE	29
ESSENTIAL HYPERTENSION	27
SEVERE PET	2
CARDIAC DISEASE	46
ARRHYTHMIAS/PALPITATIONS	8
ARRHYTHMIA WITH IMPLANTABLE DEFIBRILLATOR	1
ARRHYTHMIAS WITH PACEMAKER	1
WOLF PARKINSON WHITE SYNDROME	2
MARFANS SYNDROME	1
CONGENITAL HEART DISEASE	13
HEART MURMUR	2
MITRAL VALVE PROLAPSE	3
METALLIC MITRAL VALVE	1
MITRAL VALVE STENOSIS	1
HX MYOCARDITIS	1
COARTATION OF THE AORTA	3
AORTIC VALVE REPLACEMENT	2
ENLARGED AORTA	1
AORTIC STENOSIS	2
HX ISCHAEMIC HEART DISEASE	1
HX INTERNAL CAROTID ARTERY STENOSIS	1
POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME	1
RENAL DISORDERS	29
CHRONIC RENAL DISEASE	1
CONGENITAL RENAL ABNORMALITY	3
HISTORY OF NEPHRECTOMY	1
IGA NEPHROPATHY	2
SEVERE PROTEINURIA	4
RENAL TRANSPLANT	3
RENAL IMPAIRMENT	2
PERSISTENT HAEMATURIA	2
HX RENAL REFLUX	3
POLYCYSTIC KIDNEY	5
NEPHROTIC SYNDROME	1
PERSISTENTLY RAISED CREATININE	2
RESPIRATORY	5
SARCOIDOSIS	2
SEVERE ASTHMA	2
REPAIRED DIAPHRAGMATIC HERNIA	1

CONNECTIVE TISSUE DISEASE	30
SYSTEMIC LUPUS ERYTHEMATOUS	8
ELDER DANLOS SYNDROME	4
RHEUMATOID ARTHRITIS	6
PSORIATIC ARTHRITIS	3
ANKYLOSING SPONDYLITIS	1
RAYNAUD'S DISEASE	**1**
AUTO IMMUNE DISORDER	1
SJOGREN'S	1
BEHCETS	2
AUTOIMMUNE DISORDER	2
TYPE 2 HEREDITARY ANGIOEDEMA	1
DERMATOLOGY	**1**
PUSTULAR PSORIASIS	1
CEREBROVASCULAR DISEASE/NEUROLOGICAL	**22**
CADASIL SYNDROME	2
BENIGN INTRACRANIAL HYPERTENSION	4
PERIPHERAL NEUROPATHY	2
HISTORY OF CVA	2
MULTIPLE SCLEROSIS	8
HX AVM	1
HX MULTIPLE MENINGIOMA	1
MYASTHENIA GRAVIS	2
LIVER/GI	**27**
ULCERATIVE COLITIS	9
CROHNS DISEASE	11
ULCERATIVE COLITIS AND CROHNS DISEASE	1
SEVERELY ELEVATED LFT'S	1
GILBERTS SYNDROME	1
AUTO IMMUNE HEPATITIS	1
FATTY LIVER DISEASE	3
PRECONCEPTUAL CARE	**20**
METABOLIC/ENDOCRINE	**4**
FMHX PORPHYRIA	1
HYPER PROLACTINOMA	2
PHENYLKETONURIA	1
OTHER	**2**
BREAST CANCER	1
SYNCOPE	1

Adult Outpatients Clinics (Excluding Colposcopy & External Clinics)

Head of Department

Dr Sharon Sheehan, *Master/CEO*

Dr Tom D'Arcy, *Head of Gynaecology Division*

Dr Mary Anglim, *Lead Consultant EPAU*

Dr Michael Carey, *Director of Peri-Operative Medicine*

Patricia Hughes, *Director of Midwifery/Nursing*

Ann MacIntyre, *Interim Director of Midwifery/Nursing*

Frances Richardson, *Assistant Director of Midwifery/ Nursing*

Mary Nolan, *Clinical Midwife Manager III (until July 2016)*

Anitha Selvanayagam, *Clinical Midwife Manager III (From July 2016)*

Staff Complement

Midwifery/Nursing Staff [14.77 WTE]
1 – CMM III
2 – CMM II [EPAU & Gynae Services Coordinator]
1 – CMM II (From April 2016)
13 – Staff Midwives [10.77 WTE]
2 – Student Midwives
3.5 – Health Care Assistants

Clerical Staff [9 WTE]
1 – Grade V
7 – Grade IV
1 – Grade III [0.5 x 2]

Medical Records Staff [3.5 WTE]
1 – Grade VI
2.5 – Grade III

Key Performance Indicators

(see Table 1)

Achievements in 2016

- Further & continued validation of gynaecological waiting lists.
- Expansion of midwives clinic on Fridays.
- Routine Anti-D Prophylaxis (RAADP) program commenced in OPD.
- Diabetic Clinic further re-organised with increased expansion of Diabetic Midwives Clinic & Diabetic Education Services.
- Further reduction of did not attend rates (DNA).

Challenges for 2017

- Recruitment and retention of staff.
- Continuing education of staff.
- Ensure that clinics run to comply with EWTD (European Working Time Directives).
- Update patient information leaflets & electronic access to same.
- Continued improvements in providing patient information in both leaflet and electronic form.
- Comply with HIQA standards.
- To further reduce DNA rates.
- Continue validation to better manage waiting lists.
- Deal with increasing complexity of patients with limited resources.
- Improve patient facilities.

Key Performance Indicators

Table 1 - Activity Levels in OPD Adult Clinics 2016

Type of Consultation	Number of women attending or % value where indicated	% increase from 2015
Antenatal Booking History Appointments Made – Public/Semi Private	5640 / 868	-16.99% / -10.7%
Antenatal Booking History Appointment Attendance – Public/Semi Private	5227 / 824	-17.1% / -11.21%
Did Not Attend Rate	7.11%	- 0.17%
Total Consultant Appointments Made – New, Return, Public, Semi Private, Ante and Post Natal (excludes Diabetic Clinic)	34,335	- 10.46%
Appointments Seen	31,116	-10.65%
Did Not Attend Rate	9.37%	+0.18%
Hospital Based Midwife Appointments Made	4136	+27.73%
Did Not Attend Rate	7.13%	+0.93%
Diabetic Clinic Appointments Made	4818	+14.2%
Did Not Attend Rate	16.06%	+3.67%
Diabetic Midwifes Appointments Made	882	+8.89%
Did Not Attend Rate	32.08%	+5.68%
Mental Health & Bereavement Appointments Made	1,859	+39.25%
Did Not Attend Rate	30.28%	+0.59%
Total Ante & Post Natal Appointments Made	62,744	+14.61%
Early Pregnancy Assessment Unit [EPAU] Appointments Made *(NEW 2638, RETURNS 1822)*	4460	-12.65%
Did Not Attend Rate	6.41%	-0.75%
Anaesthetic, Pre-Op and Pain Clinic Appointments Made	2,939	+23.7%
Did Not Attend Rate	7.89%	-2.81%
Total Gynaecology Appointments Made	8502	-6.34%
Did Not Attend Rate	12.91%	-1.38%
Gynaecology New Appointments Made	2,678	+4.81%
Did Not Attend Rate	13.55%	-2.45%
Emergency Room Attendance (Manual Count)	9,026	-5.71%
Total Appointments in Adult OPD Clinics & Emergency Room Attendance	81,692	+1%

Parent Education & Antenatal Classes

Head of Department

Ms Patricia Hughes, Director of Midwifery & Nursing (until August 2016)
Ms Ann MacIntyre, Director of Midwifery & Nursing (from August 2016)

Staff Complement

1 WTE Clinical Midwife Manager Grade II: Susanne Daly
0.23 WTE Staff Midwife: Kathy Cleere
0.5 Staff Secretary

Key Performance Indicators for 2016

- Provision of a comprehensive, parent-focussed antenatal education service for women and their partners.
- Provision of an easily-accessible family-friendly service that reflects parents needs.
- Individualised education and support where a need is identified.
- Resource and support to all clinical staff.
- Education and clinical support for Higher Diploma and BSc Midwifery students both in hospital and university. The department provides 2 Parent Education Lectures annually in Trinity College and participates in the clinical assessment of students facilitating Parent Education Classes as required by their curriculum.
- Provision of a Midwives Clinic every Monday in the Outpatient Department.

Achievements in 2016

- Introduction of a Birthing Workshop.
- Relocation of all evening and weekend classes to the Wisdom Centre, a wellness centre within the Sophia Housing Association.
- Training of 2 new Staff members.

Service	Attendances 2016
Hospital Tour	295
Saturday Class	418
Refresher Class	146
Evening Classes	756
Introductory Classes	373
Day Classes (Donore)	2766
Multiple Birth Classes	64
1:1 Classes	59
Hypnobirthing Weekend	158
Hypnobirthing Evenings	125
VBAC Workshop	65
Total	**5301**

Challenges and Outlook for 2017

Training new staff members and meeting the huge demand for weekend classes and weekend hypnobirthing workshops will prove a challenge for 2017.

Perinatal Day Centre

Head of Department

Sangeetha Nagarajan, *CMM I (Jan – May)*
Mary McDonald, *CMM I (May – Dec), (Author)*

Staff Complement

Staff Midwife 2.37 WTE, January to June 2016
Staff Midwife 1.76 WTE, June to December 2016
Phlebotomist for GTT Clinic only from August 2016

Key Performance Indicators

Indicator	N=	% Change from 2015
Oral Glucose Tolerance Tests	4502	+ 3%
Fasting /Post prandial Blood Tests	887	-6%
Diabetic Blood Sugar Result "phone-ins"	459	-55%
Other Blood Tests	1814	-57%
CTG Fetal Monitoring	2463	-5%
Antenatal Steroid administration	754	+ 21%
External Cephalic Version	74	- 15%
Blood Pressure Series	1901	-13 %
Wound Review/ dressings	375	-30 %
Additional Antenatal Visits / Other visits	1104	- 115 %
Total Attendance Figures	12471	-4 %

The organisational changes implemented by the Diabetic Midwife Specialists was responsible for the significant reduction in 'Diabetic Phone-ins'. An increase in the usage of the separate Phlebotomy Department contributed to the reduction in the 'Other Blood Test' number

Achievements in 2016

- Provided care for women throughout the year.
- A Phlebotomist was successfully integrated into the Glucose Tolerance Test Clinic in the centre.

Challenges for 2017

- To improve the midwifery staffing levels.
- To successfully care for the increasing number of obstetric patients being managed on an outpatient basis who previously needed inpatient care.

Preterm Birth Prevention Clinic

Head of Department

Professor Sean Daly

In 2016 there was a NCHD assigned to the clinic and that proved a good learning opportunity for the doctors involved as well as facilitating some research within the clinic. There were 349 appointments offered to women, this was an increase of 27% on 2015. Only 32 appointments were not kept, the majority of these because women had delivered, emphasizing the importance women place on the clinic. Cervical lengths and fetal fibronection continue to be employed to individualise care plans.

We continued with the practice of managing the short cervix with cerclage prior to 24 weeks and with progesterone after 24 weeks. This is despite the OPPTIMUM study published online in February 2016 which suggested that it might not be of benefit in terms of preterm birth prevention, but vaginal progesterone was associated with a significant reduction in neonatal morbidity or death. There were 9 vaginal cervical sutures and two abdominal cerclages placed during the year.

The diagnosis of a short cervix was based on a publication from France which gives centile values across the gestational ages starting at 16 weeks (Ultrasound Obstet Gynecol 2009:33;459-464). The third centile being regarded as short rather than an arbitrary cutoff of 25mm.

Severe Maternal Morbidity & High Dependency Unit

Head of Department

Ms Ann Fergus, *CMM III Delivery Suite*

Dr Bridgette Byrne *(Lead Clinician in Labour Ward)*

Ms Julie Sloan *(Research Midwife)*

Severe maternal morbidity (SMM) has been defined using the NPEC national audit criteria. 63 women were identified out of 8233 women who delivered babies weighing 500 grams or more at the CWIUH in 2016, yielding a rate of 7.7/1,000. This rate is higher than previously reported but equivalent to rates reported in the Scottish Audit of Severe Maternal Morbidity using the same criteria. The rate of MOH is increased from last year and it remains the leading cause of SMM. There were 5 cases of peripartum hysterectomy. Four hysterectomies were performed because of placenta accreta/precreta and three of these did not meet the criteria for MOH. There was one case of eclampsia. Of concern, the incidence of Pulmonary Embolus (PE) increased to 11 cases, perhaps reflecting better case ascertainment as the majority of these patients now attend the Maternal Medicine Service if the diagnosis is made antenatally.

Table 1: Severe Maternal Morbidity* (n=65, 63 women)

Maternal Morbidity Categories	
Major Obstetric Haemorrhage	33
Peripartum Hysterectomy	5
Eclampsia	1
Renal / Liver Dysfunction	4
Pulmonary Oedema	2
PE	11
CVA	1
Septic Shock	2
ICU Admission	3
Acute Respiratory Dysfunction	3
Total	65 (63 women)

** Some patients are included in more than one category*

High Dependency Unit

There were 198 obstetric-related admissions to HDU in 2016. The leading indications for admission are haemorrhage, hypertension/PET and mgso4 for fetal neureprotection. The data for the year are shown in Table 2.

Table 2: Obstetric Related HDU Admissions 2016

Indication for admission	N=198	%
Haemorrhage	73	37
Hypertension/PET	48	24
Infection/Sepsis	17	9
Eclampsia	2	1
Medical	11	6
MgSO4 for fetal neuro protection	41	21
PE	2	1
Other	4	2
Total	198	100

Key Performance Indicators

Three women required transfer to St James's Hospital to ICU. The cases transferred to ICU were: MOH requiring hysterectomy and massive transfusion; maternal collapse at CS under spinal anaesthetic requiring intubation and ventilation; and a cardiac arrest. Six other patients required transfer for further care, but not for ICU care.

They included:

- RTI
- Exacerbation of asthma
- Pulmonary Oedema
- PE CVA
- Cardiomyopathy

Achievements in 2016

- Improvement in risk assessment for thromboprophylaxis is required and a Working group has been established with recent audit showing an excellent rate of thromboprophylaxis in CS delivery but poor risk assessment in vaginal births. Proposals for risk asessment following vaginal delivery are being implemented.
- Publication of a six-month audit outlining the complexity of cases and the skill mix required in managing sick women in a Labour Ward HDU.

- Maternal near miss: what lies beneath?

O'Malley EG, Popivanov P, Fergus A, Tan T, Byrne B.

Eur J Obstet Gynecol Reprod Biol. 2016 Apr;199:116-20

Challenges for 2017

- Prevention of MOH.
- To develop care pathways for women requiring transfer to SJH.
- Training and maintaining skill in central line management and care of the critically ill pregnant or recently pregnant women.
- To ensure appropriate midwifery staffing of the Labour Ward and HDU and to impove access to imaging and medical and surgical specialists which are off site.

Ann Fergus
Bridgette Byrne
Julie Sloan

Maternal Morbidity

Category 1 MOH

41 years, Caucasian, IVF twin pregnancy, non-smoker, hx Factor V Leiden, pernicious anaemia. Para 0^{+3}, BMI 34, LSCS for PET at 33^{+6} weeks, transfused >5 units for coagulopathy. Liveborn female infant 1.7kgs Twin I. Twin II liveborn male 1430g, transferred to NICU.

31 years, Caucasian, non-smoker, BMI 23, SOL, SVD at term + 3. PPH >2500mls. Liveborn female infant, 3680g.

38 years, Caucasian, smokes 5 cigs per day, BMI 29, Para 4^{+1}. DCDA twin pregnancy, GDM, IOL for PET at 35^{+6} weeks. SVD x 2, male infant 2680g, female infant 2360g. Atonic uterus and PPH >2500mls. Rusch balloon inserted. Transfused 2 units RCC.

37 years, Caucasian, Para 2^{+0}, smokes 20 cigs per day, BMI 27, GDM. LSCS at 34^{+1} weeks – placenta percreta. PPH >2500mls, peripartum hysterectomy.

32 years, Caucasian, Para 1^{+0}, ex-smoker, BMI 36.9. GDM. IOL, SVD, MROP PPH >2500mls. Liveborn male infant, 3790g.

37 years, Caucasian, Para 1^{+0}, IVF pregnancy. GDM, DCDA Twins. NSAPH at 36 weeks, LSCS at 36^{+0} weeks. PPH 3500mls in Theatre, insertion of Rusch balloon, transferred 6 units RCC, 4 units octaplas, 4w fibrinogen – coagulopathy. Twin I liveborn female, 2270g. Twin II female 2670g. Discharged home day 6.

34 years, Para 3^{+1}, hx of primary PHH 2008, non-smoker, BMI 22.7. IOL – maternal hypertension, SVD male liveborn infant 2790g, PPH 2900mls, transfused 2 units RCC.

36 years, South American, primigravid, non-smoker. PIH, IOL at term + 2 – SVD female infant 3830g, Apgars 9^{1}, 10^{5}. PPH 3100mls – transfused 2w RCC.

36 years, Caucasian, para 1^{+0}, ex-smoker, BMI 28.4, acceleration of labour following ROM at term. SVD male infant, 4170g. PPH > 2500mls.

31 years, primigravid, ex-smoker. BMI 19.6, DCDA twin pregnancy – spontaneous conception. LSCS at 37^{+6} weeks – failure to advance to first stage of labour. Twin I liveborn female infant 2360g, Twin II primary PPH >2500mls, atonic uterus – discharged home Day 10.

32 years, Asian, para 1^{+0}, non-smoker, BMI 28.3. SVD at 36^{+5} weeks, female infant 2740g, apgars 91, 105, retained placenta. Transferred to Theatre for EUA – PPH 2700mls. Uncomplicated postnatal recovery.

31 years, Caucasian, primigravid, ex-smoker. BMI 23.3, IVF pregnancy- DCDA twins. GDM, elective LSCS at 36 weeks. Twin I female infant 2840g, Twin II male infant, 3190g. Primary PPH in Theatre 5200mls, insertion of Rusch balloon, coagulopathy, transfusion >5 units. Transferred home Day 5.

34 years, Indian, para 1^{+0}, non-smoker, BMI 29.2, emergency LSCS at 29^{+4} weeks – APH and known placenta praevia. Liveborn male infant 1520g, PPH in Theatre 2500mls, coagulopathy – transfused 5 units RCC, 1 unit platelets, fibrinogen. Discharged home Day 4.

40 years, Caucasian, para 0^{+1}, ex-smoker, BMI 27.5, IVF pregnancy, DCDA twins. IOL at 37 weeks, ventouse delivery. Twin I male infant 2530g, vaginal breech delivery Twin II male infant 2650g, primary PPH 2500mls. Discharged home Day.

35 years, Caucasian, para 1^{+0}, non-smoker, BMI 24.2. LSCS for PET at 36 weeks, suspected IUGR. Female infant 1.7kgs. Apgars 9^{1}, 10^{5}. PPH in Theatre 3000mls, coagulopathy, transfused 2 units RCC, octaplas 2 units, fibrinogen. Insertion of arterial line. Mum discharged

home Day 8.

28 years, Caucasian, non-smoker, primigravid. SOL at terms – forceps delivery abnormal CTG. Liveborn male infant 3370g. Primary PPH 3500mls, coagulopathy and transfusion 6 units. Suture of high vaginal tear in Theatre. Discharged home Day 4.

30 years, para 2^{+0}, IOL post-dates 41^{+6} weeks. SVD male infant, 4230g, primary PPH 2600mls. No transfusion.

35 years, para 1^{+0}, Caucasian, non-smoker, BMI 24.1. SOL, SVD at term + 5. PPH 2700mls, no transfusion.

33 years, para 1^{+1}, Caucasian. GDM. IOL at 38 weeks – LSCS for fetal distress, female infant 3830g, apgars 9^{1}, 10^{5}. Primary PPH 3500mls, transfused 4 units RCC. Mum and baby discharged home Day 7.

41 years, primigravid, IVF-donor sperm, Caucasian, ex-smoker, BMI 26.1. Uneventful pregnancy. IOL for prolonged ROM at 38 weeks. Ventouse delivery female infant 2960g, apgars 9^{1}, 10^{5}. PPH 2800mls, no transfusion.

38 years, Caucasian, hx Haemachromatosis and Leukemia / Bone Marrow Transplant. Para 1^{+0} (elective LSCS), IVF pregnancy. SOL at 37 weeks, LSCS failure to advance, liveborn male infant 2060g. Placenta Accreta noted at delivery, massive PPH > 8000mls, coagulopathy, transfused 34 units blood products. Peripartum hysterectomy performed, transferred ventilated to ICU SJH. Returned to CWIUH Day 3 for routine postnatal care – mum and baby discharged home Day 8.

38 years, Caucasian, para 0^{+2}, non-smoker, BMI 27.2. IOL for macrosomia at term –1. LSCS – FTA, female infant 3590g, apgars 91, 105. Primary PPH in Theatre 2500mls, discharged home Day 5 on Fe supplements.

38 years, Caucasian, para 3^{+0}, non-smoker. LSCS at term + 11 for APH. Liveborn female infant, 4120g, apgars 9^{1}, 10^{5}. Primary PPH 2500mls – transfused 2 units RCC.

41 years, para 2^{+3}*, non-smoker, BMI 30.2. IVF pregnancy – initial twin pregnancy, fetal demise Twin 1 at 11 weeks. IOL macrosomia at 38 weeks – SVD male infant 4080g, apgars 9^{1}, 10^{5}. Primary PPH 2700mls – no transfusion, ERPC in Theatre. Discharged home Day 4.

28 years, Black African, para 1^{+0} (LSCS), BMI 30.4, serology positive. LSCS at term (NRCTG), male infant 4180g, apgars 9^{1}, 10^{5}. Primary PPH 2800mls, discharged home Day 8.

30 years, Asian, unbooked. Primigravid. Ectopic pregnancy – salpingectomy. EBL 2500mls.

31 years, Caucasian, primigravid, non-smoker. BMI 24.8, elective LSCS – maternal request at term. PPH 2500mls. Liveborn male infant, 3190g. Discharged home on Fe supplements.

33 years, Caucasian, primigravid, non-smoker, BMI 21.6. SOL at term + 5, forceps delivery FTA 2^{nd} stage. Liveborn male infant 3807g, PPH > 2500mls, transfused 3 units RCC, 1 units platelets. Discharged home Day 3.

32 years, Caucasian, para 1^{+0} (SVD), IVF pregnancy, non-smoker. BMI 24.8, DCDA twins. IOL at 36^{+5} weeks, SVD Twin I, male infant, 2680g, apgars 9^{1}, 10^{5}. Ventouse Twin II (FTA and fetal distress), male infant 3080g, apgars 91, 105. PPH 2500mls, no transfusion.

37 years, Caucasian, smokes 5 cigs per day, BMI 21.2, para 1^{+0} (LSCS). Elective LSCS at term + 8, male infant 3550g, apgars 9^{1}, 10^{5}. PPH 3000mls – transfused 4 units RCC.

37 years, Caucasian, para 3^{+0} (SVD x 3), unicornuate uterus. BMI 28.1. IOL for prolonged ROM at term. SVD female infant 3405g, apgars 9^{1}, 10^{5}. PPH 4000mls, transfused 4 units RCC. Discharged home Day 3.

29 years, Caucasian, primigravid, non-smoker, BMI 21.5. Uneventful pregnancy. IOL for prolonged ROM at terms + 5 – SVD female infant 3460g, apgars 9^{1}, 10^{5}. PPH 2900mls, insertion of Rusch balloon, transfused 4 units RCC.

36 years, Caucasian, para 1^{+0}, BMI 28.3, non-smoker. IOL RFMF, static growth at 38^{+3} weeks. Ventouse delivery for fetal distress, female infant 2850g, apgars 7^{1}, 10^{5}. PPH 2600mls, Rusch balloon inserted, transfused 4 units RCC.

Category 3 – Peripartum Hysterectomy

37 years, Caucasian, Para 2^{+0}, smokes 20 cigs per day, BMI 27, GDM. LSCS at 34^{+1} weeks – placenta percreta.

PPH >2500mls, peripartum hysterectomy.

38 years, para 1^{+2}, ex-smoker, BMI 24.1, IVF pregnancy, hx tubal surgery/ectopic pregnancy. LSCS for antenatally diagnosed placenta percreta at 37 weeks. Liveborn male infant 2815g. PPH < 1500mls, proceeded to peripartum hysterectomy.

37 years, para 2^{+0}, non-smoker, BMI 28.7, elective LSCS at 37^{+3} weeks (previous LSCS x 2), known placenta percreta diagnosed antenatally. Liveborn female infant 2900g. Peripartum hysterectomy performed, discharged home Day 9.

23 years, Black African, Jehovah's Witness, primigravid, non-smoker. BMI 26.4, sickle cell trait. LSCS at 28 weeks placenta accreta under GA. Liveborn female infant 880g, apgars 4^{1}, 5^{5}. Peripartum hysterectomy performed.

38 years, Caucasian, hx Haemachromatosis and Leukemia / Bone Marrow Transplant. Para 1^{+0} (elective LSCS), IVF pregnancy. SOL at 37 weeks, LSCS failure to advance, liveborn male infant 2060g. Placenta Accreta noted at delivery, massive PPH > 8000mls, coagulopathy, transfused 34w blood products. Peripartum hysterectomy performed, transferred ventilated to ICU SJH. Returned to CWIUH Day 3 for routine postnatal care – mum and baby discharged home Day 8.

Category 4 – Eclampsia

18 years, primigravid, non-smoker, BMI 23.1. Emergency LSCS at term -1 – eclamptic seizure, liveborn male infant 3895g, apgars 5^{1}, 7^{5}. Discharged home Day 7 on hypertensives.

Category 5 – Renal or Liver Dysfunction

27 years, Caucasian, non-smoker. BMI 40.4, developed severe PET, HELLP Syndrome. LSCS, female infant, apgars 5^{1}, 7^{5}. Discharged home Day 14.

39 years, primgravid, ex-smoker, BMI 24.5. LSCS at 33 weeks, HELLP and abnormal LFTs. Female infant 1850g, apgars 4^{1}, 8^{5}. Mum discharged home Day 8.

41 years, Caucasian, primigravid, smokes 5 cigs per day, BMI 36.5. LSCS at 39 weeks for severe PET/HELLP. Liveborn female infant 3540g. Mum and baby discharged on Day 9.

28 years, Caucasian, primigravid, BMI 20.4, non-smoker. LSCS for severe PET/HELLP at 24 weeks under GA. Female infant 480g, apgars 2^{1}, 5^{5}. Discharged home Day 9 on anti-hypertensives. Baby discharged home day 125.

Category 6 – Pulmonary Oedema

32 years old, Pakistani, para 0^{+0}, BMI 28.4. SOL SVD at term + 4, liveborn male infant 3500g. Readmitted day 13 with pulmonary oedema, transferred to SJH.

31 years, Caucasian, para 1^{+0}, non-smoker, BMI 27.2. LSCS at 34 weeks – HELLP Syndrome. Male infant 3130g, maternal condition deteriorated – pulmonary oedema confirmed on chest x-ray, rx Furosemide, O_2. Discharged home Day10.

Category 8 – Pulmonary Embolism

23 years, Caucasian, non-smoker. BMI 18.9. Ventouse delivery liveborn male infant, 3.640kg. Pulmonary emboli diagnosed day 2 postnatally, treated as per protocol.

35 years, Caucasian, para 2^{+0}, BMI 20.4, ex-smoker. Pulmonary embolus day 4 post SVD. Liveborn male infant 4200g.

34 years, Caucasian, ex-smoker. BMI 26.9, para 2^{+1}. Pulmonary embolus at 29 weeks gestation. IOL, SVD at 39^{+4} weeks, male infant 3650g.

39 years, Caucasian, non-smoker, BMI 27.4, para 5^{+2}. Multiple pulmonary emboli diagnosed at 35^{+5} weeks – delivered by LSCS under GA at 36 weeks gestation in SJH. Liveborn male infant 3350g.

28 years, ex-smoker, BMI 32.5, pulmonary embolus diagnosed at 5 weeks gestation. IOL at 37^{+6} weeks – SVD liveborn female infant 3080g.

23 years, para 1^{+0}, no hx PE prior to pregnancy. Pulmonary embolus diagnosed at 13 weeks gestation. IOL and SVD at 39 weeks, male infant 3720g.

36 years, para 3^{+0}, non-smoker, BMI 26.6. Pulmonary emboli x 2 at 10 weeks. IOL, SVD at 38^{+4} weeks, male infant 3860g.

42 years, Caucasian, para 1^{+0}, non-smoker, BMI 23.2. Pulmonary embolus at 10 weeks. Travelled to Spain for delivery.

33 years, para 3^{+0} (LSCS x 1). Pulmonary embolus diagnosed at 37 weeks. SOL, SVD at 39^{+4} weeks, male infant 3850g, apgars 9^{1}, 10^{5}. Discharged home on Innohep Day 3.

23 years, para 2^{+0}*, Black African, non-smoker. BMI 39.5, serology positive. Pulmonary embolus diagnosed at 16 weeks. SOL, SVD at term, male infant 3585g, apgars 6^{1}, 10^{5}.

29 years, para 1^{+0}, South African. Uneventful pregnancy, IOL NRCTG at 38^{+5} weeks – SVD female infant 2810g. Maternal hx ASD. PE diagnosed day 5. Mum transferred to SJH for further treatment.

Category 11 – CVA

31 years, para 2^{+1} (SVD x 2, midtrimester loss at 22 weeks). LSCS at 27 weeks PET, female infant 760g, apgars 4^{1}, 7^{5}, transferred to NICU. Mother readmitted day 16 with seizure, transferred to SJH following stabilisation for further assessment. CVA confirmed, remained in Stroke Unit for rehabilitation.

Category 13 – Septicaemic Shock

35 years, Caucasian, para 5^{+0}, BMI 23.4, unplanned pregnancy. Booked at 21 weeks, presented with ROM – amnisure positive. Maternal sepsis – delivered at 21^{+2} weeks gestation, second trimester loss.

35 years, Caucasian, para 2^{+0}, BMI 20.0, ex-smoker. Booked at 11 weeks, second trimester loss at 15^{+1} weeks, MROP and septicaemic shock. Hx Group B Streptococcus.

Category 15 – ICU Admission

36 years, Black African, para 4^{+1}, BMI 30.6, non-smoker. LSCS at term -1 for fetal tachycardia, maternal collapse in Theatre, intubated and ventilated, transferred to ICU in SJH. Readmitted to CWIUH, discharged home Day 5. Liveborn female infant 2990g.

29 years, para 0^{+1}, non-smoker, BMI 25.0. SOL at term +4 following uneventful pregnancy. Fetal tachycardia and meconium stained liquor noted – proceeded to LSCS, liveborn male infant, 3730g, apgars 1^{1},5^{5}. LSCS under GA, maternal collapse and cardiac arrest in Theatre. Intubated, ventilated and transferred to ICU SJH. Remained in ICU x 4 days. Mum and baby discharged home Day 31.

38 years, Caucasian, hx Haemachromatosis and Leukemia / Bone Marrow Transplant. Para 1^{+0} (elective LSCS), IVF pregnancy. SOL at 37 weeks, LSCS failure to advance, liveborn male infant 2060g. Placenta Accreta noted at delivery, massive PPH > 8000mls, coagulopathy, transfused 34 units blood products. Peripartum hysterectomy performed, transferred ventilated to ICU SJH. Returned to CWIUH Day 3 for routine postnatal care – mum and baby discharged home Day 8.

Category 16 – Acute Respiratory Dysfunction

28 years, Caucasian, para 2^{+0}* (LSCS x 1), non-smoker. Admitted at 18 weeks with RTI, transferred to SJH for further treatment and evaluation – acute respiratory distress. Elective LSCS at 39 weeks, male infant 4155g.

28 years, para 1^{+0}, PMHx Asthma, on Salbutamol and Seretide at booking. Infective exacerbation of Asthma at 23 weeks, transferred to SJH with acute respiratory distress. LSCS at 34 weeks – suspected IUGR. Liveborn female infant 1860g, apgars 9^{1}, 10^{5}.

31 years, para 1^{+0}, elective LSCS at 38^{+2} weeks, liveborn male infant 4050g. Maternal collapse, GA given, acute respiratory dysfunction. Discharged home Day 4.

Category 16 – Cardiomyopathy

26 years, Caucasian, primigravid, Hx Asthma, cardiac murmur. LSCS – severe PET and cardiomyopathy, liveborn male infant 2120g, cardiology consult. Discharged home Day 18.

Division of Gynaecology

General Gynaecology Report

Table 1: Inpatient Surgery

	2010	2011	2012	2013	2014	2015	2016
Patients	6239	6362	6202	6212	6374	6158	**6330**
Operations	8733	8652	8650	8980	8891	8618	**8918**

Table 2: Operation Categories

	2010	2011	2012	2013	2014	2015	2016
Obstetrical	3185	3300	3239	3308	3630	3590	**3663**
Cervical	1062	1190	1034	838	882	752	**828**
Uterine	2683	2553	2668	2897	2696	2704	**2761**
Tubal & Ovarian	1036	936	1051	1032	916	844	**847**
Vulval & Vaginal	437	400	367	522	408	361	**423**
Urogynaecology	261	226	224	336	328	329	**365**
Other	86	47	60	47	31	38	**31**
Total	8733	8652	8650	8980	8891	8618	**8918**

Table 3: Obstetrical Operations

	2010	2011	2012	2013	2014	2015	2016
Lower Segment Caesarean Section (including those with Tubal Ligation)	2257	2358	2280	2229	2476	2400	**2571**
Classical Caesarean Section (including those with Tubal Ligation)	4	7	2	4	3	6	**5**
Hysterectomy in Pregnancy	3	6	2	2	0	2	**4**
ERPC	493	460	433	494	586	596	**544**
ERPC Postpartum	25	13	11	13	19	23	**19**
Laparotomy for Ectopic *	5	3	4	0	1	5	**2**
Laparoscopy for Ectopic *	59	48	75	47	73	78	**57**
Cervical Cerclage	30	48	59	61	61	60	**36**
Perineal Repair Postpartum in theatre	104	137	123	194	196	215	**211**
Manual Removal of Placenta	95	81	79	123	94	90	**90**
Operative Vaginal Delivery in theatre	83	103	111	88	89	83	**91**
Other	27	36	60	53	32	32	**33**
Total	3185	3300	3239	3308	3630	3590	**3363**

**method of collecting ectopic data changed in 2013*

Table 4: Cervical Operations

	2010	2011	2012	2013	2014	2015	2016
LLETZ/NETZ/SWETZ/LEEP (in theatre)	179	196	176	127	99	86	**87**
LLETZ/NETZ/SWETZ/LEEP (in clinic)*	649	777	677	538	617	531	**563**
Cone Biopsy	10	10	1	4	7	8	**5**
Punch & Wedge Biopsy of Cervix	11	13	14	16	17	16	**17**
Cervical Polypectomy	60	47	42	47	22	21	**56**
Diathermy to Cervix	8	11	3	8	16	3	**4**
Other	145	136	121	98	104	87	**96**
Total	1062	1190	1034	838	882	752	**828**

** Previously only recorded in Colposcopy Clinic Statistics*

Table 5: Uterine Operations

	2010	2011	2012	2013	2014	2015	2016
Hysteroscopy:							
– Diagnostic	764	804	918	955	867	885	**939**
– Operative							
– Myomectomy	21	11	11	9	2	4	**10**
– Resection of uterine septum	2	2	12	1	5	2	**3**
– Resection of uterine adhesions	1	3	2	2	1	2	**1**
– Endometrial polyp	61	61	73	46	73	88	**49**
– Other	3	3	2	0	8	5	**5**
Laparoscopy:							
– Laparoscopic assisted Vaginal Hysterectomy	40	41	39	38	36	44	**45**
– TAH	22	7	19	35	88	73	**60**
– SAH	1	0	0	6	9	13	**7**
– Radical Hysterectomy	0	0	0	0	0	0	**0**
– Myomectomy	17	18	5	18	22	27	**8**
Laparotomy:							
– TAH	93	102	82	67	15	12	**29**
– SAH	5	1	7	4	1	1	**1**
– Radical Hysterectomy	2	1	0	0	0	0	**0**
– Myomectomy	24	19	15	16	20	21	**16**
Other:							
– Vaginal Hysterectomy	121	92	60	79	68	44	**47**
– D&C	622	606	735	759	742	779	**827**
– TCRE	68	58	25	23	23	13	**24**

Table 5: Uterine Operations continued

	2010	2011	2012	2013	2014	2015	2016
– Endometrial Ablation	0	0	2	44	43	**47**	**71**
– Mirena Coil insertion	361	347	342	374	341	**335**	**317**
– Mirena Coil removal	86	133	119	143	147	**155**	**148**
– Examination under Anaesthesia	299	208	150	214	122	**91**	**97**
– Omentectomy	21	12	15	11	9	**7**	**2**
– Other	49	24	32	53	54	**56**	**55**
Total	2683	2553	2668	2897	2696	2704	**2761**

Table 6: Tubal and Ovarian Operations

	2010	2011	2012	2013	2014	2015	2016
Laparoscopy:							
– Diagnostic	354	281	379	340	278	235	**234**
– Sterilisation	80	61	68	88	42	40	**44**
– Dye Test	125	110	131	125	106	78	**101**
– Tubal Reconstructive Surgery	1	1	1	2	0	1	**0**
– Unilateral Salpingectomy	15	14	9	10	16	17	**20**
– Bilateral Salpingectomy	4	6	10	20	35	42	**42**
– Unilateral Oopherectomy	10	12	4	5	13	7	**12**
– Bilateral Oopherectomy	2	2	1	5	1	2	**4**
– Unilateral Salpingo-oopherectomy	21	10	19	14	19	30	**19**
– Bilateral Salpingo-oopherectomy	97	85	93	95	72	69	**74**
– Unilateral Ovarian Cystectomy	79	83	69	49	73	70	**51**
– Bilateral Ovarian Cystectomy	10	16	9	29	15	5	**8**
– Aspiration of Ovarian cyst(s)	9	10	9	15	11	9	**15**
– Adhesiolysis	89	81	69	69	67	77	**74**
– Ablation/Diathermy	85	110	111	105	131	121	**110**
– Other	8	4	13	11	13	11	**15**
Laparotomy:							
– Sterilisation	0	0	1	1	0	3	**1**
– Tubal Reconstructive Surgery	4	2	4	1	2	0	**0**
– Unilateral Salpingectomy	2	4	4	3	2	1	**1**
– Bilateral Salpingectomy	4	9	8	11	1	4	**3**
– Unilateral Oopherectomy	1	6	2	4	3	2	**0**
– Bilateral Oopherectomy	0	0	1	1	0	1	**0**
– Unilateral Salpingo-oopherectomy	12	15	16	11	6	4	**7**

Table 6: Tubal and Ovarian Operations continued

	2010	2011	2012	2013	2014	2015	2016
– Bilateral Salpingo-oopherectomy	0	0	0	0	0	0	**0**
– Unilateral Overian Cystectomy	16	10	13	0	8	11	**10**
– Bilateral Ovarian Cystectomy	2	2	0	2	1	2	**1**
– Adhesiolysis	5	0	6	6	0	2	**0**
– Ablation/Diathermy	1	2	1	1	1	0	**1**
– Other	0	0	0	2	0	0	**0**
Total	**1036**	**936**	**1051**	**1032**	**916**	**844**	**847**

Table 7: Vulval and Vaginal Operations*

	2010	2011	2012	2013	2014	2015	2016
Simple Vulvectomy	2	0	3	2	4	1	**4**
Vaginal Repair for Dyspareunia/ Vaginoplasty	3	8	5	7	5	2	**0**
Posterior Repair	120	103	81	130	91	67	**87**
Anterior Repair	130	112	109	150	105	85	**87**
Suturing of Vaginal Vault	1	0	2	3	0	1	**0**
Hymenectomy/Hymenotomy	4	0	1	1	1	2	**3**
Excision of Vulval/Vaginal Cysts/Biopsy	69	77	78	110	73	86	**93**
Bartholin's Cyst/Abcess	24	25	23	24	35	30	**42**
HPV	4	4	3	3	4	4	**2**
Labial Reduction	7	8	8	9	6	9	**5**
Fenton's Procedure	14	15	5	8	9	4	**4**
Other cyst/abscess/lesions	14	6	10	8	5	14	**12**
Other	45	42	56	67	70	56	**84**
Total	**437**	**400**	**367**	**522**	**408**	**361**	**423**

**excludes Urogynaecology operations and operations for vault prolapse*

Table 8: Urogynaecology*

	2010	2011	2012	2013	2014	2015	2016
Laparoscopic Burch/paravaginal repair	0	0	6	10	4	2	**0**
TVT/TOT/TVTO	98	79	70	96	77	84	**71**
Bulking Injection	3	5	21	17	12	10	**16**
Botox injection	0	0	12	11	35	22	**39**
Vault suspension:							
SSLS	6	3	11	20	19	15	**17**
LSCP	0	3	5	10	14	26	**24**
Other	46	13	13	26	6	4	**12**
Cystoscopy	98	114	86	131	135	147	**147**
Other	10	9	6	15	26	19	**39**
Total	261	226	224	336	328	329	**365**

**includes prolapse operations only for vault prolapse*

SSLS = sacrospinous ligament suspension

LSCP = Laparoscopic sacrocolpopexy

Table 9: Other Operations

	2010	2011	2012	2013	2014	2015	2016
Abdominal Wound Dehiscence	1	1	0	0	0	1	**0**
Appendicectomy	27	15	15	12	9	7	**4**
Laparotomy for other indication	5	6	18	8	1	2	**2**
Blood Patch	13	8	14	12	10	8	**12**
Other	23	17	13	15	11	20	**13**
Total	69	47	60	47	31	38	**31**

Table 10: Total Gynaecological Outpatient Attendances

	2010	2011	2012	2013	2014	2015	2016
Adolescent	248	252	256	143	144	170	**203**
Colposcopy	5885	6732	6322	6166	7009	6473	**6029**
Endocrine/Infertility	511	582	737	627	464	504	**449**
General	3761	3903	3392	4328	4728	4469	**4981**
Urogynaecology	1006	1323	1283	1249	1436	1565	**1564**
Anaesthetic	464	548	725	905	913	1102	**2706**
Oncology*	100	20	3	-	-	-	**-**
Cervical Screening**	-	-	-	-	-	-	**-**
Total	**11975**	**13360**	**12708**	**13418**	**14694**	**14283**	**14409**

** Oncology consultant sessions transferred to St. James's Hospital, however oncology patients are seen in the Colposcopy Clinic.*

*** Cervical Screening figures are listed as part of the Colposcopy figures.*

Table 11. Gynaecology Complications & Transfer to HDU/ITU

Complication	N
Bladder Injury	4
Bowel Injury	1
Uterine Perforation	9
Transfer to HDU	3
Transfer to ITU	1
Blood Transfusion > 5 units	0
Other Organ Injury	0
Wound Dehiscence	0
Total	**18**

Coombe Continence Promotion Unit – Medical Report

Head of Department

Dr Chris Fitzpatrick, *Director (Author)*

Staff Complement

Dr Mary Anglim, *Consultant*
Dr Gunther Von Bunau, *Consultant*
Dr Aoife O'Neill, *Consultant*
Ms Eva Fitzsimons, *Specialist Urodynamic Midwife*
Dr Naomi Burke, *Specialist Registrar*
Dr Tarannum Mahedvi, *Registrar*
Ms Margaret Mason, *Physiotherapy Manager*
Ms Eibhlin Mulhall, *Physiotherapist*
Ms Anne McCloskey, *Physiotherapist*
Ms Roisin Phipps, *Physiotherapist*
Ms Sarah Bevan, *Physiotherapist*
Ms Clare Farrell, *Physiotherapist*
Ms Julia Hayes, *Physiotherapist*
Ms Anna Chrzan, *Physiotherapist*

Description of Unit

The Coombe Continence Promotion Unit was established in 1998 to provide a comprehensive multidisciplinary service to women with continence – related problems/ pelvic floor dysfunction. The Unit has three specialist subdivisions: Urogynaecology (established in 1993), Specialist Nursing Services and Physiotherapy.

Special Interests

- Post-hysterectomy and recurrent prolapse
- Refractory DO
- Stress Incontinence after previous surgery
- Painful Bladder Syndrome

Key Performance Indicators

- **520** first visits and **1044** return visits to Urogynaecology Clinic*; **272** urodynamic evaluations; **365** operative procedures; **256** Day Ward hyaluronic acid bladder instillations; **25** CISC instruction (pre-Botox mainly).
- Diagnostic rate of 95% in patients undergoing urodynamic evaluation.

**includes only patients attending Urogynaecology Clinic (CF); does not include Urogynaecology patients attending other Gynaecology OPD Clinics (MA, AON, GVB)*

Achievements in 2016

- Continuing expansion of treatment options for women with complex pelvic floor dysfunction - with both vaginal and advanced laparascopic interventions.
- Increase in urodynamics evaluations (226 in 2015; 272 in 2016).
- Increase in Day Ward intravesical hyaluronic acid bladder instillations; 176 in 2015, 256 in 2016.
- Increase in total number of operative procedures (329 in 2015; 365 in 2016); increase in Botox injections (22 in 2015; 39 in 2016).
- Same day admission policy for >95% major cases.
- Fast-tracking triage of GP referrals directly to Physiotherapy.
- Regular Urogynaecology MDT meetings.

Challenges for 2017

- Expansion of urodynamic sessions.
- Expansion of the role of the Urodynamic Specialist Midwife and training of second Urodynamic midwife/ nurse.
- Expansion of Physiotherapy services.
- Capital development.
- Appointment of Urogynaecology Fellow.

Acknowledgments

I would like to acknowledge the support of the Division of Gynaecology, Department of Peri-Operative Medicine, Theatre & Recovery, OPD, Day Ward, St Gerard's Ward, Radiology, Laboratory, Admissions and the Master in 2016. A special word of thanks to Mr Aaron Gracey and Ms Emma O'Neill for their invaluable administrative support.

Table 1 Urodynamic Diagnosis (N = 272)

Diagnosis	%
USI	**38**
USI + DO	**23**
USI + HRVD	**2**
DO	**24**
DO + HRVD	**3**
HRVD	**5**
No diagnosis	**5**
Total	**100**

USI = urodynamic stress incontinence
DO = detrusor overactivity
HRVD = high residual voiding dysfunction

Table 2 Urogynaecology Operations (2010 - 2016)

	2010	2011	2012	2013	2014	2015	2016
Laparoscopic Burch/ paravaginal repair	0	0	6	10	4	2	**0**
TVT/TOT/TVTO	98	79	70	96	77	84	**71**
Bulking Injection	3	5	21	17	12	10	**16**
Botox injection	0	0	12	11	35	22	**39**
Vault suspension:							
– SSLS	6	3	11	20	19	15	**17**
– LSCP	0	3	5	10	14	26	**24**
– Other	46	13	13	26	6	4	**12**
Cystoscopy	98	114	86	131	135	147	**147**
Other	10	9	6	15	26	19	**39**
Total	261	226	224	336	328	329	**365**

**Includes prolapse operations only for vault prolapse*
SSLS = sacrospinous ligament suspension
LSCP = laparoscopic sacrocolpopexy

Coombe Continence Promotion Unit – Midwifery Report

Head of Department

Dr Chris Fitzpatrick

Staff Complement

Ms Eva Fitzsimons *(Clinical Midwife Manager II)*

Introduction

The Coombe Women and Infants University Hospital provides an Outpatients Urodynamic service for women with lower urinary tract and pelvic floor dysfunction attending the hospital. This Midwifery/Nurse-led service provides a holistic and patient-centred approach to urodynamic practice, while maintaining high standards of clinical skills and specialist urogynaecology knowledge.

The aim of urodynamic studies is to investigate bladder function and dysfunction in women with urinary symptoms i.e. frequency, urgency, urinary leakage and voiding difficulties, whilst making accurate measurements in order to detect the underlying cause of these distressing symptoms. This provides a patho-physiological explanation for the patient's problem and directs the health care professional to the best management and care of these patients.

Attendance to the clinic can provide women with an understanding of bladder function and the appropriate interventions that may be necessary during the course of their care and treatment.

The following services are provided to women attending the clinic:

- Continence promotion and education
- Bladder re-training programme
- Frequency/Volume chart advice and review
- Uroflowmetry and Voiding Cystometry
- Intermittent self-catheterization advice and education
- Advice and information prior to urogynaecology surgery
- Follow-up support post-surgery.

Key Performance Indicators

- Provision of urodynamic sessions for women who are referred from the Urogynaecology/Gynaecology service within the hospital. 272 urodynamic evaluations with a diagnostic rate of 95% in patients undergoing this investigation.
- Provision of pre-operative education for women who may require intermittent self-catheterization during treatment for lower urinary tract dysfunction (25 in 2016).
- Resource and clinical advice to staff caring for women with urinary problems.

Achievements in 2016

- Increase in number of urodynamics evaluations.
- Regular multidisciplinary team meetings.
- Triage of referrals and fast-tracking to Physiotherapy Services.

Challenges for 2017

- Provision of more urodynamic sessions so as to reduce waiting times for women attending the Urogynaecology service.
- Wide spread consultation with women suffering from urinary incontinence could lead to greater awareness of their diverse needs and an improved level of services and interventions to assist them in coping with their symptoms. Given the levels of shame and embarrassment, and reluctance to share their innermost feelings and difficulties surrounding the symptoms of urinary incontinence, it is recommended that all relevant healthcare professionals receive up to date and appropriate training in order to meet the physical and psychological needs of these women.
- The need for a more dynamic approach to the management and care of women with urinary incontinence is evident. The development of the role of Clinical Midwife Specialist in Urodynamics and Continence Promotion is ongoing at present. Such a service would provide a more comprehensive and holistic care pathway for women with urinary incontinence, so that they can live as fully functioning members of society free from fear and embarrassment surrounding their condition.

Colposcopy Service – Medical Report

Head of Department

Dr Tom D'Arcy, *Divisional Lead for Gynaecology Department*

Staff Complement

Consultant Colposcopists
Dr Tom D'Arcy
Dr Nadine Farah
Dr Mary Anglim
Dr Waseem Kamran

Nurse Colposcopists
Sinead Cleary
Aoife Kelly

Trainee Nurse Colposcopists
Amy Coughlin

Clinical Nurse Manager II
Olivia McCarthy

Gynaecology Oncology Liaison Nurse
Aidin Roberts *(0.5WTE)*

Registered General Nurses
Rani Hilarose (0.36WTE)
Feba Paul (0.33WTE)

Healthcare Assistants
Amanda Kennedy
Maria White

Failsafe Officer/Office Manager
Bernie Cummins

Office Administrators
Frances Cunningham
Helen Browne (Leave of absence Feb 2016)
Helen Conlon
Joan McNeaney (from March 2016)

Specialist Registrars
As per rotation

The CWIUH Colposcopy service is consultant-led, and includes two nurse colposcopists, Sinéad Cleary and Aoife Kelly. All are BSCCP accredited colposcopists. To maintain service needs, the need for a third nurse colposcopist was identified. She commenced her post in January 2016.

Clinic Attendances

In 2016, 2132 women were referred for colposcopy, a 2% increase on 2015 figures.

2064 patients attended for a first visit in 2016. This represented a 4% increase on 2015 figures.

There was an 11% decrease in return visit attendances to the clinic. 3942 patients in 2016 compared to 4428 patients in 2015.

This was in direct response to a review of follow-up requirements for patients and the introduction of HPV management pathways for both low grade and post-treatment patients.

Again we saw little variance in the DNA rates for patients attending the clinic for the first time, 221 patients did not attend in 2016 versus 209 patients in 2015. For the second year in a row the overall DNA rate has decreased slightly from 19.9% in 2015 to 18.9% in 2016 for all patient groups.

In 2016 we were able to offer patients their appointment within the recommended waiting times set out by Cervical Check. 56.3% of urgent referrals were seen within 2 weeks with 72% seen within 3 weeks of referral. 89% of high grade referrals were seen within 4 weeks and 84.43% of low grade referrals were seen within 8 weeks of referral.

We continue to facilitate changing of appointments by offering early or later time slots to fit in with work and other commitments where possible. The commitment given by our office administrators in maintaining a good clinic attendance and utilizing appointment slots appropriately must be recognised.

These figures are summarised in Table 1 and illustrated in figure 1.

Table 1 Colposcopy attendance figures over 5 years

	2012	2013	2014	2015	2016
First Visits	1815	1847	2169	1993	**2064**
Follow-up Visits	4470	4355	4801	4428	**3942**
TOTAL	6285	6202	6970	6421	**6006**
DNA	1172	1286	1420	1280	**1137**
DNA %	18.6	20.7	20.3	19.9	**18.93**

Figure 1 Attendance at the Colposcopy Clinic at the CWIUH over 5 years

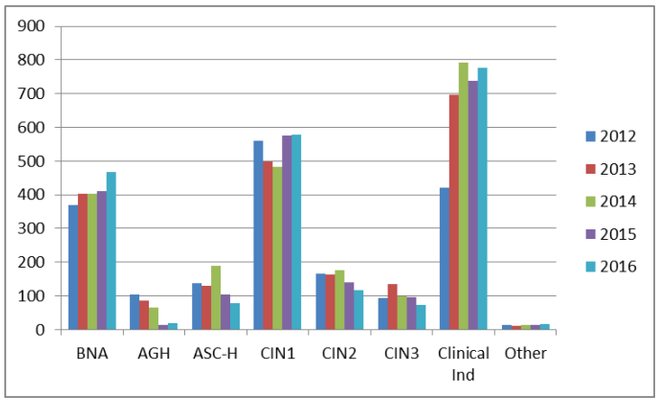


Table 2 Histological breakdown of the transformation zones which were removed by LLETZ in the clinics in 2016

LLETTZ	N=
Adenocarcinoma in-situ / CGIN	5
Cancer (including micro-invasive)	13
CIN1	146
CIN2	143
CIN3	215
Inadequate / Unsatisfactory	0
No CIN / No HPV (normal)	41
Total	**563**

Treatment and Histology

The majority of patients with cytological and/or colposcopic evidence of disease are treated within the colposcopy clinic by LLETZ (Large Loop Excision of the Transformation Zone).

For those patients who require treatment in a theatre setting, this is usually down to clinical need - extent of disease for example, larger area requiring excision and not suitable for clinic excision, for a glandular abnormality or a repeat treatment requiring a NETZ, and very occasionally, patient preference.

In 2016 there was another reduction in the number of patients going through theatre 87 patients compared to 94 patients in 2015.

This included:

- 69 LLETZ
- 18 NETZ

We remain within the Target Clinical Standards set out by BSCCP and Cervical Check for outpatient vs. inpatient treatment setting.

Quality Assurance and MDTs

In 2016, fortnightly CPC/MDT meetings were supported by the cytopathology and histopathology departments and our own clinicians.

These meetings included Quest Diagnostics via Go To meeting and facilitated discussion plus review of referral cytology processed at their laboratory in New Jersey. We remain grateful to all staff for the significant commitment required to organise and attend these meetings.

Colposcopy service provision is based upon Quality Standards set out by the National Screening Service (NSS), highlighting organisational standards such as facilities, system management, clinical staffing, and administrative management alongside governance structures.

Within the CWIUH Colposcopy department we continually review our practice against these standards and maintain a high level of compliance within these Quality Standards criteria.

Following the introduction of Reflex HPV Triage in primary care in 2015 we have seen many more women being referred for colposcopy following their first smear test at age 25. As a direct result of this management pathway we have identified a sustained increase in our first visit numbers in 2016. However with the utilization of HPV screening as a management tool we have seen an overall reduction in the frequency of and number of return visits each woman will need to the colposcopy clinic. This has correlated with the reduction in our return visit attendance numbers.

Future plans

Within our own Colposcopy service, we will continue to review management pathways to ensure optimal use and allocation of colposcopy appointments.

At the end of 2016 one of our Nurse Colposcopists and our trainee Nurse colposcopist resigned. Two trainee nurse colposcopists have been appointed and are due to commence post in Early 2017.

Olivia McCarthy
CNM 2
Colposcopy

Dr Tom D'Arcy
Director of Colposcopy

Colposcopy Service – Nurse Colposcopists Report

Head of Department

Dr Tom D'Arcy, *Divisional Lead for Gynaecology Department*

Staff Complement

3 WTE Nurse Colposcopists

Ms Sinead Cleary

Ms Aoife Kelly (Author)

Ms Amy Loughlin (Trainee Nurse Colposcopist)

Key Performance Indicators

- The management of a caseload of patients in the Colposcopy Outpatient setting, as directed by the Lead Consultant for Colposcopy.
- Maintenance of full clinical support.
- Support the Clinical Lead and Nurse Manager in the on-going review and development of the service.
- Provide a positive learning environment for nursing and qualified staff and ensure that their learning needs are met. This includes teaching colposcopy and providing support to registrars, trainee nurse colposcopists and cervical screening course students.
- Implement evidence-based policies and protocols, which are developed in conjunction with the Nurse Manager and the Clinical Lead, in line with BSCCP and NCSS guidelines.
- Nurse colposcopists are responsible for the coordination and facilitation of the CINCPC/MDT meetings that are held bi-monthly to monthly. These meetings require significant input and planning, with each CPC/MDT meeting having an average of 12 cases for discussion. The co-ordinator is responsible for the listing of cases, the requesting of slides, and presentation of cases for each meeting and reconciling outcomes and follow up management plans afterwards.

Achievements in 2016

Workload of 1 Nurse Colposcopist

Patients Seen	1445 patients 1052 follow up patients 393 first visit patients
Performed	180 LLETZ treatments 385 diagnostic biopsies
Diagnosed cancers/ cGIN	2 Micro invasive cancers 2 Invasive squamous cell carcinomas 1 Invasive adenocarcinoma 1 Adenocarcinoma-in-situ of cervix
Prescriptions as a registered nurse prescriber	129 prescriptions

Other achievements included:

- Facilitate and coordinate MDT meetings.
- Medication prescribing.
- Attendance at NICCIA annual meeting February 2016, Nurse and Midwife, Prescribing Conference April 2016, Cervical Check Colposcopy Forum December 2016.
- Lecturing for Higher Diploma midwifery students on cervical screening.

Challenges for 2017

- Continue to provide the highest standard of colposcopy service to an increasingly complex patient caseload.
- To perform further audits and presentations and attend study days.
- Support new trainee Colposcopist in training in their new roles.

Gynaecology Oncology Liaison Nurse

Head of Department

Dr Tom D'Arcy
Dr Waseem Kamran

Staff Complement

0.5 WTE Gynae Oncology Nurse, Aidin Roberts (Author)

Key Performance Indicators

	2013	2014	2015	2016
Cervix	29	38	39	**30**
Corpus Uteri	27	32	35	**28**
Ovary: Invasive Borderline	9 8	10 4	5 7	**14** **7**
Vulva	2	4	3	**10**
Other Cancers: Breast Lymphoma Renal Multiple Myeloma Primary: Lung	 1 1	 3	 1 1	 **1** **1**

Achievements in 2016

- The CWIUH has strong linkage to St Jame's Hospital. This is an essential role ensuring a seamless pathway of care is maintained for the patients diagnosed with a gynae malignancy.
- Visible presence in both the inpatient and outpatient environment, working closely with the team in Colposcopy, St Gerard's ward and Gynae Day Ward.
- Present with Dr D'Arcy and Dr Kamran when women are told of their cancer diagnosis and contact numbers are given to the patient
- Provide telephone advice, consultation and reassurance.
- Attend multidisciplinary meetings, weekly gynae-oncology multidisciplinary meeting in St James's Hospital and the fortnightly CIN/CPC meeting in the CWUIH.
- Organise the relevant imaging and biopsies that are required for staging purposes in new cases or in cases where there is a suspicion that there is a recurrence of the cancer.
- Responsible for the booking of beds for admission for both diagnostic and therapeutic purposes and the submission of patients' details for SJH MDT meeting.
- Liaison with all divisions of the gynae oncology team, including the co-ordination of referrals to both radiation and medical oncology, for patients who require adjuvant treatment.
- Meet with both the women and their families pre- and post-operatively, providing both verbal and written information and support regarding their gynae-oncology surgery and their possible need for further treatment.
- Provision of a seamless pathway of referral to the Gynaecological Oncology Service in SJH. When a confirmed cancer diagnosis has been made, an appointment for the patient to see the gynae-oncologist within 2 weeks is scheduled.
- Attended the 16th Biennial Meeting of the International Gynaecologic Cancer Society, Lisbon, Portugal,

Challenges for 2017

- To continue to ensure that a seamless pathway of care is maintained.
- To ensure that women are supported to reach their proposed treatment plan within the recommended timeframe.

Hysterosalpingocontrastsonography (HyCoSy) Service

Consultant

Dr Nadine Farah

Clinical Research Fellow

Dr Somaia Elsayed

Secretary

Ms Aideen O'Connor

Audit carried out by

Claire Drumm (Medical Student RCSI)

Key Performance Indicators

	N=	%
Number of procedures performed	**213**	
Number of procedures completed	207	97.2
Number of procedures abandoned	6	2.8

Tubal Patency Results	N=	%
• Bilateral tubal patency ascertained	174	84
• Tubal patency with previous salpingectomy	7	
• Bilateral tubal occlusion ascertained	4	
• Inconclusive	22	
Intrauterine Cavity Findings		
• Normal uterine cavity	205	96
• Uterine polyp	3	
• Sub mucosal fibroid	3	
• Septum	2	

Operating Theatre Department

Heads of Department

Dr Tom D'Arcy, *Director of Gynaecology Division*

Dr Michael Carey, *Director of Perioperative Medicine/ Anaesthesia*

Ms Frances Richardson, *Asst. Director of Midwifery & Nursing, Gynaecology*

Ms Alison Rothwell, *CNM 3, Theatre Manager and Gynaecology wards*

Staff Complement

CNM 3 x 1 WTE

CMM 2 x 1.5 WTE

CNM 2 (Anaesthetics) x 1 WTE

Staff Midwives x 5.84 WTE

RGN 18.61 WTE

Key Performance Indicators

- Efforts are on-going in the development of information sheets to enable us to meet the information requirements for women consenting to undergo surgical procedures.
- A full redevelopment and refurbishment of the Theatre Department is required and a Business Case for same had been submitted to the HSE. Following that, a HIQA visit in August 2016 confirmed these structural issues within the department. A programme of interim works commenced in December 2016 to address some issues however plans for the full redevelopment are progressing with the HSE.
- The interim works involved significant curtailment of surgical gynaecology services, to ensure we remained capable of providing the essential service of surgical obstetrics within the hospital.
- Simultaneous to the internal refurbishment of theatre, we ran a replacement programme for the Autoclaves in CSSD.
- The number of women undergoing caesarean section continues to rise.

Achievements in 2016

- Much improved air handling and fire rating standards, improved and more appropriate use of space and storage solutions have been achieved as a result of the refurbishment project.
- Continued TPOT.

Challenges for 2017

- To maintain and, if possible, to grow staffing numbers to facilitate surgical sessions for Consultants who have outpatient sessions but no dedicated operating sessions.
- To gain funding approval to go to design and tender for the building of new theatres, to reach best practice standards for Operating theatre departments.
- To publish the newly developed information sheets.
- To undertake a review of the consent form following publication of information sheets, to reflect current best practice standards.
- To continue TPOT.

Division of Paediatrics & Newborn Medicine

Division of Paediatrics & Newborn Medicine – Medical Report

Section 1: Admissions

Table 1.1: Admissions – Coombe Women & Infants University Hospital Neonatal Centre

	N
Total No. of Admissions to Neonatal Centre	1156*
No. of Infants > 1.5kg	1006

** including readmissions*

Section 2: VLBW Infants

Table 2.1: Number of cases reported to the VON 2016

	All Cases	Number of cases excluding congenital anomalies
Infants < 401g but ≥22 wks gestation	0	0
Infants 401-500g	6	6
Infants 501-1500g	108	107
Infants > 1500g but ≤29 wks gestation	7	0
Total	121	113

Table 2.2: Gestational age breakdown and survival to discharge of all infants reported to the VON (including those with congenital anomalies) 2016 (n=121)

Gestational Age	Inborn Infant	Survival to 28 days	Survival to Discharge	Outborn Infants	Survival to 28 days	Survival to Discharge	Total Survival to Discharge
21 wks	0	0	0	0	0	0	**0**
22 wks	4	0 (0.0%)	0 (0.0%)	0	0	0	**0 (0.0%)**
23 wks	2	0 (0.0%)	0 (0.0%)	1*	0 (0.0%)	0 (0.0%)	**0 (0.0%)**
24 wks	10	8 (80%)	8 (80%)	1	1 (100%)	1 (100%)	**9 (81.8%)**
25 wks	9	8 (88.9%)	7 (77.8%)	1	1 (100%)	1 (100%)	**8 (80.0%)**
26 wks	5	5 (100%)	5 (100%)	1	0 (0.0%)	0 (0.0%)	**5 (83.3%)**
27 wks	16	16 (100%)	16 (100%)	1	1 (100%)	1 (100%)	**17 (100%)**
28 wks	10	10 (100%)	10 (100%)	2	2 (100%)	2 (100%)	**12 (100%)**
29 wks	22	20 (90.9%)	20 (90.9%)	4	4 (100%)	4 (100%)	**24 (92.3%)**
30 wks	10	10 (100%)	10 (100%)	2	2 (100%)	2 (100%)	**12 (100%)**
31 wks	5	5 (100%)	5 (100%)	1	1 (100%)	1 (100%)	**6 (100%)**
32 wks	6	6 (100%)	6 (100%)	0	0	0	**6 (100%)**
> 32 wks	7	5 (71.4%)	3 (57.1%)	1	1 (100%)	1 (100%)	**4 (50.0%)**
Total	106	93 (87.7%)	90 (84.9%)	15	13 (86.7%)	13 (86.7%)	**103 (85.1%)**

** - delivered by ambulance staff in the car park of CWIUH*

Table 2.3: Birth weight and survival to discharge of all infants reported to the VON (including those with congenital anomalies) 2016 (n=121)

Gestational Age	Inborn Infant	Survival to 28 days	Survival to Discharge	Outborn Infants	Survival to 28 days	Survival to Discharge	Total Survival to Discharge
<501g	6	2 (33.3%)	2 (33.3%)	0	0	0	**2 (33.3%)**
501-600g	7	5 (71.4%)	4 (57.1%)	2*	0 (0.0%)	0 (0.0%)	**4 (44.4%)**
601-700g	6	3 (50.0%)	3 (50.0%)	1	1 (100%)	1 (100%)	**4 (57.1%)**
701-800g	11	9 (81.8%)	9 (81.8%)	1	1 (100%)	1 (100%)	**10 (83.3%)**
801-900g	12	12 (100%)	12 (100%)	0	0	0	**12 (100%)**
901-1000g	5	5 (100%)	4 (80.0%)	2	2 (100%)	2 (100%)	**6 (85.7%)**
1001-1100g	14	14 (100%)	14 (100%)	1	1 (100%)	1 (100%)	**15 (100%)**
1101-1200g	10	10 (100%)	10 (100%)	2	2 (100%)	2 (100%)	**12 (100%)**
1201-1300g	11	10 (90.9%)	9 (81.8%)	4	4 (100%)	4 (100%)	**13 (86.7%)**
1301-1400g	6	6 (100%)	6 (100%)	1	1 (100%)	1 (100%)	**7 (100%)**
>1400g	18	17 (94.4%)	17 (94.4%)	1	1 (100%)	1 (100%)	**18 (94.7%)**
Total	106	93 (87.7%)	90 (84.9%)	15	13 (86.7%)	13 (86.7%)	**103 (85.1%)**

** - 1 infant delivered by ambulance staff in the car park of CWIUH*

VON Definitions

Nosocomial Infection: defined as any late bacterial infection or coagulase negative staphylococcus infection.

Any Late Infection: defined as any late bacterial infection, coagulase negative staphylococcus infection or fungal infection after D3.

Mortality: defined as death at any time prior to discharge home or first birthday. It is applicable to all infants for whom survival status is known. In this table, it only includes infants 501-1500g and it includes infants with major congenital anomalies.

Mortality Excluding Early Deaths: excludes infants who die within the first 12 hours of birth.

Survival: indicates whether the infant survived to discharge home or first birthday.

Survival without Specified Morbidities: indicates whether the infant survived with none of the following key morbidities: severe IVH, CLD, NEC, pneumothorax, any late infection or PVL.

Source: Vermont Oxford Network Annual Report and Nightingale, the Vermont Oxford Network Internet Reporting Tool.

Table 2.4: Morbidity figures for infants 501-1500g admitted to the NICU in the CWIUH (congenital anomalies included) compared to the Vermont Oxford Network and Republic of Ireland (n=108)

	CWIUH 2016 Infants 501-1500g (n=108)	VON 2016 Infants 501-1500g (%)	ROI 2016 Infants 501-1500g (%)
Inborn	93 (86.1%)	87.4%	92.1%
Male	55 (50.9%)	50.5%	51.8%
Antenatal Steroids (partial or complete)	105 (97.2%)	83.8%	91.4%
C/S	75 (69.4%)	72.5%	70.7%
Antenatal Magnesium Sulphate	84 (77.8%)	57.5%	61.4%
Multiple Gestation	41 (38.0%)	27.2%	34.5%
Any major birth defect	6 (5.6%)	5.0%	9.0%
Small for gestational age	22 (20.4%)	24.7%	24.4%
Surfactant in DR	36 (33.3%)	23.2%	36.3%
Conventional Ventilation	55 (51.9%) (n=106)	53.9%	50.5%
High Frequency Ventilation	10 (9.4%) (n=106)	19.5%	13.0%
Any Ventilation	55 (51.9%) (n=106)	56.1%	51.0%
High Flow Nasal Cannula	28 (26.4%) (n=106)	53.6%	43.9%
Nasal IMV/SIMV	2 (1.9%) (n=106)	34.6%	19.5%
Nasal CPAP	93 (87.7%) (n=106)	78.8%	80.5%
Nasal CPAP before ETT Ventilation	65 (68.4%) (n=95)	62.1%	65.0%
Ventilation after Early CPAP	20 (30.8%) (n=65)	37.4%	33.6%
Surfactant at any time	65 (60.2%)	56.3%	59.4%
Steroids for CLD	6 (5.7%) (n=106)	9.4%	5.5%
Inhaled Nitric Oxide	17 (16.0%) (n=106)	4.9%	11.0%
RDS	93 (87.7%) (n=106)	72.2%	80.0%
Pneumothorax	5 (4.7%) (n=106)	4.1%	5.9%
Chronic Lung Disease (at 36 wks)	13 (13.5%) (n=96)	23.2%	20.5%
Chronic Lung Disease, Infants <33 wks	13 (14.6%) (n=89)	24.8%	22.5%
Early Bacterial Infection	3 (2.8%) (n=106)	2.4%	3.3%
Late Bacterial Infection	8 (7.8%) (n=103)	8.6%	9.2%
CONS Infection	6 (5.8%) (n=103)	4.9%	5.8%
Nosocomial Bacterial Infection	12 (11.7%) (n=103)	11.9%	13.8%
Fungal Infection	0 (0.0%) (n=103)	0.9%	0.2%
Any Late Infection (Bacterial or Fungal)	12 (11.7%) (n=103)	12.3%	13.8%
NEC	8 (7.5%) (n=106)	4.9%	6.9%
NEC Surgery	6 (5.7%) (n=106)	3.5%	3.6%

Table 2.4 (*continued*): Morbidity figures for infants 501-1500g admitted to the NICU in the CWIUH (congenital anomalies included) compared to the Vermont Oxford Network and Republic of Ireland (n=108)

GI perforation	6 (5.7%) (n=106)	1.7%	1.3%
PDA ligation	1 (0.9%) (n=106)	3.7%	1.9%
Surgery for ROP	1 (0.9%) (n=106)	2.3%	2.5%
Any Grade of IVH (Grade I-IV)	22 (21.4%) (n=103)	25.1%	23.9%
Severe IVH (Grade III-IV)	6 (5.8%) (n=103)	7.7%	8.3%
Cystic PVL	1 (1.0%) (n=103)	2.8%	1.2%
Retinopathy of Prematurity	18 (20.9%) (n=86)	30.7%	17.9%
Severe ROP (Stage 3 or more)	2 (2.3%) (n=86)	6.0%	2.6%
Anti-VEGF Drug	2 (1.9%) (n=106)	1.3%	0.6%
Indomethacin	0 (0.0%) (n=106)	12.2%	0.0%
PDA	8 (7.5%) (n=106)	26.8%	30.3%
Ibuprofen for PDA	1 (0.9%) (n=106)	7.0%	6.5%
Probiotics	47 (44.3%) (n=106)	14.6%	25.0%
Mortality	11 (10.4%) (n=106)	12.1%	14.0%
Mortality excluding Early Deaths	8 (7.8%) (n=103)	9.4%	10.4%
Survival	95 (89.6%) (n=106)	87.9%	86.0%
Survival without Specified Morbidities	70 (66.0%) (n=106)	59.4%	57.7%

Table 2.5: Shrunken Standardised Mortality and Morbidity (SMR) Rates

	SMR (95% confidence interval) For Year 2016	SMR (95% confidence interval) For 3 Years 2014-2016
Mortality	0.9 (0.6-1.4)	1.0 (0.7-1.4)
Death or Morbidity	0.9 (0.7-1.1)	0.9 (0.7-1.0)
CLD	0.7 (0.4-1.1)	0.7 (0.5-0.9)
CLD in <33 wks GA	0.7 (0.4-1.1)	0.7 (0.5-0.9)
NEC, any location	1.3 (0.7-2.2)	1.3 (0.8-1.8)
Late Bacterial Infection, any location	0.9 (0.4-1.5)	1.0 (0.7-1.4)
Coagulase Negative Infection, any location	1.2 (0.5-2.2)	1.1 (0.6-1.6)
Nosocomial Infection, any location	0.9 (0.5-1.5)	1.1 (0.8-1.4)
Fungal Infection, any location	0.2 (0.0-1.5)	0.8 (0.1-2.0)
Any Late Infection, any location	0.9 (0.5-1.5)	1.1 (0.8-1.4)
Any IVH, any location	0.9 (0.6-1.3)	0.9 (0.7-1.1)
Severe IVH	1.0 (0.6-1.5)	1.0 (0.7-1.3)
Pneumothorax, any location	1.1 (0.6-1.7)	1.1 (0.7-1.6)
Cystic PVL	0.7 (0.1-1.6)	0.5 (0.2-1.0)
Any ROP	0.8 (0.5-1.1)	0.7 (0.5-0.9)
Severe ROP	0.7 (0.3-1.4)	0.5 (0.3-0.9)

Section 3: Hypoxic Ischaemic Encephalopathy & Mortality Tables

Table 3.1: Hypoxic Ischaemic Encephalopathy

	Inborn	Outborn
Hypoxic Ischaemic Encephalopathy (HIE)	16	12
– Mild HIE (Grade 1)	10	1
– Moderate HIE (Grade 2)	2	7
– Severe HIE (Grade 3)	4	4
Therapeutic Hypothermia	6	11

Table 3.2: Mortality - Inborn Infants with Congenital Anomalies (n=15)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Abnormality (leading to death)
1250*	35+2	7, 9	78	OLCHC (PICU)	Intrauterine growth restriction, Respiratory distress syndrome, Complete Atrio-ventricular septal defect, Split hand and foot malformation. AND
1280	35+2	6, 9	5	CWIUH	Trisomy 18, Respiratory distress syndrome, Cardiac Failure. AND
1800	36+2	3,6	3	CWIUH (NICU)	Corneal clouding, large VSD, Cerebellar hypoplasia, Respiratory distress syndrome
1890	35+4	7, 8	1	CWIUH (DS)	Trisomy 13. AND
1910	38+4	5, 5	16	CWIUH (NICU)	Intrauterine growth restriction, M3-methylglutaconic aciduria (MEGCANN) syndrome.
2190	39+4	3, 2	1	CWIUH (DS)	Neural tube defect, Hydrocephalus, Potter's sequence, Cloacal abnormality. AND
2490*	38+4	9, 10	30	OLCHC (PICU)	Anorectal malformation, Total anomalous pulmonary venous drainage, Pneumothorax, Cat eye syndrome
2640	29+6	5, 5	1	CWIUH	Left sided Cystic lung lesion, Fetal hydrops,
2950	33+5	5, 7	3	CWIUH (NICU)	Polycystic kidney disease, Pulmonary hypoplasia, Persistent pulmonary hypertension, Renal Failure. AND
3050	39+5	6, 6	2	CWIUH (NICU)	Trisomy 21, Right ventricular hypertrophy, Persistent pulmonary hypertension, Right pleural effusion.
3090	32+1	2, 5	1	CWIUH (NICU)	Bardet-Biedl variant overlapping Meckel Gruber syndrome, Pulmonary hypoplasia. AND
3105	39+1	4, 9	20	CUH (PICU)	Neural tube defect, Corrective surgery with shunt placement, Seizures, Respiratory failure
3280*	35+2	9, 10	90	OLCHC	Microcephaly, Cleft palate, Arthrogryoposis, Transposition of great vessels with double outlet right ventricle and VSD, Pulmonary atresia. AND
3260	34+2	1, 3	1	CWIUH (NICU)	Right sided Congenital diaphragmatic hernia, Fetal Hydrops. AND

Table 3.2 (*continued*): Mortality - Inborn Infants with Congenital Anomalies (n=15)

3340	39+3	6, 8	1	CWIUH (NICU)	Congenital diaphragmatic hernia, Hypoplastic left heart syndrome. AND

AND - *Antenatally diagnosed malformation*

* - *Infant death*

Table 3.3: Mortality - Inborn Infants Normally Formed ≤ 1500g (n=20)

(Ten infants - intensive care not started for extreme prematurity)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Cause of Death
264	19	3, 3	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
310	19+6	2, 2	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
350	19+3	2, 0	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
360	21+4	2, 2	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
374	21+2	2, 2	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
410	33	6, 7	9	CWIUH (NICU)	Intrauterine growth restriction, Respiratory distress syndrome, Pulmonary hypertension, Porencephaly
420	22-23 estimated	1, 3	1	CWIUH (NICU)	Extreme prematurity, Respiratory distress syndrome
455	22+3	1, 0	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
470	22+2	2, 2	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
490	21+4	1, 0	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
520	23+3	0, 2	1	CWIUH (DS)	Extreme prematurity, Placental abruption, Sepsis, Pulmonary hypoplasia
540*	33	6, 8	214	OLCHC (PICU)	Intrauterine growth restriction, Hypothyroidism, PDA, Refractory to treatment pulmonary hypertension, Chronic lung disease
560	23+2	1, 1	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
560	22+6	2, 0	1	CWIUH (DS)	Extreme prematurity, Not resuscitated
640	23=3	4, 7	18	CWIUH (NICU)	Extreme prematurity, Respiratory distress syndrome, Necrotising enterocolitis with intestinal perforation, Klebsiella sepsis, Acute kidney injury, Grade III Intraventricular hemorrhage
680	25+1	2, 2	1	CWIUH (NICU)	Respiratory Distress syndrome, Pulmonary hypertension, Pulmonary hypoplasia
690	24+1	5, 7	8	CWIUH (NICU)	Respiratory distress syndrome, Pulmonary hypertension, Bilateral grade III Intraventricular hemorrhage
750	29+1	5, 7	25	CWIUH (NICU)	Respiratory distress syndrome, Necrotising enterocolitis with intestinal perforation
780	24+2	2, 5	1	CWIUH (NICU)	Respiratory distress syndrome, Pulmonary hypertension of the newborn, Pericardial effusion, Cardiac failure

960*	25+1	1, 2	158	OLCHC (PICU)	Respiratory distress syndrome, Necrotising enterocolitis with intestinal perforation, Enterococcus sepsis, Right sided grade IV Intraventricular hemorrhage, Hydrocephalus requiring Ventriculo-peritoneal shunt placement

** - Infant death*

Table 3.4: Mortality - Inborn Infants Normally Formed >1500g (n = 5)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Cause of Death
2320*	36	9, 10	160	Home	Sudden infant death syndrome
2690	38	2, 8	18	Home	Sudden infant death syndrome
2970*	39+1	8, 10	39	Home	Neonatal abstinence syndrome Sudden infant death syndrome
3230	38+3	0, 0	1	CWIUH (NICU)	Hypoxic Ischemic Encephalopathy (Sarnat stage III)
4400	39+6	0, 0	2	CWIUH (NICU)	Hypoxic Ischemic Encephalopathy (Sarnat stage III)

** - Infant death*

Table 3.5 Mortality - Outborn Infants with Congenital Anomalies (n = 11)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Cause of Death (Referring Hospital)
1520	35+1	9, 10	23	OLCHC (PICU)	Tetralogy of Fallot, Cornelia de Lange syndrome (Cork)

Table 3.6 Mortality - Outborn Infants Normally Formed ≤ 1500g (n = 1)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Cause of Death (Referring Hospital)
585	26+5	6, 8	18	CWIUH (NICU)	Respiratory distress syndrome, Bilateral (Galway)hydroureteronephrosis, Left portal vein thrombosis, Serratia marcescens sepsis, Necrotizing enterocolitis, Acute pulmonary haemorrhage

Table 3.7 Mortality - Outborn Infants Normally Formed >1500g (n = 3)

Birthweight (g)	Gestational Age	Apgar Scores	Age at Death (day of life)	Place of Death	Cause of Death (Referring Hospital)
2250	35+4	2, 2	5	CWIUH (NICU)	Hypoxic Ischemic Encephalopathy (Sarnat stage III), Pulmonary Hypertension (Letterkenny)
2270*	35+1	9, 10	78	Home	Idiopathic haemolytic anemia, Sudden infant death syndrome (Sligo)
3960	41+1	Home delivery	4	CWIUH (NICU)	Meconium aspiration syndrome, Pulmonary Hypertension, Hypoxic Ischemic Encephalopathy (Sarnat stage III) (Letterkenny)

** - Infant death*

Section 4: Selected Morbidity Tables for Patients Admitted to Neonatal Centre

Table 4.1 Term Baby Causes of Respiratory Morbidity (> 37 weeks)

Transient tachypnoea of the newborn	174
Respiratory distress syndrome	20
Air leak	25
Meconium aspiration syndrome	14
Aspiration pneumonia	0
Congenital pneumonia	1
Persistent pulmonary hypertension of the newborn	36
Congenital diaphragmatic hernia	4
Tracheo-Esophageal fistula/Esophageal atresia	1
Bronchogenic cyst	1
Airway pathology	4
Pulmonary hypoplasia	2

Table 4.2 Jaundice in Term Babies >37 Weeks

Non-haemolytic	30
Haemolytic	
ABO	32
RH	7
Other	5

Section 5: Congenital Abnormalities Born in the Coombe Women and Infants University Hospital

Table 5.1 Gastrointestinal Tract Anomalies

Cleft lip	3
Cleft palate +/- lip	9
Pierre-Robin sequence	1
Bowel atresia/obstruction	9
Imperforated anus/ anal anomalies	5
Pyloric stenosis	0
Omphalocoele	2
Gastroschisis	4

Table 5.2 Urinary and Genital System Anomalies

Renal agenesis	2
Multicystic kidneys unilateral/bilateral	2
Hydronephrosis +/- Vesicoureteral reflux	8
Posterior urethral valve	1
Bladder exstrophy	1
Hypospadias	10
Micropenis	2

Table 5.3 Neural System Anomalies

Anencephaly	0
Encephalocoele	0
Meningomyelocoele +/- ventriculomegaly	7
Ventriculomegaly (isolated)	2
Corpus callosum agenesis (isolated)	4

Table 5.4 Skin Anomalies

Haemangioma (extensive)	1
Cephalhaematoma	9
Subgaleal haemorrhage	10
Skin necrosis	3
Epidermolysis Bullosa	1

Table 5.5 Respiratory System Anomalies

Congenital diaphragmatic hernia	4
Choanal atresia	2

Table 5.6 Musculoskeletal Anomalies

Congenital deformities of feet	9
Arthrogryposis	1
Digital anomalies	4
Congenital hip dysplasia	118
Split hand foot malformation	1

Table 5.7 Cardiac Anomalies

Isolated ventricular septal defect	20
Transposition of the great arteries	10
Hypoplastic left heart syndrome	5
Tetralogy of Fallot	11
Atrioventricular septal defect	6
Patent Ductus Arteriosus (not in preterm)	21
Atrial septal defect	7
Supraventricular tachycardia/cardiac rhythm anomalies	2
Congenital heart block	1
Epstein's anomaly	1

Table 5.8 Chromosomal Anomalies

Trisomy 21	17
Trisomy 18	4
Trisomy 13	1
Mosaic trisomy 22	1
Turner syndrome	1
Beckwith-Wiedemann syndrome	1
Prader-Willi syndrome	1

Table 5.8 Other Disorders Associated with Dysmorphic Features/Anomalies

Cornelia de-Lange syndrome	1
MPS 1 (Hurler syndrome)	1
Noonan syndrome	1
Menke's syndrome	2

The year 2016 featured a number of notable developments concerning the medical staff and clinical activities within the Department of Paediatrics & Newborn Medicine. We welcomed the addition of two newly appointed Consultant Neonatologists. Dr. Jana Semberova appointed on 31/10/2016 and Dr. Anne Doolan on 28/11/16. Both of these new Consultant Neonatologists are joint appointments between the Coombe Hospital and the Midlands Regional Hospital in Portlaoise. Under the guidance of Drs Semberova and Doolan along with the Consultant Paediatricians at the Midland Regional Hospital in Portlaoise the two respective Paediatric Departments worked closely together in 2016 as a managed maternity network. This close working relationship featured educational days for staff, resuscitation training, and joint morbidity and mortality meeting case discussions. Dr. Jan Miletin became a clinical Professor in the School of Medicine at University College Dublin in June 2016. Prof. Miletin ceased his role as Director of Paediatrics and Newborn Medicine and this position was filled by Dr. John Kelleher on 12th of September 2016. Dr. Suzanne Kelleher departed from the Coombe to take up a full time Consultant General Paediatrician position in O.L.C.H.C. on 26/10/2016. Dr S. Kelleher had provided ongoing specialized developmental follow up clinics for newborns with HIE and extremely preterm newborns. The role of providing ongoing developmental follow up clinics whilst now the responsibility of each individual consultant neonatologist, is complimented by Dr. John Kelleher who facilitates Bayley Scales of Infant Development assessments at approximately 24 months of age corrected for prematurity for high risk infants. A breast milk analyser was purchased under the guidance of Dr Pamela O'Connor in late 2016 to provide for targeted fortification of breast milk feeds for extremely preterm infants and to assist in ongoing nutritional research projects within the department. We are forever grateful to the Milltown Golf Club under the captaincy of John Gleeson who generously donated the funds necessary to purchase the human milk analyser. Prof. Martin White continued his role as Chairman of the Neonatal Clinical Advisory Group as part of the National Clinical Programme for Paediatrics & Neonatology.

I would like to thank all the nursing, midwifery, medical, orthopaedic, physiotherapy, chaplaincy, dietetic, medical social work, laboratory, pharmacy, information technology, radiology, infection control and bioengineering personnel, as well as the human resources staff and our obstetric colleagues for their continued support and dedication in providing care for infants born at the Coombe Women & Infants University Hospital. I would also like to thank a number of our colleagues from Our Lady's Children's Hospital Crumlin and the Children's University Hospital Temple Street, who continue to consult both pre and postnatally and visit the Unit – often in the late hours. In particular, we are grateful to Dr Orla Franklin, consultant paediatric cardiologist who provides the neonatal unit with an excellent cardiology consultation service.

Comparison with Previous Reports

For the year 2016 the Coombe hospital cared for 121 premature infants whose birth weights were between 401 - 1500–g and/or whose gestational ages were between 22 + 0 weeks until 29 + 6 weeks. This included a few infants with major congenital anomalies. They included both inborn and a minority of outborn infants who were transferred into the Coombe hospital at some point during the first 28 days of their lives. These infants and aspects of their care were all prospectively reported into an international collaborative network known as the Vermont Oxford Network (VON). This number is slightly down from the year 2015 when the Coombe hospital cared for 125 such infants. Of these 121 premature VON infants the total survival to discharge in 2016 was **85.1%** compared to a similar value of 84% in the year 2015.

Of these 121 premature VON newborns the Coombe NICU admitted a total of 108 infants in 2016. The total survival to discharge was **89.6%**. This compares similarly to a survival to discharge in the year 2015 of 88.5%. In 2016 the survival to discharge of such premature infants without specified major morbidities was improved at **66%** compared with 57.7% in the year 2015. We are quite pleased that our survival to discharge without specified major morbidities is higher than overall network result of 59.4% and that of the Republic of Ireland VON result of 57.7%. Please refer to Figures 1 – 3 for a ten year trend concerning numbers of VON premature newborns and survival outcomes at the Coombe.

The incidence of severe intraventricular/periventricular (PIVH) haemorrhages was 5.8%. There were two infants with severe retinopathy of prematurity (ROP) (stage 3 or more).

The frequency of Chronic Lung disease (defined at 36 weeks gestational age) was much lower at **13.5%** compared to the year 2015 when it was higher at 21.4%. This is lower than both the entire network at 23.2% and the Republic of Ireland VON at 20.5%. The Shrunken Standardised Morbidity over the last three years for chronic lung disease is 0.7 (95% confidence interval 0.5 – 0.9). There is a continuous trend of using non-invasive forms of ventilation.

Concerning the VON pre-defined outcome of "any late infection (bacterial or fungal)" it is pleasing to note that compared to the year 2015 when the Coombe NICU had an frequency of 21.3% in premature infants within the VON database, for the year 2016 this outcome has decreased to **11.7%**. The Shrunken Standardised Morbidity over the last three years for "any late infection" is 1.1 (95% confidence interval 0.8 – 1.4). This decrease likely represents the collaborative efforts of medical, nursing and midwifery staff in promoting hand hygiene, touch surface cleaning, care bundles and early enteral human

milk nutrition.

In relation to patent ductus arteriosus (PDA), **7.5%** of our VLBW infants had PDA as defined by the VON definition. This is a decrease from the year 2015 from 14.4%. The Coombe NICU frequency of PDA diagnosis was much lower than within the VON database of 26.8%. In 2016 there was only 1 case of use of ibuprofen for PDA treatment. We continued with our conservative strategy (started in 2010) and the frequent usage of point of care ultrasound (together with excellent cardiology support from Dr. Orla Franklin); there was one case of PDA surgical ligation in 2016 and one in 2015.

In relation to hypoxic ischaemic encephalopathy (HIE), there were two inborn infants classified as HIE grade II and four classified as HIE grade III. All six of these infants were treated with therapeutic hypothermia. Our inborn HIE II/III hypothermia treatment number of 6 infants is the same as in 2015. However in 2016 the Coombe NICU provided therapeutic hypothermia to 11 outborn referred infants (7 HIE II, 4 HIE III) compared to 5 cooled infants in the year 2015. The Coombe NICU is a national referral centre for total body hypothermia therapy for infants with defined criteria (TOBY trial criteria), where this therapy would be commenced within six hours of birth. This represents an increase of more than 100% since last year. See Table 3.1 for details.

The Neonatal Centre continues to receive significant numbers of infants diagnosed with congenital abnormalities prenatally, including congenital cardiac disease. The Coombe Women & Infants University Hospital has a close relationship with cardiology, cardiothoracic surgery and paediatric intensive care at Our Lady's Children's Hospital, Crumlin in the care and transfer of these infants. Babies born with significant paediatric surgical problems receive care through the paediatric surgical teams based at the Children's University Hospital, Temple Street and Our Lady's Children's Hospital, Crumlin. There is close co-operation between our team and the foetal/perinatal medicine specialists in the Coombe Women and Infants University Hospital. We are presenting all newborns with congenital abnormalities in the Coombe Women and Infants University Hospital.

I would like to thank Dr. Saira Tabassum for her dedication and hard work in compiling this report. I wish to acknowledge the efforts of my paediatric colleague Prof. Jan Miletin for his part in the creation of this report concerning very low birth infants and those within the Vermont Oxford Network. In addition a debt of gratitude to the Vermont Oxford Database Co-Ordinator at the CWIUH, Ms Julie Sloan, and Baby Clinic staff, Ms Maureen Higgins and Ms Ciara Carroll, for their invaluable help and assistance in preparing this Annual Report. In relation to development of guidelines, Ms Anne O'Sullivan ANNP and Mr Peter Duddy, Neonatal Pharmacist, with the help of the Paediatric Drugs & Therapeutics Committee, reviewed our in-house drug policies and protocols. Finally, I would like to thank all staff members and my colleagues in the Neonatal Centre for their hard work throughout 2016.

Dr John Kelleher MB BCh BAO MSPH

Director of Paediatrics & Newborn Medicine, IMC 23364

Research in the Department of Paediatrics & Newborn Medicine 2016

The CWIUH Neonatology department continues to be very active in research. We run numerous research projects ourselves and participate in other multi-centre and international studies. Two research fellows in neonatology worked with us in 2016, Dr. Georsan Caruth and Dr. Mary O'Dea. The main research projects conducted in the Neonatology department in 2016 are listed below.

ETT study: Multicentre international prospective study. The aim was to identify the most accurate method for measuring the safe depth of orally placed neonatal endotracheal tubes (ETT). The investigators compared different body measures in relation to the ETT tip on chest radiograph. Recruitment ongoing throughout 2016.

HIP trial: Multicentre multinational randomised controlled trial investigating Management of Hypotension in the Preterm Extremely Low Gestational Age Newborns (ELGANs). The aim of the HIP trial is to develop effective diagnostic tools and treatment of hypotension in the ELGANs. HIP trial is the largest multicentre randomised European study in this particular population. Recruitment ongoing throughout 2016.

POPS trial: A randomised trial of stopping parenteral nutrition and removing PICC lines from preterm infants with very low birth weight at 100ml/kg/day or 140 ml/kg/day enteral feeds. The aim was to compare the two groups with respect to the time to regain the birth weight. The trial was completed in 2016. Abstract presented in two international conferences.

Maternal lifestyle and behaviour change intervention study. Randomized controlled study focused on primigravidas delivering in the CWIUH. The study seeks to determine whether an e-health platform compared with written and verbal communication improves maternal and neonatal health outcomes. The study is multidisciplinary with obstetric and dietetic involvement and planned follow-up at 4 and 9 months postpartum. Recruitment ongoing throughout 2016. Research fellow Dr Georsan Caruth.

Bright Horizons study: Developmental follow up study at approximately 24 months of age of ex premature newborns and term newborns treated with therapeutic hypothermia for hypoxic ischemic encephalopathy. Throughout 2016, Dr Charlotte Wilson, Lecturer in Clinical Psychology at Trinity College Dublin and Emma Hickey (PhD student in Clinical Psychology, Trinity College Dublin) performed Bayley Scales of Infant Developmental assessments on children at the National Children's Hospital, Tallaght. These children were all high risk graduates of the Coombe neonatal unit for 2014 and 2015. This study is ongoing and is financially supported by the NCH foundation and Nestle Ireland. Dr John Kelleher is the PI. Dr David Coghlan is co-investigator at the NCH, Tallaght.

PRISM study: PReterm Infection and SysteMic inflammation and neonatal outcomes. This study is focused on newborn infection and inflammation, examining novel blood inflammatory markers. The research is aimed to improve the understanding of the systemic inflammatory response in preterm infants and evaluate possible future therapies. Recruitment continued in 2016. NCH Foundation: Prof Eleanor Molloy (PI): €39,500: 2016-2017. Two international abstract presentations; PhD thesis to be submitted December 2017.

GENIE study: Gender and Neonatal Inflammation in preterm outcomes. NCRC: Dr Matt McGovern and Prof Eleanor Molloy (PI) €185,875: 2017-2020.

DISCO study: Down syndrome, Infection and Clinical Outcomes. NCH Foundation: Prof Eleanor Molloy (PI) €316,500: 2017-2020.

NEBULA study: Neonatal brain injury: Understanding systemic inflammation and immunomodulation. NCH Foundation: Prof Eleanor Molloy (PI) €39,000: 2016-2017. Four international abstract presentations.

NIMBUS study: Neonatal Inflammation and Multiorgan dysfunction and Brain injury research group. HRB HRA Award: Dr Mary O'Dea and Prof Eleanor Molloy (PI): €328,000: 2015-2018.

CHAMPION study: Childhood multiorgan outcomes after Neonatal encephalopathy. NCH Foundation: Dr Denise McDonald and Prof Eleanor Molloy (Co-PI). €107,562: 2015-2017; four international abstract presentations; Cochrane review ongoing; 2 manuscripts submitted for publication.

SFI SIRG Programme: Dr Eva Jiminez and Prof Eleanor Molloy (collaborator). The sensitivity and specificity of miRNAs as biomarkers of neonatal seizures. €519,636:2015-8

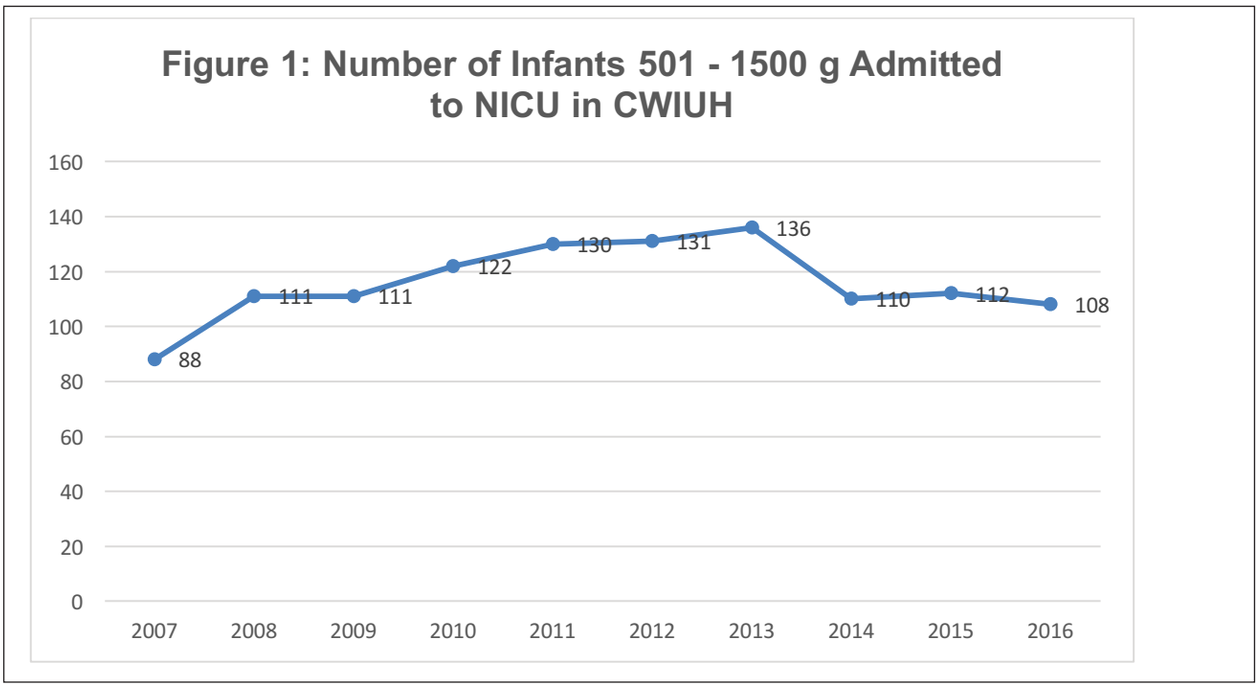
In addition to the prospective studies, we performed numerous retrospective chart reviews. We also performed multiple clinical audits which led to change of our daily practice. Monthly research meetings continue to be a platform to discuss the progress in research studies and audits.

Publications in the Department of Paediatrics & Newborn Medicine 2016

- Cowman J, Quinn N, Geoghegan S, Müllers S, Oglesby I, Byrne B, Somers M, Ralph A, Voisin B, Ricco AJ, Molloy EJ, Kenny D. Dynamic platelet function on von Willebrand factor is different in preterm neonates and full-term neonates: changes in neonatal platelet function. J Thromb Haemost. 2016 Oct;14(10):2027-2035.
- Sweetman DU, Onwuneme C, Watson WR, O'Neill A, Murphy JF, Molloy EJ. Renal function and novel urinary biomarkers in infants with neonatal encephalopathy. Acta Paediatr. 2016 Nov;105(11):e513-e519.
- Cosgrove P, Molloy EJ. Is frusemide necessary following red cell transfusion in preterm neonates? Arch Dis Child. 2016 Sep;101(9):868-70.
- Twohig A, Reulbach U, Figuerdo R, McCarthy A, McNicholas F, Molloy EJ. Supporting Preterm Infant Attachment And Socioemotional Development In The Neonatal Intensive Care Unit: Staff Perceptions. Infant Ment Health J. 2016 Mar-Apr;37(2):160-71.
- Onwuneme C, Blanco A, O'Neill A, Watson B, Molloy EJ. Vitamin D enhances reactive oxygen intermediates production in phagocytic cells in term and preterm infants. Pediatr Res. 2016 Apr;79(4):654-61
- Geurtzen R, van Heijst AF, Babarao S, Molloy E, Draaisma JM, Hogeveen M. Practices in antenatal counseling for extremely premature infants amongst European trainees. J Matern Fetal Neonatal Med. 2016 Dec;29(24):3956-9.
- Bearer CF, Molloy EJ. Expanding research, relevance, and reach. Pediatr Res. 2016 Jan;79(1-1):2.
- Onwuneme C, Diya B, Uduma O, McCarthy RA, Murphy N, Kilbane MT, McKenna MJ, Molloy EJ. Correction of vitamin D deficiency in a cohort of newborn infants using daily 200 IU vitamin D supplementation. Ir J Med Sci. 2016 Aug;185(3):683-7.
- O'Hare FM, Watson RW, O'Neill A, Blanco A, Donoghue V, Molloy EJ. Persistent systemic monocyte and neutrophil activation in neonatal encephalopathy. J Matern Fetal Neonatal Med. 2016;29(4):582-9.
- McGovern M, Reyani Z, O'Connor P, White M, Miletin J. Thyroid function testing in neonates born to women with hypothyroidism. Eur J Pediatr. 2016 Dec;175(12):2015-2018.
- Anglim B, Mandiwanza T, Miletin J, Turner M, Kennelly MM. The natural history of neural tube defects in the setting of an irish tertiary referral foetal medicine unit. J Obstet Gynaecol. 2016;36(1):19-23

- Kulihova K, Prochazkova M, Semberova J, Janota J. Fatal Primary Capillary Leak Syndrome in a Late Preterm Newborn. Indian J Pediatr. 2016 Oct; 83(10): 1197-9.
- Crosby DA, Miletin J, Semberova J, Daly S. Is routine transvaginal cervical length measurement cost-effective in a population where the risk of spontaneous preterm birth is low? Acta Obstet Gynecol Scand. 2016 Dec; 95(12): 1391-1395.
- Healy DB, Brennan AM, O'Donovan R, Daly V, Doolan A, Dempsey EM. Structured promotion of breast milk expression is associated with shortened hospitalisation for very preterm infants. Acta Paediatr. 2016 Jun; 105(6): e252-6.

Trends in Very Low Birth Weight (VLBW) Infants in the Coombe Women and Infants University Hospital over the Last 10 Years



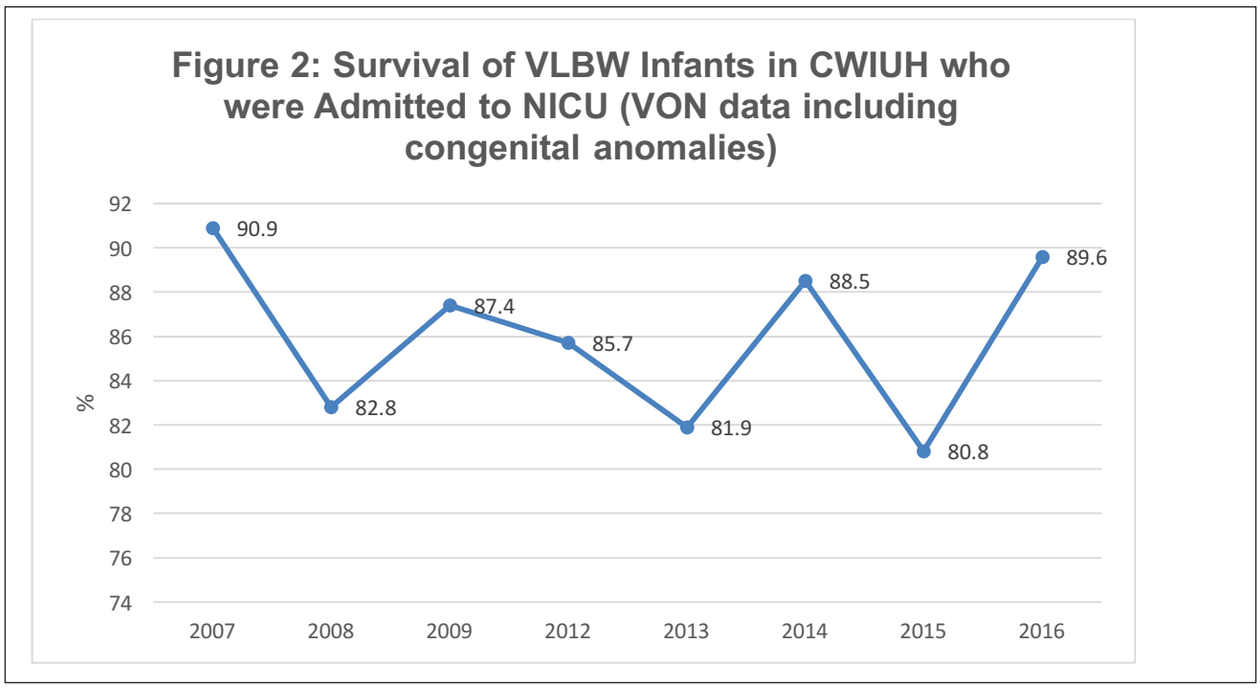


Figure 2: Survival of VLBW Infants in CWIUH who were Admitted to NICU (VON data including congenital anomalies)
%
92
90
88
86
84
82
80
78
76
74
90.9
82.8
87.4
85.7
81.9
88.5
80.8
89.6
2007
2008
2009
2012
2013
2014
2015
2016

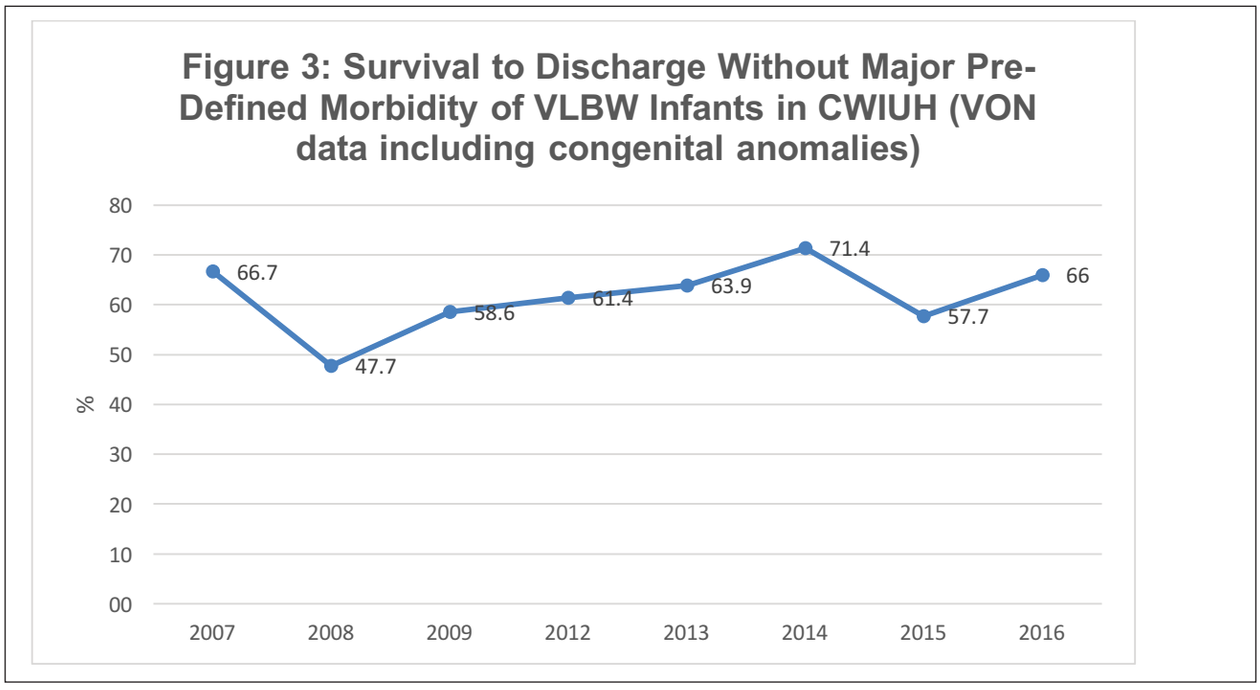


Figure 3: Survival to Discharge Without Major Pre-Defined Morbidity of VLBW Infants in CWIUH (VON data including congenital anomalies)
%
80
70
60
50
40
30
20
10
00
66.7
47.7
58.6
61.4
63.9
71.4
57.7
66
2007
2008
2009
2012
2013
2014
2015
2016

Division of Paediatrics & Newborn Medicine – Midwifery/ Nursing Report - Neonatal Unit

Heads of Department

Prof. Jan Miletin, *Director of Paediatrics and Newborn Medicine (until Sept 2016)*

Dr. John Kellher, *Director of Paediatrics and Newborn Medicine (from Sept 2016)*

Bridget Boyd, *Assistant Director of Midwifery and Nursing*

Ann Mac Intyre, *CMM3 (until Aug 2016)*

Anne Kelly, A*CMM3 (from Oct 2016)*

Staff Complement

Complement of 83.5 WTE including:

1 WTE Advanced Nurse Practitioner – Neonatal Nursing

1 WTE CMM3

6.5 WTE CMM2

5.57 WTE CMM1

1 WTE CMS Follow On Care.

0.5 WTE CMS Resuscitation

1.5 WTE Clinical Skills Facilitators

15.37 WTE Midwives

46 WTE RGNs

Clerical Staff

Support Staff

Key Performance Indicators

- CWIUH Neonatal Team is committed to improving the quality and safety of medical and nursing care for newborn infants and their families.
- Continuously searching and interpreting current evidence-based literature to achieve quality improvement and staff development.
- Improvement in medication management.
- Reduction of Nosocomial infection rates.
- Reduction in the number of ventilation days thus decreasing lung injury and therefore decreasing chronic lung disease.
- Strive to define "family–centred" care as an interdisciplinary, comprehensive, and holistic care of neonates and families while maintaining their respect and dignity, leading to the promotion of quality of care.

Achievements in 2016

- 1 WTE staff midwife recruited and 1 WTE staff nurse resigned.
- 7 staff midwives/nurses graduated with the Postgraduate Diploma in Neonates, 5 staff midwives/nurses commenced the programme.
- 5 staff completed the Foundation Programme on Principles of High Dependency and Special Care and 2 completed level 2 NICU.
- 3 staff completed the MSc in Nursing (Neonatal).
- The NTTP team from the CWIUH conducted a total number of 207 transports representing 33.4% of all NNTP transports.
- The Foundation Toolkit for Family Centred Developmental Care (FINE level 1) was coordinated and hosted by CWIUH over two days. Delegates were interdisciplinary and hailed from neonatal and paediatric units across the country.
- The family-centred developmental care committee set out aims and objectives for the unit. Following on from the Foundation Toolkit for Family Centred Developmental care, a focus group was formed to improve aspects of developmental care for babies and their families.
- The first Irish Family Infant Neurodevelopmental Education (FINE), Level 2-Practical Skills took place over 12 weeks with 3 candidates from CWIUH.
- Quarterly developmental care newsletters were published. A Prematurity Awareness Symposium was held as part of World Prematurity celebrations, culminating in the hospital being illuminated in purple.

Challenges for 2017

- To further reduce infection rates.
- Planning and managing capacity effectively.
- On-going staff recruitment and retention.
- Revising existing policies and guidelines and developing new guidelines to reflect best practice.
- Introduce Quality Improvement initiatives – early use of colostrum in VLBW infants and developing pain management practices.
- To develop an emergency evacuation plan that is unique to the NICU and meets relevant Health and Safety requirements.
- Refurbishment of the Paediatric Outpatients Department.
- Implementation of the PNW Liaison Nurse on full-time basis.

Neonatal Transition Home Service (NTHS)

Heads of Department

Dr John Kelleher, *Director of Paediatrics and Newborn Medicine*
Bridget Boyd, *Assistant Director of Nursery and Midwifery*
Ann MacIntyre, *CMM III (until Aug 2016)*
Anne Kelly, *CMMIII (from Aug 2016)*
Barbara Whelan, CMS – *Neonatal Transition Home Service (Author of Report)*

Staff Complement

1 WTE CMS – NTHS, Barbara Whelan

Key Performance Indicators

- Promote parent education in the Neonatal Centre to enhance readiness for discharge. Weekly group education sessions held. All parents and members of staff are welcome to attend.
- R.S.V. (Respiratory Syncytial Virus) prophylaxis with Palivizumab continues over the winter months. Administration in hospital and referral to home care service when appropriate.
- In conjunction with lactation support CMS, we continue to provide a bi-weekly class for mothers who are expressing milk for their babies. By offering this help and guidance, mothers have a greater chance of successfully providing milk for their babies.
- Attendance at the monthly Neonatal Support Group remains very popular and parents appreciate the support that it offers to them and their families. Attendance is encouraged prior to discharge.
- Ongoing education sessions are delivered on request to nursing and midwifery students and students of the Neonatal Intensive Care Course and also this year an update on care of neonates post discharge was given to PHNs. in the Tallaght area.
- Member of the ATTI group (Antenatal to 3 Initiative). This is a multidisciplinary committee developed to increase awareness of community initiatives and improve inter agency communication for this cohort of children in the West Tallaght area.

Achievements

- Published: Barbara Whelan, Elles Musters, Amanda Murray, Eilish Moore, Lenie Lievaart, Sjoerd Visser, Esther Toxopeus, Annemarie van Veen, Gerard Notario, Fiona J Campbell. (2016) Review of the home care programmes for respiratory syncitial virus (RSV) prophalyxis in Ireland and The Netherlands. *Drugs Ther Perspect. 32:119-130.*

Registered Advanced Nurse Practitioner

Heads of Department

Dr John Kelleher, *Director of Paediatrics & Newborn Medicine*

Bridget Boyd, *Assistant Director of Midwifery & Nursing*

Ann MacIntyre, CMM III Neonatal Unit (until Aug 2016)

Anne Kelly, *CMMIII (from Aug 2016)*

Staff Complement

1 WTE Registered Advanced Nurse Practitioner (Neonatology), Anne O'Sullivan (Author)

Key Performance Indicators

- To enable consistency in standards of health care. This is achieved by having a presence in the clinical area, offering support and guidance to medical and nursing staff, ensuring care is evidenced based, while also managing a caseload. Outcomes are measured by regular audits.
- To promote family-centred care, empowering parents to participate in the care of their infants. Education required to support this initiative is on-going.
- To further reduce nosocomial infection rates, monitor antibiotic use and put strategies in place to minimise multidrug resistant organisms.
- To further reduce ventilation days and minimize incidence of chronic lung disease in our VLBW infants.
- To promote breastfeeding and optimize nutritional management of our infants.
- To promote and facilitate research activities by participating in research studies as a primary researcher, as an investigator or in a support role.

Achievements in 2016

- In collaboration with nursing and medical colleagues, we presented posters at national and international conferences including the AbbVie 10th Annual Neonatal Study day and Irish Perinatal Meeting.
- In conjunction with nursing colleagues a number of Quality Improvement Initiatives were introduced in Nutritional support, Assessment of Neonatal Abstinence Syndrome and Parent information.
- Participated in the Masters of Science in Nursing/ Midwifery (Advanced Practice) programme in the RCSI, as a member of curriculum development group and as a lecturer.
- Participated in the Maternal & Newborn Clinical Management System Project (MN-CMS).

Challenges and Plans for 2017

- Prepare for the Introduction of the Maternal & Newborn Clinical Management System Project as a member of the implementation team.
- Seek publications to disseminate results of RCTs undertaken in 2016.
- To enhance the working relationship with medical and nursing staff in our network hospital as we strive to provide expert neonatal care in the region.
- To further develop the role of the postnatal ward Liaison Nurse. The aim of this initiative is to minimize separation of mothers and babies and to enhance the provision of neonatal care on the post-natal wards and in the delivery suite in conjunction with midwifery staff.

Division of Peri-operative Medicine

Department of Peri-operative Medicine

Head of Department

Dr Michael Carey

Staff Complement

Dr Michael Carey	Consultant	26 hours
Dr Steven Froese	Consultant	26 hours
Dr Niall Hughes	Consultant	11 hours
Dr Nikolay Nikolov	Consultant	11 hours
Dr Terry Tan	Consultant	26 hours
Dr Rebecca Fanning	Consultant	13 hours
Dr Sabrina Hoesni	Consultant	39 hours

Key Performance Indicators

Theatre

Total Number of Anaesthetics	5727
General	2679 (46.7%)
Regional	2965 (51.7%)
Local	83 (31.8%)
Elective	3902 (68.1%)
Emergency	1824 (31.8%)

Caesarean Sections

Number of Caesarean Sections	2576 (31.2%) of all mothers delivered)
Elective	1229 (47.7%)
Emergency	1347 (52.2%)

Mode of Anaesthesia for Caesarean Section

ELECTIVE	ELECTIVE	EMERGENCY
General	19[1] (1.4%)	66[2] (5.3%)
Spinal	1324 (98.3%)	670[3] (54.5%)
Epidural	3	485 (39.5%)
CSE	1	0
Total	1347	1229

[1]Includes 6 converted from regional
[2]includes 9 converted from regional
[3]includes 9 converted from regional

Mode of Labour Analgesia

Total number of mothers delivered	8233
None	660 (8%)
Entonox	5093 (61.8%)
Pethidine	187 (2.3%)
Spinal	198 (2.4%)
TENS	431 (5.2%)
Epidural	3112 (37.8%)
Birthing Pool	19 (0.2%)
Hypnotherapy	39 (0.47%)
Remifentanil PCA	33 (0.04%)

Number of epidurals in primiparae – 1836
(55.8% of primiparae)

Number of epidurals in parous – 1276
(25.8% of parous)

Anaesthetic Clinic

Anaesthetic Clinic Appointments	
Gynaecology preoperative assessment (new)	1201
Gynaecology preoperative assesment (return)	26
Maternity preoperative assessment (new)	1417
Maternity preoperative assessment (return)	25
Pain clinic (new)	80
Pain clinic (return)	10
Total Appointments	2759

Achievements in 2016

- 23% increase in number of attendances at the anaesthetic clinic from 2121 to 2759.
- Same day of surgery admission (DOSA) rate of greater than 98% of all elective surgery.
- Selected by the College of Anaesthetists of Ireland as a pilot site to trial competency based training programme for anaesthetic trainees.

Challenges for 2017

- Audit performance measures of anaesthetic clinic.

Publications

- M Creaney, D Mullane, C Casby, T Tan. Ultrasound to identify the lumbar space in women with impalpable bony landmarks presenting for elective caesarean delivery under spinal anaesthesia: a randomised trial. *International Journal of Obstetric Anaesthesia 2016*. Vol 28, p12-16.
- E O'Malley, P Popivanov, A Fergus, T Tan, B Byrne. Maternal near miss: what lies beneath? *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 2016. 199. p116-120.

Presentations

- J Boland, E Doherty, P Ecimovic, M Golden, D Moore, R Fanning. "Supporting change in practice: the role of agency, ownership and legitimacy". *2016 International Conference on Residency Education, Canada.*
- R Fanning, E Doherty, S Galvin, K Tan, P Ecimovic, D Moore, J Boland. "Training Anaesthetists in the Use of the Advocacy Inquiry Framework for Feedback in the Clinical Workplace". *World Summit on Competency-Based Medical Education. 27-28 Aug 2016, Barcelona, Spain.*

Division of Laboratory Medicine

Department of Laboratory Medicine Report

Heads of Department

Professor John O'Leary, *Director of Pathology*
Martina Ring, *Chief Medical Scientist (Laboratory Manager)*
Ruth O'Kelly, *Principal Biochemist*

Staff Complement

Pathology Consultants:

Dr Niamh O'Sullivan – Microbiology
Dr Catherine Flynn – Haematology / Transfusion
Dr Colette Adida – Histopathology / Cytology
Dr Vivion Crowley – Chemical Pathology
Dr Peter Kelehan – (Locum) Pathology / Morbid Anatomy
Dr Kevin Ryan – (Locum) Haematology

Pathology Quality/ IT Manager: Stephen Dempsey

Staff Complement:

Medical Scientists & Lab Aide Staff - 37 WTE
Biochemists - 3 WTE
Phlebotomist - 3 WTE
Administration / Clerical Staff- 6 WTE
Laboratory Aide with Portering duties - 1 WTE
Specialist Registrar [SPR] Histopathology - 1 WTE
Consultant Staff - 3 WTE
Haemovigilence Officer - 1 WTE

Key Performance Indicators: Workload by test request

Area	2011	2012	2013	2014	2015	**2016**
Microbiology	44535	44672	44672	44514	42573	**41639**
Biochemistry	203818*	172734*	162045*	205475*	218565*	**216849****
Haematology	45546	45718	46877	50717	53961	**55111**
Transfusion	220101	22076	22866	25273	26,537	**26328**
Cytopathology	12409	10428	16774	27355	25589	**26161**
Histopathology	5036	5606	5696	5877	6001	**6331**
Post mortems	34	40	41	50	35	**33**
Phlebotomy	18732	19394	19931	21084	23641	**25250**
Molecular Pathology	817	1934	2857	4442	7147	**8369**

**including POCT tests; ** = change in referral test counting*

Achievements in 2016

- Maintaining the accreditation of all Pathology Departments and POCT within the hospital.
- Appointment of a Phlebotomist to Perinatal Centre to improve patient experience in attending for GTT testing.
- The Pathology Dept. continues to provide inservice training to Cytopathology third year DIT Medical Laboratory Science students.

Challenges for 2017

- Review of equipment for programmed replacements.
- Continued cost saving and income generation initiatives within the department.

Biochemistry/Endocrinology/Point of Care Testing

Heads of Department

Ruth O'Kelly, *Principal Clinical Biochemist*

Dr Vivion Crowley, *Consultant Chemical Pathologist*

Staff Complement

Ann O'Donnell-Pentony, *Specialist Senior Medical Scientist (1.0 WTE)*

Mary Stapleton, *Senior Clinical Biochemist (1.0 WTE) (to September)*

Sanders Sebastian, *Senior Clinical Biochemist (1.0 WTE) (to January)*

Dr Anne Killalea, *Senior Clinical Biochemist (1.0 WTE) (from May)*

James Kelly, *Senior Clinical Biochemist (1.0 WTE) (from September)*

Grace Creighton, *Medical Scientist (1.0 WTE) (to June)*

Paul Carlyle, *Medical Scientist (1.0 WTE)*

Susan Carlyle, *Medical Scientist (1.0 WTE) (from October)*

Key Performance Indicators

Test numbers:

Year	Biochemistry tests	In-house tests
2016	**216849***	**189614**
2015	218565	188032
2014	205475	171781

* Change in referral test counting.

- Increased testing seen in the diagnosis and monitoring of diabetes, maternal sepsis, pregnancy complications and ectopic pregnancy.
- The Biochemistry Department and Point of Care testing (blood gases) is accredited by the Irish National Accreditation Board to ISO 15189 and ISO 22159.
- Excellent scores continued to be achieved in our External Quality Assessment Schemes.
- Referral service for specialised tests for external hospitals (Fructosamine and Total Bile acids).

Achievements in 2016

- We said goodbye to three valued staff members (Sanders Sebastian, Mary Stapleton and Grace Creighton) and welcome their replacements (Dr Anne Killalea, James Kelly and Susan Logue).
- Maintenance of INAB accreditation status with extension of scope to include Point of Care Blood Gas analysers and continued training and re-certification of ward staff in Point of Care testing.
- Senior staff regularly attended multi-disciplinary meetings including the Diabetes team meetings, Point of Care committee meetings and weekly Perinatal review meetings.
- Education and Teaching: Ruth O'Kelly lectured on the Masters in Clinical Biochemistry course (TCD). Ann Pentony is involved in the education of midwifery/medical/paediatric staff. Biochemistry staff have presented at the monthly Journal Club.
- Professional Associations: Ruth O'Kelly is a member of the National Point of Care Consultative Group. Ann O'Donnell is on the Advisory Board of the Academy of Laboratory Medicine and Clinical Science FOR Point of Care testing. Mary Stapleton is a member of Council of the Association of Clinical Biochemists in Ireland.
- Collaboration with research projects within the hospital include the effect of glycolysis in glucose measurement and its effect on the diagnosis of gestational diabetes. Collaboration with National Cancer Control Programme - Measurement of serum tumour markers.

Publication

Comparison of Citrate-Fluoride-EDTA with Fluoride-EDTA Additives to Stabilize Plasma Glucose Measurements in Women Being Screened during Pregnancy with an Oral Glucose Tolerance Test: A Prospective Observational Study. Daly N, Flynn I, Carroll C, Stapleton M, O'Kelly R, Turner MJ. Clin Chem. 2016 Jun; 62(6)

Scientific Poster

Association of Clinical Biochemists in Ireland Conference, Cork 2016: "Measuring glucose in neonates." O'Kelly R, Stapleton M, O'Donnell A, O'Sullivan A, White M.

Challenges for 2017

- The extended working day continues to pose challenges for the department as we strive to maintain our excellent quality and service to our patients.
- Cost containment.
- Improved access to referral laboratory results on the laboratory information system.
- The Diabetic service continues to expand due to the increased incidence of risk factors for diabetes in our population.
- Point of Care testing is expanding with the increased demand particularly in the area of maternal sepsis and fetal monitoring during labour.
- Replacement of main biochemistry analysers (due to age).

Cytopathology

Heads of Department

Prof John O'Leary, *Consultant Histopathologist*
Noel Bolger, *Chief Medical Scientist*

Staff Complement

Dr Colette Adida, *Consultant Histopathologist*
Mary Sweeney, *Senior Medical Scientist (0.8WTE)*
Nadine Oldfield, *Senior Medical Scientist*
Padma Naik, *Senior Medical Scientist*
Niamh Cullen, *Medical Scientist*
Roisin O'Brien, *Medical Scientist*
Mary McKeown, *Medical Scientist (0.5WTE)*
Ita Nolan, *Medical Scientist*
Graham O'Lone, *Lab Aide (0.5WTE)*
Cathy Hannigan, *Lab Aide*

Milestones

Retirement of Mr Noel Bolger, Chief Medical Scientist and Ms Mary McKeown, Medical Scientist.

Challenges for 2017

- Introduction of Document Scanning system.
- Return to 95% TAT (0-2weeks).
- Return to full staff compliment.

Key Performance Indicators

Specimen Throughput	2014	2015	2016
Total number of smears	27355	25589	**26161**
Programme Smears	25822 (95%)	24224 (95%)	**24751 (95%)**
Turnaround Time (TAT(0-2 weeks))	98%	95%	**92 %**
Unsatisfactory	1.7%	1.4%	**1.6 %**
Negative	89.3%	89%	**91 %**
Low-Grade	7.5%	7.9%	**6.0 %**
High Grade	1.5%	1.7%	**1.4 %**

Achievements in 2016

- Maintaining our INAB accreditation status.
- Participation in the Public Health England EQA scheme, U.K. (1 round).
- Introduction of electronic reporting for GP practices.
- Participation in the Hologic TEQA scheme (4 rounds).
- Participation in Coombe, Tallaght, Rotunda and NMH Holles St. Colposcopy MDT meetings.
- Attendance of European Cytology Conference, Liverpool by Ms Padma Naik, Ms Nadine Oldfield and Ms Mary Sweeney.

Haematology / Transfusion Medicine

Head of Department

Dr Catherine Flynn, *Consultant Haematologist*
Fergus Guilfoyle, *Chief Medical Scientist*

Staff Complement

WTE Chief Medical Scientist Fergus Guilfoyle
3 WTE Senior Medical Scientists
Derek Merrin
Karen Foley (0.5 WTE)
Gabriel Hyland
Isabel Fagan (0.5 WTE)
5 WTE Staff Grade Medical Scientists
Declan Lyons
Orla Cormack
Rebecca O'Grady
Irene Devine (Jan – Oct)
Eimear McGrath (Sep – Dec)
0.8 WTE Haemovigilance Officer Sonia Varadkar
0.5 WTE Clerical Officer Maureen Hand

Key Performance Indicators

Specimen Throughput

- Haematology tests: 55,111 (53,961 in 2015) 2.1% Increase
- Transfusion Medicine tests: 26,328 (26,537 in 2015) 0.8% Decrease

Turn Around Time (TAT) Figures for Haematology

Test	Full Blood Count		Coagulation Screen		Crossmatch		Inpatient Group & Screen	
Year	**2016**	2015	**2016**	2015	**2016**	2015	**2016**	2015
Target Max TAT	**60 mins**	90 mins	**120 mins**	120 mins	**240 mins**	240 mins	**240 mins**	240 mins
Average TAT achieved	**20 mins**	21 mins	**36 mins**	27 mins	**53 mins**	60 mins	**103 mins**	106 mins
% within target TAT	**99.0 %**	99 %	**99%**	100 %	**100 %**	100 %	**98 %**	97 %

Achievements in 2016

- Maintained INAB ISO 15189 accreditation for Haematology, Transfusion Medicine and Haemovigilance.
- Rolled-out Routine Antenatal Anti-D Prophylaxis programme.
- Validated two FBC analysers and introduced into routine use.
- Expanded reticulocyte testing from one batch per day to on-demand 24/7 testing.
- Expanded reporting of neonatal differential white cell counts from routine hours only to 24/7 availability.
- Reduced blood stock expiry rate from 6.1% in 2014 to 0.5% in 2015 and 0% in 2016.
- Reduced proportion of O Negative units from 36% of red cells transfused in 2014 to 26% in 2015 and 21% in 2016.
- Reduced TAT target for FBCs from 90 minutes to 60 minutes while maintaining 99% of requests processed within target.
- Introduced electronic reporting of requests referred to SJH, with results of referred tests available on CWIUH Laboratory System.

Challenges for 2017

- Roll-out of Phase 3 of Blood Track system scheduled for Quarter 3 of 2017.
- Set-up of in-house gynaecological and trimester specific FBC reference ranges.
- Maintenance of low rate of expiry for blood stocks and commencement of SLA with OLCHC for re-routing of unused paedipacks.
- Continued engagement with users to reduce sample labelling errors.
- Development of in-house guideline for haemoglobinopathy screening.
- Resources for continuing post-graduate education and training for laboratory scientists and haemovigilance officer.
- Increased demand on haematology clinical liaison due to complex antenatal patients and late transfers of patients from midlands hospitals with medical co-morbidities.
- Increased need for advisory services from the transfusion laboratory, clinical haematologist and haemovigilance due to introduction of RAADP.
- Requirement for blood film review and advisory services increasing for premature neonates.

Haemovigilance

Head of Department

Dr Catherine Flynn

Staff Complement

Sonia Varadkar, *Haemovigilance Officer (0.8 WTE)*

Key Performance Indicators

Number of Women Transfused	**247**
Number of Women who received 5 or more RCC	**5**
Number of babies who received pedipacks	**65**
Neonatal exchange transfusions	**0**
Reports to National Haemovigilance Office*	**2**
Umbilical Cord Blood Collection under the direction of the IBTS	**0**

**Patient refused to return for Anti-D and Transposition of label on unit of RCC transfused in theatre*

Achievements in 2016

- Accreditation – ISO 15189.
- 100% traceability of blood components and blood products.
- Implementation of Routine Antenatal Anti-D.

Challenges for 2017

- Education of staff.
- Review guidelines/SOPs relating to blood components and blood products.
- Transfusion rate reduction - staff identifying risk factors early and to maintain ISO 15189 (INAB Accreditation).
- Implementation of Phase III of Electronic Blood Track System.

Histopathology and Morbid Anatomy

Head of Department

Professor John O'Leary, *Clinical Head of Department*
Jacqui Barry O'Crowley, *Scientific Head of Department*

Staff Complement

Consultant Pathologist
Professor John O'Leary
Dr. Colette Adida

Special Registrars
Dr. Ronan Doyle
Dr. Aoife Doyle

Scientific Staff
Jacqui Barry O' Crowley, Chief Medical Scientist
Niamh Kernan, Senior Medical Scientist
Mairéad O'Byrne, Medical Scientist
Trinh Pham, Medical Scientist
James O'Keeffe, Medical Scientist
Claire Maguire, Medical Scientist
Hannah Deering , Medical Scientist
Eibhlin Gallagher, Medical Scientist
Johnny Savage, Laboratory Assistant
Graham O'Lone, Mortuary Technician

Clerical Officers
Ursula Mangan
Maud Flattery
Private Secretary to Professor O'Leary; Helena Lyons

Work Processes

The routine histopathology department has INAB Accreditation to ISO15189 Standard. The volume and type of work processed in the histopathology lab has continued to increase & develop in 2016.

Key Performance Indicators

Specimen Throughput

Specimens	6,331
Blocks	22,616
Special stains Immunohistochemistry/HPV In-Situ Hybridisation / C17 Probe Silver in-Situ Hybridisation	6,000
Post Mortem Cases	33

Colposcopy Specimens

Specimen Type	Avg. Case Numbers	Avg. Blocks Numbers	H&E Numbers
LLETZ*	710	5,660	11,200
CXBX**	1,506	1,506	4,518

* Each block has x 2 level on each block
** Each block has x 3 level on each block
NOTE: 30% of LLETZ / Cervical Biopsy (CXBX) cases have extra levels taken, which are not reflected in the above H&E figures

Achievements in 2016

- INAB Inspection for the histopathology laboratory took place on 12th October 2016. The histopathology department retained INAB Accreditation to ISO15189 Standards.
- The histopathology workload continued to increase in 2016. This increase was generated through the CWIUH/ NCSS Colposcopy Sevice Level Agreement.
- The immunohistochemistry panel of antibodies, molecular SISH & HPV ISH probes and special stains offered by the histopathology department, continued to increase in 2016. All of these panel of antibodies, molecular probes and special staining methods are accredited by INAB.
- The histopathology department continues to offer a panel of INAB accredited immunohistochemistry antibodies and molecular probes on Gynaecological (Cervical) Liquid Based Cytology samples and Cervical Histopathology samples in the triage of patients referred with abnormal screening results.

Molecular Techniques:

- Chromogenic In-situ Hybridisation: Human Papiloma Virus (HPV) In-Situ.
- Hybridisation on Cytology (Cervical) LBC Smears, LBC Cell Block samples & routinely processed tissue

samples.

Immunohistochemistry Techniques:

- Immunohistochemical Investigation on LBC smears / Cell Blocks:
- Cytology LBC Cell Blocks: Ki67/P16 dual staining.
- Histopathology cervical samples: Ki67/P16 dual staining.

CINtec PLUS Cytology Kit (CINtec PLUS Cervical Cancer Screening test)

- Cytology LBC Smears: CinTec Plus Ki67/p16.

The histopathology department is registered for the following Quality Assurance Schemes:
UKNEQAS, NordiQC, Inter Laboratory EQA Scheme (which is organised through the CWIUH with other INAB accredited histopathology departments throughout the country) and the Gynaecological & Perinatal External Assessment Scheme.

All histopathology staff are involved in Continuous Professional Development.

Medical Scientists were facilitated to attend the Cellullar Pathology UKNEQAS workshop, the Roche/Ventana Training Programme, Irish Molecular Pathology Network Diagnostics Network meeting. All staff are supported when undertaking their MSc in Molecular Pathology.

The Pathology Department under the direction of Professor John O'Leary, has a leading European Molecular Biology research centre. The Research Laboratory has a strong international research reputation in the area of cancer research, particularly in cervical cancer. The medical scientists in the histopathology department make a substantial contribution to this research.

Challenges for 2017

- INAB Accreditation Certification for histopathology with 'Flexible Scope'.
- Proceed with Internal Audits for both the histopathology and the general laboratories.
- Continue the management of the Inter Laboratory IHC Assessment Scheme.
- Continue to support histopathology staff in Continuous Professional Development programmes & complete their MSc in Molecular Pathology.
- Expansion to the histopathology laboratory, to facilitate and accommodate the increase in workload.

Microbiology and Infection Prevention and Control

Head of Department

Dr Niamh O'Sullivan, *Consultant Microbiologist*
Dr Catherine Byrne, *Chief Medical Scientist*
Rosena Hanniffy, *Assistant Director of Midwifery/Nursing Infection Prevention and Control*
Anne Marie Meenan, *Surveillance Scientist*

Staff Complement

Dr Catherine Byrne, *Chief Medical Scientist*
Anne Marie Meenan, *Surveillance Scientist*
KellyAnne Herr, *Senior Medical Scientist*
Sabrina McCaffrey, *Senior Medical Scientist*
Ciaran Byrne, *Medical Scientist*
Sarah Deasy, *Medical Scientist (Acting Senior)*
Vickey Moran, *Medical Scientist*
Teresa Hannigan, *Laboratory Aide*

Key Performance Indicators

- Numbers of clinical staff compliant with hand hygiene training within past two years.
- Alcohol gel consumption.
- HCAI Staph aureus and C. difficile rates per 10,000 BDU reported to HSE.
- Trending of alert organisms on dashboard.
- NICU Bloodstream Infection (BSI) rate / 1,000 patient days.
- Adult BSI rates / 1,000 patient days.
- Caesarean Section Surgical Site Infection rate per 1000 LSCS.
- Report to EARS-Net (European Antimicrobial Resistance Surveillance Network).
- External/Internal Quality Control Performance.
- Turnaround Times.
- Adult BC contamination rates.
- Microbiology specimen throughput:
  - Internal 29,248
  - External 12,391
  - Total 41,639.

Achievements in 2016

- Maintained INAB accreditation.
- Quarterly Infection Prevention and Control Committee meetings continued.
- Ongoing committee meetings: D&T, POCT, procurement, hygiene, Risk & Antimicrobial Stewardship Committee.
- Bi-annual national hand hygiene audit scores 87% and 92% in 2016 (target of 90%).
- MDRO IPC alerts to the iPiMS.
- IPC Dashboard maintained.
- Zika alert.
- PVC care bundle audits continued with monthly feedback.
- Validation, batch acceptance and Uncertainty of Measurement for accreditation.
- Increased alert organism and environmental screening undertaken due to renovations and upgrades
- Introduction of Plasmair into use.
- Poster on increasing compliance with MDRO screening in NICU presented at leadership programme.
- Blood Culture contamination rates maintained below 3.5%
- Generate antibiogram data to inform antimicrobial guidelines.
- Ongoing data presentations and feedback to multidisciplinary obstetric and paediatric meetings.

Challenges for 2017

- Microbiology and the Infection Prevention and Control Team must continue to respond to changes in patient case load, acuity and Public Health alerts.
- Optimise and audit screening of patients for Multi Drug Resistant Organisms.
- Improve antibiotic stewardship by encouraging compliance with current guidelines.
- Ongoing policy development and revision.
- Hygiene and antimicrobial stewardship HIQA audits.
- Feedback of data to clinical teams to reduce HCAI.
- Move all documents to Q Pulse
- Embed Sepsis Six.
- Business case for CSSD environmental sampling.
- Embed use of medical audit system.
- Input into product procurement of Point Of Care Tests.
- Manage increased requirements to comply with ISO 15189 2012 to maintain INAB accreditation.
- Cost containment.

Pathology/Molecular Pathology

Head of Department

Professor John O'Leary

Staff Complement

Academics: Prof Cara Martin, *Assistant Professor in Molecular Pathology (TCD)*
Molecular Pathology Manager: Prof Cara Martin (TCD/CWIUH)
Research Scientists:
Dr Cathy Spillane
Dr Christine White
Dr Helen Keegan
Dr Michael Gallagher
Ms Loretto Pilkington
Dr Sharon O'Toole (shared with Obs & Gynae, TCD)
Dr Prerna Tewari
Dr James O'Mahony
Dr Mairead O'Connor
Mr Alan O'Ceallachair (CERVIVA researcher at National Cancer Registry, Ireland)

Research Students:
PhD/MD: Stephen Reynolds, Imogen Sharkey Ochoa, Tanya Kelly, Padraig Kearney, Dr Robbie Woods, David Nuttall, Claudia Gasch, Mark Bates, Melad Aswisi, Anthony Cooney, Sara O'Kane.

Key Performance Indicators

1. Grants held 2016

Title: CERVIVA: Making Connections and Creating Impact
Awarding Body: Health Research Board. Knowledge Exchange and Dissemination (KEDS) Awards (2016-2017)
Total Value: €60,000

Title: CERVIVA Echo Studentship
Awarding body: The Coombe Women and Infants University Hospital (2016-2019)
Total Value: €68,454.00

Title: NIMBUS group: Neonatal Inflammation and Multiorgan dysfunction and Brain injury reSearch group
Awarding Body: Health Research Board (2016-2019)
Total Value: €329,352

Title: CERVIVA: From episodic care to disease prevention and management: Developing analytical skills and interdisciplinary learning from the case of HPV related cancers.
Awarding Body: Health Research Board. Interdisciplinary Capacity Enhancement (ICE) Awards (2015-2019)
Total Value: €748,793

Title: CERVIVA 2: building capacity and advancing research and patient care in cervical screening and other HPV associated diseases in Ireland.
Awarding Body: Health Research Board. Collaborative Applied Research Grant (2012-2019)
Total Value: €1,250,000

Title: Developing endosome & lysosome in prostate cancer.
Awarding Body: National Health and Medical Research Council (ACT, ACT, Australia)
2014-12 to 2017-12
Total Value: $1,000,000 AUS (€670,910)

Title: A risk model for prediction of venous thromboembolism in gynaecological cancer patients post-surgery.
Awarding Body: Health Research Board 2013-2016
Total Value: €299,000

Title: Movember Revolutionary Team Award – Australia
Awarding Body: Movember 2014-2017
Total Value: $4,250,000 AUS (€2,850,683)

Title: Pilot study to evaluate the prognostic and metabolic benefits of metformin during androgen deprivation therapy in metastatic prostate cancer.[PI: Colleen Nelson, QUT]
Awarding Body: Princess Alexandra Research Foundation:
Total Value: $50,000 AUS (€33,537)

Title: Evasion of immune editing by circulating tumour cells is an exercise-modifiable mechanism underlying aggressive behaviour in obese men with prostate cancer
Awarding Body: World Cancer Research Fund 2014-2018
Total Value: £249,994 (€284,043)

Title: iProspect
Awarding Body: Movember/ Irish Cancer Society Trans formative grant 2014-2016
Total value: €750,000.00

Title: PhD Studentship
Awarding Body: Royal City of Dublin Hospital Trust 2014-2017
Total value: €60,000.00

Title: Prostate cancer diagnosis and prognosis: developing new diagnostic and prognostic markers in prostate pre-cancer and cancer.
Awarding Body: EnVision Sciences Pty Ltd.
Total value: AUS $2,930,165.00 (2017-2019) (€1,965,877)

Title: The use of P1H10 as a prognostic biomarker for detection and targeting of multidrug resistant ovarian cancer.
Awarding Body: Ireland Health Foundation.
Total value: €50,0000

Title: Development of Diagnostic and prognostic algorithms for ovarian cancer.
Awarding Body: Roche Diagnostics International Ltd.
Total value: €19,999.68

In addition, 2 grants worth in excess of 1 million euros were awarded after application in Q4 2016.

Publications
In 2016, the Molecular Pathology Group at the CWIUH and St James's Hospital published 12 peer reviewed journal articles and 32 published abstracts [see below].

Post graduate degrees
Post graduate degrees: In 2016, the department had 11 post graduate students pursuing PhD and MD degrees.

Diagnostic Services
An INAB accredited HPV testing service is provided for the cervical screening programme [CervicalCheck] by our campus company Gynae-Screen Ltd. In 2016, 8,369 HPV tests were performed on cervical smear samples.

Achievements in 2016

Peer Reviewed Publications for 2016

1. O'Connor M, O'Leary E, Waller J, Gallagher P, D'arcy T, Flannelly G, Martin CM, McRae J, Prendiville W, Ruttle C, White C, Pilkington L, O'Leary JJ, Sharp L; Irish Cervical Screening Research Consortium (CERVIVA). Trends in, and predictors of, anxiety and specific worries following colposcopy: a 12-month longitudinal study. Psychooncology. 2016 May;25(5):597-604. doi: 10.1002/pon.3980. Epub 2015Sep 22. PubMed PMID: 26392040.
2. O'Connor M, Gallagher P, Waller J, Martin CM, O'Leary JJ, Sharp L; Irish Cervical Screening Research Consortium (CERVIVA). Adverse psychological outcomes following colposcopy and related procedures: a systematic review. BJOG. 2016 Jan;123(1):24-38. doi: 10.1111/1471-0528.13462. Jun 22. Review. PubMed PMID: 26099164.
3. O'Connor M, Waller J, Gallagher P, Martin CM, JO'Leary J, D'Arcy T,Prendiville W, Flannelly G, Sharp L. Exploring women's sensory experiences of undergoing colposcopy and related procedures: implications for preparatory sensory information provision. J Psychosom Obstet Gynaecol. 2016 Dec;37(4):137-146. doi: 10.1080/0167482X.2016.1197905. Epub 2016 Jul 4. PubMed PMID: 27376755.
4. Varga N, Mózes J, Keegan H, White C, Kelly L, Pilkington L, Benczik M, Zsuzsanna S, Sobel G, Koiss R, Babarczi E, Nyíri M, Kovács L, Attila S, Kaltenecker B, Géresi A, Kocsis A, O'Leary J, Martin CM, Jeney C. The Value of a Novel Panel of Cervical Cancer Biomarkers for Triage of HPV Positive Patients and for Detecting Disease Progression. Pathol Oncol Res. 2016 Aug 6. [Epub ahead of print] PubMed PMID: 27497597.
5. O'Mahony JF and Coughlan D, The Irish Cost-Effectiveness Threshold: Does it Support Rational Rationing or Might it Lead to Unintended Harm to Ireland's Health System? PharmacoEconomics, 2016, 34(1), p5-11. PMID:26497002
6. Martin F, Long JC, O'Toole SA, O'Leary JJ, Abu Saadeh F, Gleeson N, Norris LA. PO-14 - Tumour expression of coagulation proteases of the aPC pathway - a role in the pathogenesis of gynaecological cancers? Thromb Res. 2016 Apr;140 Suppl 1:S181. doi: 10.1016/S0049-3848(16)30147-5. Epub 2016 Apr 8. PubMed PMID: 27161702.
7. Dorris ER, Blackshields G, Sommerville G, Alhashemi M, Dias A, McEneaney V, Smyth P, O'Leary JJ, Sheils O. Pluripotency markers are differentially induced by MEK inhibition in thyroid and melanoma BRAFV600E cell lines. Cancer Biol Ther. 2016 May 3;17(5):526-42. doi: 10.1080/15384047.2016.1139230. Epub 2016 Feb 1.PubMed PMID: 26828826; PubMed Central PMCID: PMC4910922.
8. Aherne ST, Smyth P, Freeley M, Smith L, Spillane C, O'Leary J, Sheils O. Altered expression of mir-222 and mir-25 influences diverse gene expression changes in transformed normal and anaplastic thyroid cells, and impacts on MEK and TRAIL protein expression. Int J Mol Med. 2016 Aug;38(2):433-45. doi: 10.3892/ijmm.2016.2653. Epub 2016 Jun 22. PubMed PMID: 27353001; PubMed Central PMCID: PMC4935456.
9. Woods RSR, Timon, CVI. HPV and the diagnosis and treatment of head and neck cancer –an Irish Perspective. Cancer Professional Vol 11 Issue 2 Summer 2017.
10. Sulaiman, G, Cooke A, Ffrench B, Gasch C, Abdullai OA, O'Connor K, Elbaruni S, Blacksheilds G, Spillane C, Keegan H, McEneaney V, Knittel R, Rogers A, Jeffery IB, Doyle B, Bates M, d'Adhemar C, Lee M, Campbell EL, Moynagh P, Higgins DG, O'Toole S, O'Neill L, O'Leary JJ and Gallagher MF. MyD88 is an essential component of retinoic acid induced differentiation in human pluripotent embryonal carcinoma cells. Cell Death & Differentiation (In Press).
11. Ffrench B, Gasch C, Hokamp K, Spillane C, Blackshields G, Mahgoub TM, Bates M, Kehoe L, Mooney A, Doyle R, Doyle B, O'Donnell D, Gleeson N, Hennessy BT,

Stordal B, O'Riain C, Lambkin H, O'Toole S, O'Leary JJ, and Gallagher MF. CD10-/ALDH- cells are the sole cisplatin-resistant component of a novel ovarian cancer stem cell network. Cell Death & Disease (In Press).

12. MacDonagh L, Gallagher MF, Ffrench B, Gasch C, et al. Targeting aldehyde dehydrogenase 1 (ALDH1) to circumvent cisplatin resistance in NSCLC. OncoTarget (In Press).

Published Abstracts 2016

- P White C, Reynolds S, Naik P, O' Brien R, Pham T, Sharkey Ochoa I, Bolger N, Barry O'Crowley J, Tewari P, O'Toole S, Normand C, Sharp L, Gleeson, J, Flannelly G, O'Leary JJ, Martin CM on behalf of CERVIVA the Irish Cervical Screening Research Consortium. CERVIVA: HPV Primary Screening Pilot Study. Irish Society of Gynaecological Oncology Annual Scientific Meeting 2-3rd December, 2016, Dublin, Ireland.
- White C, Reynolds S, Naik P, O' Brien R, Pham T, Sharkey Ochoa I, Bolger N, Barry O'Crowley J, Tewari P, O'Toole S, Normand C, Sharp L, Gleeson, J, Flannelly G, O'Leary JJ, Martin CM on behalf of CERVIVA the Irish Cervical Screening Research Consortium. CERVIVA: HPV Primary Screening Pilot Study. 10th International Cancer Conference New Frontiers in Personalised Cancer Care 17th-18th October, 2016, Dublin, Ireland.
- Tewari P, White C, Kelly L, D'Arcy T, Murphy C, Anglim M, Farah N, Barry O'Crowley J, O' Toole S, Sharp L, O'Leary JJ, Martin CM. Role of Adjunct Triage testing for Management of HPV Positive Women Presenting at Colposcopy with Minor Cytological Abnormalities. 10th International Cancer Conference New Frontiers in Personalised Cancer Care 17th-18th October, 2016, Dublin, Ireland.
- Ó Céilleachair A, O'Mahony J, O'Connor M, O'Leary J, Normand C, Martin C, Sharp L. Health-related quality of life in the screening and management of cervical disease: A systematic Review. Health Economics Association of Ireland Autumn Meeting 2016, Dublin, Oct 6th 2016.
- White C, Reynolds S, Naik P, O' Brien R, Bolger N, Tewari P, O'Toole S, Normand C, Sharp L, Flannelly G, O'Leary JJ, Martin CM on behalf of CERVIVA the Irish Cervical Screening Research Consortium. HPV Primary Screening Pilot Study. European Congress of Cytology. Oct 2016.
- Tewari, P, White, C, Kelly, L, Kearney, P, Pilkington, L, D'Arcy, T, Murphy, C, Anglim, M, Farah, N, Lee, E, Mullen, D, Barry O'Crowley, J, O' Toole, S, Sharp, L, O'Leary, JJ, Martin, CM. Evaluation of triage markers for the management of HPV positive women presenting at colposcopy with minor cytological abnormalities. BSCCP Annual Meeting, 14th April, 2016.
- White C, Naik P, O' Brien R, Bolger N, Tewari P, O'Toole S, Sharp L, Flannelly G, O'Leary JJ, Martin CM on behalf of CERVIVA the Irish Cervical Screening Research Consortium. HPV Primary Screening Pilot Study. British Society for Colposcopy and Cervical Pathology. Bradford. Apr 2016.
- Nuttall, D, O'Leary, J, Martin, C, Dallimore, N, Hillier, S, Sloan, S, Savage, A, Clayton, H, Fox, R. Improved Detection of CIN 2+ Lesions by the Becton Dickinson Focal Point™ GS Slide Profiler No Further Review Technology. . Laboratory Investigation 2016; 96: 276A-277A.
- Spillane, C, Ffrench, B, Cooney, A, Ruttle, C, Bogdanska, A, Gleeson, N, Abu Saadeh, F, Kamran, E, O'Riain, C, Flavin, R, Gallagher, M, Martin, C, Sheils, O, O'Toole, S, O'Leary JJ. A novel digital pathology approach to definitively identify ovarian cancer CTCs. International Journal of Gynaecological Cancer 2016; 26(3):796.
- Norris LA, Martin FA, O'Toole SA, Saadeh FA, Gleeson N. PO-24 – Determinants of thrombin generation in gynaecological malignancies. Thromb Res. 2016 Apr;140 Suppl 1:S185. doi: 10.1016/S0049-3848(16)30157-8. PubMed PMID: 27161714.
- Martin F, Long JC, O'Toole SA, O'Leary JJ, Abu Saadeh F, Gleeson N, Norris LA. PO-14 - Tumour expression of coagulation proteases of the aPC pathway - a role in the pathogenesis of gynaecological cancers? Thromb Res. 2016 Apr;140 Suppl 1:S181. doi: 10.1016/S0049-3848(16)30147-5. PubMed PMID: 27161702.
- Petch S, Norris LA, O'Toole SA, Gleeson N, Saadeh FA. OC-12 - Peri operative venous thromboembolism prophylaxis in gynaecological cancer patients. A survey of current practice. Thromb Res. 2016 Apr;140 Suppl 1:S173. doi: 0.1016/S0049-3848(16)30129-3. PubMed PMID: 27161684.
- Tewari, P, White, C, Kelly, L, Kearney, P, Pilkington, L, D'Arcy, T, Murphy, C, Farah, N, Lee, E, Mullen, D, Barry-O'Crowley, J, O'Toole, S, Sharp, L, O'Leary, JJ, Martin, CM. Application of Triage Markers for Management of HPV Positive Women Presenting at Colposcopy with Minor Cytological Abnormalities. Laboratory Investigation 2016; 96:511A-512A.
- Tewari, P, White, C, Kelly, L, Kearney, P, Pilkington, L, D'Arcy, T, Murphy, C, Farah, N, Lee, E, Mullen, D, Barry-O'Crowley, J, O'Toole, S, Sharp, L, O'Leary, JJ, Martin, CM. Application of Triage Markers for Management of HPV Positive Women Presenting at Colposcopy with Minor Cytological Abnormalities. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- Cooney, A, Ffrench, B, Spillane, CD, Ruttle, C, Gleeson, N, O'Riain, C, Flavin, R, Gallagher, MF, Martin, C, Sheils, O, O'Toole, S, O'Leary, JJ. Digital Multi-Colour CTC Detection. Laboratory Investigation 2016; 96:511A-512A.

- Cooney, A, Ffrench, B, Spillane, CD, Ruttle, C, Gleeson, N, O'Riain, C, Flavin, R, Gallagher, MF, Martin, C, Sheils, O, O'Toole, S, O'Leary, JJ. Digital Multi-Colour CTC Detection. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- Bates, M, Gubbins, L, Mullen, D, Lee, E, Barry-O'Crowley, J, Costigan, D, O'Riain, C, Spillane, CD, Gallagher, MF, Martin, C, McCann, A, O'Toole, S, O'Leary, JJ. TLR4 and MAD2: Drivers of Chemoresistance in Ovarian Cancer. Laboratory Investigation 2016; 96: 276A-277A.
- Bates, M, Gubbins, L, Mullen, D, Lee, E, Barry-O'Crowley, J, Costigan, D, O'Riain, C, Spillane, CD, Gallagher, MF, Martin, C, McCann, A, O'Toole, S, O'Leary, JJ. TLR4 and MAD2: Drivers of Chemoresistance in Ovarian Cancer. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- Spillane, CD, Skehan, S, Martin, CM, O'Toole, S, Sheils, O, O'Leary, JJ. Platelet Cloaking Maintains Migratory and Invasive Characteristics of CTCs. Laboratory Investigation 2016; 96: 460A-460
- Spillane, CD, Skehan, S, Martin, CM, O'Toole, S, Sheils, O, O'Leary, JJ. Platelet Cloaking Maintains Migratory and Invasive Characteristics of CTCs. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- O'Leary, JJ, O'Kane, S, O'Toole, S, O'Brien, JK, Pennington, SR, Cahill, DJ. Biomarker Selection in Early Ovarian Cancer. Laboratory Investigation 2016; 96: 299A.
- O'Leary, JJ, O'Kane, S, O'Toole, S, O'Brien, JK, Pennington, SR, Cahill, DJ. Biomarker Selection in Early Ovarian Cancer. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- O'Toole SA, Shireen R, McDonald S, Norris L, Cooney A, AbuSaadeh F, Kamran W, Murphy C, Farah N, D'Arcy T, Gleeson N, O'Leary JJ. HE4 Has a Role in Treatment Planning in Endometrial Cancer. Laboratory Investigation 2016; 96: 300A.
- O'Toole SA, Shireen R, McDonald S, Norris L, Cooney A, AbuSaadeh F, Kamran W, Murphy C, Farah N, D'Arcy T, Gleeson N, O'Leary JJ. HE4 Has a Role in Treatment Planning in Endometrial Cancer. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- White, C, Kelly, L, Jeney, C, Tewari, P, Mahan, S, Bakhiet, S, Keegan, H, O'Leary, JJ, Martin CM. Systems Biology Approaches to Cervical Pre-Cancer Diagnostics. Laboratory Investigation 2016; 96: 300A.
- White, C, Kelly, L, Jeney, C, Tewari, P, Mahan, S, Bakhiet, S, Keegan, H, O'Leary, JJ, Martin CM. Systems Biology Approaches to Cervical Pre-Cancer Diagnostics. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- Woods, R, Keegan, H, White, C, Tewari, P, Costigan, D, Barry-O'Crowley, J, Toner, M, Kennedy, S, O'Regan, EM, Martin, CM, Timon, C, O'Leary, JJ. Identification of a Novel Junctional Site in the Oropharynx, Permissive for Human Papillomavirus Infection. Laboratory Investigation 2016; 96: 300A.
- Woods, R, Keegan, H, White, C, Tewari, P, Costigan, D, Barry-O'Crowley, J, Toner, M, Kennedy, S, O'Regan, EM, Martin, CM, Timon, C, O'Leary, JJ. Identification of a Novel Junctional Site in the Oropharynx, Permissive for Human Papillomavirus Infection. Modern Pathology 2016; 29 (Supplement 2s); 4-570.
- Woods, PRSR and O'Regan, E and Toner, M, Kennedy, S, Martin, CM, O'Leary, JJ, Timon, CV Preliminary study of junctional biomarkers and immune evasion in human papillomavirus-related oropharyngeal squamous cell carcinoma. Irish Journal of Medical Science 2016, vol 185, S161.
- Woods, PRSR and O'Regan, E and Toner, M, Kennedy, S, Martin, CM, O'Leary, JJ, Timon, CV. Cytokeratin 7: A Novel Biomarker in Human Papillomavirus-Related Oropharyngeal Squamous Cell Carcinoma. Irish Journal of Medical Science, 2016, vol 185, S153.
- O'Connor, Mairead and O'Brien, Katie and Mcrae, Judith, Martin, Cara M, O'Leary, John, Sharp, Linda. What can we do to increase cervical cancer screening uptake among older women? Understanding the views of older women. Psycho-oncology, 2016 Vol 25, SP. S3 p69.
- O'Connor, Mairead and O'Brien, Katie and Waller, Jo and Gallagher, Pamela and D'Arcy, Tom Flannelly, Grainne, Martin, Cara M, Prendiville Walter, O'Leary, John, Sharp, Linda. Physical after-effects of colposcopy and their interrelationships with psychological distress: a longitudinal study. Psycho-oncology 2016 Vol 25, SP. S3 p70.

Challenges for 2017

Establishment of:

- Non Invasive Prenatal Testing service.
- Gestational Trophoblastic Disease testing.
- Gynae-Oncology Molecular testing [for cervix, endometrial, ovarian and fallopian tube pre-cancers and cancers].
- Introduction of TLR9 polymorphism analysis for preterm labour.

Phlebotomy in OPD

Head of Department

Martina Ring, *Chief Medical Scientist (Laboratory Manager)*

Staff Complement

1 WTE - Artemio Arganio

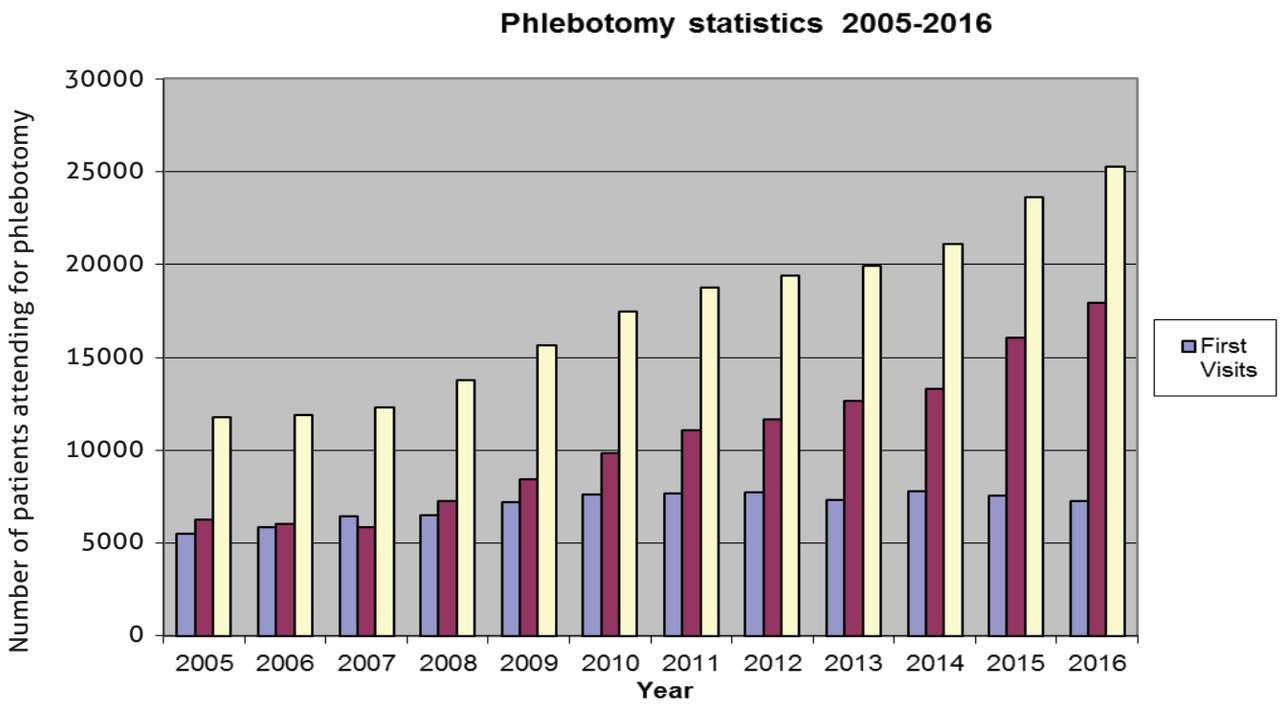
1 WTE - Vladimir Getoyev

1 WTE - Angela Petrasca *(From May 2016)*

Key Performance Indicators

Continued increase in throughput of patients in the OPD, with 1600 additional patient episodes taking place. Figures presented are patient episodes and do not reflect actual numbers of samples from each patient.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
First Visits	5860	6435	6509	7212	7610	7672	7714	7298	7773	7586	**7296**
Other Visits	6036	5886	7269	8450	9856	11060	11680	12633	13311	16055	**17594**
Total	11896	12321	13778	15662	17466	18732	19394	19931	21084	23641	**25250**



2016 saw the introduction of a Phlebotomy Service in the Perinatal Centre for all patients, in particular those patients attending for GTT testing. This service started in May with the addition of another phlebotomist - Angela Petrasca. All three phlebotomists were rostered to work in the Perinatal Centre thus providing cross-cover with the OPD.

The workload within the Perinatal Centre is substantial, >1000 patient episodes per month.

	2016
May	1054
June	1107
July	1130
Aug	752
Sept	1171
Oct	1127
Nov	1120
Dec	1101
Total	8562

Radiology Departments

Adult Radiology

Head of Department

Professor Mary T. Keogan

Staff Complement

I Clinical Specialist Radiographer/PACS Manager

I Clinical Specialist Radiographer (Ultrasound) – Part Time

I Locum Clinical Specialist Radiographer (Ultrasound – Holiday cover)

Key Performance Indicators

	N=
Adult OPD Ultrasounds	2395
Adult Inpatient Ultrasounds	386
Adult OPD Radiographs	77
Adult Inpatient Radiographs	201
Total Adult Examinations	**3,059**

**Note - figures for ultrasound may include more than one examination, e.g. ultrasound renal and pelvis.*

Achievements in 2016

- The department continues to offer diagnostic examinations for all patients within the HSE approved waiting times.
- Many thanks to department radiography and clerical staff for their hard work in maintaining timely access to diagnostic examinations for all patients.

Challenges for 2017

- Maintenance of acceptable turnaround times for radiology and ultrasound examinations as demand for these services continues to increase.

Paediatric Radiology

Head of Department

Dr David Rea

Staff Complement

2 full-time Radiographers shared between Adult and Paediatric services

1 Clinical Specialist Radiographer and 1 senior post

Key Performance Indicators

	N=
Outpatient Radiographs	1,620
Inpatient Radiographs	1,511
Inpatient Ultrasounds	1,024
Total Paediatric Examinations	**4,155**

Achievements for 2016

- Teaching registrars on the RCSI Radiology Training Scheme about neonatal imaging particularly emergency US.
- Securing funding to replace the end of life Departmental Radiographic Equipment with a Shimadzu Fixed Digital Radiography system in addition to two Shimadzu mobile digital radiography systems. This will take place in first quarter of 2017.

Challenges for 2017

- Dr David Rea will be leaving to take up a new post in the new year, and will continue in a locum capacity until a replacement Paediatric Radiologist is in post.
- An increase in Consultant Paediatric Radiology Consultant numbers and support is still required for the Neonatal service at CWIUH and in supporting both undergraduate/postgraduate education on this site.
- Hip ultrasound imaging for DDH remains outsourced.

Allied Services

Bereavement

Head of Department

Ms Brid Shine, *Clinical Midwife Specialist Bereavement & Loss (Author)*

Staff Complement

1 WTE Clinical Midwife Specialist Bereavement & Loss

Key Performance Indicators

- Provision of anticipatory bereavement counselling support to parents whose baby is diagnosed with a life-limiting condition in close liaison with the Perinatal Co-ordinator, Ms Felicity Doddy.
- Provision of bereavement counselling support for parents who experience Early Pregnancy Loss & Perinatal Death. This may be at the time of loss, in the weeks and months that follow, and may include care in relation to subsequent pregnancy anxiety.
- Provision of bereavement counselling support for families returning from abroad following termination of pregnancy for medical reasons.
- Co-ordinating the formal structured follow up care of bereaved parents who have experienced a Stillbirth following MDT discussion at the Monthly Perinatal Mortality meeting.
- Advocacy role for the needs of bereaved parents, and development of service provision in response to identified needs of bereaved families.
- Development of a holistic approach in Bereavement Care in line with evidence based practice (NICE 2014).
- Resource & informal support to staff impacted in their care of bereaved families.
- Forged links with the Voluntary Support agencies that provide care to bereaved families in the community, with recognition of their invaluable support of families.

Achievements in 2016

- Bereavement training & education, inputting on Midwifery Programmes in the CME, on the Undergraduate Programmes in TCD, post graduate Neonatal Nurse programme, Staff Induction sessions, as well as informal education in the clinical setting.
- Involved in the ongoing work of the End of Life Care Committee, co-facilitating *'Hospice Friendly Hospital'* staff training programmes.
- Presented at a Perinatal Hospice Conference at RCSI to represent care advances in the area of Perinatal Palliative Care & Bereavement.
- Involved in Fundraising events with Friends of the Coombe with many bereaved families, in memory of their babies who died in our Hospital.
- Attended the National Bereavement Conference organised by 'First Light' pertaining to the needs of Bereaved Parents.
- Involved in the Hospital's Annual Service of Remembrance.
- Attended Ireland's 2nd Children's Palliative Care conference submitting two Abstracts for Poster Presentation;
  1. Enhancing Perinatal Palliative Care - A Quality Improvement Initiative.
  2. Mindfulness & Self Compassion for Health Care Professionals - A Staff Care Initiative.
- Supportive to TG4 in the development of a television documentary highlighting society's need to respond compassionately to Stillbirth.
- Project lead in the submission of two applications to the Design & Dignity Grant scheme funded jointly by the Irish Hospice Foundation & the HSE. The Hospital was shortlisted for one of our submissions and grant funding has been allocated for a significant upgrade, small extension and refurbishment of our Hospital Mortuary.
- Presented on *'Perinatal Palliative Care - Anticipatory support for families whose Baby is diagnosed in pregnancy with a Life Limiting Condition'*, at the Hospital's Annual Prematurity Symposium.
- Active member on the HSE National Sub Group, developing draft standards for Bereavement Care for Ireland's Maternity services;

  Worked closely with the project lead Ms Anne Bergin in public forum discussions on the draft standards, facilitating the Dublin open forum event with Dr Barbara Coughlan, UCD.

  Involved in the preparation and ministerial launch of the *"National Standards for Bereavement Care Following Pregnancy Loss and Perinatal Death"* on 10th August 2016 at Farmleigh House, Dublin.

  Bereaved families from the CWIUH were supported to attend the event, meeting personally with Minister Simon Harris at the launch and were supported to take part in media interviews.
- Continued work with the HSE subgroup in drafting a guideline entitled *"Bereavement Care following Maternal Death"*.

- Facilitated Staff training in Mindfulness as part of bereavement education, and three individual one-day programmes for staff care.
- The HSE acknowledged the availability of funding for an additional CMS post with formal written indication of same in December.

Opportunities for 2017

- The expanding role has resulted in a significant increase in referrals and expectations of service delivery. The recruitment of a second CMS post will be very beneficial.
- To explore the possibility of a nominated Clinical lead in the area of Perinatal Death, to enhance service development, research & audit.
- Examining potential expansion of care in particular to siblings following Perinatal Death.

Promotion of a person-centred, humanistic approach in the care of bereaved parents and their families remains the primary focus of the CMS in Bereavement. This work could not be achieved without the involvement of the entire multidisciplinary team within the hospital.

The author would like to acknowledge all grades and all disciplines of staff within the Hospital who care compassionately for our bereaved families throughout the year.

The author would particularly like to acknowledge the voluntary support organisations for their tremendous work in the support of bereaved families in communities across Ireland. Gratitude is also expressed to our partners in community care including Primary Health Care Teams and Local as well as Specialist Palliative Care Teams. We wish to thank all parties for their ongoing support, as we all work collaboratively to enhance bereavement care for the families that we serve, at a time of immense vulnerability.

"The most that we can give is genuine, empathic, individualised care informed by guidelines designed to give and facilitate parental choices.
There is unquestionable darkness for parents. However by learning all that we can about what helps, we may lighten the way a little for those stumbling through that darkness"

(Davis 2009)

Chaplaincy/Pastoral Care Department

Heads of Department

Ms Renee Dilworth, *Chaplain*

Ms Phil Power, *Chaplain*

Achievements in 2016

The Pastoral Care Department is staffed by two Chaplains, Phil Power and Renée Dilworth. The Pastoral Care Department provides a supporting ministry to all families in times of sadness and in times of joy. The Chaplains understand that everyone has a spiritual dimension and many may have a religious component. Ministers and Leaders of other denominations and traditions are contacted at the request of patients. Chaplaincy is both a pastoral ministry of the Church and an integral and necessary part of the holistic healing process.

The Oratory is located on the fourth floor of the hospital and is open 24 hours for use by patients, staff and families. The Book of Remembrance continues to be displayed in the Oratory and is regularly updated.

With funding from Friends of the Coombe a new burial plot for the hospital was purchased and a headstone was erected to mark the grave in Holy Angels, Glasnevin. That grave is visited by Chaplaincy, Bereavement and Mortuary staff three times a year.

In 2016, the Department continued to provide support to patients and staff. There has been a notable increase in the demand for staff support. The wards and the NICU were visited daily. Holy Communion, when required, was provided. Our Service of Remembrance for Bereaved parents and their families continues to be a source of healing and support for all who attend. The Coombe Workplace Choir provided the music and the attendance is increasing year on year. The Department continues to respond to the growing cultural diversity of families attending our hospital. We are committed to ongoing development personally, pastorally and professionally. The chaplains input into study days for staff and students.

The Chaplains continue their commitment to improve the standard of Bereavement care in the hospital, to support all patients and staff. It was decided by the Bereavement Committee to send a sympathy card to families one month following the death of a baby. The feedback is very positive. The support and encouragement of all Staff and Management is deeply appreciated by the Chaplains.

Key Performance Indicators

Bereavement Support	200
Funeral Services	172
Baptisms	43
Naming/Blessing Services	127
Appointments for past patients	15
Prayer Services for past miscarriage and loss	7
Referral for support for fetal anomalies	15
Requests for copy of Baptismal Certificates	14
Organise Mass and Services for staff as required	10
Staff Appointments	22

Clinical Nutrition and Dietetics

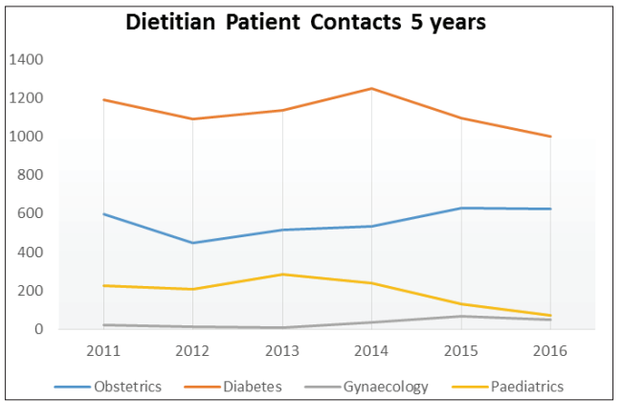
Head of Department

Fiona Dunlevy

Staff Complement

1 WTE Senior Dietitian (Celina Honahan 0.75 & Fiona Dunlevy 0.25)

Key Performance Indicators



Achievements in 2016

Abstracts

- Dunlevy F, Tadesse W, Daly, Kinsley, Turner M. Dietary Structured Education is Effective and Efficient in Treating Gestational Diabetes Mellitus. European Society of enteral and parenteral nutrition congress on clinical nutrition and metabolism, Copenhagen. 2016.
- Martin M, Dunlevy F, Murphy N, Healy L and Shanahan P. An Evaluation of patient empathy within the allied health profession in an acute hospital using the consultation and relational empathy measure. The Nutrition Society conference, Dublin. 2016.
- Byrne M, Dowds J, Dunlevy F, Gilchriest D, Higgins A, Ni Rathaille N, O'Riordan R, Reilly P. Electronic documentation for Health and Social Care Professionals: The patient perspective. The Health Informatics Society of Ireland, Dublin. 2016.
- Byrne M, Dowds J, Dunlevy F, Gilchriest D, Higgins A, Ni Rathaille N, O'Riordan R, Reilly P Electronic documentation for Health and Social Care Professionals: The staff perspective. The Health Informatics Society of Ireland, Dublin. 2016.
- Honohan C, Dunlevy F, Robinson D and Healy L (2016) Nutrition intervention reduces malnutrition risk in community living older persons. British Association for Parenteral and Enteral Nutrition, Brighton. 2016.
- Honohan C, Dunlevy F, Healy LA (2016) Robinson D Improvements in nutritional outcomes associated with a low volume, high energy, and protein supplement in free living older persons. INDI research Symposium, Dublin. 2016.
- Moynagh N, Jones E, Dunlevy F, Robinson D, Healy LA. Breaking the midnight fast results of staff survey Sir peter Fryer surgical conference, Galway. 2016.
- Tadesse W, Dunlevy F, Nazir SF, Doherty H, Daly S, Turner MJ, Kinsley B. Multidisciplinary group education for the treatment of gestational diabetes mellitus. Society for Maternal-Fetal Medicine. Atlanta. 2015.

Publications

- 2015. Dunlevy, F. Nutritional Assessment during Pregnancy. Topics in Clinical Nutrition. 30(1):71-79.

Other

- Participated in tool box sessions to provide information on artifical infant feeds to staff as part of baby friendly initiative.
- Contributed to national guidelines and working groups.

Challenges for 2017

- Need to provide dietetic input to neonatal services.
- Provision of dietetic services to diabetes services with growing demands.
- To develop integrated referral pathways for dietetic services.
- To establish hospital nutritional guidelines and work to promote national maternity standards in particular in the area of health and wellbeing.

Liaison Perinatal Mental Health

Head of Department

Dr Joanne Fenton, *Consultant Psychiatrist*

Staff Complement

Consultant Psychiatrist, 0.5 WTE Dr. Joanne Fenton & Dr. Ann O Grady Walshe

Perinatal Mental Health Nurse, 1 WTE, Elaine McGoldrick

Psychiatry Registrar 0.3 WTE, Dr Titilola Ogundare

Key Performance Indicators

Patients referred to Perinatal Clinic	1796
Patients seen for inpatient consultation	198
Diagnosed with antenatal depression	23%
Diagnosed with postpartum depression	42%
Diagnosed with anxiety disorder	30%
Diagnosed with severe & enduring mental illness	5%

Achievements in 2016

- Educational programmes provided to medical students and midwives in Perinatal Mental Health.
- Staff training days in MBSR facilitated by Perinatal Mental Health Team.
- Ongoing research in collaboration with Trinity Health Services.
- Training Day on Legislation and Assessment with respect to Protection of Life in Pregnancy.
- Education, supervision and training of SpR in Perinatal Psychiatry.

Challenges for 2017

- Provide MDT care to patients which include psychiatric and psychological support.
- Recruitment of a CNS/CMS to enhance MDT.
- Reduce waiting time for patient while ensuring high quality care.
- Continued research in mental health.
- Compile Resource Handbook for mothers attending the CWIUH.

Medical Social Work Department

Head of Department

Rosemary Grant (Author)

Staff Complement

Ms Rosemary Grant, *B.S.S., C.Q.S.W. - Principal Medical Social Worker*

Ms Denise Shelly, *B.Soc.Sc., C.Q S.W. - Senior Medical Social Work Practitioner*

Ms. Kate Burke, *B.Soc. Sc., M. Soc. Sc., N.Q.S.W.*

Ms. Tanya Franciosa, *B.S.S., N.Q.S.W.*

Ms Sarah Lopez, *B.A., H Dip.Soc.Pol., MA Social Work, N.Q.S.W. Masters in Child and Adolescent Therapy and Psychotherapy. (Part Time/Job Share post)*

Ms Sorcha O'Reilly, *B.S.S., N.Q.S.W. (Part time/Job share post)*

Ms Mary Treacy, *B.Soc. Sc., H. Dip. In Ed., Dip. In Applied Social Studies, C.Q.S.W., MA Social Work (Part-time post) Retired April 2016.*

Ms. Gretchen McGuirk, *B.S.S., N.Q.S.W. Temporary Post*

Ms. Susan Smith, *Student Social Worker (February – May 2016)*

Ms Tara Lynch *Student Social Worker (September – December 2016)*

Ms Elaine Forsythe *(Job Share), Receptionist/Secretarial Support*

Ms June Keegan *(Job Share), Receptionist/Secretarial Support*

Report

During 2016 the Medical Social Workers continued to provide a social work service to patients, their partners and their families. Continuity of care was considered important by patients and by staff so the attachment of the Medical Social Workers to the Obstetric Teams (Public, Semi-Private and Private) continued where possible. Periodically this proved impossible due to the unpredictability of the caseload generated at any given time by a particular team.

During 2016, the administrative changes introduced in 2015 bedded down and assisted in the smoother functioning of the Department. The attachment of members of the team to specific groups of patients was helpful to both patients and the Medical Social Workers and the duty system for periods of leave ensured ongoing development opportunities for all of the team.

It was still not possible to provide a dedicated Medical Social Worker to all of the obstetric teams. This is particularly true in the case of the specialist clinics including the non-addiction part of Team A Dr O'Connell, Team Multiple Births, Team Diabetes, the Medical Team and Team E. The Medical Social Work service provided to patients attending these teams continued to be on a rota basis. The lack of a dedicated Medical Social Worker for these patients continues to be problematic for the patients, the Medical Social Workers and for other members of the interdisciplinary team providing care to these women, their partners and expected babies.

During 2016 the number of patients, who were appropriately referred to the Medical Social Worker by a range of professionals in the hospital and in the community and those who self referred, continued to increase. The unpredictability involved in the maternity setting continues to challenge the provision of a Medical Social Work service to patients. This is further challenged by the increasing emphasis on Combined Antenatal Care with the patient's General Practitioner, attendance by patients at outlying clinics and Early Transfer Home. The 'window' enabling patients to access a Medical Social Work service while they are actually in the hospital either as an inpatient or while attending an outpatient clinic is becoming shorter. At the same time the need for assessment of a patient's situation is essential particularly if child protection or other safety concerns are raised. Referrals are prioritised and Domestic Violence and Child Protection concerns continue to receive the highest priority. As a result the early identification of issues of concern with a consequent referral to the Medical Social Work Department remains crucial.

Child protection issues arise in relation to a wide range of children including:

- babies born in the Coombe Women and Infants University Hospital
- patients attending either the hospital's gynaecological service or obstetric service who are under 18 years
- siblings of babies born in the hospital
- siblings of patients attending the hospital
- children who are visiting the hospital
- unknown children.

The acknowledgement of all hospital staff to the broader concept of children whose protection is in our remit is a very important message for us to promote. Staff find it easier to acknowledge a need to be concerned about babies born here and patients who are under 18 years. It is less obvious that concern should extend to siblings of babies and siblings of patients. It can be difficult for

people to be aware of the responsibility to visitors who are not our patients and even more so for children who are not known to us. For example the retrospective disclosure by a patient, now an adult, of abuse as a child, raises potential child protection issues unless the perpetrator has died.

The identification of Child Protection concerns in relation to any of the above groups of children is of extreme importance as is the appropriate referral of the family to their local Child Protection Social Work team for an assessment of the risks /issues involved. Preparation for and attendance at Child Protection Case Conferences both pre-birth and post birth remain an important and time consuming part of the workload of the Medical Social Workers.

Appropriate referrals to Medical Social Work Department include public, semi-private and private patients who are attending the maternity, neonatal/paediatric and gynaecology departments. Referrals include patients who experience different problematic issues in their lives generally and those where issues arise as a result of pregnancy. They include bereavement, domestic violence, addiction, relationship issues, mental health issues, underage pregnancy, the birth of a baby with special needs, child protection/child care issues, concealed pregnancy, crisis pregnancy and learning disability. Hospital staff, when making decisions about an appropriate referral being made to the Medial Social Work Department, need to take account of all of the people involved and in particular children affected by the issue of concern. As mentioned earlier, affected children are not just the expected babies but include siblings, young parents, and other children whose identities may be unknown. The importance of the Children First Guidelines for all hospital staff cannot be over emphasized.

As a tertiary referral centre, each year we see a number of mothers whose care is transferred from another hospital to the Coombe Women and Infants University Hospital for specialized Obstetric or Neonatal care and may include the need for proximity after birth to Our Lady's Children's Hospital Crumlin or the Children's University Hospital, Temple Street. The challenges involved for parents at this time are immense. As well as coping with all the emotions involved in having a baby who may be critically ill, they need to cope with accessing accommodation in the Dublin area, funding this accommodation and their stay in Dublin, making appropriate provision for the care and continued schooling of other children etc. They may not have any support in the Dublin area and may not in fact know Dublin well. All of this occurs within the emotional rollercoaster of having an ill baby. At these stressful times for parents Medical Social Work staff and staff in the Neonatal Units work tirelessly to try to assist them to work out a support plan which enables them be with their baby as much as is possible. The support of Friends of the Coombe has been invaluable in this regard. At the time of going to print, the Cabinet have approved a proposal that will see enhanced Maternity Leave entitlements for mothers of premature babies. This will hugely assist parents trying to care for their premature babies and other children.

During 2016 homelessness and related situations remained a significant issue for many of our patients. Patients reported uncertainty about their living arrangements, an inability to continue to live where they were living, homelessness and the fear of homelessness. Families were unable to continue to rent privately due to either the cost involved or to a lack of suitable accommodation. Some families needed to move back to their family of origin creating space problems and often relationship problems. Families moved into Hostel, B&B or Hotel-based accommodation with all the associated difficulties. Parents did their utmost to ensure children continued to attend school despite having to travel long distances a number of times a day with the associated financial implications. Parents tried to provide appropriate nutrition for children despite limited/no access to cooking facilities. Families were often accommodated a distance from their usual supports and floundered without the support of their family and friends.

During 2016 the implications of homelessness for our patients became even more challenging than other years with patients reporting sleeping in their cars, having to move from one accommodation to another frequently, having to locate hotels/B&Bs themselves, having to split their children up and arrange for them to stay with various family members/friends for a night at a time and still try to keep all their appointments, get the children to school and not know from day to day where they were going to be staying. The addition of a new baby and a newly delivered mother to this scenario is overwhelming. Lack of an address or uncertainty about an address creates difficulties for the safe follow up of mothers and babies. It is difficult for a Public Health Nurse to follow up newborns. It is difficult for new mothers to appropriately access adequate sleep/rest, food, hygiene facilities etc. Being homeless is a major challenge for all but is often overwhelming for a family with a new baby.

In 2016 Ms Tanya Franciosa in conjunction with the Drug Liaison Midwife presented to students attending the Post Graduate Diploma in Child Protection course in Trinity College Dublin. The title of their presentation was "Delivering Ante Natal Care to Opiate Dependant Women". Ms Franciosa also presented to nursing and midwifery staff on child protection issues in the Neonatal Units.

Ms Franciosa supervised a final year Trinity College student on placement in the Medical Social Work Department, Ms Tara Lynch.

Ms Denise Shelly, Senior Medical Social Work Practitioner,

and Ms Sorcha O'Reilly, Medical Social Worker, jointly supervised a final year Trinity College Masters Student on placement in the Medical Social Work Department, Ms Susan Smith.

Ms Rosemary Grant was involved with the School of Midwifery in Trinity College Dublin in the provision of educational sessions about Medical Social Work in the Maternity Setting to midwifery students.

Within the Hospital, the department continued to be represented on the End of Life Care Committee and the Bereavement Committee. Ms Denise Shelly continued with her involvement with the Neonatal Support Group.

In all of our work with patients, communication and liaison with a wide range of professional groups and voluntary specialist organisations within the hospital and in the community is essential. This liaison continued during 2016 both at individual patient/family level and at a broader level. The Medical Social Work staff continued to liaise with organisations such as the Teen Parent Support Programme, Women's Aid, Focus Ireland, A Little Lifetime Foundation and the Miscarriage Association of Ireland. Ms Rosemary Grant continued to chair the National Advisory Committee of the Teen Parent Support Programme and to represent the hospital on the Dublin Midland Hospital Group Committee preparing for Children First.

The staff of the Medical Social Work Department continues to be indebted to the members of Coombe Care who provide assistance to patients by way of necessary practical help at the time of a baby's birth. This help may include clothing and toiletries for the mother for her admission and clothing and other items for the baby for its hospital stay and discharge home. They also provide vouchers over the Christmas period to enable patients to buy items for which they would not ordinarily have the resources. The work of the Coombe Care Committee is much appreciated by hospital patients, the staff in all areas of the hospital and in particular by staff of the Medical Social Work Department. Committee members are always willing to engage with the Medical Social Work team to discuss potential areas of need. During 2016 assistance was given to individual families who were in particular need where it was impossible to locate an alternative source of support. The increased pressure on families as a result of the broader economic situation meant that a number of families who had never before been in a position of needing support found themselves in such a position.

During 2016, as in other years I have appreciated the support of the Principal Medical Social Workers in the other Maternity hospitals. There has always been a good liaison between the Medical Social Work Departments, which contributes to the ideal of best practice. The Medical Social Workers assigned to the paediatric units and to patients with addiction issues in each of the three maternity hospitals in Dublin continued to meet on a number of occasions in 2016. There were benefits to all in sharing knowledge and experiences of these particular areas of Social Work in the maternity setting.

I would like to express my particular appreciation to Ms Mary Treacy who retired from the Medical Social Work Department in 2016 after many years of service in various agencies, both voluntary and statutory. Mary's dedication to her patients and to her role was extensive and she is missed by all in the department and by the many patients whose lives she assisted with her work. I would like to wish her many happy and healthy years in her garden.

In conclusion I would like to express my sincere thanks to those who work in the Medical Social Work Department including the Medical Social Workers and the Receptionists/Secretaries. The level of professionalism and the seeking to attain a standard of best practice demands a major commitment on the part of staff in the Department which is much appreciated. The support of our colleagues in other Departments within the hospital is essential as is the support of our colleagues, both Social Work and Non Social Work within the community. I hope that when writing the 2017 Annual Report the major challenges posed by the housing situation will have decreased and that our patients will no longer be faced with uncertainty about their accommodation situation at the time of the birth of a new baby.

Pharmacy Department

Head of Department

Mairéad McGuire *(seconded to HSE June 2016)*
Peter Duddy *(June 2016-present)*

Staff Complement

1 WTE Chief Pharmacist, Peter Duddy
1 WTE Senior grade Pharmacist, Orla Fahy
1 WTE Senior grade Antimicrobial Pharmacist, Úna Rice
1 WTE Basic grade Pharmacist, Joanne Frawley
1 WTE Pharmacy Technician, Gayane Adibekova

Key Performance Indicators

- Clinical service provision:
  - Daily review of patient drug charts on adult and neonatal wards
  - High Risk Pregnancy Medical clinic
  - Acute pain round/team
  - Twice monthly Antenatal GUIDE Clinic
  - Daily Antimicrobial Stewardship rounds
- The department issued stock to wards, outpatients, staff and babies discharged from SCBU on 34574 occasions, equating to approximately one dispensing transaction for every 10 minutes a pharmacist is in the hospital, or one dispensing transaction for every 2.5 minutes that a pharmacist is rostered to be in the dispensary.
- Electronic recording of complex medicines information queries using MIDatabank software.
- Work continued on developing and maintaining a pharmacy risk register.
- Continued monitoring of compliance with the hospital's Prescribing and Microbiology Guidelines for Obstetrics & Gynaecology, further enhanced by the continued development of the post of an Antimicrobial Pharmacist which has allowed for closer monitoring and documentation of pharmacist intervention in relation to antimicrobial prescribing practice.
- Peter Duddy continued his teaching collaborations with the School of Pharmacy in University College Cork.
- As a key member of the antimicrobial stewardship team, Una Rice participated in the National Antimicrobial Point Prevalence Study.
- The department continued provision of educational sessions to medical staff, NCHDs, Consultants and Nurses/Midwives e.g. Gentamicin, analgesia, parenteral nutrition and medication management/safety sessions.
- Significant increase in workload around the management of drug shortages and supply issues and risk mitigation associated with this.
- Ongoing involvement with developments in MN-CMS project, national TPN steering group & Clinical Programmes.
- Pharmacy Technician-operated medication top-up service for wards continued to show improved stock availability, more efficient use of stock and cost efficiencies through the wards.

Achievements in 2016

- Established and led the formation of a multidisciplinary Medication Safety Committee dedicated to promoting and advancing a culture of medication safety as a priority across CWIUH, in order to enhance patient safety and minimise the potential for medication-related harm.
- Led the roll out in NICU of the National Standard Concentration Infusion library in collaboration with colleagues in the engineering department and the pharmacy department in Our Lady's Children's Hospital Crumlin. This involves the use of Drug Error Reduction software to ensure safe use of infusion in the neonatal population using Smart Pump technology.
- Successfully developed and launched a smartphone prescribing app to replace the neonatal prescribing handbook. This app is available to all neonatal consultants and NCHDs in order to provide accurate and up-to-date guidance on medications directly to the user's phone or tablet, while simultaneously allowing us the flexibility to update medical guidelines and distribute them via this mobile platform, reducing the risk of staff referring to outdated medical information and materials. In the long run, the cost of producing & printing paper copies of guidelines will be eliminated.
- Work commenced on the development of a similar app for Obstetrics and Gynaecology (estimated completion date March 2017).
- A national assurance review by HIQA took place in January to determine the current status of antimicrobial stewardship provision in the hospital, in order to assess compliance with HIQA Standard 12. The hospital was noted to have progressed the issue of antimicrobial stewardship and that an increased focus on quality improvement using validated methods should now occur to augment audit activity.
- The HIQA visit also noted a need for improvement in respect of medication error management. The hospital does not have a dedicated medication safety coordinator, so a business case was submitted for this position in order to develop a medication safety programme. Increased paediatric pharmacy staffing levels were also recommended.
- Daily antimicrobial stewardship rounds (initiated in late November 2014) continued to be carried out by the an-

timicrobial pharmacist, ensuring robust stewardship of antimicrobials. Weekly rounds with the infection control team are also undertaken on a continuous basis.

- Six monthly review of electronic versions of Prescribing and Microbiology Guidelines and Neonatal prescribing handbook which can be accessed from the user's Smartphone.
- Continued development of the role of the Pharmacist in the Medical Clinic Team.
- Renewed role on anaesthetic pain rounds and Nausea & Vomiting (PUQE) rounds.
- Continued development, revision and monitoring of comprehensive NICU medication prescribing and administration guidelines through the Paediatric Drugs & Therapeutics Committee.
- Work commenced on the development of a drug chart for the prescribing of insulin to inpatients, in line with best practice recommendations of the Irish Medication Safety Network.
- Continued participation in Clinical Trials (e.g. HIP Trial, IRELAND trial).
- Continued involvement in Risk management and auditing of practices within the hospital to improve patient safety.
- Continued strong post-graduate education ethos:
  - Peter Duddy undertook a Diploma in Patient Safety in Royal College of Physicians Ireland (estimated completion date July 2017).
  - Orla Fahy continued an MSc in Clinical Pharmacy in UCC.
  - Mairead McGuire continued a Diploma in Healthcare Management at the Institute of Public Administration. Duration of antimicrobial treatment courses
  - Undergraduate and postgraduate teaching for pharmacy, medical and nursing/midwifery students.
  - Attendance at national and international conferences related to maternity and neonatal pharmacy practice and pharmacy technician practice.
- Continued strong in-house education ethos:
  - Established protected time for all pharmacists to complete their CPD e-portfolio obligations as required by the Irish Institute of Pharmacy and the Pharmaceutical Society of Ireland.
  - Facilitated and aided nursing and midwifery colleagues in the development of the role of the Registered Nurse Prescriber within a maternity hospital setting.
  - Facilitation of second and third level students work placements.
  - Expanded in-house training for NCHDs, Consultants, midwives and nurses.
  - Provision of lectures for National Midwifery Education courses.
- The following audits were undertaken:
  - Out of hours access to the pharmacy.
  - Compliance with Medication Incident forms.
  - Trends in Medication incident Reporting.
  - Survey of Staff Attitudes to Medication Incident Reporting.
  - Adherence to Prescribing Guidelines on the Use of Inotropes in NICU.
  - Audit of prefilled syringes in Theatre Department vs previous practice.
  - Impact of clinical pharmacy service on prescribing of discharge medications for Special Care Baby Unit.
  - The National Point Prevalence Study (PPS) for antimicrobial prescribing.
  - Recording of antimicrobial indications in patients' notes and drug charts.
  - Administration of C-section prophylaxis.
  - Gentamicin levels in neonates.
  - Gentamicin dosing in adult obstetric patients (Baseline audit).
  - Gentamicin prescribing practices post introduction of the Gentamicin Weight Banding Table.
  - Compliance with empiric antimicrobial prescribing guidelines.
  - Continued co-working with the other maternity hospitals in Dublin, as well as those outside of Dublin, particularly Midlands Regional Hospital, Portlaoise.
  - Continued monitoring of all Pharmaceutical-grade fridges in the hospital using web-based Temperature monitoring system.

Challenges for 2017

- To maintain current service levels in the face of increased demands nationally.
- To maintain current service levels in the face of increasing demands from a national level.
- To effect cost savings without compromise to the standard of service provision.
- To ensure adequate stock of medications on wards outside of pharmacy hours and to empower other staff to ensure sufficient stocks are obtained, where possible, during normal pharmacy hours and reduce burden on pharmacy staff outside hours and also on ADOMs with pharmacy access.
- Promote and advance a culture of medication safety as a priority across CWIUH, in order to enhance patient safety and minimise the potential for medication-related harm.
- To develop and maintain a robust system to highlight risk and reduce medication errors, particularly in advance of the introduction of high risk new technologies in the future, including the development of a Medication Safety Committee and development of a hospital-wide medication safety strategy. A business case was submitted in 2016 to address this issue.
- To complete work on developing a Smartphone App for the dissemination of the hospital's Prescribing and Microbiology Guidelines for Obstetrics & Gynaecology.

Physiotherapy Department

Head of Department

Margaret Mason *BA MA MCSP MISCP GradDipPhys*

Staff Complement

Eibhlin Mulhall *BSc MISCP, Senior Grade 0.5 WTE (until December)*

Anne McCloskey *BSc MISCP, Senior Grade 0.5 WTE*

Clare Farrell *BSc MISCP, Senior Grade 1 WTE*

Julia Hayes *BSc MISCP, Senior Grade 0.6 WTE*

Roisin Phipps *BSc DPT MISCP, Senior Grade 1 WTE*

Sarah Bevan *MISCP, Senior Grade 0.75 WTE*

Achievements in 2016

- As in previous years we continued to provide a wide range of services to women and infants attending this hospital on an inpatient and outpatient basis.
- Continued provision of a high quality service to women and infants, within the limitations of the resources available to our department.
- Continued development of the urogynaecology triage system for women referred to the hospital with incontinence.
- Development of a new multidisciplinary pathway for the management of DDH with an expanded role for physiotherapy, providing a more efficient and streamlined approach for these patients.

Antenatal Education

- Antenatal education continues to be a priority for the physiotherapy department. Our classes are well-attended although we are limited by space and staffing constraints. We continue to receive excellent feedback from the women who attend the classes who find them both enjoyable and informative.
- Antenatal classes provide an ideal opportunity for physiotherapists to discuss and encourage health benefits of general and specific exercise, and improve health behaviours and lifestyle changes.
- One of the main topics discussed in these classes is the importance of pelvic floor muscles, their role in pregnancy and during labour, and their role in good bladder function. Appropriate pelvic floor muscle exercises are taught and encouraged in these classes.
- As part of continence promotion, good bladder habits are also discussed and women are encouraged to continue these and pelvic floor muscle exercises throughout their lives. In fact many women develop bad bladder habits even before pregnancy and find it very useful to be informed about normal micturition and the consequences of bad habits.
- The importance of exercise is stressed both generally and during pregnancy, and women are encouraged to take part in appropriate exercise regimes. Most women are aware of the benefits of regular exercise but are unsure about what kind of exercise and how much exercise they could and should do during pregnancy. Physiotherapists with their knowledge of exercise are the appropriate health professionals to discuss exercise with women and it is also part of our health promotion role.
- Women are taught strategies for managing pain during labour using non-pharmacological methods and encouraged to have confidence in their abilities to give birth. The effects of oxytocin, endorphins and stress hormones in labour are discussed and women are taught how to use deep relaxation and breathing techniques to avoid building up tension so that their experience may be more positive.
- Women are also encouraged to make informed decisions regarding their care throughout pregnancy, labour and the puerperium.

Pelvic Girdle Pain

- The number of referrals for pregnancy-related pelvic girdle pain and low back pain continued to rise. Referrals to the department for this condition often reached 200 per month during this year. We continued to provide classes for these conditions, which we instigated 6 years ago, as it would be impossible to provide individual appointments for these women without developing long waiting lists. When a woman is referred with LBP/PGP she is given an information leaflet about the condition and an appointment for a class. Our aim is to give a class appointment within two weeks of referral. In this class, women are given advice, in addition to practice exercises and techniques that they can use themselves to relieve pain. If a woman requires further treatment on an individual basis following the session, this can be arranged. There has been very positive verbal feedback from women attending the classes.

Postnatal Care

- Postnatal women are encouraged to attend the physiotherapy postnatal classes no matter what kind of delivery they have experienced, where they will receive advice on pelvic floor muscle exercises, abdominal exercises, back care, techniques for bending, carrying and lifting and good feeding positions. Women will also be advised on continuing regular exercise as part of our health promotion practice. They are also advised about positional plagiocephaly prevention and the importance of prone activities for their babies.

OASIS

- Women who sustain a third/fourth degree perineal tear (oasis) are followed up individually by a physiotherapist. These women will be seen on the ward prior to discharge, two to three weeks later and six to eight weeks following delivery when they are attending for medical review. If symptomatic they will continue to attend physiotherapy for as long as is necessary. If onward referral is deemed appropriate this is organised with the medical team/consultant. These women may be referred to physiotherapy in subsequent pregnancies for advice on maintaining good pelvic floor health throughout the pregnancy and afterwards.

Continence Promotion

- Our Continence Information and Education sessions for women continued. Most newly-referred women attend one of these sessions, usually within one month of referral. Referrals of women with incontinence continued to rise also. In this session women are informed about normal micturition, why continence problems occur, the different types of incontinence, and are advised on techniques such as urge suppression, pelvic floor muscle exercises and good bladder habits. Frequency/volume charts are explained and distributed and women are advised to complete these prior to their next physiotherapy visit. All women will then be given an individual follow-up appointment for six to eight weeks later.
- In order to help integrate the care of women with incontinence, a physiotherapist continues to regularly attend the urogynaecology clinics. The urogynaecology triage system whereby one of the urogynaeclogy consultants on the MDT triages the referrals and then sends suitable patients directly to physiotherapy has been successful and therefore continued this year. These women were seen by the physiotherapy members of the MDT while they continued on the Consultant Gynaecologist clinic waiting list. Many of these women responded well to physiotherapy and did not need to see the consultant which freed up clinics for those who do need consultant review. The urogynaecology team consists of Consultant Urogynaecologists, members of the physiotherapy team, a Clinical Nurse Specialist and administrative support.

Paediatric Services

- We continued to provide services to the NICU/SCBU, the baby clinics, and to the specialist consultant, neurodevelopmental and orthopaedic clinics.
- The lack of therapy resources in the community has led to many infants with special needs continuing to be monitored by physiotherapy in CWIUH for up to two years of age due to long waiting lists for assessment and treatment by Early Intervention Services, Primary Care Services and Specialist Services in the community. This has put huge strain on our services as we are not resourced for this kind of work and can only see these infants infrequently. However it is extremely difficult to discharge them and leave these families with no input for their child with special needs, sometimes for periods of up to six months while they wait for the community services to give them an appointment. At present we have one WTE working in the neonatal service which clearly is not sufficient for the volume of work demanded. This work includes seeing babies on the postnatal wards with talipes, DDH, brachial plexus lesions, and providing follow-up for them as outpatients, and developmental follow-up in SCBU and in the baby clinic for those infants considered to be 'at-risk' of developmental delay.
- The introduction of hip screening by ultrasound scanning which commenced in January 2014 led to a more than 2-fold increase in babies referred for treatment for DDH. Although this was anticipated by the screening service, there were no resources allocated for the treatment of these babies once the diagnosis was made. The resulting extra volume of work was absorbed by the sole physiotherapist but unfortunately this led to delays in other babies being seen and in a reduction in work in SCBU. Following the appointment of a new part-time physiotherapy post at the end of 2015 to deal with the increasing volume of work, we developed a new multidisciplinary pathway to streamline the management of this condition and lead to better patient satisfaction. This initiative was implemented in January 2016 and has been working extremely well. We are grateful to hospital management for their support in this initiative. We also developed a poster which was presented at the Irish Society of Chartered Physiotherapy national conference and an HSE New Initiatives conference in October 2016.
- One member of staff continues to be involved in the multidisciplinary Neonatal Post-Discharge Support Group. This group was set up to provide support to families of babies who have spent time in the NICU and SCBU. It runs once a month on a Saturday morning and is facilitated by a Clinical Midwife Specialist and Clinical Nurse Manager from the neonatal centre, a physiotherapist and a medical social worker (who are

not paid for providing this service). Attendance at this group has continued to grow in the eight years that it has been running and it has proven to be very successful with families.

Challenges for 2017

- To continue to provide high quality care within the limitations of our resources. We are very appreciative of the support of the hospital management during these extremely challenging times.
- To continue to develop the physiotherapy service to women and infants within the resource constraints.
- To continue to develop our integrated multidisciplinary service for women referred to the hospital with continence issues and to develop new initiatives for treatment of women with these problems.
- To continue to develop the role of the physiotherapist in the management of DDH in line with the new hospital pathway and to consider upgrading this post to a Clinical Specialist role.

Psychosexual Therapy

Head of Department

Donal Gaynor

Staff Complement

One Counsellor *(part-time)*

Key Performance Indicators

	Total
No. of Consultations	**256**
No. of New Visits	**21**
No. of Return Visits	**235**

Dysfunctions treated

- Vaginismus (32%)
- Dyspareunia (32%)
- Female Inhibited Sexual Desire (24%)
- Female Anorgasmia (2%)
- Male Anorgasmia (4%)
- Premature Ejaculation (2%)
- Others (4%)
- Sexual Addiction was evidenced in 4% of presentations.

Achievements in 2016

- Working closely with Physiotherapy Team.
- Attending COSRT Annual Conference in London.
- Commence therapy with a couple with Bechet's Syndrome and Body Dysmorphic Disorder.

Challenges for 2017

- Treatment of 2 patients, both with Lichen Sclerosus experiencing Dyspareunia and Inhibited Sexual Desire.
- Treatment of couple with Vaginismus, Anorgasmia, Inhibited Sexual Desire and Premature Ejaculation.

Quality & Patient Safety Division

Clinical Risk Management Department

Head of Department

Ms Susan Kelly

Staff Complement

Ann Byrne, Assistant Clinical Risk Manager

Key Performance Indicators

- To capture and report all incidents and untoward clinical events which threaten patient safety.
- To investigate reported incidents in order to identify possible system vulnerabilities, extract the learning, implement change where indicated and communicate this to the multidisciplinary team. We cannot change the human condition but we can change the conditions under which humans operate.

Challenges in 2016

- The HSE introduced a list of Serious Reportable Events (SREs) in January 2015. While we welcome and accept our responsibility to report these events to the HSE, the requirement to conduct a full System Analysis Review in a timely fashion is extremely challenging.
- Retrieving reports from NIMS (The National Incident Management System) continues to be difficult. A number of difficulties with data inputting have been satisfactorily addressed by the CIS.
- The number of cases referred to the Coroner and the Inquests being conducted continued to increase throughout the year.
- The number of legal cases unfortunately appears to be on the increase. The hospital and SCA successfully defended the Appeal in a Symphysiotomy case. It is hoped that these historic cases are coming to an end.

Achievements in 2016

- The CRM continues to present on the CTG Interpretation study day, the Legal Aspects of Midwifery & Nursing Care study day and many other educational programmes where there is an opportunity to participate in promoting patient safety and effective risk management.
- The Quality Safety & Risk Sub Committee of the Hospital Board continues to meet quarterly and the CRM is in attendance at these meetings.
- The establishment of the Quality & Patient Safety Directorate within the hospital.
- The CRM represents the hospital on the Voluntary Hospital Group Risk Management Forum.

Challenges for 2017

- To continue the introduction of Open Disclosure with facilitated 4-hour workshops for senior staff.
- To complete the project to introduce the National Consent Policy and revised consent form, once the up-dated Patient Information Leaflets are finalised.
- To ensure compliance with the reporting & investigation of SREs.
- To encourage the release of staff to attend the HSE System Analysis Training which needs to be conducted in a more timely fashion.
- To ensure patients are supported through the review process.
- To ensure staff are adequately supported when they are involved in a serious incident and the ensuing review of the case.
- To ensure staff are supported through the Coronial Process in the event of being called as a witness in a Coroner's case.

On this my final report, I take the opportunity to sincerely thank the CRM committee and its various members over the past almost 8 years for their commitment and support. It has been my privilege to work with two Masters, Prof Christopher Fitzpatrick and Dr Sharon Sheehan who were absolutely committed to promoting patient safety and effective risk management. Ann Byrne was my mentor and guide when I came to the role of Clinical Risk Manager and I sincerely thank Ann for her constant support and assistance. I have no doubt she will support my successor equally well. The administrative support of Mary Jackman is also acknowledged and appreciated. The recruitment of Evelyn O'Shea as Quality Manager & Carmel Tierney as Patient Advocacy Manager will greatly enhance the service we afford our women and families.

I borrow from the quote of Chantler in 1999 as I reflect on 40 years in the health service in that *"Medicine used to be simple, ineffective and relatively safe. It is now complex, effective and potentially dangerous"*. That does not deter us from pursuing our mission "Excellence in the Care of Women and Babies".

Quality, Risk & Patient Safety

Head of Department

Evelyn O'Shea

Staff Complement

4 WTEs:

Susan Kelly, Clinical Risk Manager

Ann Byrne, Assistant Clinical Risk Manager

Carmel Tierney, Patient Advocacy Manager

Evelyn O'Shea, Quality Manager

Key Performance Indicators

Service User Feedback:

- Ensure that all compliments, suggestions and complaints (verbal and written) are reported to the Patient Advocacy Manager as soon as possible. Support service users and staff in this regard.
- Acknowledge 100% of all Written Complaints within 5 working days of receipt of a Complaint.
- Endeavour to investigate and conclude Formal Complaints within 30 working days of acknowledgement of the complaint. If conclusion within 30 days is not possible, communicate this to the complainant and update the complainant every 20 working days until conclusion.
- Manage the investigation and reporting of complaints to relevant committees e.g. the Senior Management Committee, the Complaints Review Group and the Clinical Risk Management Committee and ensure that all relevant external agencies are informed as required.

Incidents, Risks & Claims:

- Ensure that all clinical and non-clinical safety incidents and near-misses are identified to the Clinical Risk Manager, reported and investigated.
- Identify and manage cases requiring Systems Analysis Review (SAR) including Serious Reportable Events (SREs).
- Manage reporting of incidents to relevant committees e.g. the Senior Management Committee and Clinical Risk Management Committee and ensure that all relevant external agencies are informed as required.
- Manage all medical negligence claims including attending Court on behalf of the Hospital and supporting staff involved in the process.
- Coordinate and manage all aspects of cases going through the Coronial system including supporting staff.

Quality Standards and Quality Improvement:

- Ensure the hospital's compliance with required quality standards and policies including the HSE's National Incident Management Policy and HSE's Complaint Management Policy - Your Service Your Say and the Ombudsman's Learning to Get Better.
- Proactively engage with our service users to establish their priorities for the delivery of an improved service and put changes in place to improve patients' overall experience of our hospital and our service.
- Lead the development, delivery, implementation and evaluation of a comprehensive quality, safety and risk programme with associated structures, policies and processes which are the vehicle for improving quality and safety in CWIUH.
- Embed a culture of continuous learning and quality improvement within CWIUH from service user feedback, clinical incidents and staff engagement in line with regulatory and practice requirements.
- Provide reports to the Master, Senior Management Team, the Board of Guardians & Directors and external agencies as required.
- Attend and participate on various Hospital Committees and Groups

Achievements in 2016

2016 was a new beginning for Quality and Patient Safety (QPS) at CWIUH with the appointment of the hospital's first Quality Manager and first Patient Advocacy Manager in late 2016. The QPS team set about establishing a structured approach to engage with women, staff and leadership so as to commence the development, delivery, implementation and evaluation of a comprehensive quality, safety and risk programme to provide assurance regarding our delivery of person-centred high-quality care in CWIUH.

Early achievements included:

- the revision of Patient Feedback boxes/forms including Comment Cards in all clinical areas of the hospital and the addition of a HIQA Standards and HSE Patient Charter categorisation to facilitate learning and improving from our complaints. Heads of Departments are actively engaging in our learning from feedback process and are disseminating feedback to their staff.
- the continued delivery of training and education on

complaints management, healthcare risk and incident management issues and Open Disclosure to staff.

- the continued management of incidents, near-misses, Serious Reportable Events (SREs), establishment of System Analysis Reviews (SARs) for serious incidents and providing support to staff around these incidents and reviews.
- the establishment of a Quality Improvement (QI) Team to consider the feasibility of conducting a QI Project to address key clinical incidents at CWIUH (Reducing Obstetric Anal Sphincter Injuries OASIs).
- attendance at many MDT and 1:1 meetings with numerous staff.

Challenges for 2017

Promote and support a person-centred high quality and safe culture in CWIUH including learning and improving from service users and staff feedback:

- Review the management of our service user feedback in the context of the revised HSE National Complaints Management Policy, the Ombudsman's Learning to Get Better and the updated National Policy on management of incidents and SARs including arranging SAR training for staff.
- Proactively engage with our women to establish their priorities for the delivery of an improved service and put changes in place to improve patients' overall experience of our hospital and our service.
- Continue to review our clinical incidents and complaints, collectively learn from them to inform and improve our service in order to ensure the safety of our women and infants and the delivery of high quality care to them; to demonstrate that we are learning and improving from our patient feedback and our incidents.
- Provide appropriate training and support for staff in all aspects of quality and patient safety (incident management including SARs and the Coronial System, complaints management, quality improvement and Open Disclosure).
- Review the current Leadership Quality Walk-Rounds in the context of National Quality Standards and as an opportunity for engaging with frontline staff regarding quality and safe care at CWIUH: demonstrate senior management's commitment to quality and safety for service users & staff; increase staff engagement in quality and patient safety and a culture of open communication; identify, acknowledge and share good practice; support a proactive approach to minimising risk, timely reporting and feedback and strengthen commitment and accountability for quality and safety.
- Establish governance and leadership for QI to support evidence-based clinically meaningful and accountable QI in CWIUH i.e. projects that address our clinical incidents/risks. Initiate and support a QI project to reflect this governance, support, methodology, accountability & staff engagement in QI.
- The high volume and on-going increase in SARs is demanding – we are challenged to continue to provide support to service users, staff and reviewers of SAR teams and the conduction and completion of SARs in the context of staff shortages and the enormous workload involved in the process. We endeavour to ensure that we learn from our Serious Incidents and SARs. This workload would be enormously supported by the recruitment of a second Clinical Risk Manager.

I wish to take this opportunity to acknowledge the huge and warm welcome that I received from all CWIUH staff and committees, and to recognise and applaud their enormous contribution to the delivery of a high quality safe care to all of our women and infants on a daily basis. Thanks to Susan Kelly, Ann Byrne and Carmel Tierney for their tireless hard work and dedication to our women, infants and staff. I also wish to thank the Master, Dr. Sharon Sheehan for her inspiration, vision and steadfast commitment to delivering person-centred high quality care to our women and infants.

Academic Departments

Academic Midwifery Report

Head of Department

Ms Patricia Hughes, *Director of Midwifery & Nursing (until August 2016)*

Ms Ann MacIntyre, *Interim Director of Midwifery & Nursing (from August 2016) (Author)*

Report

Midwifery Education between the CWIUH and Trinity College Dublin (TCD) continued for both the BScM 4 year Midwifery programme (pre-registration) and the 18 month Higher Diploma Midwifery programme (post registration). At the end of December 2016 we had a total of 78 midwifery students undertaking either one of the two programmes. Our sincere thanks to Dr. Denise Lawlor, Director of Midwifery programmes and to all the staff at the Department of Nursing & midwifery in TCD, without whose assistance and guidance, the programmes would not be possible.

The Postgraduate Diploma in Neonatal Intensive Care continued as a joint venture between the three Dublin Maternity Hospitals and the Royal College of Surgeons Ireland. We are indebted to both Professor Zena Moore and the coordinator of the programme, Patricia O'Hara for the continued success of this programme which enables nurses and midwives to provide the highest quality of neonatal nursing care in all three tertiary neonatal units.

Awards to Midwives & Nurses in 2016

Ann Louise Mulhall Scholarship Award 2016

Paula Barry
Sarah Mahony

Clinical Lead Educator Award 2016

Patricia O'Hara

Best Clinical Educator Awards 2016

Nora Vallejo
Michelle Walsh
Megan Sheppard

Awards to Midwifery Students

Gold Medal BSC Midwifery

BSc 2011- 2015 - Maebh Ní Shúilleabháin
BSc 2012 -2016 - Emma Feeley

Silver Medals BSC Midwifery

BSc 2011-2015 - Jennifer O'Gorman
BSC 2012- 2016 - Darry Reed

Gold Medal Higher Diploma in Midwifery

Aisling O'Donnell

Silver Medal Higher Diploma in Midwifery

Elaine Small

Dr. T. Healy Awards – Best Overall Clinical Student Midwife

BSc 2011-2015 - Jennifer O'Gorman
BSc 2012- 2016 - Emer Curran
Higher Diploma - Paula Fernandez Esteban

The Centre of Midwifery Education (CME) is now in its 9th year under the direction of Ms Triona Cowman, Director of the CME. Due to excellent collaboration of senior staff from all the three Dublin Maternity Hospitals, another comprehensive programme of in-service training was provided for all nurses and midwives working in the three Dublin maternity Hospitals and the greater Dublin area. Sincere thanks are due to Susanna Byrne, Director of the NMPDU in the Dublin Mid Leinster Area and Chair of the Board of Management for the CME, and from whom much support is given in respect of practice development and continuing education.

The 9th Annual Essence of Midwifery Care Conference took place on the 5th May. Dr. Michael Odent gave the 13th Maureen McCabe Lecture entitled "Neocortical inhibition: a key to understanding human nature in general and human birth in particular"

9th Annual Essence of Midwifery Care Conference

08.30- 08.50	***Registration Coffee***	***SPEAKER***
08.50-09.00	**Opening Address**	**Ms. Patricia Hughes, Director of Midwifery and Nursing, CWIUH**
09.00-09.40	**Future of Maternity Services in Ireland**	*To be confirmed*
09.40-10.10	**Dramatisation : Birth Choices: Googling the options!**	**Midwifery Students**
10.10-10.40	***Coffee & Networking***	***Poster Presentations***
10.40-11.30	**Optimising Maternity and Neonatal Care by using the evidence**	**Professor Neal Maskery,** Visiting **Professor of Evidence-informed decision making, Keele University**
11.30-12.30	**Birth Choices**	**Ms. Margaret Rogan, Consultant Midwife, Dr. Niamh McCabe Consultant Obstetrician Royal Jubilee Hospital Belfast**
12.30-13.00	**My Story**	**Ms. Jennifer McCaffrey Service User**
13.00-14.00	***Lunch & Networking***	***Poster Presentations***
14.00- 15.00	**The 12th Maureen McCabe Lecture. *'Neocortical inhibition: a key to understanding human nature in general and human birth in particular'***	**Dr. Michel Odent, Consultant Obstetrician**
15.00-15.40	**Caesarean section and child and adult morbidity: New Evidence**	**Dr. Ali Khahsan, PhD Senior Lecturer in Epidemiology Department of Epidemiology and Public Health, University College Cork**
15.40-16.00	**Closing Remarks & Results of Poster Competition**	**Patricia Hughes**

Biological Resource Bank (BRB)

Head of Department

Dr Sharon Sheehan, *Master/CEO*

Professor Michael Turner

Staff Complement

Ruth Harley, RM

Muireann Ní Mhurchú, RM

Achievements in 2016

- Since 2013, the Biological Resource Bank has worked in close collaboration and under the guidance of Professor Turner in the UCD Centre for Human Reproduction. In May 2013 a decision was made to stop collecting antenatal maternal and fetal bloods to concentrate on the utilisation of existing samples for research purposes.
- We continue to audit the bloods and freezers to ensure the bloods are frozen correctly and the freezers are running efficiently. We await research projects that are approved by the Ethics Committee to use this valuable resource that is in the CWIUH.
- Ethical Approval was granted to Prof. Cara Martin to use 340 BRB bloods on a diagnostic test for preterm birth, and the research is at present ongoing.
- Work closely with Research Fellows who are undertaking their PhDs or MDs within the UCD Centre for Human Reproduction.
- We worked alongside Ms. Shona Cawley where we recruited, consented and took antenatal booking bloods for over 500 women. This research study is specifically looking at red cell folate levels within pregnant women.
- We organised, documented and stored over 500 bloods prior to analysis for Dr. Niamh Daly's study relating to a RCT evaluating an intensive medical supervised exercise intervention during pregnancy in obese women.
- We organised, documented and stored 240 maternal and 73 fetal bloods for Dr. Maria Farren who is undertaking a RCT on whether a pseudovitamin Inisotol taken orally in early pregnancy will decrease Gestational Diabetes Mellitus.

Publications

Maguire PJ, Finlay J, Power KA, Harley R, Mhurchú MN, Sheehan SR, Fanning RA, Turner MJ. Evaluation of point-of-care maternal venous lactate testing in normal pregnancy. J Matern Fetal Neonatal Med 2016;29:2607-10. PMID:26456421

Daly N, Carroll C, Flynn I, Harley R, Maguire PJ, Turner MJ. Evaluation of point-of-care maternal glucose measurements for the diagnosis of gestational diabetes mellitus. BJOG 2016 [Epub ahead of print] PMID: 27510401

Opportunities for 2017

- To continue to work alongside Research Fellows within UCD Centre for Reproduction.
- Maintain and ensure the BRB bloods are stored correctly and freezers maintain -80 degrees.
- The BRB is a valuable and unique resource that we have in CWIUH, it would be great to have suitable research study that would benefit mothers and babies into the future.

Centre for Midwifery Education (CME)

Head of Department

Triona Cowman

Staff Complement

Triona Cowman, *Director (1 WTE)*

Patricia O'Hara, *Nurse Tutor (1 WTE)*

Liz Greene, *Midwifery Specialist Coordinator (1 WTE Fixed Term Contract)*

Judith Fleming, *Midwifery Specialist Coordinator (0.5 WTE fixed term contract)*

Patricia Griffiths, *Secretary (17.5hrs WTE)*

Key Performance Indicators

- To continue to meet the increasing demand for eduction and training.
- To promote excellence in teaching and learning to underpin a high quality student experience.
- Cost effective functioning of the CME.
- Close working relationships with all stakeholders.

Achievements in 2016

- In 2016 the CME delivered 101 programmes to 1,664 attendees. This included CWIUH in-service training in CPR, Heart saver-CPR & AED and NRP, of which there were 37 programmes and 221 attendees. Compared to 2015, there was a slight decrease of 3.7%. This decrease is attributed to a reduction in demand for specific programmes as the target audience had been reached in 2015.
- The following new programmes were developed:
  - Auditing for Clinical Practice Workshop
  - Midwifery Care of the Critically Ill Pregnant or Recently Pregnant Woman
  - Update in Emergency Skills for ED Nurses
  - Chaperone Training.
- The CME played a pivotal role in developing the *National Return to Midwifery Practice Curriculum*. In May 2016, a 12-week *Return to Midwifery Practice Programme* was delivered using a hub and spoke model. In total 9 participants commenced and completed the programme.
- The appointment of 2 Midwifery Specialist Coordinators in 2015 facilitated research activity in the CME. Currently 2 research projects are underway.
- The CME website was upgraded to support the increase in online bookings and to facilitate functionality.

Challenges for 2017

- Secure adequate educational and administrative resources in the CME so that it can respond to the increasing demand for education and training.
- Facilitate the on-going engagement of staff at education and training programmes by developing new and innovative ways of delivering them.
- To maintain research activity in the CME.
- Maintain the on-going professional development of CME staff.

Midwifery & Nursing: Practice Development

Head of Department

Ann Bowers (Acting)

Staff Compliment

1 WTE Practice Development Co-ordinator

3.5 WTE Clinical Placement Co-ordinators

3.5 WTE Clinical Skills Facilitators (1.5 WTE: Neonatal Unit, 1 WTE: DS & 1 WTE: Ward Areas)

1 WTE Post-Registration Programme Co-ordinator

0.5 WTE Allocations Liaison Officer

1 WTE Research Midwife

Key Performance Indicators

- The development and maintenance of the clinical learning environment for Bachelor of Science (BScM), Higher Diploma in Midwifery (HDIM) Students and Bachelor of Science (BScN) in Nursing Students undertaking clinical placements at the CWIUH.
- Quality assurance in midwifery and nursing practice, including facilitating and performing regular clinical audit, promoting and supporting research and evidence based practice.
- Practice Development issues in midwifery and nursing, particularly in relation to the autonomous role of the midwife and the promotion of pregnancy and childbirth as a normal healthy life event.
- Liaise with the Centre of Midwifery Education (CME) in the provision of continuing educational needs of existing Midwifery and Nursing staff.
- Collaboration with our affiliated HEIs: TCD & RCSI.
- Promotion and facilitation of Midwives Clinics.

Achievements in 2016

- Continued facilitation of the 4-year BSc in Midwifery, as well as the 18-month Higher Diploma in Midwifery Programmes in conjunction with Trinity College, Dublin (TCD)
  - 9 HDIM Students qualified September 2016 and 11 HDIM Students commenced September 2016.
  - 21 BScM Students qualified September 2016.
  - 67 BScM Students on clinical placements throughout 2016.
- Continued facilitation and support of BSc Nursing Students on maternity placement from St James's and Tallaght (AMNCH) Hospitals.
- Developed content for and facilitated Clinical Skills Sessions on a weekly basis within the hospital for midwifery students to bridge theory and practice.
- Collaborated with the Centre for Midwifery Education in facilitating clinical placements for Midwives on the Return to Midwifery Practice Programme
- Continued to support and guide clinical staff in order to provide an optimal learning environment for midwifery and nursing students.
- Continued to encourage staff to embrace evidence based care by facilitation of a monthly Journal Club, conducting clinical audits, developing evidence based PPGs, and supporting the ethos of research throughout the hospital.
- Members of the Practice Development Team participate on a number of Committees within the hospital and TCD.
- Facilitation of a Midwives Clinic by the Practice Development Team (870 consultations in 2016, an increase of 100 from 2015).
- The entire Department were involved in the organisation of the annual Essence of Midwifery Care Conference to celebrate International Day of the Midwife in May "Rediscovering Evidence Based Care in Pregnancy and Childbirth: Caring for the Next Generation"
- NMBI conducted a site visit to the CWIUH in December to assess the hospital as an appropriate clinical learning environment for midwifery and nursing students.
- The Water Immersion Study, 'WIS' commenced in January 2016. The study aims to compare water to 'land' for labour/birth, for healthy women with uncomplicated pregnancies.
- Further funding secured to enhance and promote a culture of Midwifery Research within the CWIUH.
- We welcomed new members of staff to the department: Sarah Ladola (CPC) and Gwen Baker (CPC)
- Ruth Banks (CSF) successfully completed an MSc in Midwifery Led Care. Denise Kiernan (ALO) commenced Year 2 of an MSc in Sexuality. Ann Bowers (Acting Practice Development Coordinator) successfully completed modules toward an MSc in Midwifery Led Care.

Challenges for 2017

- Continue to meet the clinical learning needs of midwifery and nursing students while on placement in the CWIUH.
- Continue to promote a positive and safe culture for students to learn and develop.
- Continue to support and assist midwifery and nursing staff involved in clinical teaching and preceptorship of midwifery and nursing students.
- Continue to support newly qualified midwives and nurses and midwives new to the CWIUH.
- Continue to promote the midwifery philosophy of "pregnancy, labour, birth and the postnatal period as healthy and profound experiences in women's lives" (Nursing and Midwifery Board of Ireland, 2015).
- Continue to develop and ensure ratification of guidelines, particularly guidelines promoting spontaneous vaginal births, in an attempt to reduce intervention and improve spontaneous vaginal birth rates.
- Continue to promote midwifery as a career pathway for RGNs.
- Continue to facilitate midwifery and nursing educational programmes and up-dates in collaboration with the CME.
- Strengthen the Midwifery Research agenda within the CWIUH.
- Continue to promote, increase attendance at and facilitation of midwives clinics.
- To promote and support a positive culture of audit, research, professional development and education among midwifery and nursing staff in order to deliver safe, effective, evidence-based care to women and babies attending the CWIUH.

Postgraduate Medical Training – Anaesthesia

Head of Department

Prof Michael Carey

Postgraduate Tutor

Dr Rebecca Fanning

The department continues to place a strong emphasis on facilitating learning and training. Eight specialist anaesthesia trainees from the national training scheme rotated through the department fulfilling their obstetric anaesthesia training requirement.

The formal educational component consists of:

- An Introduction to Obstetric Anaesthesia course delivered by senior staff
- College of Anaesthetists exam preparation
- Departmental CEPD schedule, which includes obstetric and non-obstetric related topics
- Departmental morbidity meetings/case based discussions/multidicsiplinary morbitiy meetings

The department was selected as one of four trial sites nationally for the formal evaluation of Fieldnotes (a brief summary of an event, experience or action involving a trainee in a clinical setting and of the feedback provided), as a means of promoting more effective and regular feedback to support learning process in the workplace. The CAI subsequently adopted Fieldnotes as one of the four formal workplace assessment methods that will be employed in the new competency based curriculum.

The department has also had an active role in the development of parts of the obstetric anaesthesia components of this new curriculum.

The focus in 2017 will be the implementation of the new curriculum with the routine use of performance assessment tools as a means of providing effective feedback to trainees during clinical supervision. The CAI also approved the department for an Obstetric Anaesthesia Fellow post and a special-interest post for training at an advanced level as part of the national training scheme.

Postgraduate Medical Training – Obstetrics & Gynaecology

Head of Department

Dr Nadine Farah

Key Performance Indicators

- All Doctors in training are assigned to a team and a named Trainer. In our first 6-month rotation we had 15 Registrars and 8 SHOs. From July to December we had 16 Registrars and 11 SHOs.
- All Doctors in training (BST level) are prospectively allocated to a two year BST rotation.
- All BST 1&2 rotations include one year in CWIUH and all BST 3 rotations spend at least 8 months in the CWIUH.
- Two Special Skills modules in Gynaecological surgery, one rotating with six months in St James's Hospital and the other rotating with six months in Tallaght Hospital.
- A dedicated clinical fellowship in the early pregnancy scanning.
- An International Fellow in Maternal Medicine.

Challenges for 2017

- Maximisation of training opportunities in the context of EWTD.
- Recruitment of an International Fellow in Urogynaecology.

I would like to acknowledge:

- Dr Zara Fonseca Kelly and Dr Alison Demaio in coordinating Registrar and SHO rosters during the period January to July 2016.
- Dr Jennifer Hogan, Dr Brendan Mc Donnell and Dr Fionan Donohoe in coordinating rosters during the period July to December 2016.

Postgraduate Medical Training – Paediatric Medicine

Head of Department

Dr John Kelleher

Ten Specialist Registrars in Paediatrics rotated through the Department of Paediatrics & Newborn Medicine in 2016. Each Specialist Registrar was completing 6 months of a 12-month rotation, posts are July to July. The Specialist Registrars are encouraged to undertake specific research projects and participate in audits. Senior House Officers on the Basic Specialty Training Scheme also rotate through the Department. The Department of Paediatrics & Newborn Medicine is a tertiary level Neonatology Centre offering experience in intensive care as well as neonatal transport. Neonatal training is a core component of the Specialist Registrar Programme in General Paediatrics.

The Neonatal Resuscitation Programme is led by Professor Martin White and Ms Margaret Moynihan, with large numbers of candidates completing the NRP programme. The Hospital was also closely involved in the STABLE Neonatal Transport training programme under the guidance of our Consultant Neonatologist in Transport Medicine, Dr. Jan Franta.

Postgraduate Medical Training – Pathology

Head of Department

Professor John O'Leary

Medical training in Laboratory Medicine in 2016 was provided in Histopathology, Cytopathology, Morbid Anatomy and Molecular Pathology. The Specialist Registrar is attached to the Department for a 6-month period. Two registrars are trained each year. The Specialist Registrar is encouraged to undertake a dedicated piece of research during his/her rotation in CWIUH.

The Department of Cytopathology is the only one in the Republic of Ireland that offers training in Gynaecological Cytopathology. The CWIUH houses the National Cervical Cytology Training Centre, in association with the HSE, the NCSS [CervicalCheck] and the Faculty of Pathology. 108 people have been trained in the Cytology Training Centre.

The Molecular Pathology Laboratory is a leading European and World research laboratory working in the areas of cervical, ovarian, thyroid, head and neck, prostate and cancer metastasis and has core facilities in next generation sequencing, cloning, real-time gene quantitation and transfection. The laboratory has significant international links and leads the CERVIVA, DISCOVARY and PREG consortia. The laboratory has raised in excess of 50 million euros in grant income in the past 5 years and is a Professorial unit for Pathology and Molecular Pathology at TCD.

Trinity College Dublin, Academic Department of Obstetrics & Gynaecology

Head of Department

Prof Deirdre J Murphy

Support Staff

Ms Cristina Boccardo, *Senior Executive Officer*

Academic Staff

Deirdre J Murphy, Professor, *Head of Department, Consultant in Obstetrics*

Richard Deane, *Associate Professor, Consultant Obstetrics & Gynaecology*

Sean Daly, *Clinical Professor, Consultant Obstetrics & Gynaecology*

Nita Adnan, *Clinical Lecturer, Obstetrics & Gynaecology*

Zibi Marchocki, *Clinical Lecturer, Obstetrics & Gynaecology*

Clare Dunney, *Research Midwife / TCD Tutor*

Anne Jane McBride, *P/T Midwifery Tutor*

Noreen Gleeson, *Honorary Senior Lecturer, Consultant Gynaecology*

Gunther von Bunau, *Hon Lecturer, Consultant Obstetrics & Gynaecology*

Mary Anglim, *Hon Lecturer, Consultant Obstetrics & Gynaecology*

Cliona Murphy, *Hon lecturer, Consultant Obstetrics & Gynaecology*

Mona Joyce, *Special Lecturer, Consultant Gynaecology*

Promotions/ Opportunities

Prof Richard Deane was appointed to the post of Associate Professor jointly between TCD and Tallaght / Coombe Hospitals.

Grant income to 2016

- HRB Mother & Baby Clinical Trials Network 2016-2020; €2.4 Million, Principal Investigators D Murphy (obstetrics) & E Molloy (neonatology)
- HRB Primary Care Centre (RCSI/TCD) €4 Million, Co-investigator D Murphy
- HRB PhD programme (RCSI/TCD/UCC) €5 million, Collaborator D Murphy

Achievements in 2016

- Ms Cristina Boccardo was awarded a Masters degree in Medical Ethics (1st Hons)
- Invited plenary addresses at International & National meetings:
  - Prof D Murphy. Delivery options for mid-pelvic arrest in the second stage of labour. Invited Plenary, Danish Society of Obstetrics & Gynaecology, Annual Conference, April 2016.
  - Prof D Murphy. Advances in Delivery Techniques. Invited Plenary, RCOG World Congress, Birmingham, June 2016.
  - Prof D Murphy. Labour – the final frontier. Invited Plenary, Irish Perinatal Society Annual meeting, October 2016.
- Invited International Assessor:
  - Prof D Murphy, Chair, Academy of Finland Health Research Awards.
  - Prof D Murphy, NIHR Biomedical Research Centre Core Funding awards (Budget £800 Million).
  - Peer-review publications in high impact journals and textbooks.

Publications, Presentations & Grants in 2016

TCD Academic Staff

Original Publications in Peer-Review Journals

1. Proposed learning strategies of medical students in a clinical rotation in obstetrics and gynecology: a descriptive study. Deane RP, Murphy DJ. Adv Med Educ Pract. 2016 Aug 10;7:489-96. PMID: 27570470.
2. Student and staff experiences of attendance monitoring in undergraduate obstetrics and gynecology: a cross-sectional survey. Deane RP, Murphy DJ. Adv Med Educ Pract. 2016 Apr 4;7:233-40. PMID: 27099545.
3. Operative vaginal delivery. Case-based reviews. Horan MA, Murphy DJ. Obstet Gynecol Reprod Med Reviews. 2016 Dec;26(12):358-63.
4. Haemorrhage at caesarean section: a framework for prevention and research. Jardine JE, Law P, Hogg M, Murphy DJ, Khan KS;C-SAFETY. Curr Opin Obstet Gynecol. 2016 Dec;28(6):492-498.
5. Gestational hypertensive disease in twin pregnancy: Influence on outcomes in a large national prospective cohort. Hehir MP, Breathnach FM, McAuliffe FM, Geary

MP, Daly S, Higgins J, Hunter A, Morrison JJ, Burke G, Higgins S, Mahony R, Dicker P, Tully EC, Malone FD. Aust N Z J Obstet Gynaecol. 2016 Oct;56(5):466-470. PMID: 27302243.

6. The effect of maternal obesity on sonographic fetal weight estimation and perinatal outcome in pregnancies complicated by fetal growth restriction. Cody F, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD. J Clin Ultrasound. 2016 Jan;44(1):34-9. PMID: 26179577

International Textbooks

7. Murphy DJ. Prolonged second stage of labour including difficult decisions about operative delivery. Best Practice in Labour and Delivery. Ed S Arulkumaran, Cambridge University Press, 2016.
8. Murphy DJ. Assisted Vaginal Delivery. In High Risk Pregnancy: Management Options. Cambridge University Press, 2016.
9. Murphy DJ. Malpresentation, malposition and cephalopelvic disproportion. In Oxford Textbook of Obstetrics & Gynaecology. Ed S Arulkumaran. Oxford University Press, 2016.
10. Murphy DJ. Labour: Normal and Abnormal Labour. In Obstetrics by Ten Teachers. 20th Edition. Eds Kenny & Myers, CRC Press, Taylor & Francis Group, London 2016.
11. 11: Murphy DJ. Operative Delivery. In Obstetrics by Ten Teachers. 20th Edition. Eds Kenny & Myers, CRC Press, Taylor & Francis Group, London 2016.

UCD Centre for Human Reproduction

Head of Department

Professor Michael Turner

Staff Complement

Professor Michael Turner – Professor of Obstetrics and Gynaecology

Ms Laura Bowes – Administrator

Dr Niamh Daly - Clinical Lecturer

Professor Mairead Kennelly - Consultant in Obstetrics and Gynaecology

Professor Jan Miletin - Consultant Neonatologist

Professor Chris Fitzpatrick –Consultant in Obstetrics and Gynaecology

Professor Michael Carey – Consultant Anaesthetist

Dr Aisling Martin - Honorary Lecturer

Dr Nadine Farah - Honorary Lecturer

Dr Tom D'Arcy - Honorary Lecturer

Dr Mary Anglim - Honorary Lecturer

Research Fellows

Ms Shona Cawley (PhD)

Dr Niamh Daly (PhD)

Dr Maria Farren (MD)

Ms Rachel Kennedy (PhD)

Ms Laura Mullaney (PhD)

Ms Ciara Reynolds (PhD)

Established in 2007, the UCD Centre for Human Reproduction at the Coombe Women and Infants University Hospital was recognised in 2015 by the Academic Council as one of the university's designated research centres. The Director is Professor Michael Turner and the Centre's Advisory Board includes: Dr Brendan Egan, Prof Chris Fitzpatrick, Prof Mairead Kennelly, Prof Richard Layte, Dr Dan McCartney, Dr Aisling Martin, Prof Jan Miletin, Dr Ann Molloy, Prof Carel le Roux and Prof Michael Turner.

The main research focus of the Centre is on modifiable pregnancy risk factors including maternal obesity, gestational diabetes mellitus, aberrant fetal growth, poor maternal diet, inadequate folic acid supplementation, cigarette smoking, infection and physical inactivity. Since 2010, Professor Turner has served as the National Lead for the HSE Clinical Programme in Obstetrics and Gynaecology and, as a result, the Centre as also provided leadership on maternity services implementation science projects.

In 2016, Professor Turner served on the Food Safety Authority of Ireland's Advisory Group on Folic Acid Food Fortification, on the RCPI Policy Group on Obesity, on the HIQA advisory group on standards in the Maternity Services, on the HIQA technology assessment groups for early warning systems and for smoking cessation, on the National Clinical Effectiveness Committee (NCEC) development group for maternity guidelines, on the HSE implementation groups for the maternity services and on the first National Maternity Strategy Report Group. He chairs the Department of Health's Folic Acid Policy Group. He was also requested by the Institute of Obstetrics and Gynaecology to chair a national group to draft a revised Constitution for the Institute.

Research

1. Dr Maria Farren undertook a RCT on whether a pseudovitamin Inisotol taken orally from early pregnancy will decrease the number of women whose pregnancies are complicated by Gestational Diabetes Mellitus. Dr Farren submitted her MD in Q3 2016.
2. Dr Patrick Maguire completed his prospective observational clinical studies on the development of a customised Sepsis Six Box for the Irish Maternity Early Warning System (IMEWS). He also completed an audit of the IMEWS in the setting of a High Dependency Unit and studies on the role of biomarkers in the management of infection in the pregnant woman. This work led to two national reports for the HSE and was incorporated into the first NCEC guideline in obstetrics. Dr Maguire submitted his MD in Q2 2016.
3. Dr Aoife McKeating completed her review using the hospital's computerised database of periconceptual Folic Acid supplementation in women who delivered a baby in the Coombe in the years 2009-13 inclusive. In particular, she focused on supplementation in obese women. Dr McKeating's papers have been cited in the first National Maternity Strategy Report and have contributed to the public health review of folic acid supplementation policies currently underway. Dr McKeating plans to submit her PhD in 2017.
4. Ms Laura Mullaney completed recruitment to a prospective observational study examining the relationship between maternal nutrition and both weight and body composition trajectories between early pregnancy and nine months postpartum. This research will provide important new data on dietary intakes in early pregnancy and will help in the design of future intervention studies. Ms Mullaney submitted her PhD in Q2 2016.

5. Ms Shona Cawley is undertaking a prospective observational study of periconceptual folic acid supplementation, dietary folate and maternal blood folates in women booking for antenatal care. Ms Cawley's work has already been cited in the National Maternity Strategy Report and will inform new national policies for the prevention of NTDs. Ms Cawley plans to submit her PhD in 2017.
6. Dr Niamh Daly is undertaking a RCT evaluating an intensive medically supervised exercise intervention during pregnancy in obese women. As part of her study, Dr Daly has conducted pioneering work on the preananalytical management of maternal plasma glucose measurements and has completed a national audit on the laboratory standards for Oral Glucose Tolerance Testing. Dr Daly plans to submit her PhD in 2017. Dr Daly also represented the speciality of obstetrics and gynaecology on the RCPI policy group on physical activity.
7. Ms Ciara Reynolds is conducting a RCT evaluating a customised smartapp to help women stop smoking during pregnancy. Ms Reynolds is planning to submit her PhD in early 2018.
8. Ms Rachel Kennedy is conducting a RCT evaluating a customised smartapp to improve the dietary quality of women in early pregnancy. Ms Kennedy is planning to submit her PhD in 2018.
9. Professor Turner continued his collaborative research with Professor Richard Layte and Dr Aoife Brick in the ESRI to determine what factors are responsible for increasing Caesarean section rates nationally. He also continued his collaborative work with HSE project manager Dr Lean McMahon in developing and implementing the Irish Maternity Indicator System (IMIS) for hospital performance measurement, and with Project Manager Dr Karen Power in developing guidelines and training for the critically ill pregnant woman. He is also working with Ms Mairead McGuire on the development of a National Medications Programme for obstetrics and gynaecology.

List of Grants active in 2016

Title: Folic acid in the first trimester of pregnancy (PI)

Start/End Dates: June 2015 – July 2016

Funder: Safefood

Amount: €180,000.00

List of Grants received in 2016

Title: CICER/HIQA (Collaborator)

Funder: HRB

Amount: €2,500,000.00

Title: MAMMI-SIM Study (Collaborator)

Start/End Dates: Oct 2016 (duration approx 40 months)

Funder: HRB

Amount: €869,272.00

Prizes and Awards

Professor Chris Fitzpatrick:
Guinness Lecturer, Coombe Women and Infants University Hospital

Dr Niamh Daly:
Walter Güder Preanalytical Award, European Federation of Clinical Chemistry and Laboratory Medicine, Warsaw, Poland, Sept 2016. Awarded biannually to a young scientist for significant contribution to the improvement of the preanalytical phase, based on submission of a published paper.
Daly N, Flynn I, Carroll C, Farren M, McKeating A, Turner MJ.
Impact of Implementing Preanalytical Laboratory Standards on the Diagnosis of Gestational Diabetes Mellitus: A Prospective Observational Study. Clin Chem 2016;62:387-91.

Royal Academy of Medicine in Ireland Medal- Best Endocrinology Research Paper 2016
Royal Academy of Medicine in Ireland, Obstetrics and Gynaecology Division, Irish Congress of Obstetrics and Gynaecology Annual Meeting, November 2016. Published paper.
Daly N, Flynn I, Carroll C, Farren M, McKeating A, Turner MJ.
Impact of Implementing Preanalytical Laboratory Standards on the Diagnosis of Gestational Diabetes Mellitus: A Prospective Observational Study. Clin Chem 2015

Royal Academy of Medicine in Ireland Medal- Best Oral Presentation
Royal Academy of Medicine in Ireland, Obstetrics and Gynaecology Division, Irish Congress of Obstetrics and Gynaecology Annual Meeting, Dublin Conference Centre, May 2016.
Daly N, Flynn I, Carroll C, Farren M, McKeating A, Turner MJ.
The role of point-of-care glucose measurements in the diagnosis of gestational diabetes mellitus.

Dr Maria Farren:
Master's Research Prize, Coombe Women and Infants University Hospital

First Prize Irish Perinatal Society, Drogheda, February 2016.

Professor Michael Turner:
17th William Longworth Annual Lecture, Edinburgh Royal Infirmary, November, 2016.

Academic Publications 2016

- Cawley S, Mullaney L, Mc Keating A, Farren M, McCartney D, Turner MJ.
  An analysis of folic acid supplementation in women presenting for antenatal care.
  J Public Health 2016;38:122-9. PMID:25733660
- O'Connor C, O'Higgins A, Segurado R, Turner MJ, Stuart B, Kennelly MM.
  Maternal arterial elasticity in the first trimester as a predictor of birthweight.
  J Obstet Gynaecol 2016;36:602-7. PMID:26800380
- McKeating A, Maguire PJ, Farren M, Daly NM, Sheehan SR, Turner MJ.
  The clinical outcomes of unplanned pregnancy in severely obese women.
  J Matern Fetal Neonatal Med 2016;29:646-50. PMID:25731650
- Cawley S, Mullaney L, McKeating A, Farren M, McCartney D, Turner MJ.
  A Review of European Guidelines on Periconceptional Folic Acid Supplementation.
  Eur J Clin Nutr 2016;70:143-54. PMID:26350391
- Anglim B, Mandiwanza T, Miletin J, Turner M, Kennelly MM.
  The natural history of neural tube defects in the setting of an Irish tertiary referral fetal medicine unit.
  Obstet Gynaecol 2016;36:19-23. PMID:26214050
- Daly N, Mitchell C, Farren M, Kennelly MM, Hussey J, Turner MJ.
  Maternal obesity and physical activity and exercise levels as pregnancy advances: an observational study
  Ir J Med Sci 2016;185:357-70. PMID:26220609
- Ledger WL, Turner MJ.
  Implementation of the findings of a national enquiry into the misdiagnosis of miscarriage in the Republic of Ireland: impact on quality of clinical care.
  Fertil Steril 2016;105:417-22. PMID:26607023
- Mullaney L, O'Higgins AC, Cawley S, Kennedy R, McCartney D, Turner MJ.
  Use of a web-based dietary assessment tool in early pregnancy.
  Ir J Med Sci 2016;185:341-55. PMID:26879330
- Daly N, Turner MJ.
  Laboratory diagnosis of gestational diabetes mellitus.
  BJOG 2016;123:1430-3. PMID:26879330
- Daly N, Flynn I, Carrol C, Farren M, McKeating A, Turner MJ.
  Impact of Implementing Preanalytical Laboratory Standards on the Diagnosis of Gestational Diabetes Mellitus: A Prospective Observational Study.
  Clin Chem 2016;62:387-91. PMID:26637478
- Daly N, Turner MJ.
  Changing the diagnostic criteria for gestational diabetes mellitus?
  Gestational diabetes screening: the International Association of Diabetes and Pregnancy Study Groups compared with Carpenter-Coustan Screening.
  Obstet Gynecol 2016;127:800. PMID:27008221
- Daly N, Flynn I, Carroll C, Stapleton M, O'Kelly R, Turner MJ.
  Comparison of citrate-fluoride-EDTA with fluoride-EDTA additives to stabilize plasma glucose measurements in women being screened during pregnancy with an oral glucose tolerance test: a prospective observational study.
  Clin Chem 2016;62:886-7. PMID: 27103574
- Maguire PJ, Finlay J, Power KA, Harley R, Mhurchú MN, Sheehan SR, Fanning RA, Turner MJ.
  Evaluation of point-of-care maternal venous lactate testing in normal pregnancy.
  J Matern Fetal Neonatal Med 2016;29:2607-10. PMID:26456421
- Maguire PJ, Turner MJ.
  High dependency unit admissions and the first year of national obstetric early warning system.
  Int J Gynecol Obstet 2016;133:121-2. PMID:26873121
- Maguire PJ, Power KA, Downey AF, O'Higgins AC, Sheehan SR, Turner MJ.
  Evaluation of the systemic inflammatory response syndrome criteria for the diagnosis of sepsis due to maternal bacteremia.
  Int J Gynaecol Obstet 2016;133:116-9. PMID:26873128
- Mullaney L, O'Higgins AC, Cawley S, Kennedy R, McCartney D, Turner MJ. Breast-feeding and postpartum maternal weight trajectories.
  Public Health Nutr 2016;19:1397-404. PMID:26466770
- Mullaney L, O'Higgins AC, Cawley S, Daly N, McCartney D, Turner MJ.
  Maternal weight trajectories between early pregnancy and four and nine months postpartum.

Public Health. 2016;135:144-6. PMID: 27046519

- Daly N, Flynn I, Carroll C, Farren M, McKeating A, Turner MJ.
  A national survey of preanalytical handling of oral glucose tolerance tests in pregnancy.
  Clin Chem Lab Med 2016;54:221-3. PMID:26741348
- Daly N, Turner MJ.
  Preanalytical Laboratory standards (letter).
  Clin Chem Lab Med 2016;62:894. PMID:27117466
- Cawley S, Mullaney L, McKeating A, Farren M, McCartney D, Turner MJ.
  Knowledge about folic acid supplementation in women presenting for antenatal care.
  Eu J Clin Nutr 2016;70:1285-90. PMID: 27352835
- Sinnott SJ, Layte R, Brick A, Turner MJ.
  Variation in induction of labour rates across Irish hospitals; a cross-sectional study.
  Eur J Public Health 2016;26:753-760 PMID:27267615
- Sinnott SJ, Layte R, Brick A, Cunningham N, Turner MJ.
  National variation in caesarean section rates: a cross sectional study in Ireland.
  PloS One 2016;11:e0156172 PMID:27280848
- Brick A, Layte R, Nolan A, Turner MJ.
  Differences in Nulliparous Caesarean Section Rates across Models of Care: A Decomposition Analysis
  BMC Health Serv Res 2016;16:239 PMID:27392410
- Turner MJ, Farren M
  Neonatal Brachial Plexus Palsy and causation.
  Ir Med J 2016;109:434. PMID:27834085
- Mullaney L, Cawley S, Kennedy R, O'Higgins AC, McCartney D, Turner MJ.
  Maternal nutrient intakes from food and drinks consumed in early pregnancy in Ireland.
  J Pub Health 2016 [Epub ahead of print] PMID:27679659
- Cotter D, Turner MJ, McAuliffe F, Higgins MF.
  Medical students learning experiences of the labour ward: a qualitative research study.
  Eur J Obstet Gynecol Reprod Biol 2016;206:204-207. PMID:27723552
- Cawley S, Mullaney L, Kennedy R, O'Higgins AC, McCartney D, Turner MJ.
  Duration of periconceptional folic acid supplementation in women booking for antenatal care.
  Public Health Nutr 2016;20:371-379 PMID: 27702424
- Daly N, Carroll C, Flynn I, Harley R, Maguire PJ, Turner MJ.
  Evaluation of point-of-care maternal glucose measurements for the diagnosis of gestational diabetes mellitus.
  BJOG 2016 [Epub ahead of print] PMID: 27510401
- Mullaney L, Cawley S, O'Higgins AC, Kennedy R, McCartney D, Turner MJ.
  Provision of information about infant feeding postpartum through digital media.
  Int Arch Nurs Health Care 2016;2:054
- Brick A, Layte R, Farren M, Sheehan SR, Mahony R, Turner MJ.
  Recent trends in vaginal birth after caesarean section.
  Ir Med J 2016;109:482-482.
- Allen-Walker V, Mullaney L, Turner MJ, Woodside JV, Holmes VA, McCartney DM, McKinley MC.
  How do women feel about being weighed during pregnancy? A qualitative exploration of the opinions and experiences of postnatal women.
  Midwifery 2016 [E-Pub ahead of print] PMID:28063622
- Glackin SJ, O'Sullivan A, George S, Semberova J, Miletin J.
  High flow nasal cannula versus NCPAP, duration to full oral feeds in preterm infants: a randomised controlled trial.
  Arch Dis Child Fetal Neonatal Ed 2016 [E-pub ahead of print] PMID:28011792
- Perrem LM, Gosling S, Ravikumar I, Khashan AS, Miletin J, Ryan CA, Dempsey E.
  Reporting on data monitoring committees in neonatal randomised controlled trials is inconsistent.
  Acta Paediatr. 2016 Sep 16. [Epub ahead of print] PMID: 27637413
- Crosby DA, Miletin J, Semberova J, Daly S.
  Is Routine transvaginal cervical length measurement cost-effective in a population where the risk of spontaneous preterm birth is low?
  Acta Obstet Gynecol Scand 2016;95:1391-1395. PMID: 27623283
- McGovern M, Reyani Z, O'Connor P, White M, Miletin J.
  Thyroid function testing in neonates born to women with hypothyroidism. Eur J Pediatr. 2016;175:2015-2018. PMID: 27743030
- McGovern M, Miletin J.
  A review of superior vena cava flow measurement in the neonate by functional echocardiography.
  Acta Paediatr. 2016 Sep 9. [Epub ahead of print] Review. PMID: 27611695
- Cody F, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD.
  The effect of maternal obesity on sonographic fetal weight estimation and perinatal outcome in pregnancies complicated by fetal growth restriction.
  J Clin Ultrasound 2016;44:34-9. doi: 10.1002/jcu.22273. Epub 2015 Jul 14.
  PMID: 26179577

- Hehir MP, McTiernan A, Martin A, Carroll S, Gleeson R, Malone FD.
  Improved Perinatal Mortality in Twins--Changing Practice and Technologies.
  Am J Perinatol 2016;33:84-9.
  PMID: 26295967

Abstracts 2016

- Mullaney L, O'Higgins AC, Cawley S, Daly N, McCartney DMA, Turner MJ.
  Weight and body composition trajectories between early pregnancy and four and nine months postpartum.
  Nutrition Society Conference, Irish Section, Dublin, January 2016.
- Daly N, Farren M, McKeating A, Moffitt K, Sheehan SR, Turner MJ.
  Universal screening for Gestational Diabetes Mellitus (GDM) with fasting plasma glucose measurement under strict preanalytical conditions at the first prenatal visit.
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Daly N, McKeating A, Farren M, Moffitt K, Sheehan SR, Turner MJ.
  Correlation between maternal fasting plasma glucose and maternal adiposity at the first prenatal visit.
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Daly N, Flynn I, Carroll C, Farren M, Sheehan SR, Turner MJ.
  The impact of preanalytical management of maternal glucose samples on the diagnosis of gestational diabetes.
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Burke N, Burke G, Breathnach F, McAuliffe F, Morrison JJ, Turner MJ, Dornan S, Higgins J, et al.
  How to predict cesarean delivery in the nulliparous patient: results from the prospective multi-center Genesis Study.
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Burke N, Burke G, Breathnach F, McAuliffe F, Morrison JJ, Turner MJ, Dornan S, Higgins J, et al.
  A fetal head circumference above the 90th centile is a significant risk factor for cesarean delivery and complicated labor: results from the prospective multi-center Genesis Study
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Ni Laighin C, Burke G, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, et al.
  Fetal growth asymmetry, is it still relevant after all these years?
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Hehir MP, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, et al.
  The safety of operative vaginal delivery in patients with intra-uterine growth restriction: Results from the national prospective porto cohort
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Burke N, Burke G, Breathnach F, McAuliffe FM, Morrison J, Turner MJ, Dornan S, Higgins J, et al.
  Effect of induction of labor on cesarean delivery rates in nulliparous patients: results from the prospective multi-center Genesis Study
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Burke N, Donnelly JC, Burke G, Breathnach F, McAuliffe FM, Morrison J, Turner MJ, Dornan S, et al.
  Do birth plans improve obstetric outcome for first time mothers: results from the multi-center Genesis Study
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Hehir MP, Burke N, Burke G, Breathnach F, McAuliffe FM, Morrison JJ, Turner MJ, Dornan S, et al.
  Increased fetal adiposity is a risk factor for cesarean delivery - Results of the national prospective Genesis Study
  Society of Maternal Fetal Medicine Meeting, San Diego, USA February 2016
- Kennedy RAK, Mullaney L, Reynolds CME, Cawley S, McCartney DMA, Turner MJ.
  Women's Use of Web-based Nutrition Resources in Pregnancy.
  Irish Perinatal Society, Drogheda, February 2016.
- Reynolds CME, McKeating A, Egan B,Daly N, Sheehan SR, Turner MJ.
  Annual Trends in Maternal Smoking and the Associated Characteristics.
  Irish Perinatal Society, Drogheda, February 2016.
- Cawley S, Mullaney L, McKeating A, Farren M, McCartney D, Turner MJ.
  Factors associated with Folic Acid Supplementation and knowledge regarding Folic Acid in women presenting for Antenatal Care.
  Irish Perinatal Society. Drogheda, February 2016.
- Daly N, Farren M, McKeating A, Turner MJT.
  Correlation between maternal fasting plasma glucose (FPG) and maternal adiposity at the first prenatal visit.
  The Society for Maternal-Fetal Medicine 36th Annual Pregnancy Meeting, Atlanta, Georgia, USA. February 2016

Am J Obstet Gynecol 2016; 214:S342-3.

- Daly N, McKeating A, Farren M, Moffitt K, Sheehan S, Turner MJT.
  Universal screening for gestational diabetes mellitus (GDM) with a fasting plasma glucose measurement under strict preanalytical conditions at the first prenatal visit.
  The Society for Maternal-Fetal Medicine 36th Annual Pregnancy Meeting, Atlanta, Georgia, USA. February 2016
  Am J Obstet Gynecol 2016; 214:S169-70.
- Daly N, Flynn I, Carroll C, Farren M, Sheehan S, Turner MJ.
  The impact of preanalytical management of maternal glucose samples on the diagnosis of gestational diabetes mellitus.
  The Society for Maternal-Fetal Medicine 36th Annual Pregnancy Meeting, Atlanta, Georgia, USA February 2016
  Am J Obstet Gynecol 2016; 214:S243.
- Daly N, McKeating A, Farren M, Cawley S, McCartney D, Turner MJ.
  The diagnosis of gestational diabetes mellitus and implementation of international preanalytical laboratory standards.
  Blair Bell Research Awards. Royal College of Obstetricians and Gynaecologists, London, UK. March 2016.
  Br J Obstet Gynaecol 2016. DOI: 10.1111/1471-0528.14374
- Farren M, Daly N, McKeating A, Turner MJ, Daly S
  The Role of myo-inositol/D-chiro-inositol in a physiological ratio of 40:1 in preventing the onset of gestational diabetes mellitus.
  Blair Bell Research Awards. Royal College of Obstetricians and Gynaecologists, London, UK. March 2016.
  Br J Obstet Gynaecol 2016. DOI: 10.1111/1471-0528.14374
- Maguire PJ, Power KA, Farren M, Daly N, McKeating A, Turner MJ.
  The role of an obstetric early warning system in high dependency unit admissions.
  RCOG Annual Academic Meeting, London, March 2016
- Daly N, Farren, McKeating A, Turner MJ.
  Prediction of Gestational Diabetes Mellitus (GDM) in obese women.
  RCOG Annual Academic Meeting, London, March 2016
- Daly N, Farren M, McKeating A, Turner MJ.
  The diagnosis of Gestational Diabetes Mellitus and implementation of international preanalytical laboratory standards.
  RCOG Annual Academic Meeting, London, March 2016
- Daly N, Farren M, McKeating A, Stapleton M, O'Kelly R, Turner MJ.
  From bedside to bench: the incidence and epidemiology of gestational diabetes mellitus is affected by the way we handle glucose samples before they reach the laboratory.
  European Diabetes Epidemiology Group Meeting, April 2016
- Kennedy RAK, Mullaney L, Reynolds CME, Cawley S, McCartney DMA, Turner MJ.
  The features pregnant women want in a web-based nutrition resource.
  Proceedings of the Nutrition Society, Dublin, July 2016.
- Kennedy RAK, Mullaney L, Cawley S, Daly N, McCartney DMA, Turner MJ.
  A pilot study: Women's engagement with a nutrition, lifestyle and health website during pregnancy.
  Proceedings of the Nutrition Society, Dublin, July 2016.
- Cawley S, Mullaney L, Kennedy R, Farren M, McCartney D, Turner MJ
  Duration of periconceptional folic acid supplementation in women booking for antenatal care.
  Proceedings of the Nutrition Society, Dublin, July 2016.
- Cawley S, Duggan K, Mulaney L, McCartnet D, Turner MJ.
  Maternal dietary vitamin D intakes during the first trimester of pregnancy.
  Proceedings of the Nutrition Society, Dublin, July 2016.
- Kennedy RAK, Mullaney L, Reynolds CME, Cawley S, Turner MJ, McCartney D.
  Maternal nutrition knowledge in early pregnancy.
  Power of programming, Developmental Origins of Adiposity and Long-term Health. Munich, October 2016, Germany.
- Kennedy RAK, Mullaney L, Reynolds CME, Cawley S, McCartney D, Turner MJ.
  Women's use and preferences for online nutritional resources in pregnancy.
  Power of programming, Developmental Origins of Adiposity and Long-term Health. Munich, October 2016, Germany.
- Reynolds CME, Egan B, Daly N, McCartney D, Sheehan SR, Turner MJ.
  The programming of fetal growth associated with maternal smoking and alcohol.
- Power of programming, Developmental Origins of Adiposity and Long-term Health. Munich, October 2016, Germany.

- O'Malley E, McKeating A, Cawley S, Daly N, Farah N, Turner MJ.
  Folic acid use in women reporting infertility.
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- Barrett M, Daly N, Reynolds C, Duffy A, Toland S, Crean R, Clinton S, Murphy S, Halpin S, Egan B, Turner MJ.
  Novel measurement of maternal functional physical capability in early pregnancy.
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- Donohoe F, Daly N, Reynolds C, McKeating A, Farren M, Turner MJ
  Cigarette smoking during pregnancy and pregnancy outcomes.
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- Duffy A, Daly N, McKeating A, Reynolds CME, Farren M, Turner MJ.
  Ante-natal demographics and birth outcomes in the travelling community.
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- Duffy A, Daly N, McKeating A, Reynolds CME, Turner MJ.
  Pregnancy outcomes in underweight women.
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- McNestry C, Reynolds C, McKeating A, Daly NM, Farren M, Turner MJ.
  Obstetric outcomes for women with a low Body Mass Index
  Institute of Obstetricians and Gynaecologists, RCPI Four Provinces Meeting, Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Royal Academy of Medicine in Ireland. RCPI, Dublin. November 2016.
- Reynolds CME, Egan B, Daly N, Sheehan SR, Turner MJ.
  Investigation of women's interest in online provision of smoking cessation information in pregnancy.
  Healthcare Informatics Society of Ireland 21st HISI Annual Conference and Scientific Symposium, Dublin, November, 2016.

Support Services

Hygiene Services

Head of Department

Vivienne Gillen, *Hygiene Services Manager*

Staff Complement

Household and Support Services Manager
2.2 WTE Assistant Supervisors
38.8 WTE Cleaners

Key Performance Indicators

- Hygiene Audits carried out by Ward Managers, Household Supervisors and Hospital Management.
- Waste Segregation and Recycling.
- Compliments and Complaints.

Overall Auditing	**90%**
Environmental Auditing	**90%**
Recycling Figure	**70%**

Waste Management:

- Total waste generated by Hospital in 2016 was 487 tonnes.
- Recycling figure remains at 70%.

Achievements in 2016

- Conclusion of cleaning review following lengthy negotiations. This review will result in a more efficient department with uniform allocation of duties.
- It will also result in the introduction of 24-hour cleaning in the Delivery Suite and NICU.
- Introduction of the Medical Audits electronic auditing system to all management/ wards and departments giving greater reporting ability.
- New flooring installed in the Ultrasound Department.
- Commencement of Phase 1 of theatre renovation.
- Installation of new autoclaves in the CSSD department.
- Continuous upgrading of hand hygiene sinks during refurbishment programmes.

Challenges for 2017

- To maintain and improve on current hygiene practices across the campus.
- To identify and implement best available technologies to all aspects of Hygiene.
- To extend the use of the electronic auditing system.

Information Technology Department

Head of Department

Tadhg O'Sullivan, *IT Manager*

Staff Complement

Ms. Emma McNamee, *Systems Administrator*
Mr. Eamonn Sheridan, *Technical Support Officer*
Ms. Carol Cloonan, *Technical Support Officer*
Ms. Anne Clarke, *IT Midwife (0.5 WTE job-sharing)*

Key Performance Indicators

- Providing a high level of service to internal and external users of IT services.
- Providing high availability of equipment and services.
- Ongoing integration of systems and services.
- Ongoing provision of an effective statistical information service.

Achievements in 2016

- Ongoing maintenance of core operational and technical environment.
- Implementation of local and national ICT projects, including an upgrade of iPM (Hospital Information System).
- Laboratory Information System upgrade.
- Upgrade of core data storage (SAN) and Virtualisation infrastructure.

Challenges for 2017

- Increase in level and complexity and demand for IT services, both internally and externally.
- Ongoing involvement in national ICT clinical and infrastructure projects, in particular preparatory work for MN-CMS (Maternal & Newborn Clinical Management System).

Friends of the Coombe

Friends of the Coombe

Head of Department

Ms Ailbhe Gilvarry, *Chair*

Staff Complement

Emer McKittrick, *Development Officer (until November 2016)*

Friends of the Coombe is deeply indebted to the many individuals and families who have tirelessly fundraised in aid of the charity. Their support is critical to the ability of Friends of the Coombe to fund projects which further the development of the Coombe Women & Infants University Hospital and its philosophy of family-centred care.

Examples of the support provided during 2016

- Neonatal Unit Assistance: Ongoing accommodation support for parents, staff attendance at key teaching and training conferences and the provision of additional parent information.
- Support for the voluntary Neonatal Support Group.
- Purchase of equipment.
- Support for the annual Bereavement Service.

Opportunities for 2017

- Development of a new strategic plan.
- Further engagement with the hospital and its departments in relation to equipment, education and research requirements.
- Continue to raise awareness.
- Build & protect reputation.
- Demonstrate need and highlight impact.
- Support for the annual Bereavement Service.

Appendices

Appendix One

Outline History of the Coombe Women and Infants University Hospital

1770 Foundation stone laid on 10th October by Lord Brabazon for new general hospital in the Coombe.

1771 Hospital opened in the Coombe known as "The Meath Hospital and County Dublin Infirmary".

1822 Meath Hospital transferred to Heytesbury Street to a site known as "Dean Swift's Vineyard".

1823 Old Meath Hospital bought by Dr. John Kirby and opened in October under the name of "The Coombe Hospital".

1826 Maternity service founded in The Coombe Hospital by Mrs. Margaret Boyle.

1829 Hospital bought from Dr. John Kirby and opened on February 3rd as "The Coombe Lying-in Hospital".

1835 Dublin Ophthalmic Infirmary established in outpatient department (until 1849).

1839 Gynaecology ward opened in hospital.

1867 Royal Charter of Incorporation granted to the Coombe Lying-in Hospital on November 15th.

1872 Due to the benevolence of the Guinness family, a new wing, including gynaecology beds, known as "The Guinness Dispensary" opened on April 24th.

1877 Coombe Lying-in Hospital rebuilt and reopened by the Duke and Duchess of Marlborough on May 12th.

1903 Weir Wing in hospital opened.

1911 Pembroke dispensary for outpatient care of children opened July 6th.

1926 Hospital centenary celebrated by first international medical congress to be held in Dublin.

1964 Foundation stone laid for new Hospital in Dolphin's Barn on May 14th by Minister for Health, Mr. McEntee.

1967 New Coombe Lying-in Hospital opened on July 15th.

1976 Celebration of the 150th birthday of Hospital held in October.

1987 Maternity service in St. James's Hospital transferred to Coombe Lying-in Hospital on October 1st.

1993 Hospital renamed the 'Coombe Women's Hospital' on December 8th.

1995 UCD Department of General Practice opened in February.

2001 175th Anniversary of the Coombe Women's Hospital.

2008 Hospital renamed 'Coombe Women & Infants University Hospital' on January 1st.

2013 First Female Master took up position.

Appendix Two

Masters of the Coombe Lying-in Hospital/Coombe Women's Hospital/Coombe Women & Infants University Hospital

Richard Reed Gregory	1829 – 1831
Thomas McKeever	1832 – 1834
Hugh Richard Carmichael	1835 – 1841
Robert Francis Power	1835 – 1840
William Jameson	1840 – 1841
Michael O'Keeffe	1841 – 1845
John Ringland	1841 – 1876
Henry William Cole	1841 – 1847
James Hewitt Sawyer	1845 – 1880
George Hugh Kidd	1887 – 1893
Samuel Robert Mason	1894 – 1900
Thomas George Stevens	1901 – 1907
Michael Joseph Gibson	1908 – 1914
Robert Ambrose MacLaverty	1915 – 1921
Louis Laurence Cassidy	1922 – 1928
Timothy Maurice Healy	1929 – 1935
Robert Mulhall Corbet	1936 – 1942
Edward Aloysius Keelan	1943 – 1949
John Kevin Feeney	1950 – 1956
James Joseph Stuart	1957 – 1963
William Gavin	1964 – 1970
James Clinch	1971 – 1977
Niall Duignan	1978 – 1984
John E. Drumm	1985 – 1991
Michael J. Turner	1992 – 1998
Sean F. Daly	1999 – 2005
Chris Fitzpatrick	2006 – 2012
Sharon Sheehan	2013 – present

Appendix Three

Matrons & Directors of Midwifery & Nursing at Coombe Women & Infants University Hospital

Over a period of 149 years since the granting of the Royal Charter of Incorporation to the Coombe Lying In Hospital in 1867, there have been 16 Matrons or Directors of Midwifery & Nursing (DoM&N) as follows;

Mrs Watters	Matron	1864 – 1874
Kate Wilson	Matron	1874 – 1886
Mrs Saul	Matron	1886 – 1886
Mrs O'Brien	Matron	1886 – 1887
Mrs Allingham	Matron	1887 – 1889
Annie Hogan	Matron	1889 – 1892
Annie Fearon	Matron	1892 – 1893
Hester Egan	Matron	1893 – 1909
Eileen Joy	Matron	1909 – 1914
Genevieve O'Carroll	Matron	1914 – 1951
Nancy Conroy	Matron	1952 – 1953
Margaret (Rita) Kelly	Matron	1954 – 1982
Ita O'Dwyer	DoM&N	1982 – 2005
Mary O'Donoghue	DoM&N – Acting	2005 – 2006
Patricia Hughes	DoM&N	2007 – August 2016
Ann McIntyre	DoM&N – Acting	August 2016 - Present

Appendix Four

Guinness Lectures

1969 The Changing Face of Obstetrics
Professor T.N.A. Jeffcoate, University of Liverpool

1970 British Perinatal Survey
Professor N. Butler, University of Bristol

1971 How Many Children?
Sir Dougald Baird, University of Aberdeen

1972 The Immunological Relationship between Mother and Fetus
Professor C.S. Janeway, Boston

1973 Not One but Two
Professor F. Geldenhuys, University of Pretoria

1978 The Obstetrician/Gynaecologist and Diseases of the Breast
Professor Keith P. Russell, University of Southern California School of Medicine

1979 Preterm Birth and the Developing Brain
Dr. J. S. Wigglesworth, Institute of Child Health, University of London

1980 The Obstetrician a Biologist or a Sociologist?
Professor James Scott, University of Leeds

1981 The New Obstetrics or Preventative Paediatrics?
Dr. J. K. Brown, Royal Hospital for Sick Children, Edinburgh

1982 Ovarian Cancer
Dr. J. A. Jordan, University of Birmingham

1983 The Uses and Abuses of Perinatal Mortality Statistics
Professor G.V.P. Chamberlain, St. George's Hospital Medical School, London

1984 Ethics of Assisted Reproduction
Professor M. C. McNaughton, President, Royal College of Obstetricians and Gynaecologists

1985 Magnetic Resonance Imaging in Obstetrics and Gynaecology
Professor E. M. Symonds, University of Nottingham

1986 Why Urodynamics?
Mr. S. L. Stanton, St. George's Hospital Medical School, London

1987 Intrapartum Events and Neurological Outcome
Dr. K. B. Nelson, Department of Health & Human Services, National Institute of Health, Maryland

1988 Anaesthesia and Maternal Mortality
Dr. Donald D. Moir, Queen Mothers Hospital, Glasgow

1989 New approaches to the management of severe intrauterine growth retardation
Professor Stuart Campbell, Kings College School of Medicine & Dentistry, London

1990 Uterine Haemostasis
Professor Brian Sheppard, Department of Obstetrics and Gynaecology, Trinity College, Dublin

1991 Aspects of Caesarean Section and Modern Obstetric Care
Professor Ingemar Ingemarsson, University of Lund

1992 Perinatal Trials and Tribulations
Professor Richard Lilford, University of Leeds

1993 Diabetes Mellitus in Pregnancy
Professor Richard Beard, St. Mary's Hospital, London

1994 Controversies in Multiple Pregnancies
Dr Mary E D'Alton, New England Medical Center, Boston

1995 The New Woman
Professor James Drife, University of Leeds

1996 The Coombe Women's Hospital and the Cochrane Collaboration
Dr Iain Chalmers, the UK Cochrane Centre, Oxford

1997 The Pathogenesis of Endometriosis
Professor Eric J Thomas, University of Southampton.

1998 A Flux of the Reds - Placenta Prevail Then & Now
Professor Thomas Basket, Nova Scotia

1999 Lessons Learned from First Trimester Prenatal Diagnosis
Professor Ronald J Wagner, Jefferson Medical College, Philadelphia

2000 The Timing of Fetal Brain Damage: The Role of Fetal Heart Rate Monitoring
Professor Jeffrey P Phelan, Childbirth Injury Prevention Foundation, Pasadena, California

2001 The Decline & Fall of Evidence Based Medicine
Dr John M Grant, Editor of the British Journal of Obstetrics & Gynaecology

2002 Caesarean Section: A Report of the U.K. Audit and its Implications
Professor J.J Walker, St James's Hospital, Leeds

2003 The 20th Century Plague: it's Effect on Obstetric Practice
Professor Mary-Jo O'Sullivan University of Miami School of Medicine, Florida

2004 Connolly, Shaw and Skrabanek - Irish Influences on an English Gynaecologist
Professor Patrick Walker, Royal Free Hospital, London

2005 Careers and Babies: Which Should Come First?
Dr Susan Bewley, Clinical Director for Women's Health, Guys & St Thomas NHS Trust, London

2006 Retinopathy of Prematurity from the Intensive Care Nursery to the Laboratory and Back
Professor Neil McIntosh, Professor of Child Life and Health, Edinburgh, Vice President Science, Research & Clinical Effectiveness, RCPCH, London

2007 Schools, Skills & Synapses
Professor James J. Heckman, Nobel Laureate in Economic Sciences
Henry Schultz Distinguished Service Professor of Economics, University of Chicago, Professor of Science & Society, University College Dublin

2008 Cervical Length Screening For Prevention of Preterm Birth
Professor Vincenzo Berghella, MD, Director of Maternal-Fetal Medicine, Thomas Jefferson University, Philadelphia

2009 Advanced Laparoscopic Surgery: The Simple Truth
Professor Harry Reich, Wilkes Barre Hospital, Pennsylvania; Past President of the International Society of Gynaecologic Endoscopy (ISGE)

2010 Magnesium – The Once and Future Ion
Professor Mike James, Professor and Head of Anaesthesia
The Groote Schuur Hospital, University of Capetown

2011 Pre-eclampsia: Pathogenesis of a Complex Disease
Professor Chris Redman, Emeritus Professor of Obstetric Medicine, Nuffield
Department of Obstetrics and Gynaecology, University of Oxford

2012 Non-invasive prenatal diagnosis: from Down syndrome detection to fetal whole genome sequencing
Professor Dennis Lo, Director of the Li Ka Shing Institute of Health Sciences, Department of Chemical Pathology, Prince Of Wales Hospital, Hong Kong

2013 A procedural approach to perceived inappropriate requests for Medical Treatment. Lessons from the USA.
Prof Geoffrey Miller, Professor of Pediatrics and of Neurology; Clinical Director Yale Pediatric Neurology, Co-Director Yale/MDA Pediatric Neuromuscular Clinic Yale Program for Biomedical Ethics

2014 "THE CHANGE", Highlighting the change in diagnosis and management in the past thirty years
Prof C.N. Purandare , MD,MA Obst.(IRL),DGO,DFP, DOBST.RCPI(Dublin),FRCOG(UK) ,FRCPI (Ireland), FACOG (USA), FAMS, FICOG,FICMCH, PGD MLS(Law), Consultant ,Obstetrician & Gynecologist
President Elect FIGO

2015 Why you shouldn't believe what you read in medical journals
Dr Fiona Godlee, Editor in Chief, British Medical Journal

2016 'We are such stuff as dreams are made on': Imagination & Revolution – the Epiphany of a Photograph
Professor Chris Fitzpatrick, Consultant Obstetrician & Gynaecologist CWIUH, Clinical Professor UCD School of Medicine

*The annual Guinness Lecture and Conference acknowledges the benevolence of the Guinness family to the hospital in the past.

**Specially adapted from *'And Spring Shall Come'* by Ruán Magan & Chris Fitzpatrick

CME approval pending.

The CWIUH wishes to acknowledge the generous support of the Beacon Hospital & Mr Brian Fitzgerald, Deputy CEO.

Places strictly limited. To register attendance, please email Laura Forde, Master's Office at **lforde@coombe.ie**

History says, don't hope
On this side of the grave.
But then, once in a lifetime
The longed-for tidal wave
Of justice can rise up,
And hope and history rhyme.

– from 'The Cure at Troy' by Seamus Heaney

Coombe Women & Infants University Hospital
Excellence in the Care of Women and Babies
Foirfeacht i gCúram Ban agus Naíonán

FÁINNE GEAL AN LAE

The Dawning of the Day

1916-2016 COMMEMORATIVE GUINNESS* CONFERENCE

Coombe Women & Infants University Hospital
11th November 2016

Coombe Women & Infants University Hospital
Excellence in the Care of Women and Babies
Foirfeacht i gCúram Ban agus Naíonán

TIME	EVENT
08:30 – 09:20	Registration
09:20 – 09:30	Welcome & Introduction *Dr Sharon Sheehan, Master/CEO, CWIUH*
	Conference Chairperson *Professor Michael Turner, CWIUH & UCD*
09:30 – 09:50	The Coombe Lying-in Hospital and the Easter Rising *Ms Ann Louise Mulhall, retired member of staff, CWIUH*
09:50 – 10:10	'Father: deceased' – The Birth of Maura Constance Connolly Mallin in the Coombe Lying-in Hospital, 19th August 1916 *Ms Sinead McCoole, historian, author ('Easter Widows'), broadcaster & Historical and Curatorial Advisor, National Commemorative Programme*
10:10 – 10:30	A Rebel in the Family *Professor Sean Daly, CWIUH & TCD, grand son of Patrick Dunne (Fianna Éireann & Irish Republican Army 1916-1921)*
10:30 – 10:40	Questions
10:40 – 11:10	Coffee
11:10 – 11:20	*'Fáinne Geal an Lae'* (In memory of Canon James Goodman 1826-1896, uileann piper, folk music collector, Unionist, Professor of Irish TCD & Church of Ireland Rector, Skibereen, Co Cork) *Emma McNamee accompanied by Tadhg O'Sullivan, Alannah Kirkham & Fionnvola Armstrong*
11:20 – 11:35	Pin-pointing the site of the 1916 Surrender *Mr Sean Murphy, historian, genealogist & author*
11:35 – 11:50	The Camera Never Lies: Photographs of the Easter Rising & Great War *Mr Seamus Travers, photographer*
11:50 – 12:10	An Officer and a Gentleman: the man behind the lens *Dr Richard De Courcy-Wheeler, grand son of Captain Harry De Courcy Wheeler*
12:10 – 12:30	Stepping forward into history: the revolutionary life of Elizabeth O' Farrell *Mr Ian Kelly, grand nephew*
12:30 – 12:50	Profiles in Courage: Terence Mac Swiney and Cathal Brugha *Ms Deirdre Stuart, grand daughter*
12:50 – 13:00	Questions
13:00 – 14:00	Lunch

TIME	EVENT
14:00 – 14:20	Patrick Pearse: A Man for All Seasons *Mr Ciarán Scarlett, great grand nephew*
14:20 – 14:40	From Hollywood to Vienna and Dublin; in the footsteps of my father and mother *Mr Anthony Loder, son of Lieutenant John Lowe & Hollywood actress Hedy Lamarr, grand son of Brigadier-General William Henry Muir Lowe*
14:40 – 15:00	Countermanding the Rising: Truth and Deception on the Eve of the Rising in the home of Dr Seamus O'Kelly, Assistant Master, Coombe Lying-in Hospital *Mr Annrai O'Toole, current owner of property*
15:00 – 15:20	1916 - Unfinished Business?: a personal perspective *Professor Michael Carey, CWIUH & UCD*
15:20 – 15:40	'Easter 1916' by WB Yeats *Dr Pamela O'Connor, CWIUH*
	'Lament for Thomas Mac Donagh' by Francis Ledwidge *Muriel McAuley, grand daughter of Tomas Mac Donagh*
15:40 – 15:50	Questions
15:50 – 16:10	*'The Tri-coloured Ribbon: Óró Sé do Bheatha Bhaile / It's a Long Way to Tipperary / The Sash My Father Wore'***
	'Mo Ghile Mear' (In memory of Peader Ó Cearnaigh of Dolphin's Barn & Inchicore, member of the IRB, Irish Volunteer, actor, house painter & decorator, member of the Gaelic League and Irish language teacher, lyricist of *'The Tri-coloured Ribbon'*, *'The Bold Fenian Men'* and the National Anthem – *'The Soldier's Song/Amhrán na bhFiann'*, uncle of Brendan & Dominic Behan, died in poverty 1943.)
	Ceoltóirí an Chúim: Paddy O'Brien, Anne Byrne, Mary Donegan, Fiona Dunlevy, Margaret Moyinhan, Anne Bowers, Mary Ryan, AnneMarie Waldron, Ann O'Donnell, Mary Sweeney, Renee Dilworth, Martina Ring, Amelia Brady (guest soloist), accompanied by Tadhg O'Sullivan, Alannah Kirkham & Fionnvola Armstrong, Musical Arrangement by Lisa Price.
16:10 – 16:30	Coffee
16:30	**2016 Guinness* Lecture** Introduction: *Dr Sharon Sheehan, Master/CEO, CWIUH* **'We are such stuff as dreams are made on': Imagination & Revolution - the Epiphany of a Photograph** ***Professor Chris Fitzpatrick, CWIUH & UCD***

Appendix Five

Glossary of Terms

Booked patient: a patient who is seen at the antenatal clinic, other than the occasion on which she is admitted. This includes patients seen by the consultant staff in their consulting rooms.

Miscarriage: expulsion of products of conception or of a fetus weighing less than 500 grams.

Maternal Mortality: death of a patient for whom the hospital has accepted medical responsibility, during pregnancy or within six weeks of delivery (whether in the hospital or not). Maternal mortality is calculated against the total number of mothers attending the hospital including miscarriages, ectopic pregnancies and hydatidiform moles.

Stillbirths (SB): a baby born weighing 500 grams or more who shows no sign of life.

First week neonatal death (NND): death within seven days of a live born infant weighing 500 grams or more.

Late neonatal death (late NND): death between 7 and 28 days of a live born baby weighing 500 grams or more.

Perinatal Mortality: the sum of stillbirths and first week neonatal deaths as defined above. The perinatal mortality rate refers to the number of perinatal deaths per 1,000 total births infants weighing 500 grams or more in the hospital.

The following abbreviations are used throughout the report:

ABG	arterial blood gas
ACA	anticardiolipin antibody
AC	abdominal circumference on ultrasound
AEDF	absent end diastolic flow in uterine arteries
AMNCH	Adelaide, Meath, incorporating the National Children's Hospital (Tallaght Hospital)
Amnio	amniocentesis
ANA	antinuclear antibody
ANC	antenatal care
APH	antepartum haemorrhage
ALPS	anti-phospholipid syndrome
ARM	artificial rupture of membranes
ASD	atrial septal defect
ATIII	Anti-thrombin III
BBA	born before arrival
BPP	biophysical profile
CANC	combined antenatal care
CIN	cervical intraepithelial neoplasia
CBG	capillary blood gas
CNM	clinical nurse manager
CNO	chief nursing officer
CMM	clinical midwife manager
Cord pH (a)	arterial cord pH
Cord pH (v)	venous cord pH
CPD	cephalopelvic disproportion
CPR	cardio-pulmonary resuscitation
CRP	c reactive protein
CTPA	computerised axial tomography pulmonary arteriography
Cryo	cryoprecipitate
CT	Chlamydia trachomatis
CTG	cardiotocograph
CWIUH	Coombe Women & Infants University Hospital
DCDA	dichorionic diamniotic
D&C	dilatation and curettage

DIC	disseminated intravascular coagulopathy
DoHC	Department of Health and Children
DVT	deep venous thrombosis
EBL	estimated blood loss
ECV	external cephalic version
ECHO	echocardiogram
EEG	electroencephalogram
EFM	electronic fetal monitoring
EFW	estimated fetal weight
EPAU	early pregnancy assessment unit
ERPC	evacuation of retained products of conception
ETT	endotrachial tube
EUA	examination under anaesthetic
FAS	fetal assessment scan
FBS	fetal blood sample in labour
FHNH	fetal heart not heard
FM	fetal movement
FMNF	fetal movement not felt
FTA	failure to advance
FV Leiden	factor V Leiden
GA	general anaesthesia
HB	haemaglogin
HCG	human chorionic gonadotrophin
Hep B	Hepatitis B
Hep C	Hepatitis C
HFOV	high frequency oscillatory ventilation
HRT	hormone replacement therapy
HVS	high vaginal swab
HIV	infection with human immuno deficiency virus
Hx	history of
INAB	Irish National Accreditation Board
IOL	induction of labour
IPPV	intermittent positive pressure ventilation
IPS	Irish Perinatal Society
ITP	idiopathic thrombocytopoenia
IUCD	intrauterine contraceptive device
IUD	intrauterine death
IUGR	intrauterine growth retardation
IVH	intraventricular haemorrhage
LFD	large for dates
LLETZ	large loop excision of the transformation zone
LMWH	low molecular weight heparin
LSCS	lower segment caesarean section
LV	liquor volume
MSU	mid stream urinalysis
NAD	no abnormality detected
NEC	necrotising enterocolitis
NETZ	needle excision of transformation zone
NG	neisseria gororrhoea
NICU	neonatal intensive care unit
NIPT	non invasive prenatal testing
NNC	neonatal centre
NND	neonatal death
NO	nitric oxide
NR	not relevant
NS	not sent
NTD	neural tube defect
OGTT	oral glucose tolerance test
OFC	occipitio-frontal circumference
OLHC	Our Lady's Hospital Crumlin
OP	occipito-posterior
PCO	polycystic ovary
PET	pre eclamptic toxemia
PDA	patent ductus arteriosus
Pg	prostaglandin
PIH	pregnancy-induced hypertension
PMB	post menopausal bleeding
POP	persistent occipito posterior
PPH	postpartum haemorrhage
PPHN	persistent pulmonary hypertension of the newborn
PTL	preterm labour
PVB	per vaginal bleeding
RBS	random blood sugar
RCSI	Royal College of Surgeons in Ireland
RDS	respiratory distress syndrome

RV	right ventricle
Rx	treated with
SB	stillbirth
SCBU	special care baby unit
SE	socio economic group
SFD	small for dates
SIDS	sudden infant death syndrome
SIMV	synchronised intermitent mandatory ventilation
SJH	St James's Hospital
SOL	spontaneous onset of labour
SpR	specialist registrar
SROM	spontaneous rupture of membranes
SVD	spontaneous vaginal delivery
TAH	total abdominal hysterectomy
TCD	Trinity College Dublin
TPA	transposition of the great vessels
TTTS	twin to twin transfusion syndrome
TVT	tension free vaginal tape
UCD	University College Dublin
US	ultrasound
USS	ultrasound scan
UTI	urinary tract infection
VBAC	vaginal birth after caesarean section
VBG	venous blood gas
VG	volume guaranteed
VE	vaginal examination
VSD	ventriculo-septal defect

Appendix Six

Dr James Clinch Prize for Audit 2016

Audit of Adherence to Referral Pathway for Pregnant Women with History of Genital Herpes in CWIUH

Aug 2015 – Aug 2016

Audit Lead: Nikita Deegan, SpR Obstetrics & Gynaecology & Orla Cunningham, CMS Infectious Diseases, CWIUH.

Supervisor: Dr Michael O'Connell, Consultant Obstetrician & Gynaecologist

Speciality: Infectious Diseases in Pregnancy

Date of report: 28/09/2016

Key Stakeholders: Pregnant women attending CWIUH with a history of Genital Herpes or an outbreak of Genital Herpes in pregnancy and the medical and midwifery staff caring for them.

Will a re-audit be conducted by you or someone in your department: Yes

Proposed re-audit date: Sept 2016 – Feb 2017

Introduction

Genital Herpes Simplex Virus (HSV) can be transmitted in the perinatal period with the potential for serious and devastating consequences for the fetus / infant. Disseminated maternal herpes in pregnancy is rare but also may be life-threatening. Genital HSV infection can be clinically apparent with visible genital lesions, or inapparent with no visible lesions (asymptomatic or sub-clinical). 60-80% of women delivering an HSV infected infant have clinically inapparent infection (1). Transmission from mother to infant most commonly occurs due to exposure during delivery (85 – 90% cases)(2). Acyclovir and its analogues used for treatment and prophylaxis can reduce the risk of viral shedding at delivery and therefore reduce transmission risk (3).

In early 2014, the team caring for women with Infectious Diseases in pregnancy identified that pregnant women attending CWIUH with a history of genital HSV or an outbreak in pregnancy, were an at-risk group without a specific care pathway, often with differing clinical decisions regarding their care in pregnancy. A clinical guideline was therefore developed by Dr Nicola Maher (SpR Obs & Gyn) and Orla Cunningham (CMS ID) under the guidance of consultant Dr Michael O'Connell. The guideline became available on the hospital Q-pulse system from July 2014 and was presented nationally at the Four Provinces IOG Meeting, December 2014. Following expert review by GUM consultants, Obstetricians, midwives and Paediatric Infectious Disease experts, the local CWIUH guideline was incorporated into the National document 'Prevention of Perinatal Transmission: A practical guide to the antenatal and perinatal management of HIV, Hepatitis B, Hepatitis C, Herpes Simplex & Syphilis, 2015' (4).

Launch of the new national document took place in the CWIUH in September 2015, specifically addressing Management of Genital Herpes in Pregnancy. The launch included a question and answer session with Professor Fiona Mulcahy of GUIDE, SJH and Dr Michael O'Connell, CWIUH. The national document was added to Q-pulse in CWIUH and education sessions were provided for the multidisciplinary team to heighten awareness as to the clinical care pathway being provided for this cohort of pregnant women.

A retrospective audit was undertaken to ascertain adherence to the specified referral pathway for pregnant women who gave a history of genital herpes, when booking into CWIUH, August 2015 – August 2016.

Methodology:

In our unit all women booking for antenatal care are asked a question relating to history of genital herpes, by the midwife doing their booking history. When a history of genital herpes is declared this should prompt referral to our specialist service. This involves completion of a referral form to CMS Infectious Diseases (ID) and the woman should have a request for 'HSV type specific antibodies' included in routine booking bloods. Referrals are triaged by the CMS ID and women subsequently are referred to our visiting GUIDE team in our dedicated combined GUIDE/ obstetric clinic, which runs on alternate Tuesdays in Margaret Boyle suite. Acyclovir and its analogues are available for treatment and prophylaxis, reducing the risk of viral shedding at delivery and therefore reducing neonatal transmission risk or the need for unplanned caesarean section as a result of genital lesions. Based on a woman's clinical history and serological status the Guide team decide an individualised careplan and women will either remain with Team A ID clinic or be discharged back to routine antenatal care.

Through observation it became evident that some, potentially many, women were not being referred appropriately to specialist services from booking or during their pregnancy, therefore never receiving a specialist consult with the GUIDE team. These women were at increased risk of presenting in labour with a genital outbreak, necessitating emergency LSCS and neonatal management. It was decided to audit referrals to our specialist team to ascertain what number/percentage of women were referred/not referred to specialist services. Approval was sought from the master at CWIUH. Initial timeframe for audit was a 9 month period from 1st August 2015 – 30th April 2016, however this timeframe was then extended until 31st August 2016, based on the initial audit findings.

All women whom declared a history of genital HSV at booking history from 1st August 2015 – 31st August 2016 were identified via our IT PAS system. A list was composed using patient hospital numbers, these were cross checked manually against referral forms received by the CMS ID. Patient hospital numbers were then cross checked with K2 lab system to identify if HSV antibody type specific bloods had been sent along with routine booking bloods on these patients. All medical charts were then obtained via medical records and a retrospective chart review was performed.

Initial 9 month Audit Results (Aug '15 – April '16):

- 58 women declared a history of genital herpes from 1st August 2015 – 30th April 2016.
- 8 women were personal/private patients so were excluded as we were unable to gain access to patient charts.
- 1 chart was not located.
- 49 women were eligible for inclusion in audit.
- Only 6 women were referred from booking history (12%)
  - 3 were referred due to history of genital herpes.
  - 2 women had a lesion in 1st trimester/at time of booking
  - 1 woman was referred for another infectious disease (coincidental pick up).
  - 5 of the 6 had type specific bloods sent from booking.
- 43 patients were **not** referred from booking as per hospital guideline (88%) and therefore were at potential risk of an outbreak at delivery and risk of perinatal transmission.
- Of the 43 not referred from booking, 7 were referred later in their pregnancy.
  - 3 developed lesions in the 2nd trimester (17-28/40)
  - 3 booked as semiprivate patients under our team A consultant and were therefore identified at antenatal visit.
- 1 was referred to team A/specialist services when booking bloods identified another infectious disease.
- In total only 13 of 49 (26%) of women were referred to specialist services at any time during their pregnancy (2 were coincidental referrals for alternate reasons i.e. another infectious disease).
- Therefore 36 of 49 women (74%) were never referred to specialist services throughout the pregnancy despite specified referral pathway/guideline being in place in our unit.
- Of the 36 women, 22 had no documentation in their chart from a consultant or doctor in relation to their history of genital HSV.
- 1 of the above mentioned 22 patients presented with a lesion in labour and required delivery by emergency

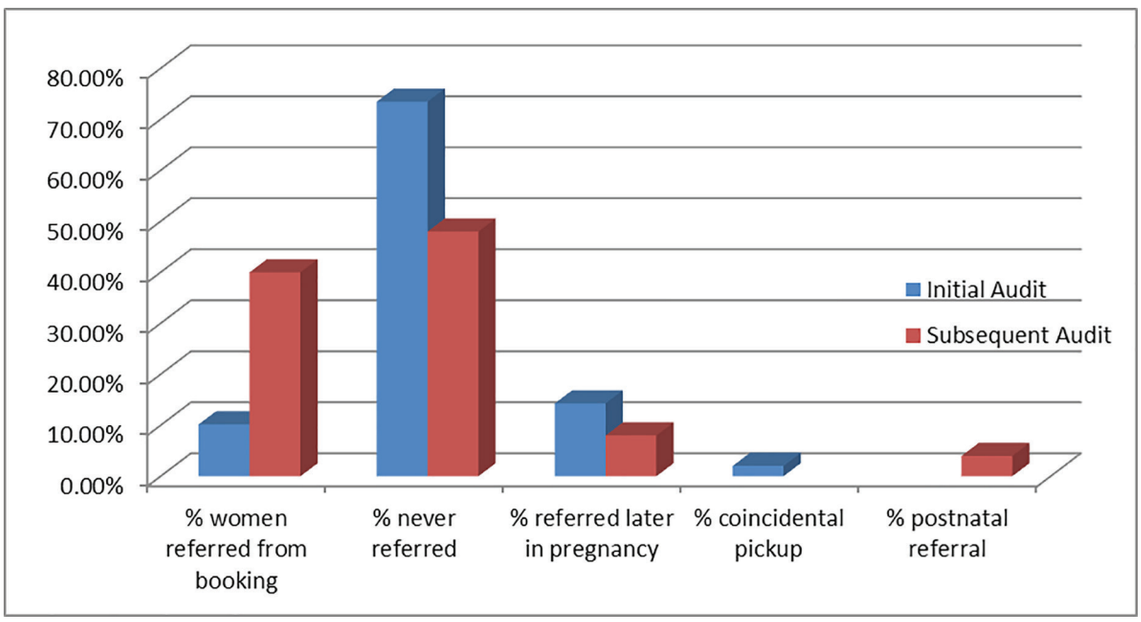
caesarean section and neonatal management.

- 14 women who had a comment written in their chart but were not referred for Guide consult, had comments such as:
  - HSV years ago, fully treated' (no bloods or referral done)
  - 'HSV Tx 2006, no repeat issues' (no bloods or referral done)
  - 'Valtrex from term' (no exact gestation or dosage provided)
  - 'consider Valtrex near term if outbreak in pregnancy'
  - 'hx HSV, monitor same' (no bloods or referral done)

An overview of the 9 month audit provided stark evidence that knowledge of/ adherence to referral pathway in our unit was only 10.2% (only 5 of 49 women referred directly from booking on the basis of history of genital HSV). Specific education and training was provided over May – June 2016, both at midwifery and medical level to ensure care-providers taking booking histories and at any stage of a woman's antenatal journey are familiar with the importance of specialist input in the cases where a woman has a history or outbreak of genital herpes.

Subsequent 4 month Audit Results (May – Aug 2016):

- 32 women declared a history of genital herpes from 1st May – 31st Aug 2016.
- 7 women were personal/private patients so were excluded as we were unable to gain access to patient charts.
- 25 women were eligible for inclusion in our re-audit.
- 10 women were referred directly from booking history, 2 women were referred following antenatal consult later in pregnancy and 1 woman was referred post-delivery for education, having presented in labour with a first episode of genital herpes.
- In total, 54% of women were referred for specialist consult in the period following re-education, (only 10% in initial audit), showing a large improvement in awareness of our referral pathway, however, with some room for improvement still evident!



Conclusion

With the assistance of the IT department, hospital numbConclusion:

Audit of practice and in particular following an introduction of a new care pathway, is an essential tool for demonstrating compliance as well as highlighting gaps which require addressing. Our initial audit over a 9 month period certainly demonstrated that there was an overall deficit in knowledge regarding the referral pathway for pregnant women with a history or outbreak of genital HSV, which had been laid out in both a hospital and national guideline a year previous. Education targeting the team of midwives who ascertain women's history upon booking into the maternity services, has improved referrals as per our 4 month follow-up audit. However room for improvement remains.

Action Plan:

The team have put in place on-going educational sessions, whereby newly rotated NCHD's are provided with an overview of the genital HSV guideline and hospital referral pathway on a 6 monthly basis. Genital HSV has been presented and discussed at recent midwifery journal club, along-side on-going education for those midwives recording a woman's booking history, as well as those working in antenatal, intrapartum and postnatal areas. (People responsible are Team A Registrar & CMS ID on a 6 monthly basis.)

Treatment algorithms from the hospital guideline have been laminated and placed in our Emergency Room, Assessment Unit and Delivery Suite to aid with appropriate management of women presenting with an outbreak of genital lesions in pregnancy or at delivery. (Already in place).

A change in our hospital guideline is planned to ensure that **all** women who provide a history of genital HSV will **automatically** be provided with an appointment to see our specialist team, organised directly from the booking visit. (People responsible are Dr M. O'Connell & O. Cunningham, CMS ID. Timeframe Oct 2016).

We also plan in the near future to re-highlight genital HSV in pregnancy at our multidisciplinary meetings, with an emphasis on our recent audit results. (People responsible are Dr M. O'Connell, Dr N. Deegan, as invited guest & O. Cunningham, CMS ID. Timeframe Oct - Nov 2016).

A notice on our hospital intranet as well as further audit of the referral process are some of the other methods by which we plan to ensure women with a history or outbreak of genital herpes in pregnancy are provided with the specialist care they deserve. (People responsible are Dr C. Mc Nestry & O. Cunningham, CMS ID. Timeframe Sep 16- Feb 2017)..

References

1. Kimberlin DW, Baley J. Guidance on management of asymptomatic neonates born to women with active genital herpes lesions. Pediatrics 2013; 131:635-46.
2. Brown ZA, Wald A, Morrow RA et al. Effect of serologic status and caesarean delivery on transmission rates of herpes simplex virus from mother to infant. JAMA 2003; 289:203-9.
3. Watts DH, Brown ZA, Money D. et al. A double-blind, randomised, placebo-controlled trial of acyclovir in late pregnancy for the reduction of herpes simplex virus shedding and caesarean delivery. Am J Obstet Gynaecol. 2003; 188:836-43.
4. Butler K et al. Preventing Perinatal Transmission: A practical guide to the antenatal and perinatal management of HIV, Hepatitis B, Hepatitis C, Herpes Simplex and Syphilis. 2015. www.ssstdi.ie/guidelines/

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