Coombe Women & Infants University Hospital
Ospidéal Ollscoille Ban agus Náionán an Chúim

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

Annual Report

2020

Coombe Women & Infants University Hospital
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Excellence in the care of Women and Babies

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Definitions, terms and abbreviations

Booking: a woman who has attended an antenatal clinic or a consultant for antenatal care in consulting rooms has booked.

Corrected perinatal mortality rate: the sum of stillbirths and early neonatal deaths excluding those associated with or due to a major congenital anomaly per 1,000 total births.

DOMINO and early transfer home services: the DOMINO and early transfer home (ETH) services are available to healthy pregnant women attending the CWIUH who live in specified areas. The team of midwives look after a woman from the booking visit, throughout the pregnancy, during the labour and for the first week after the birth of the baby.

Early neonatal death: death within seven days of a liveborn infant who weighed 500 grams or more at birth.

Fourth degree tear: an injury to the perineum that involves the anal sphincter complex and the anorectal mucosa.

Infant feeding: includes breastfeeding and formula feeding.

Late maternal death: death of a woman from direct or indirect obstetric causes, more than 42 days, but less than one year after the end of the pregnancy.

Late neonatal death: death between 7 and 28 days of a liveborn baby who weighed 500 grams or more at birth.

Nulliparous: a woman who has not previously given birth to an infant, either liveborn or stillborn, weighing greater than or equal to 500 grams.

Obstetric anal sphincter injuries: encompass both third and fourth degree perineal tears.

Major obstetric haemorrhage: occurs if one of the following criteria are met; estimated blood loss of at least 2,500ml; transfusion of five or more units of blood; and, receiving treatment for coagulopathy.

Maternal death: death of a woman while pregnant or within 42 days of the end of the pregnancy irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Parous: a woman who has previously given birth to at least one infant, either liveborn or stillborn, weighing greater than or equal to 500 grams.

Perinatal mortality rate: the sum of stillbirths and early neonatal deaths per 1,000 total births.

Primary postpartum haemorrhage: the loss of 500ml or more of blood from the genital tract within 24 hours of the birth of a baby.

QUiPP app: a clinical decision making tool that can help clinicians determine the risk of preterm birth in women with symptoms of threatened preterm labour as well as in asymptomatic women who are at high risk of preterm birth.

Severe maternal morbidity: a pregnant or recently pregnant woman (up to 42 days following the end of the pregnancy) who experienced any of the following: major obstetric haemorrhage, uterine rupture, eclampsia, renal or liver dysfunction, pulmonary oedema, acute respiratory dysfunction, pulmonary embolism, cardiac arrest, coma, cerebrovascular event, status epilepticus, septicaemic shock, anaesthetic complications and peripartum hysterectomy.

Stillbirth: a baby weighing 500 grams or more, who shows no sign of life at delivery.

Third degree tear: an injury to the perineum that involves the anal sphincter complex.

The following abbreviations are used but not explained in the Annual Report:

Anti-VEGF drug anti-vascular endothelial growth factor drug

AVSD atrioventricular septal defect

BMI body mass index (kg/m^2)

CGIN cervical glandular intra-epithelial neoplasia

CIN cervical intra-epithelial neoplasia

CPAP continuous positive airway pressure

DVT deep vein thrombosis

ECMO extracorporeal membrane oxygenation

HDU high dependency unit

HELLP syndrome haemolysis, elevated liver enzymes and thrombocytopenia syndrome

IUGR intrauterine growth restriction

IVH intraventricular haemorrhage

LEEP loop electrical excision procedure

$MgS0_4$ magnesium sulphate

MToP medical termination of pregnancy

NEC necrotising entercolitis

NPEC National Perinatal Epidemiology Centre

NCHD non-consultant hospital doctor

NIPT non-invasive prenatal testing

PDA patent ductus arteriosus

PVL periventricular leukomalacia

ROP retinopathy of prematurity

SpR specialist registrar

STABLE sugar, temperature, airway, blood pressure, lab work and emotional support

SToP surgical termination of pregnancy

SWETZ straight wire excision of the transformation zone

TGA transposition of the great arteries

TVT tension free vaginal tape

TVTO tension free obturator tape

TOT transobturator tape

VAIN vaginal intra-epithelial neoplasia

VSD ventricular septal defect

WPW Wolff-Parkinson White.

Introduction from the Master

It is my great privilege as the 31st Master of the Coombe Women and Infants University Hospital (CWIUH) to introduce the 2020 Annual Report. The Coombe has been offering care to women for 194 years and as part of my address during the commencement ceremony I highlighted a continuation of the vison of provision of services for and service to women.

All Mastership transitions are accompanied by a sense of anticipation, excitement and an ongoing support for the office of Master. This was no different for me as I met all the women who were in-patients on that day, all the staff who were on duty and all who attended the commencement ceremony. I was and continue to be humbled by the support offered to me in my role by all. I wish to acknowledge and thank my friend and colleague Professor Sharon Sheehan for her incredible contribution to the hospital as Master and personally for the advice and support she gave me during the transition.

While the role of Master is a daunting one, it is only possible to do effectively with the support of the Senior Management Team (Patrick Donohue, Ann McIntyre, Annemarie Waldron, John Robinson). This team evolved during the year with the establishment of the roles of Chief Clinical Operating Officer (CCOO) - Professor Martin White and Chief Operating Officer (COO) - Melissa Lawlor. Laura Forde continued to offer support as my PA. I am very grateful for the support of the Board as a whole, but in particular to the Chair Mr. John Gleeson.

By March, COVID-19 hit our shores and my vision of services for and service to women was truly demonstrated by all our staff. The facilitation by colleagues to redeployment to COVID assessment units and screening desks, the changes in rosters, the adaptation to 'red and green zones', the acceptance of negative pressure rooms, the delivery of COVID-19 tests, the 'let's find' solutions (virtual appointments, COVID-19 adapted website, antenatal education videos) and the incredible resilience in terms of delivering our services in an ever evolving pandemic was remarkable and epitomised the dedication and care offered by all to the women and babies under our care. The "Coombe Way" was further demonstrated by those retired staff who came back to help during the darkest days of the pandemic. The collaboration between our laboratory and the laboratory in Children's Health Ireland at Crumlin (CHI, Crumlin) in the provision of COVID-19 testing was exemplary and augurs well for closer alignment between the CWIUH and CHI, Crumlin in the future. The COVID Executive Team with their ability to adopt an evolving knowledge base of the disease to minimise risk to the women, babies and staff, I believe was key to our success in managing the first pandemic since that seen in the Mastership of Robert Ambrose Laverty

during the Spanish Flu (1918-1920). Despite the COVID-19 pandemic we cared for 7,405 women who gave birth to 7,566 babies. The corrected perinatal mortality rate was 2.8 per 1,000 total births. We cared for 888 babies in our NICU and SCBU. We delivered the largest benign gynaecology service in Ireland. The clinical care we offered in addition to being of high quality was also holistic in nature enhancing the woman's experience. Our Women's Health Unit was key to the assessment and management of urgent gynaecology cases during the year.

Professor Stephen Lindow became the first Clinical Lead for the Master's research and audit. He offers enthusiastic support to all clinical research projects across CWIUH.

As Master, I have instituted daily visits to all wards and a monthly Master's round where I call to all in-patients. I have also commissioned a Master's medal commemorating the first baby born in the CWIUH each year, an image of which can be seen on page 11.

We were delighted to welcome Mr. Stephen Donnelly Minister for Health in July. His commitment to women's health is inspiring. On behalf of myself and the staff I wish to formally thank him for his visit and wish him all the best in the coming years in what is a very challenging portfolio.

If COVID-19 has taught us anything, it is the importance of the old adage 'physician heal thyself' and I am grateful for the team that have progressed our wellbeing initiatives. I have introduced the Master's weekly wisdom quote which is on the CWIUH intranet and on a TV in the Oratory. Needless to say, these are selective quotations for reflection, from those wiser than I.

In September we had (in compliance with government restrictions) the first Master's Coombe Camino and together the staff and their families completed 780 km over a 12 hour period on a circuit around Dublin 8.

The pandemic has hampered progress on our values, branding, and strategy but I am confident that we will make up lost time in due course.

My thanks to all who contributed to this Annual Report, in particular to Julie Sloan and Emma McNamee, for their support and attention to detail.

My thanks to all our staff who not only delivered excellent care but superb outcomes in this the most challenging of years.

COVID-19 PANDEMIC

The global impact of COVID-19 has been profound, with unprecedented challenges within the maternity system, and here at the CWIUH. Throughout the pandemic, there have been huge staffing challenges due to COVID-19 illness, contact with positive cases as healthcare workers, and the requirement to follow strict contact tracing guidelines. The COVID Executive Team comprising of The Master, P Donohue, A McIntyre, G Chawke, Dr. N O'Sullivan, Prof. M J White and M Lawlor was established and complemented, as required, by leads from all departments. The response from the women, their partners, and each member of staff was outstanding and in full co-operation with the COVID Executive Team. The Team met regularly to discuss the challenges of the pandemic, and ensure the constant provision of excellent care for women and infants attending the CWIUH.

Infrastructural changes made included a COVID-19 assessment unit, a screening desk at the entrance, 'red and green' designated 'zones' and negative pressure rooms.

In March 2020, as the risk of COVID-19 transmission intensified, testing for SARS-CoV-2 commenced at CHI, Crumlin. In early April, a system for sampling commenced in the CWIUH. This continued throughout 2020 in conjunction with our colleagues in CHI, Crumlin. Between March and December 2020, 3,080 samples taken from women booked for maternity care, infants and members of staff were tested for SARS-CoV-2. In total, 50 samples detected SARS-CoV-2. A cohort of 12 antenatal women tested positive, with one ICU admission for respiratory support (subsequent full recovery). The other 11 antenatal women presented with mild symptoms and were predominantly asymptomatic at the time of testing. There were no additional complications, and all pregnancies resulted in liveborn infants. Three postnatal women were asymptomatic with positive SARS-CoV-2 results. One twin infant was asymptomatic with a positive SARS-CoV-2 result (other twin negative SARS-CoV-2 result). This infant developed complications of extreme prematurity which were not attributed to infection with COVID-19. All cases of SARS-CoV-2 were reported to the National Perinatal Epidemiology Centre.

PROF. MICHAEL O'CONNELL | MASTER


BIOHAZARD
RED
EXIT
ZONE

The Master's Office Report

Research Update

The year 2020 has been a difficult one for the CWIUH due to the COVID-19 pandemic. However, this has also provided research opportunities as the CWIUH responded to this new challenge. Research into COVID-19 and its effects on the mental health of women and staff have been followed up with studies on vaccination intentions that are underway currently.

Internally, the formation of the audit and quality advisory (AQuA) group to advise and facilitate audit and quality improvement projects is a substantial development, which will assist all staff working at the CWIUH. This group will, together with the CWIUH Research Ethics Committee, provide the framework for clinicians and scientists to work collaboratively and ethically.

Research links have been formed with Qatar (Hamad Medical Corporation and Sidra Medicine), India (Banaras Hindu University), South Africa (University Cape Town), and the UK (Hull University Hospitals).

Collaborative work resulted in nine publications in 2020. CWIUH staff were the lead authors in six publications and co-authors in three publications. A tenth paper has been accepted for publication, which is awaited. One of the nine publications (Garry et al, 2020, appendix two) was sufficiently interesting to be the subject of a number of reports in Irish mainstream newspapers.

The philosophy about research in the CWIUH remains the same in that it is expected that all junior doctors will contribute to or take the lead on a project during their time at the CWIUH.

See Appendix Two for a list of the publications by the Master's Office.

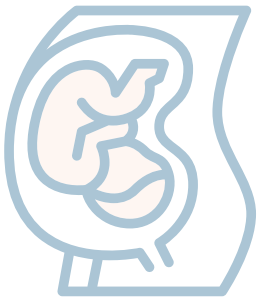
Biological Resource Bank

Biological Resource Bank (BRB) blood samples consist of plasma and red blood cells of consented women and babies who attended the CWIUH. All research studies that use the BRB samples require both the Master's approval and the approval of the CWIUH Research Ethics Committee.

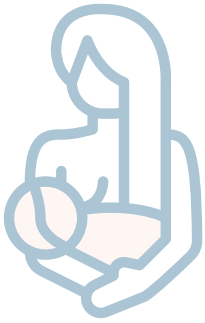
Currently, studies on early onset pre-eclampsia and preterm labour are in progress. These studies will use approximately two hundred samples from the BRB. Given GDPR regulations, the anonymisation of data is an ongoing process and is a critical component of the work of the BRB.

The Master's medal commemorating the first baby born in the CWIUH each year.

Year In Review 2020



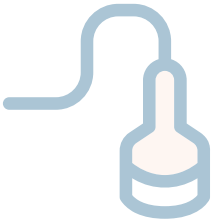
7,405
WOMEN GAVE BIRTH



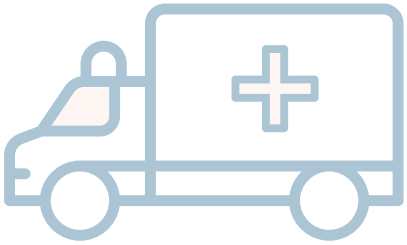
7,566
BABIES WERE BORN

888
BABIES WERE CARED FOR IN NICU AND SCBU

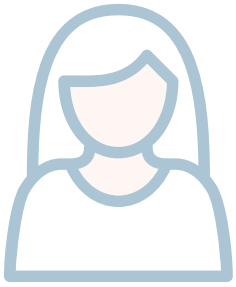
4,481
EARLY PREGNANCY ASSESSMENT UNIT ATTENDANCES



28,681
ULTRASOUND SCANS

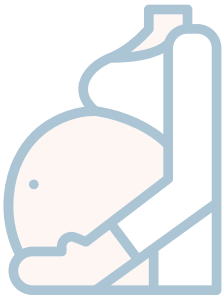


7,663
EMERGENCY ROOM ATTENDANCES



13,005
GYNAECOLOGY OUTPATIENT ATTENDANCES

5,424
GYNAECOLOGY SURGICAL PROCEDURES



2,432
CAESAREAN SECTIONS

Director of Midwifery and Nursing-Corporate Report 2020

Overview of 2020

Our new Master, Prof. Michael O'Connell commenced on the 1st January 2020 and I would like to take this opportunity on behalf of our midwifery and nursing colleagues to wish him well. I look forward to working with him in achieving the aims and objective of the National Maternity Strategy 2016-2026 and Sláintecare.

2020 is the year we will never forget. 2020 was the '*The International Year of the Midwife and Nurse*'. We celebrated the International Day of the Midwife on 5th May and International Day of the Nurse on 12th May in the Rita Kelly Conference Room with the essential ingredient of social distancing. A banner was displayed at the front of the CWIUH and our chefs baked amazing cakes.

In February, the Health Information and Quality Authority (HIQA) published a report of findings of its inspections of the 19 maternity units across Ireland. They found that effective arrangements were in place in the CWIUH to detect and respond to obstetric emergencies and there were effective leadership, governance and management structures to ensure the safety and quality of maternity services. Unsurprisingly, the infrastructure, in particular the Emergency Room, was deemed to be non-compliant. The CWIUH is seeking to address this through the development of a new unscheduled care unit, which is awaiting funding.

Spring saw the first wave of COVID-19 pandemic in Ireland. COVID-19 has been a frightening and fearful experience for many of the women and staff but it was great to see the many areas and disciplines within the CWIUH come together and work closely, supporting our women and each other. Many of our midwives and nurses led out on the development and implementation of pathways and processes to ensure that women, families and staff were kept safe. A triage desk was set up in the front hall. Centre of midwifery education staff, the practice development team, student midwives and the security team supported this which enabled women, families and staff to feel safe and protected.

COVID-19 brought many challenges through staff absenteeism and special leave. Like many hospitals, we were forced to cancel some routine appointments but our primary concern was to keep our women safe. Ger Chawke was appointed as Clinical Midwife Manager (CMM3) in infection prevention control (IPC). She provided wonderful support, guidance and worked tirelessly throughout the pandemic to keep our women, babies and staff safe.

COVID-19 was also an impetus for change and innovation. For example, the neonatal intensive care unit (NICU) commenced baby-parent video calls as an initiative to facilitate partners, siblings and families to meet their new family member. This did not replace parental presence but it enabled the family to meet and bond with their new arrival when unable to visit in person. Due to the infrastructure and shared rooms our neonatal staff collaborated with parents and developed a fair rota system to ensure all parents had equal opportunity to be present with their baby.

Where possible, virtual clinics were established and our antenatal classes moved online. This allowed more women and their partners to attend classes. The feedback has been extremely positive. The CWIUH also established phone helplines to support the women and staff and to address their queries. Members of the midwifery and medical team provided this service. Community midwives continued to deliver services and continually adapted to changing restrictions. This reflects the great work done by the team at the CWIUH. The COVID-19 pandemic has highlighted how flexible, resilient, adaptable, caring and innovative our midwives and nurses are and continue to be. I would really like to thank the Assistant Directors of Midwifery, Advanced Nurse Practitioners (ANPs), Candidate Advanced Midwife Practitioners (cAMPs), Clinical Midwife Managers (CMMs), Clinical Midwife Specialists (CMSs), Clinical Nurse Managers (CNMs), Clinical Nurse Specialists (CNSs), Clinical Skills Facilitators (CSFs), the Clinical Placement Coordinator (CPC) team and all the midwives and nurses for their support and dedication throughout this difficult year.

A flu team comprised of the occupational health nurse, CSFs, CPCs and our communication officer was established. The flu vaccination programme began in October. A structured timetable for all areas was organised for the vaccination clinics, ensuring easy access for staff. The team vaccinated 67% of the staff.

On 17th November 2020, the CWIUH was lit up in purple to celebrated *World Prematurity Day*. There was a poster at the gate and baby socks and balloons were in the front hall in recognition of the day. All the Coombe babies received a Late Late Babygro on 27th November 2020.

We finished 2020 with a Midwifery and Nursing Webex Presentation from the Rita Kelly Conference Centre for the '*International Year of the Nurse and Midwife 2020*'. This provided a wonderful showcase of the innovative and dynamic midwives and nurses who work in the CWIUH. The conference consisted of ten-minute presentations from midwives, neonatal nurses, perinatal mental health nurses, parent education midwives, practice development, gynaecology oncology and cAMP in high risk care and cAMP in models of care. We were delighted that Margaret Quigley, National Lead for Midwifery in the Office of the Nursing and Midwifery Services Director (ONMSD) and Angela Dunne, National Lead Midwife for the National Women and Infants Health Programme (NWIHP) attended and presented. The 'Birth Dynamics' education pack for women was launched at the conference. There is access to 'Birth Dynamics' classes, a manual, a video and visual education displays on the CWIUH website. 'Birth Dynamics' will be evaluated after six months, in collaboration with TCD. The second phase of 'Birth Dynamics' for midwives and support workers is underway in collaboration with the Centre for Midwifery Education (CME) and has been submitted for Nursing and Midwifery Board of Ireland (NMBI) approval.

The care, support and passion given by the midwives, nurses and healthcare assistants in the CWIUH is reflected throughout this Annual Report. Their eagerness and enthusiasm to provide 'excellence in care' was demonstrated throughout 2020. The achievements listed in the various clinical reports would not have been possible without the dedication and commitment of all the staff. Sincere thanks to the ADoMNs for their leadership and management, and of course their continued support, help and kindness which they continually gave to all the staff throughout the year. A very sincere thanks to all the CMMs, CNMs, CN/MSs, CSFs, CPCs and all the staff for their hard work, dedication and caring ethos which they bring to women, babies, families and colleagues in the CWIUH everyday.

Workforce Planning

We continued to expand our perinatal mental health team with the appointment of an additional CNS. A CMM3 in Community, a CNM/MM3 in the Women's Health Unit, a CMM3 in IPC, a CMM2 in Diabetes, a CMM3 on Maternity Ward, a CSF Maternity Wards, a CNS in Fertility and a CMS in Bereavement were recruited. We were delighted, that once again, 15 of our BSc student midwives who qualified in September took on permanent contracts. Two adaptation midwives successfully completed their programme. Rotation continued and a new three-month internal rotation from the antenatal ward (St Monica's Ward) to the diabetes services commenced with a view to expanding the midwives' experience and knowledge while also supporting the diabetes service. The internal rotational midwife/sonographer training post also continues. These rotational posts increase midwifery knowledge as well as supporting '*growing our own*' experienced and knowledgeable midwives.

Recruitment continued via Zoom with the assistance of the Human Resources Department team, Practice Development Team (PDD), CMM3s and our ADoMNs. A very sincere thank you to everyone.

Midwifery and Nursing Education

Education and training continued throughout the year under strict adherence to the hand hygiene policy, social distancing and the use of personal protective equipment. This was a testament to the team of passionate and supportive midwives, dedicated to different and diverse education programmes (mandatory education and skills and drills). In the Delivery Suite, three staff undertook the high dependency unit (HDU) programme and 68% of staff trained in suturing with a further ten midwives in training. The education toolboxes continued in Delivery Suite and the maternity wards, focusing on maternal and neonatal emergencies with support from the multidisciplinary team (MDT).

The Maternity Care Metrics commenced in St. Monica's Ward and Our Lady's Ward with the support of the ward level CMM2s and the CSFs. This enabled the collection of; data regarding key performance indicators in midwifery care and monthly audits. Toolbox sessions on sepsis and documentation continued. Two CMM2s commenced a team leadership programme in Tallaght University Hospital. The CMM1 in Our Lady's Ward was selected to participate in the National Clinical Leadership Centre, ONMSD Florence Nightingale Challenge Programme. This is a very prestigious initiative and will be of immense benefit to midwifery and nursing staff. The CMM2 in parent education is a member of the the National Forum for the Development of Antenatal Education with the ONMSD and the Nursing and Midwifery Planning and Development Unit (NMPDU). The CMSs in Bereavement were invited to participate in a Children's Health Ireland programme, 'Care of Children with Life Limiting Conditions Level B', in 2021. The NWIHP also invited our CMSs in Bereavement to be part of the National Maternity Bereavement Survey. Our cAMP in Models of Care has been asked to join the National Joint Working Group looking at sharing the learning around hypoxic ischaemic encephalopathy.

In the Perioperative Department, the CNM2 completed a 12-week leadership programme, one staff nurse completed a perioperative diploma course and two staff completed a course on theatre skills. The CSF continued to orientate new staff and support their education requirements. The CNM2, Women's Health Unit, commenced the RCSI cervical screening training module.

The MDT in the NICU and Special Care Baby Unit (SCBU) completed simulation and training for Project 23. Six transfers have been successfully completed to date. The second draft of Emergency Evacuation Plan was completed and MDT drills were conducted in the NICU. Four staff members commenced the Postgraduate Diploma in Neonatal Intensive Care, six staff completed Level 1 Principles and three staff commenced Level 2 of The Family and Infant Neurodevelopmental Education (FINE).

Approval and funding from the NMPDU was secured for 34 midwives and nurses to continue and/or commence study for a; Diploma, Postgraduate Diploma, MSc, High Dependency Maternity Care module or Internationally Board Certified Lactation Consultant (IBCLC) Lactation Course. This sponsorship totalled €151,364. This financial support is vital for continued education enabling our midwives and nurses to provide evidenced based care to all women and babies in the CWIUH.

We are forming close links with TCD to form a Research Collaboration Team and are in the process of developing a Coombe Research Team to support staff midwives and nurses who are undertaking MSc and Postgraduate Diploma programmes since September 2020. The Practice Development Coordinator and cAMP in Models of Care, Professor Smith (TCD) and Dr. O'Malley have commenced a study entitled '*COVID-19 clinical and experiential outcomes: a before and after audit with an alongside qualitative study'.*

Student midwives returned to clinical practice supported and closely supervised by the allocation officer and the PDD. Very sincere thanks for all the hard work behind the scenes to ensure that the students returned to clinical practice safely. The student midwives were delighted to return to clinical practice.

Quality Improvement and Risk

The results of the National Maternity Patient Experience Survey, undertaken in the 19 maternity units in October 2019, were published in 2020. The response rate from 616 women who gave birth in the CWIUH was 48%. The CWIUH scored an overall satisfaction rate of 94%, which was 4% higher than the national average. The CWIUH scored the highest national satisfaction rate with enabling *skin-to-skin contact* between mother/father and baby immediately following the birth, and *for providing emotional support in the neonatal unit*.

The Parent Education Department designed and digitally recorded a new enhanced suite of antenatal educational videos. These are available to all women and partners on the CWIUH website. This initiative was in response to the COVID-19 pandemic and the cessation of antenatal classes. The recorded videos were an additional resource to interactive virtual classes. The development of all videos was in line with the recommendations from the recently launched National Standards of Antenatal Education in Ireland (2020). The facilitation of antenatal education includes parent education, physiotherapy, infant feeding, perioperative medicine and anaesthesia and dietetics. A digitally recorded version of the 'Birth Dynamics' programme has been completed and is available to all women and their partners on the CWIUH website. A comprehensive programme of education is available to women. This extensive programme of education will empower women and their birthing partners throughout their birthing journey.

A Lactation Support Nurse commenced in the NICU on a six months pilot with the aim of providing support to mothers within two hours of giving birth. At three months, there were improvements; in times to women receiving assistance, in times colostrum received in NICU as well as increased maternal milk supplies. The data suggest that the expressed breast milk (EBM) supply increased along with maternal satisfaction. The NICU team presented a poster '*Impact of NICU dedicated lactation specialist in breastfeeding outcomes of preterm infants: An audit review*' at the Irish Nurses and Midwives Organisation annual midwifery and nursing conference in October. This audit demonstrated an increase in lactation support within six hours of giving birth, from 26% in 2019 to 80% in April 2020. The number of mothers who maintained an adequate supply of EBM 14 days after giving birth increased by 13%. The *SHED* concept for expressing was introduced in the NICU such that two mothers can use the facility for expressing milk. This is supported by the author Francesca Segal, whose third novel entitled '*The Mother Ship*' is about the time she spent in hospital with her prematurely born twin daughters.

Activity Data

Dublin Maternity Hospitals - Combined Clinical Data

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

1. Women who attended the CWIUH in pregnancy

	n
Women who gave birth to babies weighing ≥ 500g	7,405
Women who gave birth to babies < 500g (includes miscarriages)*	504
Gestational trophoblastic disease	7
Ectopic pregnancies	104
Total	8,020

** does not include all spontaneous miscarriages*

2. Maternal deaths, n = 2*

** late maternal death: occurring between 42 days and one year after the end of pregnancy*

3. Babies born weighing ≥ 500g

	n
Singletons	7,244
Twins*	318
Triplets	0
Quadruplets	4
Total	7,566

** excludes 2 babies weighing < 500g*

4. Obstetric outcome

	%
Spontaneous vaginal birth	53.6
Forceps	3.5
Vacuum	10.2
Caesarean section	32.8
Induction of labour	38.9

5. Perinatal deaths ≥ 500g*

	n
Antepartum deaths	19
Intrapartum deaths	3
Stillbirths	22
Early neonatal deaths	13
Late neonatal deaths	12
Congenital anomalies	19†

** excludes terminations of pregnancy and outborn babies*

† 3 stillbirths, 9 early neonatal deaths, 7 late neonatal deaths

6. Perinatal mortality rates

	Per 1,000 total births
Overall perinatal mortality rate	4.6
Perinatal mortality rate corrected for lethal congenital anomalies	3.0
Perinatal mortality rate including late neonatal deaths	6.2
Perinatal mortality rate excluding those unbooked	4.4
Corrected perinatal mortality rate excluding those unbooked	2.8
Corrected perinatal mortality rate excluding those initially booked elsewhere	2.8

7. Age

Age at delivery (years)	Nulliparous (n)	Parous (n)	Total (n)	Total (%)
< 20	95	14	109	1.5
20 - 24	371	173	544	7.3
25 - 29	600	651	1,251	16.9
30 - 34	1,128	1,475	2,603	35.2
35 - 39	671	1,646	2,317	31.3
≥ 40	159	422	581	7.8
Total	3,024	4,381	7,405	100.0

8. Parity

Parity	Nulliparous (n)	Parous (n)	Total (n)	Total (%)
Para 0	3,024	-	3,024	40.8
Para 1	-	2,681	2,681	36.2
Para 2 - 4	-	1,623	1,623	21.9
Para 5+	-	77	77	1.1
Total	3,024	4,381	7,405	100.0

9. Country of birth and nationality

Country of birth and nationality	n	%
Republic of Ireland	5,203	70.3
Britain	198	2.7
EU	847	11.4
Rest of Europe (including Russia)	158	2.1
Middle East	43	0.6
Rest of Asia	500	6.7
Americas	212	2.9
Africa	228	3.1
Australasia	14	0.2
Uncoded	2	0.0
Total	7,405	100.0

10. Birth weight

Birth weight (grams)	Nulliparous (n)	Parous (n)	Total (n)	Total (%)
500 - 999	17	25	42	0.6
1,000 - 1,499	19	36	55	0.7
1,500 - 1,999	54	50	104	1.4
2,000 - 2,499	162	161	323	4.3
2,500 - 2,999	438	536	974	12.9
3,000 - 3,499	1,079	1,466	2,545	33.6
3,500 - 3,999	993	1,524	2,517	33.3
4,000 - 4,499	298	582	880	11.6
4,500 - 4,999	32	85	117	1.5
≥ 5,000	1	8	9	0.1
Total	3,093	4,473	7,566	100.0

11. Gestational age

Gestational age (weeks)	Nulliparous (n)	Parous (n)	Total (n)	Total (%)
< 26	8	13	21	0.3
26 - 29 $^{+6 \text{ days}}$	22	36	58	0.8
30 - 33 $^{+6 \text{ days}}$	45	59	104	1.4
34 - 36 $^{+6 \text{ days}}$	195	233	428	5.6
37 - 41 $^{+6 \text{ days}}$	2,785	4,119	6,904	91.2
≥ 42	36	10	46	0.6
Uncoded	2	3	5	0.1
Total	3,093	4,473	7,566	100.0

12. Perineal injury after spontaneous vaginal birth (SVB)

Perineal injury after SVB	Nulliparous* n (%)	Parous* n (%)	Total* n (%)
Episiotomy	323 (26.7)	175 (6.3)	498 (12.5)
First degree tear	224 (18.5)	646 (23.4)	870 (21.9)
Second degree tear	506 (41.8)	799 (29.0)	1,305 (32.9)
Third degree tear	25 (2.1)	21 (0.8)	46 (1.2)
Fourth degree tear	2 (0.2)	0 (0.0)	2 (0.0)
Lacerations	707 (58.4)	1,147 (41.6)	1,854 (46.7)
Intact	70 (5.8)	713 (25.8)	783 (19.7)
Total SVB	1,210	2,759	3,969

** may be recorded in more than one category*

13. Third degree tears

Third degree tears	Nulliparous (n)	Parous (n)	Total* (n)	Total* (%)
Spontaneous	25	21	46	52.9
Associated with episiotomy	29	3	32	36.8
Associated with forceps	16	2	18	20.7
Associated with vacuum	17	3	20	23.0
Associated with vacuum and forceps	3	0	3	3.4
Associated with OP† position	6	2	8	9.2
Total third degree tears	61	26	87	-

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

† OP; occipito-posterior position

14. Perinatal mortality in normally formed stillborn infants

Classification	Nulliparous (n)	Parous (n)	Total (n)
Placental abruption	0	3	3
Cord accident	0	4	4
Cord pathology	0	2	2
Intrauterine growth restriction	1	1	2
Prematurity	0	2	2
Pre-eclampsia	0	1	1
Awaiting coroner's report	1	2	3
Unexplained	1	1	2
Total	3	16	19

15. Perinatal deaths in infants with congenital anomalies*

Classification	Nulliparous (n)	Parous (n)	Total (n)
Chromosomal	1	1	2
Genetic syndromes	2	3	5
Cardiac	0	2	2
Renal	0	2	2
Hydrops fetalis (non-immune)	1	0	1
Total	4	8	12

** 3 stillbirths, 9 early neonatal deaths*

16. Early and late neonatal deaths ≥ 500g*

Classification	Nulliparous (n)	Parous (n)	Total (n)
Congenital	5	11	16
Extreme prematurity/sepsis	0	2	2
Extreme prematurity/necrotising enterocolitis	2	0	2
Extreme prematurity/intraventricular haemorrhage	1	0	1
Extreme prematurity/born before arrival	0	1	1
Hypoxic ischaemic encephalopathy	1	0	1
Other	1	0	1
Awaiting coroner's report	1	0	1
Total	11	14	25

** 13 early neonatal deaths, 12 late neonatal deaths*

17. Overall perinatal autopsy rate - 64%

18. Hypoxic ischaemic encephalopathy (Grade II and III) Inborn, n = 8

19. Severe maternal morbidity (n = 43)

Severe maternal morbidity	Nulliparous (n)	Parous (n)	Total* (n)
Major obstetric haemorrhage	9	24	33
Renal or liver dysfunction	1	0	1
Pulmonary embolism	0	1	1
Pulmonary oedema	2	1	3
Respiratory dysfunction	1	0	1
Septicaemic shock	0	1	1
Sickle cell crisis	0	1	1
Uterine rupture	0	1	1
Other (ovarian vein thrombosis)	0	1	1
Intensive care unit admission	2	2	4 (4)
Peripartum hysterectomy	0	3	3 (3)

* *numbers followed by a number in brackets indicate that the woman is already included in another category*


Purair 750

Obstetrics and Midwifery

General Obstetric Report - Medical Report

In line with national trends, the number of women giving birth at the Coombe Women and Infants University Hospital (CWIUH) has decreased over time from 8,632 in 2014 to 7,405 in 2020 (table 1.1.1). In 2020, 7,566 babies weighing ≥ 500g were born at the CWIUH (appendix one). However, the demographic characteristics of women attending the CWIUH in pregnancy changed between 2014 and 2020 (tables 1.1.2, 1.1.3 and 1.1.4). Women born outside of the EU and Britain comprised 12.5% of the booking obstetric population in 2014, compared with 15.7% in 2020 (table 1.1.2). In 2020, only 45.0% of women had a healthy body mass index (BMI) at booking compared with 52.5% in 2014 (table 1.1.3). The proportion of nulliparous women at booking was 38.6% in 2014, this peaked at 42.0% in 2019 and was 40.4% in 2020 (table 1.3.1). In 2020, 7.8% of women were ≥ 40 years of age when they gave birth compared with 6.3% in 2014 (appendix one). At the time of giving birth, 78.5% of nulliparous women were public patients in 2020 compared with 74.7% in 2014 (appendix one). Similarly, 78.3% of parous women were public patients in 2020 compared with 73.7% in 2014 (appendix one).

The rates of primary postpartum haemorrhage (1^0 PPH) associated with mode of birth are presented in Table 1.1.12. The overall 1^0 PPH was 22.7% in 2020 compared with 14.6% in 2014. The rate of 1^0 PPH was; 9.0% in women who had spontaneous vaginal birth (SVB), 30.8% in women who had a forceps delivery, 19.8% in women who had a vacuum delivery and 45.1% in women who had a Caesarean section (table 1.1.12). In 2017, a standardised method of measuring blood loss was implemented in the CWIUH. This replaced the visual estimation of blood loss which is still used by most maternity units in Ireland. This change in practice may explain the relatively high rate of 1^0 PPH in the CWIUH. The rate of 1^0 PPH increased from 18.0% in 2016 to 21.9% in 2017, and has remained above 21% since then. Audit of 1^0 PPH rates in the CWIUH is ongoing. Fiona Noonan (CMM2) has been appointed as the local PPH champion to lead the CWIUH multidisciplinary team in the National Women and Infants Health Programme PPH Quality Improvement Initiative (QII).

In 2020, the overall perinatal mortality rate (PMR) was 4.6 per 1,000 total births (appendix one). The corrected PMR was 3.0 per 1,000 total births. The corrected PMR excluding women initially booked elsewhere was 2.8 per 1,000 total births. The adjusted PMR rate in normally formed babies ≥ 34 weeks' gestation and weighing ≥ 2.5kg was 1.3 per 1,000 (appendix one).

Table 1.1.1 Women who attended the CWIUH in pregnancy

	2014	2015	2016	2017	2018	2019	2020
Women who booked (n)	9,333	8,933	8,647	8,653	8,608	8,284	7,916
Women who gave birth to babies ≥ 500g (n)	8,632	8,220	8,233	7,975	8,154	7,746	7,405

Table 1.1.2 Women's profile at booking - general demographic factors

	2014	2015	2016	2017	2018	2019	2020	n
Born in Republic of Ireland (%)	71.5	69.5	68.9	70.1	69.1	68.4	70.9	5,614
Born in rest of EU (%)	13.6	14.9	15.4	13.1	12.7	12.4	10.5	831
Born in Britain (%)	2.4	2.9	2.6	2.8	3.0	2.8	2.8	226
Born outside EU and Britain (%)	12.5	12.6	12.9	13.9	15.1	16.3	15.7	1.5
Country of birth unknown (%)	0.0	0.1	0.2	0.1	0.1	0.1	0.1	4
Resident in Dublin (%)	64.6	63.7	63.3	62.6	63.0	62.2	62.4	4,940
< 18 years (%)	0.5	0.5	0.6	0.3	0.3	0.3	0.4	28
≥ 40 years (%)	6.3	6.4	6.9	7.2	7.3	7.5	8.0	633
Unemployed (%)	23.0	24.3	21.5	20.5	19.5	18.4	17.2	1,361
Communication difficulties reported at booking (%)	6.4	6.9	5.7	6.1	5.1	4.8	3.2	253

Table 1.1.3 Women's profile at booking - general history

	2014	2015	2016	2017	2018	2019	2020	n
BMI underweight: < 18.5 kg/m^2 (%)	2.0	2.0	1.6	1.7	1.6	1.4	1.4	110
BMI healthy: 18.5 - 24.9 kg/m^2 (%)	52.5	51.6	50.7	49.3	48.1	47.1	45.0	3,559
BMI overweight: 25 - 29.9 kg/m^2 (%)	26.8	29.2	29.3	29.7	30.3	31.0	29.7	2,352
BMI obese class 1: 30 - 34.9 kg/m^2 (%)	9.9	10.8	11.9	12.3	12.7	13.0	13.0	1,027
BMI obese class 2: 35 - 39.9 kg/m^2 (%)	3.9	4.2	4.4	4.5	4.9	4.9	4.6	368
BMI obese class 3: ≥ 40 kg/m^2 (%)	1.5	1.7	1.8	2.3	2.1	2.4	2.4	192
Unrecorded (%)	3.5	0.4	0.2	0.2	0.3	0.2	3.9	308
Para 0 (%)	38.6	38.9	40.7	41.1	41.8	42.0	40.4	3,196
Para 1 - 4 (%)	60.0	59.9	57.8	57.9	57.0	56.9	58.5	4,630
Para 5+ (%)	1.4	1.2	1.4	1.0	1.2	1.1	1.1	90
Unplanned pregnancy (%)	27.7	28.9	27.6	26.6	26.9	25.7	24.5	1,940
No preconceptual folic acid (%)	52.6	54.1	52.9	49.6	51.4	52.0	50.0	3,956
Current smoker (%)	10.5	11.1	10.0	9.4	9.5	8.9	8.0	637
Current alcohol consumption (%)	1.5	1.1	1.0	0.7	0.7	0.5	0.3	25
Taking illicit drugs/methadone (%)	0.5	0.3	0.2	0.3	0.2	0.2	0.2	15
Illicit drugs/methadone ever (%)	8.3	8.2	8.0	7.5	7.8	7.9	7.6	601
Gave history of domestic violence (%)	1.0	1.0	0.9	0.9	1.1	1.0	1.0	78
Cervical smear never performed (%)	18.7	19.9	19.1	19.2	20.0	19.9	19.4	1,535
History of psychiatric/ psychological illness/disorder (%)	16.6	15.5	16.7	18.5	21.1	21.0	23.4	1,849
History of postnatal depression (%)	4.7	4.5	4.4	4.6	4.1	4.1	4.5	359
Previous perinatal death (%)	2.3	1.6	1.5	1.7	1.5	1.5	1.5	122
Previous infant < 2500g (%)	6.5	5.2	4.7	5.9	4.9	5.4	5.0	393
Previous infant < 34 weeks (%)	2.7	2.4	2.1	2.6	2.1	2.3	2.1	168
One previous Caesarean section (%)	13.8	12.9	12.7	12.7	12.7	13.5	14.1	1,117
≥ Two previous Caesarean sections (%)	4.0	4.0	4.0	4.2	4.6	3.9	4.4	349

Table 1.1.4 Women's profile in index pregnancy (women who gave birth to babies ≥ 500g)

	2014	2015	2016	2017	2018	2019	2020	n
Pregnancy induced hypertension (%)	7.5	6.7	7.3	6.8	6.8	6.2	6.1	454
Pre-eclampsia (%)	3.3	2.9	2.8	2.7	2.3	2.6	2.2	162
Eclampsia (%)	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0
Type 1 diabetes mellitus (%)	0.3	0.4	0.3	0.4	0.4	0.4	0.2	18
Type 2 diabetes mellitus (%)	0.2	0.3	0.2	0.3	0.3	0.2	0.2	16
Gestational diabetes mellitus (%)	7.8	7.8	8.4	9.7	10.4	12.0	8.7	646
Placenta praevia (%)	0.4	0.5	0.4	0.4	0.6	0.4	0.5	39
Placental abruption (%)	0.2	0.4	0.2	0.1	0.4	0.3	0.3	22
Antepartum haemorrhage (%)	6.6	5.3	5.7	5.3	4.8	4.2	4.2	313
Haemolytic antibodies (%)	0.5	0.5	0.6	0.4	0.6	0.4	0.6	41
Hepatitis C (%)	0.5	0.5	0.4	0.3	0.2	0.2	0.1	5
Hepatitis B (%)	0.4	0.5	0.4	0.2	0.3	0.2	0.3	20
HIV (%)	0.2	0.3	0.2	0.2	0.1	0.2	0.1	10
Sickle cell trait (%)	0.3	0.3	0.4	0.2	0.4	0.3	0.3	19
Sickle cell anaemia (%)	0.1	0.02	0.05	0.03	0.05	0.1	0.1	5
Thalassaemia trait (%)	0.3	0.5	0.3	0.4	0.3	0.2	0.3	19
Delivery < 28 weeks (%)	0.5	0.5	0.5	0.5	0.5	0.7	0.5	36
Delivery < 34 weeks (%)	2.2	2.2	2.1	2.2	2.1	2.3	2.1	154
Delivery < 38 weeks (%)	13.6	14.3	13.9	14.5	15.5	16.7	15.4	1,139
Delivery < 1,500g (%)	1.2	1.3	1.3	1.4	1.1	1.4	1.1	85
Delivery < 2,500g (%)	6.4	7.2	6.1	6.6	6.6	6.7	6.2	459
Unbooked women (%)	1.6	0.9	0.7	1.0	1.1	1.1	1.0	77
Caesarean section (%)	28.7	29.3	31.3	31.8	33.8	33.8	32.8	2,432
Admissions to HDU (%)	2.0	2.6	2.0	2.2	2.0	2.2	2.0	147
Severe maternal morbidity (%)	0.5	0.4	0.8	0.7	0.8	1.0	0.6	43
Maternal deaths (n)	1	1	0	0	1	0	0	0

Table 1.1.5 Labour

	2014	2015	2016	2017	2018	2019	2020	n
Induction of labour (%)	30.9	31.7	33.9	34.8	37.0	38.2	38.9	2,877
Epidural analgesia (%)	40.9	42.5	37.8	39.7	40.6	40.8	41.7	2,085
Prolonged labour (%)	3.7	3.9	3.4	3.4	2.9	3.5	4.0	295
Fetal blood sampling (%)	8.8	9.5	10.5	8.8	7.2	5.5	4.4	329

Table 1.1.6 Labour by parity, 2020

	Nulliparous, n (%)	Multiparous, n (%)	Total, n (%)
Induction of labour	1,426 (47.2)	1,451 (33.1)	2,877 (38.9)
Epidural analgesia in labour	1,782 (58.9)	1,303 (29.7)	3,085 (41.7)
Prolonged labour	253 (8.4)	42 (1.0)	295 (4.0)

Table 1.1.7 Mode of delivery by parity

	2014	2015	2016	2017	2018	2019	2020
Nulliparous							
Spontaneous vaginal birth (%)	41.1	40.8	38.9	37.8	36.9	39.2	40.0
Forceps (%)	11.2	13.0	11.5	11.0	9.7	8.4	7.4
Vacuum (%)	18.2	17.7	16.9	17.6	18.1	14.3	19.4
Caesarean section (%)	29.7	28.4	33.2	34.0	35.7	34.4	33.4
Parous							
Spontaneous vaginal birth (%)	67.1	65.9	64.9	64.3	62.7	63.2	63.0
Forceps (%)	1.3	1.4	1.2	1.4	1.2	1.1	1.0
Vacuum (%)	3.6	3.2	3.9	4.1	3.8	2.6	3.9
Caesarean section (%)	28.1	29.8	30.0	30.3	32.4	33.3	32.4
Total							
Spontaneous vaginal birth (%)	57.0	56.2	54.5	53.4	51.8	54.3	53.6
Forceps (%)	5.2	5.8	5.3	5.3	4.8	4.3	3.5
Vacuum (%)	9.3	9.0	9.1	9.6	9.8	7.8	10.2
Caesarean section (%)	28.7	29.3	31.3	31.8	33.8	33.8	32.8

Table 1.1.8 Episiotomy

	2014	2015	2016	2017	2018	2019	2020
Nulliparous (%)	27.8	29.6	32.0	34.5	33.8	32.2	34.6
Parous (%)	3.9	4.0	4.4	6.4	6.4	5.2	6.9
Total (%)	13.2	13.9	15.5	17.9	17.9	17.2	18.2

Table 1.1.9 Obstetric anal sphincter injuries (OASIS), 2020

OASIS	Nulliparous, n (%)	Parous, n (%)	Total, n (%)
Third degree tears (total deliveries)	61 (2.01)	26 (0.59)	87 (1.17)
Third degree tears (vaginal deliveries)	61 (3.03)	26 (0.87)	87 (1.74)
Fourth degree tears (total deliveries)	5 (0.16)	0 (0.00)	5 (0.07)
Fourth degree tears (vaginal deliveries)	5 (0.24)	0 (0.00)	5 (0.10)
OASIS (total deliveries)	66 (2.18)	26 (0.59)	92 (1.24)
OASIS (vaginal deliveries)	66 (3.27)	26 (0.87)	92 (1.84)

Table 1.1.10 Shoulder dystocia

Shoulder dystocia	2014	2015	2016	2017	2018	2019	2020	n
%	0.6	0.7	0.6	0.6	0.8	0.7	1.0	73

Table 1.1.11 Shoulder dystocia by parity and birthweight, 2020

Parity	Nulliparous	Multiparous	Total
(%)	1.4	0.7	1.0
Birthweight	Mothers of babies < 4kg	Mothers of babies ≥ 4kg	Total
(%)	0.6	3.2	1.0

Table 1.1.12 Primary postpartum haemorrhage (1˚ PPH)

	2014	2015	2016	2017	2018	2019	2020	n
Total 1˚ PPH (%)	14.6	13.7	18.0	21.9	21.6	21.8	22.7	1,681
Spontaneous labour								
Nulliparous (%)	12.0	12.0	15.1	18.2	18.2	16.7	18.2	212
Parous (%)	7.4	8.3	8.4	8.8	9.4	9.7	10.3	175
Total (%)	9.1	9.6	11.0	12.6	13.1	12.6	13.5	387
Induced labour								
Nulliparous (%)	22.5	20.1	25.3	30.8	29.9	30.7	29.7	423
Parous (%)	9.6	10.9	10.9	12.1	13.3	12.2	12.4	189
Total (%)	16.0	15.3	18.2	21.5	21.9	21.5	21.0	603
Spontaneous vaginal birth								
Nulliparous (%)	7.9	7.5	10.2	11.5	11.9	12.3	11.6	140
Parous (%)	5.7	6.9	6.3	7.4	7.7	8.0	7.9	218
Total (%)	6.3	7.1	7.4	8.6	9.0	9.4	9.0	358
Forceps								
Nulliparous (%)	18.6	18.2	19.4	29.6	31.2	28.7	30.5	68
Parous (%)	17.6	22.9	21.3	16.4	15.3	16.7	32.4	12
Total (%)	18.4	18.9	19.6	27.5	28.8	26.9	30.8	80
Vacuum								
Nulliparous (%)	10.9	8.3	13.3	16.7	13.4	20.7	21.1	124
Parous (%)	5.3	8.7	8.7	10.4	11.0	5.2	15.2	26
Total (%)	9.6	8.4	12.1	15.2	12.9	17.7	19.8	150
Caesarean section								
Nulliparous (%)	38.2	33.4	43.2	50.0	45.6	48.0	49.8	504
Parous (%)	27.7	23.1	34.1	41.8	38.5	38.0	41.8	594
Total (%)	31.9	26.9	38.0	45.3	42.8	42.2	45.1	1,098
Caesarean section by priority status								
Elective (%)	26.5	19.6	32.7	40.9	36.5	36.9	39.2	536
Emergency (%)	36.9	35.4	43.7	50.1	49.3	48.3	52.7	562
Total (%)	31.9	26.9	38.0	45.3	42.8	42.2	45.1	1,098
Twin pregnancy								
Nulliparous (%)	50.0	46.0	50.6	60.5	58.1	51.8	70.4	50
Parous (%)	43.6	23.5	43.3	39.8	40.2	39.8	41.6	37
Total (%)	56.4	33.1	46.9	48.9	49.1	45.7	54.4	87

Table 1.1.13 Manual removal of retained placenta and 1˚ PPH

	2014	2015	2016	2017	2018	2019	2020	n
Manual removal of retained placenta (%)	1.1	1.3	1.2	1.0	1.1	1.3	1.2	86
Manual removal of retained placenta and 1˚ PPH (%)	62.8	53.7	67.4	62.3	70.0	65.0	70.9	61

Table 1.1.14 Maternal transfusion

	2014	2015	2016	2017	2018	2019	2020	n
Mothers who received a transfusion (%)	2.0	1.9	2.4	2.8	3.0	2.1	2.8	207
Mothers who received ≥ 5 units of RCC (%)	0.05	0.05	0.06	0.1	0.1	0.1	0.2	14

Table 1.1.15 Caesarean section - singleton breech presentation

	2014	2015	2016	2017	2018	2019	2020
Nulliparous (n)	151	144	180	166	185	184	159
CS rate (%)	98.7	97.9	93.9	94.6	97.3	94.0	97.5
Parous (n)	167	174	167	157	160	175	160
CS rate (%)	95.2	91.9	91.0	93.0	92.5	92.6	92.5
Total (n)	318	318	347	323	345	359	319
CS rate (%)	96.8	94.6	92.5	93.8	95.1	93.3	95.0

Table 1.1.16 Surgical maternal morbidity

	2014	2015	2016	2017	2018	2019	2020
Classical Caesarean section (n)	3	6	2	6	8	7	9
Uterine rupture (n)	2	0	0	3	2	0	1
Peripartum hysterectomy (n)	0	2	5	3	6	5	3

Table 1.1.17 Caesarean section (CS) - Robson Ten Groups Classification, 2020

	Groups	CS	Women	Size of group	CS rate
1	Nulliparous, singleton, cephalic, ≥ 37 wks, spont. labour	101	1,049	14.2	9.6
2	Nulliparous, singleton, cephalic, ≥ 37 wks, induced labour or CS before labour	633	1,601	21.6	39.5
2a	Nulliparous, singleton, cephalic, ≥ 37 wks, induced labour	419	1,387	18.7	30.2
2b	Nulliparous, singleton, cephalic, ≥ 37 wks, CS before labour	214	214	2.9	100.0
3	Multiparous (excl. prev. CS) singleton, cephalic, ≥ 37 wks, spont. labour	10	1,376	18.6	0.7
4	Multiparous (excl. prev. CS) singleton, cephalic, ≥ 37 wks, induced labour or CS before labour	167	1,427	19.3	11.7
4a	Multiparous (excl. prev. CS), singleton, cephalic, ≥ 37 wks, induced labour	41	1,301	17.6	3.2
4b	Multiparous (excl. prev. CS), singleton, cephalic, ≥ 37 wks, CS before labour	126	126	1.7	100.0
5	Previous CS, singleton, cephalic, ≥ 37 wks	947	1,144	15.4	82.8
6	Nulliparous, singleton, breech	155	159	2.1	97.5
7	Multiparous, singleton, breech (incl. prev. CS)	148	160	2.2	92.5
8	All multiple pregnancies (incl. prev. CS)	104	161	2.2	64.6
9	Abnormal lies, singleton (incl. prev. CS)	14	14	0.2	100.0
10	Singleton, cephalic, < 37 wks (incl. prev. CS)	153	309	4.2	49.5
	Gestation uncoded	0	5	0.1	0.0
	Total	n = 2,432	n = 7,405	100.0%	32.8%

Table 1.1.18 Mode of delivery with one previous lower segment Caesarean section, 2020

Mode of delivery (women)	Para 1	Para 1+	Total
Total (n)	810	214	1,024
Elective Caesarean section, n (%)	565 (69.8)	80 (37.4)	645 (63.0)
VBAC attempted, n (%)	245 (30.2)	134 (62.6)	379 (37.0)
VBAC achieved, n (%)	*121 (49.4)*	*96 (71.6)*	*217 (57.3)*
Emergency Caesarean section, n (%)	*124 (50.6)*	*38 (28.4)*	*162 (42.7)*

Table 1.1.19 Vaginal birth with one previous lower segment Caesarean section

Parity	2014	2015	2016	2017	2018	2019	2020	n
Para 1 (%)	19.9	19.8	19.7	14.9	15.4	11.8	14.9	121
Para 1+ (%)	58.5	51.5	49.0	51.9	46.7	46.8	44.9	96
Total (%)	29.7	27.7	27.6	25.0	22.7	19.3	21.2	217

Table 1.1.20 Caesarean section rate by parity

Parity	2014	2015	2016	2017	2018	2019	2020
Nulliparous (%)	29.7	28.4	33.2	34.0	35.7	34.4	33.4
Parous (%)	28.1	29.8	30.0	30.3	32.4	33.3	32.4
Total (%)	28.7	29.3	31.3	31.8	33.8	33.8	32.8

Table 1.1.21 Neonatal outcomes

	2014	2015	2016	2017	2018	2019	2020	n
Apgar score < 7 at 5 mins (%)	0.9	0.8	0.8	0.9	0.7	0.9	0.8	56
Arterial cord pH < 7 (%)	0.5	0.4	0.5	0.5	0.4	0.4	0.5	34
Admission to SCBU/NICU ≥ 38 weeks (%)	5.5	5.0	6.7	5.1	4.9	4.4	4.8	359
Born before arrival (%)	0.3	0.3	0.3	0.4	0.3	0.4	0.4	32

Table 1.1.22 Obstetric surgical procedures in theatre

Type of surgical procedure (n)	2014	2015	2016	2017	2018	2019	2020
Lower segment CS (including tubal ligation)	2,476	2,400	2,571	2,534	2,746	2,611	2,423
Classical CS (including tubal ligation)	3	6	5	6	8	7	11*
Peripartum hysterectomy	0	2	4	1	6	0	3
Evacuation of retained products of conception (ERPC)	586	596	544	538	509	510	482
ERPC postpartum	19	23	19	14	26	22	24
Cervical cerclage	61	60	36	41	59	65	52
Postpartum perineal repair	196	215	211	166	165	133	187
Manual removal of retained placenta	94	90	90	68	64	77	74
Instrumental vaginal delivery	89	83	91	80	69	73	51
Other	32	32	33	33	22	48	48
Total (n)	3,556	3,507	3,604	3,481	3,674	3,546	3,355

* *includes 2 babies (singletons) weighing < 500g born by Caesarean section*

Addiction and Infectious Diseases

ADDICTION SERVICE

In 2020, 36 women linked with the Drug Liaison Midwife (DLM) and attended the service, 28 of whom gave birth in 2020. Nine additional women who linked with the DLM were non-opioid dependent but using other drugs, chose to remain on other obstetric teams. Six women declined follow up with the DLM service after phone and/or face-to-face consultation. The majority of these women gave a history of cannabis use.

Eighteen women were already linked to an opioid substitution treatment (OST) programme and prescribed methadone. In addition, five women presented who were abusing heroin and/or other drugs and not in treatment. They were started on an OST outpatient programme during their pregnancies. One woman declined this programme. One woman completed methadone detox before pregnancy and attended our service for support during pregnancy.

The DLM was linked in with 28 women who self-reported use of cocaine, alcohol, unprescribed benzodiazepine and/or cannabis in pregnancy and were not opiate dependent. Seven women were admitted to residential drug stabilisation treatment programmes within the Community Addiction Service.

Fifteen opiate dependent women delivered 16 liveborn babies. Six women delivered seven babies at less than 37 weeks' gestation. Fourteen babies were admitted to NICU/SCBU (one of whom was transferred to another hospital). They had a mean length of stay of 15 days (range 1 to 94 days). Four babies needed pharmacological treatment for neonatal abstinence syndrome (NAS). These babies had a mean length of stay in the NICU/SCBU of 42 days (range 11 to 94 days).

Two of the 16 non-opioid dependent women delivered at less than 37 weeks' gestation. Five babies were admitted to the NICU/SCBU. They had mean length of stay of 12 days (range one to 31 days). None of these babies required pharmacological treatment for NAS.

There continued to be a decrease in the number of women prescribed OST who presented to the CWIUH. However, within this cohort there was polydrug use including heroin, benzodiazepine abuse, cocaine particularly crack, and cannabis. Almost 50% (12/45) of women linked to the DLM were staying in homeless accommodation.

The senior medical social worker (MSW) meets with all women who attend the CWIUH with current drug or alcohol addictions. This facilitates a focused and specialised service for these women. The senior MSW is present at the weekly antenatal clinic. This promotes the role of the senior MSW within the multidisciplinary team (MDT) and increases women's accessibility to the MSW service. The senior MSW provides ongoing interdisciplinary and inter-agency education and training on working with women experiencing a current addiction and highlights trends of social complexities experienced by women in addiction which in turn informs practice.

INFECTIOUS DISEASES (HEPATITIS B AND C, HIV, GENITAL HSV AND TREPONEMA PALLIDUM)

In 2020, 285 women attended the infectious diseases service at the CWIUH, the majority of whom were provided with full antenatal care and postnatal follow up. In addition, a number of antenatal and gynaecology patients attended for consultation and follow up regarding positive sexually transmitted infection (STI) screening.

Fourteen women who booked for antenatal care in 2020 tested positive for hepatitis B virus, two of whom were newly diagnosed on antenatal screening. Seven women were born in Eastern Europe, four in Africa, two in Asia and one in Europe. Eight additional women who showed evidence of resolved infection attended the service. One woman had an intrauterine fetal death.

Thirteen antenatal women tested positive for hepatitis C, with one new diagnosis of reinfection (having previously been PCR [polymerase chain reaction] negative). Of the 13, one woman was PCR positive and 12 were PCR negative, the majority of whom had been successfully treated. Eleven women were born in Ireland, one was born in Eastern Europe and one was born in South East Asia. One Irish born woman became reinfected and she was linked in with the Department of Hepatology, St James's Hospital for treatment. The decline in the number of women who are hepatitis C PCR positive attending, is directly attributable to the recent successful roll out of the National Hepatitis C Treatment Programme in Ireland.

Sixteen antenatal women tested positive for HIV (human immunodeficiency virus infection), with no new diagnoses. Nine women originated from Africa, four from Ireland and the remaining three from Europe and South America. Three women were coinfected with genital herpes and one woman was coinfected with hepatitis C. One woman miscarried. Three women had preterm births at 24, 26 and 30 weeks' gestation (one of whom died). One baby died from terminal congenital cardiac disease at 12 days of age.

Ninety-one antenatal women with a history of or outbreak in pregnancy of genital herpes simplex virus (HSV) were cared for. Thirty-three women had a positive PCR test or were antibody positive for HSV-1. Forty-one women had a positive PCR test or were antibody positive for HSV-2. Samples from 17 women could not be typed.

Eleven women were confirmed positive for Treponema pallidum. Four of these women required treatment in pregnancy as new diagnoses. Two of the women originated from Eastern Europe, one from Ireland and one from India. The remaining women had been appropriately treated in the past. Seventy-eight antenatal women required follow up and/or repeat testing due to indeterminate serology which was attributed to cross-reactivity in pregnancy.

No mother-to-child transmission of an infectious disease occurred in 2020.

The 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 and care-planning, specialised counselling as well as disclosure and support services. Women are provided with a specific pathway into specialist ongoing care, ensuring treatment and monitoring thereby often preventing disease progression, mother-to-child transmission and significantly reducing future healthcare costs in this high risk cohort.

A shared care approach is taken for a number of our high risk women. Under the managed clinical care network, they can now attend the Midland Regional Hospital Portlaoise (MRHP) and GP services for part of their care. Women also attend for shared care with maternity services in the Midland Regional Hospital Mullingar, Portiuncula University Hospital and Wexford General Hospital.

Specialist services were also provided for additional women with high risk pregnancies e.g. loss in pregnancy, sero-discordant couples, current STI and Tuberculosis. Couples continued to be seen in our conception clinic, which provides fertility investigations for both seropositive and serodiscordant couples attempting to optimise conception, while safeguarding the risk of transmission of HIV.

Prof. Fiona Mulcahy and Sinead Murphy, CNS retired in 2020. Sinead relocated to the Mid-West and is setting up a GUIDE service there.

Dr. Aisling Loy and Emma Flynn joined the GUIDE team. Orla Cunningham was accepted onto the inaugural MSc Midwifery Advanced Practice in TCD and continues to work towards being recognised as an Advanced Midwife Practitioner.

Adult Outpatients Department

The staff in the adult outpatients department (OPD) facilitate public and semi-private antenatal clinics (excluding the diabetic service) and public gynaecology clinics (excluding the colposcopy clinic). The adult OPD houses the emergency room (ER) which cares for women up to 24 weeks' gestation and for postnatal and gynaecology patients. The early pregnancy assessment unit (EPAU) is also located in the adult OPD. Specialist outpatient services and clinics are reported separately in the Annual Report.

Table 1.3.1 Attendances at clinics in the adult OPD*

Type of appointment	Attendances (n)
Antenatal booking history appointments (public and semi-private)	4,990
Consultant led antenatal appointments (public and semi-private)	26,751
Specialist consultant led antenatal appointments (including addiction and infectious diseases clinic, fetal cardiac clinic, preterm birth prevention clinic, multiple birth clinic)	2,414
Hospital based midwife appointments (midwives' antenatal clinics and routine anti-D prophylaxis clinic)	3,288
Emergency room (ER)	7,663
Total	45,106

* *excluding gynaecology clinics*

A full antenatal service was maintained throughout the year despite the considerable challenges posed by the COVID-19 pandemic. Table 1.3.1 shows the types of appointments and attendances in 2020. The ability of all staff to adapt to an ever-changing work environment, to cope with frequent staff shortages and to prioritise patient safety must be acknowledged.

The refurbishment of the adult OPD was completed in June. The ongoing work added to the disruption caused by the pandemic. However, the resulting improvements to the adult OPD are beneficial to women and staff.

The 'Solace Room' was completed in July. It was partially funded by a Quality Improvement Award from the Irish Hospice Foundation. This room provides a quiet space for women who have received sad news in the EPAU, the ER or the antenatal clinic.

A new swabbing programme to detect multi-drug resistant organisms was implemented in April. All antenatal women are risk assessed by a midwife at the booking visit and swabbed as required. Approval was secured for the creation of a clinical midwife manager post in the adult OPD to plan, implement and audit the roll out of the new targeted anti-D service.

Combined Service for Diabetes Mellitus

In 2020, 25 women with Type 1 diabetes mellitus (DM) booked at the CWIUH, seven of whom had spontaneous miscarriages (18 women gave birth in the CWIUH). Eighteen women with Type 2 DM booked at the CWIUH, two of whom had spontaneous miscarriages (16 women gave birth in the CWIUH). Table 1.4.1 presents obstetric, maternal and neonatal outcomes. Macrosomia was suspected in one woman with Type 1 DM. The baby was born by elective Caesarean section (CS) and weighed > 5.0kg. Labour was induced in four women with Type 1 DM, all of whom had a spontaneous vaginal birth. Labour was induced in five women with Type 2 DM, three of whom had an emergency CS and two of whom had a spontaneous vaginal birth. Two women with Type 2 DM had an emergency CS prior to labour. The total CS rate in women with Type 1 DM was 66.7% (all elective) and it was 81.3% in women with Type 2 DM (table 1.4.1).

There were no congenital anomalies, intrauterine deaths or shoulder dystocia in either of these two groups. Babies of four mothers with Type 1 DM and babies of three mothers with Type 2 DM were admitted to NICU (table 1.4.1).

Table 1.4.1 Type 1 and Type 2 diabetes mellitus

Type of diabetes mellitus	Type 1	Type 2
Obstetric data	n = 25	n = 18
Women booked in CWIUH	25	18
Spontaneous miscarriages	7	2
Women delivered in CWIUH	18	16
Babies born in CWIUH	20	16
Twins	2	0
Parous	14/18 (77.8%)	10/16 (62.5%)
Delivered < 37 weeks' gestation	6/18 (33.3%)	4/16 (25.0%)
Intrauterine fetal death	0	0
Maternal data	n = 25	n = 18
Age (years) (mean, sd)	31.8 ± 6.1	31.8 ± 5.3
Duration of DM (years) (mean, sd)	14.6 ± 6.8	2.2 ± 1.3
Complications of diabetes mellitus	n = 25	n = 18
Hypertension	2	5
Retinopathy	0	0
Nephropathy	1	0
Pre-eclampsia	1	0
Polycystic ovarian syndrome	0	2
Gestation at booking (weeks) (mean, sd)	8.3 ± 2.1	11.2 ± 6.4
Booking HbA1c (IFCC) (mean, sd)	54 ± 15	49 ± 15
Delivery HbA1c (IFCC) (mean, sd)	45 ± 10	38 ± 8
Booking fructosamine (mean, sd)	333 ± 53	261 ± 42
Delivery fructosamine (mean, sd)	279 ± 59	234 ± 22
Macrosomia suspected antenatally	1	0
Mode of delivery (women)	n = 18	n = 16
Elective Caesarean section	12 (66.7%)	8 (50.0%)
Spontaneous vaginal birth	6 (33.3%)	3 (18.8%)
Emergency Caesarean section	0	5 (31.2%)
Neonatal outcomes	n = 20	n = 16
Gestation at delivery (weeks) (mean, sd)	37.4 ± 2.4	36.7 ± 3.8
Birth weight (grams) (mean, sd)	3307 ± 924	2909 ± 1070
< 4,000 grams	17 (85.0%)	13 (81.3%)
4,000 - 4,499 grams	1	3
4,500 - 4,999 grams	1	0
≥ 5,000 grams	1	0
Shoulder dystocia	0	0
Congenital anomalies	0	0
NICU admission	4 (20.0%)	3 (18.9%)

In 2020, 646 women with gestational diabetes mellitus (GDM) who attended the diabetes service gave birth in the CWIUH (table 1.4.2). Fourteen women had twin pregnancies. A total, of 660 babies were born to women with GDM. Over half of the women with GDM were treated by diet alone (table 1.4.2). Table 1.4.3 presents obstetric and neonatal outcomes by treatment type. One woman, treated with diet alone, had an intrauterine fetal death.

Table 1.4.2 GDM - treatment type

GDM - treatment type	Women, n (%)
Diet alone	364 (56.4)
Metformin alone	123 (19.0)
Insulin alone	88 (13.6)
Metformin and insulin	71 (11.0)
Total	646 (100.0)

Table 1.4.3 Obstetric and neonatal outcomes

Treatment with diet alone	
Women (n)	364
Babies (n)	371
Gestation at delivery (weeks) (mean, sd)	38.7 ± 1.5
Birth weight (grams) (mean, sd)	3,343 ± 544
Suspected macrosomia (n)	21
Caesarean section, n (%)	112 (30.8%)
Shoulder dystocia (n)	5
Intrauterine fetal death (n)	1
Treatment with metformin alone	
Women (n)	123
Babies (n)	127
Gestation at delivery (weeks) (mean, sd)	36.5 ± 1
Birth weight (grams) (mean, sd)	3,248 ± 469
Macrosomia suspected antenatally (n)	9
Suspected intrauterine growth restriction (n)	13
Caesarean section, n (%)	24 (19.5%)
Shoulder dystocia (n)	1
Treatment with insulin alone	
Women (n)	88
Babies (n)	90
Gestation at delivery (weeks) (mean, sd)	38.3 ± 0.9
Birth weight (grams) (mean, sd)	3,292 ± 499
Suspected macrosomia (n)	2
Caesarean section, n (%)	13 (14.8%)
Treated with metformin and insulin	
Women (n)	71
Babies (n)	72
Gestation at delivery (weeks) (mean, sd)	38.5 ± 1.3
Birth weight (grams) (mean, sd)	3,161 ± 862
Macrosomia suspected antenatally (n)	2
Caesarean section, n (%)	13 (18.3%)

In 2020, the diabetes midwifery team identified ways to capture their workload on the integrated patient management system (IPMS). As a result, time management for both women and staff became more efficient. This integration also facilitated adherence to social distancing because women spent less time in the CWIUH. It permitted the accurate capture of data such as women attending for metformin management and women attending for insulin education. This in turn led to fewer inappropriate referrals to the diabetes service.

2020 saw a change in our management of insulin safety and education. Education now takes place on an outpatient basis, which has health economic benefits for the CWIUH and personal advantages for the women.

We would like to acknowledge the resignation of Prof. Sean Daly from our team and we wish him every success and happiness in his new venture. We would like to thank him for all his guidance and support over the years.

Community Midwife Service

In 2020, the Community Midwifery Service ran 15 antenatal clinics weekly. The service also managed one obstetric-led antenatal clinic in Naas where 1,795 women attended for follow up antenatal appointments.

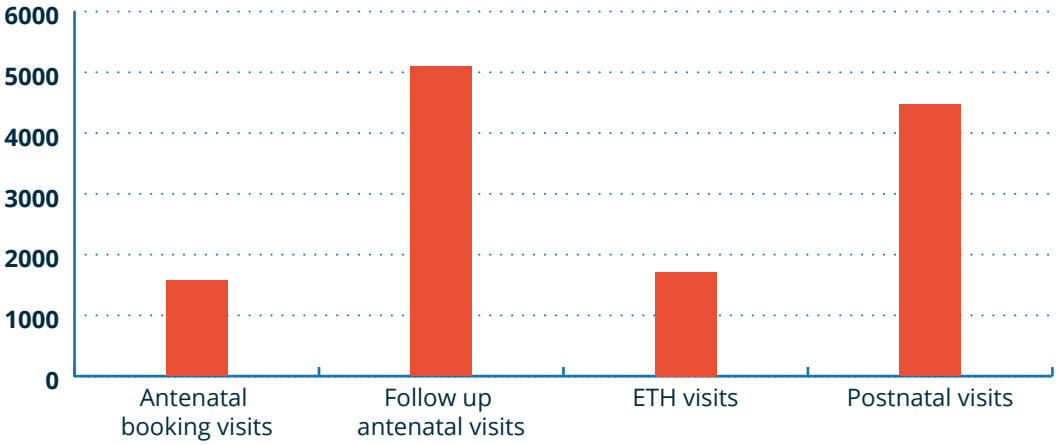
In response to COVID-19, Naas General Hospital antenatal clinics were relocated to the CWIUH and Citywest and Tallaght University Hospital antenatal clinics were relocated to Tallaght Cross Primary Care Centre. The Community Midwifery Service implemented phone consultation booking appointments and postnatal support during level five COVID-19 national restrictions.

The primary focus of the service was to maintain antenatal and early transfer home (ETH) services in line with COVID-19 restrictions while encouraging eligible women to avail of the DOMINO service. The activity of the service is presented in Figure 1.5.1.

Thirty-one percent of women who availed of the ETH service were exclusively breastfeeding on day 5 whilst another 29% of these women were combination feeding.

In 2020, 360 women booked for the DOMINO service (compared with 418 women in 2019). The spontaneous vaginal birth rate, the Caesarean section rate and the instrumental delivery rate remained stable in this cohort of women at 69%, 14% and 17%, respectively.

Figure 1.5.1 Community Midwifery Service visits



Delivery Suite

** Some of the tables referred to below are in the General Obstetric Report.*

In 2020, 7,405 women gave birth to 7,566 babies weighing ≥ 500g in the CWIUH. The spontaneous vaginal birth (SVB) rate was 53.6% in 2020 compared to 57.0% and 54.3% in 2014 and 2019, respectively (table 1.1.7). The SVB rate in nulliparous women was 40.0% in 2020 compared to 41.1% in 2014 and 36.9% in 2018 (table 1.1.7). The total instrumental birth rate was 13.7% in 2020 compared with 14.5% in 2014 (table 1.1.7). The rate of induction of labour was stable at 38.9% (38.2% in 2019) but it has increased from 30.9% in 2014 (table 1.1.5).

The rate of obstetric anal sphincter injuries (OASIS) in vaginal births was 1.84% in 2020, 2.6% in 2018 and 1.85% in 2019. The rate of OASIS by parity in 2020 is presented in Table 1.1.9. Data on the classification of third degree tears OASIS from 2016 to 2020 are presented in Figure 1.6.1. The OASIS Quality Improvement Project (QIP) team continued to have regular MDT meetings in 2020. Through a process of education and evaluation, the team have continued to maintain the reduced rate of OASIS since 2018.

The Caesarean section (CS) rate increased from 27.8% in 2014 to 32.8% in 2020 (appendix one). However, the rate in 2020 was lower, compared to the rate in 2018 and 2019 (33.8% in both years). The Robson Group 1 CS rate was stable at 9.6% in 2020 but it has decreased from 12.0% in 2018 (appendix one). The size of Robson Group 2a increased from 18.4% in 2018 to 18.7% in 2020. However, the CS rate in this group decreased from 36.8% to 30.2% during this time. The size of Robson Group 5 increased from 14.7% in 2018 to 15.4% in 2020 (table 1.1.18). The rate of elective CS in Robson Group 5 was 63.0% in 2020. It was 69.8% in women with one previous delivery and 37.4% in women with two or more previous deliveries (table 1.1.18).

Overall, vaginal birth after Caesarean section (VBAC) was achieved in 57.3% of women who attempted a VBAC in 2020. It was achieved in 49.4% of women with one previous delivery and 71.6% of women with two or more previous deliveries (table 1.1.18).

IMPACT OF COVID-19

During the pandemic 'green zones' and 'red zones' were established on the Delivery Suite. Four delivery rooms were converted into negative pressure rooms. Women who had or were suspected of having COVID-19 infection were cared for in these rooms. The theatre on Delivery Suite was designated the COVID-19 theatre.

Figure 1.6.1 Classification of OASIS with SVB

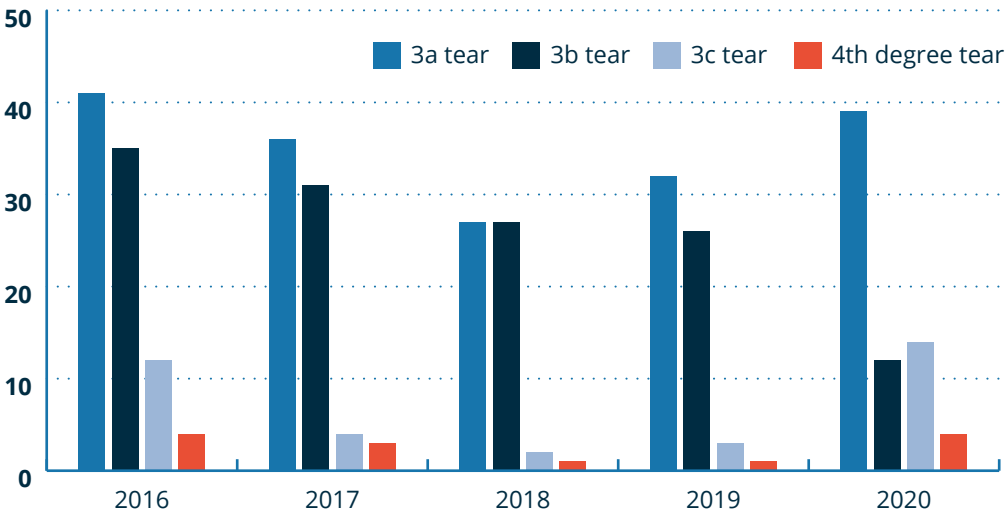
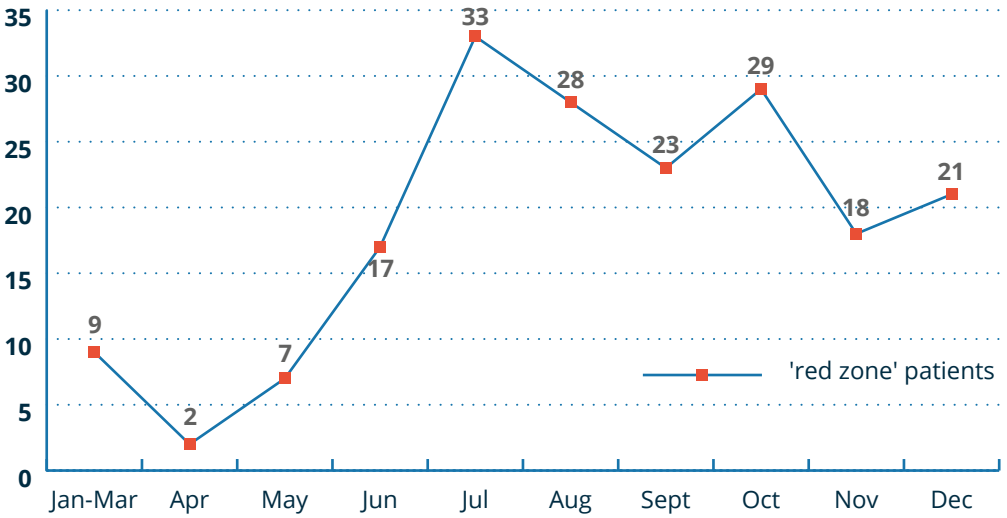


Figure 1.6.2 Number of women in the 'red zone' in Delivery Suite

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Early Pregnancy Assessment Unit

There were a total of 4,481 attendances at the Early Pregnancy Assessment Unit (EPAU) in 2020, 58.6% (2,624) of which were new attendances. Attendances included women who had more than one visit to the EPAU (table 1.7.1).

Table 1.7.1 Diagnoses in attendances at the EPAU

Diagnosis	n (%)
Ongoing pregnancy	1,088 (24.3)
Pregnancy of uncertain viability	635 (14.2)
Miscarriages	1,606 (35.8)
Pregnancy of unknown location	608 (13.6)
Ectopic pregnancy*	144 (3.2)
Gestational trophoblastic disease†	11 (0.2)
Gynaecology	389 (8.7)
Total	4,481 (100.0)

** excludes women admitted directly to theatre from the emergency room and women who were diagnosed outside normal working hours*

† includes women who had consultations because of suspected gestational trophoblastic disease

Table 1.7.2 Management of women with delayed and incomplete miscarriage*

Type of management	n
Medical management	240
Surgical management	221
Conservative management	20
Total	481

** excludes women with complete miscarriage*

The use of mifepristone in the medical management of women with miscarriage was introduced in 2020. The protocol for the follow up of women was streamlined which resulted in a reduction in the number of follow up visits required. The EPAU provided training in transvaginal early pregnancy ultrasound and facilitated four midwives to complete the University College Dublin (UCD) EPAU Module and one midwife to complete a Masters in Ultrasound.

Fetal Cardiology

The Department of Fetal Cardiology continued to provide rapid access and expert opinion to women whose pregnancies were complicated by congenital heart disease. In total, 190 women attended the fetal cardiac clinic. Structural cardiac anomalies were detected in 91 pregnancies and an abnormality of cardiac rhythm was detected in a further five pregnancies (table 1.8.1). Twenty-five structural cardiac abnormalities were associated with an antenatally confirmed chromosomal abnormality. As in previous years, the service continued to attract referrals from 11 sites across Ireland with further expansions of the cross-border referral group from Northern Ireland. Thirty-eight cardiac anomalies were detected in babies of women who were not originally booked to deliver in the CWIUH. Combined antenatal care was coordinated with their local hospitals and delivery at the CWIUH was planned. The likely need for urgent cardiac surgical or catheter intervention in the immediate postnatal period dictated the site of delivery.

Table 1.8.1 Congenital heart disease

Type of structural cardiac anomaly	n = 91
Hypoplastic left heart disease	13
Hypoplastic right heart disease	1
Complete atrioventricular septal defect	15
Ventricular septal defect	25
Tetralogy of Fallot	5
Double outlet right ventricle	5
Transposition of the great arteries +/- VSD	10
Coarctation of the aorta/arch hypoplasia/interrupted aortic arch	4
Shone complex	1
Tricuspid stenosis and/or pulmonary stenosis	4
Mitral stenosis and/or aortic stenosis	4
Ebstein's anomaly	1
Rhabdomyomata	1
Cardiomegaly/cardiomyopathy	1
Left atrial isomerism	1
Type of arrhythmia	n = 5
Supraventricular tachycardia (including atrial flutter)	2
Congenital complete heart block	2
Atrial ectopic tachycardia	1

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

Fetal Medicine and Perinatal Ultrasound Department

All women who book in the CWIUH are routinely offered a booking scan at their first visit and a fetal anomaly scan at 18 - 22 weeks' gestation. A complete ultrasound service (dating scans, anomaly scans and third trimester scans) continued throughout the COVID-19 pandemic. In total, 27,783 ultrasound examinations were performed in 2020. The Naas Clinic was relocated across two sites (Citywest and the CWIUH) because of the COVID-19 pandemic. Jane Durkan CMS performed 948 scans in these two sites (table 1.9.1).

Table 1.9.1 Ultrasound department and fetal medicine

Type of ultrasound scan	n
First trimester and dating scans	5,698
Structural survey at 20 - 22 weeks' gestation	7,745
Fetal wellbeing assessment (third trimester and follow up scans)	Growth, amniotic fluid volume and Dopplers (n = 9,242) Cervical length measurement (n = 356) Placental site (n = 727) Single umbilical artery (n = 12) Pyelectasis (n = 40)
Dating, anatomy and third trimester scans in Naas clinic	948
Total (sonographer scans)	24,768
Fetal medicine	n
Non-invasive prenatal testing (NIPT)	806
Fetal medicine consultants	1,775 (including screening echocardiogram {echo})
Fetal echo: screening echo service fetal cardiac service	 304 297
Invasive procedures	137
Total	27,783

Table 1.9.2 Invasive procedures

Type of invasive procedure	n
Chorionic villus sampling	44
Amniocentesis	92
Amniodrainage	1
Total	137

Table 1.9.3 Chromosomal anomalies detected

Type of chromosomal anomaly	n
Trisomy 21	17
Trisomy 18	13
Trisomy 13	2
Triploidy	2
Other	4
Total	38

Table 1.9.4 Diagnosis of chromosomal anomalies

Chromosomal anomaly	Indication for invasive testing
Trisomy 21 (n = 17)	Cystic hygroma (n = 4) Increased nuchal fold (n = 3) Complete AVSD (n = 4) High risk NIPT (n = 6)
Trisomy 18 (n = 13)	High risk NIPT (n =2) Cystic hygroma (n = 5) Multiple structural abnormalities (n = 6)
Trisomy 13 (n = 2)	Cystic hygroma (n = 2)

Table 1.9.5 Structural fetal anomalies detected antenatally

Category of fetal anomaly (n)	Type of fetal anomaly (n)
Neural tube defects (n = 20)	Spina bifida (n = 8) Anencephaly (n = 7) Encephalocele (n = 4) Iniencephaly (n = 1)
Cardiac (n = 96)	Structural cardiac abnormalities (n = 91) Cardiac arrhythmia (n = 5)
Thorax (n = 7)	Diaphragmatic hernia (n = 5) Cystic lung lesions (n = 2)
Abdominal wall defect (n = 12)	Gastroschisis (n = 6) Omphalocoele (n = 5) Cloacal dysgenesis sequence (n = 1)
Skeletal (n = 12)	Arthrogryposis (n = 1) Isolated talipes (n = 11)
Lymphatic vessel abnormalities (n = 41)	Cystic hygroma (n = 41)
Renal (n = 24)	
Neurological (n = 35)	
Facial clefts (n = 3)	
Total	n = 250

One midwife commenced a Masters in Ultrasound in September whilst another midwife completed the Masters in Ultrasound in December. Online learning commenced in view of the COVID-19 pandemic. Staff availed of the multiple webinars provided by The Fetal Medicine Foundation. Machinery was upgraded with the installation of an E10 ultrasound machine.

The ultrasound and fetal medicine service at the CWIUH provided a comprehensive service in the specialist areas of fetal abnormalities, invasive and non-invasive testing, multiple pregnancies, haemolytic disease of the fetus and screening for preterm birth. As a tertiary referral centre, we provided support and co-ordinated shared care with maternity units outside Dublin for women whose babies require planned delivery in Dublin in order to facilitate urgent transfer to a paediatric surgical centre or specialised neonatal care. We have a multi-disciplinary network, consisting of neonatology, paediatric sub-specialties in CHI, clinical genetics, radiology, medical social work and bereavement support, to provide comprehensive care to women and their families following a prenatal diagnosis of a fetal abnormality. Sadly, 27 families received the diagnosis of a fatal fetal abnormality/life limiting condition in 2020. Seventeen women had a termination of pregnancy and 10 women continued the pregnancy with perinatal palliative care.

CONDOLENCES

In October 2020, we sadly lost a beautiful friend and colleague, Siobhán Ní Scanaill (1960 - 2020). Siobhán was a Clinical Midwife Specialist with over 25 years' ultrasound experience. Her expertise and knowledge of ultrasound was outstanding. Siobhán was a highly valued member of our ultrasound team and we all miss her friendship, kindness and humour so much. May she rest in peace.

Haemolytic Disease of Fetus and Newborn

An isoimmunisation guideline was developed to facilitate the management of women with red cell antibodies by their team clinicians. Using the guideline algorithm, women are referred to the Rhesus Clinic if the threshold antibody levels for ultrasound surveillance are reached. Women with previously affected pregnancies and those with high risk antibodies are managed in the Rhesus Clinic.

Pregnant women who develop or present with significant red cell antibodies in pregnancy are referred to the Rhesus team for evaluation. Where clinically significant red cell antibodies are detected, the paternal genotype is determined by serology. The Rhesus D (RhD) status of the fetus can be ascertained, when indicated, by extracting free fetal DNA from the maternal plasma. At risk pregnancies are followed using antibody levels and/or ultrasound surveillance using middle cerebral artery peak systolic flow velocities to detect fetal anaemia.

Forty-one women were referred to the Rhesus Clinic in 2020 (table 1.10.1). Thirty-one women of these women were diagnosed with red cell antibodies for the first time. Two women had multiple red cell antibodies. No intrauterine red cell transfusions were required. Fourteen neonates had a positive Direct Coombs Test (DCT) at birth (table 1.10.1). Six neonates required admission to the Special Care Baby Unit (SCBU) for phototherapy (table 1.10.2). Two neonates required intravenous immunoglobulin (IVIG) in addition to phototherapy and one of these neonates also required a blood transfusion.

Table 1.10.1 Red cell antibodies

Red cell antibody	n	DCT positive	DCT negative
Anti D	2	2	-
Anti c	4	3	1
Anti K	1	1	-
Anti Jka	2	2	-
Anti Jkb	1	-	1
Anti Cw	6	1	5
Anti E	9	4	5
Anti M	12	-	12
Anti Fya/b	2	-	2
Multiple antibodies	2	1	1
Total	41	14	27

Table 1.10.2 Neonatal outcomes

Neonatal outcomes	n
Affected neonates (DCT positive at birth)	12
Intrauterine transfusion	0
Phototherapy only	4
Phototherapy and IVIG	1
Phototherapy, IVIG and RCC transfusion	1
Admission to SCBU	6

Infant Feeding Report

The CWIUH promotes and supports evidence based practice in Infant Feeding in line with the HSE National Infant Feeding Policy for Maternity and Neonatal Services. In so doing, staff, by complying with the standards of the Baby Friendly Initiative, implement and sustain an environment that routinely provides breastfeeding supportive practices towards lifelong health and wellbeing. Staff are empowered, through planned ongoing education and clinical support, to deliver optimum care in Baby Friendly Practices and to maximise the provision of human milk to all babies. The team worked in conjunction with staff from the Centre for Midwifery Education, CWIUH and staff from The Rotunda and The National Maternity Hospital to develop and provide a comprehensive online midwife education programme under COVID-19 guidelines.

Table 1.11.1 Infant feeding statistics, 2014 to 2020

Method of feeding (babies)*	2014	2015	2016	2017	2018	2019	2020
Liveborn and eligible for feeding (n)	8,781	8,230	8,244	8,156	8,305	7,799	7,372
Breastfeeding initiated	61.3%	61.9%	63.7%	65.8%	65.6%	66.6%	65.5%
Breastfeeding exclusively at discharge	36.6%	38.2%	38.9%	36.8%	37.5%	35.7%	32.5%
Breastfeeding non-exclusively at discharge	19.0%	20.7%	21.8%	23.5%	23.9%	25.8%	33.6%

** figures are calculated from mothers' computerised discharge data*

Infant feeding statistics in the CWIUH from 2014 to 2020 are presented in Table 1.11.1. The percentage of babies in whom breastfeeding was initiated increased from 61.3% in 2014 to a peak of 66.6% in 2019. The decrease to 65.5% in 2020 may have been due to the COVID-19 pandemic because it goes against the upward trend seen since 2014. The percentage of babies breastfeeding exclusively at the time of discharge from the CWIUH fell from a peak of 38.9% in 2016 to a trough of 32.5% in 2020. The COVID-19 pandemic may have contributed to the 3.2% decrease seen between 2019 and 2020. In contrast, the percentage of babies breastfeeding non-exclusively at the time of discharge from the CWIUH has increased steadily from 19.0% in 2014 to 33.5% in 2020.

Women who may experience breastfeeding difficulties are identified through the use of an antenatal discussion checklist and an antenatal lactation self-assessment tool. These women receive individualised preparation, planning and follow up. Up until March 2020, the team were able to facilitate lactation clinics to assist women who may experience breastfeeding difficulties. All antenatal breastfeeding classes also stopped at this time. In order to continue breastfeeding education, the team commenced daily distribution of information about breastfeeding with relevant contact details, in all outpatient areas. One on one postnatal consultations for inpatients and outpatients continued during the COVID-19 pandemic. The volume and duration of phone support that the team provided to women in the community increased during the pandemic. The team prepared updated information about breastfeeding, with relevant video links, for uploading to the CWIUH website.

The team developed an Information Leaflet on the harvesting of colostrum in 2020. Following the distribution of this, there was an increase in the demand for harvesting colostrum from women with potential breastfeeding challenges. The team distributed packs for the antenatal harvesting of colostrum and documented this in women's medical records.

The team revised the CWIUH Infant Feeding Information Leaflet and collaborated in the updating of the HSE booklet entitled 'Breastfeeding and expressing for your premature or sick baby'.

The team supported and facilitated a lactation support nurse to facilitate the provision of breast milk to premature babies in NICU within two hours of birth. At three months, there were improvements in; time to women receiving assistance, time colostrum received in NICU as well as increased maternal milk supplies. The data suggest that there was an increase in both the supply of expressed breast milk and maternal satisfaction.

In 2020, there was an increase in the number of babies referred for assessment and division of ankyloglossia within the CWIUH. This may have been due to the development in 2019 of a formalised pathway. The team worked in collaboration with the Department of Paediatrics and Newborn Medicine to cope with this increase in demand. The team continued to follow up babies after frenotomy and to promote and support exclusive breastfeeding.

Maternity - Inpatient

Midwives in the CWIUH continued to collaborate with the Community Midwifery Service in the provision of the Early Transfer Home (ETH) service for women and families residing in the Community Midwifery Service's catchment areas. The rotation of a newly qualified midwifery group, which recommenced in January and February 2020, brought great benefits to all departments. The rotation incorporated antenatal, intranatal and postnatal components.

The CWIUH commenced the process of facilitating midwives moving from Nigeria, Ghana, and Zimbabwe to Ireland to complete a midwifery adaptation programme in collaboration with the Nursing and Midwifery Board of Ireland. The role of the Clinical Skills Facilitators was paramount in supporting, mentoring and advising these midwives as well as other midwifery staff that joined the CWIUH in 2020. A new orientation booklet was developed to assist all new midwifery staff.

The relaunch of the five-year midwifery and nursing vision took place in January. Leadership, integrity, belief and dedication to delivering the highest quality of care to mothers and babies are the foundations of this five-year vision. The primary drivers of this vision are workforce, education and research, leadership and management, and innovation. All CMM3s and CNM3s presented to staff in order to showcase the work of their individual departments.

Quality Care Metrics (QCM) (a programme introduced by the Office of the Nursing and Midwifery Services Director 2018) which 'provides a framework to identify gaps in care delivery, enabling action planning for quality improvements and also provides a mechanism by which care providers can be accountable for the quality of their care delivery commenced on St. Monica's, St. Patrick's, St. Joseph's and Our Lady's Wards in June 2020. In time, this QCM will be conducted in all departments. The White Belt Lean Health Quality Improvement Programmes (QIPS) from the November 2019 Study Day were completed sporadically throughout 2020 by staff from Delivery Suite, Our Lady's Ward, Practice Development, Laboratory Services and Pharmacy.

In December 2020, the CWIUH Midwifery Maternity Strategy Group reconvened with CMMs of the adult OPD, the Community Midwifery Service, AMP Candidate Supported Pathway of Care and a wider group of Clerical Managers, the Chief Operating Officer and Public Relations personnel. Working as a collective, they reviewed and developed the Supported Pathway of Care within the mission, vision and values of the CWIUH whilst being in line with the National Maternity Strategy 2016-2026.

St Joseph's Ward was designated for use in the event of an escalation to a COVID-19 crisis. Four rooms were converted into rooms named as the 'red zone'. These rooms were refurbished with the necessary negative pressure requirements so that women who were potentially COVID-19 positive could be cared for appropriately. These rooms corresponded with Delivery Suite 'red zone' rooms and the COVID Assessment Unit (CAU) located at the front of the CWIUH. The CAU was set up at the end of March 2020 to assess and provide appropriate care to pregnant and postnatal women suspected or confirmed to be infected with COVID-19. The CAU was identified as the first point of access for symptomatic pregnant women who were in need of midwifery and/or obstetric intervention. Similarly, facilities for those considered virus free was referred to as the 'green zone'. The CAU was staffed by very experienced midwives who were redeployed from various departments. Midwives were required to provide a 24 hour service, in collaboration with a designated senior NCHD. The provision of services within the CAU developed from week to week in accordance with national health policy guidance.

Medical Clinic

In 2020, a high level of care for these high risk patients was maintained under challenging conditions due to the pandemic. Clinics were extended and limited to allow for social distancing and phone consultations were substituted where possible.

Catherine Manning, our high risk liaison midwife became a Candidate Advanced Nurse Pratitioner, recognising the importance of the role of advance practice midwifery within the obstetric medicine service.

Women attending the Medical Clinic have pregnancies with a range of complexity. This necessitates careful monitoring and planning of delivery. Women with complex care needs have a detailed plan of care made arising from our multidisciplinary team (MDT) meetings. Plans of care are inserted into these women's medical records in advance of delivery. Some women with more complex care needs may require a planned abdominal delivery with input from other specialties.

There were 363 new referrals to the Medical Clinic in 2020 (table 1.13.1).

Table 1.13.1 New referrals to the Medical Clinic by type of medical condition

Medical condition	n
Thrombosis/thromboprophylaxis	44
History of venous thromboembolism (VTE)	33
Other (including pulmonary embolism, family history of VTE, DVT in pregnancy)	11
Clotting factor deficiencies	23
Von Willebrand's disease	11
Other (including bleeding disorder of unknown aetiology and Factor VII deficiency)	12
Thrombophilias	9
Platelet disorders	20
Immune thrombocytopaenia	16
Other	4
Red cell disorders	14
Thalassaemia	8
Sickle cell disease	5
Other	1
White cell disorders	10
Essential hypertension	57
Cardiac disease	38
Arrhythmias/palpitations	6
Heart murmur	8
Congenital heart disease	6
Atrial septal defect	4
Other (including WPW syndrome, valve disorders and cardiomyopathy)	14
Renal disorders	12
Respiratory	8
Connective tissue disease	38
Systemic lupus erythematous	9
Rheumatoid arthritis	9
Psoriatic arthropathy	9
Other	11
Dermatology	2
Cerebrovascular and neurological	29
Multiple sclerosis	11
History of cerebrovascular accident	8
Other	10
Liver and gastrointestinal	26
Crohn's disease	16
Ulcerative colitis	6
Other	4
Preconceptual care	20
Other	12

Fifty-seven percent of women had a spontaneous vaginal birth, 25% of women underwent an elective Caesarean section and 11% of women underwent an emergency Caesarean section.

Multiple Birth Clinic

One hundred and sixty-five women with multiple pregnancies booked at the CWIUH in 2020. There was one set of spontaneously conceived quadruplets (trichorionic tetraamniotic; monochorionic diamniotic (MCDA) twins and two singletons). There were no triplet pregnancies. Initially there were 164 twin pregnancies. These comprised 124 sets of dichorionic diamniotic (DCDA) twins, 38 sets of MCDA twins and two sets of monochorionic monoamniotic (MCMA) twins. Thirty-six of the MCDA twin sets were conceived spontaneously. There were five cases of twin-to-twin transfusion syndrome. All were reviewed in the Rotunda Hospital for laser treatment. Three sets of MCDA twins were born in the Rotunda Hospital and one set of DCDA twins was lost to follow up. Therefore, 160 sets of twins were born at the CWIUH. Three hundred and eighteen of the twin babies weighed ≥ 500g. The set of quadruplets was born by emergency lower uterine segment Caesarean section at 31 weeks' gestation. A total of 322 babies of multiple pregnancies were born in the CWIUH in 2020. Details of the gestational age (GA) at delivery and mode of delivery are presented in Tables 1.14.1 and 1.14.2, respectively. Rates of Caesarean section in twin pregnancies from 2018 to 2020 are presented in Appendix One.

Table 1.14.1 Gestational age of twin pregnancies at delivery

GA at delivery (weeks)	DCDA	MCDA	MCMA	All twins
≥ 37	46 (37.4%)	4 (11.4%)	0	50 (31.2%)
34 - 36 + 6 days	61 (49.6%)	21 (60.0%)	0	82 (51.2%)
32 - 33 + 6 days	11 (9.0%)	2 (5.7%)	0	13 (8.2%)
28 - 31 + 6 days	3 (2.4%)	5 (14.3%)	1 (50.0%)	9 (5.6%)
23 - 27 + 6 days	2 (1.6%)	3 (8.6%)	1 (50.0%)	6 (3.8%)
Total (n)	123	35	2	160

Table 1.14.2 Mode of delivery, twin pregnancies ≥ 23 weeks' gestation

Mode of delivery (women)	DCDA	MCDA	MCMA	All twins
SVB*	23	4	0	27 (16.9%)
SVB/assisted vaginal breech	9	5	0	14 (8.7%)
SVB and instrumental	8	1	0	9 (5.6%)
Instrumental/assisted vaginal breech	2	0	0	2 (1.3%)
Instrumental x 2	2	1	0	3 (1.9%)
Assisted vaginal breech x 2	1	0	0	1 (0.6%)
Elective Caesarean section	51	10	0	61 (38.1%)
Emergency Caesarean section	26	13	2	41 (25.6%)
SVB/emergency Caesarean section	1	1	0	2 (1.3%)
Total (n)	123	35	2	160

* *spontaneous vaginal birth*

Options in Pregnancy Clinic

The options in pregnancy service was established in February 2019 to provide abortion care in accordance with the Health (Regulation of Termination of Pregnancy) Act 2018. Women are referred electively to the clinic by their general practitioner or community women's health provider. The majority of women are referred as they are between 9 and 12 weeks' gestation or because they have a comorbidity which makes them unsuitable for early medical abortion (EMA) in the community. We are fortunate in being able to offer access to inpatient medical termination seven days a week and surgical termination Monday to Friday. Women with suspected complications of early medical abortion (EMA) are also seen in this clinic. Women are offered follow up appointments for insertion of long acting reversible contraceptives. There were 221 new appointments in 2020. The non-attendance rate was 7.0% (17 women).

There was a 50% increase in attendances at the options in pregnancy service in 2020. The service continued without interruption during the COVID-19 pandemic. Access to face-to-face consultations and the option of surgical termination were available throughout. The clinical outcomes are shown in Table 1.15.1.

Teaching sessions for trainee medical staff continued remotely during the year. Aoife Mullally and Clare Smart were speakers at the CME Termination of Pregnancy Education Meeting in November 2020.

Table 1.15.1 Clinical outcomes

Clinical outcomes	n
MToP	50
SToP	41
Management of complication post-community EMA	98
Continued with pregnancy	8
Miscarriage	3
Unable to proceed as > 12 weeks' gestation	4
Total	204

Parent Education

All face-to-face classes ceased in March 2020 due to the COVID-19 pandemic. Staff were redeployed to the COVID assessment unit (CAU) and in parallel designed a new suite of classes for facilitation on an online platform and prepared for the production of antenatal education videos to be housed on the CWIUH website.

'Birth Dynamics' a new programme of antenatal care which was produced by the parent education department was launched in December 2020. This is a toolkit for labour designed in five modules, to support women in labour and optimise the birth process. The multifaceted programme is inclusive of a four-hour interactive class, a video and a 72-page workbook which is available on the CWIUH website.

Production for a complete series of antenatal education videos commenced in June. This saw collaboration across the departments of midwifery, anaesthesia and perioperative medicine, obstetrics and gynaecology, physiotherapy and nutrition. The department produced ten videos inclusive of: common complaints in pregnancy, concerns in pregnancy, signs and stages of labour, pain relief options, obstetric interventions, Caesarean birth, a toolkit for labour, maternal wellbeing, the transition to parenthood and practical baby care. The video suite was launched on the CWIUH website in September 2020. It has received extremely positive feedback from women and families. The availability of video material ensured equitable access to antenatal education for all.

Online interactive antenatal classes, inclusive of breastfeeding, for first time parents commenced using a blended learning approach on the virtual platform Webex in November 2020. Classes are now available to all first time parents attending the CWIUH. Parents can choose between morning, evening or weekend classes.

Preterm Birth Prevention Clinic

One hundred and seventy-four women attended the preterm birth prevention clinic and delivered in 2020. This is similar to the 2019 figure. As in previous years, the non-attendance rate was very low.

Women who present before 14 weeks' gestation are given the option to have a cervical cerclage placed or to have surveillance with ultrasound and fetal fibronectin. In general, women are seen for the first time in the clinic and have cervical length measurements between 16 - 18 weeks' gestation. Each woman's individual risk of preterm labour is evaluated either by cervical length measurements alone or by the combination of cervical length measurement and fetal fibronectin, using the QUiPP app. An individual care plan is tailored accordingly. Cervical cerclages are placed up to 25 weeks' gestation in women whose cervical length on transvaginal ultrasound is less than 25mm or whose QUiPP risk score indicates a high risk of preterm labour and birth.

Two women with twin pregnancies attended the clinic. The care of 172 women with singleton pregnancies was managed at the clinic. One hundred and thirty-seven (78.7%) women gave birth at greater than or equal to 37 weeks' gestation. Thirty-two women, (18.6%) gave birth between 23 $^{+0}$ and 36 $^{+6}$ weeks' gestation.

Spontaneous labour occurred in 79 (45.9%) women. It occurred at less than 34 weeks' gestation in 12 (6.9%) women. Sixty-three (36.6%) women had an induction of labour. Forty-seven (27.3%) women were delivered by lower uterine segment Caesarean section, 24 of whom were delivered by elective Caesarean section.

Three women had late miscarriages at 19 $^{+3}$, 20 $^{+3}$, and 22 $^{+1}$ weeks' gestation, respectively. There were two intrauterine deaths at 35 $^{+1}$ and 39 $^{+6}$ weeks' gestation.

We would like to acknowledge the resignation of Prof. Sean Daly from our team and we wish him every success and happiness in his new venture. We would like to thank him for all his guidance and support over the years.

Severe Maternal Morbidity and High Dependency Unit Report

Forty-three of the 7,405 women (5.8 per 1,000) who delivered a baby/babies ≥ 500g in the CWIUH fulfilled the criteria for the diagnosis of severe maternal morbidity (SMM). The trend in SMM rates at the CWIUH over the last 21 years is shown in Figure 1.18.1. There was a 40% reduction in the number of women experiencing SMM in 2020 despite the extra demand that the COVID-19 pandemic placed on clinical services. Fourteen women were diagnosed with COVID-19 infection during pregnancy. One woman became severely ill due to respiratory dysfunction. She required delivery and transfer to the intensive care unit (ICU) and made a full recovery.

The leading cause of SMM was, as usual, major obstetric haemorrhage (MOH) (figure 1.18.1). The rate of MOH was reduced by 30% compared to 2019. Only one case fulfilled the criteria because of treatment with fibrinogen alone. The remaining cases lost an estimated volume of blood ≥ 2,500mls and/or were transfused with five or more units of red cell concentrate (RCC). There were three cases of peripartum hysterectomy because of placental accreta (table 1.18.1). One case of MOH had successful interventional radiology to arrest bleeding. There was one case of pulmonary embolism and one case of uterine rupture and once again no case of eclampsia (table 1.18.1). Four women were transferred for ICU care; one with sickle cell crisis, one with acute respiratory dysfunction secondary to COVID-19 infection and two with acute pulmonary oedema (one unexplained and one due to peripartum cardiomyopathy) (table 1.18.1).

Figure 1.18.1 Severe maternal morbidity rates from 1999 to 2020

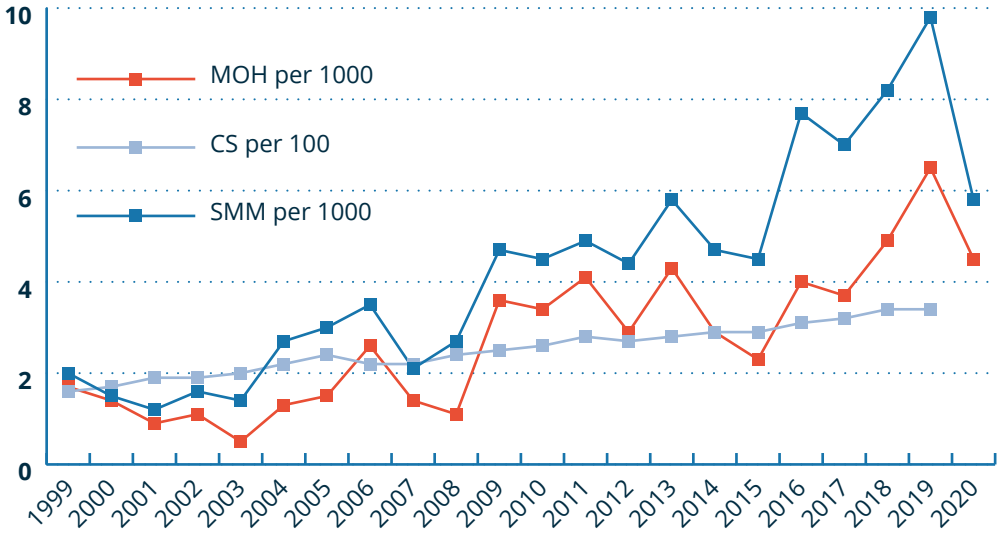


Table 1.18.1 Number of cases and causes of severe maternal morbidity in 2020

Organ dysfunction categories	n
Major obstetric haemorrhage	33
RCC ≥ 5 units	*14*
EBL ≥ 2.5 litres	*29*
Fibrinogen/plasma or platelets only	*1*
Renal or liver dysfunction	1
Pulmonary embolism	1
Pulmonary oedema	3 (2)
Respiratory dysfunction	1
Septicaemic shock	1
Sickle cell crisis	1
Uterine rupture	1
Other - ovarian vein thrombosis	1
Management based categories	
ICU admission	4 (4)
Peripartum hysterectomy	3 (3)
Total	43

Table 1.18.1 outlines the main causes of severe maternal morbidity. When numbers are followed by another number in brackets, this means that the case is already included in another category.

HIGH DEPENDENCY UNIT (HDU)

One-hundred and sixty-six obstetric women (2.2% of the obstetric population) who delivered in the CWIUH in 2020 required higher level care. They were cared for in the Delivery Suite but not always in the HDU area because of reorganisation of clinical space during the COVID-19 pandemic. The leading indications for admission were haemorrhage and hypertension/pre-eclampsia and the data for 2020 are shown in Table 1.18.2.

Table 1.18.2 Obstetric related HDU admissions

Indication for HDU admission	n
Major obstetric haemorrhage	33
Postpartum haemorrhage	35
Antepartum haemorrhage	5
Pre-eclampsia ± HELLP	37
Hypertension	2
Threatened preterm labour	3
$MgS0_4$ (fetal neuroprotection)	15
Sepsis	3
Suspected sepsis	2
Septic shock	1
Respiratory distress	2
Pulmonary oedema	3
Liver or renal dysfunction	2
Respiratory failure	3
Hypoglycaemia	2
Seizures	2
Hypotension or tachycardia	3
Anaesthetic problems	2
Sickle cell disease	2
Miscellaneous*	9
Total	166

* *includes methylhaemoglobinemia, neutropenia, ovarian vein thrombosis and uterine rupture*

Four pregnant or recently pregnant women were transferred to St James's Hospital ICU (table 1.18.1).

Dr. Jennifer Hogan was appointed as a Consultant Obstetrician with sessional commitment to optimise care pathways for pregnant women at St James's Hospital. Fiona Noonan (CMM2) was appointed as the local PPH champion to lead the CWIUH multidisciplinary team in the NWIHP PPH Quality Improvement Initiative (QII).

Data outlining trends in SMM and MOH at the CWIUH over 21 years were presented at the recent RCOG meeting (June 2021) - *Severe maternal morbidity trends in a tertiary stand alone maternity unit. Dakin A, Clinton S, Sloan J, Dicker P and Byrne B. Uterine atony is the main aetiological factor in increasing rates of Major Obstetric Haemorrhage. Clinton S, Dakin A, Sloan J, Byrne B.*

Specialist Perinatal Mental Health Service

There were a total of 667 outpatient referrals and 10 to 15 inpatient referrals per week to the Specialist Perinatal Mental Health Service in 2020.

The service moved into a new dedicated clinic space in 2020 which has facilitated multiple multidisciplinary team (MDT) clinics. A complete MDT was recruited to the service according to the Perinatal Model of Care. There was an increase in the number of women seen in 2020. A wider range of interventions were offered to women, including cognitive behavioural therapy and attachment therapy. A virtual clinic was rolled out which allowed the service to continue throughout the COVID-19 pandemic.

A psychology postgraduate researcher was recruited to offer both individual and group therapy to women. An antenatal anxiety online support group commenced. The postnatal café which is an online support group for postnatal mother was launched.

Psychologist-led reflective groups were another new initiative. These groups are for clinical teams processing trauma at work. The service's Quality Improvement Strategy continued to inform the coordination of audit and research. Perinatal mental health teaching and training, both internal and external, continued in 2020.

Gynaecology Report

Overview

The CWIUH continued to provide the largest benign gynaecology service in Ireland. The outpatient gynaecology services include; general gynaecology clinic, endocrine/fertility clinic, urogynaecology clinic, options in pregnancy clinic, colposcopy service and the outpatient hysteroscopy service. In 2018, the Women's Health Unit was established, where outpatient gynaecology surgical procedures are carried out. Since 2018, the outpatient hysteroscopy service has streamlined the investigation, diagnosis and management of women referred to the gynaecology service. In 2020, there were 12,756 gynaecology outpatient attendances (including virtual consultations), a decrease of 4,444 compared with 2019 (table 2.1.1). This decrease was due to the cancellation of non-urgent gynaecology clinics due to the COVID-19 pandemic. In total, there were 5,424 gynaecology surgical procedures in 2020 (table 2.1.2). Tables 2.1.2 to 2.1.6 present the numbers of surgical procedures by category of gynaecology surgery (excluding urogynaecology), from 2014 to 2020. Despite the limitations the COVID-19 pandemic placed on clinical services in 2020, the number of gynaecology surgical procedures remained relatively stable, apart from cervical surgery. The temporary cessation of CervicalCheck screening services affected the number of cervical surgical procedures (table 2.1.3). Sixty-nine (59.5%) of the 116 abdominal hysterectomies performed in 2020 were laparoscopic (table 2.1.4). Twenty-seven (37.0%) of the 73 vaginal hysterectomies performed in 2020 were laparoscopically assisted (table 2.1.4). Forty-seven percent of endometrial ablations were performed as outpatient procedures in the Women's Health Unit (table 2.1.4). In total, 952 tubal and ovarian surgical procedures were performed, 797 (83.7%) of which were performed laparoscopically (table 2.1.5). Forty sacrospinous ligament suspensions were performed in 2020, compared with 19 in 2014 and 35 in 2019 (table 2.2.1).

Table 2.1.1 Gynaecology outpatient clinic attendances

	2014	2015	2016	2017	2018	2019	2020
General gynaecology clinic (n)	4,728	4,469	4,981	6,155	5,798	7,547	5,186
Colposcopy clinic (n)	7,009	6,473	6,029	5,938	6,011	6,603	5,226
Urogynaecology clinic (n)	1,436	1,565	1,564	1,736	1,648	1,561	584
Endocrine/infertility clinic (n)	464	504	449	483	494	530	420
Options in pregnancy clinic (n)	-	-	-	-	-	174	248
Outpatient hysteroscopy service (n)	-	-	-	-	857	805	1,092
Total (n)	13,781	13,181	13,226	14,312	14,808	17,220	12,756

Table 2.1.2 Category of gynaecology surgery

	2014	2015	2016	2017	2018	2019	2020
Cervical (n)	882	752	828	844	872	902	620
Uterine (n)	2,696	2,704	2,761	2,543	2,564	2,656	3,152
Tubal and ovarian (n)	916	844	847	812	775	769	952
Vulval and vaginal (n)	408	361	423	360	427	405	361
Urogynaecology (n)	328	329	365	410	377	363	282
Other (n)	31	38	31	43	56	40	57
Total (n)	5,261	5,028	5,255	5,012	5,071	5,135	5,424

Table 2.1.3 Cervical surgery

	2014	2015	2016	2017	2018	2019	2020
LLETZ/NETZ/SWETZ/LEEP (inpatient) (n)	99	86	87	82	101	110	82
LLETZ/NETZ/SWETZ/LEEP (outpatient) (n)	617	531	563	604	563	614	373
Cone biopsy (n)	7	8	5	2	6	1	5
Punch and wedge biopsy of cervix (n)	17	16	17	14	11	16	4
Cervical polypectomy (n)	22	21	56	36	32	30	17
Diathermy to cervix (n)	16	3	4	3	2	2	1
Other (n)	104	87	96	103	157	129	138
Total (n)	882	752	828	844	872	902	620

Table 2.1.4 Uterine surgery

	2014	2015	2016	2017	2018	2019	2020
Hysteroscopy (n)							
Diagnostic inpatient	867	885	939	856	853	864	841
Diagnostic outpatient	-	-	-	-	-	-	430
Operative hysteroscopy							
– Myomectomy	2	4	10	6	11	8	8
– Resection of uterine septum	5	2	3	7	7	7	7
– Resection of uterine adhesions	1	2	1	3	1	0	2
– Removal of endometrial polyp	73	88	49	59	104	111	92
– Other	8	5	5	0	5	3	27
Subtotal (n)	956	986	1,007	931	981	993	1,407
Laparoscopy (n)							
Laparoscopic assisted vaginal hysterectomy	36	44	45	34	28	19	27
Total abdominal hysterectomy	88	73	60	52	40	75	68
Subtotal abdominal hysterectomy	9	13	7	5	1	0	1
Radical hysterectomy	0	0	0	1	0	2	0
Myomectomy	22	27	8	8	8	11	18
Subtotal (n)	155	157	120	100	77	107	114
Laparotomy (n)							
Total abdominal hysterectomy	15	12	29	34	39	59	43
Subtotal hysterectomy	1	1	1	3	0	1	4
Radical hysterectomy	0	0	0	0	1	0	0
Omentectomy	9	7	2	4	2	7	4
Myomectomy	20	21	16	10	15	22	15
Subtotal (n)	55	41	48	51	57	89	66
Vaginal hysterectomy (n)	68	44	47	70	56	44	46
Other (n)							
Dilatation and curettage	742	779	827	737	708	729	681
Transcervical resection of endometrium	23	13	24	26	28	24	9
Endometrial ablation (inpatient)	43	47	71	69	76	84	86
Endometrial ablation (outpatient)	-	-	-	-	-	-	77
Mirena coil insertion	341	335	317	279	290	302	297
Mirena coil removal	147	155	148	121	156	128	123
Examination under anaesthesia	122	91	97	114	79	103	147
Other	54	56	55	45	56	53	99
Subtotal (n)	1,472	1,476	1,539	1,391	1,393	1,423	1,519
Total (n)	2,706	2,704	2,761	2,543	2,564	2,656	3,152

Table 2.1.5 Tubal and ovarian surgery

	2014	2015	2016	2017	2018	2019	2020
Laparoscopy (n)							
Diagnostic	278	235	234	249	247	267	236
Sterilisation	42	40	44	58	28	28	17
Dye test	106	78	101	85	91	53	83
Tubal reconstructive surgery	0	1	0	0	0	0	1
Unilateral salpingectomy	16	17	20	12	14	9	10
Bilateral salpingectomy	35	42	42	26	39	45	59
Unilateral oophorectomy	13	7	12	4	12	7	9
Bilateral oophorectomy	1	2	4	1	4	1	3
Unilateral salpingo-oophorectomy	19	30	19	17	8	14	15
Bilateral salpingo-oophorectomy	72	69	74	75	46	66	81
Unilateral ovarian cystectomy	73	70	51	75	77	60	50
Bilateral ovarian cystectomy	15	5	8	7	6	2	10
Aspiration of ovarian cyst(s)	11	9	15	6	3	3	4
Adhesiolysis	67	77	74	58	50	58	74
Ablation/diathermy	131	121	110	98	95	75	110
Other	13	11	15	14	7	9	35
Subtotal (n)	892	814	823	785	727	697	797
Laparotomy (n)							
Sterilisation	0	3	1	0	0	0	13
Tubal reconstructive surgery	2	0	0	0	0	0	0
Unilateral salpingectomy	2	1	1	1	3	2	3
Bilateral salpingectomy	1	4	3	4	11	14	92
Unilateral oophorectomy	3	2	0	0	2	6	2
Bilateral oophorectomy	0	1	0	0	1	0	0
Unilateral salpingo-oophorectomy	6	4	7	5	0	5	5
Bilateral salpingo-oophorectomy	0	0	0	5	23	35	24
Unilateral ovarian cystectomy	8	11	10	6	4	2	6
Bilateral ovarian cystectomy	1	2	1	1	1	0	2
Adhesiolysis	0	2	0	2	0	1	5
Ablation/diathermy	1	0	1	0	1	2	2
Other	0	0	0	3	2	5	1
Subtotal (n)	24	30	24	27	48	72	155
Total (n)	916	844	847	812	775	769	952

Table 2.1.6 Vulval and vaginal surgery*

	2014	2015	2016	2017	2018	2019	2020
Simple vulvectomy	4	1	4	0	2	1	0
Vaginal repair for dyspareunia/vaginoplasty	5	2	0	0	5	0	0
Posterior repair	91	67	87	76	90	63	52
Anterior repair	105	85	87	105	95	88	69
Suturing of vaginal vault	0	1	0	0	0	0	3
Hymenectomy/hymenotomy	1	2	3	5	1	2	1
Excision of vulval/vaginal cysts/biopsy	73	86	93	55	94	95	72
Bartholin's cyst/abscess	35	30	42	24	16	19	18
Labial reduction	6	9	5	4	3	2	1
Fenton's procedure	9	4	4	7	9	8	3
Other cyst/abscess/lesions	5	14	12	14	14	11	11
Other	74	60	86	70	98	116	131
Total (n)	408	361	423	360	427	405	361

** excludes urogynaecology surgery and surgery for vault prolapse*

Table 2.1.7 Miscellaneous surgery*

	2014	2015	2016	2017	2018	2019	2020
Total (n)	31	38	31	43	56	40	57

** includes appendicectomy, abdominal wound repair and laparotomy for other reasons etc*

Coombe Continence Promotion Unit

The Coombe Continence Promotion Unit was established in 1998, to provide a comprehensive multidisciplinary service to women with continence - related problems and pelvic floor dysfunction. The unit has three specialist subdivisions; urogynaecology (established in 1993), specialist nursing services and physiotherapy. Special interests include; (a) refractory detrusor overactivity, (b) stress incontinence after previous surgery, (c) painful bladder syndrome and (d) post-hysterectomy and recurrent prolapse.

In 2020, significant restrictions were imposed on outpatient and continence services due to the COVID-19 pandemic. Virtual consultations were introduced in response to these restrictions. There were 584 attendances (including virtual consultations) at our urogynaecology clinic (this did not include women who attended other gynaecology outpatient clinics with urogynaecological symptoms).

Table 2.2.1 presents the types and numbers of urogynaecology surgery performed in the CWIUH from 2014 to 2020. In 2018, the Department of Health placed a pause on the use of mid-urethral polypropylene tapes for stress incontinence and vaginal polypropylene mesh for pelvic organ prolapse. Although the use of polypropylene mesh in abdominal reconstructive surgery for pelvic organ prolapse was not included in the terms of reference of the pause, this and other major surgical procedures for stress incontinence have discontinued at the CWIUH.

Table 2.2.1 Urogynaecology surgery*

	2014	2015	2016	2017	2018	2019	2020
Laparoscopic Burch/paravaginal repair	4	2	0	1	0	0	0
TVT/TOT/TVTO	77	84	71	85	28	0	0
Bulking injection	12	10	16	16	25	7	3
Botox injection	35	22	39	30	38	44	39
Vault suspension							
- Sacrospinous ligament suspension	19	15	17	22	39	35	40
- Laparoscopic sacrocolpopexy	14	26	24	16	4	0	0
- Other	6	4	12	18	2	8	4
Cystoscopy	135	147	147	200	215	240	169
Other	26	19	39	22	26	29	27
Total (n)	328	329	365	410	377	363	282

* *includes prolapse surgery only for vault prolapse*

URODYNAMICS SERVICE

Female urinary incontinence is a distressing health problem, which can affect both the social and psychological wellbeing of women of all ages and sociocultural backgrounds. Continence services have gained recognition worldwide in the last few decades with government bodies and health organisations in active partnership to reduce the prevalence of this condition. For healthcare professionals, the importance of knowing, understanding and empathising with women who are struggling with this embarrassing and socially isolating condition is essential to the formation of high quality, woman-centred holistic care.

The urodynamics service is provided by a clinical nurse/midwife specialist in urodynamics. The service provides a full range of comprehensive services including ongoing diagnostic bladder assessment, continence education, self-catheterisation instruction and emotional support to women attending the CWIUH with symptoms of lower urinary tract dysfunction. However, due to the COVID-19 pandemic restrictions, the urodynamic service was temporarily suspended for a number of months in 2020. Despite this, 100 urodynamic studies were performed. New urodynamic equipment was purchased during the year.

In 2020, a nurse-led pessary clinic was established to provide a more efficient and enhanced service for women with pelvic organ prolapse. This service provided women with continuity of care, an improved experience in addition to advice and phone support if required. There were 136 attendances at the pessary clinic.

The administration of Cystistat (bladder instillation) was relocated to the urodynamics service so that a more holistic and cohesive service could be provided to women with bladder conditions. There were 176 attendances at the Cystistat clinic.

Colposcopy Service

MEDICAL REPORT

The CWIUH Colposcopy Service is consultant-led, supported by two nurse colposcopists who facilitate two nurse-led sessions per week and support the four consultant-led sessions per week.

The COVID-19 pandemic had a considerable impact on colposcopy clinic attendances in 2020. There was significant curtailment on clinical activity from March to July. Colposcopy clinic appointments were reserved for women referred because of high-grade changes or changes suspicious of cancer. In the latter part of 2020, service curtailment was not so significant and we remained open to all referrals, whilst prioritising those high risk group patients as before. In 2020, 1,492 referrals were received compared with 2,330 in 2019. There was a 36% decrease in first visits attendances, 1,376 women compared to 2,152 women in 2019.

Many factors affected attendances, including intercounty lockdowns, and in some cases the woman's own preference not to travel into Dublin to attend the clinic when case numbers were high in this region. There was a 13.5% decrease in follow up visits, 3,850 in 2020 compared to 4,454 in 2019 (table 2.3.1). The number of women, due to attend the clinic for the first time, who did not attend decreased from 208 in 2019 to 133 in 2020. The overall non-attendance rate continued its downward trend for another year (721 women - 13.8%).

Table 2.3.1 Colposcopy clinic attendances, 2016 to 2020

Type of attendance	2016	2017	2018	2019	2020
Referrals (n)	2,071	1,915	2,094	2,330	1,492
First visits (n)	2,064	1,863	1,986	2,152	1,376
Follow up visits (n)	3,942	4,046	4,007	4,454	3,850
Total visits (n)	6,006	5,909	5,993	6,606	5,226
Non-attendance, n (%)	1,137 (18.9)	871 (17.5)	904 (15.0)	920 (13.9)	721 (13.8)

As in previous years, the majority of women with cytological and/or colposcopic evidence of disease had treatment with large loop excision of the transformation zone (LLETZ) in the colposcopy clinic.

TREATMENT AND HISTOLOGY

Due to COVID-19, the pathways for treatment in the colposcopy clinic were revised, as 'see and treat' procedures could no longer be facilitated. All women were required to have a confirmed negative COVID-19 test, before they could be offered treatment. This change in management required significant planning.

In 2020, 406 LLETZ treatments were conducted in clinic and 82 LLETZ treatments and needle excision of transformation zone (NETZ) treatments were conducted in theatre. The histology results of the LLETZ are shown in Table 2.3.2. The treatments remain within the Target Clinical Standards set out by the British Society for Colposcopy and Cervical Pathology and CervicalCheck for outpatient vs. inpatient treatment setting. The histological breakdown of the transformation zones which were removed by LLETZ are shown in Table 2.3.2.

Table 2.3.2 Histology results of LLETZ, 2020

Histology result	Clinic	Theatre	Uncoded	Total
Adenocarcinoma in-situ/CGIN	7	1	1	9
Cancer (including micro-invasive)	1	0	0	1
CIN uncertain grade	0	0	0	0
CIN1	182	6	11	199
CIN2	111	8	7	126
CIN3	81	5	7	93
HPV/cervicitis only	0	0	0	0
Inadequate/unsatisfactory	0	0	0	0
No CIN/no HPV (normal)	21	1	2	24
VAIN1	1	0	0	1
VAIN2	0	0	0	0
VAIN3	0	0	0	0
Unknown	2	0	0	2
Total (n)	406	21	28	455

The COVID-19 pandemic impacted on our ability to host MDT meetings. In the absence of meetings, women requiring review were discussed and reviewed by the lead clinician and nurse and managed appropriately.

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 with these Quality Standards criteria.

During the pandemic, the colposcopy service was maintained for urgent referrals, high-grade referrals and for treatments. As restrictions were lifted, we resumed service with the rescheduling of women for appointments that had been cancelled to ensure that they did not have to wait for a further extended period of time.

NURSE AND TRAINEE NURSE COLPOSCOPISTS REPORT

The nurse and trainee nurse colposcopists are responsible for the management of a caseload of women in the colposcopy outpatient setting, as directed by the lead consultant for colposcopy. This involves running two nurse-led colposcopy clinics, working alongside four consultant colposcopists and, in their absence, sustaining and maintaining full clinical support. The nurse and trainee nurse colposcopists record, manage and communicate cytology, histology and microbiology results to women and their GPs. They also arrange follow up appointments and discharges. They triage referrals received and determine the urgency of the referral and the appropriate clinic to accommodate the referral.

The introduction of lockdowns across the entire country resulted in the cancellation of colposcopy clinics with women requesting rescheduling of appointments. All urgent and high-grade referrals were prioritised. Extra personal protective equipment (PPE) was required to be worn and due to the concern that COVID-19 could be spread by performing aerosol producing procedures, extra procedures were required to ensure the safety of both women and staff. This included COVID-19 swabbing and testing of all women requiring diagnostic loop biopsies and LLETZ treatment. This also impacted on the administrative workload. Extra cleaning was required and aeration of a clinical room following an aerosol producing procedure resulted in extra time needed per patient procedure.

Gynaecology Oncology Liaison Nurse

Sixty-nine women with gynaecological cancers received a diagnosis and/or were cared for in 2020. These included women with new or recurrent cancers of the cervix, ovary, endometrium and vulva. Essential services including diagnosis and treatment of women with gynaecology cancers continued throughout the pandemic with little or no delays to women's treatments.

The CWIUH has strong links to St James's Hospital. The gynaecology oncology liaison nurse attends outpatient clinics in both hospitals each week. The role is vital to ensure ongoing communication between both hospitals so that a seamless pathway of care is maintained for women with gynaecological cancers. Women are given the contact details of the gynaecology oncology liaison nurse who provides ongoing support to women by way of phone, email and consultation.

Operating Theatre Department, including Anaesthetic Clinic

Elective gynaecology surgery, unlike urgent gynaecology surgery, was deferred from mid-March 2020 due to the COVID-19 pandemic. There was a staged resumption of elective gynaecology surgery from mid-May with a staged return to normal services from the end of June until the end of the year.

The Delivery Suite (DS) theatre was set up for all COVID-19 positive and suspected cases. Additional staff were placed on-call, out-of-hours, to cope with implementing the infection control requirements of these cases. Once full elective gynaecology surgical services were resumed, the DS theatre provided for all emergencies cases, both COVID-19 and non COVID-19, during daytime hours.

During the early days of the pandemic, the Anaesthetic Clinic continued to pre-assess routine and urgent obstetric cases through phone assessment. Over the course of the year, video technology was used to enable virtual assessments to be conducted, through the Microsoft Teams platform.

No case of COVID-19 due to workplace exposure was reported amongst the theatre staff.

Outpatient Hysteroscopy Service

In 2020, there was an increase of 26% (287 women) in attendances. In total, 1,092 women attended the service for assessment and/or treatment. The non-attendance rate fell from 14.0% in 2019 to 9.6% in 2020 (table 2.6.1).

Table 2.6.1 Outpatient hysteroscopy service, 2018 to 2020

Appointments	2018*	2019	2020
Total (n)	857	805	1,092
Non-attendance (n)	119	118	105
Non-attendance (%)	13.0	14.0	9.6
Histology results	2018*	2019	2020
Complex hyperplasia (n)	5	8	14
Cancers (n)	13	10	18

**includes attendances from mid July 2017*

Fourteen cases of complex hyperplasia and 13 confirmed cancers were diagnosed in 2020. Table 2.6.1 shows the breakdown of histology from 2018 to 2020.

In 2020, 77 MyoSure treatments were undertaken, a combination of both 'see and treat' and planned procedures.

Paediatrics and Newborn Medicine

Paediatrics and Newborn Medicine - Medical Report

ADMISSIONS

Table 3.1.1 Admissions to NICU and SCBU

Admissions to NICU and SCBU*	n
Total admissions	888
Admissions with birth weight > 1.5 kg	749
Admissions at ≥ 35 weeks' gestation	595

** excluding readmissions; NICU: Neonatal Intensive Care Unit; SCBU: Special Care Baby Unit*

VERY LOW BIRTHWEIGHT (VLBW) INFANTS (VERMONT OXFORD NETWORK) OUTCOME DATA

Table 3.2.1 Cases reported to the VON in 2020 (n = 110)*

	All cases	Cases excluding congenital anomalies n (%)	Survival to discharge† n (%)	Survival without morbidities† n (%)
Infants < 401g but ≥ 22 weeks' gestation	0	0	0	0
Infants 401 - 500g	9	9	0	0
Infants 501 - 1500g	98	93	84	64
Infants > 1500g but ≤ 29 $^{+6}$ weeks' gestation	3	1	0	0
Total	110	103 (94%)	84 (76%)	64 (58%)

** represents total number of VON infants managed by the CWIUH (both inborn and outborn VON infants). There were a total of seven newborns with VON defined major congenital anomalies. Six were inborn and one was outborn. The number 110 includes all newborns with any sign of life following delivery.*

† excluding major congenital anomalies

Figure 3.2.1 Number of infants 501 - 1500g admitted to NICU in CWIUH (inborn and outborn)

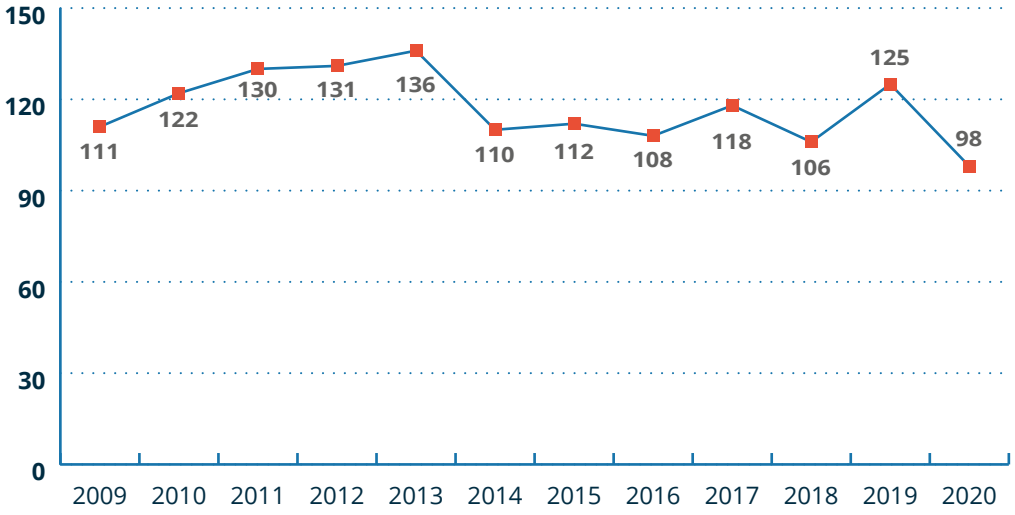


Figure 3.2.2 Total number of VON eligible infants both inborn and outborn including congenital anomalies in CWIUH over 10 years

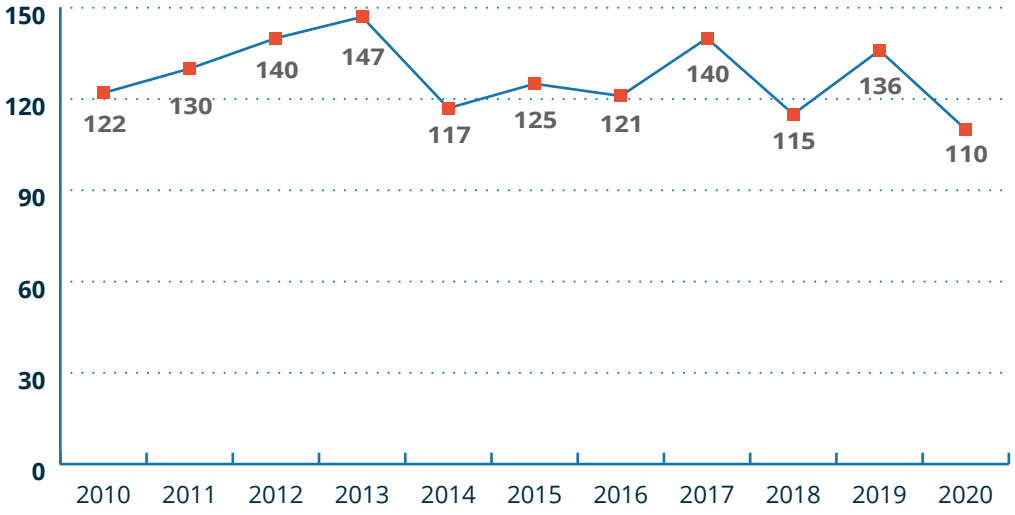


Figure 3.2.3 Survival of VLBW infants who were admitted to NICU in CWIUH (VON data including congenital anomalies) over 10 years

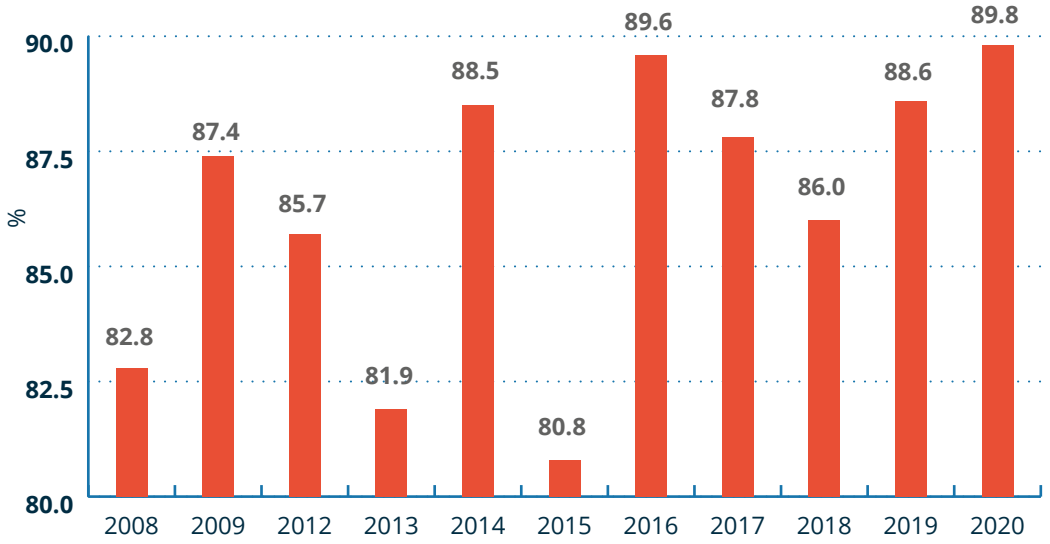


Figure 3.2.4 Survival to discharge without major pre-defined morbidity of VLBW infants in CWIUH (VON data including congenital anomalies) over 10 years

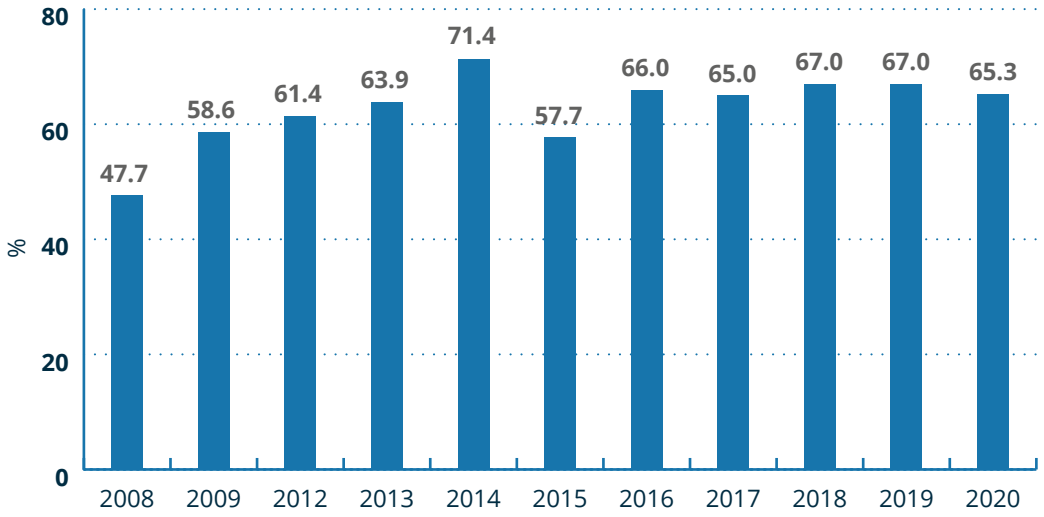


Table 3.2.3 Gestational age breakdown and survival to discharge of all infants reported to the VON (including congenital anomalies) who were resuscitated/stabilised in the delivery room in 2020

Gestational age (weeks)	Total n	Died in DR* n (%)	Survival to discharge, n (%)	Survival to discharge without major morbidity, n (%)
< 24	8	4 (50%)	0	0
24 - 26	32	0	23 (71.9%)	11 (34.4%)
27 - 29	48	0	45 (93.8%	36 (75%)
30 - 32	17	0	16 (94.1%)	12 (70.6%)
> 32	5	0	5 (100.0%)	5 (100.0%)
Total	110†	4 (3.6%)	89 (80.9%)	64 (58.2%)

** delivery room*

† includes both inborn and outborn infants

Table 3.2.4 Survival to discharge of all infants born at less than 24 weeks' gestation who were reported to the VON (including those with congenital anomalies) (i.e. ≥ 22 weeks and/or ≥ 400g) (n = 8)

Gestational age (weeks)	Birth weight (g)	DR stabilisation (yes/no)	Death in DR (yes/no)	Survival to discharge (yes/no)	Day of life if death
21^{+2}	470	no	yes	no	1
21^{+4}	409	no	yes	no	1
22^{+0}	476	no	yes	no	1
22^{+1}	427	no	yes	no	1
23^{+0}	440	yes	no	no	7
23^{+0}	505	yes	no	no	10
23^{+1}	540	yes	no	no	3
23^{+5}	860	yes	no	no	77

Table 3.2.5 Outcome to discharge of all infants born at less than 24 weeks' gestation reported to the VON (≥ 22 wks. and/or ≥ 400g) including congenital anomalies for years 2012 to 2020

Year	Infants n	DR stabilisation n	Death in DR n	Survival to discharge, n (%)	Survival to discharge without morbidity, n (%)
2012	9	4	6	0 (0%)	0 (0%)
2013	15	5	12	2 (13%)	0 (0%)
2014	4	1	3	1 (25%)	0 (0%
2015	11	6	5	5 (45%)	1 (9%)
2016	8	3	5	0 (0%)	0 (0%)
2017	10	3	7	1 (10%)	0 (0%)
2018	5	2	3	1 (20%)	0 (0%)
2019	13	7	6	4 (31%)	0 (0%)
2020	8	4	4	0 (0%)	0 (0%)
Total	83*	35 (42%)	51 (61%)	14 (17%)	1 (1%)

* *includes both inborn and outborn infants*

VON DEFINITIONS

Nosocomial infection: defined as any late bacterial infection or coagulase negative staphylococcus infection (CoNS).
Any late infection: defined as any late bacterial infection, CoNS or fungal infection after day 3.
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 3.2.6 Morbidity and mortality data for infants with birthweight 501 - 1500g admitted to NICU in CWIUH (congenital anomalies included), compared to the VON and Republic of Ireland in 2020

	CWIUH 2020 n, (%), (denominator)	*ROI 2020 Median	*VON 2020 Median
Inborn	79, (80.6%), (98)	87.2%	87.2%
Antenatal steroids (partial or complete)	91, (93.8%), (97)	91.4%	91.3%
Caesarean section	73, (98%), (98)	74.5%	74.2%
Antenatal magnesium sulphate	81, (83.5%), (97)	76.4%	63.6%
Multiple gestation	28, (28.6%), (98)	32.0%	24.2%
Any major birth defect	5, (5.1%), (98)	8.2%	11.0%
Surfactant in delivery room	15, (15.3%), (98)	21.6%	19.2%
Surfactant at any time	59, (60.2%), (98)	55.9%	56.8%
Conventional ventilation after initial resuscitation	51, (52.0%), (98)	50.7%	52.2%
High frequency ventilation after initial resuscitation	8, (8.2%), (98)	9.1%	20.3%
Ventilation after early CPAP	31, (42.5%), (73)	35.2%	37.2%
Inhaled nitric oxide	8, (8.2%), (98)	7.7%	5.4%
Pneumothorax	2, (2.0%), (98)	5.3%	3.9%
Chronic lung disease (at 36 weeks)	17, (20.7%), (82)	26%	25.6%
Steroids for chronic lung disease	11, (11.2%), (98)	9.9%	12.1%
Early bacterial sepsis	1, (1.0%), (98)	0.7%	1.3%
Late bacterial sepsis	8, (8.2%), (97)	5.6%	7.0%
CoNS infection	1, (1.0%), (97)	2.9%	4.5%
Nosocomial bacterial infection	9, (9.3%), (97)	8.0%	10.5%
Fungal infection	1, (1.0%), (97)	0.2%	0.9%
Any late infection (bacterial or fungal)	10, (10.3%), (97)	8.2%	11%
NEC	5, (5.1%), (98)	5.6%	5.3%
GI perforation	3, (3.1%), (98)	0.9%	1.7%
NEC surgery	5, (5.1%), (98)	5.3%	4.8%
Severe ROP (≥ Stage 3)	4, (5.5%), (73)	3.6%	6.0%
Anti-VEGF drug	3, (3.1%), (98)	2.3%	2.0%
Surgery for ROP	0, (0.0%), (98)	2.1%	1.9%
Severe IVH (Grade III-IV)	9, (9.3%), (97)	6.4%	7.8%
Cystic PVL	1, (1.0%), (97)	1.0%	2.7%
Paracetamol for PDA	6, (6.1%) (98)	9.8%	7.3%
Ibuprofen for PDA	1, (1.0%), (98)	7.9%	5.7%
PDA surgery	0, (0.0%), (98)	2.1%	2.7%
Any human milk enteral feeds at discharge	66, (67.3%), (98)	55.6%	53.1%
Human milk only enteral feeds at discharge	54, (55.1%), (98)	16.3%	12.1%
Mortality	10, (10.2%), (98)	14.0%	12.3%
Mortality excluding early deaths	10, (10.2%), (98)	9.1%	9.8%
Survival	88, (89.8%), (98)	86%	87.7%
Survival without specified morbidities	64, (65.3%), (98)	58.4%	58.0%

* *Republic of Ireland (ROI) and VON outcome data are expressed as median percentage values*

Table 3.2.7 Shrunken standardised mortality and morbidity (SMR) rates

Mortality and morbidity	SMR (95% confidence interval) 2020	SMR (95% confidence interval) 2018-2020
Mortality	1 (0.6 - 1.6)	1.1 (0.8 - 1.4)
Death or morbidity	0.9 (0.6 - 1.1)	0.8 (0.7 - 1)
Chronic lung disease (at 36 weeks')	0.9 (0.6 - 1.3)	0.7 (0.5 - 0.9)
NEC	1 (0.4 - 1.8)	1.2 (0.7 - 1.7)
Late bacterial infection	1.1 (0.5 - 1.8)	1.2 (0.8 - 1.6)
CoNS infection	0.3 (0 - 0.9)	0.5 (0.2 - 0.9)
Nosocomial infection	0.8 (0.4 - 1.4)	0.9 (0.7 - 1.3)
Fungal infection	1.1 (0.1 - 3.3)	0.8 (0.1 - 2)
Any late infection	0.9 (0.5 - 1.5)	1 (0.7 - 1.3)
Severe IVH	1.1 (0.7 - 1.6)	1 (0.7 - 1.3)
Pneumothorax	0.8 (0.4 - 1.4)	1.4 (1 - 2)
Cystic PVL	0.6 (0.1 - 1.5)	0.5 (0.1 - 0.9)
Severe ROP	1 (0.4 - 1.9)	0.8 (0.5 - 1.4)

HYPOXIC ISCHAEMIC ENCEPHALOPATHY AND MORTALITY TABLES

Table 3.3.1 Hypoxic ischaemic encephalopathy (HIE)

HIE	Inborn (n)	Outborn (n)
HIE moderate stage 2	7	4
HIE severe stage 3	1	3
Total HIE (n)	8	7
Therapeutic hypothermia	Inborn (n)	Outborn (n)
Outcomes for hypothermia	8*	6†
Death	1	2
Alive and normal to date	6	1
Motor delay	1	1
Alive with unknown outcome‡	-	2

* *1 inborn infant received therapeutic hypothermia for a number of hours. However, this was discontinued due to worsening pulmonary hypertension. This infant went for ECMO in Karolinska, Sweden. Normal neurodevelopmental status to date.*

† *1 outborn infant did not receive therapeutic hypothermia and died*

‡ *due to be discharged back to a peripheral neonatal unit with developmental follow up status not yet ascertained*

Table 3.3.2 Mortality - inborn infants with congenital anomalies (n = 16, includes 3 infant deaths)

Group classification (n)	Abnormality (leading to death)
Prematurity and congenital heart disease (n = 3 neonatal deaths)	
	Hemifacial microsomia, VSD, coarctation of aorta
	Transient neonatal cyanosis, cardiac failure, liver necrosis
	Trisomy 21, AVSD, hydrops fetalis
Prematurity and congenital anomalies, (n = 6 neonatal deaths and 1 *infant death*)	
	Trisomy 18, not resuscitated
	Trisomy 13, not resuscitated
	Cloacal dysgenesis, NEC, bilateral Grade IV IVH
	Arthrogryposis
	Hydrops fetalis
	Congenital diaphragmatic hernia
	Encephalocele - *infant death*
Term and congenital heart disease, (n = 3 neonatal deaths and 2 *infant deaths*)	
	Cleft palate and truncus arteriosus
	TGA, Epstein's anomaly, hypoplastic aortic arch
	Hypoplastic left heart syndrome
	Hypoplastic left heart syndrome *infant death*
	Noonan's syndrome, VSD, pulmonary hypertension and multiorgan failure - *infant death*
Term and congenital anomalies, (n = 1)	Congenital diaphragmatic hernia and chromosomal deletion

Table 3.3.3 Mortality - inborn infants normally formed ≤ 1500g (n = 16, includes 2 infant deaths)

Group classification	Abnormality (leading to death)
Extreme prematurity - intensive care not started for extreme and comfort care provided (n = 7)	Gestational ages 19 - 20 weeks
Extreme prematurity, NEC +/- bowel perforation +/- spontaneous intestinal perforation (n = 4, includes *1 infant death)*	NEC with perforation n = 3 Spontaneous intestinal perforation and pneumothorax, n = 1
Extreme prematurity and aetiology of death otherwise specified (n = 5, includes 1 *infant death*)	Extreme prematurity, pneumothorax, n = 1 Extreme prematurity, bilateral IVH, and/or post-haemorrhagic hydrocephalus, n = 2 Extreme prematurity, septicaemia, n = 2

Table 3.3.4 Mortality - inborn infants normally formed > 1500g (n = 1)

Group classification	Abnormality (leading to death)
Hypoxic ischaemic encephalopathy	Sarnat III HIE, meconium aspiration, tension pneumothorax

Table 3.3.5 Mortality - outborn infants normally formed ≤ 1500g (n = 3)

Group classification	Abnormality (leading to death)
Extreme prematurity, n = 1	Extreme prematurity and hepatic subcapsular haematoma (n = 1)
Extreme prematurity and CNS pathology, n = 2	Extreme prematurity and HIE (n = 1) Extreme prematurity and Grade IV IVH (n = 1)

Table 3.3.6 Mortality - outborn infants normally formed > 1500g (n = 2)

Group classification	Abnormality (leading to death)
Hypoxic ischaemic encephalopathy, n = 2	Transferred to CWIUH at term for therapeutic hypothermia

SELECTED CONGENITAL ANOMALIES AND MORBIDITIES IN INFANTS BORN IN THE CWIUH

The diagnosis of fetal and neonatal cardiac anomalies is detailed in the section entitled 'Fetal Cardiology' under the Division of Obstetrics.

Table 3.4.1 Selected major congenital anomalies (all liveborn)

Type of major congenital anomaly	n
Cleft palate +/- lip	6
Bowel atresia/obstruction	6
Exomphalos	2
Gastroschisis	5
Duodenal atresia	4
Polycystic kidney disease/Potter sequence	2
Anencephaly	3
Meningomyelocele +/- ventriculomegaly	3
Isolated agenesis corpus callosum	2
Congenital diaphragmatic hernia	5
Congenital pulmonary airway malformation	6
Anorectal malformation	2
Multicystic dysplastic kidney	2
Trisomy 21	19
Trisomy 18	6
Trisomy 13	1
Beckwith Wiedemann syndrome	1
Barth syndrome	1

Table 3.4.2 Musculoskeletal anomalies (all liveborn)

Type of musculoskeletal anomalies	n
Developmental dysplasia of the hip (requiring treatment)	30
Pavlik harness	*24*
Abduction brace only	*6*
Osteogenesis imperfecta	2
Arthrogryposis multiplex congenita	1

ACTIVITY OF CWIUH BABY CLINIC

Table 3.5.1 Summary of CWIUH Baby Clinic Activity by clinic type

Type of clinic	Patient visits (n)
Paediatric/neonatology clinic	3,310
Orthopaedic clinic	239
Physiotherapy clinic	1,683
Psychologist clinic	12
'Walk in' paediatric clinic	443
Weight clinic	68
Tongue tie assessment clinic	126
Ophthalmologist clinic	22
Total number of individual patient visits	5,903

ACHIEVEMENTS IN 2020

The year 2020 demonstrated an overall decrease in NICU and SCBU admissions and Baby Clinic activity, with unit admissions down in total from 938 in 2019 to 888 in 2020 (a decrease of 8.6%, and Baby Clinic total outpatient visits decreased by 13.4%). There was a further decrease in the total number of Vermont Oxford Extreme Preterm newborns with a decrease from 136 babies in 2019 to 110 in 2020. For the first time in many years, the total number of extremely preterm newborns admitted to the CWIUH NICU with birth weights between 501 and 1500g dipped below the critical 100 number to an absolute number of 98 babies! The decrease in overall unit activity may reflect the following variables:

- The increased role of NICU and SCBU nurse liaison activity in attempting to facilitate the care of certain newborns on the postnatal ward alongside their mothers. Traditionally, many newborns 35 - 37 weeks' gestation, birth weight 2 - 2.5kg, and with need for some feeding assistance were admitted to the neonatal unit. The increased utilisation of the liaison nurse has decreased this need for neonatal unit admission.
- The COVID-19 pandemic resulting in fewer hospital attendances including to the Baby Clinic.
- Recurrent plumbing problems and air sampling environmental microbial challenges within the CWIUH NICU that necessitated relocation of the NICU to a different location within the hospital and temporary reduction of our cot status at various times from 40 to 35/36 cots.

There was a continued high usage of any breast and/or a diet of exclusive breast milk for Vermont Oxford Extreme Preterm babies at discharge from the NICU. For the year 2020 this was quite high at 67.3% (previously 72.4% in 2019) and 55% (previously 52.8% in 2019) respectively. This is a sustained improvement in the care of critically sick extreme preterm newborns at the CWIUH seen for both years 2019 and 2020. The year 2020 stands out in all of our lives as the year a virus from China changed the world forever! This is certainly true of CWIUH neonatology. The year was extremely challenging with staff using Personal Protective Equipment, one dedicated isolation room for a NICU, whilst grappling with sick absenteeism in staff secondary to COVID-19 close contact status. The COVID-19 pandemic and prolonged national lockdowns made the year quite difficult for the staff in the department. These difficulties were, further amplified by the prolonged closure of our traditional 14 cot NICU due to frequent plumbing problems, and challenges with environmental microbial contamination and frequent failed air sampling assays.

Prof. Martin White, Prof. Jan Miletin and Prof. Eleanor Molloy continued their respective academic roles within the CWIUH in association with the Royal College of Surgeons, University College Dublin and Trinity College Dublin, respectively. Dr. Anne Doolan functions as chair of Parenteral Nutrition for Paediatrics and Neonatology Expert Group.

COMPARISON WITH PREVIOUS REPORTS

For the year 2020, the CWIUH cared for 110 premature infants whose birth weights were between 401 - 1500g 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 CWIUH 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 has decreased from the year 2019 when the CWIUH cared for 136 such infants. Figures 3.2.1 and 3.2.2 depict this historical trend concerning overall VON infant numbers at the CWIUH. Of these 110 premature VON infants', complete survival/mortality data for 98 of these infants who were admitted to the NICU is known at the point of death or discharge. These 98 newborns include both inborn and outborn babies and are defined as those liveborn newborns admitted to CWIUH NICU with birth weights 500 - 1500g. Of these 98 premature VON infants, 79 were inborn at the CWIUH and 19 were outborn. A sizeable minority of both inborn and outborn preterm newborns were originally booked in Northern Ireland. The total survival to discharge in 2020 was **89.8%**, similar to 2019.

In 2020, the survival to discharge of such premature infants without specified major morbidities was **65.3%** which was similar to the previous year. We are quite pleased that our survival to discharge without specified major morbidities is similar to the overall VON and that for the Republic of Ireland of 58%. Both the survival to discharge and survival without major pre-specified morbidities for VON extreme preterm newborns at the CWIUH NICU has been very stable for the last four years with little significant fluctuation. Table 3.2.6 features outcome data for the CWIUH compared to median percentage values for both aggregate Republic of Ireland NICUs and the entire VON. Please refer to Figures 3.2.1 to 3.2.4 for a ten-year trend concerning numbers of VON premature newborns and survival outcomes at the CWIUH.

One particular point of note is that in 2020, in four cases of newborns with gestational age 23 weeks, while resuscitation/stabilisation was successfully followed by NICU admission, none of these four infants survived to discharge. Whilst it is encouraging that all four newborns at 23 weeks' gestation in the delivery room were indeed resuscitated/stabilised and no 23 weeks' gestation baby was offered a comfort care approach, the overall survival to discharge is disappointingly low. In comparison to the VON, this represents a much lower survival outcome percentage than would be expected for a level III neonatal unit. Tables 3.2.4 and 3.2.5 depict survival data for such extreme preterm newborns at the CWIUH.

Concerning the VON Shrunken Standardised Morbidity rate for various key performance parameters over the three years 2018-2020, the CWIUH remains within the acceptable normative ranges. This is true of infections, chronic lung disease, NEC, NEC surgery, severe ROP, IVH, and PVL. Our strategy for PDA management remains a conservative approach with use of early targeted echocardiogram in postnatal life and paracetamol therapy if a PDA is considered non-restrictive in its flow pattern and haemodynamically significant. No inpatient from CWIUH in the year 2020 received a traditional PDA ligation surgery. We have only ever referred a total of two newborns for PDA surgical ligation for the years 2015 - 2020. This is a dramatically low number compared to overall VON practice.

In relation to hypoxic ischaemic encephalopathy (HIE), there were eight inborn infants classified as HIE and managed with therapeutic hypothermia. There were seven outborn HIE newborns referred to the CWIUH NICU in 2020 for therapeutic hypothermia of which six were managed with hypothermia. The CWIUH 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. See Table 3.3.1 for details.

As per NICE guideline and The Model of Care for Neonatal Services in Ireland (2015), developmental follow up for extremely preterm and low weight babies at 24 months corrected is recommended for early identification, assessment and intervention of infants with developmental concerns. The Bayley Scales of Infant and Toddler Development III (BSID-III) is the recommended instrument to measure developmental outcomes of preterm and term infants. The BSID-III is a standardised, norm-referenced developmental battery that provides information regarding children's developmental skills across cognitive, language and motor domains (Bayley, 2006). Unfortunately, in 2020 Dr. Louise Hickey, clinical psychologist performing Bayley assessments, was unable to do so due to COVID-19 pandemic. At the end of the year Dr. Hickey left her employment at the CWIUH. It is with a heavy heart that I acknowledge the gap in the developmental paediatric service that now exists at the CWIUH. Whilst Bayley assessments have now recommenced with Dr. J Kelleher, there is a lack of follow up data, thus rendering it impossible to present any meaningful two year follow up outcomes concerning babies born in 2018 (who would have had Bayley assessments in 2020).

RESEARCH IN THE DEPARTMENT OF PAEDIATRICS AND NEWBORN MEDICINE

The CWIUH Neonatology Department continues to be very active in research. We run numerous research projects ourselves and participate in other multicentre and international studies. Two research fellows in neonatology worked with us in 2020, Dr. Saira Tabassum and Dr. Meredith Kinoshita. The main research projects conducted in the Neonatology department in 2020 are listed below:

PhD STUDENTS (SUPERVISOR: PROF. ELEANOR MOLLOY, CWIUH AND TCD)

1. PhD: Dr. Mary O'Dea: Underlying mechanisms in Neonatal Immune metabolic dysregulation, Circadian rhythm and bRain INjury: UNICoRN study. PI EM. TCD 2016-9: submitted December 2019; Awarded March 2020.
2. Dr. Matthew McGovern: GENIE project: GEnder and Neonatal Inflammation in prEterm outcomes: PI EM: TCD: 2017-20: submitted August 2020: viva December 2020.
3. Dr. Murwan Omer: PRISM: PReterm Infection and SysteMic inflammation and neonatal outcomes. TCD 2014-: Principal Investigator (EM)
4. Dr. Tim Hurley: CRADLE: Circadian Rhythm Alterations anD outcome in neonatal Encepahlopathy. TCD 2018-2021
5. Dr. Eman Iwesi: FIREFLY: Follow up of Inflammatory Responses and multiorgan outcomes FoLlowing neonatal brain injury Principal Investigator (EM) 2019
6. Dr. Aoife Brannigan: PUFfIN: Point of care Ultrasound For Multiorgan evaluation in Neonatal encephalopathy: TCD
7. Dr. Gergana Semova: PLATYPUS: Preterm InfLAmmatory hyperreactiviTY and response to Pentoxyfylline to Understand necrotising enterocolitis and Sepsis. TCD
8. PhD: Chelo Del Rosario: PANDA: Psychological And Neurodevelopmental assessment of Neonatal Encephalopathy: co-supervisors: Profs. Elizabeth Nixon and Jean Quigley, TCD
9. PhD: Megan Dibble. NEON: Investigate the functional brain changes in Neonatal Encephalopathy and the associated behavioural and cognitive consequences. Primary Supervisor: Prof Arun Bokde: Co-supervisors: Profs. Elizabeth Nixon and Declan Devane
10. PhD: Dr. Graham King: Neonatal functional MRI and early development of cognition: Principal Investigator Prof Rhodri Cusack TCD: https://www.cusacklab.org/research.html
11. PhD: Sarah Kift: Development of a Complex Occupational Therapy intervention for Neonatal Units in Ireland: INCOT: Irish Neonatal Care Occupation Therapy Study PI: Prof Michelle Spiritos, TCD

MD STUDENTS (SUPERVISORS: DR. ANNE DOOLAN AND PROF. MARTIN, CWIUH AND RCSI)

Dr. Saira Tabassum is completing her MD thesis 'Relationship between maternal diet, macronutrient content of preterm expressed breast milk, infant growth and infant body composition' as a student of RCSI.

Dr. Meredith Kinoshita is currently undertaking her MD project 'Assessing breastfeed volumes in preterm infants' as a student of RCSI.

GRANTS

Prof J Miletin (CWIUH and UCD)

HRB/Definitive Intervention and Feasibility Awards 2020 (DIFA-2020-016). Randomised Placebo-Controlled Trial of Early Targeted Treatment of Patent Ductus Arteriosus with Paracetamol in Extremely Low Birth Weight Infants (ETAPA). 718,576.47, - EUR. Principal Investigator. In preparation

HRB/Definitive Intervention and Feasibility Awards 2020 (DIFA-2020-013). Safeguarding the Brain of Our Smallest Children – an open-label phase-III randomised trial of cerebral oximetry combined with a treatment guideline versus treatment as usual in premature infants. €982,646.88. Co-Applicant. In preparation

Friends of the Coombe. Randomised Placebo-Controlled Trial of Early Targeted Treatment of Patent Ductus Arteriosus with Paracetamol in Extremely Low Birth Weight Infants (ETAPA) - a pilot study. €11,000. Principal Investigator from 1.7.2020 to 31.12.2021 (ongoing)

HRB/National Children's Hospital Foundation Scheme (NCHF-2017-005). Longitudinal Assessment of Cardiac Function in Infants with Downs Syndrome Using Novel Echocardiography Techniques. €292,648.00. Co-Applicant. 1.10. 2017 to 31.10.2020 (ongoing)

Prof. E Molloy (CWIUH and TCD)

Principal Investigator €3.83 million current funding
Including collaborators €7.13 million
Total funding: €10.96 million

Principal investigator

Health Research Board Collaborative Doctoral Award. Irish Neonatal Brain Injury Consortium. 2018-2023. PI EM: €1.47 million

Health Research Board HRA Grant 2019-22: FIREFLY: Follow up of Inflammatory Responses and Multiorgan outcomes FoLlowing neonatal brain injury. PI EM: €369,891

National Children's Research Centre: GEMINI: GEnder and inflaMmatIoN In neonatal encephalopathy. Paediatric research Project grant. PI EM: 2019-20; €282,553

National Children's Research Centre Fellowship. Dr. Dean Huggard. DINOSAUR. Down syndrome and ImmuNOdeficiency and Systemic And mUltiorgan Responses. PI EM: 2018-20; €161,020

National Children's Hospital Foundation. DISCO: Down syndrome, Infection and Clinical Outcomes PI EM: 2016-9; €303,500

National Children's Hospital Foundation. PROSPER: PaediatRic Outcomes and Serum biomarker Panel in acutE traumatic bRain injury /concussion to severe traumatic 2015-19. PI EM: €300,000

Health Research Board HRA Grant. NIMBUS study: Neonatal Inflammation and Multiorgan dysfunction and Brain injury research group. PI EM: 2015-19; €328,000

National Children's Hospital Foundation. PROSPER: PaediatRic Outcomes and Serum biomarker Panel in Health Research Board HRA Grant. NIMBUS study: Neonatal Inflammation and Multiorgan dysfunction and Brain injury research group. 2015-9 PI EM: 2015-19; €328,000

National Children's Hospital Fund. CHAMPION study Childhood multiorgan outcomes after Neonatal encephalopathy. Co-PI Dr. Denise McDonald: 2015-18; €107,562

National Children's Research Centre Fellowship Dr. Mary O'Dea: Underlying mechanisms in Neonatal Immune metabolic dysregulation, Circadian rhythm and bRain INjury: UNICoRN study. PI EM: 2016-19; €76,275

National Children's Research Centre Fund. Dr. Niamh Lagan. DREAM study. Down syndRomE And Multiorgan involvement and neurodevelopmental outcome study. PI EM: €23,500

Health Research Board: Knowledge Exchange Scheme 2017: PATHFINdER: Parental information on therapeutic Hypothermia Following Neonatal Encephalopathy. PI EM: €31,335

National Children's Hospital Foundation. UNICORN: Underlying mechanisms in Neonatal Immune metabolic dysregulatiOn and bRain Injury. PI EM: 2017-21; €99,473

National Children's Research Centre. GENIE study: GEnder and Neonatal Inflammation in prEterm outcomes. PI EM: 2017-20; €185,875

National Children's Hospital Foundation. PRISM: PReterm Infection and SysteMic inflammation and neonatal outcomes. PI EM: 2016-19; €39,500

National Children's Hospital Foundation. NEBULA: Neonatal brain injury: Understanding systemic inflammation and immunomodulation. PI EM: 2016-18; €39,000

HRB summer Studentship: David O'Driscoll: Gender Effects on Neonatal Disease and ImmunE Responses (GENDER) Study: Co-PI: Prof. C Greene

European Society for Paediatric Research (ESPR) Young Investigator Start-up Grant 2020: CRADLE project: Circadian Rhythm Alterations anD outcome in neonatal Encepholopathy. PhD student Dr. Tim Hurley. PI EM; €6,000

Health Research Board. 2020 Multiorgan dysfunction in Cerebral Palsy. Medical student fellowship Zainab Aftal: €2,500

Wellcome trust: Student fellowship. DIXIE project: Down syndrome and Inflammation related to Toll-lIke rEceptor 2. Wen Koay. PI EM: 2018-19; €2,500

Henry Cook Scholarship, TCD, Medical student research: METEOR Liam Dwyer 2018

Co-applicant/collaborator
Provosts Award 2019 TCD: PETIT study of developmental follow up in Preterm infants. PIs: Profs Nixon and Quigley: Co-applicant EM

Health Research Board DIFA: Definitive Intervention: Membrane sweeping for induction of labour: The MILO Study: PI Prof Declan Devane NUIG; Co-applicant EM: 2018-21; €348,666

Enterprise Ireland: Infant Digestion study: Teagasc/UCC/TCD; PI: Andre Brodkorb; Local PI: CHI at Crumlin/TCD EM (TCD): 2018-20; €125,952; Overall €433,860

National Children's Research Centre Fund. PhD: Dr. John Allen: SERENITY project: SEveRE Neurological Impairment and children with medical complexity. TCD 2018-2021: PI Prof Denise McDonald: EM Co-supervisor. €23,500

National Children's Research Centre Fellowship. Dr. Lyudmyla Zakharchenko. Post-Operative Myocardial Performance and Pulmonary Hypertension in Infants with Down syndrome: The Role of Inflammation. PI: A EL-Khuffash. EM: Co-investigator: 2018-2021

Health Research Board NCHF: Longitudinal Assessment of Cardiac Function in Infants with Downs Syndrome Using Novel Echocardiography Techniques. NCHF-2017-005. PI Prof Afif El-Khuffash: 2017-21 Co-investigator EM: €292,648

ERC Advanced Grant: FOUNDCOG: Curiosity and the Development of the Hidden Foundation of Cognition. PI Prof Rhodri Cusack: Collaborator EM: 2018-23; €3,030,538

National Children's Hospital Foundation Ref: 1716 - BRAIN Injuries in Neonates: MRI Networks: PI: Prof Arun Bokde. Co-investigator EM: €144,487

National Children's Hospital Foundation Ref: 1719; Investigating the immune evasion mechanisms of respiratory syncytial virus in paediatric patients attending NCH: towards the development of novel curative therapeutics; €50,000 PI: Dr. Nigel Stephenson. Co-investigator: EM: €50,000

National Children's Hospital Foundation Comprehensive and Effective Laboratory Test Reference Intervals for Irish Children: the Celtic Ranges Project (Phase 1 study) Ref: 1713: PI: Prof Gerard Boran. Co-investigator: E M; €148,311

HRB Ireland Perinatal Clinical Trials Network 2015: Co-Principal Investigator. €2.5 million

Dr. J Kelleher (CWIUH)
Gel for Early Hypoglycaemia Prevention in Preterm Infants - the GEHPPI study. Principal Investigator: Dr. John Kelleher. Co-investigators: Dr. Joythsna Purna, Ms Shirley Moore, Dr. Johannes B. Letshwiti, Ms Jean James, Dr. Jan Janota, Dr. Radim BRABEC , Dr. Margaret Moran, Ms Christine McDermott, Prof Jan Miletin (UCD), Ms Anne O'Sullivan (RANP), Mr Peter Duddy (Chief 2 Pharmacist), Ms Julie Sloan (Research Midwife), Dr. Graham King. Grant from Friends of the Coombe €10,000. Commenced in 2020 and ongoing multicenter international RCT recruitment.

See Appendix Two for a list of publications of the Department of Paediatrics and Newborn Medicine.

Paediatrics and Newborn Medicine - Midwifery and Nursing Report

The National Neonatal Transport Programme (NNTP) team from CWIUH conducted 180 transports in total. This accounted for 33% of the total NNTP transports (n = 546). The CWIUH received 35% of the national referrals for neonatal management that were transported by the NNTP.

The introduction of a dedicated lactation support CNS to the NICU, has resulted in significant improvements in: (1) mothers receiving assistance within the first two hours (from 0% to 20%), (2) subsequent support (27% to 79%), (3) the acquisition of colostrum within six hours (from 13% to 54%), (4) increased maternal supply at days 3, 7, and 14 and (5) increased breastfeeding rates on discharge, (from 68% to 92%, with a drop off to 80% due to COVID-19 related restrictions).

The postnatal ward liaison nurse continued to support postnatal staff in the care of late preterm babies and particularly babies with feeding issues, which traditionally required admission. The role also facilitates babies who require more supervised care for a short period. This initiative reflected positively in the National Maternity Experience Survey 2020, in that there were less admissions thus avoiding separation and facilitating bonding and attachment.

COVID-19 seriously affected Family Infant Neurodevelopmental Education (FINE) Level I programme facilitated and coordinated by CWIUH, leading to the development of an online course by faculty. The fourth Irish FINE Level II course was coordinated from CWIUH, facilitated online.

COVID-19 seriously impacted on our highly valued family centred care philosophy, as there was a significant reduction in the number of adults per room which was influenced by our infrastructure and an infection control requirement. However, the parents collaborated with us, thus achieving increased time with their baby without impacting on fellow parents. Video call for parents and baby was initiated. The reciprocity that was evident especially when siblings were greeting their baby was astounding. In an effort to increase parents' interactions, particularly in NICU and HDU, we introduced a 'Reading to your Baby' initiative. Parents found this easy to do everyday.

Two staff members graduated with the Postgraduate Diploma in Neonatal Intensive Care Nursing. Two others were facilitated from Galway and Limerick University Hospitals. Four staff commenced the programme. Six staff completed the Foundation Programme on Principles of High Dependency and Special Care; six completed level II, Neonatal intensive Care.

Neonatal Transition Home Service

In 2020, this service provided practical and emotional support to 68 families of 80 premature babies prior to and following discharge home from our NICU and SCBU. Unfortunately, COVID-19 restrictions prevented home visits for most of the year. An initial review of the outcomes of calls made by staff to parents, indicated a need for change in practice. Therefore, 274 planned phone calls were made to parents in the weeks following discharge. Topics of calls included general feeding and supplementation progression advice, concerns about bowel patterns, hernias, haemangiomas, stoma and oxygen care, prescription and follow up queries in regards to referrals and appointments. Home oxygen was organised for two babies and stoma supplies for two others. In June, the recording of parents' calls following discharge commenced. These calls included other disciplines such as the baby clinic, public health nurses, dietician, physiotherapists, medical social workers, stoma nurses, pharmacies, bereavement team, mental health team and the Synagis (palivizumab) community referral team. Between June and December, 178 calls were recorded.

Parents were offered twice-weekly education sessions and cardiopulmonary resuscitation (CPR) workshops. All parents were encouraged to attend and staff were welcome too. In 2020, 133 mothers and 35 fathers availed of these sessions and workshops. One-to-one classes with fathers were facilitated outside the CWIUH building when level 5 COVID-19 restrictions were in place.

The Annual Christmas party for premature babies who have been discharged was cancelled in 2020 due to COVID-19 restrictions.

The respiratory syncytial virus (RSV) prophylaxis programme, with the monthly administration of palivizumab to eligible babies and referral of these babies to the home administration service *(Synacare®)* ran from early October until late February. Pre-discharge doses were administered to 14 babies and 41 babies were referred to *Synacare®*.

Funding was secured to purchase ten hospital grade breast pumps. These are loaned to mothers of our premature babies.

Online lectures on discharge planning, immunisations and palivizumab were recorded for neonatal foundation course students because in-person lectures were impossible due to COVID-19 restrictions.

Advanced Neonatal Nurse Practitioner

The role of the Advanced Neonatal Nurse Practitioner (ANNP) is to enable consistency in standards of health care, by having a presence in the clinical area, to ensure care is evidenced based while offering support and guidance to medical and nursing staff at the bedside. The ANNP also promotes family centred care, empowering parents to participate in the care of their baby.

The ANNP promotes breastfeeding and optimises nutritional management of our babies.

In 2020, the ANNP further developed the simulation programme acquiring additional simulation equipment to enhance training in resuscitation, stabilisation and clinical procedures for nursing and medical staff. A multidisciplinary guideline for the stabilisation and initial management of babies born between 23 and 27 weeks' gestation was introduced. The ANNP actively participated on the Neonatology Project Group tasked with the design of a new neonatal unit.

Perioperative Medicine

Department of Perioperative Medicine and Anesthesia

Table 4.1.1 Mode of anaesthesia administered in theatre*

	Elective (n)	Emergency (n)	Total (n)
Local anaesthetic	84	7	91
General anaesthetic	2,032	173	2,205
Spinal	1,451	652	2,103
No anaesthetic used	18	6	24
Spinal or epidural	1	5	6
Epidural	10	521	531
General and spinal	16	3	19
General and spinal and epidural	1	1	2
General and epidural	1	8	9
Local and general	3	0	3
Spinal and epidural	2	18	20
Spinal and no anaesthetic used	0	1	1
Total	3,619	1,395	5,014

* *excluding LLETZ/NETZ/SWETZ/LEEP procedures in colposcopy clinic*

Table 4.1.2 Mode of anaesthesia for Caesarean sections

	Elective CS (n)	Emergency CS (n)	Total CS (n)
General anaesthetic (GA)	16	38	54
GA and other		4	4
GA and spinal	4	6	10
GA and epidural	1	9	10
Spinal	1,343	577	1,920
Spinal and epidural	2	26	28
Epidural		399	399
Uncoded		9	9
Total	1,366	1,068	2,434

Table 4.1.3 Mode of analgesia in labour

	Epidurals/mothers delivered (n)
Epidurals - nulliparous	1,782/3,024
Epidurals - parous	1,303/4,381
Total - epidurals	3,085/7,405
Each instance of pain relief (not per mother)	
Aromatherapy	4
Acupuncture	2
Epidural continuous infusion and top ups	1,768
Epidural continuous infusion alone	1,275
Epidural - top ups alone	42
GA	13
Hydrotherapy	5
Hypnotherapy	51
Inhalational analgesia	4,547
Intrathecal catheter	1
Lignocaine	5
No analgesia	540
Uncoded	1,661
Other	23
Pethidine	176
Pudendal block	18
Remifentanil infusion	23
Spinal	160
Transcutaneous electrical nerve stimulation	471
Total	10,785

An online virtual pre-assessment service was introduced in 2020. Almost half (49%) of women attending the pre-assessment clinic were assessed virtually with no change in the rate of day of surgery cancellation or delays. In 2020, the Pain Service was formalised.

See Appendix Two for a list of publications of the Department of Perioperative Medicine and Anaesthesia.

Pathology and Laboratory Medicine

Overview

Table 5.1.1 Workload by test request

Department	2014	2015	2016	2017	2018	2019	2020
Microbiology	44,514	42,573	41,639	44,387	44,764	43,781	43,781
Biochemistry	205,475*	218,565*	216,849†	207,686	213,994	216,915	196,526
Haematology	50,717	53,961	55,111	54,298	51,418‡	52,640	46,098
Transfusion	25,273	26,537	26,328	29,464	29,099	30,088	29,784
Cytopathology	27,355	25,589	26,161	26,185	31,814	33,200	8,172
Histopathology	5,877	6,001	6,331	6,380	6,796	7,092	6,337
Post mortems§	50	35	33	32	32	35	60
Phlebotomy	21,084	23,641	33,812	37,870	38,287	39,554	35,960

** includes POCT tests*

† change in referral test counting

‡ corrected test number, counting method change in late 2017

§ includes post mortem examinations of outborn babies

In 2020, routine and on-call service provision was maintained during SARS-CoV-2 global pandemic from 18th March. Onsite SARS-CoV-2 testing was instituted on a 24-hour basis.

The accreditation of all Pathology and Laboratory Departments as well as Point of Care Testing (POCT) within the CWIUH was maintained in 2020.

Mr Vincent Brennan, (Project Manager by HSE Estates Office), commenced work with the CWIUH staff on the planning and development phase for the National Cervical Screening Laboratory. Pathology staff were recruited to a number of teams within the CWIUH to ensure the project would provide the necessary footprint for the laboratory requirements of the new National Cervical Screening Laboratory.

Clinical Biochemistry, Endocrinology and Point of Care Testing

The Biochemistry Department provides test results for diagnostic, screening, therapeutic and disease monitoring purposes. Our test repertoire includes 38 biochemistry tests and eight endocrinology tests. Point of Care Testing (POCT) throughout the CWIUH includes ten blood gas analysers, 21 glucose meters, two meters for testing for threatened preterm labour and rupture of membranes and three Clinitek devices for measuring urine human chorionic gonadotropin. Our patients include pregnant women and neonates as well as women attending for gynaecological investigations. The quality of our results is of upmost importance and therefore we take great pride in the accreditation of the Biochemistry Department to ISO 15189 and 22870 standards by the Irish National Accreditation Board (INAB). Point of Care Testing (blood gases) is also accredited to ISO 22159. The types and numbers of test performed from 2017 to 2020 are shown in Table 5.2.1.

Table 5.2.1 Tests performed

Type of test	2017	2018	2019	2020
All biochemistry tests* (n)	207,686	213,994	216,915	196,526
Glucose tolerance tests (n)	4,212	4,400	4,458	4,245
C-reactive protein tests (n)	5,392	5,465	6,605	5,656
Thyroid function tests (n)	5,165	5,406	5,601	5,440
Blood gas requests (n)	17,685	17,438	17,049	16,731

** includes referred tests*

Ms Ruth O'Kelly retired as Principal Biochemist in July 2020. All the staff in the Biochemistry Department wish her a long and happy retirement.

Cytopathology

The Cytopathology Department received 8,172 samples in 2020 a decrease of 75% compared with the number of samples received in 2019 (table 5.3.1). This decrease was due to the pausing of the cervical screening programme during the COVID-19 pandemic.

In 2020, CervicalCheck (programme samples) comprised 76% of the workload of the department.

Table 5.3.1 Specimen throughput, 2018 to 2020

Specimen throughput	2018	2019	2020
Total number of samples	31,814	33,200	8,172
Programme samples, n (%)	30,235 (95%)	31,265 (94%)	6,241 (76%)
Turnaround Time (TAT) 0 - 2 weeks	*	*	*
Unsatisfactory	4.6%	6%	9%
Negative	86%	75%	67%
Low-grade	8.8%	10%	11%
High-grade	1.8%	3%	4%

** TAT monitoring suspended May 2018 by CervicalCheck*

Eight staff members completed training for human papilloma virus (HPV) testing and processing. New HPV Analysers were implemented, validated and brought into use for HPV testing. This facilitated extensions to scope for INAB ISO 5189 accreditation for cytopathology which was retained.

Three Medical Scientists participated in the joint Technological University Dublin/CWIUH/CervicalCheck Certificate in Molecular Cytopathology from March 2020 - 2021. Four staff attended the Cytology update course in September 2020. Staff from the department participated in 31 MDT meetings.

The department continued to implement LEAN across the department although this was severely impacted by the COVID-19 pandemic.

Haematology and Transfusion Medicine

There was a decrease in specimen throughput in 2020 due to the impact of the global SARS-CoV-2 pandemic on the service. There were 46,098 haematology tests in 2020 compared with 52,640 in 2019 (a 12% decrease) and 29,784 transfusion medicine tests in 2020 compared with 30,088 in 2019 (a 1% decrease). Turn around time (TAT) figures for haematology and transfusion medicine are shown in Tables 5.4.1 and 5.4.2.

Table 5.4.1 Turn around time (TAT) figures for haematology

Test	Full blood count		Coagulation screen	
Year	2020	2019	2020	2019
Target Max TAT (mins)	60	60	120	120
Average TAT achieved (mins)	28	22	40	41
Within target TAT (%)	95	98	96	96

Table 5.4.2 Turn around time (TAT) figures for transfusion medicine

Test	Crossmatch		Inpatient group and screen	
Year	2020	2019	2020	2019
Target Max TAT (mins)	240	240	240	240
Average TAT achieved (mins)	90	58	120	164
Within target TAT (%)	96	100	93	99.5

The impact of the COVID-19 pandemic on the service was managed successfully. The quality of the service was maintained throughout the year and INAB ISO 15189 accreditation was retained.

Presentations and posters on initiatives to improve blood stock management in conjunction with Tallaght University Hospital and Naas General Hospital were:

- presented at National Haemovigilance Office Conference
- shortlisted for Healthcare Excellence Awards
- won team event in Dublin region of Spark Ignite Awards
- shortlisted for Irish Healthcare Awards.

A new coagulation analyser and new Kleihauer method were validated and brought into use, including successful extensions to scope for ISO 15189 accreditation.

An electronic reporting service for fetal RhD screening with the Irish Blood Transfusion Service was introduced to decrease turnaround time and prepare for targeted routine administration of anti-D immunoglobulin roll out in the CWIUH.

Haemovigilance

Table 5.5.1 Summary

Women who received a transfusion (n)	218
Women who received ≥ 5 units of RCC (n)	15*
Babies who received pedipacks (n)	62
Neonatal exchange transfusions (n)	0
Neonatal extracorporeal membrane oxygenation (n)	0
Reports to National Haemovigilance Office (n)	4

** 14 obstetric cases submitted to NPEC and 1 gynaecology case*

In 2020, ISO 15189 accreditation was achieved as was 100% traceability of blood components and blood products.

Histopathology and Morbid Anatomy

Table 5.6.1 Histopathology workload, 2017 to 2020

	2017	2018	2019	2020
Cases (n)	6,355	6,798	7,092	6,337
PM cases (n)	30	32	35	60
Blocks (n)	9,139	18,436	20,409	17,692
H and E (n)	56,363	53,903	51,946	41,781
IHC (n)	1,943	2,236	1,883	2,170
Specials (n)	45	45	66	100

TARGET HISTOPATHOLOGY TURN AROUND TIMES (TATS)

According to Royal Faculty of Pathology Guidelines, the times (TATs) should be as follows:

- Small biopsy TATs: 80% within five working days
- Non-biopsy and other TATs: 80% within seven working days.

Table 5.6.2 Target histopathology turn around time (TAT)

2020	Cases (n)	Day 3 (%)	Day 5 (%)	Day 7 (%)	Day 10 (%)	Outliers (n)
Total TAT histology	6,033	50.56	83.72	90.97	96.34	81
Small biopsy TAT	2,063	56.57	86.62	92.44	97.87	4
Non - biopsy - other TAT	3,970	47.43	82.22	90.2	95.54	77

TATs were exceeded for both small biopsies and non-biopsy samples in 2020 as shown in Table 5.6.2.

Continuous professional development is strongly supported in this department as evident from the number of courses, talks and meetings attended (online) by our team in 2020 (table 5.6.3).

Table 5.6.3 Continuous professional development

Month, 2020	Title of course	Scientists attending (n)
Mar	Histodissection course - Gynaecology and Placenta	2
Apr - July	Online Histopathology courses	4
Sept	Quality Conversations: Promoting Dignity and Respect in the Workplace	3
Oct	Biomedica President's Prize	1
Dec	Healthcare and the Law	1
Jan - Dec	Histodissection Course - Gynaecology and Placenta	5

Eibhlin Gallagher progressed to the second year of the MSc in Biomedical Science with the University of Ulster. Rosana Alves commenced the MSc in Biomedical Science with the University of Ulster in September.

INAB ISO 15189 accreditation for histopathology was maintained and silver in situ hybridisation staining is to move from the Benchmark LT to the Benchmark Ultra. Training and competency records moved to Q-Pulse.

Microbiology and Infection Prevention

The Microbiology Department is accredited by the Irish National Accreditation Board to ISO 15189: 2012 Standard.

In 2020, the Microbiology specimen throughput was as follows:

- Specimens, n = 28,242
- Susceptibilities, n = 2,006
- Referral tests, n = 16,722.

Figure 5.7.1 Send out workload, 2012 to 2020

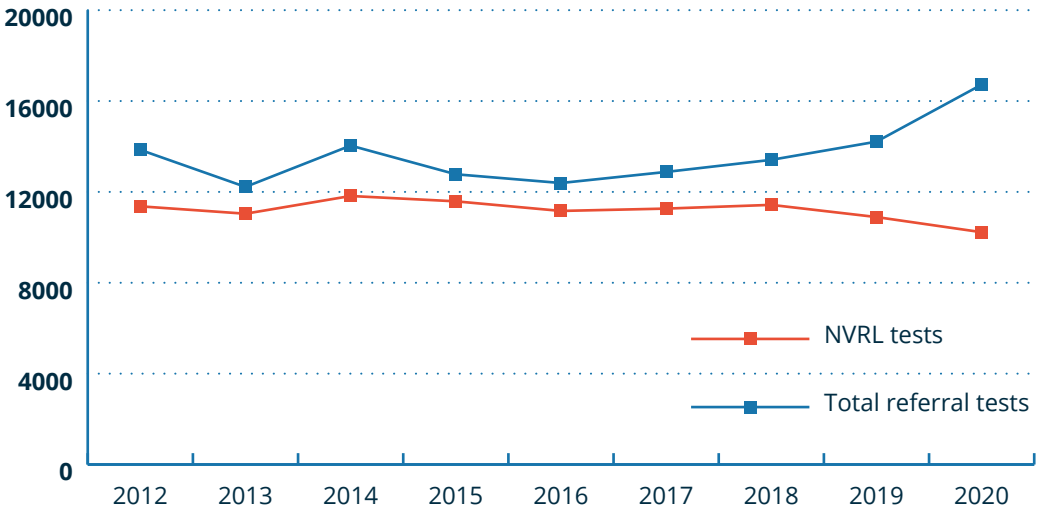
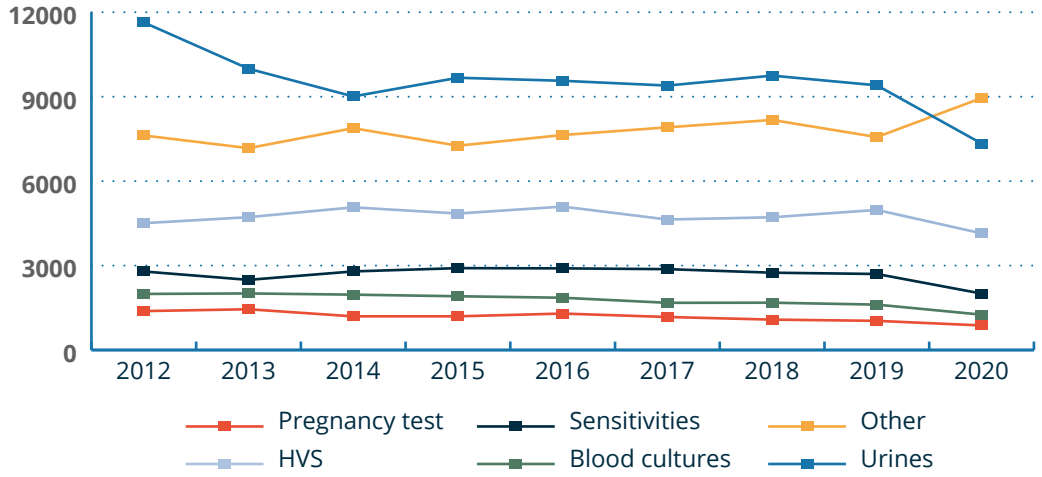


Figure 5.7.2 Type and number of specimens, 2012 to 2020



SARS-CoV-2 testing was introduced in the Microbiology Department in May 2020. Table 5.7.3 shows the number of tests performed in the laboratories that provided a SARS-CoV-2 testing service to the CWIUH.

Table 5.7.3 SARS-CoV-2 testing by laboratory

Testing laboratory	Number of tests, n (%)
CWIUH	1,680 (53.6)
CHI Crumlin	1,400 (44.7)
National Virus Reference Laboratory	54 (1.7)
Total	3,134 (100.0)

› Environmental screening:
- Required after building work is completed prior to opening.
- Essential to allow equipment to be reused post cleaning.

› Turnaround times:
- Turnaround times were analysed on 23 occasions in 2020.
- This included blood cultures, urines, microbiology specimens both simple and complex, semen samples, pregnancy tests, external tests, SARS-CoV-2 and CSF microscopy and Gram stains.
- Nineteen of these 23 occasions were within the target turnaround times.

› External QA:
- Sixty-one distributions were analysed in 2020.
- Schemes: pregnancy testing, antifungal ID and susceptibility, general bacteriology, antimicrobial susceptibility testing, genital pathogens, MRSA screening, andrology, urinalysis cell count, blood culture Gram stains and SARS-CoV-2.

› Internal quality assurance:
- Ongoing tests, kits, and reagents validation.
- Batch acceptance of all products.
- Daily, weekly, monthly and quarterly quality control was carried out, covering all microbiology methods, reagents, media and susceptibility testing.

› All microbiology staff up to date with manual handling, chemical safety, fire safety and hand hygiene training.

SURVEILLANCE

- Microbiology and Infection Prevention and Control dashboard is maintained to provide ongoing information on key performance indicators
  - Alert organisms
  - Multi-drug resistant organisms
  - Serious infection rates
  - Notifiable diseases
  - Blood borne viral infections
  - SARS-CoV-2
- Adult blood stream infection (BSI) rate per 1,000 bed days used (BDU)
- Adult blood culture contamination rate
- Paediatric late onset primary blood stream infection rate in NICU per 1,000 patient days
- Paediatric laboratory confirmed early onset blood stream rate per 1,000 live births
- Healthcare associated infections, Staph aureus and C. difficile rates per 10,000 BDU reported to the Business Information Unit, HSE
- Resistance patterns of specific organisms reported to EARS-Net (European Antimicrobial Resistance Surveillance Network). This allows comparison with similar hospitals in Ireland and national comparison with other European countries
- Number of CRE screens performed.

Table 5.7.1 Infections rates (%)

Year	Adult BSI rate	Paediatric NICU late onset BSI rate	Paediatric early onset BSI rate	S. aureus HAI rate	C difficile HAI rate
2019	0.47	6.0	0.18	0.39	0.0
2020	0.44	8.5	0.79	0.94	0.47

INFECTION CONTROL PREVENTION (ICP)

- Clinical staff compliant with hand hygiene training
  - Between 61% and 82% in 2019
  - Between 44% and 61% in 2020

- Hand hygiene audits in clinical locations (target 90%)
  - 94% in May 2029 and 91% in October 2019
  - 92% in May 2020

- Alcohol gel consumption
  - 1,617 litres in 2019
  - 2,959 litres in 2020

Molecular SARS-CoV-2 testing was introduced and the following continued:

- Validation and batch acceptance continued for accreditation.
- Performance characteristics of examination procedures, including uncertainty of measurement, were determined for accreditation purposes.
- Staff training in semenology.
- Senior staff regularly attended MDT meetings within the CWIUH including Drugs and Therapeutic committee, Antimicrobial Stewardship committee, Infection Prevention and Control committee and POCT.
- Microbiology staff are members of and contributed to National committees and advisory groups.
- The Infection Prevention and Control Dashboard was maintained.
- The rate of adult blood culture contamination was 0.7%. This rate was below 3% for the seventh year in a row.
- Alert organism and environmental screening continued.
- Antibiogram data was produced to inform antimicrobial guidelines.
- Annual surveillance and IPC data were produced for senior management:
  - Annual newsletter
  - CWIUH Board Report.
- Additional maternal BSI surveillance submitted to EARS-Net.
- Ongoing data presentations and feedback to MDT obstetric and paediatric meetings.
- Collaboration with research projects within the CWIUH.
- Patients with multi-drug resistant organisms continued to have alerts added to their records on iPIMS.
- Peripheral vascular catheter care bundle audits continued. Staff could access the results on the medical audit system.
- Ongoing training of staff in IPC issues.

- Collaboration with the Centre for Midwifery Education.
- Engagement with users to reduce pre-analytical blood culture non-conformances.
- Use of Q-Pulse for management of pathology non-conformances.
- SARS-CoV-2 information required; CWIUH testing database, HSE daily tracker, daily reporting to the Dublin Midlands Hospital Group (DMHG) via hospital senior management, daily submission of all SARS-CoV-2 results to Public Health, notification of SARS-CoV-2 'detected' results via computerised infectious disease reporting (CIDR) and weekly reporting of test consumables to the HSE.

Phlebotomy Department and Clinical Area

The impact of the COVID-19 pandemic on the phlebotomy service in the adult outpatient department (OPD) and Perinatal Day Centre (PDC) led to a decrease of 3,594 patient episodes in 2020 compared with 2019 (table 5.8.1). The workload within the PDC remained almost the same despite the pandemic. Figures presented are patient episodes and do not reflect actual numbers of blood samples taken from each patient. All three phlebotomists worked in the PDC and the adult OPD providing cross cover for both areas.

The workload within the PDC continued to be substantial (> 1,000 patient episodes per month) which reflected the high level of screening for gestational diabetes in the antenatal population.

Table 5.8.1 Numbers of visits and PDC blood tests, 2014 to 2020

Type of visit	2014	2015	2016	2017	2018	2019	2020
First visits	7,773	7,586	7,296	7,237	7,090	6,908	6,342
Other visits	13,311	16,055	17,954	17,369	18,414	18,951	16,033
PDC (blood tests)	-	-	8,562	13,264	12,783	13,695	13,585
Total (n)	21,084	23,641	33,812	37,870	38,287	39,554	35,960

Radiology Department

Adult Radiology

In 2020, 898 adult ultrasound examinations and 183 adult radiograph examinations were carried out in the adult radiology department. The service for all urgent and emergency patients was maintained during the COVID-19 pandemic. However, the routine adult ultrasound service was reduced to 23% of the service provided in 2019. The curtailment in this service was directly related to the response to the COVID-19 pandemic. We endeavoured to resume our routine service in line with HSE guidance and attempted to maintain acceptable turnaround time for both ultrasound and radiograph examinations despite the development of waiting lists for the routine ultrasound service.

Allied Health Services

Chaplaincy and Pastoral Care

The Pastoral Care Department is staffed by one chaplain, Renée Dilworth. The department provides a supporting ministry to all families in times of sadness and in times of joy (table 7.1.1). The surrounding parishes provide additional support when possible. The chaplain understands that everyone has a spiritual dimension and that many may have a religious component, we can contact ministers and leaders of other denominations and traditions 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 CWIUH and is open 24 hours a day for use by women, families and staff. The Book of Remembrance continues to be displayed in the Oratory and it is updated regularly.

Table 7.1.1 Service provided by the Pastoral Care Department, 2020

Service provided	n
Bereavement support	205
Funeral services	183
Baptisms	29
Naming and blessing services and blessings	32
Appointments for past patients	9
Prayer services for past miscarriage and loss	6
Referral for support of fetal anomalies	7
Requests for copy of baptismal certificates	5
Organise Mass and services for staff	0*
Staff appointments	23

** due to the COVID-19 pandemic*

In 2020, the department continued to provide support to women, families and staff.

Due to COVID-19 restrictions our Annual Service of Remembrance was cancelled in 2020. Instead, a reflection was posted on social media. The department continues to respond to the growing cultural diversity of women and families attending the CWIUH. Good relationships have been built with voluntary organisations which support our bereaved families. The chaplain gives input to online study days for staff and students at this time. The department continues to send a sympathy card to families one month following the death of a baby.

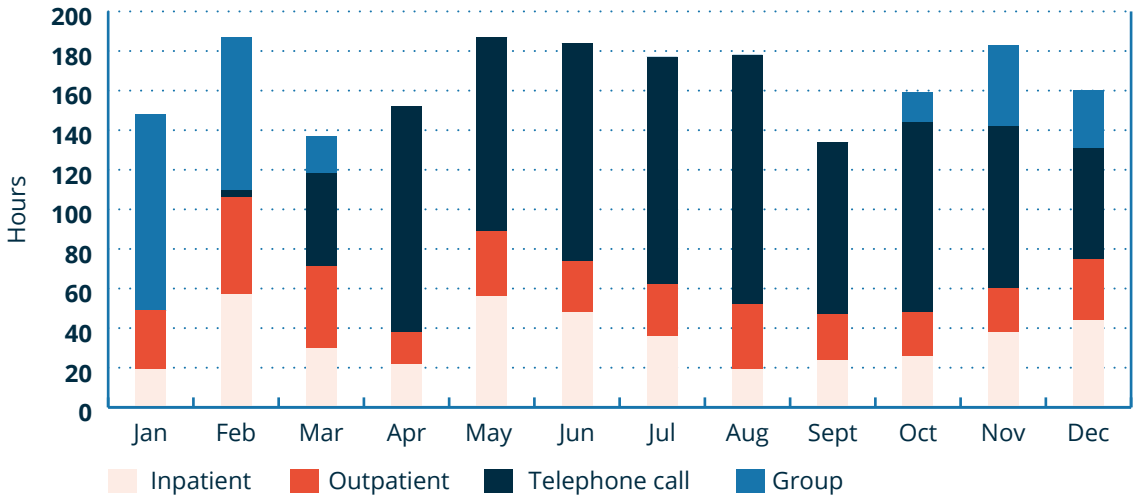
The support given to the options in pregnancy service has increased the workload of the chaplain.

Clinical Nutrition and Dietetics

Table 7.2.1 Number of patients seen in 2020

Clinical area	Patients seen (n)
Diabetes	1,138
Neonatal	503
Obstetrics and Gynaecology	275
Total	1,916

Figure 7.2.1 Dietitian activity, 2020



COVID-19 necessitated the introduction of a virtual and telehealth service. Education videos were developed, in conjunction with the parent education department, for the CWIUH website. A full service to women with GDM continued despite the challenges posed by COVID-19 and the non-attendance rate reduced by 65%.

Medical Social Work

In 2020, 1,050 women were referred to the medical social work (MSW) department. In total, 1,201 women received MSW intervention in 2020 (151 of these women were referred in 2019). Over half of the referrals were allocated to a specialist MSW with advanced knowledge and skills in the specific area of need. An immediate MSW intervention was required in 48% of referrals (including child protection and patient safety referrals). The waiting list average was 26 women (range 12 - 51 women) representing an improvement on 2019 figures, despite the challenges associated with the COVID-19 pandemic.

Safe provision of all MSW services, including face-to-face and telehealth interventions where appropriate, continued throughout the year despite the COVID-19 pandemic. During the year, there was a broadening of MSW service provision through the development and implementation of two new MSW services: (a) a specialist perinatal mental health service and (b) a network link with the Midland Regional Hospital Portlaoise (MRHP). These services run independently of but with a crossover attachment to the MSW department. One hundred women received a MSW intervention through the specialist perinatal mental health service and 158 women received a MSW intervention through the network link service established in the MRHP.

Continued personal development is valued in the department with Kerri O'Brien completing a Postgraduate Diploma in Child and Adolescent Loss through NUI, Maynooth and Tanya Franciosa completing an MSc in Leadership through RCSI, Institute of Leadership.

Gretchen McGuirk ran a successful domestic violence awareness raising campaign within the CWIUH throughout the year. This was especially pertinent given the well documented increase in the prevalence of domestic violence during the COVID-19 pandemic.

MSWs continued to promote the importance of the Children First Act, 2015 and provided assistance to other mandated reporters within the CWIUH.

The refurbishment of the MSW department reception created a more welcoming environment for women at their point of access to the MSW service.

Accommodation for parents living outside of Dublin, whose babies are admitted to NICU and SCBU, remains an ongoing issue for families. MSWs along with staff in the Neonatal Units work tirelessly to facilitate support plans for families. The support from Friends of the Coombe and the InsideOut Homeshow is invaluable in this regard and the MSW department remains grateful to these charities for the support they provide to parents.

The staff of the MSW department continue to be indebted to the members of Coombe Care who provide assistance to women by way of necessary practical help at the time of a baby's birth. The COVID-19 pandemic changed the face of fundraising overnight and despite this, the committee members remained committed to the women who attend the CWIUH. The work of Coombe Care is much appreciated by women and staff in all areas of the CWIUH.

Pharmacy Department

The staff of the pharmacy department continued to provide a comprehensive pharmacy service despite staff shortages, stock availability issues and changes in day-to-day work practices during the COVID-19 pandemic. Staff adapted well to remote working which enabled the formation of two separate teams to prevent the forced self-isolation of the entire department in the event of a possible COVID-19 infection or exposure.

The daily review of prioritised patient drug charts on adult wards, medicines reconciliation at admission and review of drug charts for potential interactions and safety in pregnancy continued. Daily remote attendance at NICU ward rounds and review of all neonatal drug charts; including facilitation and support around prescribing of individualised and standard concentration parenteral nutrition continued. Multidisciplinary acute pain rounds and team-patient education regarding appropriate analgesia use and review of medication charts continued. Staff reviewed and updated 154 NICU drug guidelines in 2020.

Staff submitted 143 medication safety event reports in 2020. This represented a 25% reduction compared with 2019. One hundred and twelve (79%) of these medication safety event reports were actioned during 2020 which was a small increase compared to the number of actioned reports in 2019. A review, of the Institute for Safe Medication Practices (ISMP) Targeted Medication Safety Best Practices for Hospitals, was undertaken during 2020. This US-based institution developed these targets to identify, inspire, and mobilise widespread, national adoption of consensus-based Best Practices for specific medication safety issues that continue to cause fatal and harmful errors in patients. The review found that the CWIUH was by and large compliant with all applicable recommended best practices. Information on management of overdose of certain medications and appropriate antidotes was developed and added to the CWIUH prescribing app.

The antimicrobial pharmacist acts as secretary and continues to be an active member of the Antimicrobial Stewardship and Infection Prevention and Control Committees and Teams in the CWIUH. The antimicrobial pharmacist is also a member of the newly established, Bug Busting committee for the NICU in the CWIUH. The Health Protection Surveillance Centre (HPSC) reported a decrease of 10% in antimicrobial consumption in the CWIUH from 2019 to 2020. Education to NCHD staff on the appropriate use of antimicrobials, prescribing guidelines and the importance of stewardship was provided via Zoom due to the COVID-19 pandemic. An in-depth review of the CWIUH Antimicrobial Prescribing Guidelines for adult obstetric and gynaecology patients was conducted. This included review of the CWIUH antibiograms provided by microbiology, review of treatment monographs and a comprehensive update of safety information about antimicrobial agents in lactation. The antimicrobial pharmacist participated in

the National Antimicrobial Point Prevalence Survey and continued to submit data regarding antibiotic consumption on a monthly basis to the HPSC.

The following audits were completed in 2020: audit of prophylactic antibiotics for gynaecological patients and a re-audit of prophylactic single dose antibiotic administration for instrumental vaginal delivery.

In 2020, the department undertook significant expansion of the CWIUH prescribing apps for neonatology and obstetrics and gynaecology. This work involved adding new sections to both apps and undertaking a review of app functionality and making improvements to the layout and presentation of information within the apps to make the prescribing process easier and safer. iPads were rolled out in the NICU to aid with prescribing and administration of medication, thus replacing paper-based guidance with a more efficient and permanently up to date system. Regular six to twelve monthly review of electronic and pdf versions of Prescribing and Microbiology Guidelines and the Neonatal prescribing handbook were conducted. These can be accessed from the user's Smartphone.

The expansion of the Pharmacy Technician-led Medication Top-up service to all wards and clinical areas in the CWIUH occurred in 2020. This led to further considerable cost savings in 2020 and improved stock availability, more efficient use of stock and cost efficiencies throughout the wards.

The department continued to support and promote the use of new standard concentration parenteral nutrition solutions in NICU. Compared to previous products, these new solutions are a better source of nutrition for our most vulnerable babies. The expected reduction in the requirement for individualised parenteral nutrition was seen and in fact, exceeded expectations in terms of reducing costs as well as reducing the reliance of the CWIUH on the national service for individualised parenteral nutrition.

The department issued stock to wards, outpatients, staff and babies discharged from SCBU on 31,000 occasions, equating to approximately 123 dispensing transactions per day.

Peter Duddy continued as an attending member of the Irish Medication Safety Network, an attending member representing neonatal pharmacy and continued his teaching collaborations with the School of Pharmacy in University College Cork. Orla Fahy continued as a member of the Irish Antimicrobial Pharmacists group. Mairead McGuire and Orla Fahy continued in their review and editorial roles in the Primary Care Prescribing Guideline Group.

Physiotherapy Department

The provision of inpatient services, a specialised physiotherapy service to the NICU and SCBU and outpatient group physiotherapy services was maintained during the COVID-19 pandemic. All outpatient appointments ceased in March 2020. Staff used this extra time to triage patients over the phone, develop online classes and maintain the inpatient services.

The physiotherapy department received 2,196 referrals in total from the adult OPD, a 21% decrease compared with 2019. However, there was a 36% (1,616) increase in inpatient referrals compared with 2019. There were 1,308 referrals to the low back pain and pelvic girdle pain classes. There were 1,892 appointments, both new and review, in the Baby Clinic.

Details about the type and numbers of classes provided by the physiotherapy department are presented in Table 7.5.1. Women were offered a two-hour class as part of the MDT led antenatal education classes. Physiotherapy classes were delivered in person until March 2020. Classes moved to a live online format from August 2020.

Table 7.5.1 Classes provided by the physiotherapy department in 2020

Type of class	n
Physio antenatal classes (Jan - Mar in person)	168
Physio antenatal classes (Nov - Dec online class pilot)	51
Total	219
Postnatal classes (Jan - Mar in person)	88
Postnatal classes (Sept - Dec online class pilot)	136
Total	224

A series of online videos covering antenatal, postnatal, gynaecology and paediatric physiotherapy topics were recorded. The postnatal video resource was launched in August 2020. Physiotherapy patient information booklets were also uploaded. This was followed by the launch of a live online postnatal class. Live classes included postnatal, antenatal, low back pain, pelvic girdle pain and antenatal bladder classes. The size of these classes was unlimited which reduced the waiting time from, two to four weeks, to one week.

In 2020, 46 referrals were received because of development dysplasia of the hip (DDH). The pathway which had been implemented in 2019 was continued. The department adhered to national guidelines for DDH services.

The physiotherapy department underwent a refurbishment to create an extra treatment cubicle and upgrade the old department. Outpatient treatment was very limited throughout the duration of the works.

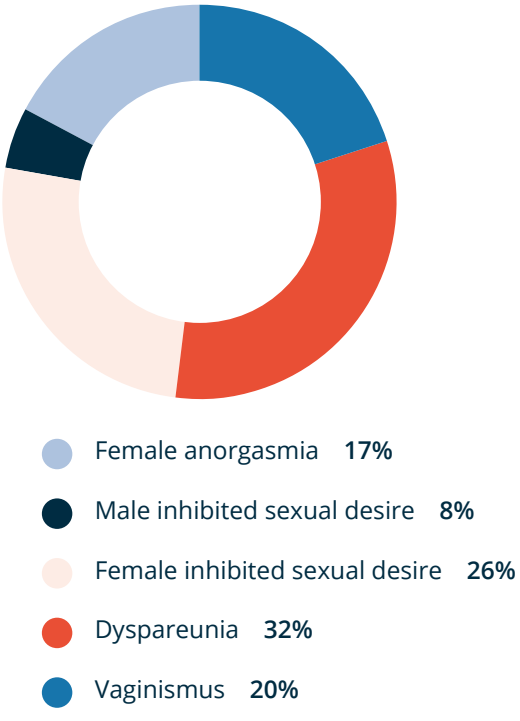
All staff participated in online CPD and mandatory training. In-house CPD continued throughout the year. Amanda Drummond Martins became a representative on the CPWHC committee for the Irish Society of Chartered Physiotherapists.

Psychosexual Therapy

In 2020, a total of 167 consultations (19 new and 167 return) were held. The types of sexual dysfunction treated are presented in Figure 7.6.1. It was however, necessary to defer therapy for three months due to COVID-19 restrictions.

Despite COVID-19, the 'Overview of Psychosexual Therapy' CPD to was delivered to Physiotherapists.

Figure 7.6.1 Types of sexual dysfunction treated



Quality, Risk and Patient Safety

Department of Quality, Risk and Patient Safety

The Department of Quality, Risk and Patient Safety underwent significant change in 2020, with changes in staff members and the allocation of a consultant clinician with dedicated sessions in the department. As a result, structures and processes changed and improved methods of investigation were implemented.

Incident reporting remained constant throughout the year with a slight decline in the second quarter, likely to be as a result of simultaneously reduced clinical activity in some areas due to the effects of COVID-19.

The system and structures in place for formal incident review in the CWIUH were significantly expanded and improved throughout 2020. In January, Dr. Mark Hehir, Consultant Obstetrician and Gynaecologist was assigned to work in the area of clinical risk to facilitate the review processes and oversee the completion of existing Systems Analysis Reviews (SARs) already in progress.

In early 2020, a novel multidisciplinary system for the review of adverse outcomes was implemented. The system involves an initial rapid concise review of all adverse events within a maximum of 14 days of the incident by a multidisciplinary team consisting of consultants in obstetrics, neonatology and anaesthetics, senior midwives, a haemovigilance officer and clinical risk managers. A pre-defined list of inclusion criteria for review was developed. This expanded formal incident review beyond serious reportable events (SREs), usually cases of neonatal encephalopathy and perinatal mortality, to a range of moderate and severe maternal morbidity incidents such as major obstetric haemorrhage, uterine rupture as well as unexpected poor outcomes in gynaecological care. Seventy-seven incidents were reviewed by the concise review team (CRT) in 2020 representing a significant increase in the rate of investigation of adverse outcomes.

The senior incident management team (SIMT) was restructured under new terms of reference, with monthly meeting of the newly appointed senior multidisciplinary incident management team to review all SREs as well as other incidents discussed by the CRT team where care was deemed suboptimal. Learnings, amendments to current practice, guidelines and management and the necessity for further review were decided and allocated to the clinical managers responsible for implementation. Due to thorough, timely, and multi-layered desktop review of adverse outcomes the number of SARs commissioned decreased by almost 70%. Due to the large number of SARs commissioned in previous years, many remained incomplete at the beginning of the year causing frustration and uncertainty for women, families and staff. In January 2020, there were 34 outstanding SARs requiring either commencement or completion. Due to accelerated completion and thanks to the work of the staff involved in our new model of review there are nine outstanding SARs requiring commencement or completion, at the time of writing (a decrease of 73%.)

The Dublin Midlands Hospital Group (DMHG) Senior Incident Management Forum for Women and Infants' Health was established in 2020. The first meeting was held in September. SREs and serious incidents (SIs) from the CWIUH and the Midland Regional Hospital, Portlaoise were discussed by members of the forum from both hospitals and the HSE hospital group level. Meetings are held monthly, whereby the findings of the local SIMT are discussed and the decisions regarding further review/ investigation are ratified.

Whilst the COVID-19 pandemic led to a significant decline in the number of medico-legal cases and coronial inquests, a substantial number of claims progressed to various levels of mediation or closure. Despite the reduction in court appearances, investigation and preparation for matters such as mediation and closure still led to a significant workload and the increasing need for ongoing staff support throughout.

August 2020 saw the creation of the audit and quality advisory (AQuA) Group. The group is designed to provide structure, governance and assistance to those pursuing audits and quality improvement programmes (QIPs) projects at the CWIUH. Staff were informed of the creation of AQuA through group emails and an information session for newly appointed NCHDs took place in August 2020. Since the establishment of the AQuA group, 34 audits and eight QIPs have been assessed and approved.

In 2020, 3,949 compliments and 204 new complaints were received (62.3% of new complaints were written). Feedback from women and families was positive 95% of the time. The most frequent themes of our complaints in 2020 were; communication and information, access and safe and effective care. In 2020, 100% of all written complaints were acknowledged within five working days and 90% of all written complaints were resolved within 30 working days of acknowledgement of the complaint. While there is no national target, most hospitals and hospital groups have a target of 70 - 75%. As a direct result of our patient liaison manager's completion of patient complaints advocacy service training, the number of patient advocacy support interventions, almost doubled from 93 support interventions in 2019 to 174 in 2020.

In October 2019, the CWIUH participated in the National Maternity Experience Survey (NMES), the results of which were published in 2020. Overall, the majority of women who gave birth in the CWIUH had a positive experience of maternity care. Across each stage of care from antenatal care through to postnatal care the majority of women (88%) rated their experience as very good/good in comparison to 85% nationally. Areas where the CWIUH scored above the national average were skin-to-skin contact following delivery (98%) and overall experience in the NICU (96%). The survey highlighted areas for improvement. QIPs for these areas have been established and embedded within the CWIUH. The patient liaison manager provided feedback on the CWIUH's results to staff, at very well attended sessions.

The roll out of the National Healthcare Communication Programme commenced in 2020 but it had to be suspended due the COVID-19 pandemic. It had been reinstated at the time of writing.

Education and Training

Centre for Midwifery Education

The Centre for Midwifery Education (CME) provided 95 education and training events in 2020. These included face-to-face classroom teaching, live virtual events and blended and eLearning. They ranged in duration from one hour to nine months. The total recorded attendance at classroom events, live virtual events and completion of eLearning for the year was 1,164. This was a decrease of 38% compared with 2019. This decrease was attributed to: full cessation of face-to-face classroom education and training events in the first wave of the COVID-19 pandemic, a redeployment of five members of the CME team to the frontline for a three-month period, a reduced capacity to facilitate face-to-face education and training in line with Infection Prevention and Control (IPC) guidance and limited venue availability as a result of IPC measures and vaccination roll out.

The CME implemented a new Classroom Management System (CMS) hosted on HSELanD. In addition, eight new programmes of education and training were developed and delivered. Eight of our existing programmes were moved to a combination of synchronous and/or asynchronous learning. The CME collaborated with the Regional Centre of Nursing and Midwifery Practice, Tullamore, to support the provision of education and training in perineal repair and fetal heart rate monitoring.

Midwifery and Nursing: Practice Development

The Practice Development Department (PDD) facilitates the development and maintenance of the clinical learning environment for all midwifery and nursing students who attend the CWIUH for clinical placements. The department also liaises with the CME and affiliated Health Education Institutes; TCD and RCSI in relation to staff and student education and learning needs. In addition, it supports and develops midwives, in particular new midwives working in the CWIUH.

The PDD facilitates and performs regular clinical audit. It promotes and supports research, evidence based practice and CPD among staff. It champions the autonomous role of the midwife and promotes pregnancy and childbirth as a normal healthy life event.

With the onset of the COVID-19 pandemic, members of the PDD immediately offered their services by adapting their roles to support the CWIUH with the aim of keeping women, families, students and staff safe. Some PDD staff were redeployed to various clinical areas while others took on roles such as staffing the triage screening desk, answering the COVID-19 patient and staff helpline and working in the COVID assessment unit (CAU). One member of staff, redeployed to the occupational health department subsequently assisted with the roll out of the COVID-19 vaccination programme. COVID-19 resulted in many disruptions to the student education programme. Plans had to be made with regard to students returning or not returning to clinical placements on a week-to-week and sometimes a day-to-day basis, depending on their COVID-19 risk status. Alternatives had to be made i.e.: online education sessions and meetings on 'Zoom' and other platforms became commonplace. As a result, students and the PDD staff had to be extremely flexible, resourceful and resilient.

PDD staff were involved in the successful recruitment, induction and continued support of midwives and nurses from Ireland and abroad.

Academically the PDD published the Coombe Water Birth Study in the BMJ Open, Dec 2020 and was awarded funding for the 'TCD COVID-19 Research Fund' to conduct two studies; one on clinical outcomes pre and post-acute phase of COVID-19 and a second on women's experiences of having a baby during the COVID-19 pandemic.

Joy Geraghty successfully completed her MSc in Midwifery in TCD, while Gwen Baker commenced the first year of MSc in Law and Ethics in RCSI.

Sixteen midwifery students were up-skilled to work on the COVID-19 triage desk and/or in the CAU at Health Care Assistant level.

Paula Barry and Nora Vallejo provided 623 consultations in the Midwives clinic in 2020.

In 2020, Nora Vallejo took up the position of Candidate Advanced Midwife Practitioner (cAMP) with a remit to enhance and develop the Supported Model of Care pathway, as outlined in 'Creating a Better Future Together, National Maternity Strategy 2016-2026'. Nora adapted the role to include supporting the development of a COVID-19 pregnancy assessment unit and a client and staff COVID screening service.

Postgraduate Medical Training - Department of Perioperative Medicine

The department was successful in advancing and further developing our approaches to teaching and training despite the many challenges posed over the past year.

Twelve specialist anaesthesiology trainees from the College of Anaesthesiologists of Ireland (CAI) rotated through the department fulfilling their training requirements in obstetric anaesthesia.

We continue to train beginner trainees in anaesthesia and 2020 saw our strong record continue, with a high proportion progressing onto the structured anaesthetic training scheme.

Our academic programme consisted of both in person and remote lectures and tutorials to ensure compliance with distancing, and thus maintaining a vibrant teaching programme for our trainees.

A number of workshops in airway management, transthoracic echocardiography, and ultrasound scanning were conducted.

In addition, focused tutorials were organised and attended by those trainees preparing for Membership (MCAI) and final (FCAI) postgraduate examinations.

The anaesthetic led high fidelity multidisciplinary simulation programme continued, with participation from obstetrics, anaesthesia and our theatre nursing staff. This emphasises both the technical and non- technical aspects of managing emergent scenarios and the importance of teamwork in order to achieve positive patient outcomes and further demonstrating our commitment to patient care and safety.

The acquisition of a lumbar spine simulation model and airway mannequin will further assist with the assessment of competency and the provision of safe and effective teaching for some of the important procedural skills relevant to our specialty.

Our departmental bi-monthly clinical risk and governance meetings enable analysis of key performance indicators and creates a beneficial case based learning environment.

The department continues to demonstrate a strong commitment to academia and quality improvement (QI) with trainees being strongly encouraged and supported to carry out a research, audit or QI project during their rotation.

Dr. Patrick Wiseman was awarded the best oral presentation at the Irish Society of Obstetric Anaesthesia Annual Scientific Meeting in 2020.

Postgraduate Medical Training - Obstetrics and Gynaecology

2020 was a difficult year for all the trainees due to the COVID-19 pandemic. Training in gynaecology was affected by the curtailment of gynaecology services. The trainees were required to do more shift work in groups to reduce cross exposure.

All doctors in training are assigned to a team and to a named trainer. From January to July, eight SpRs, six registrars, four junior registrars and ten senior house officers (SHOs) rotated through Obstetrics and Gynaecology. From July to December, eight SpRs (and one half-time SpR), four registrars, four junior registrars and ten SHOs rotated through Obstetrics and Gynaecology.

The NCHD staff complement included:

- The Bernard Stuart Research Fellow
- UCD lecturer
- TCD lecturer
- Clinical Fellow in Early Pregnancy Scanning
- International Fellow in Gynaecology Surgery.

All doctors training in the CWIUH 'hub', are prospectively allocated to a Basic Specialist Training (BST) scheme. They spend at least one of the two BST years training in the CWIUH. Three special skills in gynaecology surgery posts were available in the CWIUH in 2020. One post rotated with St James's Hospital for six months and the other two posts rotated with Tallaght University Hospital for six months.

Postgraduate Medical Training - Paediatric Medicine

Seven SpRs in paediatrics rotated through the department of paediatrics and newborn medicine in 2020 in addition to a higher specialist trainee (HST) registrar in neonatology. Each SpR completed six months of a twelve-month rotation (July to July). The SpRs are encouraged to undertake specific research projects and participate in audits. SHOs on the BST scheme also rotate through the department. The department is a tertiary level neonatology centre offering experience in intensive care as well as neonatal transport. Neonatal training is a core component of the SpR programme in general paediatrics. In 2020, the CWIUH department welcomed two HST registrars in neonatology, Dr. Caroline Ahearne and Dr. Robert McGrath. Dr. Ahearne completed her 12-month rotation over the years 2019 - 2020. Dr. McGrath spent 12-months in the CWIUH as neonatal HST from July 2020 to July 2021.

The Neonatal Resuscitation Programme (NRP) was co-ordinated by the advanced neonatal nurse practitioner, Ms Anne Sullivan and a large number of candidates completed this programme. The CWIUH was also closely involved in the STABLE National Neonatal Transport Training Programme under the guidance of Dr. H Fucikova, our consultant neonatologist in transport medicine.

Postgraduate Medical Training - Pathology

The Cellular and Molecular Cytopathology Training School (CMCTS) led by Dr. Helen Keegan and Prof. John O'Leary, offers training in Molecular Cytopathology to scientists, pathologists in training, colposcopists and biologists. The CMCTS, in collaboration with the Technological University Dublin (TUDublin) [Dr. Alison Malkin, Dr. Mary Hunt, Dr. Jan Guerin], offer accredited and certified advanced courses in Molecular Cytology, including a CPD Certificate in Molecular Cytopathology. The CMCTS has trained over 200 people.

In 2020-2021, the CMCTS provided 20 educational and training events or workshops in co-operation with the Departments of Cytopathology and Histology and the Molecular Pathology Research Laboratory. These were provided to colposcopy specialists and colposcopy nurses in training (7), pathology trainees (2), biomedical scientists (8), laboratory aides (4) and undergraduate biomedical scientists/student placements/transition year students (3). The CMCTS adapted its histology microscopy sessions for colposcopy specialists to an online digital pathology format. The CMCTS provided research supervision to MD, PhD, BSc students from TCD and TU Dublin (3). The Certificate in Molecular Cervical Cytopathology in co-operation with TU Dublin and in partnership with CervicalCheck, is ongoing. Conferences and educational events such as the International Papillomavirus Conference, EUROGIN 2021 Pre-conference Sessions, the BSCCP Annual Conference and the BAC Annual Conference were streamed online in the cytology training room and attended widely by staff of the cytology and histology departments and the molecular pathology research laboratory.

In 2020, the Molecular Pathology Group at the CWIUH and St James's Hospital published 19 peer reviewed journal articles and five published abstracts (appendix two).

The CWIUH hosts one SpR every six months in histopathology, cytopathology, morbid anatomy and molecular pathology. Trainees gain wide experience in all the above areas of pathology and are encouraged to carry out basic scientific research and audit.

Academic Departments

Department of Molecular Pathology and Molecular Research, Trinity College Dublin

HEAD OF DEPARTMENT
Prof. J O'Leary

ACADEMICS
Prof. Cara Martin, Assistant Prof. in Molecular Pathology (Trinity College, Dublin)

MOLECULAR PATHOLOGY MANAGER
Prof. Cara Martin (CWIUH and TCD)

Research Scientists
Dr. Prerna Tewari
Dr. Christine White
Dr. Mark Ward
Dr. Mark Bates
Dr. Ola Ibrahim
Dr. Bashir Mohammed
Dr. Bernadine O'Donovan
Ms. Loretto Pilkington
Dr. Helen Keegan
Dr. Sharon O'Toole (shared with Obstetrics and Gynaecology, TCD)
Ms. Martha Finan
Dr. Yanmei Huang (visiting researcher)
Dr. Lucy Norris (visiting researcher)

RESEARCH STUDENTS
PhD: Tanya Kelly, Laura Edgerton, Padma Naik, Colm Kerr, Jessica Heatlie*, Thuy Giang*, Ka Lok Li*, Francesca Chilcott*
MD: Dr. Roisin O'Connor
*co-supervised with Prof Doug Brooks, UniSA

ADJUNCT PROFESSORS
Prof. Doug Brooks

Associate Prof. Stavros Selemidis

VISITOR
Dr. Robert Brooks, UniSA

GRANTS HELD IN 2020
Title: Precision Molecular Diagnostic Testing in Solid Tumours (Principal investigator)
Awarding Body: Eurofins-Biomnis (2020-2021)
Value: €133,203

Title: Equivalency Study of Clinician and SelfCollected Samples for Cervical Cancer Screening Protocol No. MULTIHPV463 (Principal investigator)
Awarding Body: Roche Molecular Diagnostics (2019-2021)
Value: €1,200,000

Title: Evaluation of the BD Onclarity HPV DNA test for triage of HPV positive cases from a HPV based primary screening population (Principal investigator)
Awarding Body: Becton Dickinson (2019-2020)
Value: Equipment and reagents in kind contribution to run 2,000 tests

Title: Biobanking Awareness: Improving Research and Healthcare (Principal Investigator)
Awarding Body: The Irish Cancer Society Cancer Research Engagement Award
Duration: 2019-2020
Value: €2,500

Title: Advancing ovarian cancer Diagnostics and PrognosTics; ADAPT (Amendment to Cancer Trials Ireland Study) (Principal Investigator)
Awarding Body: Royal City of Dublin Hospital Trust Fund
Duration: 2019-2021
Value: €63,333

Title: Interrogation of the cancer cell metabolome in ovarian cancer, assessment of omentin and resistin as biomarkers of response (Principal Investigator)
Awarding Body: Royal City of Dublin Hospital Trust Fund
Duration: 2019-2021
Value: €38,058

Title: Development of Diagnostic and Prognostic Algorithms for Ovarian Cancer (Principal Investigator)
Awarding Body: Roche Investigator Initiated Study
Duration: 2018-2020
Value: €19,999.68

Title: HPV associated disease: shaping the future prevention and management pathway
ARPP-A-2018-018 (2018-2022)
Awarding Body: Health Research Board, Ireland.
Total Value: €236,000

Title: Characterising the proteogenome of Circulating Tumour Cells [CTCs]
Awarding Body: SFI Industry Fellowship in conjunction with Becton Dickinson (2019-2021)
Value: €79,965

Title: Deciphering the most clinically and biologically relevant circulating tumour cells [CTCs] in cancer metastasis [2018-2020]
Awarding Body: Enterprise Ireland Innovation Award with Becton Dickinson
Total Value: €803,000

Title: Enhancing the Evidence Base for Cost-Effectiveness Analysis in Ireland: Building Improvements from the Intervention-Specific to System-Wide Levels
Awarding Body: Health Research Board. Emerging Investigator Awards (EIA) (2018-2022)
Total Value: €632,058

Title: CERVIVA-Vax: Monitoring the impact of HPV vaccination in Ireland
Awarding Body: Merck Investigator Projects (2018-2021)
Value: €200,000

Title: CERVIVA-Vax: Monitoring the impact of HPV vaccination in Ireland
Awarding Body: Health Research Board. Investigator Led Projects (2018-2021)
Value: €370,000

Title: What influences cervical screening uptake in older women and how can screening programmes translate this knowledge into behaviour changing strategies? A CERVIVA-CervicalCheck co-production project
Awarding Body: Health Research Board. Applied Partnership Award (APA) Awards (2017-2022)
Total Value: €119,973

Title: Targeting endosomal NOX-2 oxidase in viral disease [2017-2020]
Awarding Body: NHMRC
Total value: €549,858

Title: Endosomal reactive oxygen species in tumour angiogenesis [2017-2020]
Awarding Body: NHMRC
Total value: €440,096

Title: EU Nanomedicine characterisation laboratory (participant)
Awarding body: EU H2020 (2015-2020)
Total value: €4,995,182

Title: Biomarkers in prostate cancer (in association with UniSA and RMIT)
Awarding body: EnVision Sciences
Total value: Aus$3,800,000 (€2,620,000)

Title: Biomedical Translational Bridge Programme (BTB).
Awarding Body: Round 3 COVID-19 call: application number BTBR30047 (2020)
Total value: Aus$1,800,000 (€1,241,279)

Title: UniSA Support Grant for Cancer Research Translation Programme
Chief Investigators: Brooks DA, Logan J, Martino C, Sorvina A, Johnson I, Butler L, Selemidis S, O'Leary J, Pursey P.
Awarding body: UniSA Division of Health Sciences ($125,000/yr) and UniSA Innovation Services ($283,000/yr).
Total value: Aus$1,632,000 ($408,000/yr). (€1,125,000)

Title: An anti-viral therapeutic for Influenza, Rhinovirus and COVID-19
Awarding body: ViarLok Therapeutics PTY LTD (pre-clinical fund)
Total value: Aus$1,043,901.71. (€719,931)

Title: Diagnosis and prognosis of prostate cancer using blood and tissue tests
Awarding body: Envision Science Pty. Ltd/ UniSA BTB grant
Total value: Aus$2,400,000 (€1,655,172)

Total grants (approximately): €17,244,607

POSTGRADUATE RESEARCH DEGREES

In 2020, nine postgraduate students were pursuing PhD or MD degrees in the department.

HPV SERVICE PROVISION

In 2020, our molecular pathology research scientists established and obtained INAB accreditation for HPV testing services at the CWIUH. These scientists continue to provide ongoing service, support and advice for the HPV Diagnostics Service and the National Cervical Screening Laboratory development project.

See Appendix Two for a list of publications of the Department of Molecular Pathology and Molecular Research, Trinity College Dublin.

Trinity College Dublin, Academic Department of Obstetrics and Gynaecology

HEAD OF DEPARTMENT

Prof. Deirdre J Murphy

ADMINSTRATIVE STAFF

Cristina Boccardo, Senior Executive Officer

ACADEMIC STAFF

Deirdre J Murphy, Prof., Head of Department, Consultant Obstetrician
Richard Deane, Associate Prof., Consultant Obstetrician and Gynaecologist
Sean Daly, Clinical Prof., Consultant Obstetrician and Gynaecologist
Clare Thompson, Locum Associate Prof., Consultant Gynaecologist
Mei Yee Ng, Clinical Lecturer, Obstetrics and Gynaecology
Catherine O'Gorman, Clinical Lecturer, Obstetrics and Gynaecology
Oladayo Oduola, Clinical Tutor and Research Fellow
Clare Dunney, Research Midwife and TCD Tutor
Paula Barry, Midwifery Tutor
Noreen Gleeson, Clinical Associate Prof., Consultant Gynaecologist
Tom D'Arcy, Clinical Senior Lecturer, Consultant Obstetrician and Gynaecologist
Gunther von Bunau, Clinical Senior Lecturer, Consultant Obstetrician and Gynaecologist
Mary Anglim, Clinical Senior Lecturer, Consultant Obstetrician and Gynaecologist
Cliona Murphy, Clinical Senior Lecturer, Consultant Obstetrician and Gynaecologist
Michael Carey, Hon Senior Lecturer, Consultant in Perioperative Medicine
Joanne Fenton, Clinical Senior Lecturer, Consultant in Perinatal Psychiatry

GRANT INCOME TO 2020

HRB Mother and Baby Clinical Trials Network 2016-2020; €2.8 million, Co-Principal Investigators D Murphy (Obstetrics) and E Molloy (Neonatology).

HRB Primary Care Research Centre (RCSI and TCD) €4 million, Co-investigator D Murphy.

HRB Definitive Intervention Award. €1 million, Chief Investigator D Murphy.

Prof. Richard Deane was appointed as Chair of St James's Hospital/Tallaght University Hospital Joint Research Ethics Committee.

Prof. Sean Daly was appointed to the position of National Specialty Director.

See Appendix Two for a list of publications of the Academic Department of Obstetrics and Gynaecology, Trinity College Dublin.

University College Dublin Centre for Human Reproduction

HEAD OF DEPARTMENT

Prof. Michael Turner, Professor of Obstetrics and Gynaecology

Ms Laura Bowes - Administrator

Dr. Eimer O'Malley, Clinical Lecturer (From July 2017- to July 2020)

Dr. Emma Tuthill, Clinical Lecturer (From July 2020 - present)

Prof. Mairead Kennelly, Consultant Obstetrician and Gynaecologist

Prof. Jan Miletin, Consultant Neonatologist

Prof. Chris Fitzpatrick, Consultant Obstetrician and Gynaecologist

Prof. Aisling Martin, Consultant Obstetrician and Gynaecologist

Prof. Michael Carey, Consultant Anaesthetist

Prof. Nadine Farah, Consultant Obstetrician and Gynaecologist

Prof. Tom D'Arcy, Consultant Obstetrician and Gynaecologist

Prof. Anne Doolan, Consultant Neonatologist

Prof. Sharon Sheehan, Consultant Obstetrician and Gynaecologist

Prof. Anthony Dempsey, Visiting Consultant

Dr. Terry Tan, Consultant Anaesthetist

Dr. Neil O'Gorman, Consultant Obstetrician and Gynaecologist

RESEARCH FELLOWS

Dr. Rachel Kennedy (PhD)
Dr. Emma Tuthill
Dr. Eimer O'Malley (PhD)
Dr. Ciara Reynolds (PhD)

The UCD Centre for Human Reproduction at the CWIUH (the Centre) was established in 2007. In 2015, the Academic Council in UCD recognised it as one of the designated research centres in UCD. This recognition was renewed in 2018. The Director is Prof. Michael Turner and the members of the Centre's Advisory Board include: Dr. Brendan Egan, Prof. Chris Fitzpatrick, Prof. Mairead Kennelly, Prof. Richard Layte, Prof. Aisling Martin, Prof. Jan Miletin, Prof. Ann Molloy and Prof. Carel le Roux.

The main research focus of the Centre is on modifiable pregnancy risk factors including maternal obesity, gestational diabetes mellitus, aberrant fetal growth, inadequate maternal diet, inadequate folic acid supplementation, cigarette smoking, infection and physical inactivity. In the decade 2010 - 20, Prof. Turner served as the National Director for the HSE Clinical Programme in Obstetrics and Gynaecology and, as a result, the Centre also provided leadership on maternity services implementation science projects. The Centre delivered a transitioned undergraduate teaching programme in response to the COVID-19 pandemic.

RESEARCH

Dr. Ciara Reynolds was awarded a PhD for her thesis on smoking cessation in pregnancy, which has resulted in several publications in peer-reviewed international journals. As part of an interventional randomised controlled trial (RCT), Dr. Reynolds developed a customised SmartApp to help women stop smoking after presentation for antenatal care. Ciara published a number of papers on the adverse impact of persistent smoking in pregnancy and the use of breath carbon monoxide testing to identify women who have not disclosed their smoking at the first visit. Publications from her PhD will inform the forthcoming National Clinical Effectiveness Committee (NCEC) National Guideline on smoking cessation.

Rachel Kennedy completed her PhD on a RCT evaluating a customised SmartApp designed to improve the dietary quality of women in early pregnancy. Ms Kennedy has also developed a novel periconceptual nutrition score (PENS) to assess dietary intake of micronutrients in early pregnancy. Her research has resulted in several international peer reviewed publications.

Dr. Eimer O'Malley was awarded her PhD on the evaluation of point-of-care maternal glucose and lipid measurements at the end of the second trimester. As part of her PhD, Dr. O'Malley examined the relationship between an established panel of ten biomarkers and the risk of developing gestational diabetes mellitus and fetal macrosomia.

Laura Bowes was awarded her MSc in Human Resource Management in UCD Michael Smurfit Graduate Business School. She also continued to provide strong support for the Centre's research workstreams in addition to her commitments with the teaching programme.

Dr. Karen Power and Prof. Turner continued their collaboration in developing NCEC Guidelines for the maternity services. The revision of the Irish Maternity Early Warning System (IMEWS) was completed and published in April 2019. This was the first of the NCEC suite of national guidelines to be revised. The IMEWS has generated considerable attention to date in Norway, Scotland, England and Wales and the United States of America. As part of this work, Dr. Catherine O'Regan developed a novel scoring system for the early detection of maternal infection. Dr. Power also continued to work on the development of the NCEC Guidelines for risk stratification in pregnancy as recommended in the National Maternity Strategy Report in 2016. This guideline was published in 2020.

Dr. Lean McMahon, Project Manager for the Irish Maternity Indicators System (IMIS) and Prof. Turner continued their collaboration on the IMIS report on hospital performance measurements. This report is produced for individual hospitals, the six networks and nationally. This work continued to evolve in association with the HSE NWIHP.

Dr. Emma Tuthill undertook an observational study to describe the transition of the undergraduate obstetrics and gynaecology programme in the CWIUH from a traditional face-to-face approach to a blended learning programme in response to the COVID-19 pandemic.

Prof. Turner continued to serve as a member of the HSE National Guideline Committee on smoking cessation, which were commissioned by the NCEC. Prof. Turner also served as a member of the HIQA Special Purpose Maternity Advisory Group and as a Member of the RCPI Policy Group on Obesity.

See Appendix Two for a list of publications and presentations of UCD Centre for Human Reproduction.

Administration

Human Resources Department

In 2020, the average rate of absence of staff in the CWIUH was 3.5%. The average rate of staff turnover was 14.8%. The average rate of compliance with the European Working Time Directive was 91.0%.

Table 11.1.1 Recruitment competitions in 2020

Type	n
Midwifery and Nursing	46
Medical (NCHDs and Consultants)	106
Health and Social Care Professions	14
Administration and Support	42
Total	208

There were 46 national and international appointments to Midwifery and Nursing (table 11.1.1). Ten Enhanced Midwifery Nursing contracts were issued. Fourteen B.Sc. Graduate Nurse of 2020 were appointed to posts in the CWIUH. There were 106 medical appointments, including six consultant posts (new and replacement).

Activities under the Health and Wellbeing Programme in line with the DMHG Healthy Ireland Implementation plan included: National Health and Wellbeing day in April, Coombe Choir - virtual sessions and video recordings, retirement planning programme for 25 staff, resilience training, interview skills and eLearning staff onboarding for newly appointed NCHDs. In addition, a number of eLearning programmes such as customer care training were delivered.

Friends of the Coombe

The year began with Friends of the Coombe being named the Enterprise Rent-A-Car Charity of the Year and a number of families and supporters indicating that they would like to hold fundraising events in aid of the charity. However, the COVID-19 pandemic required us to quickly adapt our plans as public health restrictions prevented physical events being held.

We were honoured to partner with award-winning interior designer Gwen Kenny and colour consultant Adele Roche to co-produce the InsideOut Homeshow which was originally planned as an in-person event. Featuring names such as Hugh Wallace, Dermot Bannon, Aisling Larkin, Cathy Kelly, and Andrew Rudd, the two-day virtual event raised €35,000 for Friends of the Coombe. We deeply appreciate the considerable time and energy Gwen and Adele committed to the event, and are extremely grateful to the many artists, architects, interior designers, garden designers and technical advisors who made the show possible.

This was the first year of The Master's Coombe Camino Challenge, a seven-year journey along the Camino de Santiago concluding in 2026, the bicentennial year of the CWIUH. Despite COVID-19 preventing a group of ten staff from the CWIUH travelling to France to embark on the first of seven week-long Camino walks in aid of Friends of the Coombe, we were able to create our own 'Coombe Camino' comprising a 5km looped walk beginning and ending at the CWIUH. Thanks to the support of colleagues from the CWIUH and their family members who walked the route individually to ensure compliance with COVID-19 public health requirements, a collective 780km was walked over 12 hours, the equivalent of the entire Camino de Santiago.

As well as welcoming the new Master of the CWIUH, Prof. Michael O'Connell to the Board, we published a five-year strategic plan, setting out our priorities in the context of supporting excellence in the care of women and babies at the CWIUH.

This has been a challenging year for all on so many levels. We are extremely grateful to each and every person who has supported Friends of the Coombe by giving their time and talents, as well as donating much-needed funds.

Friends of the Coombe purchased a new transport ventilator and a lumbar puncture training simulator mannequin for the NICU. An epidural simulation mannequin was purchased for the department of perioperative medicine. Friends of the Coombe provide ongoing accommodation support, for parents of babies cared for in the NICU and SCBU following transfer from other hospitals throughout the country. Friends of the Coombe also provide support for the palliative care and bereavement service.

Support Services

Central Services Sterilisation Department

The Central Services Sterilisation Department (CSSD) continued to operate successfully as a Class 8 facility. The appointment of a new manager of the CSSD introduced improvements such as:

- The development of a service level agreement on a contingency plan with Naas General Hospital and the Rotunda Hospital.
- The introduction of a communications and quality board.
- The creation of 'red zones' and traffic control increased awareness of both restricted and semi-restricted zones which added another layer of contamination control in CSSD.
- The appointment of an in-house engineer to carry out preventative maintenance on machines.
- The elimination of the use of auto dispatch, which ensures that all CSSD sets must be manually dispatched.
- The use of clean up fingerprint launchers to necessary shortcuts only, preventing the unloading of washers and autoclaves without checking graphs and printouts.
- Following the introduction of a new detergent the wash time was reduced by 12 minutes.
- A change in supplier of new instruments and repairs has resulted in better quality instruments for the same price and quicker turnaround time for repairs.
- The implementation of the use of instruments on clips which prevent damage to instruments moving around trays, stop piercing of wrap and also limit sharps injuries to scrub nurses.
- The introduction of new proactive measure to give instruments a deep clean every 20 cycles. The chemical used removes any rust and brings up old instruments to a better finish.

These improvements have greatly improved efficiencies in the CSSD.

Hygiene Services

Ward managers, household supervisors and management continued to carry out hygiene audits in 2020.

The total waste generated by the CWIUH in 2020 was 453 tonnes, a reduction of 37 tonnes compared with 2019. The amount of healthcare risk waste generated reduced by four tonnes, from 109 tonnes in 2019 to 105 tonnes in 2020. The amount of recycling increased by 1% from 75% in 2019 to 76% in 2020.

Staff training continued in 2020. An evening cleaner commenced in order to service departments in the CWIUH, after hours. The upgrading of hand hygiene sinks continued during the refurbishment programmes.

Information Communications Technology Department

A new Information Communications Technology (ICT manager) and a new System/Networks Engineer were appointed in 2020.

Systems uptime:

- Internal services achieved a target of over 99% uptime
- External service links achieved over 99% uptime
- Call closure resolution
  - Successfully met 92% of service level agreements
- Project completion
  - Active directory uplift
  - Server/SAN migration.

The server/SAN upgrade was completed in 2020.

Dispersed services were developed to facilitate staggered onsite and 'Work from Home' requirements due to COVID-19.

The ICT department was awarded the tender for the Network Refresh Project.

Appendices

Appendix One

Clinical summaries, 2014 to 2020

	2014	2015	2016	2017	2018	2019	2020
Women attending							
Women who gave birth to babies ≥ 500g (n)	8,632	8,220	8,233	7,975	8,154	7,746	7,405
Women who gave birth to babies < 500g (including miscarriages*) (n)	632	649	589	586	578	559	504
Gestational trophoblastic disease (n)	6	8	6	24	16	15	7
Ectopic pregnancies (n)	124	124	113	104	79	114	104
Total (n)	9,394	9,001	8,941	8,689	8,827	8,434	8,020
Maternal deaths† (n)	1	1	0	0	1	0	0
Babies weighing ≥ 500g							
Singleton (n)	8,463	8,042	8,048	7,786	7,978	7,568	7,244
Twins‡ (n)	336	353	350	365	344	345	318
Triplets (n)	20	9	23	15	8	12	0
Quadruplets (n)	0	0	0	0	0	4	4
Total (n)	8,819	8,404	8,421	8,166	8,330	7,929	7,566
Obstetric outcomes							
Induction of labour (%)	30.9	31.7	33.9	34.8	37.0	38.2	38.9
Episiotomy (%)	13.2	13.9	15.5	17.9	17.9	17.2	18.2
Forceps (%)	5.2	5.8	5.3	5.3	4.8	4.3	3.5
Vacuum (%)	9.3	9.0	9.1	9.6	9.8	7.8	10.2
Caesarean section (%)	27.8	29.3	31.3	31.8	33.8	33.8	32.8
Perinatal deaths							
Stillbirths (n)	41	29	21	27	20	33	22
Early neonatal deaths (n)	13	19	18	22	16	11	13
Late neonatal deaths (n)	2	7	6	11	5	8	12
Total (n)	56	55	45	60	41	52	47

** does not include all spontaneous miscarriages*

† deaths of women while pregnant or within 42 days of the end of the pregnancy

‡ excludes babies weighing < 500g

Robson Ten Group Classification System - Caesarean section rates, 2018 to 2020

Group	2018	2019	2020
1	156/1295 (12.0%)	118/1121 (9.6%)	101/1049 (9.6%)
2	751/1698 (44.2%)	673/1644 (40.9%)	633/1601 (39.5%)
2a	*551/1498 (36.8%)*	*468/1439 (32.5%)*	*419/1387 (30.2%)*
2b	*200/200 (100.0%)*	*205/205 (100.0%)*	*214/214 (100.0%)*
3	29/1618 (1.8%)	31/1449 (2.1%)	10/1376 (0.7%)
4	211/1443 (14.6%)	198/1476 (13.4%)	167/1427 (19.3%)
4a	*76/1308 (5.8%)*	*65/1343 (4.8%)*	*41/1301 (3.2%)*
4b	*135/135 (100.0%)*	*133/133 (100.0%)*	*126/126 (100.0%)*
5	980/1201 (81.6%)	960/1141 (84.1%)	947/1144 (82.8%)
6	181/186 (97.3%)	173/184 (94.0%)	155/159 (97.5%)
7	148/160 (92.5%)	162/175 (92.6%)	148/160 (92.5%)
8	115/175 (65.7%)	130/178 (73.0%)	104/161 (64.4%)
9	12/12 (100.0%)	8/8 (100.0%)	14/14 (100.0%)
10	171/363 (47.1%)	175/363 (48.2%)	153/309 (49.6%)
Gestation uncoded	0/3	0/7	0/5
Total Caesarean section rate	2,754/8,154 (33.8%)	2,618/7,746 (33.8%)	2,432/7,405 (32.8%)

Robson Ten Group Classification System - size of groups, 2018 to 2020

Group	2018	2019	2020
1	1295 (15.9%)	1121 (14.5%)	1049 (14.2%)
2	1698 (20.8%)	1644 (21.2%)	1740 (21.6%)
2a	*1498 (18.4%)*	*1439 (18.6%)*	*1387 (18.7%)*
2b	*200 (2.5%)*	*205 (2.6%)*	*214 (2.9%)*
3	1618 (19.8%)	1449 (18.7%)	1376 (18.6%)
4	1443 (17.7%)	1476 (19.1%)	1427 (19.3%)
4a	*1308 (16.0%)*	*1476 (19.1%)*	*1301 (17.6%)*
4b	*135 (1.7%)*	*133 (1.7%)*	*126 (1.7%)*
5	1201 (14.7%)	1141 (14.7%)	1144 (15.4%)
6	186 (2.3%)	184 (2.4%)	159 (2.1%)
7	160 (2.0%)	175 (2.3%)	160 (2.2%)
8	175 (2.1%)	187 (2.3%)	161 (2.2%)
9	12 (0.1%)	8 (0.1%)	14 (0.2%)
10	363 (4.5%)	363 (4.7%)	309 (4.2%)
Gestation uncoded	3 (0.04%)	7 (0.09%)	5 (0.1%)
Total	8,154 (100.0%)	7,746 (100.0%)	7,405 (100.0%)

Perinatal mortality rates (PMR) per 1,000 total babies weighing ≥ 500 grams, 2015 to 2020

	2015	2016	2017	2018	2019	2020		PMR
Total births (n)	8,404	8,421	8,166	8,330	7,929		7,566	
Total perinatal deaths (n)	48	39	49	36	44	35		
PMR by parity								
Para 0	2.5	5.3	7.7	4.8	4.9	10	3,097	3.2
Para 1	6.3	4.1	4.0	2.1	3.6	17	2,736	6.2
Para 2 - 4	9.3	4.0	5.9	6.5	9.1	5	1,656	3.0
Para 5+	27.5	0.0	19.0	9.8	24.1	3	77	38.9
PMR by age at delivery (years)								
< 20	6.4	5.7	22.7	17.5	15.4	1	109	9.2
20 - 24	4.3	7.0	16.0	1.4	8.1	0	550	0.0
25 - 29	5.4	2.6	4.1	2.7	3.7	4	1,264	3.2
30 - 34	3.6	4.2	5.2	5.9	5.5	15	2,655	5.7
35 - 39	6.5	5.0	5.4	3.5	5.3	14	2,382	5.9
≥ 40	19.2	5.3	3.7	5.0	6.2	1	606	1.7
PMR by birth weight (grams)								
500 - 999	200.0	240.0	203.7	300.0	298.2	7	42	166.7
1,000 - 1,499	74.1	74.1	162.5	187.5	82.2	4	55	72.7
1,500 - 1,999	79.4	32.0	86.2	44.6	39.6	9	104	86.5
2,000 - 2,499	19.8	11.8	14.2	7.6	16.6	5	323	15.5
2,500 - 2,999	4.5	1.7	4.8	0.0	5.3	5	974	5.1
3,000 - 3,499	2.1	3.2	0.0	0.4	1.2	2	2,545	0.8
3,500 - 3,999	1.4	0.7	1.8	0.7	0.4	3	2,517	1.2
4,000 - 4,499	11.1	1.1	0.0	0.0	1.2	0	880	0.0
4,500 - 4,999	8.0	0.0	0.0	0.0	0.0	0	117	0.0
≥ 5,000	0.0	0.0	0.0	0.0	0.0	0	9	0.0
PMR by gestational age (weeks)								
< 26	200.0	416.7	360.0	388.9	483.9	5	21	238.1
26 - 29 +6 days	76.9	66.7	160.0	176.5	73.5	8	58	137.9
30 - 33 +6 days	80.3	38.1	94.4	57.1	43.5	6	104	57.7
34 - 36 +6 days	24.4	19.4	31.5	14.7	8.2	4	428	9.4
37 - 41 +6 days	2.1	1.8	1.4	0.5	2.0	11	6,904	1.6
≥ 42	28.6	0.0	0	0.0	0.0	1	46	21.7
Uncoded	0.0	0.0	0.0	*	*	0	5	0.0

* *PMR by gestational age not calculated as gestation uncoded*

Adjusted perinatal mortality rate of normally formed babies ≥ 34 weeks' gestation and ≥ 2.5kg, 2015 to 2020

	2015	2016	2017	2018	2019	2020
Perinatal deaths (normally formed babies ≥ 34 weeks' and ≥ 2.5kg) (n)	9	8	6	2	10	9
All babies ≥ 34 weeks' and ≥ 2.5kg (n)	7,800	7,790	7,559	7,704	7,322	7,035
Adjusted PMR per 1,000	1.2	1.0	0.8	0.3	1.4	1.3

Perinatal mortality rates, 2014 to 2020

PMR per 1,000 total births	2014	2015	2016	2017	2018	2019	2020
Overall PMR	6.1	5.7	4.5	6.0	4.3	5.5	4.6
Overall corrected PMR	4.3	3.2	2.6	3.0	2.7	3.9	3.0
PMR including late neonatal deaths	6.4	6.5	5.2	7.2	4.9	6.6	6.2
PMR excluding those unbooked	5.3	4.8	3.9	4.5	4.2	5.2	4.4
Corrected PMR excluding those unbooked	3.8	3.1	2.0	2.6	2.5	3.5	2.8
Corrected PMR excluding those initially booked elsewhere	-	-	-	-	1.6	3.3	2.8

Maternal demographics, 2014 to 2020

	2014	2015	2016	2017	2018	2019	2020
Category - nulliparous							
Public	74.7%	77.2%	78.3%	77.5%	78.9%	77.9%	78.5%
Semi-private	9.8%	10.3%	9.4%	9.8%	8.7%	8.9%	9.1%
Private	15.5%	12.5%	12.3%	12.7%	12.4%	13.2%	12.4%
Category - parous							
Public	73.7%	76.9%	76.8%	78.1%	78.8%	79.3%	78.3%
Semi-private	9.5%	9.5%	9.4%	7.9%	7.8%	7.9%	7.8%
Private	16.8%	13.6%	13.8%	14.0%	13.4%	12.8%	13.9%
Country of birth							
Republic of Ireland	72.1%	70.3%	70.3%	70.4%	70.2%	70.3%	70.3%
EU	15.9%	17.9%	17.0%	16.3%	15.6%	14.6%	11.4%
Britain	-	-	-	-	-	-	2.7%
Non-EU	11.7%	11.7%	12.6%	13.2%	14.0%	15.1%	15.6%
Uncoded	0.3 %	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%
Age at delivery (years)							
< 20	1.9%	1.9%	2.1%	1.7%	1.4%	1.7%	1.5%
20 - 24	9.3%	8.5%	8.6%	8.6%	8.5%	7.8%	7.3%
25 - 29	20.2%	19.9%	18.5%	18.5%	18.1%	17.1%	16.9%
30 - 34	36.1%	36.3%	36.4%	34.0%	34.3%	34.4%	35.2%
35 - 39	26.2%	27.3%	27.8%	30.4%	30.7%	31.0%	31.3%
≥ 40	6.3%	6.1%	6.6%	6.8%	7.0%	8.0%	7.8%
Parity							
P 0	39.1%	38.5%	40.0%	40.9%	42.1%	41.4%	40.8%
P 1 - 3	57.7%	58.6%	57.0%	56.3%	55.2%	55.9%	56.5%
P 4+	3.2%	2.9%	3.0%	2.8%	2.7%	2.7%	2.7%

Birth weight and gestational age of babies weighing ≥ 500 grams, 2014 to 2020

	2014 (n = 8,819)	2015 (n = 8,404)	2016 (n = 8,421)	2017 (n = 8,166)	2018 (n = 8,330)	2019 (n = 7,929)	2020 (n = 7,566)
Birth weight (grams)							
500 - 999	0.6%	0.6%	0.6%	0.7%	0.6%	0.7%	0.6%
1,000 - 1,499	2.2%	0.6%	0.6%	1.0%	0.6%	0.9%	0.7%
1,500 - 1,999	1.5%	1.5%	1.5%	1.4%	1.5%	1.3%	1.4%
2,000 - 2,499	4.3%	4.2%	4.0%	4.3%	4.8%	4.6%	4.3%
2,500 - 2,999	13.9%	13.4%	13.9%	12.8%	13.5%	14.4%	12.9%
3,000 - 3,499	34.0%	34.3%	33.9%	33.5%	32.9%	32.6%	33.6%
3,500 - 3,999	32.9%	33.1%	33.0%	34.0%	33.1%	33.9%	33.3%
4,000 - 4,499	10.4%	10.7%	10.8%	10.7%	11.7%	10.4%	11.6%
≥ 4,500	1.7%	1.6%	1.5%	1.5%	1.3%	1.2%	1.6%
Uncoded	0.0%	0.0%	0.2%	0.1%	0.0%	0.1%	0.0%
Gestational age (weeks)							
< 28	0.5%	0.5%	0.5%	0.5%	0.5%	0.7%	0.5%
28 - 36 + 6 days	6.2%	6.2%	6.0%	6.5%	6.4%	6.7%	6.2%
37 - 41 + 6 days	92.7%	92.8%	92.9%	92.2%	92.4%	91.9%	92.6%
≥ 42	0.6%	0.4%	0.6%	0.7%	0.6%	0.6%	0.6%
Uncoded	0.04%	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%

Attendances, 2014 to 2020

Outpatient attendances	2014	2015	2016	2017	2018	2019	2020
Obstetrics* (n)	104,213	102,493	98,324	103,700	103,271	99,919	100,168
Gynaecology† (n)	13,781	13,181	13,226	14,312	14,808	17,220	13,005
Neonatal (n)	8,587	6,829	6,572	5,545	6,393	4,845	4,428
Total (n)	126,581	122,503	118,122	123,557	124,472	121,984	117,601
Other attendances	2014	2015	2016	2017	2018	2019	2020
Emergency room (women)	9,457	9,573	9,026	9,351	9,163	9,606	7,663
Early pregnancy assessment unit	4,654	5,106	4,460	4,213	4,178	5,063	4,393
Perinatal ultrasound department‡	26,039	28,161	28,913	28,858	29,620	29,658	27,783

** excludes perinatal day centre*

† includes colposcopy

‡ refers only to scans performed in the perinatal ultrasound department

Admissions, 2014 to 2020

Day case admissions	2014	2015	2016	2017	2018	2019	2020
Obstetrics (n)	12,268	12,453	12,841	13,160	13,540	12,476	9,332
Gynaecology (n)	9,850	8,510	8,495	8,185	7,885	8,313	6,685
Total (n)	22,118	20,963	21,336	21,345	21,425	20,789	16,017
Inpatient admissions*	2014	2015	2016	2017	2018	2019	2020
Obstetrics (n)	17,637	16,398	17,006	16,514	16,709	16,479	14,615
Gynaecology (n)	1,028	966	943	812	737	759	605
Neonatal (n)	1,106	1,052	1,424	1,105	1,128	1,040	948
Total (n)	19,771	18,416	19,373	18,431	18,574	18,278	16,168

** numbers based on discharges*

Surgical procedures, 2014 to 2020

Category of surgery	2014	2015	2016	2017	2018	2019	2020
Obstetrics (n)	3,630	3,590	3,663	3,544	3,748	3,609	3,358
Gynaecology (n)	5,261	5,028	5,255	5,012	5,071	5,135	5,424
Total (n)	8,891	8,618	8,918	8,556	8,819	8,744	8,782

Appendix Two
Publications and Presentations

PUBLICATIONS: DEPARTMENT OF PAEDIATRICS AND NEWBORN MEDICINE, CWIUH

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Thompson C, Murphy C, D'Arcy T, Farah N, Heron E, O'Leary JJ, Abu Saadeh F, Gleeson N. HE4 and CA125 as preoperative risk stratifiers for lymph node metastasis in endometrioid carcinoma of the endometrium: A retrospective study in a cohort with histological proof of lymph node status. Gynecol Oncol. 2021 Feb;160(2):514-519. doi: 10.1016/j.ygyno.2020.11.004. Epub 2020 Nov 16. PMID: 33213897.

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POSTER PRESENTATIONS: UNIVERSITY COLLEGE DUBLIN CENTRE FOR HUMAN REPRODUCTION

O'Malley EG, Reynolds CME, Killalea A, O'Kelly R, Sheehan SR, Turner MJ. Comparison of gestational diabetes mellitus diagnostic criteria after applying stringent preanalytical laboratory sample standards. Society for Maternal-Fetal Medicine 39th Annual Pregnancy Meeting, Dallas, USA, February 2020.

Tuthill EH, Reynolds CME, McKeating A, O'Malley EG, Kennelly MM, Turner MJ. Maternal Obesity and Depression reported at the first antenatal visit. JOGS Annual Scientific Meeting, Virtual Conference RCPI, November 2020.

Tuthill EH, Bowes LA, Kennelly MM, Turner MJ. The implementation of blended undergraduate teaching in Obstetrics and Gynaecology during a pandemic. JOGS Annual Scientific Meeting, Virtual Conference RCPI, November 2020.

Tuthill EH, Bowes LA, Kennelly MM, Turner MJ. A Survey of the Experience of Medical Students with blended teaching in Obstetrics and Gynaecology during a pandemic. JOGS Annual Scientific Meeting, Virtual Conference RCPI, November 2020.

Varadkar S. Retrospective audit of the use of Recombinant Activated Factor VIIa in neonates over a 10-year period in a large Dublin maternity hospital. National Haemovigilance Office Annual Conference, March 2020.

Appendix Three
Members of the Board of Guardians and Directors (Charity Trustees)

Mr. J Gleeson	Chair
Prof. M Carey	Deputy Chair
Ms. A M Curran	
Ms. M Donovan	
Ms R Gilligan	
Prof. M Turner	
Dr. E Mallon	
Ms. T Daly	
Mr. G Prendergast	
Ms. B Byrne	
Ms. C Bolger	Retired June 2020
Ms M Quinn	Retired June 2020
Ms. R Grant	Joined October 2020
Dr. M O'Hare	Joined October 2020

EX-OFFICIO MEMBERS

The Lord Mayor of Dublin	
	Mr. P McAuliffe
	Mr. T Brabazon
	Ms. H Chu
The Master	Prof. M O'Connell

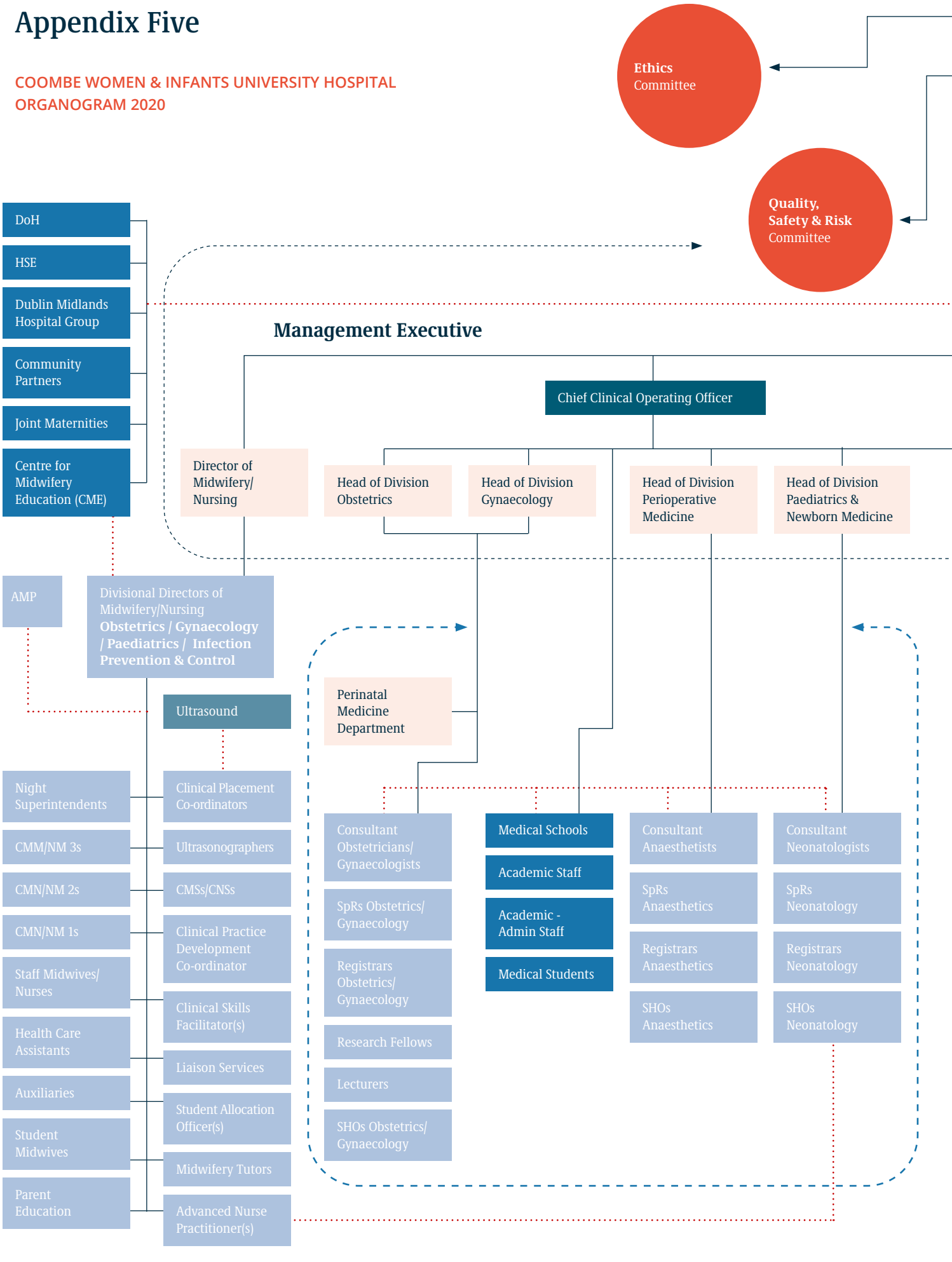
Appendix Four

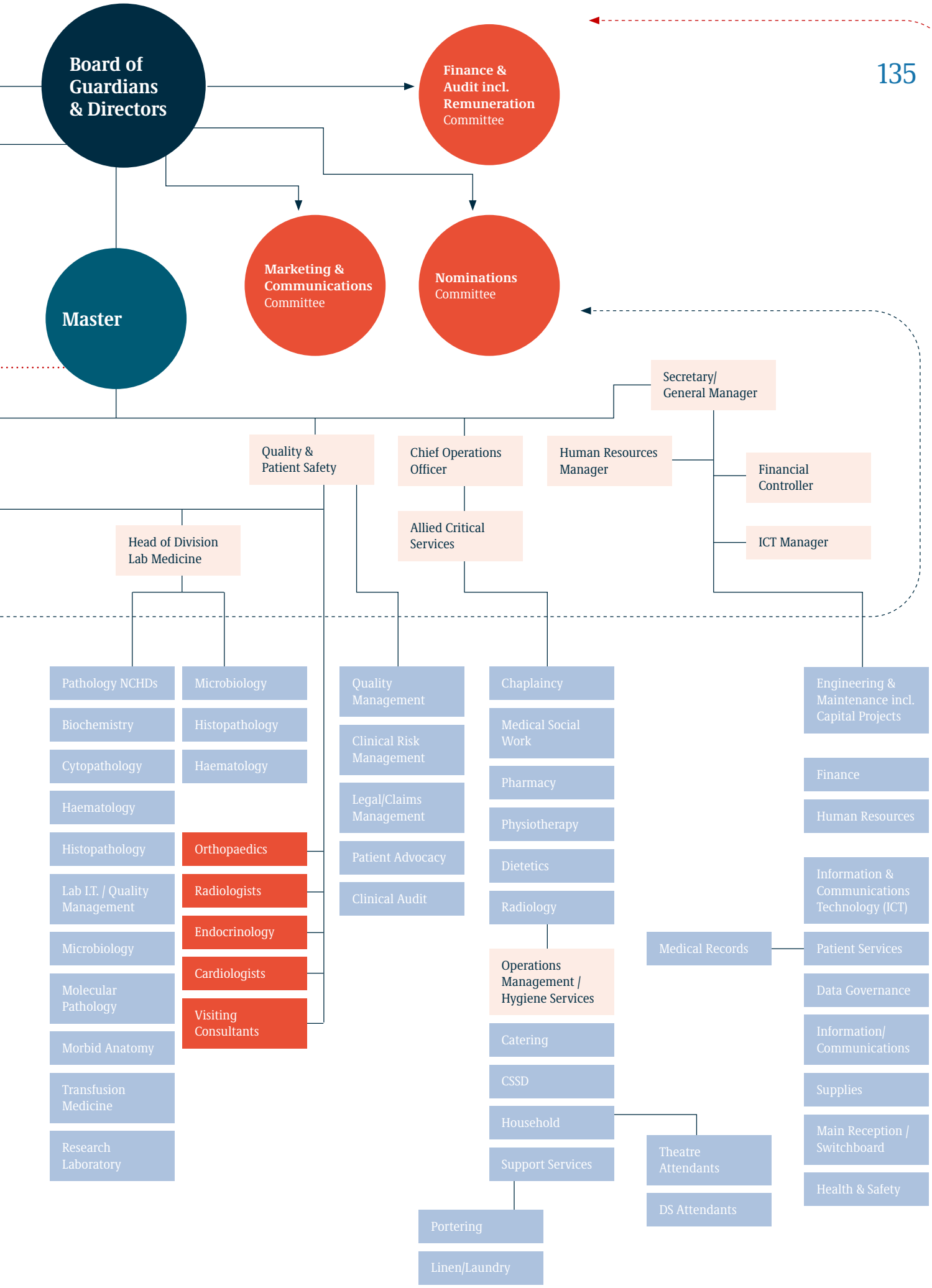
FINANCIAL SUMMARY AT 31st DECEMBER 2020

Income	€,000	€,000
Department of Health Allocation 2020	78,898	
Patient Income	7,862	
Other	3,940	
		90,700
Pay		
Medical	14,420	
Nursing	23,866	
Other	34,190	
		72,476
Non Pay		
Drugs and Medicines	2,246	
Medical and Surgical Appliances	5,892	
Insurances	116	
Laboratory	2502	
Other	7664	
		18,420
Net Deficit 2020		196
Taxes paid to Revenue Commissioners Year ending 31st December 2020		
PAYE and USC		13,400
PRSI EE		2,175
PRSI ER		5,851
Withholding Tax		164

Appendix Five

COOMBE WOMEN & INFANTS UNIVERSITY HOSPITAL ORGANOGRAM 2020




Board of Guardians & Directors
Finance & Audit incl. Remuneration Committee
Marketing & Communications Committee
Nominations Committee
Master
Secretary/ General Manager
Quality & Patient Safety
Chief Operations Officer
Human Resources Manager
Financial Controller
ICT Manager
Head of Division Lab Medicine
Allied Critical Services
Pathology NCHDs
Biochemistry
Cytopathology
Haematology
Histopathology
Lab I.T. / Quality Management
Microbiology
Molecular Pathology
Morbid Anatomy
Transfusion Medicine
Research Laboratory
Microbiology
Histopathology
Haematology
Orthopaedics
Radiologists
Endocrinology
Cardiologists
Visiting Consultants
Quality Management
Clinical Risk Management
Legal/Claims Management
Patient Advocacy
Clinical Audit
Chaplaincy
Medical Social Work
Pharmacy
Physiotherapy
Dietetics
Radiology
Operations Management / Hygiene Services
Catering
CSSD
Household
Support Services
Portering
Linen/Laundry
Theatre Attendants
DS Attendants
Engineering & Maintenance incl. Capital Projects
Finance
Human Resources
Information & Communications Technology (ICT)
Medical Records
Patient Services
Data Governance
Information/ Communications
Supplies
Main Reception / Switchboard
Health & Safety

Appendix Six

MASTERS OF THE COOMBE LYING-IN HOSPITAL/COOMBE WOMEN'S HOSPITAL/CWIUH

Richard Reed Gregory 1829 - 1831
Thomas McKeever 1832 - 1834
Charles Joseph O'Hara 1835 - 1835
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 - 1875
George Hugh Kidd 1876 - 1883
Samuel Robert Mason 1884 - 1890
John Colclough Hoey 1891 - 1899
Thomas George Stevens 1900 - 1907
Michael Joseph Gibson 1907 - 1914
Robert Ambrose MacLaverty 1914 - 1921
Louis Laurence Cassidy 1921 - 1928
Timothy Maurice Healy 1928 - 1935
Robert Mulhall Corbet 1935 - 1942
Edward Aloysius Keelan 1942 - 1949
John Kevin Feeney 1949 - 1956
James Joseph Stuart 1956 - 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 R. Sheehan 2013 - 2019
Michael P. O'Connell 2020 - present

Appendix Seven

MATRONS AND DIRECTORS OF MIDWIFERY AND NURSING AT THE CWIUH

Over a period of 153 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 and Nursing (DoMN).

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 DoMN 1982 - 2005
Mary O'Donoghue DoMN - Acting 2005 - 2006
Patricia Hughes DoMN 2007 - 2016
Ann MacIntyre DoMN 2016 - present

Appendix Eight

GUINNESS LECTURES

1969 The Changing Face of Obstetrics. Prof. T.N.A. Jeffcoate, University of Liverpool

1970 British Perinatal Survey. Prof. N. Butler, University of Bristol

1971 How Many Children? Sir Dougald Baird, University of Aberdeen

1972 The Immunological Relationship between Mother and Fetus. Prof. C.S. Janeway, Boston

1973 Not One but Two. Prof. F. Geldenhuys, University of Pretoria

1978 The Obstetrician/Gynaecologist and Diseases of the Breast. Prof. 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? Prof. 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. Prof. G.V.P. Chamberlain, St. George's Hospital Medical School, London

1984 Ethics of Assisted Reproduction. Prof. M. C. McNaughton, President, Royal College of Obstetricians and Gynaecologists

1985 Magnetic Resonance Imaging in Obstetrics and Gynaecology. Prof. 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 and 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. Prof. Stuart Campbell, Kings College School of Medicine and Dentistry, London

1990 Uterine Haemostasis. Prof. Brian Sheppard, Department of Obstetrics and Gynaecology, Trinity College, Dublin

1991 Aspects of Caesarean Section and Modern Obstetric Care. Prof. Ingemar Ingemarsson, University of Lund

1992 Perinatal Trials and Tribulations. Prof. Richard Lilford, University of Leeds

1993 Diabetes Mellitus in Pregnancy. Prof. 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. Prof. 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. Prof. Eric J Thomas, University of Southampton.

1998 A Flux of the Reds - Placenta Prevail Then and Now. Prof. Thomas Basket, Nova Scotia

1999 Lessons Learned from First Trimester Prenatal Diagnosis. Prof. Ronald J Wagner, Jefferson Medical College, Philadelphia

2000 The Timing of Fetal Brain Damage: The Role of Fetal Heart Rate Monitoring. Prof. Jeffrey P Phelan, Childbirth Injury Prevention Foundation, Pasadena, California

2001 The Decline and Fall of Evidence Based Medicine. Dr. John M Grant, Editor of the British Journal of Obstetrics and Gynaecology

2002 Caesarean Section: A Report of the U.K. Audit and its Implications. Prof. J.J Walker, St James's Hospital, Leeds

2003 The 20th Century Plague: It's Effect on Obstetric Practice. Prof. Mary-Jo O'Sullivan University of Miami School of Medicine, Florida

2004 Connolly, Shaw and Skrabanek - Irish Influences on an English Gynaecologist. Prof. Patrick Walker, Royal Free Hospital, London

2005 Careers and Babies: Which Should Come First? Dr. Susan Bewley, Clinical Director for Women's Health, Guys and St Thomas NHS Trust, London

2006 Retinopathy of Prematurity from the Intensive Care Nursery to the Laboratory and Back. Prof. Neil McIntosh, Professor of Child Life and Health, Edinburgh, Vice President Science, Research and Clinical Effectiveness, RCPCH, London

2007 Schools, Skills and Synapses. Prof. James J. Heckman, Nobel Laureate in Economic Sciences. Henry Schultz Distinguished Service Professor of Economics, University of Chicago, Professor of Science and Society, University College Dublin

2008 Cervical Length Screening For Prevention of Preterm Birth Prof. Vincenzo Berghella, MD, Director of Maternal-Fetal Medicine, Thomas Jefferson University, Philadelphia

2009 Advanced Laparoscopic Surgery: The Simple Truth. Prof. Harry Reich, Wilkes Barre Hospital, Pennsylvania; Past President of the International Society of Gynaecologic Endoscopy (ISGE)

2010 Magnesium – The Once and Future Ion. Prof. Mike James, Prof. and Head of Anaesthesia, The Groote Schuur Hospital, University of Capetown

2011 Pre-eclampsia: Pathogenesis of a Complex Disease. Prof. 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 Prof. 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. Consultant Obstetrician and 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 and Revolution – the Epiphany of a Photograph. Prof. Chris Fitzpatrick, Consultant Obstetrician and Gynaecologist CWIUH, Clinical Professor UCD School of Medicine

2017 'Women; the journey is far from over'. Prof. James Dornan. Chair Health and Life Sciences University of Ulster. Emeritus Chair Fetal Medicine Queen's University Belfast

2018 'Domestic Violence and the Obstetrician'. Prof. Stephen Lindow, Division Chief of Obstetrics at Sidra Medical and Research Centre, Qatar

2019 'From Queen Victoria to the Duchess of Cambridge'. Prof. Rob Dyer, University of Cape Town, New Groote Schuur Hospital

2020 Deferred due to the COVID-19 Pandemic

Coombe Women & Infants University Hospital
Ospidéal Ollscoille Ban agus Náionán an Chúim

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

Cork Street, Dublin 8, Ireland | Phone: 01 408 5200 | Email: info@coombe.ie