THE ROTUNDA HOSPITAL
DUBLIN

Parnell Square • Dublin 1
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Clinical Report

1st January - 31st December 2015

Master

Sam Coulter-Smith
MB BCh BAO LRCPI & SI FRCOG

Elected August 2008

CARING FOR GENERATIONS
SINCE 1745

INDEX

Dublin Maternity Hospitals Combined Clinical Data

1. TOTAL MOTHERS ATTENDING	Totals 2015
Mothers who have delivered babies weighing >500 grams	8361
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1528
Hydatidiform Moles *	20
Ectopic Pregnancies	169
Total Mothers Delivered	**10078**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2015
Maternal Deaths	1

3. BIRTHS	Totals 2015
Singletons	8191
Twins	322
Triplets	21
Quadruplets	4
Total Babies Delivered weighing> 500 grams	**8538**

* 1 less than 500g

4. OBSTETRIC OUTCOME		Totals 2015
Spontaneous Vaginal Delivery	51%	4268
Forceps	5%	424
Ventouse	12%	973
Caesarean Section	32%	2696
Induction of Labour	29%	2430

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2015
Antepartum Deaths	44
Intrapartum Deaths	0
Stillbirths	44
Early Neonatal Deaths	27
Late Neonatal Deaths	1
Congenital Anomalies	30

6. PERINATAL MORTALITY RATES

	Totals 2015
Overall Perinatal Mortality Rate per 1,000 Births	8.3
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.8
Perinatal Mortality Rate Including Late Neonatal Deaths	8.6
Perinatal Mortality Rate Excluding Unbooked Cases	8.3
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.8

7. AGE OF WOMEN

	Nullips	Multips	Total Mothers	Delivered>500g
<20 yrs	152	22	174	
20-24 yrs	513	301	814	
25-29 yrs	831	881	1712	
30-34 yrs	1196	1676	2872	
35-39 yrs	666	1598	2264	
40+ yrs	156	369	525	
Total	**3514**	**4847**	**8361**	

8. PARITY

	Totals 2015	% from Total Mothers	Delivered >500g
Para 0	3514	42.0%	
Para 1	2930	35.0%	
Para 2-4	1822	21.8%	
Para 5+	95	1.1%	
Total	**8361**	**100%**	

9. COUNTRY OF BIRTH & NATIONALITY AT DELIVERY - 2015

	2014	%	2015	%
Irish	5,451	62.03%	4,420	52.86%
EU	1,613	18.36%	1,263	15.10%
NonEU	1,106	12.59%	870	10.40%
Unknown /Unrecorded	617	7.02%	1,808	21.63%
Total	**8,787**	**100.00%**	**8,361**	**100.00%**

10. SOCIO-ECONOMIC GROUP

Socio-Group	2013	%	2014	%	2015	%
1	559	6.46%	636	7.24%	350	4.19%
2	1,989	23.00%	1,891	21.52%	1,225	14.65%
3	1,384	16.00%	1,270	14.45%	825	9.87%
4	437	5.05%	400	4.55%	275	3.29%
5	528	6.11%	468	5.33%	299	3.58%
6	317	3.67%	314	3.57%	187	2.24%
7	2,476	28.63%	1,782	20.28%	1,174	14.04%
8	0	0.00%	0	0.00%	3,369	40.30%
9	0	0.00%	2	0.02%	1	0.01%
10	958	11.08%	2,024	23.03%	656	7.85%
TOTAL	**8,648**	**100.00%**	**8,787**	**100.00%**	**8,361**	**100.00%**

"**8 - Information not completed on booking visit 3,369 unknown."

11. BIRTH WEIGHT

Weights	Totals 2015
500 - 999 gms	49
1,000 - 1,499	75
1,500 - 1,999	141
2,000 - 2,499	332
2,500 - 2,999	1115
3,000 - 3,499	2825
3,500 - 3,999	2835
4,000 - 4,499	1018
4,500 - 4,999	141
>5,000	7
Total	**8538**

12. GESTATIONAL AGE

	Nullips	Multips	Totals 2015
<26 weeks	15	7	22
26 - 29 weeks + 6 days	23	25	48
30 - 33 weeks + 6 days	66	51	117
34 - 36 weeks + 6 days	178	208	386
37 - 41 weeks + 6 days	3205	4548	7753
42 + weeks	28	7	35
Total	**3515**	**4846**	**8361**

13. PERINEAL TRAUMA AFTER ALL VAGINAL DELIVERIES (Numbers & Percentages)

	Nullips	Multips	Totals 2015
Episiotomy & Extended Episiotomy	1140	292	1432
First Degree Laceration	161	475	636
Second Degree Laceration	614	1027	1641
Third Degree Anal Sphincter/Mucosa	105	55	160
Fourth Degree	5	2	7
Other { Lacerations/Grazes not requiring sutures}	236	570	806
Intact	110	872	982
Totals	**2371**	**3293**	**5664**

CS Deliveries not included in the above. Total Vaginal deliveries: 5664

14. THIRD DEGREE TEARS *

	Nullips	Multips	Totals 2015
Occurring Spontaneously	52	41	93
Associated with Episiotomy	18	3	21
Associated with Forceps	22	3	25
Associated with Ventouse	25	9	34
Associated with Ventouse & Forceps	1	4	15
Associated with O.P. position	16	7	23

*Total 3rd Degree not listed as some women have a 3rd degree Tear with Both Episiotomy & Instrumental Delivery.Table 13 have totals listed.

15. PERINATAL MORTALITY IN ANTEPARTUM NORMALLY FORMED STILLBORN INFANTS

	Nullips	Multips	Totals
Placental	5	5	10
Cord Accident	2	4	6
Feto Maternal Haemorhage	0	1	1
Infection	2	3	5
Unexplained	2	5	7
Total	**11**	**18**	**29**

Autopsy Totals			
Autopsy Rate	19/29	65.5%	

16. PERINATAL MORTALITY IN CONGENITALLY MALFORMED INFANTS

	Nullips	Multips	Totals
CNS Lesions	1	1	2
Cardiac	0	1	1
Renal	0	3	3
Chromosomal	7	6	13
Diaphragmatic Hernia	2	2	4
Other	3	4	7
Totals	**13**	**17**	**30**

17. EARLY NEONATAL DEATHS

	Nullips	Multips	Totals
Congenital	5	10	15
Prematurity / Infection	4	1	5
Placental	1	6	7
Totals	10	17	27
Full Autopsy	8/27		
Overall Full Autopsy total for all Perinatal Deaths			**30**
Overall Autopsy Rate			**42%**

18. HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Grades	Grade 1	Grade 2	Grade 3
	9	6	1

19. SEVERE MATERNAL MORBIDITY

	Nullips	Multips	Totals
Massive Obstetric Haemorrhage	12	13	25
Emergency Hysterectomy	0	1	1
Transfer To ICU/CCU	2	1	3
Uterine Rupture	0	4	4
Eclampsia	1	0	1
Acute Renal & Liver Dysfunction	4	3	7
Acute Respiratory Dysfunction	2	0	2
Septic Shock	5	6	11
Other	8	3	11

20. BODY MASS INDEX

Body Mass Index	2012	2013	2014	2015
Underweight: <18.5	224 (2.5%)	215 (2.5%)	168 (1.9%)	168 (2.0%)
Healthy: 18.5 - 24.9	4661 (52.7%)	4619 (53.4%)	4762 (54.2%)	4454 (53.3%)
Overweight: 25 - 29.9	2259 (25.5%)	2283 (26.4%)	2342 (26.7%)	2323 (27.8%)
Obese class 1: 30 - 34.9	790 (8.9%)	804 (9.3%)	890 (10.1%)	838 (10.0%)
Obese class 2: 35 - 39.9	261 (3.0%)	267 (3.1%)	288 (3.3%)	294 (3.5%)
Obese class 3: >40	84 (1.0%)	83 (1.0%)	117 (1.3%)	116 (1.4%)
Unrecorded	567 (6.4%)	377 (4.4%)	220 (2.5%)	168 (2.0%)
Total Deliveries	**8846**	**8648**	**8787**	**8361**

21. FINANCIAL INFORMATION: Non-capital income and expenditure account For the year ended 31 December 2015

	2015 €'000	2014 €'000
Cumulative non-capital deficit/(surplus) brought forward from previous year	**182**	80
Pay		
Salaries	**47,375**	46,535
Superannuation and gratuities	**4,570**	3,394
Total Pay	**51,945**	49,929
Non-Pay		
Direct patient care	**5,300**	5,679
Support services	**5,578**	4,858
Financial and administrative	**3,470**	3,485
Total Non Pay	**14,348**	14,022
Gross expenditure for the year	**66,293**	64,031
Income	**(18,161)**	(18,862)
Net expenditure for the year	**48,314**	45,169
HSE Funding notified for the year	**(48,095)**	(44,987)
Deficit for the year carried forward to following year	**219**	182

THE ROTUNDA HOSPITAL DUBLIN

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Introduction
by the master

2015

CARING FOR GENERATIONS
SINCE 1745

Introduction

The Master

It has been an honour and a privilege to serve as Master of the Rotunda for the seven years from 2009 to 2015 inclusive. These seven years have been remarkable in many ways. They have been seven of the busiest years for the hospital in terms of the unprecedented demand for maternity services. A time where we have seen a very significant financial recession, which has affected not just the Country but the Health Service and those working within the service. This has had a direct effect on the funding of the Health Service. The financial measures taken to deal with this recession have directly impacted on the staffing of the hospital, making it extremely difficult for us to retain and attract the best quality staff to our service. This is an issue that has effected not just the Rotunda, but every hospital and health institution right across the country.

Maternity services have been in the spotlight over the last number of years, with significant focus on clinical governance, openness, accountability and transparency. This has all happened at a time when the oversight of the Health Service has undergone a significant transition moving from the Department of Health to the HSE and now to Hospital Groups. In addition to the increased demand for maternity services the demand for gynaecology has also increased substantially, with the demand for gynaecology out-patient appointments almost doubling.

Over the course of 2015, 10,591 patients registered for antenatal care, which was 3 % less than 2014. We delivered 8,361 women of 8,538 babies greater than or equal to 500g in weight. The corrected perinatal mortality rate for 2015 was 4.8 per 1,000. There were 1 indirect maternal death in 2015.

Over the course of the last two years the hospital has been working with the HSE to validate the gynaecological waiting lists. The Board funded a very successful waiting list initiative with the Mater Private Hospital to address these waiting lists. In tandem with these initiatives the hospital worked with the RCSI Hospitals Group, particularly with Connolly Hospital to set-up a hysteroscopy out-patient service which commenced early in 2016. A further initiative took place, with a collaborative effort involving the Irish College of General Practitioners, a GP Led Evening Gynae Clinic is now in existence, principally for insertion of Mirena devices for contraception and management of menorrhagia. This has proved to be an extremely popular and useful initiative.

In May of this year the Minister for Health Dr. Leo Varadakar came to the hospital to announce the decision to relocate and co-locate the Rotunda Hospital to the Connolly Campus in Blanchardstown. This was a welcome acknowledgement of the fact that the Rotunda needs to move to a new facility in order to provide safe and efficient care to our patients, however it was

disappointing that no funding was identified at the time. The hospital continues to work with the HSE, the Department of Health and the Group in order to pursue the ultimate aim of co-locating with Connolly. In the meantime it is very important that the Rotunda continues to be able to provide top class care to all of its mothers and babies and it must be recognised that there will be interim developments required to improve facilities here on Parnell Square while the move to Connolly is being pursued.

Over the course 2015 we were successful in negotiating several new consultant posts in obstetrics and gynaecology, pathology and neonatal paediatrics. It is anticipated these posts will be filled early in 2016. We will continue to work with our partners within the RCSI Hospitals Group to facilitate the provision of sub-specialist services to both Drogheda and Cavan particularly in the area of perinatal pathology and fetal medicine. It was therefore fitting that the new mortuary facility based in the Rotunda opened late in 2015.

The Research and Academic Affairs Department headed by Dr. Joanna Griffin continues to work with the RCSI Academic Department and has been very successful in terms of research output. The relocation of the Research Department to one area within the Nurse's Home has enabled a much more cohesive and efficient set up which is already paying dividends.

Over the course of the year we have been working very hard to get new additional consultant posts and we look forward to the appointment of three new consultants to assist with the new gynae services based in Connolly and the obstetric services based in the Rotunda. We have also been fortunate in achieving new appointments in anaesthesia and neonatal paediatrics.

The Bartholomew Mosse Charter Day Lecture was delivered by Professor Michael Geary, now based in Toronto. His lecture entitled 'Enhancing Patient Safety and Quality of Maternity Care - New Directions' was very well received.

The Friends of the Rotunda had a busy year working extremely hard to support research within the Hospital. The organisation is currently being re-invigorated with the genesis of the Rotunda Foundation. A great deal of credit and thanks go to Sheila Thompson and all of the people who work in the Friends of the Rotunda for all of the hard work that they put in to supporting what we do.

The Rotunda's partnership with the RCSI Institute of Leadership programme continues to go from strength to strength with a second cohort of staff completing their leadership training programme within the RCSI. Many of these projects have lead to significant strategic improvement within the hospital.

Introduction

Given that this is my last annual report I would like to take this opportunity to thank all those who have contributed to the support and provision of the services to our patients during my time as Master. The Hospital remains significantly under staffed and it is a tribute to the dedication and skill of our front line staff who despite all of the constraints continue to maintain quality services in increasingly difficult circumstances. To all of those staff who come in to do additional shifts when requested, who stay late and miss breaks and meals, your efforts are appreciated and I am eternally grateful for your dedication to the jobs that you do so well.

It would be impossible to do the job as Master of the hospital without the support and assistance of the hospital administrative management team led by Ms. Pauline Treanor, the Secretary General Manager. Pauline and all of her support staff work incredibly hard to ensure that the hospital's administrative processes are as lean and efficient as possible and they do a wonderful job. My sincere thanks to Pauline and her team.

To my midwifery colleagues, led by Ms. Margaret Philbin, our Director of Midwifery, I would like to express my sincere gratitude. The midwifery team have shown extraordinary dedication over the last number of years in very difficult circumstances.

To all of the Heads of Department for the enormous work that they do in contributing to the life and running of the hospital, I am also extremely grateful. Again it would be impossible to run the hospital without the help and assistance of consultant colleagues in all specialties. Each and every one of them puts in a huge effort to keep the hospital safe and on an even keel. Over the years there have been some extraordinarily skilled and dedicated NCHDs who have gone through the system. To all of the Assistant Masters and all of our Registrars and SHOs, I would like to thank them for their hard work and dedication.

The Board of the Rotunda Hospital plays a hugely important role in the oversight and running of the hospital. I would like to pay particular tribute to all of the members of the Board but especially to the Chair of the Board Ms. Hilary Prentice who has always been there for advice and support when required. As I have said in previous reports, the Rotunda Hospital is a voluntary institution overseen by a voluntary Board. This model of governance has proved to be effective and very positive for the running of the hospital over the years and it is a model that needs to be maintained and built on in the face of increasing challenges to the voluntary hospital sector in the future.

I think it is appropriate at the end of seven years to look back over this period of time and take stock of what's happened in terms of maternity outcomes. Over the course of seven years, we looked after 71,453 mothers, 61,101 of them delivered

Introduction

62,423 babies. The caesarean section rate has gone from 28.5% to 32%. The perinatal mortality rate has ranged from 6.5 to 8.4, with a mean of 7.6 per 1,000. Over the course of seven years the complexity of the workload that we face has significantly increased. The number of patients transferred from the Rotunda to acute medical services for investigation and management has increased significantly and it is vitally important that as we plan towards a new Rotunda Hospital in partnership with an acute adult hospital that the facilities required to manage this level of complexity are put in place in tandem with any planned move.

Last but not least I would like to pay particular tribute to Mary O'Grady in the Master's Office, without whose help, assistance, guidance and expertise my job as Master would have been all but impossible.

At the time of going to print Professor Malone will have completed his first six months as the new Master of the Rotunda. I would like to wish him every success in his seven year tenure. I sincerely hope and believe that he will get all of the help and support that I received during my time as Master.

Dr. Sam Coulter-Smith.
Master.

THE ROTUNDA HOSPITAL DUBLIN

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Statistical Tables & Summaries

CARING FOR GENERATIONS SINCE 1745

Comparative Results for 10 Years

YEARS	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Babies Born	7325	8456	8799	8912	8792	9319	9041	8841	8980	8538
Perinatal Deaths	50^{+13} *	66^{+10} *	64^{+7}*	56^{+5}*	69^{+5}*	59^{+2}*	66^{+2}*	63^{+6}*	68^{+2}*	71
Perinatal Mortality Rate	8.6	9.0	8.1	6.8	8.4	6.5	7.5	7.8	7.8	8.3
Mothers Attending	8,036	9,290	9,655	9,709	9,594	10,547	10,397	10,314	10,814	10,078
Maternal Deaths	0	0	1	2	3	3	2	3	2	1
Caesarean Section %	27.7	27.1	26.2	28.5	27.9	29	29	31	31	32
Forceps/ Ventouse %	16.8	17	20	19.8	20.5	19.4	18	17	17	17
Epidural %	47	47	49	49.2	46.6	46	48	47	47	47
Induction %	20	20	21	23.27	27	29	28	29	30	29

* Unbooked

Statistical Summaries

1. TOTAL MOTHERS ATTENDING	Totals 2015
Mothers who have delivered babies weighing >500 grams	8361
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1528
Hydatidiform Moles *	20
Ectopic Pregnancies	169
Total Mothers Delivered	**10078**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2015
Maternal Deaths	1

3. BIRTHS	Totals 2015
Singletons	8190
Twins	326
Triplets	18
Quadruplets	4
Total Babies Delivered weighing> 500 grams	**8538**

4. OBSTETRIC OUTCOME		Totals 2015
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Ventouse	12%	973
Caesarean Section	32%	2696
Induction of Labour	29%	2430

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2015
Antepartum Deaths	44
Intrapartum Deaths	0
Stillbirths	44
Early Neonatal Deaths	27
Late Neonatal Deaths	1
Congenital Anomalies	30

6. PERINATAL MORTALITY RATES

	Totals 2015
Overall Perinatal Mortality Rate per 1,000 Births	8.3
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.8
Perinatal Mortality Rate Including Late Neonatal Deaths	8.6
Perinatal Mortality Rate Excluding Unbooked Cases	8.3
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.8

7. STATISTICAL ANALYSIS OF HOSPITAL POPULATION

AGE AT DELIVERY	2009	2010	2011	2012	2013	2014	2015
<20	3.8%	3.5%	3.0%	2.8%	2.5%	2.5%	2.1%
20-24	14.6%	13.1%	12.4%	11.6%	11.0%	10.1%	9.7%
25-29	24.7%	24.6%	23.6%	23.2%	21.5%	20.8%	20.5%
30-34	31.6%	31.6%	33.6%	34.8%	34.8%	35.1%	34.3%
35-39	21.3%	22.2%	22.5%	22.0%	24.3%	25.1%	27.1%
>=40	4.0%	5.0%	4.9%	5.5%	5.9%	6.5%	6.3%

PARITY	2009	2010	2011	2012	2013	2014	2015
0	47.3%	45.5%	45.5%	44.4%	42.6%	43.1%	42.0%
1	31.2%	32.3%	32.8%	34.1%	34.1%	34.3%	35.0%
2-4	20.4%	21.1%	20.7%	20.3%	22.1%	21.2%	21.8%
5+	1.1%	1.1%	1.0%	1.2%	1.2%	1.4%	1.1%

BIRTHWEIGHT (grams)	2009	2010	2011	2012	2013	2014	2015
500-999	0.5%	0.6%	0.5%	0.7%	0.8%	0.6%	0.6%
1000-1499	0.9%	0.7%	0.8%	1.0%	0.9%	0.8%	0.9%
1500-1999	1.6%	1.4%	1.6%	1.5%	1.7%	1.5%	1.7%
2000-2499	3.4%	4.0%	3.8%	4.0%	4.1%	3.8%	3.9%
2500-2999	13.6%	13.1%	13.8%	12.9%	13.0%	13.1%	13.1%
3000-3499	33.5%	32.1%	32.4%	31.5%	32.6%	33.4%	33.1%
3500-3999	34.4%	32.9%	33.0%	34.1%	32.4%	32.9%	33.2%
4000-4499	10.0%	12.7%	11.8%	12.2%	12.2%	12.0%	11.9%
4500-4999	1.9%	2.3%	2.1%	2.0%	2.2%	1.8%	1.7%
>5000	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%

GESTATION (Weeks)	2009	2010	2011	2012	2013	2014	2015
<26 weeks	0.2%	0.3%	0.2%	0.3%	0.3%	0.3%	0.3%
26 - 29 weeks + 6 days	0.6%	0.6%	0.8%	0.7%	0.7%	0.6%	0.6%
30 - 33 weeks + 6 days	1.4%	1.4%	1.3%	1.5%	1.5%	1.4%	1.4%
34 - 36 weeks + 6 days	4.1%	4.3%	4.4%	4.4%	4.4%	4.9%	4.6%
37 - 41 weeks + 6 days	92.6%	92.8%	93.2%	93.0%	93.0%	92.6%	92.7%
42 + weeks	1.1%	0.6%	0.2%	0.2%	0.1%	0.1%	0.4%

Fetal Loss
The Master

NOTES ON PERINATAL MORTALITY

- The overall rate applies to all babies weighing greater than or equal to 500g who were stillborn or died in the first seven days of life (71).
- The corrected perinatal mortality rate is when congenital malformations are excluded (71-30 = 41). This gives a corrected rate of 4.8 and an overall rate of 8.3.

STILLBIRTHS	
Stillbirths	**44**
Congenital	15
Placental	10
Cord	6
Infection	5
Feto Maternal Haemorrhage	1
Unexplained	7

Congenital (15)

1. Para 0. BMI 20. Booked at 10 weeks. Med hx systemic lupus. Anatomy scan at 20+4 weeks revealed multiple abnormalities. All measurements < 5th centile, lemon shaped head, sacral spina bifida, Arnold Chiari malformation, bilateral rocker bottom feet, VSD. Decision to proceed to amniocentesis, Karyotype 47 XX, Trisomy 19. Scanned regularly until 34 weeks at which time no FH detected. Induced. SVD stillborn female infant weighing 1190g. PM declined given antenatal diagnosis.

2. Para 1+0. Previous forceps at term. BMI 27.4. History of depression. Booked at 12 weeks. Anatomy scan at 21 weeks - abnormal heart views. Repeat anatomy and fetal ECHO, Aortic arch hypoplasia, absent stomach bubble, clenched hands. Amniocentesis - Trisomy 18. Attended at 28 weeks for RAADP - no FH. IUD confirmed. IOL. Assisted breech delivery of stillborn male infant weighing 600g. Normal IUD bloods. PM declined. Cause of death Trisomy 18.

3. Para 1. SVD. BMI 19.3. Booked at 14 weeks. Anatomy scan at 24+6 - symmetric IUGR, borderline ventriculomegaly, echogenic bowel. Referred to Fetal Medicine Department. Review 25+3 agreed with scan findings, uncomplicated amniocentesis, maternal bloods for TORCH screen. CMV DNA detected by PCR on amnio. Likely prognosis congenital CMV. Regular follow-up in Fetal Medicine Department. MRI at 28+5 - severe tetraventricular hydrocephalus, cystic change in both cerebellar hemispere, evidence of hyrdops. Review at 30+5, IUD confirmed. IOL. Assisted breech delivery of a stillborn male infant weighing 1400g. TORCH CMV IgV positive. Group B strep in placenta. PM performed. Cause of death congenital CMV.

4. Para 2. Stillbirths x 2 at 25 and 28 weeks. BMI 22. Booked at 16 weeks. Patient and partner are carriers of pathogenic variants in RYRI gene. Anatomy scan at 20 weeks - bilateral talipes, wrists flexed. Amniocentesis at 21+6. Amnio-reduction at 30+6 weeks. IUD confirmed at 32 weeks. IOL. Compound presentation - arm, transverse lie, proceeded to emergency LSCS. Stillborn female infant delivered weighing 1430g. PM declined. Cause of death congenital arthrogryposis.

5. Para 2+2. Previous forceps and Ventouse. BMI 26. Booked at 12. Ultrasound at 21+1 weeks - multiple anomalies detected. Amniocentesis PCR - T18. Failed IOL at 37 weeks. IOL at 39+6. Assisted breech delivery of stillborn female infant weighing 1.77 kg. PM declined. Cause of death Trisomy 18.

6. Para 0+1. Booked at 12 weeks. At 13+2 CVS - T21. Regular attend at ANC. Presented at 39 weeks with decreased FM - oligohydramnios. IUD confirmed on scan. IOL. SVD of stillborn female infant weighing 2.98 kg. PM declined. Cause of death Trisomy 21.

7. Para 1, previous elective caesarean section at term because of displaced fractured pelvis. BMI 21. Booked at 13 weeks. Anatomy scan at 21 weeks revealed possible cardiac defect with intra-cardiac echogenic foci in the left ventricle and bilateral hydronephrosis, femur length on the 5th centile. Amniocentesis confirmed Trisomy 21. Patient attended at 28 weeks, no FH detected. Following extensive discussion and in view of previous caesarean section and displaced fractured pelvis, delivered by elective caesarean. Stillborn male infant 1.46 kilograms. Post-mortem declined. Cause of death Trisomy 21.

8. Para 0. BMI 23. Booked at another hospital. Referred at 20+6 following scan suggesting congenital anomaly. USS at 21+2 - abnormal four chamber view (large VSD, ventricular discordance, marked thickening of right ventricular wall, pleural effusion), bilateral rocker-bottom feet, small for gestation age. Amniocentesis - PCR unbalanced translocation between Chromosome 7 and 13, 46XX. IOL at 37+6, assisted breech delivery of stillborn female infant weighing 1780g. PM declined. Likely cause of death unbalanced translocation between chromosome 7 and 13, 46XX.

9. Para 2+4 (SVD x 2). BMI 43.2. Booked at 10. Smoker. Difficult anatomy scan at 19 and 23 weeks because of BMI. USS at 25+1, major cardiac anomaly. Amniocentesis - Trisomy 13. Presented at 35+6, feeling unwell, no FH on ultrasound. IOL. SVD stillborn female infant weighing 2040g. PM declined. Cause of death Trisomy 13.

10. Para 0. Booked 12+3 weeks. Anatomy scan at 20+5 and 23+3 weeks - no obviously anomaly. USS at 28+4 and 30+4 - reassuring interval growth. Seen regularly in the ANC. At last ANC visit at 40+4 - reduced AFV. Plan to admit for IOL. Admitted for IOL at 40+6, no FM since the morning. IUD confirmed on scan. IOL. SVD, stillborn male infant weighing 2600g. PM performed. Karyotype and placental histology - an abnormal male karyotype with a complement of 47 chromosomes, including three copies of chromosomes 21 (Trisomy 21). Placenta from a case of Trisomy 21 with IUGR, small placenta, delayed villous maturation, hypoxia, chronic - chorangiosis and nucleated red blood cells in the fetal circulation. Cause of death - Trisomy 21.

11. Para 0. Booking bloods normal. Booked at 14 weeks. Scan confirmed dates. Anatomy scan at 21 weeks - poor cardiac views, heart displaced to left side, estimated fetal weight < 5th centile. Large mass noted in the chest cavity. Suspected large right sided diaphragmatic hernia confirmed in the Fetal Medicine Unit. Follow-up in the combined Rotunda/Coombe Cardiac Clinic. Amniocentesis normal karyotype. Scan at 29 weeks, growth remained less < 5th centile, absent end dystolic flow. Scan at 31 weeks - reversed end diastolic flow. IUD noted at 32 weeks. Induction of labour. Spontaneous vaginal delivery of a stillborn female infant weighing 1.0 kgs. Cause of death large congenital right sided diaphragmatic hernia. PM declined.

12. Para 0+1. Transferred from another hospital with fetal hydrops diagnosed at 29 weeks gestation. IUD diagnosed at 30 weeks. Induction of labour. Stillborn female infant weighing 1.81 kilograms delivered. Manual removal of placenta required. Consent for post-mortem. PM showed no evidence of any congenital malformation. There was no evidence of viral intra nuclear inclusions. Immuno staining for parvovirus was negative. Placenta showed diffuse hydropic change. Cause of death unexplained non immune hydrops.

13. Para 2+3 (SVD x 2, 1 NND, 3 early miscarriages). BMI 25. Booked at 11+4. USS at 16+5 revealed infantile polycystic kidneys, no other structural abnormality. USS at 20+5 - massively enlarged kidneys with evolving heart failure and ascites. USS at 21+2 - IUD. IOL. SVD of stillborn male infant weighing 565g. PM declined. Likely cause of death diffuse cystic renal dysplasia.

14.&15. Para 0+1 (early mis.) BMI 26.6. Booked in another hospital. Smoker. MCDA pregnancy. Referred with increased NT. Seen at 16+4, USS showed extensive cyst hygroma on both fetuses with significant hydrops, but no evidence of TTTS. Amniocentesis - 45X. Ultrasound at 22+4, fetal demise x 2, gross fetal hydrops. IOL. SVD of stillborn female infant weighing 660 and stillborn female infant weighing 550g. No PM. Likely cause of death 45X, Turner Syndrome.

Placental (10)

1. Para 0+1. Previous first trimester miscarriage. BMI 25. Booked at 12+4 weeks. Smoker 10 per day. Anatomy scan at 20+5 weeks. All biometry <5th centile. No obvious fetal defect. Repeat scan at 23+2 weeks. Biometry remained below 5th centile. Amniocentesis declined. Repeat scan at 25+2, biometry remained below 5th centile, oligohydramnios noted, absent end-diastolic flow with evidence of cerebral redistribution. Discussion with patient regarding prognosis. Risk of IUD explained. TORCH screen sent. Further scan at 25+5, oligohydramnios, intermittent absent end diastolic flow. Further scan at 26+2, persistent absent EDF. Admitted for daily monitoring. Obstetric and Paediatric discussion with patient and family. Conservative management agreed. Scan at 31+2 confirmed IUD. Mifepristone given. Assisted breech delivery of a stillborn male infant weighing 660g. TORCH screen negative. HVS - Bacterial vaginosis. PM declined. Cause of death placental insufficiency.

2. Para 2. Previous SVD x 2. BMI 25. Smoker 10 per day. Booked at 14 weeks. Anatomy scan at 20 weeks NAD. Seen at 28 weeks NAD. Presented to ER at 31 weeks with decreased fetal movements. IUD confirmed. IOL. SVD male infant weighing 1.2 kg. TORCH screen negative. Maternal toxicology positive for opiates and cannabis. PM performed. Cause of death chronic utero placenta insufficiency.

3. Para 1 (SVD at 41/40, 3.64 kg). BMI 27.9. Booked at 12+5 weeks. Anatomy scan at 20 weeks - normal. USS at 29+2 all measurements <5 centile, oligohydramnios, normal Doppler, normal CTG. Steroid given. TORCH screen: CMV IgM (Architect -weak positive, Vidas - equivocal), CMV IgG positive (IgG avidity index - 0.864, strongly suggesting primary infection dating > 3 months). Amniocentesis - normal PCR, 46XY. Regular follow-up, guarded prognosis explained. USS at 30+6 - new findings of pulmonary valve abnormality with post valvular dilatation of PA (? Pulm stenosis). Presented at 31+4 with small pv bleed, no pain, USS - no FH, oligohydramnios, breech. IOL. Assisted breech delivery of stillborn male infant weighing 1080g. Post-mortem performed - macerated stillbirth, IUGR, hypoxia/stress effect, chronic uteroplacental insufficiency. Small placenta. Negative for congenital malformation of congenital infection.

4. Para 0. BMI 30.23. Booked at 10 weeks. Anatomy scan at 20 weeks. Regular attender at ANC. Presented to ER at 38+2 weeks with no FM for 3 days. IUD confirmed on scan. Contracting. SVD of stillborn male infant weighing 2.69 kg. PM declined. Cause of death extensive villitis in the placenta.

5. Para 1. (Em LSCS at 39 weeks). Booked at 11+5. Anatomy scan at 20+6, normal. Transferred to ER at 33+3 weeks with severe abdo pain. IUD confirmed. NIEL. Consumptive coagulopathy. Decision for GA - CS, intrauterine balloon, HDU care, EBL 2.5 litres. Stillborn female infant weighing 2.29 kg delivered. Post CS sepsis. PM performed. Cause of death abruption.

6. Para 0. BMI 26. Booked at 12+3 weeks. Leucocytes noted. Bacteruria screen each visit. 2 x ecoli UTI this pregnancy, nitrofurantoin prophylaxis. Anatomy scan at 21+3 weeks normal. Repeat USS for cardiac review. Cardiac ultrasound at 26+1 normal. ER at 27 with no FM. IUD confirmed. IOL. Assisted breech delivery of a stillborn female infant weighing 780g. Limited PM performed. Cause of death retroplacental haemorrhage.

7. Para 0. BMI 26. Booked at 14+6. Poor English. History of Migraines and RTA - ongoing musculo skeletal pains. Scan at 21+2, placenta low lying for re-scan at 34 weeks. Presented to ED at 38+2 with ? labour pains by 1 day. Unable to auscultate FH. Scan confirmed no FH. Induced. SVD stillborn male infant weighing 2.5 kg. PM performed. Cause of death fetal thrombotic vasculopathy.

8. Para 0+1. BMI 22.5. Booked at 12 weeks. Unexplained secondary infertility. IVF pregnancy. Normal anatomy scan at 20+3 weeks. Regular ANC follow-up. At 39+5 presented with reduced FM x 1 day. USS confirmed no FH. IOL. SVD of stillborn male infant weighing 3630g. PM performed. Negative for congenital malformation. Likely cause of death fetal thrombotic vasculopathy.

9 & 10 Para 1+1. Previous Ventouse delivery at 41+2. BMI 22.5. Booked at 12 weeks. Early scan at 9+4 confirmed MCD twin pregnancy. Serial scans performed. Doppler and LV normal at 33+4. At 33+5 presented with no fetal movements since morning. Double fetal demise confirmed. No clinical evidence of infection or abruption. Mifepristone given. IOL at 34 weeks. SVD of twin girls weighing 2.25 and 1.96 kg. TORCH screen negative. TFTs normal. PMs performed. Cause of death probable twin to twin transfusion.

Cord (6)

1. Para 1. SVD. BMI 38. Booked at 17 weeks. Anatomy scan at 22+6 - restricted view due to BMI, cardiac views not obtained. Repeat scan at 25+6 - good cardiac views. Negative GTT at 26 weeks. Presented to ER at 26+2 - no FM for 2 days. Scan confirmed IUD. IOL. SVD of stillborn female infant weighing 850g. PM performed. Cause of death probably cord accident.

2. Para 1. SVD. BMI 24. Booked at 13 weeks. Anatomy scan at 20 weeks - 2 vessel cord noted. Growth scans at 28 and 32 weeks normal. Presented to ER at 38+3 with decreased FM. Seen in ANC at 40 week - NAD. Presented at 40+1 with decreased FM. IUD confirmed. IOL. SVD stillborn male infant weighing, 4.46 kg. Consent to PM. Cause of death cord accident.

3. Para 1. (El LSCS - placental insufficiency). BMI 40. Booked at 14. NIDDM, PCOS. Anatomy scan at 20, anterior low lying placenta. Admitted for BSL stabilisation. ANC at 22 weeks. USS at 24 weeks, normal fetal echo. ER at 26+5, no FM x 1 day. IUD confirmed. IOL. Breech delivery of stillborn male infant weighing 1000g. Nuchal cord. Consented for PM. Cause of death - cord accident.

4. Para 1. (LSCS). BMI 23. Booked at 8+4 weeks. Anatomy scan at 21+2 no obvious abnormality. Regular attender at ANC. Presented at 39 weeks with no FM for 1 day. USS revealed IUD. IOL. SVD stillborn male infant weighing 2850g. PM declined. Histology - cord accident - umbilical vein thrombosis, fetal thrombotic vasculopathy, diffuse moderated delayed villous maturation. Multifocal villitis of unknown aetiology. Likely cause of death - cord accident.

5. Para 0. BMI 20.5. Booked at 15+3 weeks. Anatomy scan at 20+3, growth < 5th centile. Scan at 22+3 - good growth. Regular antenatal attendances. Seen in ANC at 36 weeks - ? PPROM. Presented at 38 weeks with 3 day history of decreased fetal movements. IUD confirmed. SVD of a stillborn female infant weighing 2440g. PM performed. Cause of death cord accident, stricture of the cord with almost occlusive thromi in 2 vessels.

6. Para 0+1 (ectopic). BMI 26.4. Booked at 12 weeks. Presented to EPAU at 8 weeks, dates confirmed. Posterior fibroid uterus 4.5 cm. Anatomy scan at 20 weeks normal. Attended at 28 weeks for RAADP. Seen in antenatal clinic at 32 and 34 weeks - uneventful. Attended ER at 35+1 with decreased FM. IUD confirmed. IOL. SVD stillborn male infant weighing 2.29 kg, nuchal cord x 2 tight. TORCH screen negative. PM declined. Unexplained IUD.

Infection (5)

1. Para 1. Previous LSCS. Presented to Cavan Hospital with PPROM at 22+5. Transferred to Rotunda at 23+3. At 24+1 CTG showed decreased variability, with unprovoked decelerations. Transferred to delivery suite for continuous monitoring. Vaginal breech delivery of a stillborn female infant weighing 590g. PM declined. Histology revealed ascending infection and hypoxia. Cause of death extreme prematurity/infection.

2. Para 0+1 (Missed Misc). BMI25. Booked at 7 weeks. Hypermesis, IV hydration. ER at 8+ weeks, threatened miscarriage, reassured. ANC at 11 weeks, T1 screening - low risk. Anatomy scan at 18+ weeks normal. ER at 20+2 weeks with PPROM. 21+4 USS - anhydramnios. Day 11 post PPROM clinical chorioamnioitis . IOL. SVD stillborn infant weighing 510g. HVS GBS isolated. Placental swab GBS. PM declined. Cause of death extreme prematurity/infection.

3. Para 0. BMI 21. Booked at 13 weeks. Presented to ER at 19, 19+3, 20+3 weeks with PV bleeding. At 21+2 weeks presented and admitted with PPROM. Started on erythromycin. USS at 21+3, no obvious anomaly, anhydramnios, posterior low lying placenta. Swab - light growth of GBS. At 23+3 weeks cord prolapse noted and patient advised on the likely course of events and prognosis. USS the following morning - no FH, breech. IOL. Assisted breech delivery of a stillborn female infant weighing 555g. PM performed. Likely cause of death cord prolapse with a background of pre-viable PPROM.

4. Para 1+0. Previous SVD, third degree tear, PPH. BMI 23. Booked at 13 weeks. Anatomy scan at 22+6 - no abnormalities noted. Presented to ER at 23+1 - feeling unwell, lower back and abdominal pain, pv spotting x 1 day, fluid draining. Impression PPROM. Admitted for expectant management. SVD delivery of a female stillborn infant weighing 520g. MSU HVS and rectal swab from admission grew Group B strep. PM declined. Cause of death ascending infection/prematurity.

5. Para 3 (term SVD x 3). BMI 20.1. Smoker 10 per day. History of depression. Booked in another hospital. Admitted with PPROM at 22 weeks. Transferred to Rotunda at 24+2. WCC and CRP persistently raised. 26+2 reviewed for pain, no evidence of choriamniotis. At 26+3 passed a large clot, difficult to auscultate FH. VE - cord prolapse. Cat 1 CS under GA. Stillborn female infant weighing 750 gms delivered. Limited PM performed. Cause of death ascending infection with cord prolapse.

Feto Maternal Haemorrhage (1)

1. Para 1. BMI 23.5. Booked at 11 weeks. Seen in ED at 17/40 weeks following a fall. Denied any direct abdominal trauma. Scan at 21+3 and 24+4 normal. Seen in antenatal clinic at 30 and 34 weeks, all well. Referred to ED by GP at 35+2 with decreased fetal movements. Unable to auscultate FH. Scan confirmed absent FH. Mifepristone given. SVD stillborn male infant weighing 2.96 kg. PM performed. Cause of death massive feto-maternal haemorrhage.

Unexplained (7)

1. Para 1+0. SVD at 37+5 weeks, 3rd degree tear and PPH. BMI 20. Booked at 12+4. Anatomy scan at 22+4 weeks - no abnormalities noted. Seen in Perineal Clinic at 29+3, decision for SVD. Referred to ER by GP with decreased fetal movements. Unable to auscultate FH. Scan confirmed IUD. Mifepristone given. SVD male stillborn infant weighing 2070g. Cord noted around baby's leg and neck. TORCH screen negative. PM performed. Cause of death - unexplained.

2. Para 4. SVD x 3, LSCS x 1 (PET at 31/40). BMI 34. Booked at 12+5 weeks. Ultrasound confirmed DCDA twins. Anatomy scan at 20+5 - no abnormalities noted, poor renal and cardiac views. Repeat scan at 24+6 - normal views. Regular attender at ANC. GTT at 26 weeks normal. Seen at 32+5 - FDIU twin II, EFW 1433g, anhydramnios; twin II, 2069 g, normal AFI and Doppler. Admitted for monitoring and steroids. Booked for elective LSCS at 37 weeks. Twin 1 male infant weighing 3.03 kg, Apgars 9 and 10. Twin 2, stillborn male infant weighing 900g. PM performed. Cause of death - unexplained.

3. Para 1. Term delivery complicated by gestational hypertension. Family history of non-insulin dependent diabetes mellitus. Late booker at 25 weeks. Anatomy scan negative for malformations. Regular attendance at clinic. Routine visit at 38+5 weeks, no fetal heart detected. Induction of labour. Spontaneous vaginal delivery of a stillborn male, weighing 2.82 kilograms. Post-mortem declined. Placental histology showed hypercoiling of cord, coiling index 0.42. No evidence of inflammation or thrombus formation. No evidence of ascending infection. Cause of death unexplained.

4. Para 2 (LSCSx2). BMI 34.5. Booked at 12+4. Stable anti D antibody 9.83 at booking, 9.23 at 21 weeks, 10.20 at 29+4 weeks, 9.60 at 32+4 weeks. Anti C titre remained < 1. Anatomy USS at 21 , no obvious abnormality, no evidence of fetal anaemia. Had regular ANC follow-up. USS at 23, 25, 27, 28+4, 29+4, 30+4, 32, 32+4, normal growth. At 33+4 reported reduced FM for 1 day. USS revealed no FH. Elective LSCS at 34 weeks. Stillborn male infant weighing 2500g delivered. PM performed. Cause of death unexplained.

5. Para 0+1. Booked at 13 weeks. Smoker 10/day. Threatened miscarriage at 5+ weeks. EPAU 7+ and 9+ weeks - viable IUP. ER at 17+ weeks leaking fluid. Anatomy scan at 22+4, normal. ER at 27 weeks with no FM. IUD confirmed. IOL. SVD stillborn female infant weighing 930g. PM performed. Cause of death - unexplained.

6. Para 0. BMI 26.3. Booked at 16+3. US confirmed dates and multiple fibroids noted. Admitted at 17+5 with pain, ? degenerating fibroid. Regular scans and ANC attendances.. Attended ANC at 37+4 - 2+ glucose, fasting sample next day normal. Presented at 38+2 with decreased fetal movements for 1 day and SROM draining mec grade III. IUD confirmed on ultrasound. IOL. SVD complicated by severe should dystocia. Stillborn male infant weighing 3.96 kg delivered. PM performed. Features of an acute hypoxic event - acute petechial haemorrhages in lungs, heart and pericardium. CNS - hypoxic ischaemic encephalopathic changes. Heart - myocardial contraction bands. Placenta - nucleated RBCs in fetal circulation. Ribs - focal growth arrests. Negative for congenital anomalies. Long umbilical cord with coiling index at the upper limit of normal. No definite thrombus identified. Possibility of cord accident superimposed on a small placenta.

7. Para 2. Two previous elective caesarean sections. Booked at 12 weeks. Scan confirmed dates. Booking bloods normal. MCDA twin pregnancy. Regular follow-up in Fetal Medicine Twin Clinic. Concordant growth. Anatomy scan negative for malformations. Forth nightly growth scans. At 34 weeks estimated weighs 2.8 and 2.7 kilograms. Blood pressure mildly elevated at 35+ weeks. Reviewed in Day Care Unit and admitted for observation with planned delivery next day. Delivery by caesarean section. Twin I male, 3.27 kg, good Apgar scores. Twin II unexpected stillborn male infant weighing 2.53 kg. Placental histology showed no evidence of gross or histological evidence of vascular anastomosis, no evidence of cord accident or ascending infection. Cord insertion of twin II was villamentous. There was some evidence of impaired fetal blood flow possibly due to compression of villamentous cord insertion. Coroners post-mortem. Result unavailable at time of preparation of report.

EARLY NEONATAL DEATH

Early Neonatal Deaths	27
Congenital	15
Prematurity	5
Other	7

Congenital (15)

1. Para 1. BMI 25. Previous SVD. Booked at 13 weeks. Anatomy scan at 22 weeks revealed left sided cystic adenomatoid malformation. Further scan at 23 weeks confirmed left sided diaphraghmatic hernia, absent right hand, shortened left forearm with small hand and absent digits. Subsequent confirmation of Cornelia de Lange Syndrome. Presented at 31+4 weeks in labour. Delivered a female infant weighing 1110g. NND day 1. PM declined.

2. Para 1+1. BMI 27. Previous first trimester miscarriage in 2014 and SVD in 2012. Referred from OLOL to Prenatal Diagnosis Clinic at 23+4, re: family history of Osteogenesis imperfecta. Scan revealed cardiac circumference >50% thoracic diameter; bilateral short humeri; bilateral short femurs; bowing and fracture of right femur. Further scans at 30, 35, 38 and 39 weeks. Multiple fractures noted. Small thorax noted. Seen at 40+4 and noted to be breech presentation. Decision for delivery by LSCS. Liveborn male infant weighing 2.42 kg with Apgars of 1, 4 and 3. NND day 1. PM declined.

3. Para 2. BMI 39. SVD of stillborn female infant at 36 weeks and EM LSCS for fetal distress at 38 weeks of live born male. Referred from OLOL at 32+1 with ? diaphragmatic hernia. Scan findings, some views suggestive of congenital diaphragmatic hernia, MRI recommended. MRI at 37 weeks, symmetrically raised hemidiaphragms, small lungs bilaterally, fluid around both kidneys suggestive of retroperitoneal urinary tract rupture, no definitive hernia seen. Plan for elective LSCS at 39 weeks. Presented at 38+5 in labour. Decision for vaginal delivery and transferred to LW. Slow progress, blood stained noted, decision for EM LSCS. Re-examined in Theatre and fully dilated. Forceps delivery of liveborn female infant weighing 3.38 kilograms. Cord pH 7.25 and 7.35. NND day 3. PM declined.

4. Para 0+0. BMI 37. Referred to Fetal Medicine at 20 weeks, multiple abnormalities noted on scan in OLOL. Scan revealed oligohydramnios, bilateral ventriculomegaly, Banana shaped cerebellum, cystic structure at base of spine, pericardial effusions, left sided echogenic focus, echogenic myocardium. Impression: severe ventriculomegaly with spina bifida. Patient counselled regarding likely poor prognosis. IOL at 40 weeks. SVD of live born male infant weighing 1750g. NND day 1. PM declined.

5. Para 1+1. SVD live born male infant weighing 3.5 kg in 2013; TOP in 2010. BMI 25. Booked at 21+6. Scan at 23+4 - abnormal cardiac views. 24+3 weeks Fetal Echo, hypoplastic left heart noted, mitral atresia diminutive aortic outflow with retrograde flow in aortic arch, reversed flow across foramen. Decision to proceed with amniocentesis. Repeat Echo at 26+4 with cardiologist. Amniocentesis - Mosaic Turner Karyotype, hypoplastic left heart, mitral and aortic atresia. MDT review and decision that surgery would not be offered. Plan for comfort care at birth. Presented to ER at 38+6 in labour. Live female infant weighing 2.77 kg delivered. NND day 1. No PM. Diagnosis from amniocentesis and US.

6. Para 0+6. Recurrent 1st trimester miscarriages. BMI 23.3. Clomid pregnancy. Booked at 16 weeks. Anatomy scan at 20 weeks - growth < 10th centile, right choroid plexus cysts, left ventricolumegaly, ? small VSD and polyhydramnios. Amniocentesis - Trisomy 18. Scans at 25, 33 and weekly thereafter. Breech with polyhydramnios. IOL at term +10. Breech delivery of live born female infant weighing 1830g. NND day 1. PM declined.

7. Para 0. BMI 23.4. Booked at 15 weeks. Smoker 10 per day. History of depression, not on treatment. Anatomy scan at 22+3 - right sided CDH, long heart ratio - 0.5, bright kidneys, since vessel cord. Amniocentesis at 23+6 - IUFR, normal karyotype and microarray. MRI - large right CDH, herniation of the right lobe of liver, stomach and loops of bowel. Deviation of heart and mediastinum to left hemithorax, miminal lung tissue visible in the right hemithorax suggestive of right lung hypoplasia. Fetal echo at 28+6 - cardiac dextroposition with no structural abnormality. Seen regularly in FAU up to 38 weeks. Booked at for LSCS at 38+4. Live born female infant weighing 2.49 kg was delivered. RIP day 1. Post-mortem declined. Cause of death congenital diaphragmatic hernia.

8. Para 0. BMI 20. Booked at 13 weeks. Medical history of hypothyroidism, on Eltroxin 75mcg daily. Anatomy scan at 20+4 - Holoprosencephaly, abnormal facies including cleft lip and palate, abnormal 4 chamber view of heart, large VSD, clinical impression of Pateu's syndrome. Amniocentesis performed at 23+1. 46XY. MRI - alobar holoprosencephaly which communicates with a sizeable dorsal cyst, crescent of brain tissue anterior and lateral to ventricles is thinned and smooth. Midline cleft noted. Discussion with parent re poor prognosis despite normal karyotype. Decision for comfort care at delivery. Presented to ER in labour at 39+6. SVD of live born male infant weighing 2340g. NND day 4. PM declined.

9. Para 1+1. Em LSCS/first trimester miscarriage. BMI 21. Booked at 11+4. Anatomy scan at 20+2 - anencephaly. Regular scans throughout pregnancy. Plan for VBAC. No SOL at 42+3, decision to proceed to LSCS. Live born male infant weighing 2870g delivered. NND the following day. Limited PM performed.

10. Para 1. Previous forceps. BMI 22. Booked at 20. Smoker - 5 per day. Ultrasound at 26 weeks - asymmetric IUGR, polyhydramnios, VSD. Amniocentesis - 47 XY + 18. PPROM at 31+6. Admitted, decision made for IOL, SVD live born male infant weighing 1070g. NND at 1 hour. PM declined. Cause of death Trisomy 18.

11. Para 2. SVD x 2. 1 NND renal agenesis. Booked at 12 weeks. USS at 16 weeks - oligohydramnios. 17+1 - CVS. 17+2 - Anhydramnios, central previa, BOO Hx PPROM, Amnisure neg. 18+3 - Anhydramnios, Echogenic kidneys, megacysts. 31+1 complained of cramps, soft cervix, NIEL. Presented to ER at 33+4 in ? labour - NIEL. At 33+6 presented to ER in labour. SVD of a male infant weighing 1.36 kg. NND at 2 hours of life. PM performed. Bladder outlet obstruction.

12. Para 2+2. SVD x 2 at term. Booked at 12 weeks. Hyperprolactinemia. At booking NT 3.5 mm referred to Fetal Medicine. At 14 weeks NIPT, cystic hygroma - 'low risk' Harmony result. At 15+1 - body wall oedema offered invasive testing. At 17+1 - shortened long bones. At 19+1 - All long bones shortened. For NIPD (FGFR3 mutation). Scanned at 24, 28+3 and 31+1. At 34+1 - polyhdyramnios, HC increased. Offered IOL. SVD of male infant weighing 2.54 kg. NND day 1. PM declined.

13. Para 2+1 (SVD x2). BMI 28.6. Booked at 12+5. DCDA. Anatomy scan at 21+6, fetus 1 normal, restricted view of fetus 2 due to position. Further scan at 28 weeks, oligohydramnios (fetus 2), suspected renal dysgenesis. MRI confirmed renal agenesis in Twin 2. Regular follow-up in Fetal Medicine. SOL at 37 weeks, twin 1, live born SVD weighed 3190g and twin 2, assisted breech delivery of live born infant weighing 1900g, NND shortly afterward birth. PM declined.

14. Para 0+3. Recurrent miscarriage. BMI 22.7. Booked at 12+6 weeks. Hypothryroidism (Eltroxin). Partner carrier of osteogenesis imperfecta gene (type 1). Booked USS - large omphalocele. Declined NIPT/invasive testing. Follow up in Fetal Medicine. Presented at 31+1 weeks with abdominal pain and bulging membranes. Steroids. Emergency LSCS. Avulsion of umblical cord during delivery, cystic dilatation of part o f cord. Male infant weighing 2000g delivered. RIP despite active resuscitation. PM performed. Likely cause of death - bilateral pulmonary hypoplasia due to large omphalocele.

15. Para 1. Previous term delivery. Known fibroid uterus. Suspected fetal abnormality diagnosed in Drogheda, transferred to Rotunda for Fetal Medicine follow-up. Bilateral ventriomegaly, generalised oedema, clenched hands with polyhdyramnios noted on scan. No stomach bubble identified. Suspected trachael oesophageal fistuala or oesophageal atresia. Amniocentesis 46XY. Induction of labour at 39 weeks. Emergency caesarean section for fetal distress. Male infant 3.48 kilograms. Apgars 0 at 1, 2 at 5, 2 at 10. Placental histology confirmed massive placental abruption. Early neonatal death. Congenital malformation with placental abruption. Coroner PM.

Prematurity (5)

1. Para 1+3. SVD x1, 1st trimester miscarriage x 2, ectopic x 1. BMI 24.5. Booked at 13 weeks. Presented to ER with PV bleed at 15 weeks. Anatomy scan at 21+1 weeks normal. Presented at 21+6 with SROM. Commenced on oral erythromycin. Swabs taken - no GBS isolated. Scan 22+1 - Breech, anhydramnios, FM present. At 22+2 developed abdominal pain and flu like symptoms, clinical impression of evolving chorioamnionitis. Decision made to proceed to IOL. Vaginal breech delivery of live born male infant weighing 540g. NND shortly after delivery. PM declined. Cause of death ascending infection/prematurity.

2. Para 0. BMI 31. Booked at 11 weeks. Presented to ER with PV spotting at 12+5 weeks, 14+5 weeks and 17 weeks. Anatomy scan at 20+3 weeks, no fetal abnormalities noted, restricted view of heart, placenta low lying and two fibroids noted. Repeat scan at 25+3, heart view obtained no abnormality noted. At 26 weeks presented to ER with diarrhoea and vomiting. Admitted and commenced on IV fluids. Had episode of PV blood on ward. VE fully effaced, bulging membranes, breech presentation. Commenced on Dexamethasone. Labour progressed. Decision for EM LSCS in view of footling breech presentation. Difficult breech extraction. Live female infant delivered weighing 1.035 kilograms. NND day 4. PM declined. Cause of death prematurity.

3. Para 0+1. BMI 31. Booked at 12 weeks. History of secondary infertility, hypothyroid - on Eltroxin. Anatomy scan at 21+3 normal. Plan for rescan to complete cardiac view. Presented to ER at 23+6 with heavy pv bleed. Dexamethasone given. Transferred to LW. Expectant management. SVD of live born female infant weighing 510g. NND day 4. PM declined. Placental histology: Acute ascending infection and retroplacental haemorrhage with secondary inflammation.

4&5. Para 0. BMI 44. Booked at 7 weeks. IVF DCDA twin pregnancy. Partner has Marfan's syndrome. Regular ANC attendances at 10, 12, 13, 15, 18 (anatomy scan - normal) and 22 weeks. Presented to ER at 23+2 with pressure, PPROM. Twin 1 SVD live born infant weighing 660g. NND day 1. Twin 2 planned interval delivery, 2 days later SVD of live born male infant weighing 800g. NND day 3. HVS - E coli. PM declined. Cause of death infection/extreme prematurity.

Other (7)

1. Para 4+1. Four previous term vaginal deliveries. Past history of depression and unexplained seizures. On Methadone maintenance programme. Booked at 9 weeks. Irregular attender at antenatal clinic. Anatomy scan at 20 weeks, negative for malformations. Multiple DNAs at antenatal clinic. Spontaneous labour at 38+4 weeks. SVD of a male infant weighing 2.62 kilograms. Mother and baby discharged home well following liaison with Social Work. Baby unexpected death at home on day 6. PM ordered by State Pathologist. Results unavailable at the time of going to press.

2. Para 3 (LSCS x3). Booked in another hospital. MCDA twins confirmed on scan at 13 weeks. Heavy smoker. Personality disorder, was on Olanzapine and Pregablin up to 18 weeks and Prozac thereafter. Referred to the Rotunda at 24+3 with ? TTS. Reviewed at 26+5, stage 1 TTTS, admitted and given steroids. Review 27+2 - Normal Dopplers. Review at 27+6 - unable to auscultate both FH on ward - intermitted AEDF T2, DP - 20cm. At 28+1 decreased FM overnight, non reassuring CTG - decreased variability. USS - FH x2 seen, normal HR, no movement. Proceeded to emergency CS. Twin 1 - live born female infant weighing, 830g. Twin 11 live born female infant weighing 1.16 kg. Twin II NND day 1. Coroners PM performed. No results at time of going to press.

3. Para 1. SVD. BMI 29.6. Booked at 10+3. Scan confirmed dates. Booking bloods normal. Anatomy scan at 20+3 - negative for malformations. Regular attendance at clinic. Presented to ER at 40 weeks with decreased FM x 1 day. Monitoring fetal heart revealed a fetal bradycardia of 60 beats per minute. Immediate transfer to theatre for emergency caesarean section. Female infant weighing 3.38 kilograms delivered. Apgars scores 0 at 1, 0 at 5 and 2 at 25. Transferred to NICU. RIP day 1. Coroners post-mortem. Cause of death invasive group B strep infection in the absence of ruptured membranes.

4. Para 6+2. SVD x 4, LSCS x 2, VBAC x 3. Smoker 40-50 day. Booked at 8 weeks. Background history of alcoholism, IVDA, PUD, Gallstones, Cirrhosis and ? CVA. Multiple presentations to ER with abdo pain and spotting in first trimester. Anatomy scan at 21+6 - NAD. Attended DOVE clinic. Presented to ER at 29 weeks with abdo pain and SOB. Admitted overnight, for ultrasound - absconded. Presented to ER at 29+2 with increasing abdominal pain. Fetal bradycardia. Cat 1 CS - ruptured uterus. Male infant weighing 1035g. NND day 2. No PM. Cause of death hypoxia secondary uterine rupture.

5. Para 0. BMI 31.31. Booked at 16+6 in another hospital. Seen in FAU at 18+1 - DCTA triplets with reassuring growth MCDA pair. Seen again in FAU at 22+1 - reassuring interval growth in all three fetuses. FAU again at 24+1, normal. Seen again at 26+1 - severe IUGR with anhydramnios and REDF in fetus 3. Expectant management agreed. FAU review 28+2, fetus 3 severe IUGR. Decision made to proceed with delivery. Male infants x 3 delivered, weighing 1.5, 1.2 and 640g. Triplet 3 NND day 4. PM performed - complications of prematurity, RDS and IUGR secondary to features of chronic uteroplacental insufficiency.

6. Para 1. Booked at another institution, transferred to the Rotunda for management of MCAD twins with 25% growth discrepancy at 17 weeks gestation. Twin to twin transfusion syndrome confirmed. Laser oblation and amnio reduction performed. Re-presented to the Rotunda at 23+4 weeks gestation with vaginal bleeding. Admitted for observation. Spontaneous labour at 23+5. Twin 1, male weighing 0.39 kg, apgars 4 at 1 and 1 at 5. RIP. Twin 2, male, assisted breech, weighing 0.75 kg, Apgars 6 at 1, 4 at 5 and 1 at 50. Early neonatal death. Cause of death extreme prematurity complicated by acute suppurative chorioamnionitis with chorionic plate vasculitis. PM declined.

7. Para 1 (SVD at 39/40, 2.96kg). BMI 23. Booked at 11+6. Anatomy scan at 20 weeks - multiple abnormalities. Amniocentesis showed normal PCR, 46XY. USS at 23 - symmetrical IUGR. Echocardiography at 26+3, normal. At 27+4 IUGR with interval growth, polyhydramnios. Presented at 32+4 in advanced labour, SVD, male infant weighing 1420g. NND day 1. PM revealed multiple contractures involving elbows, knees, wrists, and hips. Bilateral talipes equinovarus, scoliosis of spine, camptylodactyly with long tapering fingers and poor nail development, hypertelorism, micrognathia, CNS abnormalities. Karyotype 46XY. Micro array - normal with no significant copy number variants but with low resolution. Likely cause of death - congenital malformation due to ischemic CNS damage.

Maternal Mortality

The Master

MATERNAL MORTALITY 1

There was one indirect maternal death during 2015. A single woman, gravida 3, para 2+0, previously an emergency caesarean section and a Ventouse delivery, booked at 15 weeks gestation. Uncertain of dates, past history of significant mental health issues and hepatitis C positive. Smoker 20 per day. Regular attendance at antenatal clinic. Followed up by Medical Social Workers and DOVE support team. Delivered by elective caesarean section at 39 weeks gestation. Live born female infant weighing 2.95 kilos. Day 5 post delivery discharged to Community Services. Eight weeks following delivery the hospital was informed that the patient had tragically died of a drug overdose.

Maternal Mortality

Year	Total	Total Number of Mothers Attending
2006	0	8036
2007	0	9290
2008	1	9655
2009	2	9709
2010	3	9594
2011	3	10547
2012	2	10397
2013	3	10314
2014	2	10814
2015	1	10078
Total	**17**	**95874**

Maternal Mortality Rate **17.3/100,000**

WHO Definitions:

Direct obstetric deaths are those resulting from obstetric complications of the pregnant state {pregnancy, labour and the puerperium} from interventions, omissions, incorrect treatment or from a chain of events resulting from the above.

Indirect obstetric deaths are those resulting from previous existing disease or disease that developed during pregnancy and which are not due to direct obstetric causes, but are aggravated by the Physiologic effects of pregnancy.

Severe Morbidity

Dr. Sharon Cooley

The Rotunda continued to prospectively monitor severe maternal morbidity during 2015.

In total there were 63 patients (6 gynaecology) reported on and 73 events. The incidence of severe maternal morbidity in pregnancy for 2015 was 0.68%

Our number of women with major morbidity events was higher in 2015, this is largely contributed to by an increase in women attending with complex pre-existing medical conditions that required inpatient multidisciplinary care and an increase in women attending with gynaecology complications, for example Ovarian Hyperstimulation following assisted fertility treatments elsewhere.

Our number of cases with major obstetric haemorrhage fell in 2015 and we had no case of pulmonary embolism. Two of our women had interventional radiology in the Mater Hospital for bleeding, one of which was delivered in the Mater with placenta accreta and preoperative interventional radiology.

In line with previous years we report "near-miss" cases for prompt identification of learning points for all providing maternity care in Ireland.

Major Morbidity	Number of cases 2014	Number of cases 2015
Transfusion more than 5 units or Estimated Blood loss more than 2.5L or treated for coagulopathy	30	25
Uterine rupture	0	4
Peripartum hysterectomy	0	1
Eclampsia	0	1
Renal or liver dysfunction	14	7
Pulmonary oedema or acute respiratory dysfunction	5	2
Pulmonary embolism	1	0
Cardiac arrest	2	1
Coma	1	0
Cerebrovascular accident	1	0
Status epilepticus	1	1
Septicaemic shock	10	11
Anaesthetic issue	2	0
ICU/CCU Transfer	17	5
Maternal deaths	1	1
Interventional Radiology		2
Other		13

Major Obstetric Haemorrhage (25)

1. Para 2, non-smoker, non drinker. Booked in Sligo General Hospital. Transferred from Sligo General Hospital at 26 weeks gestation with preterm premature rupture of membranes (PPROM) and placenta praevia. In patient in Sligo at 20 weeks for PPROM, inpatient for 3 weeks. Two previous live births, one pre-term at 36+3. MRSA positive axilla and groin swab so prophylaxis commenced. Antepartum haemorrhage at 28+5, blood loss of one litre. Emergency caesarean performed with total blood loss of 2.5 litres. Male infant weighing 1.57 kilograms delivered, transferred to NICU. Mother transfused with two units red cells and 2 grams fibrinogen. High dependency unit care for 48 hours. Discharged home well day 5 postnatally.

2. Para 0+1, BMI 23, non-smoker, booked at 12 weeks gestation for combined antenatal care. No significant medical history, previous ovarian cystectomy 2014. Presented in labour at 39+3 weeks gestation. Ventouse delivery of liveborn female infant weighing 3.86kg. Subsequent retained placenta requiring a manual removal of placenta in theatre. Uterine balloon inserted. Total blood loss 2.5 litres, transfused 3 units of red cells. High dependency care for 24 hours post operatively. Discharged home well on day 5.

3. Para 1, BMI 20, Non-smoker, booked at 13+6 weeks gestation for combined antenatal care. History of pregnancy induced thrombocytopenia and emergency caesarean section undertaken at full dilatation in the previous pregnancy. Four units red cells received at that time and total blood loss 700mls. Received Kiovig (Human Normal Immunoglogulin) infusion at 39+2 weeks gestation in this pregnancy. Presented in labour at 39+5 weeks gestation. Subsequent emergency caesarean section at full dilatation for failure to progress. Live born female 4.2kgs, Apgars 9@1, 9@5. Total blood loss 3 litres, two units red cells transfused. High dependency care for 24 hours post operatively. Discharged home day 3 on antibiotics for cellulitis at the wound site with follow-up scheduled at six weeks postpartum.

4. Para 0, BMI 18, Non-smoker, booked at 8 weeks gestation for consultant led care. Medical history of infertility, hypothyroidism and family history of hypertension. Dichorionic, diamniotic twin pregnancy as a result of IVF with planned elective caesarean section. Group B Streptococcus isolated antenatally. Presented in spontaneous labour at 35 weeks gestation. Emergency caesarean section performed. Two live born female infants delivered weighing 2.28 and 2.33 kilograms. Both transferred to NICU. Intraoperative blood loss of 400 millilitres. Subsequent return to theatre for examination under anaesthesia and uterine balloon insertion for postpartum haemorrhage secondary to uterine atony. Total blood loss of 2.5 litres. Three units of red cells transfused and one gram of fibrinogen. Transferred to the high dependency care unit post operatively. Discharged home well day 6 post-operatively.

5. Nullip, BMI 25, Non-smoker, booked at 14+2 weeks gestation for consultant led care. No significant medical history. Presented in labour at 39+6 weeks gestation. Ventouse delivery of live-born female infant weighing 3.21kg, Apgars 2 at 1, 6 at 5 and 10 at 8. Baby transferred to NICU

for septic work-up. One litre estimated blood loss at delivery. Subsequent retained placenta requiring a manual removal of placenta in theatre under general anaesthetic. Uterine balloon inserted. Total blood loss of 3 litres, transfused 2 units of red cells and 2 grams fibrinogen. High dependency care for 24 hours post operatively. Discharged home well on day 4 post operatively.

6. Para 0+1, BMI 22, Non-smoker, booked at 12 weeks gestation for combined antenatal care. IVF singleton pregnancy. History of hypothyroidism, on Eltroxin for same. Family history of hypertension. Previous surgery for removal of ovarian cysts. Presented in labour at 41+2 weeks gestation, prolonged rupture of membranes. IV antibiotics commenced. Emergency caesarean section performed for failure to progress and non reassuring CTG. Female infant weighing 4.24 kgs, Apgars 9@1, 10@5. Intrapartum haemorrhage with total blood loss of 2.5 litres. Transfused one unit of red cells. High dependency unit care for 24 hours. Discharged home well day 4 postnatally.

7. Para 3, unbooked presented to emergency room with shoulder tip pain and suspected ectopic pregnancy, 7+2 weeks gestation. Three previous spontaneous term deliveries. Laparoscopy converted to laparotomy due to ruptured left corneal ectopic. Haemoperitoneum with total blood loss of 2.5 litres. Transfused three units red cells and 2 grams fibrinogen. High dependency care for 24 hours post operatively. Transferred home well day 4 with follow-up arranged.

8. Para 1+0, unbooked, brought by ambulance to emergency room with severe abdominal pain and substantial PV bleeding at 14 weeks gestation. One previous spontaneous term delivery. Intrauterine bleeding noted on ultrasound. Transferred to high dependency care unit and transfused 2 units of red cells initially. Ongoing haemorrhage and transfusions. Eight units red cells transfused in total with >2.5 litre blood loss. Due to deterioration of maternal status, induction undertaken at 14 weeks gestation under the Protection of Life Act. High dependency unit care throughout.

9. Para 2. BMI 19. Non-smoker. Two previous terms deliveries. Prior third degree tear on first delivery, ERPC for retained products 4 weeks postnatally on last delivery. Booked for combined antenatal care at 16 weeks gestation. Dichorionic, diamniotic twin pregnancy. Spontaneous onset of labour at 37 weeks gestation. Live born male infant weighing 2.99 kilograms delivered spontaneously, Apgars 7@1, 8@5. Assisted breech delivery of live born male infant weighing 2.66 kilograms. Apgars 9@1, 10 @ 5. One litre blood loss during delivery, further 1.6 litre blood loss after delivery and subsequent return to theatre for examination under anaesthetic. Retained cotyledon and vaginal abrasions secondary to assisted delivery noted. Uterine balloon and vaginal pack inserted. Five units of red cells transfused. Total blood loss 4.2 litres. Transferred to high dependency unit care for 24 hours. Antibiotic therapy initiated for ongoing pyrexia. Discharged home well day 4 postnatally.

10. Para 2+3, BMI 26, non-smoker, booked for combined antenatal care at 12 weeks gestation. Previous gestational diabetes. Family history of hypertension. Induced at 40 weeks gestation for macrosomia. Emergency caesarean section carried out due to non-reassuring CTG. Liveborn male, weighing 4.26 killograms delivered, Apgars 3 @ 1 and 8 @ 5. Total blood loss 3.5 litres inter-operatively, 4 units red cells and 2 grams fibrinogen transfused. Admitted to high dependency unit for 2 days. Discharged home well day 4 postnatally.

11. Para 1. BMI 24, Non-smoker. One previous emergency caesarean section at 41 weeks gestation for failure to progress and non-reassuring CTG. Booked for combined antenatal care at 13 weeks gestation. Elective caesarean section undertaken at 39 weeks gestation. Live born male weighing 3.49 kilograms delivered, Apgars 9 @ 1 and 10 @ 5. Estimated intraoperative blood loss 300 millilitres. Discharged home well day 3 postnatally. Subsequent pyrexia and secondary postpartum haemorrhage day 10 post operatively, requiring re-admission. Antibiotics commenced for endometritis and 4 units of red cells transfused plus 2 grams fibrinogen over 2 days. Total estimated blood loss 2.3 litres. Re-examination under anaesthetic carried out day 12 postpartum with evacuation of uterus. Further 2 units of red cells transfused peri-operatively. High dependency unit care for 24 hours. Discharged home well day 2 postoperatively.

12. Para 2, two prior preterm vaginal deliveries. DCDA pregnancy. Hospital led antenatal care. IOL at 37 weeks for IUGR. 2.79 Kgs female Apgars 9@1, 10@5. 1.7Kgs female Apgars 9@1, 10@5. Postpartum haemorrhage, atonic uterus. Transferred to OT for EAU. Bakri Balloon inserted 2 Litre blood loss. 2g Fibrinogen, 1g Tranexamic acid, 2 units RCC transfused. HDU care. Discharged home well Day 4.

13. Para 0+1. BMI 28, non-smoker. History of abnormal smears and LLETZ procedure. Infertility. Bipolar Affective Disorder. Laparoscopic myomectomy in 2013. Admitted at 17 weeks gestation for recurrent antepartum haemorrhage; short cervix noted. Preterm premature rupture of membranes at 24+6 weeks gestation. Steroids commenced. Chorioamnionitis diagnosed at 25 weeks gestation. Induction undertaken. Live born female delivered weighing 750 grams, transferred to NICU, estimated blood loss of 1 litre. Retained placenta requiring manual removal in theatre. Further estimated blood loss of 1.5 litres intraoperatively. Transfused with 3 units red cells and 2 grams fibrinogen. Admitted to high dependency unit for 24 hours before transfer to ward. Triple antibiotics administered for pyrexia. Urinary incontinence post delivery. Discharged home well day 22 postpartum.

14. Nullip. BMI 32, non-smoker. History of infertility, family history of hypertension. ICSI pregnancy. Booked at 14+6 weeks gestation for combined antenatal care. Induced at 41 weeks gestation for post dates and polyhydamnios. Forceps delivery of a live born female infant, weighing 3.79 kilograms. Apgars 9 @ 1 and 10 @ 5. Placenta delivered, noted to be incomplete. Estimated blood loss of 2 litres. Examination under anaesthetic

undertaken. Retained membranes removed and Rushe baloon inserted. Transfused 2 units of red cells and 1 gram fibrinogen. Total blood loss 2.5 litres. High dependency unit care for 3 days post operatively. Blood patch required for post-dural headache day 3 post delivery. Discharged home well day 4 postpartum. Subsequent return to emergency room, day 5 postpartum with severe post dural headache, repeat blood patch performed and patient discharged.

15. Nullip, BMI 24, non-smoker, booked at 12 weeks gestation for combined antenatal care. History of urinary tract infections, no other significant medical or family history. Presented at 40+4 weeks gestation with spontaneous rupture of membranes. Spontaneous vaginal delivery of a live born female infant, weighing 3.83 kgs. Estimated blood loss during delivery of 1.9 litres. Subsequent retained placenta requiring manual removal in theatre. Total estimated blood loss 2.5 litres. Two units red cells and 2 grams fibrinogen transfused intraoperatively. High dependency Unit care for 24 hours before transfer to postnatal ward. Discharged home well day 4 postnatally.

16. Para 0+3, BMI 22, non-smoker, booked at 14 weeks gestation. Consultant led antenatal care, no significant medical history. Presented in spontaneous labour at 37 weeks. Vaginal delivery of live born male infant weighing 3.1 kgs. Apgars 9@1, 10@5. Subsequent retained placenta requiring a manual removal of placenta and cotyledons in theatre. Total blood loss 2.8 litres, transfused 2 units of red cells. High dependency care for 4 days post operatively. Discharged home well on day 4. Baby transferred to Temple Street for surgery for duodenal obstruction Day 5 postnatally.

17. Para 3+1. BMI 28,Booked at 12 weeks gestation for combined antenatal care. Had retained placenta in first pregnancy requiring manual removal of placenta and high dependency care unit admission. Placenta praevia, acreta and suspected percreta noted this pregnancy. Elective caesarean section, caesarean hysterectomy and bilateral salpingectomy performed at the Mater Hospital at 34 weeks gestation. Live born male infant delivered, weighing 2.94 kgs, Apgars 8 @ 1, 9 @5 and 9@10. Baby transferred to Rotunda Hospital NICU. Estimated intraoperative blood loss of 3 litres, 5 units of red cells transfused. Transferred to the Rotunda day 1 post delivery. High dependency unit care for 3 days post partum. Discharged home well day 7 postnatally.

18. Para 2+1, unbooked, transferred from Connolly Hospital Emergency Department with a suspected ectopic pregnancy of unknown gestation. Two previous term deliveries. Ruptured ectopic confirmed upon review. Midline laparotomy performed. Right ovarian cyst removed and partial salpingectomy undertaken. Massive haemorrhage with total blood loss of 3 litres. Transfused four units red cells and four units of octoplas. High dependency care for 24 hours post operatively. Home well day 5.

19. Para 1, BMI 21, booked at 11 weeks gestation. Previous emergency caesarean section at term for prolonged rupture of membranes. Medical history of anaemia and chronic hepatitis B infection. Family history of hypertension. Transferred from Naas General Hospital with severe abdominal pain at 33 weeks gestation. Abruption and intrauterine death confirmed by ultrasound. Caesarean section following correction of maternal consumptive coagulopathy. Total blood loss of 2.5 litres intraoperatively. Rusch balloon inserted. Transfused with 600 millilitres from cell salvage and 2 units red cells. High dependency unit care for 5 days before transfer to ward for a further 3 days. IV antibiotics administered for intermittent spikes in temperature. Patient discharged well day 8, on PO antibiotics with plan for follow-up.

20. Nullip, non-smoker, booked at 13 weeks gestation. Midwife led antenatal care (Domino), no significant medical history. Family history of hypertension. Induction of labour at 40 weeks due to prolonged rupture of membranes. Forceps delivery of live born male infant weighing 4.33kg. Subsequent retained placenta requiring a manual removal of placenta and cotyledons in theatre. Vaginal pack. Total blood loss 3.5 litres, transfused 3 units of red cells and 1 grams of Fibrinogen. High dependency care for 24 hours post operatively. Discharged home well on day 3 on antibiotics.

21. Para 0, BMI 21, non-smoker, booked at 12 weeks gestation. Medical history of anaemia and family history of hypertension. Midwifery-led care. Induction of labour at 41+5 for post dates. Triple antibiotics for pyrexia in labour, suspected chorioamnionitis. Emergency caesarean section undertaken for FTA. Atonic uterus. 3 litre blood loss. Two units red cells transfused. Live born male infant weighing 4.78 kilograms Apgars 9@1, 10@5, transferred to NICU for septic workup for pyrexia. Mother transferred to high dependency unit for monitoring. Developed post dural puncture headache, resolved with epidural blood patch. Discharged home well day 5 postnatally.

22. Para 1. BMI 27. Non-smoker. Booked for antenatal care at the Midland Regional Hospital Mullingar at 13 weeks gestation. Dichorionic, diamniotic twin pregnancy. Transferred care to the Rotunda Hospital at 23 weeks gestation. No significant medical or family history. Previous emergency caesarean section for failed induction. Elective caesarean section undertaken at 38 weeks gestation. Two live born female infants were delivered weighing 2.97 and 2.3 kgs. Intraoperative blood loss of 2.75 litres due to uterine atony. 1 unit of red cells transfused. Transferred to high dependency unit post operatively. Transferred to ward day 2 post delivery. Discharged home well day 3 post partum.

23. Para 4+2. Booked at 15 weeks for combined antenatal care. Medical history of anaemia and thrombocytopenia. Spontaneous vaginal delivery at 41 weeks of a live born male infant weighing 3.52kg, Apgars 9 @ 1, 10 @ 5. Subsequent atonic uterus and massive post partum haemorrhage necessitating examination under anaesthesia and Bakri balloon insertion. Total blood loss of 3.5 litres, 4 units of red cells transfused. High dependency care post operatively. Discharged home day 3 with arrangements for post natal follow-up at 6 weeks.

24. Nullip, non-national, booked at 12 weeks gestation with a history of PCRS and primary infertility. IVF pregnancy, non-smoker, non-drinker. Combined antenatal care. Spontaneous labour at 40 weeks gestation. Emergency caesarean section for non-reassuring CTG in labour, live born female infant delivered weighing 3.75 kilograms, Apgars 9 at 1 and 10 at 5. Atonic uterus at delivery, intra-operative blood loss 2 litres. Requiring transfusion of 4 units of packed red cells. Discharged home well day 5 postnatally.

25. Nullip. Non-smoker. Normal BMI. Background history of PCOS and infertility. IVF pregnancy. Twin pregnancy, dichorionic diamniotic twins. Hospital based antenatal care with serial growths scans. Cholestasis at 30 weeks gestation. Admitted at 32 weeks with cholestasis. Stabilised and arrangements for Day Care follow-up. Presented to the Day Care Unit at 35 weeks gestation with a deceleration auscultated on twin 1. Admitted for close monitoring. Induced at 36 weeks gestation. Assisted vaginal delivery of twin I, female infant, 2.9 kilograms, Apgars 8 at 1 and 9 at 5. Twin 2, male infant, 2.15 kilograms, Apgars 9 at 1 and 10 at 5. Transferred to the HDU with a two litre post-operative blood loss and an episode of desaturation in the Recovery Room. Transfused with two units of packed red cells and two units of fibrinogen. Developed confusion day 2 postnatally, arranged neurology review. Suspected reversal encephalopathy. Transferred to the Mater Hospital post partum for follow-up. Subsequent six week follow-up, patient had not memory of the first two weeks postnatally. Frontal lobe changes identified on MRI.

Uterine Rupture (4)

1. Para 1+0, previous emergency caesarean section 2013 for non reassuring CTG at 7cm dilatation. Live born male infant weighing 3.96kgs. White coat hypertension. Late booker, booked at 22 weeks gestation. Non Smoker. BMI 26. Counselled in relation to VBAC. Presented in spontaneous labour at 3cm dilation at 40 weeks and 4 days. Emergency caesarean section at 7cm dilatation, uterine rupture, live born male infant delivered weighing 3.66kgs. Apgars 6 at 1, 7 at 5. Discharged home well day 5 postnatally.

2. Para 1. Previous emergency caesarean section. Admitted for induction of labour on a background history of newly diagnosed hyperparathyroidism and multiple admissions. Developed pre-eclampsia. Following delivery parathyroid tumour excised 6 months following delivery. Booked at 12 weeks gestation. Hospital based antenatal care. VBAC discussed. Presented in spontaneous labour at 40 weeks gestation. Suspected uterine rupture confirmed at 9cm dilation. Live born male infant delivered weighting 3.84kgs. Apgars 6 at 1, 9 at 5. One litre intra operative blood loss. Discharged home well day 5 post natal.

3. Para6+2. Four previous vaginal deliveries. Two previous sections. Medical history of a transient ischemic attack. Peptic ulcer and Hepatitis C. Previous drug overdose on nine occasions. Anxiety, back ache, alcohol related seizures, recurrent urinary tract infections, asthma, bronchitis, liver cirrhosis. On Methadone treatment. Alcoholic, drinking 40 units of alcohol per day. BMI 32. Presented by ambulance at 29 weeks with severe pain. Emergency laparotomy. Suspected uterine rupture. Confirmed at time of surgery. Live born male infant delivered weighing 1.035kgs. Apgars 3 at 1, 4 at 5. Litre intra operative loss. Neonatal death. Complicated postnatal course, sepsis at 5 days following delivery. Poor social circumstances. Suspected DVT unconfirmed. Discharged home 10 days post operatively.

4. Para1+2. One previous emergency caesarean section at 39 weeks gestation. One previous ectopic and one previous termination of pregnancy in another jurisdiction. Pregnancy induced hypertension in her only ongoing pregnancy. Known uterine fibroids. Booked at 17 weeks gestation for combined antenatal care. Presented in spontaneous labour at 41 weeks gestation. Emergency category one caesarean section undertaken for suspected uterine rupture. Male infant delivered weighing 3.46kgs. Apgars 9 at 1, 10 at 5. Uterine rupture confirmed. Total blood loss 600 mls. Good postnatal recovery. Discharged home day 5.

Peripartum Hysterectomy (1)

1. No. 17 above in Major Obstetric haemorrhage.

Eclampsia (1)

1. Nullip, past history of irritable bowel. Booked at 12 weeks gestation. Subsequent hypertension at 38 weeks gestation. Admitted in labour. Spontaneous vaginal delivery. Live born male infant weighing 3.73 kilograms. Hypertension deteriorated day 1 postnatally necessitating commencement of magnesium sulphate and transfer to the High Dependency Unit. High dependency care, condition stabilised with magnesium sulphate and labetalol. Discharged from hospital day 5 following delivery on medication with arrangements for review.

Acute Renal and Liver Dysfunction (7)

1. Para 0+1. Primary infertility. Donor egg pregnancy. Past history of pneumonia and ovarian cystectomy. Booked at 11 weeks gestation for hospital based antenatal care. Non-smoker, non-drinker. HELLP syndrome at 38 weeks gestation. Emergency caesarean section. Live born female infant delivered weighing 2.8 kilograms. Apgars 9 at 1 and 10 at 5. Mother stabilised and transferred to the HDU. 48 hours postoperatively good recovery and home day 5 postnatal.

2. Nullip, booked at 17 weeks gestation. Past medical history of migraine. Non-smoker. BMI 37. Presented at 37 weeks gestation with epigastric pain. Abnormal liver function. Diagnosis of HELLP syndrome made. Admitted

to the HDU for stabilisation with magnesium sulphate, dexamethasone and emergency caesarean undertaken at 37 weeks gestation. Live born male infant delivered weighing 2.78 kilograms. Apgars 7 at 1 and 9 at 5. Mother transferred back to the HDU and discharged home day 6 postnatally.

3. Para 2+0. Two previous term deliveries, induced on the first pregnancy for pregnancy induced hypertension. Booked at 15 weeks. Hypertensive at booking. Arrangements made for review in the Renal Clinic. Failed to attend for the first visit in the Renal Clinic. Attended for review at 20 weeks gestation. Advise for home blood pressure checking. Subsequent follow-up, poorly compliant with home blood pressure check. Subsequently admitted at 31 weeks gestation with HELLP syndrome, on Labeletol at presentation, transferred to the HDU. Dexamethasone administered. Maternal condition stabilised. Subsequent deterioration over the following 48 hours, necessitating emergency caesarean section at 31+2 weeks gestation. Live born female infant weighing 1.64 kilograms delivered. Apgars 9 at 1 and 9 at 5. Mother stabilised and transferred back to the HDU for three days. Discharged home day 4 with arrangements for Day Care follow-up. Re-presented 8 days post caesarean section with hypertension. Blood pressure stabilised and discharged with arrangements for follow-up.

4. Para 0, booked at 13 weeks gestation, IVF pregnancy, with monochorionic diamniotic twins. No significant medical history. Admitted at 34 weeks gestation with pre-clampsia, condition deteriorating, stabilised and an elective caesarean section was done at 34 weeks gestation. Twin I weighed 1.60 kilos, Apgars 8 at 1 and 10 at 5. Twin 2 weight 1.68 kilos, Apgars 8 at 1 and 10 at 5. Maternal care in the HDU secondary to hypertension postoperatively. Discharged home day 7.

5. Para 2+4. Two previous term uncomplicated deliveries. Past history of depression, recurrent urinary tract infection and Addison's disease. Booked at 10 weeks gestation for hospital based antenatal care. Uncomplicated antenatal care. Noted to be carrying macrosomic infant at 37 weeks gestation. Induction of labour at 39 weeks gestation and a live born female infant was delivered weighing 4.22 kilograms, Apgars 9 at 1 and 9 at 5. HDU care postnatally. Suspected sepsis on day 2 postnatal. Klebsiella bacteraemia identified secondary to a urinary tract infection and subsequent pyelonephritis. Discharged home day 4 post delivery.

6. Para 1, one previous emergency caesarean section due to renal dysfunction at 35 weeks gestation, live born female infant weighing 1.96 kilograms. Known lupus nephritis antiphospholipid syndrome. Transferred from Letterkenny Hospital at 26 weeks gestation with deterioration in renal function. Admission to the High Dependency Unit at this time point with significant proteinuria, anaemia and a raised urea. Stage III chronic kidney disease. Transferred to the General Ward after two days in HDU. Six weeks hospital stay. Caesarean section and tubal ligation. Discharged home day 6 postnatally well, after delivery of a live born female infant weighing 1.4 kilogram and Apgars 9 at 1 and 9 at 5.

7. Nullip. Booked at 12 weeks gestation. Non smoker. BMI 22. Combined antenatal care. Presented at 31 weeks gestation with PV bleeding and diagnosed HELLP syndrome. Caesarean section under taken at 31 weeks gestation. Live born male infant delivered weighing 1.46kgs. Apgars 5 at 1, 9 at 5. Suspected abruption Good postnatal recovery. Discharged home day 5 postnatally with arrangements made for haematology follow up.

Acute Respiratory Dysfunction (2)

1. Nullip, transfer from Cavan Hospital at 24 weeks gestation with sever pre-eclampsia. Unbooked in this hospital. 24+4 days at transfer. Steroids administered. Symmetrical growth restriction noticed in the fetus. No past medical history. Non-reassuring CTG at 25 weeks gestation necessitating stabilisation and delivery. High dependency care. Live born female infant delivered weighing 565g, stabilised and transferred to the Special Care Baby Unit. Discharged home day 6 on anti-hypertensive with arrangements for Day Care follow-up and advice in relation to recurrence risks on any subsequent pregnancy.

2. Primip, booked at 11 weeks for combined antenatal care. Non-smoker. Pre-eclampisa at 27 weeks gestation with superimposed sepsis at 28 weeks gestation. Suspected influenza. Pulmonary oedema identified on chest x-ray. Subsequent emergency caesarean section due to deterioration in the maternal condition at 28 weeks gestation and a live born male infant weighing 1.14 kilograms delivered, Apgars 8 at 1 and 10 at 5.

Cardiac (1)

1. Para 6, admitted for a vaginal hysterectomy and pelvic floor repair cardiac arrest in the recovery room. Likely secondary to hypovolaemia, stabilised and transferred to the Mater Hospital. Re-Laparotomy and ligation of the uterine artery. Discharged home well.

Status Epilepticus (1)

1. Para 1+ 3, three previous large loop excisions of the transformation zone. Prior haemorrhoidectomy, panic attacks, epilepsy, renal calculi, asthma. Poorly compliant with medical care. Transfer of care from America at 19 weeks gestation, ultrasound at presentation correlated with a gestation of 11 weeks and 2 days. Cervical cerclage inserted based on prior history of LLETZ. Presented at 17 weeks with query history of status epilepticus at home. Had presented originally to Wexford General Hospital with a similar history and was provided with anti epileptic medication but did not take the same. Hospitalised for 2 days with arrangements for follow up care. She was re-admitted subsequently with a similar episode of tonic clonic seizures. Recurrent pseudo seizures during hospital stay. Failed to return for care in the hospital.

Septicaemic Shock (11)

1. Nullip, booked at 11 weeks gestation, non-smoker, non-drinker, BMI of 28. Past history of recurrent urinary tract infections. Combined antenatal care. Admitted at 26 weeks gestation with suspected uro-sepsis. Septic work-up and triple antibiotics commenced. Pyelonephritis diagnosed. 72 hours of high dependency care. Gradual improvement and discharged home one week following initial admission. Subsequent uncomplicated antenatal care. Presented in spontaneous labour at 40 weeks gestation and assisted vaginal delivery of live born male infant weighing 4.15 kilograms. Apgars 9 at 1 and 10 at 5.

2. Para 1. BMI 36. Previous full term unassisted vaginal delivery in 2011. Induced on that pregnancy due to pre-eclampsia. Booked at 14 weeks gestation on this pregnancy. Hypertensive episodes at term. Subsequent induction for the same and a spontaneous vaginal delivery of a female infant weighing 3.6 kilograms. Discharged home day 2 with subsequent re-admission with septicaemia. Admitted to the High Dependency Unit. Commenced on triple antibiotics. Group A streptococcus isolated. Hypertension review postnatally with meds altered accordingly. Discharged home day 15 following vaginal delivery. Apyrexial.

3. Para 2, first pregnancy was a term delivery of a female infant weighing 2.24 kilograms noted small for gestation age. Second pregnancy emergency section at 32 weeks of a 1.24 kilograms baby with a background history of abruption. Past history of pre-eclampsia, epilepsy, mitochondrial disorder and psychosis. Late booker. Booked at 21 weeks gestation. Gestational diabetes likely secondary to medications. Intra-uterine growth restriction on this pregnancy. Admitted at 29 weeks gestation with sepsis of unknown origin, neutropenia, stabilised and subsequently transferred to the High Dependency Unit in the Mater Hospital due to sustained hypotension and a requirement for vasopressors. Elective section at 37 weeks in fetal interest. Live born male infant delivered weighing 2.51 kilograms. Apgars 9 at 1 and 10 at 5. HDU postoperative care due to hypothermia and hypotension. Five days hospital stay with arrangements for follow-up in the Mater Hospital Neurology Service due to persistent headache.

4. Para 1. Booked at 12 weeks gestation. Medical history of anaemia and recurrent urinary tract infections. Emergency admission at 19 weeks gestation with suspected uro-sepsis. High dependency care, septic work-up and triple antibiotics. Gradual improvement with treatment. Discharged four days following admission. Subsequent uneventful antenatal care. Spontaneous onset of labour at 40 weeks gestation and delivery of a female infant weighing 3.36 kilograms, Apgars 9 at 1 and 10 at 5.

5. Para 2+1. Two previous caesarean sections. Background history of recurrent urinary tract infections. Booked at 15 weeks gestation. Non-smoker. BMI 37. Combined antenatal care. Numerous episodes of failure to attend for antenatal care throughout the course of the pregnancy, poorly compliant with our diabetic screening service. Presented at 32 weeks with a recurrent episode of pyelonephritis and suspected septic shock having had one previous episode of cystitis at 26 weeks in the pregnancy and having failed to attend for follow-up thereafter. Transferred to the HDU for septic workup, triple antibiotics. Spend 48 hours in HDU before transferring to the general ward for completion of a course of IV antibiotics. Subsequently presented for caesarean section at 38 weeks gestation and a live born male infant was delivered, Apgars 9 at 1 and 10 at 5. Discharged home day 3 postnatally.

6. Para 0+1, booked at 13 weeks gestation. Very little English. Past medical history of migraine and asthma. Combined antenatal care. Presented in spontaneous labour at 40 weeks gestation. Assisted vaginal delivery for non-reassuring CTG. Live born male infant delivered weighing 4.61 kilograms. Apgars at 1 and 10 at 5. Subsequent hypothermia postnatally with a suspicion of septic shock, necessitating admission to the high dependency unit. Triple antibiotics, gradual response to treatment. Treatment complicated by suspected penicillin allergy. Discharged home well day 4 post delivery.

7. Para 0, past history of acute lymphoblastic leukaemia and bone marrow transplant. Presented with abdominal pain and pyrexia. Suspect haemtometra, stabilised. Pain controlled and transferred to theatre for examination under anaesthetic. Haemtometra drained. Recurrence of pain during her hospital stay. Discharged home with subsequent re attendance with similar pain with acute sepsis. Acute bacterial sepsis diagnosed with vaginitis. Septic shock. Stabilised and transferred to our high dependency unit. Triple antibiotics, suspected toxic shock. Transferred to the Mater Hospital for surgical review.

8. Nullip. No significant medical history. Booked at 12 weeks gestation for combined antenatal care. Uneventful pregnancy. Attended the Emergency Room at 39 weeks, non-reassuring CTG, Category 1 emergency caesarean section. Hypothermic day one post operatively. Septic shock suspected. Klebsiella identified on a high vaginal swab. Resistant to gentamicin. Antibiotics modified. Discharged home days 6 post section well.

9. Nullip. Known cystic fibrosis. Peg tube in-situ for feeding. Insulin dependent diabetic. Booked at 9 weeks gestation for hospital based antenatal care. Pre-pregnancy lung function approximately 40%. Know MRSA and pseudomonas. Hospitalised on occasion over the course of the pregnancy in Beaumont Hospital with exacerbation of cystic fibrosis and super imposed infection. Emergency caesarean section indicated in the Mater Hospital at 32 weeks gestation. Delivery of a live born male infant weighing 1.71 kilograms with Apgars of 9 at 1 and 10 at 5. Baby transferred back to the Rotunda Hospital. Maternal care continued in general hospital.

10. Para 1+1. One previous Em. LSCS for failure to advance. Med Hx anaemia. Booked at 12 weeks gestation. Ultrasound consistent with dates. Presented to the ER at 16 weeks gestation with offensive discharge and bulging membranes and pyrexia. Transferred to HDU. Second trimester loss with suspected chorioamnionitis triple antibiotics and blood cultures. 3 day stay in HDU. Gradual resolution of symptoms. Discharged home day 6 post loss.

11. Para 2, history of menorrhagia and fibriods. Refractory to treatment. Admitted for TAH. Moderately difficult procedure. Discharge home day 5 post op. Subsequent re-admission one week post op with nausea, vomiting, diarrhoea, sepsis. Pelvic collection suspected triple therapy commenced. Gradual resolution of symptoms.

ICU / CCU Transfer (5)

1. See No. 25 in Major Obstetric haemorrhage
2. See No. 3 in Septic Shock
3. See No. 7 in Septic Shock
4. See No. 1 in Cardiac
5. See No. 17 in Major Obstetric haemorrhage

Interventional at Radiology (2)

1. See No. 17 in Major Obstetric Haemorrhage
2. See. No. 1 in Cardiac Arrest

Other unspecified (13)

1. Para 2+0, one previous preterm delivery at 36 weeks gestation and a previous full term assisted delivery. Past history of depression and migraine, smoker at booking - approx 10 per day. Booked at 14 weeks. Presented at 19 weeks gestation with bilateral lower limb pain and swelling with a family history of thrombosis. Admitted. Therapeutic Innohep commenced and arrangements made for doppler imaging. Doppler reported as negative. Discharged home. Subsequent re-presentation at 27 weeks gestation by ambulance with right sided chest pain radiating into back. Suspected lower respiratory tract infection, commenced on IV antibiotics. Could not outrule pulmonary embolism. Therapeutic Innohep re-commenced. CTPA negative for pulmonary embolism. Solidation and collapse noted of the right lung. Persistent tachypneoa. Transferred to the HDU for continuous maternal monitoring. Pneumonia diagnosed. One week of IV antibiotics and multidisciplinary care in HDU. Gradual resolution of symptoms. Subsequent spontaneous onset of labour at 39 weeks gestation and a live born female infant delivered weighing 3.83 kilograms, Apgars 9 at 1 and 10 at 5. Uncomplicated postnatal care.

2. Para0+4. Transferred from Drogheda Hospital. Threatened pre term labour at 25 weeks gestation and thyrotoxicosis. Endocrine review and appropriate treatment commenced. PV bleeding at 25 weeks gestation. Inpatient care. Suspected cervical incompetence as presented to the midwifery staff fully dilated with a breech on the perineum. Assisted breech delivery of a live born female infant weighing 0.66kgs. Baby transferred to the neonatal intensive care unit. She subsequently re presented with retained products of conception necessitating evacuation of retained products. Orally compliant with her thyroid medications. Arrangements for endocrine follow up.

3. Asian lady, nullip, booked. History of sub-fertility and Takayasus arthritis. Booked at 9 weeks gestation with hypertension. On anti hypertensives. Anti hypertensives changed to medications more suitable with pregnancy. Blood pressure poorly controlled necessitating admission at 24 weeks gestation. Elective caesarean section at 36 weeks gestation. Twelve week hospital stay. Hypertensive post-operatively necessitating transfer to the Recovery Room as our high dependency unit was full. Transferred out to the HDU when a bed became available. Five days high dependency care due to the refractory hypertension. Discharged home day 7 post-operatively.

4. Para 0, IVF in another unit, presented to the hospital at 4 weeks gestation with moderate ovarian hyperstimulation necessitating 4 days admission. A full recovery with conservative measures.

5. Para 0 + 1, transferred from an external IVF unit with ovarian hyperstimulation at 4 weeks gestation. Four days hospital stay. Good recovery with expectant management.

6. Paro 0. History of primary infertility. Has Spina Bifida Occulta and ICSI pregnancy. Presented to the hospital at 4 weeks gestation with moderate ovarian hyperstimulation. Abdominal drain was sited due to persistent ascites and patient discomfort. Fourteen day hospital stay. Good recovery. Subsequent term uncomplicated delivery.

7. Para 0. Transferred from a fertility unit with ovarian hyperstimulation at 4 weeks gestation. Five days hospital stay, subsequently discharged but re-attended with worsening symptoms. Hospitalised for 6 days in total.

8. Para 0, booked at 11 weeks gestation with a history of Wolff Parkinson White syndrome since 2003. Atrioventricular block with a pacemaker and defibrillator in situ. Additional medical history of scarcoidosis and a penicillin allergy. Multidisciplinary care with cardiology and respiratory input. Pre-eclampsia developed at 36 weeks gestation. Elective Caesarean section at 37 weeks gestation. Live born male infant weighing 3.1kg, Apgars 9 at 1 and 10 at 5. HDU care post operatively. Discharged home well at day 4 postnatal.

9. Nullip. No significant medical history. Booked at 8 weeks gestation with monochorionic monoamniotic twins. Hospital based antenatal care. Subsequent admission at 24 weeks gestation for fetal surveillance due to the risk of cord entanglement. Caesarean section at 32 weeks gestation. Twin 1 weighed 1.77 kilograms, Apgars 5 at 1 and 9 at 5. Twin II weighed 1.54 kilograms, Apgars 5 at 1 and 10 at 5. Both female infants. One episode of symptomatic tachycardia at 25 weeks gestation necessitating high dependency care during this episode. No further episodes.

10. Para 1+1. One previous elective caesarean section for a growth restricted infant in 2010. History of stenosis of the aortic and mitral valves in conjunction with cervical spine stenosis. Mucopolysaccharidosis type VI, and Maroteaux Lamy syndrome. Booked at 24 weeks gestation, having had care in Lithuania prior to this. Combined multidisciplinary cardiac care. Elective section at 39 weeks gestation. Live born female infant weighing 3.16 kilograms delivered. Apgars 9 at 1 and 10 at 5. High dependency care post operatively. Discharged home well day 3 post operatively.

11. Para 1. One previous emergency caesarean section for failed induction for pre-eclampsia, male infant weighing 3.18 kilograms. History of primary infertility, Brucellosis in childhood. IVF pregnancy. Dichorioamniotic diamniotic twins. Booked at 7 weeks gestation for hospital based antenatal care. Discordant growth of twins noted at 36 weeks gestation. Admitted for corticosteroids and fetal monitoring. Elective caesarean section at 36 weeks gestation. Twin I weighed 2.63 kilograms, Apgars 9 at 1 and 10 at 5. Twin 2 weighed 2.66 kilograms, Apgars 9 at 1 and 10 at 5. Maternal supraventricular tachycardia post operatively requiring adenosine. Transferred to the HDU. Cardiology review. Three days high dependency care.

12. See Transfer to Intensive Care above

13. See Septic Shock above.

Complicated Postnatal Clinic

Dr Maeve Eogan

This clinic offers postnatal review to women who sustain anal sphincter injury at vaginal delivery. The Royal College of Obstetricians and Gynaecologists, the HSE and the Institute of Obstetrics and Gynaecology recommend that such patients are ideally seen in a dedicated Perineal Clinic in order to:

- Discuss delivery and associated events in further detail
- Assess for symptoms of continence compromise
- Arrange appropriate treatment / referral
- Advise on future deliveries

Our clinic also reviews women who are pregnant again after a previous anal sphincter injury in order to discuss options and risks in terms of mode of delivery. It also provides care for women who have had other postnatal concerns, including wound infection, perineal pain, dyspareunia and faecal incontinence.

429 new patients were seen in the clinic in 2015 and the indications for their attendances are tabulated below:

Indication for Attendance	Number of Patients Seen
Postnatal Third Degree Tear	151
Postnatal Fourth Degree Tear	6
Postnatal Perineal Infection / Pain / Dyspareunia	52
Faecal Incontinence	13
Antenatal Assessment (next pregnancy)	180
FGM assessment	6 (3 currently pregnant)
Other (incl healing issues, history of FGM etc)	21
Total	**429**

For the first time since this clinic began, the largest group (180 patients) attending the clinic were pregnant women with a history of previous obstetric anal sphincter injury (OASI). The next most common reason for attendance was recent OASI. 167 patients sustained anal sphincter injury in the year 2015, 160 of whom had third degree tear, while 7 patients sustained fourth degree tear (extending to involve anal mucosa).

The modes of delivery of those who sustained anal sphincter injury are tabulated below:

Mode of Delivery	Third Degree Tear	Fourth Degree Tear
SVD	91	2
Ventouse	33	1
Ventouse & Forceps	14	1
Forceps	22	3
Born before arrival	0	0
Total	**160**	**7**

Clinic review after anal sphincter injury takes place at 6 weeks postnatal. However, all patients will have been offered physiotherapy follow-up prior to that and the clinic works closely with Cinny Cusack and team at the Department of Physiotherapy. History is taken, including continence score if there are symptoms of faecal incontinence. Information regarding perineal healing and other postnatal symptoms is also obtained. Appropriate treatment or referral is initiated as required, and the clinic visit also provides an opportunity to answer questions regarding the index delivery as well as to the potential impact on future deliveries.

In 2014, the Irish Family Planning Association (IFPA) in with support from the HSE National Social Inclusion Unit and AkiDwA established Ireland's first Specialist Clinical Service for the Treatment of Female Genital Mutilation (FGM). This clinic refers any women who require surgical treatment to me for evaluation, and we anticipate that we will be seeing greater numbers of women in this context over the coming years.

49 patients who attended the clinic required treatment or ongoing referral (in addition to physiotherapy, which is offered to all). The specific treatments required are enumerated below:

Procedure/Referral	Number of Patients
Removal of persistent suture material (OPD)	11
Treatment of granulation tissue (OPD)	9
Fenton's procedure / perineal revision (day case)	14
Reversal of FGM	2
Perineal injection (day case)	4
Referral to colorectal service	9
Total	**49**

I am very grateful to my colleagues at the Department of Colorectal Surgery, Mater Misericordiae University Hospital for both clinic and operative support and also to all the team at the Physiotherapy Department for their holistic and committed care of our combined patient cohort.

Audit:

Azura N, Eogan M. Re-audit of Inpatient Follow-up of Patients with Intrapartum Complications.

Hypertension with Proteinuria

The Master

YEARS	2014	2015
Total number of cases	**189**	**129**
Booked	187	126
Unbooked	2	3
Incidence against delivery	2.2%	1.5%
Eclampsia %	0.00%	0.00%
Stillbirths	2	2
Neonatal Deaths	0	0
Multiple pregnancy	13	10

Parity of Patients at Delivery

0	126	85
1	38	26
2	10	7
3	10	6
4 plus	55	
Total	**189**	**129**

Gestation of Patients at Delivery

< 28 weeks	5	2
28 - 29 weeks	3	1
30 - 31 weeks	3	7
32 - 33 weeks	15	10
34 - 35 weeks	15	16
36 weeks plus	148	93
Total	**189**	**129**

Induction of Labour

The Master

In 2015 there were 2,430 inductions which was a rate of 29%; 1% lower than 2014. There was no significant difference in the indications or the methods of inductions performed, compared to the previous year.

INDUCTIONS OVER 5 YEARS

Year	Nullip	%	Multip	%	Total	%
2011	1482	57%	1134	43%	2616	29%
2012	1414	57%	1064	43%	2478	28%
2013	1372	54%	1151	46%	2523	29%
2014	1436	55%	1195	45%	2631	30%
2015	1279	53%	1151	47%	2430	29%

INDICATIONS FOR INDUCTIONS 2014

REASONS	TOTAL	%
Post Dates	630	25.9%
Prolonged SROM	437	18.0%
Reduced Fetal Movements	158	6.5%
Diabetes	123	5.1%
Hypertension	189	7.8%
Heart Disease	3	0.1%
IUD	28	1.2%
Anomaly	17	0.7%
Antibodies	3	0.1%
Diminished Liquor	82	3.4%
IUGR	126	5.2%
Large Baby	60	2.5%
Medical/Social	285	11.7%
Multiple Births	27	1.1%
Other	201	8.3%
Poor Obstetric History	53	2.2%
Decreased Placental Function	6	0.25%
Poor Byphysical Score	2	0.1%
Total	**2430**	**100%**

* Anti D detected or Anti E

INDUCTION OF LABOUR

YEARS	2014	2015
Total No. of cases	2631	2430
Incidence against deliveries >500	30%	29%
No. of Caesarean sections for Inductions	614	547
Stillbirths	30	32
Neonatal Deaths	8	5

METHOD OF INDUCTION

YEARS	2014	2015
ARM	215	225
ARM + Synto	559	669
Prostin + ARM + Syntocinon	682	563
Prostin + ARM	375	332
Prostin	299	248
Cytotec	23	19
Prostin + Syntocinon	204	154
Syntocinon	274	220
Total	**2631**	**2430**

Caesarean Section

The Master

In 2015 the caesarean section rate for the year was 32.2%. There were 2,696 sections. Of these 1,364 were elective and 1,332 were emergency. The section rate for the year was almost 1% higher than 2014. Over my seven year tenure as Master the caesarean section rate has risen from 28.5% to 32.2%. In terms of the number of primary caesarean sections was slightly reduced from 1,713 in 2014 to 1,566 in 2015. The indications were broadly similar; there was a slightly higher number of placenta praevia cases. The number of failed instrumental deliveries was reduced by over half. There was a slightly higher number of severe IUGR cases requiring primary section. In terms of repeat caesarean sections there were 857 elective repeats and 274 emergency repeats. Looking at the Robson criteria for 2015, there were no significant differences in the ten groups.

YEARS	2014	2015
Total number of cases	2753	2696
Incidence against total deliveries > 500g	31.3%	32.2%
Maternal Mortality	2	1
Primary C.S.	62.2%	58.1%
Repeat C.S.	37.8%	41.9%
Classical C.S	2	5
Tubal Ligation at C.S.	132	134
C/S Hysterectomy	1	1

CAESAREAN SECTION ANALYSIS

All Deliveries for 2015	**8361**
All Caesarean Sections	2696
Section Rate	32.2%
Group 1 - Nullip Single Ceph Term Spont Lab	190/1597
Section Rate	11.9%
Group 2 - Nullip Single Ceph Term Induced	414/1234
Section Rate	33.5%
Group 2a - Nullip Single Ceph Term CS Before Labour	231
Group 3 - Multip Single Ceph Term Spont Labour	36/1963
Section Rate	1.8%
Group 4 - Multip Single Ceph Term Induced	88/1046
Section Rate	8.4%
Group 4a - Multip Single Ceph Term CS before Labour	169
Group 5 - Prev Section Single Ceph Term	965/1220
Section Rate	79.1%
Group 6 - All Nullip Breeches	174/182
Section Rate	95.6%
Group 7 - All Multip Breeches	132/141
Section Rate	93.6%
Group 8 - All Multiple Pregnancies	113/169
Section Rate	66.9%
Group 9 - All Abnormal Lies	18/18
Section Rate	100.0%
Group 10 - All Preterm Single Ceph	167/392
Section Rate	42.6%
Elective Caesarean Section Total	1364
Emergency Caesarean Section Total	1332
Total Multips	**4847**
Total Primips	**3514**

INDICATION FOR PRIMARY SECTIONS 2015

DELIVERY METHOD INDICATION	2014	2015
Fetal Distress {Antepartum & Intrapartum}	555	476
Failure to progress 1st stage	162	157
Failure to progress 2nd stage	31	26
Breech	267	220
Abruption/APH	18	16
P.E.T.	29	29
Transverse Lie/Oblique	17	19
Pyrexia	21	14
Placenta Praevia	28	35
Poor Obstetric History	16	11
Cord Prolapse/Presentation	7	8
Disproportion & Deep Transverse arrest	2	0
Failed Forceps/Ventouse	31	13
Face/Brow Presentation	4	1
Multiple Birth	60	31
Failed Induction	77	84
Prematurity	8	8
Hypertension	18	27
Emergency CS Scheduled for Elective CS	13	13
I.U.G.R.	14	25
Maternal Request	31	38
Medical Disorders	41	44
Poor Biophysical Profile	0	1
Other	181	189
Recurring indications	7	0
Rhesus Antibodies	0	0
Previous 3/4th degree tear	55	64
Malpresentaion in labour	20	17
Total	**1713**	**1566**

INDICATION FOR REPEAT SECTIONS 2015

DELIVERY METHOD INDICATION	Elective	Emergency
Failure to progress 1st stage	0	26
Failure to progress 2nd stage	0	4
Fetal distress	0	70
Disproportion(Malpresentation in Labour)	1	0
Breech	12	10
Hypertension	4	4
Placenta praevia	4	7
P.E.T.	0	5
Poor obstetric history	4	1
Cord Prolapse/Presentation	0	2
Previous LSCS	770	85
Previous classical CS	8	0
Multiple birth	10	2
Abruption / APH	6	0
Failed induction	0	1
Antepartum fetal distress	0	1
Emergency CS scheduled for elective CS	0	18
Failed forceps/ventouse	0	0
I.U.G.R.	4	1
Medical disorders	5	2
Transverse lie / Oblique lie	6	4
Other	17	25
Recurring Indications	0	2
Maternal request	2	1
Prematurity	0	0
Previous 3/4th Degree tear	3	0
Pyrexia	0	2
Pre-Term Labour	0	1
Rhesus	1	0
TOTAL	**857**	**274**

** These reasons are the First reason for Caesarean Section

Outpatient Activity Data 2015

CLINIC	New Attendances	Return Attendances	Total
Antenatal & Postnatal	10,845	31,991	42,836
Gynaecology	2,323	4,981	7,304
Paediatrics	4,808	3,572	8,380
Endocrinology	2,833	2,285	5,118
Gastroenterology	40	13	53
Haematology	301	309	610
Anaesthetics	607	27	634
Nephrology	232	616	848
Psychiatry	459	467	926
Dove Medical	110	117	227
Allied Health Clinics	5,259	8,001	13,260
Diagnostic Clinics	7,444	20,791	28,235
Total	**35,261**	**73,170**	**108,431**

THE ROTUNDA HOSPITAL DUBLIN

3 Departmental Reports

CARING FOR GENERATIONS SINCE 1745

Department of Gynaecology

OPERATION CATEGORIES

	2011	2012	2013	2014	2015
Obstetrical Majors	2745	2604	2717	2821	2757
Obstetrical Minors	1287	1284	1259	1242	1120
Vaginal Surgery	626	610	609	592	573
Abdominal:Uterus	110	125	93	88	115
Abdominal:Tubes & Ovaries	336	317	311	295	379
Other procedures	2615	2365	2245	2369	2329

THEATRE GYNAECOLOGIC WORKLOAD

VAGINAL SURGERY	2014	2015
Vaginal hysterectomy	10	13
Manchester repair	0	2
Pelvic Floor Repair	41	42
Vaginal Hysterectomy & AP Repair	31	49
Sacro Spinous Colpopexy	5	10
Removal of IUCD	146	112
Insertion of IUCD	344	328
Other	15	17
Total	**592**	**573**

ABDOMINAL OPERATIONS OF THE UTERUS	2014	2015
Total Abdominal Hysterectomy	14	30
Myomectomy	16	29
TAH & Bilateral Salpingo-oophorectomy	31	34
Sub Total Hysterectomy	27	22
Total	**88**	**115**

THEATRE GYNAECOLOGIC WORKLOAD

ABDOMINAL: TUBES AND OVARIES	2014	2015
Tubal Surgery	1	1
Laparoscopic Sterilisation	28	34
Tubal Ligation at Caesarean Section	92	134
Salpingectomy	68	72
Ovarian Cystectomy	69	90
Oophorectomy	9	16
Ovarian Biopsy	3	7
Salpingo-oophorectomy	25	25
Total	**295**	**379**

OTHER PROCEDURES	2014	2015
Laparoscopy	259	300
Laparoscopy and Dye	218	173
Hysteroscopy	153	163
D&C/H&C	846	811
UBT	54	68
EUA	65	53
Cystoscopy	15	6
Laparotomy	59	44
Excision Bartholins Cyst	24	47
Fentons	13	9
Diathermy Vulval Warts	0	0
Operative Hysteroscopy	6	29
Endometrial Ablation {Rollerball}	47	50
Laparoscopic division of Adhesions	29	31
Laparoscopic Ablation of Endometriosis/Argan	138	115
Polypectomy	72	68
TVT	1	0
Punch Biopsy of Cervix	4	6
LLETZ	23	7
Other Gynae Surgery	307	294
Other Surgery - fetal/anaesthetic	36	55
Total	**2369**	**2329**

GRAND TOTAL		
Gynae Grand Total Minors & Majors	**3344**	**3369**

THEATRE OBSTETRIC WORKLOAD 2014

MAJORS	2014	2015
Caesarean Hysterectomy	1	1
Classical Caesarean Section	2	5
Ectopic	68	60
Lower Segment Caesarean	2750	2691
Totals	**2821**	**2757**

MINORS	2014	2015
SVD	2	6
Delivery Forceps	55	52
Delivery Vacuum	50	36
Episiotomy Resuturing	0	0
Episiotomy Repair	95	63
Evacuation of Uterus (AB)	544	504
Evacuation of Uterus (PPH)	8	10
Placenta Manual Removal	113	94
Insert Shirodkar suture	31	29
Remove Shirodkar suture	20	10
Suturing 1st/2nd degree Tear	62	46
Suturing 3rd degree Tear	159	160
Suturing 4th degree Tear	5	7
Suturing Vaginal Wall Tear	16	23
Miscellaneous	82	80
Total Minors	**1242**	**1120**

GRAND TOTAL		
Grand Total Obstetrics (Majors & Minors)	**4063**	**3877**

Colposcopy Service

Consultant Colposcopists	DR. PAUL BYRNE (Director Of Colposcopy)
	DR. HASSAN RAJAB
	DR. TOM WALSH
	DR. YAHYA KAMAL
Lead Nurse Coordinator	MS. SELINA IGOE
Nurses	MS. ROSE THORNE
	MS. CAROLE O'ROURKE
	MS. JENNIFER O'NEILL
	MS. VIRGINIE BOLGER
Health Care Assistants	MS. TRISH O'DONOVAN
	MS. NICOLA BOYD
Colposcopy Team Leader	MS. SUSAN DALY
Administrative Support	MS. ÉILIS DALTON
	MS. NIAMH O'CARROLL
	MS. OLGA PEARSON
	MS. MARITA PABERZA
	MS RUTH MACKAY

Service Overview

In 2015, we increased our Service Level Agreement with the National Cancer Screening Service (NCSS) from 1,500 to 2000 new patients. During the year we saw 1,902 new patients and there were 3,442 return visits, giving a total of 5,344 patient visits (Table 1). This represents a significant increase in activity compared to our 2014 figures. Our non-attendees (DNA) rate is 14%, which is within the NCSS target of 15%. Every effort is made to accommodate patients who need to reschedule appointments.

Table 1. Clinic Attendances

	2010	2011	2012	2013	2014	2015
New attendances	1664	1908	1563	1569	1503	1902
Return visits	2568	2769	3159	3325	3424	3442
Total	**4232**	**4677**	**4722**	**4894**	**4927**	**5344**

The number of LLETZ treatments decreased significantly in 2015 (Table 2). This has occurred because of the introduction of the therapeutic modality of Cold Coagulation. In recent years data has been published showing the LLETZ may be associated with an increase in the risk of miscarriage and preterm labour. This increase in risk is seen particularly in women who require a LLETZ with a depth of greater than 1cm or in those who require more than one treatment. Cold Coagulation is an ablative therapy that does not appear to be associated with these risks. Furthermore, a recent meta-analysis has shown that this therapy is as effective as LLETZ for treating all grades of CIN. It is now our policy to offer Cold Coagulation rather than LLETZ when this is clinically appropriate.

Table 2. Biopsies and Treatments

	2010	2011	2012	2013	2014	2015
Biopsies	732	991	1014	1013	1114	1469
LLETZ	784	914	752	465	528	380
Cold Coagulation	-	-	-	-	42	199
Total	**1516**	**1905**	**1966**	**1478**	**1642**	**2048**

The histological diagnosis in LLETZ and biopsy specimens is shown in Table 3. There were 5 cases of unexpected invasive disease in women who had a LLETZ done for what was presumed to be pre-invasive disease. Three cases with clinical suspicion of invasive carcinoma were confirmed by colposcopic biopsy.

Table 3. Histology of LLETZ and Colposcopic Biopsies

	CIN 1/HPV	CIN 2	CIN 3	CGIN/AIS	SCC Incl. Microinvasion	Negative
LLETZ	72	83	196	9	5	15
Biopsies	676	325	297	4	3	124

The provision of the colposcopy service in The Rotunda Hospital is based on the Quality Standards set out by the National Cervical Screening Programme. These standards cover every aspect of the screening pathway. Some of the key administrative and clinical targets are shown in Tables 4 and 5.

The fact that we have exceeded all of the targets in 2015 is a reflection of the hard work and dedication of all members of the Colposcopy Team. All of this is done in a facility that is far too small for the clinical workload. Our colposcopy clinic is currently located in what was once the neonatal unit. We have two small clinical rooms, with very limited office space. We need to increase our clinical space, both for patient comfort and so that we can cope with the increased clinical workload. We gained another clinical room in 2015 as part of the redevelopment of the existing clinical area. We are optimistic that there will be funding to fully equip this as a third colposcopy clinical room.

Table 4.

Administrative Standards	Rotunda	Target
Proportion referred with HSIL seen within 4 weeks	95%	>90%
Proportion referred with LSIL seen within 8 weeks	98%	>90%
Proportion of appointments that were unattended	14%	<15%

Table 5.

Clinical Standards	Rotunda	Target
Proportion referred with HSIL[1] seen within four weeks	95%	>90%
Proportion referred with LSIL[2] seen within eight weeks	98%	>90%
Proportion of LLETZ[3] as outpatients	99%	>80%
Proportion of women with CIN[4] on histology (LLETZ)	96%	>85%
Proportion of women with CIN on histology (Biopsy)	93%	>85%
Proportion of women treated at first visit with CIN on histology	98%	>90%
Proportion of women admitted as inpatients following LLETZ	0%	<2%

1 High-grade squamous intraepithelial lesion
2 Low grade squamous intraepithelial lesion
3 Large Loop Excision of the Transformation Zone
4 Cervical intraepithelial neoplasia

Quality Initiatives in 2015
The compliance with the Guidelines for Quality Assurance in Cervical Screening is monitored in a variety of ways as outlined below.

Clinical Audit.
Audits completed in 2015 and certified by The Rotunda Hospital Clinical Audit Department include:

1.An audit of Cold Coagulation
2.Compliance with National Cancer Screening Service standards for Large Loop Exci-sion of the Transformation Zone

MDT Meetings
Monthly multidisciplinary team (MDT) meetings are held.

Failsafe Reports
Failsafe reports are run daily and weekly on the Mediscan system. These reports ensure that the data are captured correctly for each visit. This data are returned to the NCSS on a regular basis.

Monthly Reports
A report on key performance indicators is returned to the NCSS each month.

NCSS Report
The NCSS Performance Evaluation Unit compares and evaluates key performance indicators across the 15 colposcopy clinics in Ireland. In a recent assessment, the Rotunda Hospital colposcopy clinic compared very favourably with the other clinics across a wide variety of standards.

SERVICE DEVELOPMENTS IN 2015

Cold Coagulation
Cold coagulation, which allows treatment of CIN without the risk of pregnancy complications was introduced in September 2014. Our clinical audit of the first 100 cases has confirmed that this treatment is effective as Large Loop Excision of the Transformation Zone (LLETZ) which is considered to be the gold standard.

Nurse-led Clinics
Our nurseled colposcopy clinics, introduced in 2014, continue to gathered momentum over the last year. Three of the nurses are now trained to work independently as diagnostic colposcopists and run their own weekly clinics. In 2015 we increased the number of nurse-led clinics from two to three each week. In 2015, 401 new patients were seen in these clinics. This has had a significant beneficial effect on the throughput to clinics, as it allows more women with high-grade disease to be seen in the consultant clinics.

Management of Low-grade Disease
The introduction of reflex HPV testing of low grade smears by the NCSS is one of the main reasons for the increase demand for colposcopy, hence the need to increase our referrals from 1500 to 2000. This increase in demand has been offset to some extent by other changes introduced by the NCSS whereby women who have been treated (LLETZ or cold co-agulation) now have only one test of cure (TOC) in our clinic. Until recently, such women had two TOCs before being discharged.

Track & Trace
The Track and Trace System was introduced in the Colposcopy Clinic in April 2015. It is used to track all Reusable Invasive Medical Devices (RIMDs) through their cleaning and de-contamination processes and to trace their usage on patients. The system helps lessen contamination risk, ensure compliance with required standards and assures quality. It maintains better quality decontamination records and enables ready access to the records. The system is highly automated using scanning technology and GS1/MS1 coding.

PRIORITIES FOR 2016.

1. Dealing with increased referrals
To increase the number of new patients from 1500 to 2000 per year will make significant demands on our resources at every level. An extra weekly consultant clinic will be required to service this increase in referrals.

2. Cold Coagulation
We aim to increase the use of Cold Coagulation for women who are suitable for this type of treatment. As the numbers of treatments increase a second treatment unit will be required.

3. Develop a 3rd Treatment Room
As part of the redevelopment of the Mortuary, we have gained one extra room in the colposcopy clinic. The aim is to have this room fully equipped as a third treatment room.

4. Upgrading of Clinical and IT Equipment
Our colposcopes and IT equipment are reaching the end of their lifespan and will need to be replaced in the coming year.

Department of Paediatrics

DR. D. CORCORAN , PROF. A. EL KHUFFASH (DEPT. HEAD)
DR. A. FORAN, DR B. HAYES, PROF. N. MCCALLION,
PROF. M. D. KING (NEUROLOGY),DR J. FRANTA (TRANSPORT MEDICINE)

ADMISSIONS TABLES (1.1-1.10)

In 2015 the number of admissions to the NICU reduced slightly compared with 2014 1,311 vs 1,439). The average occupancy was 78.15% peaking in July at 86.77%. We continued to look after over 800 babies on the postnatal wards. We continue to have difficulty with neonatal nurse staffing and maintaining a nurse to patient ratio that is consistent with international recommendations. Ideally we require a minimum of 13 nurses per shift to reach any kind of minimum safe standard, and we still lack a dedicated resuscitation nurse for emergencies. At times close to 20 babies were being treated in the high dependency unit which has a maximum capacity of 13 beds. It is a credit to all our staff especially frontline nursing staff that we managed to maintain acceptable survival and morbidity results, but this cannot be sustained.

This is the third year we are in a position to present more detailed data on babies admitted with birth weights >1500g. We wish to thank the IT midwives and especially Kathy Conway for their hard work in compiling this data. Going forward this will help us develop a new model of care and identify those babies that can be nursed safely in a transitional care unit.

Vermont Oxford **Network (Section 2 Tables 2.1-2.5)**

Neonatal Mortality (< 28 days)(Tables 3.2 and 3.3)

Congenital Malformations (3.2)

Deaths of Normally formed infants receiving intensive care (3.3)

Neonatal Encephalopathy (Table 3.1)

Follow-up of babies <1500g

Neonatal Encephalopathy

In 2015, 27 babies (16 inborn) delivered at ffl 35 weeks gestational age were admitted with signs of hypoxic ischaemic encephalopathy (HIE). Encephalopathy was graded as severe in 4 newborns (1 inborn), moderate in 12 (6 inborn) and mild in 11 (9 outborn) newborns. In total 17 babies were treated with therapeutic hypothermia including all 16 babies with moderate/ severe encephalopathy. Cooling was continued in another baby despite a history consistent with only mild encephalopathy given limitation of examination on arrival due to sedation. Cooling was initiated within the critical 6 hour time period in all cases. In one

baby therapeutic cooling was discontinued early in view of a large subdural which required neurosurgical drainage. The trend for improved outcomes in babies with moderate encephalopathy treated with therapeutic hypothermia has again continued and all babies in this group with neurodevelopmental surveillance in the Rotunda have had normal developmental progress to date. Developmental surveillance of this group is ongoing. We are delighted that all babies admitted with significant encephalopathy will now be invited back to the Rotunda for formal neurodevelopmental assessments at 2 years. Unfortunately, outcome remains extremely poor for newborns with severe encephalopathy. In this cohort, all four babies died in the initial neonatal period. One baby (inborn) failed to respond to intensive care measures with refractory pulmonary hypertension and systemic hypotension. Post-mortem confirmed group B sepsis in addition to severe hypoxia ischaemic brain injury. In the remaining 3 babies (outborn) intensive care measures were withdrawn given severity of encephalopathy and no improvement in clinical exam and electroencephalogram (EEG) at greater than 48 hours after birth.

Comments

Paediatric outpatients' attendances remained high at 8,380 which is a slight decrease from 2014 but significantly lower than previous years when over 12,000 attendances were recorded. 366 babies were reviewed in the emergency room. 59 attended our specialist neurology clinic and 48 our neurodevelopmental follow up clinic. 217 attended our rainbow clinic for specialist follow up of those infants at high risk for infectious diseases. The overall DNA rate was low at 9%

The Dublin North East neonatal network (encompassing the Rotunda, Drogheda and Cavan) continues to evolve. There were 5 transfers from Cavan and 6 from Drogheda to the rotunda ex utero, contributing to 217 NICU bed days in the Rotunda respectively. There were 19 Mothers from Cavan and Drogheda in-utero with 88 bed days.

The appointment of a neonatal dietician last year has drastically improved our nutrition services and provision of total parenteral nutrition. Onsite physiotherapy in the NICU is improving the developmental care of our sick infants. In addition, we had a neonatal pharmacist on a temporary basis and this has significantly decreased the number of drug errors in the unit. Now that we have social work, physiotherapy and dietetics streamlined we hope to expand with permanent neonatal pharmacy, speech and language therapy and permanent psychology services.

The neonatal transport has been running on a 24/7 basis for two years now. Dr Jan Franta continues his excellent work as the consultant leading the service and continues to have a huge impact on training of NCHDs and nurses, allowing more formal training especially with respect to air retrieval. The total number of infants transported by the NNTP in 2015 was 611. The Rotunda received 57 (9.3%) of these: 46 (7.5%) were national referrals for neonatal management, this figure represents 33% of the total number (139) of NNTP transports referred for neonatal management to the three Dublin maternity Hospitals in 2015; 3 from adult hospitals (booked in RH); 43 from non-tertiary neonatal centres [including 11 within NE network, 6 from Cavan and 5 Drogheda]; 11 (1.8%) were own hospital returns from Dublin paediatric hospitals, post-surgical / cardiology / neonatal

interventions. The Rotunda Hospital also used the NNTP service to transfer out 72 infants: This represents 11.8% of all NNTP transports in 2015. Of these: 54 (8.8%) were referrals to Dublin paediatric hospitals for surgical and cardiac management; 18 (2.2%) were returns to original hospitals, 17 outside Dublin and; 1 within Dublin. The NNTP team from the Rotunda conducted 32% (196) of the total number (611) NNTP transports in 2015, 107 (55%) of which were outside the greater Dublin area.

The neonatal unit continues its active role in research, and during 2015 there were a total of four higher degree candidates in the Department of Paediatrics: Drs Adam James, Colm Breatnach, Raga Malika, and Elaine Neary. The Rotunda Hospital continues to lead and actively participate in Randomised Control trials. While consultants were invited speakers and projects were presented at many local and national meetings, we have presented only publications and presentations at larger international meetings.

The Rotunda Hospital continues to support the role of advanced neonatal nurse practitioners with a third candidate undertaking the program in 2015. The Neonatal Unit will then have three Advanced Nurse Practitioners in Neonatology, which further expands the ANP role within the unit. Three staff are due to undertake the postgraduate Diploma in neonatal nursing in the RCSI, with two staff due to complete the program this year. Throughout the year staff were also supported to attend national and international neonatal nursing conferences.

The neonatal unit continues to identify quality improvement plans to enhance our philosophy of a family centred care approach. The need for a neonatal lactation specialist and developmental care (NIDCAP) specialist, have been highlighted in previous parent satisfaction surveys. Providing lactation consultant support for our most vulnerable babies is essential and approval was given in May 2015 to provide 15hrs per month to increase support in this area, which will further improve support for all mothers to provide breast milk for their babies. A member of the neonatal nursing team is currently undertaking the lactation course. It is envisaged that this role/post will be provided in addition to our current whole time equivalent in the near future.

Acknowledgements

We would like to acknowledge the dedication and commitment of all members of our neonatal team, including the consultants, registrars, senior house officers, nurses, midwives, advance nurse practitioners, pharmacy, physiotherapy, bio-engineering, social work, porters, household, administration and the IT department that support us, all of whom are dealing with a high volume intensive work load on a daily basis.

Consultants: Adrienne Foran, David Corcoran, Naomi McCallion, Afif El-Khuffash, Breda Hayes.

CNM 3: Orla O'Byrne

SECTION 1

TABLE 1.1
ADMISSION & DISCHARGE TO THE NEONATAL UNIT

ADMISSIONS	1,311
DISCHARGES	1,273
INFANTS > 1.5Kg	1,145
INFANTS TREATED ON WARD	752

**Including readmissions*

TABLE 1.2
ADMISSION WEIGHT TO THE NEONATAL UNIT

500 - 1000grms	46
1001 - 1500grms	82
1501 - 2000grms	143
2001 - 2500grms	175
Over 2500grms	827
TOTAL INFANTS DISCHARGED	**1,273**

** Based on Infants Discharged from NICU*

TABLE 1.3
MAIN INDICATIONS FOR ADMISSION TO THE NEONATAL UNIT

RESPIRATORY SYMPTOMATOLOGY	523
PREMATURITY < 37 WEEKS	357
JAUNDICE	360
LOW BIRTH WEIGHT < 2.5Kg	446
HYPOGLYCAEMIA	241
CONGENITAL ABNORMALITIES	240
SUSPECTED SEPSIS	40
NEONATAL ABSTINENCE SYNDROME	28
SEIZURES	8
HIE	29
GASTRO-INTESTINAL SYMPTOMS	15
SOCIAL	5
DEHYDRATION	16

**Some Infants are assigned more than one reason for admission*

TABLE 1.4
TERM BABY CAUSES OF RESPIRATORY MORBIDITY (>37 WEEKS)

TRANSIENT TACHYPNOEA OF THE NEWBORN	239
MECONIUM ASPIRATION SYNDROME	5
PERSISTENT PULMONARY HYPERTENSION OF THE NEWBORN	22
RESPIRATORY DISTRESS SYNDROME	26
STRIDOR	12
CONGENITAL PNEUMONIA	11
LEAK	0
CONGENITAL DIAPHRAGMATIC HERNIA	6
LARYNGOMALACIA	1
TRACHEO-OESPHAGEAL FISTULA	1
CONGENITAL CYSTIC ADENOMATOID MALFORMATION	1
PULMONARY HYPOPLASIA	2

TABLE 1.5 CONGENITAL HEART DISEASE	
PATENT DUCTUS ARTERIOSUS	70
DYSRHYTHMIA	63
PERSISTENT PULMONARY HYPERTENSION OF THE NEWBORN	36
VENTRICULAR SEPTAL DEFECT	25
ATRIAL SEPTAL DEFECT	8
ATRIOVENTRICULAR SEPTAL DEFECT	3
HYPOPLASTIC LEFT HEART SYNDROME	5
TRANSPOSITION OF THE GREAT ARTERIES	6
TETRALOGY OF FALLOT	3

TABLE 1.6 GASTROINTESTINAL ANOMALIES	
GASTRO-OESOPHAGEAL REFLUX	6
INGUINAL HERNIA	12
CLEFT PALATE ONLY	7
OMPHALOCOELE	3
CLEFT LIP	3
GASTROSCHISIS	3
SPONTANEOUS PERFORATION	2
IMPERFORATE ANUS	2
BOWEL ATERESIA	0
TRACHEO-OESPHAGEAL FISTULA	1
PYLORIC STENOSIS	0

TABLE 1.7 CENTRAL NERVOUS SYSTEM ABNORMALITIES	
NEONATAL ABSTINENCE SYNDROME	28
SEIZURES NOT HIE	8
MEINGITIS	3
HYDROCEPHALUS	2
ERB'S PALSY	0
MICROCEPHALY	2
SCHIZENCEPHALY	3
SUBDURAL HAEMORRHAGE	0

TABLE 1.8 METABOLIC / ENDOCRINE /HAEMATOLOGICAL ABNORMALITIES	
HYPOGLYCAEMIA	241
ANAEMIA OF PREMATURITY	93
THROMBOCYTOPENIA	47
DISSEMINATED INTRAVASCULAR COAGULOPATHY	19
HYPERGLYCAEMIA	19
POLYCYTHAEMIA	39
ANAEMIA(NOT INCL OF PREMATURITY)	8
HYPOTHYROIDISM	3
SIADH	6
HYPERINSULINISM	2
GALACTOSAEMIA	1
HAEMOLYTIC DISEASE OF NEWBORN	21

TABLE 1.9 DYSMORPHIC SYNDROMES	
TRISOMY 21	*19
DYSMORPHIC FEATURES (NO FINAL DIAGNOSIS)	7
TRISOMY 18 (EDWARDS)	0
TRISOMY 13 (PATAU)	0

** 19 Infants born with T21, 14 admitted to NICU*

TABLE 1.10 JAUNDICE IN TERM BABIES > 37 WEEKS		
NON-HAEMOLYTIC		132
HAEMOLYTIC		
	ABO	17
	RH	2

SECTION 2 - VLBW INFANTS

TABLE 2.1
NUMBER OF CASES REPORTED TO VON 2015

	All Cases	Excluding Congenital
Anomalies		
Infants < 401g but ≥22 wks gestation	1	0
Infants 401-500g	2	0
Infants 501-1500g	122	16
Infants > 1500g but ≤29 wks gestation	5	0
Total	**129**	**16**

TABLE 2.2
GESTATIONAL AGE BREAKDOWN AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2015 (N=129)

Gestational Age (completed) weeks	Inborn Infants	Survival to Discharge	%	Outborn Infants	Survival to Discharge	%	Total Survival Discharge to	%
21	1	0	(0%)	0	0		0	(0%)
22	1	0	(0%)	0	0		0	(0%)
23	6	0	(0%)	1	0	(0%)	0	(0%)
24	6	5	(83%)	0	0		5	(83%)
25	7	7	(100%)	3	3	(100%)	10	(100%)
26	10	9	(90%)	0	0		9	(90%)
27	6	6	(100%)	2	1	(50%)	7	(88%)
28	25	23	(92%)	2	2	(100%)	25	(93%)
29	19	18	(95%)	2	2	(100%)	20	(95%)
30	9	9	(100%)	3	3	(100%)	12	(100%)
31	12	10	(83%)	3	3	(100%)	13	(87%)
32	4	2	(50%)	0	0	(0%)	2	(50%)
> 32	7	6	(86%)	0	0	(0%)	6	(86%)
Total	**113**	**95**	**84%**	**16**	**14**	**(88%)**	**109**	**(84%)**

Delivery room deaths 2015

< 24 weeks gestation 4

severe congenital abnormalites 3

Other 1

Total 9

TABLE 2.3
BIRTH WEIGHT AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2015 (N=129)

Birth Weight (grams)	Inborn Infants	Survival to Discharge	%	Outborn Infants	Survival to Discharge	%	Total Survival Discharge to	%
<500	2	0	(0%)	0	0		0	(0%)
501-600	11	6	(55%)	0	0	-	6	(55%)
601-700	6	4	(67%)	1	0	(0%)	4	(57%)
701-800	9	7	(78%)	2	2	(100%)	9	(82%)
801-900	8	8	(100%)	2	1	(50%)	9	(90%)
901-1000	2	2	(100%)	1	1	(100%)	3	(100%)
1001-1100	12	9	(75%)	1	1	(100%)	10	(77%)
1101-1200	12	10	(83%)	1	1	(100%)	11	(85%)
1201-1300	18	18	(100%)	3	3	(100%)	21	(100%)
1301-1400	10	9	(90%)	2	2	(100%)	11	(92%)
>1400	23	22	(96%)	3	3	(100%)	25	(96%)
Total	**113**	**95**	**(84%)**	**16**	**14**	**(88%)**	**109**	**(84%)**

TABLE 2.4
MORBIDITY FIGURES FOR INFANTS 501-1500G BORN (CONGENITAL ANOMALIES INCLUDED) COMPARED TO THE VERMONT OXFORD NETWORK

	N	Rotunda (n=129)	VON n=62082
Inborn	129	113 (88%)	88%
Male	129	75 (58%)	51%
Antenatal Steroids (partial or complete)	129	108 (84%)	81%
C/S	129	90 (70%)	72%
Antenatal Magnesium Sulphate	129	75 (58%)	55%
Multiple Gestation	129	57 (44%)	27%
Any major birth defect	129	16 (12%)	5%
Small for gestational age	129	28 (22%)	24%
Conventional Ventilation	120	72 (60%)	56%
High Frequency Ventilation	120	12 (10%)	21%
Any Ventilation	120	73 (61%)	59%
High Flow Nasal Cannula	120	55 (46%)	53%
Nasal CPAP	120	105 (87%)	75%
Nasal CPAP before ETT Ventilation	107	36 (34%)	59%
Ventilation after Early CPAP	36	13 (36%)	37%
Surfactant at any time	129	87 (67%)	57%
Steroids for CLD	119	10 (8%)	10%
Inhaled Nitric Oxide	120	11 (9%)	5%
RDS	120	109 (91%)	73%
Pneumothorax	120	12 (10%)	4%
Chronic Lung Disease (at 36 wks)	104	21 (20%)	24%
"Chronic Lung Disease, Infants <33 wks"	98	21 (21%)	25%
Early Bacterial Infection	119	2 (2%)	3%
Late Bacterial Infection	116	7 (6 %)	9%
Coagulase Negative staph infection	116	15 (13 %)	6%
Nosocomial Bacterial Infection	116	20 (17 %)	12%
Fungal Infection	116	0 0(%)	1%
Any Late Infection (Bacterial or Fungal)	116	20 (17 %)	12%
NEC/bowel perforation Surgery	120	2 (2%)	3%
PDA ligation	120	4 (3%)	4%
Surgery for ROP	120	11 (9%)	2%
Any Grade of IVH (Grade 1-4)	114	44 (39%)	25%
Severe IVH (Grade3-4)	114	13 (11%)	8%
Cystic PVL	118	3 (2%)	3%
Retinopathy of Prematurity	99	18 (18%)	31%
Severe ROP (Stage 3 or more)	99	9 (9%)	6%
NEC	119	11 (9%)	5%
PDA	120	45 (37%)	28%
Ibuprofen for PDA	120	22 (18%)	7%
Probiotics	120	102 (85%)	14%
Mortality	129	20 (15%)	15%
Mortality excluding Early Deaths	119	10 (8%)	10%
Survival	129	109 (85%)	85%
Survival without Specified Morbidities	129	64 (50%)	57%

TABLE 2.5

SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2015					SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2013- 2015 INCLUSIVE			
Measure	**N**	**SMR**	**SMR 95% Lower**	**SMR 95% Upper**	**N**	**SMR**	**SMR 95% Lower**	**SMR 95% Upper**
Mortality	121	1.1	0.7	1.6	378	1.3	1	1.6
Mortality Excl Early Deaths	113	1	0.5	1.5	355	1.2	0.9	1.6
Death or Morbidity	121	1.1	0.9	1.4	378	1.1	0.9	1.2
Chronic Lung Disease	100	1	0.6	1.4	295	0.9	0.7	1.1
"CLD, Infants < 33 Weeks "	94	1	0.6	1.4	271	0.9	0.7	1.1
"NEC, Any Location "	114	1.5	0.9	2.4	359	1.8	1.3	2.4
Late Bact Infection	111	0.8	0.4	1.3	345	0.7	0.4	1
Coag Neg Staph	111	2	1.1	3.1	345	1.7	1.1	2.3
Nosocomial Infection	111	1.3	0.8	1.9	345	1.1	0.8	1.4
Fungal Infection	111	0.2	0	1.4	345	0.1	0	0.7
Any Late Infection	111	1.3	0.8	1.8	345	1.1	0.8	1.4
Any IVH	109	1.5	1.1	1.9	342	1.5	1.2	1.7
Severe IVH	109	1.3	0.8	1.9	342	1.4	1	1.8
Pneumothorax	115	1.5	0.9	2.2	360	1.6	1.1	2.1
Cystic PVL	115	1	0.3	1.9	349	0.9	0.5	1.5
Any ROP	94	0.7	0.5	1.1	284	0.6	0.4	0.8
Severe ROP	94	1.6	0.9	2.7	284	1.3	0.8	2

SECTION 3 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY AND MORTALITY TABLES

TABLE 3.1 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY (HIE)

	Inborn	**Outborn**
TOTAL	15	11
Mild HIE (Grade 1)	9	2*
Moderate HIE (Grade 2)	6	6
Severe HIE (Grade 3)	1	3
Therapeutic Hypothermia	7	10

**Therapeutic Hypothermia continued on 1 outborn baby with mild encephalopathy*

TABLE 3.1a CLINICAL DETAILS OF NEWBORNS WITH SIGNS OF MODERATE TO SEVERE HIE

Grade HIE	Place of Delivery	Gestation	Mode of delivery	Arterial Cord Gas		Venous Cord Gas		1 Minute Apgar	5 Minute Apgar	Therapeutic Hypothermia	Seizures	Brain MRI	ND Progress Assessment	Age at
				pH	BE	pH	BE							
2	inborn	40+5	Inst	6.9	-17	7.1	-14	5	6	Yes	No	Normal	Normal	11
2	inborn	40+2	SVD	7.2	-4.1	7.1	-6.4	0	5	Yes	No	Normal	Normal	5
2	inborn	39+5	Inst	nd		nd		4	7	Yes	No	Brightness deep white matter bilaterally	Normal	8
2	inborn	40	Inst	7.3	-3.9	7.3	-3	2	6	Yes	No	Arnold chiari malformation	Spina Bifida F/uin TSCUH	
2	inborn	39	EMCS	6.9-	17	6.9	-17	7	8	Yes	No	Normal	Normal	5
2	inborn	41+1	Inst	6.9	-14	7	-11	2	6	Yes	Yes	Right Cerebral Contusion; associated large cerebral haematoma requiring drainage	Normal at 3 months; Followed in Children's Hospital	
2	outborn	40+6	EMCS	nd		nd		3	7	Yes	No	Normal	Normal	12
2	outborn	37+5	SVD	7-15	7	-16		5	5	Yes	Yes	Abnormal restricted diffusion corpus callosum and right optic radiation; Deep white matter brighter than expected	Followed locally	
2	outborn	40+2	EMCS	7.2	-6.1	7.2	-6.3	1	3	Yes	No	Normal	Normal	4
2	outborn	41	EMCS	6.6	-23	6.6	-23	2	4	Yes	Yes	Echogenicity basal ganglia, thalami and perirolandic fissure	Followed Locally	
2	outborn	36	EMCS	nd		nd		8	9	No	Yes	Cerebral oedema: small foci deep white matter restricted diffusion left cerebral hemisphere	Followed Locally	
3	inborn	40	EMCS	6.5-	35	nd		0	0	yes	No	No	Neonatal Death Day 1*	
3	outborn	39+6	EMCS	nd		nd		0	0	yes	No	No	Neonatal Death Day 2	
3	outborn	41+2	EMCS	6.6	-26	6.7	-25	0	5	Yes	Yes	No	Neonatal Death Day 3	
3	outborn	36+5	EMCS	nd		nd		0	2	yes	No	No	Neonatal Death Day 2	

EMCS= Emergency Caesarean Section; Inst= Instrumental SVD= Spontaneous Vaginal Delivery; nd= Not Documented;
¥ Optic Atrophy on ophthalmological examination felt to be unrelated to perinatal events
*Associated group B sepsis on post-mortem

TABLE 3.2 - INBORN /OUTBORN INFANTS WITH CONGENITAL ANOMALIES (18)

Birth Wt (g)	Gestation	Sex	Delivery	Apgars	Age	Principle Cause of Death
2.34kg	40+0	M	SVD	7[1],7[5]	4 days	Trisomy 13, Holoprosencephaly
2.77kg	38+6	F	SVD	5[1],6[5]	2 days	Turner's Syndrome, Hypoplastic left heart
2.42kg	40+6	M	LSCS	1[1],4[5]	<1 day	Osteogenesis imperfecta
2.0kg	31+0	M	EmLSCS	1[1],0[5]	<1 day	Large omphalocoele, cord avulsion, multiple contractures, pulmonary hypoplasia
1.9kg	37+0	F	SVD breech	9,10	<1 day	Renal agenesis
2.49kg	38+4	F	ELSCS	4[1],4[5]	<1 day	Right congenital diaphragmatic hernia, pulmonary hypoplasia
3.48kg	39+6	M	SVD	0[1],2[5]	<1 day	Pulmonary hypoplasia, severe skeletal anomalies, eventeration diaphragam, dysmorphic features,antenpartum haemorrhage
1.36kg	34+0	M	SVD	5[5],5[5]	<1 day	Bladder outlet obstruction, Potter's Syndrome
3.38kg	38+5	F	forceps	5[1],8[5]	3 days	Diaphragmatic eventeration, pulmonary hypoplasia
1.75kg	40+0	M	SVD	not available	<1 day	Lumbosacral myelomeningocoele, renal agenesis, Arnold-Chiari malformation, anhydramnios
2.54kg	35+6	M	SVD	4[1],2[5]	<1 day	Thanatophoric dwarfism
2.87kg	42+2	M	ELSCS	9,10	1 day	Anencephaly
1.1kg	31+4	F	SVD	4[1],2[5]	<1 day	Congenital diaphragmatic hernia, Cornelia de Lange
1.07kg	32+0	M	SVD	not available	<1 day	Trisomy 18
1.83kg	41+1	F	SVD	1[1],0[5]	<1 day	Trisomy 18

TABLE 3.3 - INBORN /OUTBORN INFANTS NORMALLY FORMED > 500G

Birth Wt (g)	Gestation	Sex	Delivery	Apgars	Age	Principle Cause of Death
1.16kg	28+1	F	EmLSCS	0[1],1[5],1[10],1[15], 0[20]	<1 day	Twin to twin tranfusion syndrome, growth discordance, pleural and pericaridal effusions, cardiomegaly, chronic hypoxia.
2.62kg	38+4	M	SVD	9[1], 10[5]"	6 days	Normal neonatal care. Normal newborn examination. Passed away Day 6 at home. Awaiting State Pathologist report.
0.51kg	24+0	F	SVD	3[1],6[5],8[10]	4 days	Extreme prematurity, severe intraventricular and intraparenchymal haemorrhage (Grade III and Grade IV), maternal chorioamnionitis,hypotension.
1.025kg	26+0	F	EmLSCS	2[1],8[5],10[10]	4 days	Extreme prematurity, Pulmonary Haemorrhage, necrotising enterocolitis, bilateral intraventricular haemorrhage (Grade III and Grade IV).
0.8kg	23+3	M	SVD	6[1],5[5],8[10]	2 days	Extreme prematurity, Twin 2, Large bilateral Grade IV intraventricular haemorrhage
0.64kg	28+4	M	EmLSCS	4[1],7[5],8[10]	4 days	Uteroplacental insufficiency, Severe respiratory distress syndrome, pulmonary hypertension, prematurity, IUGR, acute tubular necrosis, hypoxic ischaemic encephalopathy.
3.38kg	40+0	F	EmLSCS	0[1],0[5],0[10], 0[15]	1 day	Invasive group B streptococcal disease. Full resuscitation. First heart rate at 28 minutes after delivery. Severe encephalopathy. Redirection to comfort care.
1.035kg	29+2	M	EmLSCS	1[1],3[5],4[10],5[15]	2 days	Uterine rupture at 29 weeks, prolonged resuscitation, severe encephalopathy, seizures, significant ischaemia on cranial ultrasound.
0.66kg	23+1	M	SVD	3[1],7[5]	2 days	Extreme prematurity, severe respiratory distress syndrome, recurrent pneumothoraces, large grade IV IVH with midline shift.
0.54kg	22+2	M	SVD	Not applicable	<1 day	Extreme prematurity <23 weeks.
1.42kg	32+4	M	SVD	3[1],2[5],0[45]	<1 day	In utero vascular accident, arthrogryphosis.
0.75kg	23+5	M	Assisted	6[1],4[5],1[50] breech	<1 day	Twin to twin transfusion syndrome (other twin 390g), extreme prematurity.

Department of Anaesthesia

DR. MARY BOWEN (CHAIRMAN) , DR. NIAMH HAYES, DR. JOHN LOUGHREY
DR. CONÁN MC CAUL, DR. RÓISIN NÍ MHUIRCHEARTHAIGH,
DR. PATRICK THORNTON.

The Department continues to participate in high risk cardiac obstetric cases and multidisciplinary six weekly meetings with Dr. Kevin Walsh, Consultant Cardiologist, Mater Misericordiae University Hospital, Dr. Fionnuala NíAinle, Consultant Haematologist (Adult) and Dr. Peter McKenna, Consultant Obstetrician Gynaecologist.

This year an additional Pre-Operative Assessment Clinic for gynaecological patients has been introduced and is being lead by Dr. Patrick Thornton. We are fortunate to have two Specialist Midwives: Sinead Corbett and Linda Chiles who were appointed to support the running of the clinic.

Dr. Thornton continues in his role as Clinical Tutor.

The RHOET courses run successfully and provide training in obstetrical emergencies.

The Department maintained an active involvement in the RCSI student teaching programme.

The Department is currently applying for two new consultant positions to incorporate sessions with James Connolly Memorial Hospital. We also hope to gain approval for a consultant position shared with Beaumont Hospital.

We run a very comprehensive teaching programme, providing formal teaching sessions at least twice a week for the NCHDs. Training in Echocardiology and Difficult Airway Skill Programme is included in this.

Non-Consultant Hospital Doctors:

We would like to congratulate Dr. Rania Haydar and Dr. Shane O'Sullivan who both passed their Membership examinations in anaesthesia.

Dr. Anne Doherty was our first NCHD appointed as a special interest year in obstetrical anaesthesia. She was also appointed as lead NCHD from July 2015 until January 2016. This is the first time a lead NCHD has been chosen from the Department of Anaesthesia. Dr. Doherty received the ABBVIE Scholarship from the College of Anaesthetists. She has also been involved in the HANDLE study.

DELIVERY SUITE ACTIVITY

DELIVERIES UNDER EPIDURAL

The number of women requesting epidural analgesia remains high, a similar rate to 2014. Patients receiving epidurals continue to receive patient controlled epidural infusions (PCEA) with a background infusion.

Labour Analgesia is also provided by Entonox, TENS and Remifentanil PCA.
A Remifentanil PCA is offered to patients in whom epidurals are contraindicated or who want an alternative to epidural analgesia and 33 patients availed of this.

Mode of Delivery for Parturients who select Epidural Analgesia.
Epidural Workload 2015

Deliveries Under Epidural	2014	%	2015	%
Nulliparous {% of Primips less C/S before labour {2014-3311} {2015-3039}	2331	70%	2198	72%
Multiparous {% of Multips less C/S before labour {2014-3800} {2015-3610}	1696	45%	1700	47%
TOTAL	4027		3898	

Mode of Delivery after Epidural Analgesia

NULLIPAROUS

Mode of Delivery	2014	%	2015	%
Normal	711	30.5	759	34.5%
Forceps	254	10.9	230	10.5%
Vacuum (Vacuum & Vacuum/Forceps)	757	32.5	706	32.1%
L.S.C.S	606	26.0	500	22.7%
Breech	3	0.1	3	0.1%
Total	**2331**		**2198**	

MULTIPAROUS

Mode of Delivery	2014	%	2015	%
Normal	1281	75.5	1284	75.5%
Forceps	51	3.0	40	2.4%
Vacuum (Vacuum & Vacuum/Forceps)	213	12.6	211	12.4%
L.S.C.S	149	8.8	161	9.5%
Breech	2	0.1	4	0.2%
Total	**1696**		**1700**	

Neuraxial Analgesia Techniques

	Epidural	%	CSE	%
Nulliparous	2083	57.7%	159	45.2%
Multiparous	1530	42.3%	193	54.8%
TOTAL	**3613**		**352**	

Some patients had CSE + Epidural so combined totals different

CAESAREAN SECTION RATE 2014- 2015

2015

Mode of Anaesthesia	Elective	%	Emergency	%
Spinal	1329	96.8	629	44
G.A.	13	0.9	106	7.4
Epidural	4	0.3	621	43.5
CSE	27	2.0	73	5.7
Total	**1373**		**1429**	

2014

Mode of Anaesthesia	Elective	%	Emergency	%
Spinal	1281	96.0	630	40.1
G.A.	13	1.0	139	8.8
Epidural	5	0.4	718	45.7
CSE	36	2.7	84	5.3
Total	**1335**		**1571**	

OPERATING THEATRE ACTIVITY

GYNAECOLOGICAL REPORT

Operation Categories	2011	2012	2013	2014	2015
Obstetrical Majors	2745	2604	2717	2821	2757
Obstetrical Minors	1287	1284	1259	1242	1120
Vaginal Surgery	626	610	609	592	573
Abdominal:Uterus	110	125	93	88	115
Abdominal:Tubes & Ovaries	336	317	311	295	379
Other procedures	2615	2365	2245	2369	2329

ANAESTHESIA OUTPATIENT CLINIC

The Pre-Anaesthesia Assessment (Obstetric) Clinic lead by Dr. McCaul continues on a weekly basis with 526 attendees this year.

A Pre-Operative Assessment Clinic (Gynaecology) lead by Dr. Thornton, was commenced in August of this year and by the end of year had reviewed 87 patients.

The Cardiac Anaesthetic Clinic runs on a monthly basis also lead by Dr. Thornton and reviewed 104 patients this year.

POST DURAL-PUNCTURE HEADACHE (PDPH)

There were 3,613 epidurals performed with 1,333 obstetric spinal anaesthetics and 27 Combined Spinal Epidurals CSEs. There were 82 documented Post Dural Puncture Headaches (1.7%) of whom 31 required epidural blood patch treatment (0.6%). A repeat blood patch was required by 4 patients to achieve resolution of the headache.

High Dependency Unit

DR. MARY BOWEN CONSULTANT ANAESTHETIST

Total Admissions	**217**
Obstetrical	**198**
Gynaecological	**19**

Obstetric Category	Number	% Overall	% Obstetric Admissions
Haemorrhage (APH/PPH)	**87**	**40**	**43.9**
PET / Eclampsia/ HELLP	**42**	**19.8**	**21.2**
Sepsis	**33**	**15.2**	**16.6**
Cardiac	**11**	**0.50**	**0.55**
Miscellaneous	**40**	**0.18**	**0.20**
Ovarian Hyperstimulation Syndrome	**4**	**0.018**	**0.02**
TOTAL	**198**	**91.2**	

Gynaecology	Number	% Overall	% Gynaecological
Admissions			
Pain Control	**2**	**0. 9**	**0.10**
Sepsis	**4**	**1.8**	**0.21**
Bleeding	**3**	**13**	**0.16**
Miscellaneous	**10**	**4**	**0.52**
TOTAL	**19**	**8**	

Transfers	
To: Mater Misericordiae University Hospital (MMUH)	5
From: Mater Misericordiae University Hospital	1
From: St. Vincent's University	1
From: Our Lady of Lourdes Hospital, Drogheda	1
TOTAL	**8**

Transfers To MMUH 5

1. A Parturient delivered twins with a PPH and estimated blood loss of 2 litres. She was transfused with 2RCC, 2 Fibrinogen. Patient became confused in HDU. Had CT brain at MMUH and diagnosed with Post reversible encephalopathy syndrome

	2.	Patient one week post abdominal hysterectomy. Admitted with sepsis and pelvic collection.
	3.	Gravida 3 Para 2 @ 29/40 with sepsis. Known mitochondrial disorder, epilepsy, hearing deficit, psychosis and gestational Diabetes. Presented with hypotension requiring a noradrenalin infusion. Transferred to MMUH.
	4.	A gynaecological patient developed sepsis of unknown origin. History of Acute lymphatic leukaemia at age 17 years. Had Bone marrow transplant and full body radiation. Transferred for imaging.
	5.	Case of Vaginal hysterectomy and anterior repair. Collapse on ward 4hrs post surgery due to haemorrhage. Had embolisation of iliac vessels at MMUH
From Mater Misericordiae University Hospital	1	D1 post LSCS and hysterectomy under GA at MMUH for placenta accreta. Transfused 5 RCC. Had interventional radiology assistance.
From St. Vincent's University Hospital.	1	Known epileptic. 22/40 presented to SVUH with seizures. Referred to Rotunda hospital. Had been diagnosed with Pseudo seizures. Transferred back to SVUH
From: Our Lady of Lourdes Hospital, Drogheda	1	39yr old 24/40 with bad obstetric history and IVF pregnancy presented to Drogheda with APH. Noted to be thyrotoxic, Started on Carbimazole.

Cardiac Admissions:

1	Patient presented with supraventricular tachycardia (SVT) at 220 b/min. Given adenosine 6mg IV. Reverted to sinus rhythm.
2	Admitted post Elective LSCS had history of SVT with loss of consciousness.
3	Admitted post Elective LSCS under combined spinal epidural (CSE) Patient had corrective surgery in childhood for Tetralogy of Fallot.
4	Known case of Wolf Parkinson White (WPW) Syndrome with ICD in situ. Patient was hypertensive during the pregnancy. Admitted post Elective LSCS under Spinal anaesthesia.
5	Known case of Maroteaux-Lamy Syndrome. Patient had mucopolysaccharidosis with Aortic and Mitral regurgitation. Admitted for monitoring after Elective LSCS under CSE

6	Known case of corrected Tetralogy of Fallot with residual pulmonary incompetence and moderate right ventricular dilatation. Patient had lumbar scoliosis requiring multiple operations and had Harrington rods in situ. Admitted post elective LSCS under CSE.
7	Patient admitted post EL LSCS under spinal. Patient had a history of Coarctation of the Aorta. She had WPW and was on beta blockers.
8	Admitted post EL LSCS under CSE. Known case of Transposition of Great arteries with Ebstein's anomaly with an ICD implant in situ.
9	Patient with Transposition of great arteries, VSD and Pulmonary atresia. She had corrective surgery as a child. She had developed a ventricular aneurysm. She had a history of 2 CVAs and was on long term anticoagulation. She also had scoliosis and corrective surgery with Harrington rods and a spinal fusion. She was admitted post elective LSCS under CSE
10	Patient 36/40 with twins who developed atrial flutter. Given adenosine. Elective LSCS the day following onset of atrial flutter. She had recurrent episodes of atrial flutter post operatively requiring adenosine.
11	Patient with a history of VSD repair and Tricuspid and Mitral valve replacements. She developed PET in pregnancy and had a semi elective LSCS.

Miscellaneous Admissions:

The miscellaneous group of patients admitted to the HDU included 5 gynaecological patients 2 of which were CPAP dependent. One obstetric patient with a high BMI was also admitted post delivery.

There were 2 cases of anaphylaxis post caesarean section. One had anaphylaxis to benzylpenicillin and one to morphine.

One IDDM obstetrical patient was admitted following a hypoglycaemic episode. Two patients were admitted due to poorly controlled epilepsy and one of these was subsequently diagnosed with pseudoseizures.

The majority of gynaecological patients admitted were admitted for post operative analgesic requirements.

Additional/Invasive Monitoring:

Arterial Lines	40
CVP Lines	3

Caesarean Hysterectomies: 1

Dove Clinic

DR MAEVE EOGAN, Consultant Obstetrician and Gynaecologist
DR JACK LAMBERT, Consultant in Infectious Diseases
DR WENDY FERGUSON, Infectious Diseases Associate Specialist Paediatrician
DR BARRY KELLEHER, Consultant in GI/Hepatology
DR RICHARD DREW, Consultant Microbiologist
MS MAIREAD LAWLESS, ID Liaison Midwife
MR JUSTIN GLEESON, Drug Liaison Midwife
MS RUTH POWER, Medical Social Worker
DR VALERIE JACKSON, Clinical Audit & Surveillance Scientist

INTRODUCTION

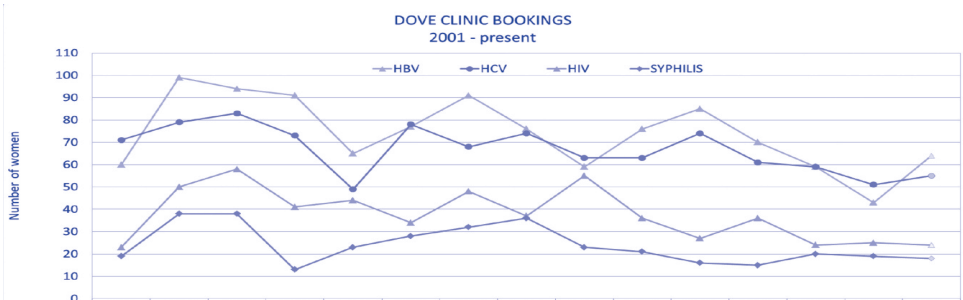
The DOVE clinic was set up to look after the specific needs of women who have or are at risk of blood and sexually transmitted bacterial and viral infections. This could be through drug use, unprotected sex, or any contact with infected blood or body fluid.

DOVE BOOKINGS IN 2015

During 2015, 203 women booked into the DOVE clinic for their antenatal care. Of these,

- 65 (32% of bookings) women were positive for Hepatitis B surface antigen, representing a increase of 49% compared to 2014 (Fig 1).
- 55 (27%) women were positive for Hepatitis C antibody, an increase of 4% compared to 2014.
- 24 (12%) were positive for HIV infection, a decrease of 8% compared to 2014.
- 18 (9%) women had positive Treponemal serology, a decrease of 5% compared to 2014.
- 52 (26%) women were known to be on prescribed methadone programs, the same number as booked in 2014.
- In addition, 67 women attended for treatment for Chlamydia Trachomatis infection in 2015.

Fig 1: DOVE Bookings by Year



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HBV	60	99	94	91	65	77	91	76	59	76	85	70	59	43	64
HCV	71	79	83	73	49	78	68	74	63	63	74	61	59	51	55
HIV	23	50	58	41	44	34	48	37	55	36	27	36	24	25	24
SYPHILIS	19	38	38	13	23	28	32	36	23	21	16	15	20	19	18

DOVE DELIVERIES 2015

Deliveries to HIV Positive Mothers 2015	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	24

Live Infants	25 (incl.1 set of twins)
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	2
Infants ≥37 weeks gestation	23
Infants delivered by Caesarean Section	11
HIV Positive Infants	0
Maternal Data (n=25)	
Median Age	34
Newly Diagnosed at ANS	2

**Final serology not yet available for all infants.*

Deliveries to HCV Positive Mothers 2015	
Total Mothers Delivered <500g (incl miscarriage)	2
Total Mothers Delivered >500g	48

Live Infants	50 (incl. 2 sets of twins)
Miscarriage	3 (incl.1 set of twins)
Stillbirths	0
Infants <37 weeks gestation	7
Infants ≥37 weeks gestation	43
Infants delivered by Caesarean Section	20
HCV Positive Infants	0*
Maternal Data (n=50)	
Median Age	31
Newly Diagnosed at ANS	8

Final serology not yet available for all infants

Deliveries to HBV Positive Mothers 2015	
Total Mothers Delivered <500g (incl miscarriage)	3
Total Mothers Delivered >500g	40

Live Infants	40 (incl.1 set twins &1 baby of a set of twins)
Miscarriage	3
Stillbirths	2 (incl.1 baby of a set of twins)
Infants <37 weeks gestation	3
Infants ≥37 weeks gestation	37
Infants delivered by Caesarean Section	14
HBV Positive Infants	0*
Maternal Data (n=43)	
Median Age	30
Newly Diagnosed at ANS	8

**3 delivered elsewhere/ 2 sets of twins **Final serology not yet available for all infants*

Deliveries to Syphilis Positive Mothers 2015	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	15
Live Infants	15
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	4
Infants ≥37 weeks gestation	11
Infants delivered by Caesarean Section	2
Syphilis Positive Infants	0
Maternal Data (n=16)	
Median Age	33.5
Newly Diagnosed at ANS	4

Deliveries to Mothers under DLM* service 2015	
Total Mothers Delivered <500g (incl miscarriage)	7
Total Mothers Delivered >500g	62
Live Infants	63 (incl. 1 set of twins)
Miscarriage	7
Stillbirths	0
Infants <37 weeks gestation	11
Infants ≥37 weeks gestation	52
Infants delivered by Caesarean Section	24
NICU admissions for NAS	15

**DLM: Drug Liaison Midwife*

In 2015, 217 infants attended the Rotunda Paediatric Infectious disease clinic (The Rainbow clinic) for follow up. The clinic is delivered solely by a paediatric specialist (Dr Ferguson).

EDUCATION AND TRAINING

Members of the DOVE team continue to be actively involved in undergraduate, postgraduate and hospital education programmes.

The ID Liaison Midwife, Mairead Lawless continues to provide monthly in-service education sessions for all clinical staff. In addition Mairead also gives a lecture on Infectious Diseases in Pregnancy to the TCD postgraduate midwifery students on an annual basis.

The British Association for Sexual Health and HIV (BASHH) accredited Sexually Transmitted Infection Foundation (STIF) Course continues to be held Dublin, with Dr Lambert acting as course director, and Dr Eogan providing teaching on management of rape and sexual assault. The course took place in February and September 2015 and provided multidisciplinary training in the attitudes, skills, and knowledge required for the prevention and management of STIs. Further courses are planned for 2016.

Dr Wendy Ferguson was a member of the writing committee for the revision of the national guidelines on Preventing Perinatal Transmission, launched in August 2015. This document gives a comprehensive and practical overview of care pathways for antenatal, perinatal and postnatal management of HIV, HBV, HCV, Syphilis and Herpes Simplex Virus.

Dr Ferguson also continues her role as chair and project coordinator for the Irish Congenital CMV Working Group (ICCWG), established in 2015 to address the ongoing issue of late diagnosis of congenital cytomegalovirus (CMV) in asymptomatic infants with sensorineural hearing loss. CMV screening of infants who fail the newborn hearing test will commence in January 2017, for a period of 2 years. This pilot will run in the three Dublin Maternity hospitals and Cavan General. If successful and cost effective, the initiative will be rolled out nationally to all maternity units.

The hepatitis B working group was set up in January 2016 to direct the Antenatal Hepatitis B Screening and Perinatal Hepatitis B Prevention Programme in Ireland. This is a HSE national project and Dr Ferguson is the appointed paediatric ID representative on the group. The management of hepatitis B women and the follow-up of their infants by the DOVE team at the Rotunda Hospital has been identified by the working group as the gold standard model for the project. The aim is to establish this standard in in all maternity units with minimum costs incurred. The project is due to commence in January 2017.

RESEARCH ACTIVITIES OF THE DOVE CLINIC

There are several research projects ongoing, many in collaboration with other disciplines within the Rotunda Hospital and also with the ID and Hepatology teams at the Mater Misericordiae University Hospital. Areas of interest include the emergence of drug resistance and the pharmacokinetics of HAART during pregnancy.

PUBLICATIONS AND PRESENTATIONS

1. *Syphilis serology in pregnancy: an eight-year study (2005-2012) in a large teaching maternity hospital in Dublin, Ireland*. McGettrick P, Ferguson W, Jackson V, Eogan M, Lawless M, Ciprike V, Varughese A, Coulter-Smith S, Lambert JS. Int J STD AIDS. 2016 Mar;27(3):226-30. Epub Mar 2015

2. *Lamivudine treatment and outcome in pregnant women with high hepatitis B viral loads.* Jackson V, Ferguson W, Kelleher TB, Lawless M, Eogan M, Nusgen U, Coughlan S, Connell J, Lambert JS. Eur J Clin Microbiol Infect Dis. 2015 Mar; 34(3):619-23.

3. *Impaired glucose metabolism in HIV-infected pregnant women: a retrospective analysis.* Moore R, Adler H, Jackson V, Lawless M, Byrne M, Eogan M, Lambert JS. Int J STD AIDS. 2016 Jun;27(7):581-5. Epub May 2015

4. *The effect of initiation of antiretroviral therapy on monocyte, endothelial and platelet function in HIV-1 infection.* O'Halloran JA, Dunne E, Gurwith M, Lambert JS, Sheehan GJ, Feeney ER, Pozniak A, Reiss P, Kenny D, Mallon P. HIV Med. 2015 Nov;16(10):608-19. Epub Jun 2015

5. *Pregnancy Outcomes of Mothers with Detectable CMV-Specific IgM Antibodies: A Three-Year Review in a Large Irish Tertiary Referral Maternity Hospital*. Drew RJ, Stapleton P, Abu H, Healy E, Ferguson W, De Gascun C, O'Gorman J, Eogan M. Infect Dis Obstet Gynecol. 2015

6. *A Retrospective Audit of Clinically Significant Maternal Bacteraemia in a Specialist Maternity Hospital from 2001 to 2014*. Drew RJ, Fonseca-Kelly Z, Eogan M. Infect Dis Obstet Gynecol. 2015

Radiology/ Paediatric Ultrasound

STEPHANIE RYAN FFR RCSI
NEIL HICKEY FFR RCSI
AILBHE TARRANT FFR RCSI

The radiology department in the Rotunda Hospital performed 6,534 exams in 2015 representing a slight reduction in activity when compared to 2014. Our department images both adults and children. 94% of these were paediatric examinations and 6% were adult examinations.

We continue to train radiographers in ultrasonography and in particular in hip sonography and continue to provide a neonatal hip screening programme. We continue to have quarterly meetings in quality improvement and audit.

In August 2015 the Rotunda hospital joined multiple other hospitals in adopting the National Integrated Medical Imaging System (NIMIS) as our radiology image management system. NIMIS was initiated in August 2007 and since then has been installed in over 40 hospitals. It delivers a filmless solution for radiology and cardiology imaging in all these hospitals. It provides a paperlite or paperless solution for test requesting and test reporting. All hospitals with NIMIS are integrated, facilitating the controlled, rapid and secure movement of patient image data through the health service. The system went live on the 24th August 2015. With the aid of the Mc Kesson installation team and the tireless input of Lorraine Hanley and Meave Hayes in our department, the transition from our pre existing system to NIMIS went smoothly. Nearing the end of our first year with NIMIS, Rotunda patients have benefited from the secure transfer of their images to all other participating hospitals, including Our Lady's Hospital for Sick Children, Crumlin and The Mater Hospital. The system facilitates the participation of the Rotunda radiology department in national quality improvement programmes. As part of NIMIS in the Rotunda hospital we use Peervue, a software application which records quality activities such as prospective and retrospective peer review, notification of unexpected findings and of critical and urgent findings to clinicians and recording of acknowledgments of receipt of same.

ADULT RADIOLOGY

The adult radiology service in the Rotunda Hospital is provided by Dr. Neil Hickey. In 2015 a total of 474 adult radiological examinations were performed of which 166 (35%) were hysterosalpingograms, performed as part of the fertility clinic work up. Other examinations also include other fluoroscopic procedures such as cystograms, non-obstetrical ultrasound (general abdominal, renal, pelvic, head and neck, vascular and soft tissue) and plain films.

PAEDIATRIC RADIOLOGY

Paediatric imaging accounts for 94% of the workload in the Department of Paediatric Radiology. In 2015, a total of 6,060 paediatric studies were performed. Of these, just over half (3,157) were paediatric ultrasound examinations.

1,865 hip ultrasounds are performed as part of a targeted screening programme for developmental dysplasia of the hip. As the hip screening service is well established now, there has been no significant change in the number of hip ultrasound scans performed since 2014.

We continue to perform fluoroscopic studies, for investigation of the upper and lower GI tract, often as an emergency out of hours study. There continue to be modified feeding studies performed in Rotunda hospital but many of these still need to be referred to TSH where facilities for feeding the baby upright are available and where the advice of the Speech and Language therapists can be sought.

The MRI unit at the Children's University Hospital, Temple Street, which has state of the art neonatal monitoring equipment, scanned a total of 116 Rotunda babies from both NICU and POPD. This is particularly valuable in the evaluation of the newborn with neonatal encephalopathy and adds very useful additional information to the bedside cranial ultrasound examination. MRI scanning was also used for the evaluation of babies with brain and spine malformations as well as metabolic and other diseases. 15 paediatric patients were referred to Temple Street for CT scanning. 26 fetal MRIs were performed in Temple Street for Rotunda obstetric patients. Many of these Rotunda babies are discussed at multidisciplinary meetings in Temple Street Children's University Hospital attended by Rotunda neonatologists and radiologists and where the input of paediatric neurology and paediatric neurosurgery teams is valuable.

Both Dr Ryan and Dr Tarrant are actively involved in training at several levels and in paediatric radiology research. Several audits have been performed. There were several publications from our department as well as presentations and lectures at national meetings. 2015 was the 4th year of a cranial ultrasound course, organised by the paediatric MD registrar and the department of radiology. This course is a practical course for paediatric trainees designed to give participants an introduction to cranial ultrasound and provide practical hands on experience for neonatal/paediatric trainees. Again, this was well attended and it is foreseen that it will continue on an annual basis.

TABLE 1: STAFF COMPLIMENT 2015

	WTE
Diagnostic radiographers / ultrasonographers	2.5
Secretary	0.5
Consultant paediatric radiologist	0.76
Consultant adult radiologist	0.20
Senior medical physicist	As needed

TABLE 2: ACTIVITY LEVELS 2015

TOTAL ACTIVITY	**6,534**
TOTAL ADULT EXAMS	474
HSG	166
TOTAL PAEDS (X-ray & US)	6,060
TOTAL PAEDS US	3,157
HIP US	1,865
NEONATAL FLUOROSCOPY	59

PUBLICATIONS AND PRESENTATIONS STEPHANIE RYAN 2015

Publications

1. Boyle M, Shim R, Gnanasekaran R, Tarrant A, Ryan S, Foran A, and McCallion N. *Inclusion of extremes of prematurity in ventricular centile charts.* J Perinatology 2015 35(6): 439-443

2. *Post natal MRI Brain in infants treated for Twin to twin transfusion Syndrome*. Boyle M, Lyons A, Ryan S, Malone F and Foran A Ir Med J. 2015 Sep;108(8):240-3.

3. Hayes BC, Ryan S, Mc Garvey C et al. *Brain magnetic resonance imaging and outcome after hypoxic ischaemic encephalopathy*. J Matern Fetal Neonatal Med Published on line 4 Sep 2015

Presentations

1. *Iterative reconstruction – a dose saving paradigm in paediatric computed tomography imaging*. Saidlear C, Bonner M, Donoghue V, Ryan S, Twomey E, Robinson I, Laffan E. Scientific exhibit C-188 European Congress of Radiology, Vienna, 2015

Invited Lectures

1. *Skeletal Injury – Role of Imaging in making a diagnosis of Non Accidental Injury*. As part of NAI - A collarbaritve Approach. Multidisciplinary conference UCD 24 Jan 15

2. ***Topical Topics in Neonatal Brain Imaging*** at Paediatric Imaging Symposium, Dublin. 11 Sep 2015

3. *Imaging of Congenital Chest Abnormalities*. Radiological Soiety of North America Annual Meeting. Chicago Dec 15

Publications on Eurorad: the electronic teaching database of the European Society of Radiology

1. *Case 12451 A Case of a Primitive Neuroectodermal Tumour in a 2 year old* KA Lee, S Ryan. 9 Feb 2015. URL: http://www.eurorad.org/case.php?id=12449

2. *Case 12449 A Case of a Medullary Glioma in a 12 year old*. KA Lee, S Ryan 29 Jan 2015. URL: http://www.eurorad.org/case.php?id=12449

3. *Case 12728 Thyroid Dyshormonogenesis* Auyushi Rai, S Ryan 30 Jun 2015. URL:http://www.eurorad.org/case.php?id=12729.DOI: 10.1594/EURORAD/CASE.12728

Department of Midwifery/Nursing

MS. MARGARET PHILBIN, DIRECTOR OF MIDWIFERY/NURSING

Midwives and Nurses work with skill and dedication both within the hospital and in the community to provide high quality care for women, babies and families. The ongoing commitment of staff to the hospital and to those who attend for care is truly appreciated.

STAFFING

Ms. M. Philbin	Director of Midwifery/Nursing
Ms. P. Williamson	Assistant Director of Midwifery/Nursing
Ms. F. Hanrahan	Assistant Director of Midwifery/Nursing
Ms. M. Keane	Assistant Director of Midwifery/Nursing
Ms. C. Halloran	Assistant Director of Midwifery/Nursing (from 24/03/14)
Ms. M. O'Reilly	Practice Development Co-ordinator
Ms. A. O'Byrne	Practice Development Co-ordinator
Ms. M. Brennan	Assistant Director of Midwifery/Nursing-Infection Control
Ms. J. MacFarlane	Night Superintendent
Ms. A. Keenan	Acting Night Superintendent
Ms. M. Whelan	Clinical Audit Facilitator

STAFF IN POST AT 31ST DECEMBER 2015

POST	WTE in Post
Director of Midwifery/Nursing	1
Midwifery/Nursing Administration	7.76
Practice Development Co-ordinator	1.60
Advanced Nurse Practitioner (Neonatology)	2
CMM/CNM 3	6
Clinical Skills Co-ordinator	1.80
Clinical Placement Co-ordinator (BSc Midwifery)	2.90
Allocations Officer (BSc Midwifery)	0.50
PGDM Clinical Co-ordinator	1
Neonatal Discharge Co-ordinator	1
Colposcopy Nurse Co-ordinator	2
CMM/CNM 2	42.52
CMS/CNS	9.88
CMM/CNM 1	22.65
Staff Midwife	154.90
Staff Nurse	66.58
Student Midwife	18.5
Maternity Care Assistant	29.6
Total	**371.69**

APPOINTMENTS WTE		RESIGNATIONS WTE	
Midwives/Nurses/Midwifery Students		Midwives/Nurses/Midwifery Students	
TOTAL:	38.50	TOTAL:	26.91

Active recruitment initiatives resulted in a net gain in the number of Midwives and Nurses employed at the end of the year. Despite this we continue to experience difficulty attracting staff to specialised areas of Neonatal Intensive Care and Theatre.

RETIREMENTS

There were no retirements from the Midwifery and Nursing staff in 2015.

HOSPITAL BASED MIDWIFERY AND NURSING SERVICES

Staff in the Adult Outpatient Department facilitated a total of 42,742 attendances of pregnant women during 2015 representing a slight increase on the previous year. An additional 9,000 attendances to specialist clinics were recorded. A further 3,512 women attended the Early Pregnancy Unit which represented a reduction of over 400 since 2014. Although some elements of the outpatient service experienced a reduction in attendances the increasing complexity of the attendees continued to be a significant factor in the provision of care.

The Midwifery Inpatient Antenatal Service incorporating Day Care, Fetal Assessment, Ultrasound and Fetal Medicine is provided by a team of dedicated Midwives and Sonographers. There were a total of 24,723 attendances at Ultrasound, Fetal Assessment and Prenatal Diagnosis Clinics during the year, which represents a significant increase on the 2014 figures. A total of 4,043 attendances were recorded to the expanded Day Assessment Unit during the year with a significant number of women attending on more than one occasion. The Unit continues to facilitate the ongoing assessment and management of women with a variety of conditions. The service has seen a significant increase in the number of women attending with hypertension and for blood sugar series. The most common indications for attendance are represented in Table 1.

Table 1: Attendance at Day Care

Attendance Reason	Number
Antenatal and Postnatal Hypertension	1441
Cardiotcograph Monitoring	1292
Obstetric Cholestasis	321
Intrauterine Growth Retardation	158
Blood Sugar Series	289
Preterm Pre-labour Rupture of Membranes	56
Hyperemesis	64
IVIG	1
IV Antibiotic Administration	25
Admission	316
Prolutin Administration	442
Dexamethazone Administration	184
Insulin Education	111
Iron Infusion	21

The Nurses and Midwives in the Neonatal Intensive Care Unit experienced a small decline in activity with a total of 1,302 babies being admitted to the Unit. Sixty-four of these babies were transferred into the Unit from other hospitals situated within and outside of the RCSI Hospitals Group. The Paediatric Outpatients Department facilitated 8,376 neonatal reviews, a slight decline on the 2014 figures.

Ongoing education for all staff in the Neonatal Unit continued throughout 2015. Two more staff successfully completed the Postgraduate Diploma in Neonatal Nursing with the RCSI and a further four staff members were sponsored to undertake the programme, which commenced in September 2015. Three new staff members participated in the 'Principles of Neonatal Care' Level 1 Programme with five staff undertaking it at Level 2. Throughout the year Nursing staff were also supported to attend National and International Neonatal Nursing Conferences. A Neonatal Palliative Care Group was established in 2015 the aim of which is to enhance and improve care given to neonates with life limiting and life threatening conditions. This initiative was led by two Neonatal Staff Nurses who went on to organise a National Neonatal Palliative Care Study Day in October 2015. The first of its kind in Ireland, this study day was extremely well attended by both Rotunda staff and delegates from Neonatal Units around the country.

Staff in the Delivery Suite provided care to a total of 8,361 women who delivered 8,538 babies. Despite the slight reduction in the number of births in 2015 women are presenting with more complex care requirements which are consistently provided for in a competent professional manner. A total of 22,270 attendances to the Emergency and Assessment Unit (which falls under the remit of the Delivery Suite) were recorded, the majority with pregnancy related problems.

The Theatre Nursing and Midwifery Team continued to experience high levels of activity. The team assisted with a total of 1,131 day cases and 725 elective and non elective Gynaecological Surgical Operations. In addition, a total of 2,696 Caesarean Sections were performed, 1,332 of which were categorised as emergency operations.

Staff in the Gynaecological Department faced a challenging year with 401 elective and 350 non-elective gynaecological admissions to the department. Care was also provided to a range of antenatal, postnatal and high dependency admissions. Bereaved couples were also predominantly cared for by the Gynaecological team. This diverse casemix results in a complex and hugely demanding work environment for the staff in this area.

Maternity Care Assistants continue to play a pivotal role in assisting in the provision of patient care throughout the hospital. Their contribution to the services provided by the hospital throughout the year is enormous and is very much appreciated.

COMMUNITY MIDWIFERY SERVICES

2015 was a busy year for the Community Midwifery Team. It was also the year that the Hospital marked the 10 year anniversary of this service. An afternoon of celebration was organised in December attended by the Lord Mayor, members of the Board of Governors, staff and most importantly mothers, babies and families who had availed of the service over the years.

A 9th Antenatal Community Clinic was established during 2015. Entitled 'Next Birth after Caesarean Section', this clinic offers Midwife provided antenatal care to women with a previous Caesarean Section and no underlying medical condition. Currently ten to fifteen women are seen at each clinic session. The pathway of care includes a scheduled visit to see a Consultant Obstetrician at 28 and 38 weeks gestation respectively with women reverting to midwifery provided care following same. Also incorporated in this pathway of care is a dedicated home support visit at 24 weeks gestation to review medical notes from previous pregnancies.

Hypnobirthing classes and an antenatal breast feeding class were initiated by the Community Team in 2015 to further provide women centred care with the numbers attending steadily increasing throughout the year.

In 2015, a total of 1,687 women booked for antenatal care with the Community Midwifery Team which represents a significant increase on the previous year. Women are booked directly (home booking visits with the Community Midwife) and indirectly (referrals from the Adult Outpatients Department). The team continue to provide all aspects of antenatal care including booking visits and subsequent home visits where appropriate in addition to facilitating a number of clinics in local health centres.

A total of 354 women left the scheme at varying stages of their pregnancies. This is an increase on the figure for 2014. These women were deemed unsuitable to continue under the care of the Community Midwifery Team for varying medical reasons and were referred back to the hospital for obstetric care by the attending Midwives at the outlying antenatal clinics as referenced in Table 2 below. A marked growth in the number of women with abnormal glucose tolerance tests was noted, rising from 25 in 2014 to 54 in 2015.

Table 2: Indications for referral from the Community Midwifery Service for Obstetric Review and Ongoing Care

Referrals	Numbers
Small for Dates/ Oligohydramnios	34
Large for Dates / Polyhydramnios	20
Breech Presentation	5
Abnormal Glucose Tolerance Test	54
Ante Partum Haemorrhage / NSAPH	8
Hypertension	11

Outcomes for women attending the Community Midwifery Services are reflected in Table 3 below. Of note, from a total of 1,310 deliveries, 69% (N=901) of women had a spontaneous vertex delivery. The Emergency Caesarean Section rate within this cohort was 13% (N=166) and the Elective Caesarean Section rate was 4% (N=58) one percentage higher than in 2014. One woman attending the service unfortunately experienced an intra-uterine death at term+3. The mother delivered a male infant with a birth weight of 4.3kg. The likely cause of death was an acute event consistent with an umbilical cord accident. We offer our sincere condolences to the family on their tragic loss.

Table 3: Outcomes of Care

Total Deliveries	**1,310**	**100%**
Spontaneous Vertex	901	69%
Ventouse	129	10%
M/C Forceps	42	3%
Ventouse/Forceps	10	1%
Emergency Caesarean Section	166	13%
Elective Caesarean Section	58	4%
Born Before Arrival	3	0.2%
Stillborn	1	0.07%

The team also offer postnatal visits to women who are living in the Greater Dublin Area. A total of 3,432 women availed of the service in 2015 representing a slight increase from the previous year. The Community Midwives carried out 10,296 postnatal visits over the year providing on average of three postnatal visits at home.

LACTATION SERVICES

The Rotunda Hospital remains the only Dublin Maternity Hospital to have achieved the National Baby Friendly Accreditation Award. The hospital also continues to hold the Baby Friendly Health Initiative 'Breastfeeding Supportive Workplace' Silver Award.

Our Lactation Specialists continue to work with staff of all disciplines to protect, promote and support breastfeeding as the optimal way for a mother to feed her baby. Acknowledging that breast milk offers important health benefits for both mother and child we strive to assist as many women as possible to initiate breastfeeding. The initiation rate increased to 71.49% in 2015.

Supports available for breastfeeding mothers and babies in the hospital include:

- The provision of breastfeeding information in the Antenatal Clinic with referral to the Lactation Specialist if required.
- Inclusion of information on the benefits and management of breastfeeding at parent education sessions.
- Provision of a breastfeeding workshop every Tuesday and Thursday evening.
- Hospital policies include mother friendly labour and birthing practices.

- Skin to Skin contact is policy for all mothers and babies including those following a Caesarean Section. Contact is encouraged for at least 60 minutes post delivery and babies are offered the first breastfeed at this time.

- Individual assistance and support with early breastfeeding problems is provided.

- The Lactation Specialist attends the ward when more specialised care and advice is necessary.

- Postnatal breastfeeding information sessions are held at ward level.

- An outpatient service is available for mothers with breastfeeding issues from Monday to Friday.

- A phone counselling and advice service is available Monday to Friday.

- A breastfeeding support group is held every Thursday between 11.30hrs and 12.30hrs.

- Community links with Public Health Nurses, General Practitioners and Voluntary support groups are an important resource outside of the hospital setting. Mothers are advised to link in with these services.

Breastfeeding Committee Meetings
This multidisciplinary committee which also includes members from the voluntary breastfeeding support groups continued to meet during 2015. There were 4 meetings held during the year.

Breastfeeding Education
Joint breastfeeding training continued to be facilitated by the three Dublin Maternity Hospitals for Nurses and Midwives comprising of four 20 hour training sessions and three refresher courses. Breastfeeding lectures were included in orientation programmes for all new staff, Medical and Midwifery students.

National Breastfeeding Week
To celebrate this important week which ran from the 1st to the 7th October all babies delivered during that time were presented with a gift of a knitted hat and cardigan or blanket and hat kindly donated by the Friends of the Rotunda and the Rotunda Knitters Group. Ms. Maura Lavery represented the hospital at Áras an Uachtaráin where an event to celebrate Breastfeeding Week was hosted by Mrs. Sabina Higgins, wife of the President of Ireland.

PERINATAL MENTAL HEALTH SERVICE

The Midwifery Perinatal Mental Health Team working in close collaboration with the Consultant Psychiatrist continued to play a very active role in the provision of this specialised service in 2015. A total of 1,599 women reported a mental health history at their booking visit during the year. All of these women were given the opportunity to contact the services antenatally following which individual meetings were organised to continue to support them during their pregnancy and to facilitate brief intervention following delivery.

The Midwifery Team provided 335 new and 251 follow-up consultations for women in the Health Promotion Clinic. These women are seen individually for up to an hour each. The sessions include an individual assessment; talk therapy, support and relaxation techniques which are provided in both the antenatal and postnatal periods. Women can avail of this service for up to four months post delivery.

A further 1,676 women with a mental health history were reviewed at ward level for brief intervention, including health promotion, mental health management and follow up service advice. In addition, the Mental Health Support Midwives support the practice of offering every woman in the Rotunda the opportunity to complete the Edinburgh Postnatal Depression Score before discharge.

There is a steady demand for the Mental Health Support Team to present to Midwifery Students in TCD. Public Health Nurse Colleagues also attended for training on assessment, treatment and referral of women with a mental health history.

BEREAVEMENT SUPPORT AND CHAPLAINCY SERVICES

The Rotunda Hospital acknowledges that the loss of a baby during pregnancy or following delivery is a one of the most painful experiences imaginable in any parent's life and we offer a range of services provided through the Bereavement, Recurrent Pregnancy Loss, and Prenatal Diagnosis Clinics to afford bereaved parents the necessary support to meet their individual needs. The Bereavement Team continued to provide sensitive, compassionate and individualised care to these families in 2015.

Education sessions were provided by the team during the year, including full study days for Undergraduate and Postgraduate Midwifery Students, and Midwives and Nurses in conjunction with the Centre for Midwifery Education. Training sessions for Non Consultant Hospital Doctors and other disciplines of staff were also delivered.

The work of the hospital is greatly assisted by the Chaplains and Ministers who are available to offer support to patients and staff alike. Their dedication and attention to women, their babies, families and staff is very much appreciated.

ANNUAL SERVICE OF REMEMBRANCE

The Annual Service of Remembrance was held in the Pro-Cathedral in November 2015. We are again very grateful for the continued support of The Very Reverend, Cannon Damian O'Reilly for facilitating this extremely important event where we gather to remember and honour the precious short lives of babies who died during 2015 and in previous years. The number of families attending this remarkable service continues to increase. The service was also attended by Chaplains from the main Churches, members of the Board of Governors, the Executive Management Team and many staff members. The occasion was enhanced by the music provided by soloist, Mary Flynn and harpist, Denise Kelly. We extend our gratitude to the numerous staff members who volunteered to assist on the day. Following the Service many families joined the Governors and staff in the Gresham Hotel for light refreshments.

BOOKS OF REMEMBRANCE

The Books of Remembrance which are a key feature of the Remembrance Service are reserved in the Hospital Mortuary Chapel. Babies' names are entered by the Hospital Chaplain at the request of parents.

PARENT EDUCATION

The Parent Education Midwife working in close liaison with the Physiotherapy Department continued to provide an extensive range of education sessions to both Inpatients and Outpatients during 2015. Demand for this service remained high and additional first classes were facilitated to meet the requirements. Parent education sessions aim to convey positive messages to parents regarding their role in the development of healthy children and their lifestyles. This is achieved by woman focused sessions with the role of the father emphasised throughout. Education is provided to expectant women and their birth partners on issues relating to pregnancy, labour and the immediate postnatal period with feeding choices, baby care and the future demands of parenthood also discussed. Information is also provided to inform parents where to source support and resources when they go home with their new baby. Special education sessions were organised for groups with specific identified needs including:

- Those with hearing disabilities
- Parents with sight disabilities
- Those with language difficulties

MIDWIFERY EDUCATION / PRACTICE DEVELOPMENT UNIT

Throughout 2015 the Practice Development Team maintained a strong commitment to supporting the 94 Undergraduate and Postgraduate Midwifery Students in clinical placement from the University of Dublin, Trinity College. In addition to the Midwifery Students, the team supported almost 200 other students, including Public Health, General and Integrated Nursing Students from various hospitals and Universities on short term placements.

Ongoing education of our Midwifery and Care Assistant Staff is an extremely important element of the team's role within a leading teaching hospital and a wide variety of education sessions to support continuous professional development were facilitated throughout the year. The Practice Development Team played a key role in the implementation of the National Early Warning Observation Chart for non-pregnant women.

Staff were released to attend more than 800 study days in recognition of the positive impact of professional development on the quality of care of women, babies and families. Midwives were supported to attend the 'Newborn Discharge' and 'Lactation Consultant' education programmes. A number of staff were also supported to undertake education programmes at Degree and Masters Level and participated in National Programmes including Nurse/Midwife Prescribing. Two staff members continued their preparation for progression to positions as Advanced Nurse (NICU) and Midwife (Emergency) Practitioners.

CLINICAL AUDIT

The Clinical Audit Facilitator continued to promote and support all disciplines of staff to undertake clinical audit throughout the year. In 2015 from a total of 57 clinical audits, 11 were undertaken by the Midwifery/Nursing Staff. Outcomes from all audits were presented at the monthly Quality and Safety Committee, Departmental Patient Safety and at the Quarterly and Biannual Audit Results meetings. All audits requiring immediate action were reported to the Executive Management Team for progressing.

HEALTH PROMOTING HOSPITALS

'Healthy Ireland' is a Government Framework for action to improve health and wellbeing for future generations. This initiative has been developed in response to rising levels of chronic illness, lifestyle trends that threaten health and persistent health inequalities. The Rotunda is a committed member of Healthy Ireland with a focus on supporting a reduction in obesity and diabetes, improving mental health and increasing breastfeeding rates.

November 2015 marked the second anniversary of the Rotunda Hospital becoming a 'Tobacco Free Campus'. The Smoking Cessation Service jointly facilitated by the Smoking Cessation Officer and the Occupational Health Department continues to offer support to the patients and staff who wish to reduce and/or quit smoking. Patient referrals to the Smoking Cessation Service come primarily from the Midwives and Doctors in the Outpatient Department with the highest number of referrals following the first booking visit. Self referrals are invited from members of staff either through the Smoking Cessation Service or the Occupational Health Department. Motivational interviewing techniques are used to help individuals address the issues around their smoking with intensive follow up support offered to those who quit. Training in these interview skills is included in the 'Brief Intervention in Smoking Cessation' training (BISC) for staff, assisting them with the management and support of patients and colleagues who are trying to stop smoking. A total of 148 new clients availed of the service in 2015 which represented a reduction of 16 on the 2014 figure. However, the improved 'quit rate' of 15% is heartening taking cognisance of the difficult challenges facing individuals trying to stop smoking.

OCCUPATIONAL HEALTH DEPARTMENT

The Department of Occupational Medicine endeavours to promote and maintain the highest degree of physical and mental health of all employees by preventing departures from good health, controlling risks and adapting work to people and people to their jobs as much as possible. The Department provides an independent and confidential service for all employees hosting a clinic for staff on one morning per week.

Throughout 2015 the team continued a rigorous campaign to promote and administer the flu vaccine to all staff. The annual vaccination clinic was held in the Front Hall over a 12 hour period to facilitate staff on duty. Thereafter, the Occupational Health Nurse Manager held regular vaccination clinics in the Department of Occupational Medicine and the N.I.C.U Department. We have seen a rise in the uptake of this vaccination throughout the many disciplines working in the Rotunda which is very positive for the health and wellbeing not alone of our staff but also the women and babies we care for.

CONCLUSION

I would like to take this opportunity to thank the Chairman, Ms. Hilary Prentice and the members of the Board of Governors for the support they have continued to provide to Midwifery and Nursing during 2015. I would like to extend my sincere thanks to the Master, Dr. Sam Coulter Smith and Secretary/Group General Manager, Ms. Pauline Treanor, for their support and advice throughout the year. I would like to extend my appreciation to Medical, Allied Health and Administration Support staff colleagues for their continued assistance. I wish to acknowledge and thank all of the external Agencies that have continued to support Midwifery and Nursing Education and Practice during 2015 in particular staff in the Nursing and Midwifery Planning and Development Dublin North East, colleagues involved in Midwifery Programmes, Trinity College and the collaboration with staff in the Centre for Midwifery Education.

The hospital could not run as effectively or efficiently without the dedicated Midwifery and Nursing staff who continue to provide such high quality care despite the many challenges they face. I am indebted to them for their continued commitment to work in the Rotunda Hospital for and with women, babies and families. I would like to add a special word of thanks to the Assistant Directors of Midwifery/Nursing and to Carol, Ger and Mags for their loyal support and endless patience. They continue to meet the ever increasing demands on their time and talents with cheerful enthusiasm.

Ms Margaret Philbin
Director of Midwifery/Nursing
2015

Royal College of Surgeons in Ireland
Dept. of Obstetrics & Gynaecology

1. DEPARTMENT STAFF

PROFESSOR AND HEAD OF DEPARTMENT
Fergal D Malone MD, FACOG, FRCOG, FRCPI

HONORARY CLINICAL PROFESSORS
Sam Coulter Smith MB, BCH, LCRPI & SI, FRCOG
Michael Geary, MD, FRCOG, FRCPI, DCH

SENIOR LECTURERS
Fionnuala Breathnach MD, MRCOG FRCPI DCH DipGU Med
Paul Byrne MD, FRCOG, FRCPI
Bridgette Byrne, MD, FRCOG, FRCPI
Ronan Gleeson MA MD, FRCOG FRCPI
Carmen Regan, MD, FRCOG, FRCPI

HONORARY CONSULTANT SENIOR LECTURERS
Carole Barry MD, FRCOG
Edgar Mocanu MD, DM, FRCOG, DMMD, Dip Ethics.

MATERNAL FETAL MEDICINE SUBSPECIALTY FELLOWS
Etaoin Kent MD, MRCPI, MRCOG (Jan – July)
Jennifer Walsh, MD, MRCPI, MRCOG (July – Dec)

SPECIALIST REGISTRAR LECTURERS/TUTORS
Siobhan Corcoran MB BCh BAO MRCPI MRCOG
Hugh O'Connor MRCPI
Cathy Monteith MB BCh BAO MRCPI
Siglinde Muellers MRCPI (Jan – July)
Ann McHugh MB BCh BAO MRCPI MRCOG (July – Dec)

RESEARCH FELLOW PHD
Siglinde Muellers MRCPI

MIDWIFE SONOGRAPHERS
Claire O'Rourke
Ann Fleming

RESEARCH NURSE
Grainne Mc Sorley

RESEARCH STAFF
Elizabeth Tully (Research Manager) PhD
Patrick Dicker PhD (Epidemiologist/Statistician)
Robin George (Lab Technician)
Jessica Colby-Milley MSc (Research Coordinator)
Lisa McSweeney MSc (Research Coordinator)
Fiona Cody MSc (Research Sonographer)

ADMINISTRATION
Suzanne Kehoe
Michelle Creaven
Suzanne King
Paula Carty
Sinead Buckley (Maternity Cover)

1. PATIENT SERVICES

The RCSI Fetal Medicine Centre continues to provide advanced fetal medicine services for patients of the Rotunda Hospital, as well as those referred from throughout Ireland. During the current academic year a total of 3,394 fetal ultrasound examinations were performed at the Centre. This included a total of 416 first trimester assessments for fetal aneuploidy, based on combined nuchal translucency and serum screening, as well as 653 non-invasive prenatal testing (NIPT) cases using free fetal DNA. The RCSI Fetal Medicine Centre operates a one-stop clinic for assessment of risk of fetal aneuploidy, using the Brahms Kryptor biochemistry platform and also NIPT. Management of multiple gestations contributed a significant workload to the Centre, with 36 twin pregnancies and 5 triplet pregnancies managed through our unit.

2. TEACHING SERVICES

One hundred and ninety six students participated in the RCSI Obstetrics & Gynaecology clinical rotations. The RCSI Department of Obstetrics and Gynaecology has a leadership role in providing teaching and assessment for undergraduates at the Rotunda Hospital, National Maternity Hospital, Our Lady of Lourdes Hospital Drogheda, Midland Regional Hospital Mullingar, St. Luke's Hospital Kilkenny, and Waterford Regional Hospital.

These students participated as sub-interns on the hospital wards and in clinics, contributing significantly to the mission and function of the hospital, while providing increasingly positive feedback on their learning experiences.

Continuing Medical Education Courses Taught:

- Advanced Course in Ultrasound and Fetal Medicine, 352 Academy, Belfast, Northern Ireland, October 2015
- Institute of Obstetricians and Gynaecologists, Annual Study Day, Dublin, Ireland, September 2015
- 3rd Irish Congress of Obstetrics, Gynaecology and Perinatal Medicine – Dublin, Ireland, May 2015

3. RESEARCH OUTPUT

a) Research Grants and Awards:

- Health Research Board, Ireland
  - HRB Ireland Perinatal Clinical Trials Network
  - F. Malone, MD Principal Investigator
  - Total support €2,500,000
  - 2014 – 2019
- Health Research Board, Ireland
  - Knowledge Exchange and Dissemination Scheme
  - Healthy Pregnancy in Ireland
  - F. Malone, MD Principal Investigator
  - Total support €60,000
  - 2015 – 2016

b) Perinatal Ireland

Perinatal Ireland is a multi-centre, all-Ireland research consortium focussed on carrying out research into women's and children's health. The consortium which was the first HRB-funded network in the country, links the 7 major academic obstetric hospitals across the island of Ireland (Rotunda Hospital Dublin, Coombe Women and Infants University Hospital Dublin, National Maternity Hospital Dublin, Cork University Maternity Hospital, University College Hospital Galway, Mid-Western Regional Maternity Hospital Limerick, and Royal Jubilee Maternity Hospital Belfast), as well as representatives of all 7 medical schools on the island of Ireland (UCD, TCD, RCSI, UCC, NUIG, University of Limerick, and Queens University Belfast).

The network is headquartered at the RCSI Department of Obstetrics & Gynaecology at the Rotunda Hospital and is an international leader in obstetric and paediatric research. In addition to its clinical research activities, Perinatal Ireland is active in other educational activities and methods of advancing clinical care including:

- Hosting of annual teaching conferences for practitioners in critical areas of obstetric and paediatric health
- Development of national clinical guidelines to optimise the management of important obstetric conditions
- Contribution to international guidelines
- Development of new information technology systems to underpin obstetric ultrasound equipment based on data developed from our studies

2015 saw completion of the recruitment phase of both the GENESIS and TEST studies. The GENESIS study aimed to prospectively assess the use of Fetal Head Circumference in the late third trimester, as a predictive tool for labour dystocia and intrapartum caesarean section. GENESIS recruited over 2500 nulliparous women nationally and primary findings were accepted for presentation at both the Society for Maternal Fetal Medicine (SMFM) Pregnancy Meeting and the British Maternal Fetal Medicine Society (BMFMS) Meeting in early 2016.
The main aim of the TEST study was to examine the benefit of routinely prescribing low dose aspirin to low risk women in their first pregnancy compared with test indicated aspirin on the basis of a positive early pregnancy screening test for pre-eclampsia and fetal growth restriction. The TEST study is the first national drug trial in pregnancy recruiting over 550 women across two sites (the National Maternity Hospital and the Rotunda Hospital) and data from the pilot phase of this randomised controlled trial (RCT) will be used to inform a larger definitive study.

c) HRB Mother and Baby Clinical Trial Network Ireland

In late December 2014, RCSI was joint recipient (together with University College Cork) of a HRB Clinical Trials Network Grant of €2.5 million to fund a five year programme of clinical trials in the perinatal space. The HRB Mother and Baby Clinical Trials Network Ireland (HRB MB-CTNI) is a new, exciting and unique partnership between these two successful perinatal research entities, Perinatal Ireland and the SFI funded INFANT centre in Cork and further solidifies the existing collaboration and partnership between the seven largest academic obstetrics units on the island.

The HRB Mother and Baby CTNI have a well-established record in collaborative research and in conducting large-scale, multicentre, randomised controlled trials. The network builds on the complimentary world class expertise and strengths of both INFANT and Perinatal Ireland with a core focus on conduct of clinical trials of novel interventions and diagnostics in pregnancy and neonates.

The initial work programme for the HRB Mother and Baby CTNI involves the implementation of the PARROT RCT as the main network definitive intervention clinical trial, as well as a suite of other pilot and feasibility studies including; TEST, MINT and IRELAND. The CTNI will also launch a research programme in the area of Clinical Trials Methodology and will launch a nationwide follow up programme for the children who participate in these trials. The HRB Mother and Baby Clinical Trial Network Ireland brings together leading Irish obstetric and neonatal researchers, with an international reputation to address problems in women and children's health that will have a global impact.

The overall vision of the networks is the following;

- To establish a world-class centre of excellence in perinatal medicine research
- To build an all-Ireland dedicated research capacity to conduct high-quality, patient-oriented clinical research
- To translate research findings into clinical practice to improve the health of women and children
- To develop collaborative, cross-disciplinary programmes to generate a self-sustaining national and international research infrastructure

Current portfolio of network trials

PARROT - PARROT is a multi-centre stepped wedge RCT of a point of care (POC) device to measure plasma PIGF (Placenta Growth Factor) in women who present with suspected pre-eclampsia prior to 37 weeks gestation.

TEST – TEST is a pilot study to assess the effectiveness of routine prescription of Low Dose Aspirin to low risk women in their first pregnancy versus women who were prescribed aspirin on the basis of a positive early pregnancy screening test for pre-eclampsia and fetal growth restriction

MINT – MINT is a pilot study to assess the feasibility of performing a pivotal trial to obtain preliminary data to calculate a sample size for definitive multicentre trial of milrinone therapy in new-borns with persistent pulmonary hypertension (PPHN).

IRELAND – IRELAND is a pilot study investigating the role of Aspirin in the pregnancy outcome of women with pre-gestational diabetes.

4. RESEARCH PUBLICATIONS

A) Papers in Peer-Reviewed Journals:

- Corcoran S, Breathnach F, Burke G, McAuliffe F, Geary M, Daly S, Higgins J, Hunter A, Morrison JJ, Higgins S, Mahony R, Dicker P, Tully E, Malone FD. "Dichorionic Twin Ultrasound Surveillance: Sonography Every 4 Weeks Significantly Underperforms Sonography Every 2 Weeks – Results of the Prospective Multicenter ESPRiT Study." American Journal of Obstetrics and Gynecology 213:551.e1-5, 2015.
- Boyle M, Lyons A, Ryan S, Malone F, Foran A. "Postnatal MRI in Infants Treated for Twin-Twin Transfusion Syndrome." Irish Medical Journal 108:240-243, 2015.
- Mullers SM, McAuliffe FM, Kent E, Carroll S, Mone F, Breslin N, Dalrymple J, Mulcahy C, O'Donoghue K, Martin A, Malone FD. "Outcome Following Selective Fetoscopic Laser Ablation for Twin to Twin Transfusion Syndrome: An 8 Year National Collaborative Experience." European Journal of Obstetrics Gynecology and Reproductive Biology 191:125-129, 2015.
- Dempsey MA, Flood K, Burke N, Murray A, Cotter B, Mullers S, Dicker P, Fletcher P, Geary M, Kenny D, Malone FD. "Platelet Function in Patients with a History of Unexplained Recurrent Miscarriage who Subsequently Miscarry Again." European Journal of Obstetrics Gynecology and Reproductive Biology 188:61-65, 2015.
- Hirtz DG, Weiner SJ, Bulas D, DiPietro M, Seibert J, Rouse DJ, Mercer BM, Varner MW, Reddy UM, Iams JD, Wapner RJ, Sorokin Y, Thorp JM, Ramin SM, Malone FD, Carpenter MW, O'Sullivan MJ, Peaceman AM, Hankins GD, Dudley D, Caritis SN. "Antenatal Magnesium and Cerebral Palsy in Preterm Infants." Journal of Pediatrics 167:834-839, 2015.
- Dempsey MA, Flood K, Burke N, Fletcher P, Kirkham C, Geary MP, Malone FD. "Perinatal Outcomes of Women with a Prior History of Unexplained Recurrent Miscarriage." Journal of Maternal Fetal and Neonatal Medicine, 28:522-525, 2015.
- Hehir MP, Dalrymple J, Malone FD. "Decision-Support Guide and Use of Prenatal Genetic Testing." JAMA – Journal of the American Medical Association 13:313, 2015.
- Peaceman AM, Lai Y, Rouse DJ, Spong CY, Mercer BM, Varner MW, Thorp JM, Ramin SM, Malone FD, O'Sullivan MJ, Hankins GD. "Length of Latency with Preterm Premature Rupture of Membranes before 32 Weeks' Gestation." American Journal of Perinatology 32:57-62, 2015.
- Unterscheider J, Dicker P, Malone FD. "The PORTO Study and the Importance of the Cerebroplacental Ratio in Fetal Growth Restriction." American Journal of Obstetrics and Gynecology, 212:552, 2015.
- Horton AL, Lai Y, Rouse DJ, Spong CY, Leveno KJ, Varner MW, Mercer BM, Iams JD, Wapner RJ, Sorokin Y, Thorp SM, Ramin SM, Malone FD, O'Sullivan MJ, Hankins GD, Caritis SN. "Effect of Magnesium Sulfate Administration for Neuroprotection on Latency in Women with Preterm Premature Rupture of Membranes." American Journal of Perinatology, 32:387-392, 2015.

- Unterscheider J, O'Donoghue K, Malone FD. "Guidelines on Fetal Growth Restriction: A Comparison of Recent National Publications." American Journal of Perinatology, 32:307-316, 2015.

- Haddow JE, Neveux LM, Palomaki GE, Lambert-Messerlian G, Malone FD, D'Alton ME. "An Inverse Relationship Between Weight and Free Thyroxine During Early Gestation Among Women Treated for Hypothyroidism. Thyroid 25:949-953, 2015.

- Varner MW, Marshall NE, Rouse DJ, Jablonski KA, Leveno KJ, Reddy UM, Mercer BM, Iams JD, Wapner RJ, Sorokin Y, Thorp JM, Malone FD, Carpenter M, O'Sullivan MJ, Peaceman AM, Hankins GD, Dudley DJ, Caritis SN. "The Association of Cord Serum Cytokines with Neurodevelopmental Outcomes." American Journal of Perinatology, 30:115-122, 2015.

- Olson G, Weiner SJ, Rouse DJ, Reddy UM, Mercer BM, Varner MW, Leveno KJ, Iams JD, Wapner RJ, Ramin SM, Malone FD, Carpenter MW, O'Sullivan MJ, Dinsmoor MJ, Hankins GD, Caritis SN. "Relation Between Birth Weight and Weight and Height at the Age of Two in Children Born Preterm." American Journal of Perinatology, 32:591-598, 2015.

- Murphy NC, Diviney MM, Donnelly JC, Cooley SM, Kirkham CH, Foran AM, Breathnach FM, Malone FD, Geary MP. "The Effect of Maternal Subclinical Hypothyroidism on IQ in 7 to 8 Year Old Children: A Case Control Review." Australia and New Zealand Journal of Obstetrics and Gynaecology, 55:459-463, 2015.

- Palatnik A, Mele L, Landon MB, Reddy UM, Ramin SM, Carpenter MW, et al. "Timing of Treatment Initiation for Mild Gestational Diabetes Mellitus and Perinatal Outcomes." American Journal of Obstetrics and Gynecology 213:560.e1-8, 2015.

- Borowski KS, Clark EA, Lai Y, Wapner RJ, Sorokin Y, Peaceman AM, et al. "Neonatal Genetic Variation in Steroid Metabolism and Key Respiratory Function Genes and Perinatal Outcomes in Single and Multiple Courses of Corticosteroids." American Journal of Perinatology 32:1126-1132, 2015.

- Stuebe AM, Landon MB, Lai Y, Klebanoff M, Ramin SM, Wapner RJ, et al. "Is There a Threshold Oral Glucose Tolerance Test Value for Predicting Adverse Pregnancy Outcome?" American Journal of Perinatology 32:833-838, 2015.

- Halling C, Malone FD, Breathnach FM, Stewart M, McAuliffe F, Morrison JJ, Dicker P, Manning F, Corcoran JD. Neurodevelopmental outcome of a large cohort of growth discordant twins. Eur J Pediatr (Accepted Sept 2015)

- Corcoran S, Breathnach FM. The early bird catches the worm: Predicting the onset of gestational diabetes in the first trimester. J Matern Fetal Neonatal Med 2014 Jul 11:1-2. PMID: 24920284 IF:1.311

B) Abstracts in Peer-Reviewed Journals:

- Corcoran S, Breathnach F, Burke G, McAuliffe F, Geary M, Daly S, Higgins J, Hunter A, Morrison J, Mahony R, Dicker P, Tully E, Malone F. "Dichorionic Twin Ultrasound Surveillance – Four Weekly Significantly Underperforms Two Weekly Ultrasound: Results of the Prospective Multicenter ESPRiT Study." American Journal of Obstetrics and Gynecology 212, S34-S35, 2015.

- Muellers S, Burke N, Cowman J, Kearney M, Flood K, O'Connor H, Dicker P, Tully E, Geary M, Kenny D, Malone F. "Platelet Function in Intrauterine Growth Restriction: Altered Platelet Behaviour as a Cause or a Consequence of Utero-Placental Disease." American Journal of Obstetrics and Gynecology 212, S125-S126, 2015.

- Corcoran S, Briggs K, O'Connor H, Muellers S, Monteith C, Donnelly J, Dicker P, Franklin O, Malone F, Breathnach F. "Prenatal Detection of Congenital Heart Disease." American Journal of Obstetrics and Gynecology 212, S126, 2015.

- Corcoran S, Unterscheider J, Daly S, Geary M, Kennelly M, McAuliffe F, O'Donoghue K, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "Fetal Growth Restriction Co-existing with Gestational Diabetes – Impact on Perinatal Outcome: Results of the Multicenter PORTO Study." American Journal of Obstetrics and Gynecology 212, S126-S127, 2015.

- Anglim B, Walsh J, Daly S, Unterscheider J, Geary M, O'Donoghue K, Kennelly M, McAuliffe F, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "Cardiovascular Doppler Assessments in IUGR: Are They Associated with Adverse Perinatal Outcome? Results from the Multicenter Prospective PORTO Trial." American Journal of Obstetrics and Gynecology 212, S83, 2015.

- Kent E, Breathnach F, Burke G, McAuliffe F, Geary M, Daly S, Higgins J, Hunter A, Morrison J, Higgins S, Mahony R, Dicker P, Manning F, Tully E, Malone F. "Perinatal Outcome in Twins Discordant for Umbilical Arterial Doppler Abnormalities." American Journal of Obstetrics and Gynecology 212, S170-S171, 2015.

- O'Connor H, Unterscheider J, Daly S, Geary M, Kennelly M, McAuliffe F, O'Donoghue K, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "Comparison of Asymmetric Versus Symmetric IUGR – Results from a National Prospective Trial." American Journal of Obstetrics and Gynecology 212, S173-S174, 2015.

- Regan C, Unterscheider J, Daly S, Geary M, Kennelly M, McAuliffe F, O'Donoghue K, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "The Effect of Maternal Cigarette Smoking on Pregnancy Outcome in FGR." American Journal of Obstetrics and Gynecology 212, S377, 2015.

- Monteith C, Mullers S, Unterscheider J, Flood K, Breathnach F, Daly S, Geary M, Kennelly M, McAuliffe F, O'Donoghue K, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "Is a Normalizing Cerebro-Placental Ratio (CPR) a Potential Predictor for Adverse Outcome in Intrauterine Growth Restriction: Results of the Multicenter PORTO Study." American Journal of Obstetrics and Gynecology 212, S308, 2015.

- Hehir M, Breathnach F, McAuliffe F, Geary M, Daly S, Higgins J, Dornan J, Morrison J, Burke G, Higgins S, Dicker P, Mahony R, Malone F. "Gestational Hypertensive Disease in Twin Pregnancy: Influence on Outcomes in a Large National Prospective Cohort." American Journal of Obstetrics and Gynecology 212, S257-S258, 2015.
- Hehir M, Unterscheider J, Daly S, Geary M, O'Donoghue K, Kennelly M, McAuliffe F, Hunter A, Morrison J, Burke G, Dicker P, Tully E, Malone F. "The Influence of Growth Restriction on Mode of Delivery: Results from a Multi-Center Prospective Cohort." American Journal of Obstetrics and Gynecology 212, S210-S211, 2015.
- Roche A, Mullers S, Monteith C, Kent E, Corcoran S, O'Connor HD, Flood K, Cooley SM, Donnelly J, Dicker P, Foran A, McCallion N, Malone FD, Breathnach F. "Customised Centiles for Trisomy 21: Presenting Prenatal Growth References for Down Syndrome." American Journal of Obstetrics and Gynecology 212, S225-S226, 2015.

5. INVITED LECTURES

Prof. Fergal Malone

"HRB Perinatal Clinical Trial Network Ireland" – HRB Clinical Research Coordination Ireland and Dublin Centre for Clinical Research, Joint Scientific Meeting, Dublin, Ireland, November 2015

Clinical Trials in the Perinatal Space - National Clinical Research Infrastructure Showcase, Dublin, Ireland, November 2015

"Fetal Surgery for Twin-to-Twin Transfusion Syndrome" – King Hamad University Hospital, Bahrain, November 2015

"Fetal Growth Restriction Management" – Advanced Course in Ultrasound and Fetal Medicine, 352 Academy, Belfast, Northern Ireland, October 2015

"Fetoscopic Laser Ablation for Twin to Twin Transfusion Syndrome" – Institute of Obstetricians and Gynaecologists, Annual Study Day, Dublin, Ireland, September 2015

"Doppler Ultrasound in the Management of Fetal Growth Restriction" – MDI Ultrasound Annual Study Meeting, Straffan, Ireland, June 2015

"What Have We Learned from Perinatal Ireland" – 3rd Irish Congress of Obstetrics, Gynaecology and Perinatal Medicine, Dublin, Ireland, May 2015

"Fetal Growth Restriction – Evidence from the PORTO Study" – National Institute of Child Health and Human Development, Society for Maternal Fetal Medicine, and American Congress of Obstetrics and Gynecology, Fetal Imaging Workshop – Fetal Growth Restriction, Washington, DC, USA, April 2015

"Perinatal Ireland – Establishing a Clinical Research Network" – Health Research Board of Ireland Grantholders Conference, Limerick, Ireland, February 2015

Department of Laboratory Medicine

DR FIONNUALA NÍ ÁINLE (DIRECTOR)
MR JOHN O'LOUGHLIN (LABORATORY MANAGER)

INTRODUCTION

The Department of Laboratory Medicine is staffed by dedicated and highly educated professionals who are committed to providing a service of the highest quality that is pro-active and responsive to the needs of the users of the service. Quality is of paramount importance. These high standards are reflected in continuing accreditation to International Organisation for Standardisation (ISO):15189 requirements across all departments. Individual departments continuously seek opportunities to improve the care that we provide to our patients, responding to new challenges and developments particularly in high-risk areas.

During 2015, major initiatives were launched that will greatly benefit both our patients and users. The microbiology department repatriated key serological tests from the National Virus Reference Laboratory and commenced testing using of a state of the art piece of equipment, "GeneXpert", to enable rapid diagnosis of Influenza and other dangerous microorganisms. The haematology/transfusion department initiated capillary electrophoresis (replacing HPLC) for haemoglobinopathy testing, the biochemistry department introduced testing for the AMH hormone and introduced a new blood gas analyser to the neonatal intensive care unit and the histopathology department commenced a new service in Connolly Hospital, Blanchardstown.

Key awards and achievements included the recognition of an innovative initiative led by haemovigilance officer, Ms Siobhan Ryan-Enright along with the neonatology multidisciplinary team. Ms Enright represented the Rotunda Hospital at the HMI leadership awards, presenting data from this project.

Finally, we are delighted to have been the first public medical testing laboratory in Ireland to have gained accreditation for Flexible Scope (INAB)

The overall laboratory workload is reflected in Tables 1 and 2.

TABLE 1: TESTS PERFORMED IN-HOUSE IN 2015

Department	Specimens / Cases*	% Change over 2013	Tests / Blocks*	% Change over 2013
Haematology	57,889	-3.4	79,291	-0.6
Blood Group Serology	24,983	5.8	32,362	-9.1
Transfusion	8,891	-3	8,891	-3
Microbiology	42,334	-3.5	78,775	-3.6
Virology / Serology	14,071	2.49	57,651	73.9
Biochemistry	58,653	1.6	264,682	2
Histopathology	6,631	14	16,554	9

*Histology work is numbered by case. Each case can include multiple specimens and blocks, requiring ≥1 stains of various complexity

TABLE 2: TESTS REFERRED TO OUTSIDE LABORATORIES IN 2015

	Specimens	% Change over 2013	Tests	% Change over 2013
Haematology	1,537	-3.4	1,537	-3.4
Biochemistry*	1,501	18.6	1,501	-18.6
Microbiology	1,656	-27	7,457	-5
Rubella/VZ/Syphilis	9,528	-2.25	9,889	-2.4

* Serology Confirmation and other specialized tests
VZ: Varicella Zoster

QUALITY MANAGEMENT SYSTEM IN THE DEPARTMENT OF LABORATORY MEDICINE:

Quality Manager:	Ms Susan Luke
Deputy Quality Officer	Ms Emily Forde*
Training Officer	Mr. Ciaran Mooney*
Health and Safety Officer	Ms Aiveen O'Malley*
POCT Co-ordinator	Ms Lorna Pentony*
LIMS Officer	Ms Jane Halligan

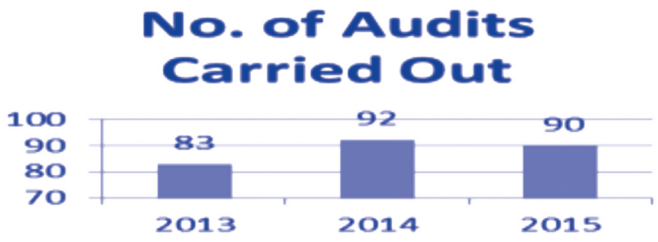
*(*duties carried out in addition to departmental position)*

The department of laboratory medicine maintained accreditation in 2015 across all disciplines ensuring all processes are compliant with the required standards and that these standards are continually maintained. The lab is accredited to ISO 15189 AND ISO 22870.

In 2015 the Rotunda laboratory became one of the first medical testing laboratories to achieve accreditation for flexible scope, this allows the laboratory to report tests as accredited without having to have an onsite assessment. This can be utilised for some processes. This in turn provides a cost saving to the laboratory as extra assessment can be financial burden on the budget.

The maintenance of the laboratory quality management system requires a continuous active program to ensure achievement and compliance with the required standards and quality of service the laboratory wishes to maintain. This is achieved through documented procedures both testing, managerial and day to day running of the laboratory being systematically reviewed. An audit calendar is drawn up at the beginning of each year. In 2015 the laboratory performed 90 audits (fig 1).

Figure 1



The laboratory submitted an Annual Report for Blood Transfusion to the Health protection Regulatory Agency (HPRA) formally the Irish Medicines Board (IMB). This report documents the activity for the previous year and reports blood usage and wastage, status of accreditation and informs of any planned future changes. The report has been submitted for 2015.

The QMS is embedded across the laboratory services and is dependent on all those working in the laboratory.

In 2015 the laboratory has endeavoured to reduce the paper trail and increase the use of Q-pulse to manage the QMS. This is turn allows a robust tracking of documentation to alert review dates, on-going tracking and trending of non-conformances.

In addition the use of Q-pulse to record and hold accurate and easily accessible records of our suppliers, training records, contracts and SLA's both historic and live information.

The laboratory has implemented a Risk Management System. The risk Management System scores actual and potential risks to the department using the HSE Risk Management Matrix. This utilizes Impact and Likelihood scores to quantify risks that may affect the department.

Risks are identified through a variety of methods but the most commonly used method in the department is risks identified and quantified using process flow analysis. Each department maps each of its processes and documents the processes using a Process Flow Diagram. Each critical process is identified and a Failure Mode Effect Analysis (FMEA) is carried out to identify risks that may result in a failure in the process. Each process is first discussed amongst staff in the department and any potential failure modes are discussed and investigated. This is essentially a brain storming session talking through any issues that may pose a risk to the system. Also any actions that may alleviate the risk are discussed and documented. Each step is then scored using the Impact by Likelihood scoring tool. We also add an additional score Detectability which allows us to score and rank risks based on their risk Priority Number (RPN). The RPN is calculated by multiplying Impact by Likelihood by Detectability (IxLxD). This allows us to priorities risk and manage accordingly.

We are committed to providing a service of the highest quality and shall be aware and take consideration of the needs and requirements of the users which is reflected in our quality policy.

HAEMATOLOGY and BLOOD TRANSFUSION:

Consultant:	Dr Fionnuala Ní Áinle (Adult Haematology) Dr Melanie Cotter (Paediatric Haematology)
Chief Medical Scientist:	Ms. Deirdre Murphy
Senior Medical Scientists:	Mr Ciaran Mooney, Ms Deirdre O'Neill Ms Emily Forde
Medical Scientists:	Ms Liliana Rasidovic Ms Edel Cussen (commenced a 3 year career break December 2013) Ms Noreen Brady (commenced year career break in August 2015) Ms Aileen Carr (commenced maternity leave in March 2015), Ms Michelle Burns, Ms Deirdre Corcoran Ms Elaine O Leary (locum post; commenced June 2015) Ms Christine Clifford (Locum post commenced Sept 2015)
Laboratory Aide:	Ms. Karen Fennelly

1. General Overview, and developments during 2015

The laboratory submits an Annual Report for Blood Transfusion to the Health Products Regulatory Authority formally the Irish Medicines Board (IMB). This report documents the activity for the previous year and reports blood usage and wastage, status of accreditation and informs of any planned future changes. The report has been submitted for 2015. The annual report for Blood Transfusion for 2014 was submitted to the Irish Medicines Board (IMB). This was satisfactory and no visit was deemed necessary

The Haematology laboratory validated and introduced a capillary electrophoresis method for the diagnosis of Haemoglobinopathies in adult and newborn patients. This new technology was awarded INAB accreditation in October 2015

2. Training and development initiatives

Since 2012 the department in conjunction with Dublin Institute of Technology, Kevin Street, has provided third year in-service training for Medical laboratory Science Degree students. Blood Transfusion laboratory in service training was again provided in 2015.

The department provides training of non routine staff for the on call service. The department of laboratory medicine has introduced monthly multi disciplinary case review where interesting cases from each department are reviewed.

3. In-house workload (Table 3)

A recent review of Rotunda Hospital guidelines for investigation of acquired and inherited Thrombophilia has resulted in testing being performed in line with international guidelines and best practice. Numbers are consistent with previous year 2014 when the new guidelines were implemented

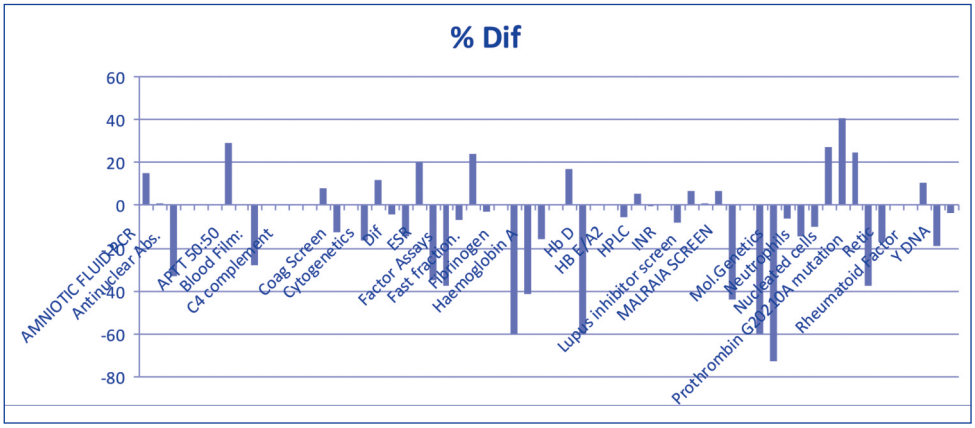
Table 3: Haematology in-house workload

Test Name	2014	Change	2013
Full blood count	42,468	-3.0	43,779
Manual differential	1,811	-4.0	1,886
Manual Platelet count	9	N/A	12
Reticulocyte count	456	N/A	460
Coag Profile (PT, APTT, Fibrinogen)	2,662	-12.5	3,043
Lupus anticoagulant	175	+6.7	164
Kleihauer[1]	457	-6.0	488
Haemoglobinopathy	3,143	+10.0	2,847
Malaria	16	N/A	15
Thrombophilia	53	10.4	48
Total tests	**57,889**	**-3.4**	**59,909**

1 Kleihauer tests performed on post-delivery patient samples for confirmation of flow cytometry results are not included.

Table 4: Variations in testing in 2015 compared with 2014.

(NOTE: Some tests with small numbers have been removed as these differences are not statistically significant)



4. Referred workload (Table 5)

TABLE 5: COMMON HAEMATOLOGY REFERRED TESTS

TEST	TESTS	% CHANGE OVER 2014
Anti Cardiolipin/ 2 Glycoprotein	279	1
Thrombophilia (referred component)	152	5
Haemoglobinopathy confirmation	121	-15
Lymphocyte subsets	108	-0.9
Factor Assays	24	-23
Cytogenetics	415	-16.16
Molecular Genetics/Microarray	108	20
YDNA	39	-19
Genetic Antenatal screening	154	15
ESR	30	N/A
D-Dimer	19	N/A
Anti-Xa assay	10	N/A
Factor V Leiden	9	N/A
Anti-D quantitation	69	-33
Total Referred tests	**1537**	**-3.4**

CG: cytogenetics; PCR: polymerase chain reaction; ESR: Erythrocyte sedimentation rate

5. Blood Group Serology (Tables 6 and 7)

A decrease in Blood Grouping was observed as consequence of a fall in activity during 2015. The introduction of the two sample rule in 2013 is now embedded for issue of group specific blood products for both adult and paediatric patients..The increase in phenotyping is a combination of patient phenotyping as part of antibody investigation /exclusions and increase in blood stock typing in an effort to reduce the phenotyped blood stock ordered from the IBTS.

TABLE 6: BLOOD GROUP SEROLOGY WORKLOAD

Test Name (Most Common Tests)	2015	% Change	2013
ABO Group	24,233	-9	26,630
Rhesus (Rh) Group	24,233	-9	26.63
Antibody Screen	17,876	-1.9	18,218
Direct Coomb's Test	3,607	-16.8	4,335
Antibody Identification panel	605	13.7	532
Phenotype	831	70.6	487
Rh D antibody screen	1,518	-1.7	1,545
Antibody Titre	96	-6.8	103
Antibody Elution	48	-21.3	61
Weak/Partial RhD Typing	44	-30.2	63
Flow Cytometry	701	-10.6	784
Total tests	**32,362**	**-9.1**	**35,582**

TABLE 7: DETAILS OF RED BLOOD CELL ALLOANTIBODIES DETECTED

Antibody	Number	Antibody	Number
D	2	Anti-H (Bombay)	1
E	8	Fya	2
C + D	4	M	22
Cw	3	M+E	1
c +/- E	6	M+ Undefined specificity	1
D+C+ Auto	1	N + Chido Rodgers	1
Fya + E	1	S	3
e+/-C	2	s	2
K	3	Anti-S + Jkb	1
Undefined specificity	10	Anti-Lua	1
Le a+b	3	Anti-Lea +C	1
Lea	10	Lua	1
Leb	2	Cr1 related antibody	1
Auto Anti-E + undefined specificity	1	Autoagglutinin	2

Total: 97

6. Blood transfusion

There continues to be modest decrease in the number of patients transfused overall. Another increase in the cross-match to transfusion ratio was observed in 2015 (Table 8), reflecting perhaps the complexity of the patient population and a change in the grading of placenta praevia. The MBOS is due for review in the coming year and with the introduction of new clinical guidelines for crossmatching in this patient cohort we hope to reduce the crossmatch transfusion ratio. Blood wastage remains low, but the shortage of an O RhD negative blood supply in the IBTS on a couple occasions did impact on this. It is hoped that a reduction in the C:T ratio will aid in reducing this as well.

Novo seven was used for one paediatric patient transferred from another hospital for a case of Neonatal Haemochromatosis.

Blood was imported from the UK for one adult patient of the Oh Bombay blood group, as no suitable blood was available in the Irish donor population. This blood was not required for the patient and was later returned to the IBTS where it can be utilized in the investigation of antibodies to high incidence antigens

TABLE 8: BLOOD TRANSFUSION WORKLOAD

Test	2015	Change	2014
Group and save	7691	1.6	7573
Crossmatch	1200	-24.9	1599
Patients crossmatched	512	-9.3	565
Red Cell Units transfused	424	-38	684
Patients Transfused	191	-43.8	340
Crossmatch: transfusion ratio	2.7:1		1.7:1
IUT (red cell units)	9	N/A	15
Pedipack units transfused	118	N/A	119
Transfused Components	**2015**	**Change**	**2014**
Plasma (adult)	67		66
Plasma (paediatric)	21		25
Platelets (adult)	7		18
Platelets (paediatric)	38		39
Fibrinogen (adult)	70	18.6	57
Fibrinogen (paediatric)	19	-51.3	39
Novoseven	3* 1 patient		0
Anti-D	2901		2729
Wastage:	2015	Change	2014
Red cell (concentrated)	4.50%		2.60%
Platelets	6.45%		0%
Plasma	16.50%		18.50%

7. Haemovigilance

The haemovigilance officer (HVO) continues to provide extensive education on the process of blood transfusion to clinical staff. During 2015, 230 Nurses, Midwives and Student Midwives and 84 non-consultant hospital doctors attended Haemovigilance Education.

Once again, a very high standard was maintained in haemovigilance, with 100% traceability of all blood components issued.

In 2015 1.7% of mother who delivered babies > 500g required a blood transfusion, the most common indication for blood transfusion in the Obstetric setting remains post-partum haemorrhage. In 2014 there was an initiative to reduce administration of 2 units of red Cells to 1 unit where appropriate this led to a 20% reduction for 2015(Post-natal Transfusions- 80% received 2 units , 20% 1 unit) we hope this trend continues.

There has been an overall reduction in neonatal transfusion – this has mainly been achieved through the work of multi-disciplinary team. The most significant changes have been in reduction of donor exposure of babies <1000g from a mean of 2 donors to a mean of 1 donor. The incidence of transfusion for babies > 1500g has decreased by 50% over the last 5 years.

The Rotunda Hospital Haemovigilance Department maintains close links with the National Haemovigilance Office (NHO) with the continuing aim of maintaining quality of care through regular audit and education.

The HVO reports serious adverse events (SAE) and Serious Adverse Reactions to the NHO. Three SAEs and One SAR were reported to the NHO during 2015, there were no adverse outcomes for patients. SAE's pertained to delayed and missed administration of Anti-D immunoglobulin. The recently revised clinical pathway managing patients who require Anti-D for prevention of RhD sensitization continues to be under review, and specific SAE numbers related to this process remain low as a consequence, compared with previous years.

Implementation of a programme of RAADP administration to RhD negative women was launched in July 2013. Audit and evaluation of the system is ongoing through the Rotunda Hospital multidisciplinary RAADP committee.
In 2015 a total of 1124patients received RAADP - average 21 patients are receiving Anti-D per week.

CLINICAL MICROBIOLOGY

Consultant: Microbiologist	Dr. Richard Drew
Specialist Registrar:	N/A
Associate Paediatric Specialist in Infectious Diseases:	Dr Wendy Ferguson
Chief Medical Scientist:	Mr David Le Blanc
Senior Medical Scientists:	Ms Niamh Cahill Mr Haydn Hammerton
Medical Scientists:	Ms Ita Cahill (0.5) Ms Patricia Baynes Ms Ann Lamont (0.5) Ms Bernadette Lennon (0.5) Ms Ellen Lennon (0.5) Ms Gemma Tyrrell.
Laboratory Aides:	Ms Grainne McDonald Mr Tom Murphy
Assistant Director of Midwifery/Nursing in Infection Prevention and Control:	Ms Marian Brennan
Infection Prevention and Control Midwife:	Ms Alva Fitzgibbon
Infectious Diseases Liaison Midwife:	Ms Mairead Lawless

TABLE 9: OVERALL MICROBIOLOGY WORKLOAD IN 2015 COMPARED WITH 2014

	2015		% Change	
	Tests	Specimens	Tests	Specimens
Testing in-house				
General Microbiology	78775	42334	-3.62	-3.45
Virology/Serology	57651	14071	73.91	2.49
Total tested in-house	136426	56405	18.75	-2.03
Referred				
Syphilis Screening	9889	9528	-2.25	-2.43
Confirmation and other specialist tests referred externally	7457	1656	-4.82	-27.08
Total Referred	**18340**	**12539**	**-53.47**	**-48.59**

GENERAL MICROBIOLOGY WORKLOAD

The activity and complexity of the Microbiology workload and that of the Neonatal Unit, contributed significantly to continuing high workload (summarised in Table 9 and detailed in Table 19).

Overall, the workload was slightly down (4%) on 2014, which can be reflected in the reduction of admissions and general reduction in hospital activity. The total swab numbers were down by 2.78% with screens down by a total of 5.81%. Total urine samples for culture and sensitivity were also down by 7%. Pregnancy testing continues to decline in the laboratory as this procedure is generally tested at the patient bedside. The laboratory continues to supply, control and maintain the pregnancy sticks supplied to the wards. CSF numbers were down significantly by 33% on 2014 and blood culture numbers also dropped by 6% on 2014. Sample numbers from the Mortuary increased in 2015 and continue to rise as the department expands. Specimens for testing for *Chlamydia trachomatis* PCR were up (7%), with a similar rise in testing for *Neisseria gonorrhoea*. New PCR testing was introduced on the GeneXpert for C. difficile, Influenza and MRSA/SA on positive blood cultures. In total 274 tests were performed on the GeneXpert, which although may cost the department financially, it is the wards that benefit from the rapid (2 hour) turnaround time for these tests.

The department continues to enjoy full accreditation (ISO: 15189) in Serology, Andrology and General Bacteriology and was again inspected in 2015, with all non-conformities raised cleared within the 1 month time frame. As a result of continued quality control within the department IQA samples were slightly up by 7.64% on 2014.

SURVEILLANCE SCREENING

In line with best practice and in the interests of patient safety, screening for multi-drug resistant organisms (MDROs) including MRSA, VRE, ESBLs and CRE in identifiable 'at risk' groups in adults and neonates continued in 2015.

2015 saw continued surveillance screening for the entire hospital and improved reporting of figures to hospital committees. This included figures for adult & paediatric blood cultures and screening of the NICU for resistant Coliforms, VRE, pseudomonas and MRSA. All these figures are presented at the NICU and infection control meetings, which take place quarterly.

Also presented at these meetings are any infection clusters (Influenza, Norovirus or C. *difficile*), EARSS data and resistance patterns on various antibiotics.
Surveillance of the adult blood cultures saw a continuation of contamination among the positive blood cultures (2.89%), which is down on 2014 and most significantly is <3%. This is the first time since rates have been measured that it fell below 3%. Contamination rates among the neonatal patients continues to be <3%. Data sharing between the other two Dublin maternity hospitals continued in 2015 and has proved very useful when collating data.

The Laboratory works as part of a multi-disciplinary team and provides the surveillance data to the Neonatal Infection Prevention and Control group, which helped to enable the group to identify changes and practices, which were required in order to reduce the incidence of contaminated samples and healthcare associated infection (HCAI).

During 2015 the rectal screening of the NICU yielded 4 Gentamicin resistant Coliforms, 24 AmpC producing Coliforms, 4 ESBL producing Coliforms and 7 *Pseudomonas spp*. There were no CRE isolates in 2015. These figures are consistent with 2014.
Screening for MRSA continued, yielding a total of 20 positive patient results in 2015, 2 of which were in the NICU. These results are similar to previous years and the Rotunda continues to enjoy low rates of MRSA among patients due to its policy of 'seek and destroy'.

Quarterly reporting of EARS organisms continued in 2015 and results were as follows. 20 *E. coli*, 1 *Ent. feacalis*, 1 *S. aureus* (MRSA), 1 *Kleb. Pneumonia*, 0 *Ps. Aeruginosa*, 1 *Group A streptococcus* and no *Ent. feacium or S. pneumoniae*. There was no case of invasive infection with multiple antimicrobial resistant Gram-negative bacilli in the Neonatal Unit throughout 2014 and this continued in 2015.

TABLE 10: CLINICAL MICROBIOLOGY WORKLOAD IN 2015 COMPARED WITH 2014 SPECIMEN TYPES AND TEST NUMBERS

Specimens	2015	% Difference over 2014
Urine	19571	-7.09
Swabs	9134	-2.78
CSF	157	-33.19
Blood Cultures	2786	-6.32
GeneXpert Total	274	Not tested in 2014
Mortuary	211	21.97
Semen	2220	14.97
Pregnancy Tests	64	-47.11
Screening	4264	-5.81
Chlamydia trachomatis/ N. gonorrhoea PCR	2765	7.30
IQA	888	7.64
Total specimens	**42334**	**-3.45**
Tests		
Urines	31217	-8.31
Swabs	18268	-2.78
CSF	490	-35.19
Blood Cultures	2786	-6.32
Mortuary	211	21.97
MRSA Screen	4090	-2.94
Rectal Screen	6657	-8.31
Semen	5319	14.04
Antimicrobial Cards	2597	-4.28
Pregnancy Tests	64	-47.11
Chlamydia trachomatis	2765	7.3
Neisseria gonorrhoea	2765	7.34
GeneXpertMRSA/*BA*	196	Not tested in 2014
GeneXpertC. diff	132	Not tested in 2014
GeneXpert*Influenza*	330	Not tested in 2014
IQA	888	7.64
Total Tests	**78775**	**-3.62**

VIROLOGY/SEROLOGY WORKLOAD

The virology/serology for the Rotunda IVF Clinic continues to be performed in the virology/serology section of the Microbiology laboratory and is down by roughly 10%. Under the EU Tissue Directive, it is a legal requirement that this testing can be only performed in a laboratory that is fully accredited to ISO. The laboratory was again inspected by INAB in 2015, and continues to enjoy ISO: 15189 Accreditation.

The number of antenatal booking bloods tested is similar with the number for 2014; however the overall in-house virology testing has increased dramatically on 2014. Overall virology testing is up by 74% for virology tests and 2.49% for virology samples. This is mainly due to the fact that the Serology department is now performing virology tests for Med-Lab pathology, generating valuable revenue for

the laboratory. Also, the department repatriated both VZV IgG and Rubella IgG testing from the NVRL, which was cost neutral. CMV IgG testing is down by 10.19%, which reflects a drop in Rotunda IVF blood testing. The number of specimens referred for testing at outside laboratories is down (49%) and tests are down by 54%, reflecting the increase in on-site testing.

Validation began in late 2015 for Syphilis (TPE) testing on the Abbott Architect and has been fully operational since January 2016. Syphilis screening is expected to be assessed for ISO:15189 accreditation in April of 2016. Money was sourced from the HSE to perform these tests and so there is no cost to the hospital. In addition, Biomerieux provided a free upgrade of the mini-vidas analyser in order to carry out confirmatory testing for Rubella IgG, VZ IgG and Hep B core. This allows the department to report all tests in a timely manner and prevents unnecessary and time-consuming dispatch of confirmatory testing. The addition of all these tests in-house is of great benefit to the Hospital and more importantly the patient. A full detail of Virology/Serology testing is represented in Tables 11 &12

TABLE 11: VIROLOGY/SEROLOGY WORKLOAD (TESTS), 2015

Tested in-house	2015	% Change over 2014
HIV	12637	5.34
HbsAg	12707	6.21
Hepatitis B Core	3432	33.18
HepC Antibody	6312	22.4
CMV IgG	1304	-10.19
Rubella IgG	10353	-1.29 (Performed in NVRL)
VZV IgG	9324	-1.48 (Performed in NVRL)
Rubella IgG - vidas	776	Performed in NVRL
Hep B core - vidas	175	Performed in NVRL
VZ IgG - vidas	631	Performed in NVRL
Total	**57651**	**73.91**
Specimens Referred		
Syphilis Screening SJH		
TPE	9528	-2.43
RPR	147	0.68
TPEM	68	15.25
TPPA	146	-0.68
Sub Total	**9889**	**-2.25**
NVRL & others		
Confirmation and other specialist tests referred externally (MA)	-34.39	994
Other Referred tests (ME)	7457	-4.82
Total referred	**18340**	**-53.47**

ACCREDITATION WORKLOAD

Work involved in continuation of the ISO: 15189 2012 standards continue to be both challenging and time consuming. Batch acceptance (Internal Quality Assurance) of all reagents, media, antibiotics and kits continues to be an important part of the weekly management of the department. It is an essential part of providing a quality service and Internal Quality Assessment increased in 2015; however this does not capture all the work involved. A lot of IQA performed, in particular on analysers, is not captured on the LIMS but is stored on either hard copy or soft copy.

Accreditation also involves updating standard operating procedures (SOPs) on a continual basis, keeping a close eye on what is international best practice. Methods and procedures are forever evolving, requiring validation or verification of new test methods. New media and/or reagents/kits come on-stream from time to time and again require validation or verification before they can be employed.

Continual training for non-microbiology on-call staff and either new staff members or returning staff members form long-term leave is always a challenge. Proficiency testing and competency testing is an important part of a scientist training log. The Microbiology department continues to strive towards international excellence and to this end has ISO: 15189 for nearly 100% of its repertoire of tests.

ANDROLOGY WORKLOAD

Semen analysis for Infertility tests and Post vasectomy testing continued into 2015 and was fully accredited to ISO: 15189 in late 2015. The SQA-V Gold instrument for analysing Semen was replaced with more up-to-date and user friendly software. This computer assisted semen analysis (CASA) has reduced the cost of performing semen for infertility significantly making it cost neutral. Semen analysis for infertility is by appointment only on the days Monday through Wednesday from 9am to 1pm and a maximum of 10 appointments are made for each morning and as a medical scientist is specifically assigned to carry out the duties; this adds pressure to the rest of the department. Sample numbers for infertility were up significantly in 2015 (11%), with overall numbers for semen analysis up by 15%, reflecting an increase in samples for post vasectomy testing. These samples are less time consuming and do not require immediate testing and therefore can be batched together allowing better use of the scientist time. All Andrology testing provides valuable income for the laboratory and it is hoped that in 2016 the repertoire of tests can be increased and the service expanded. It is vital that a room be found within the hospital to allow patients to produce samples on-site as Semen for infertility should ideally be tested within 1 hour of been produced.

CHANGES IN LABORATORY EQUIPMENT AND TESTING PROCEDURES

Computer Assisted Semen Analysis (CASA)

Replacement of the SQA-V Gold instrument, for the analysis of semen for infertility with a new, state-of-the-art software package. The sperminator uses a combination of video clips from a mounted camera on a microscope to track sperm for motility and perform a sperm count, allowing for an accurate analysis of the patients sample.

VITEK MS

VITEK MS is a bacterial and fungal identification system, which uses the matrix-assisted laser desorption/ionisation (MALDI) mass spectrometry. It is a rapid method for microorganism identification from clinical cultures. The VITEK MS analyses material from microbial cultures to provide organism identification. The VITEK MS was purchased for the department by the HSE in December 2015 and won't be fully operational until early 2016. It will revolutionise the way in which the department currently identifies microorganisms. At present it takes at least 24 hours to identify many bacteria and yeast, which can be costly. The VITEK MS, will identify bacteria and yeast in a matter of minutes at a fraction of the cost and so ultimately will reduce laboratory costs and have significant impact on patient management. The VITEK MS has huge potential for research and development and it is envisaged to purchase the research module for the instrument in 2016.

VITEK MS comes with software (MYLA) allowing all the Biomerieux analyzers to be connected to this one high tech software package. The VITEK MS, VITEK 2 Compact and BacTAlert 3D instruments can all be interfaced through this software package, reducing the high costs of analyser interfacing. MYLA can be accessed remotely, allowing easy access to patient results and releasing to the LIMS in a timely manner.

GeneXpert

The GeneXpert was fully operational in 2015 and was also fully accredited to ISO: 15189, for *Influenza, C. difficile and MRSA/SA* (Positive Blood Cultures). These tests are now offered 24 hours a day, 7 days a week and significantly improve the management of patients and particularly that of turnaround times. The GeneXpert is a valuable asset to the department and it is hoped to expand the repertoire of tests in 2016, particularly in the area of *Group B streptococcus* in patients with PPROM. Currently the Rotunda offer *C. difficile* testing to the Children's University Hospital Temple Street and in return they analyse our stool samples for routine culture and sensitivity.

Mini-Vidas

An audit was performed on repeat testing for VZV IgG and Rubella IgG on the mini-vidas and the number of repeat tests has dropped significantly allowing for prompt patient results and significant reduction in cost.

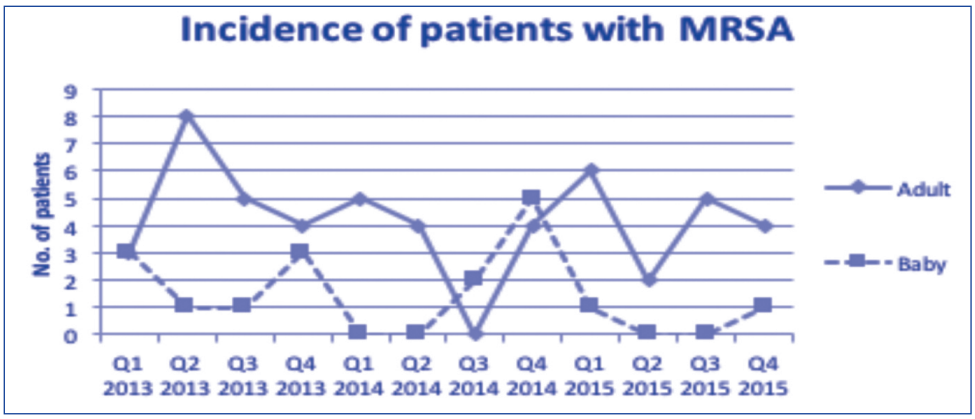
Liaison

The liaison was interfaced in 2015 with the LIMS reducing the time spent entering results manually onto the APEX computer system. This has eliminated the likelihood of transcription errors and significantly improved the scientist's workload, allowing for better time spent elsewhere. Also, the work performed on the Liaison was streamlined making it more efficient and cost productive.

Clusters of unusual infection and investigation of these outbreaks

MRSA
There were no clusters of MRSA in 2015

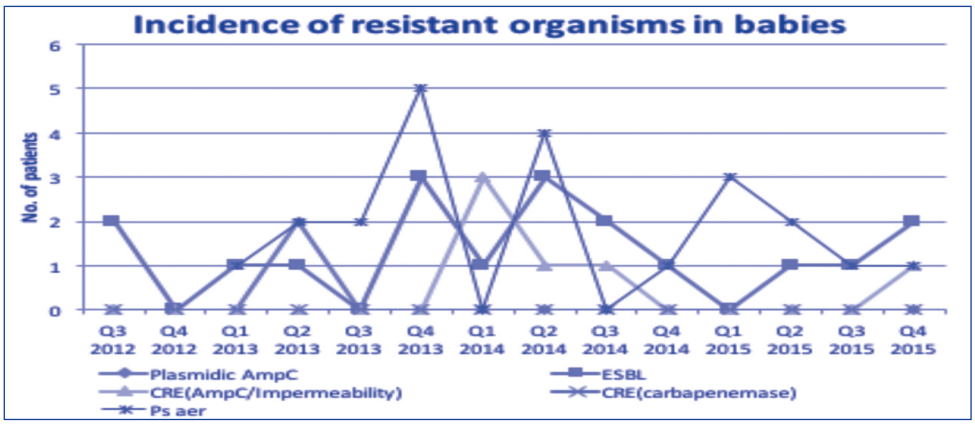
Figure 2:



Pseudomonas aeruginosa

There was 7 *Pseudomonas aeruginosa* isolated from the NICU in 2015. This was a slight increase from 2014. Screening continues using the latest Chromogenic ID agar to help in the identification of *Pseudomonas aeruginosa* & improve TAT. The laboratory remains vigilant to identify any isolates in clinical specimens from the NICU and the situation is being kept under review.

Resistant Gram Negative Bacilli
Figure 3



Influenza & Norovirus
Influenza and Norovirus continue to be a challenge for hospital staff and patients throughout the country. Luckily there were no major clusters of either within the Rotunda. There were no reported cases of Norovirus for Rotunda patients in 2015.

There was a total of 13 Positive Influenza A (3 of which were H1N1) and 13 Influenza B in 2015. Quarter 1 and Quarter 4 remain the busiest times for influenza, when national numbers are at their peak.

Clostridium difficile
There were no cases of *C. difficile* for Rotunda patients in 2015.

TABLE 12: SEROLOGY TESTING

	2015 Tests	2014 Tests	Difference Nos	% Change
VZV IgG	9324	9464	-140	-1.48
VZVR	631	3	628	
Total VZ IgG	**9955**	**9467**	**488**	**5.15**
Rubella IgG	10353	10488	-135	-1.29
RUBGVR	776	0	776	
Rubella IgG	**11129**	**10488**	**641**	**6.11**
Confirmatory & misc tests	**994**	**1515**	**-521**	**-34.39**
Total NVRL tests (MA)	**994**	**21467**	**-20473**	**-95.37**
TPE	9528	9765	-237	-2.43
RPR	147	146	1	0.68
TPPA	146	147	-1	-0.68
TPEM	68	59	9	15.25
Total TP (SJH)	**9889**	**10117**	**-228**	**-2.25**
Tested In-House				
HIV	12637	11996	641	5.34
Hep B	12707	11964	743	6.21
Hep B core	3432	2577	855	33.18
Hep C	6312	5157	1155	22.4
CMV	1304	1452	-148	-10.19
HBCVR	175	1	174	
Total	**36567**	**33147**	**3420**	**10.32**
Total Serology In-House	**57651**	**33150**	**24501**	**73.91**
Total Samples In-House	**14071**	**13729**	**342**	**2.49**
Total Tests on MA samples	**68534**	**64734**	**3800**	**5.87**
Referred Tests (ME)	7457	7835	-378	-4.82
Referred Specimens (ME)	1656	2271	-615	-27.08
Total Referred Tests	**18340**	**39419**	**-21079**	**-53.47**
Total Referred Specimens	**12539**	**24391**	**-11852**	**-48.59**
Total Tests	75991	72569	3422	4.72
Total Specimens	26610	38120	-11510	-30.19

TABLE 13: MICROBIOLOGY TESTING

	2015		2014		Difference numbers		% Change	
	Tests	Specimens	Tests	Specimens	Tests	Specimens	Tests	Specimens
MSU								
Microscopy's	11413		12749		-1336		-10.48	
MSU Culture	11450		12793		-1343		-10.5	
Total MSU	22863	11450	25542	12793	-2679	-1343	-10.49	-10.5
First visit	8354	8121	8504	8271	-150	-150	-1.76	-1.81
Total Urine	**31217**	**19571**	**34046**	**21064**	**-2829**	**-1493**	**-8.31**	**-7.09**
Pregnancy Tests	**64**	**64**	**121**	**121**	**-57**	**-57**	**-47.11**	**-47.11**
Blood Culture (sets)	2786	2786	2974	2974	-188	-188	-6.32	-6.32
Mortuary samples	211	211	173	173	38	38	21.97	21.97
GeneXpert Influenza	330	110	3	1	327	109		
GeneXpert C. diff	132	66	2	1	130	65		
GeneXpert MRSA/SA	196	98	44	22	152	76		
Total GeneXpert	**658**	**274**	**49**	**24**	**609**	**250**		
CSF Culture	157		235					
CSF Gram	153		230					
CSF Cell Count	152		233					
CSF Diff	28		58					
Total CSF	**490**	**157**	**756**	**235**	**-266**	**-78**	**-35.19**	**-33.19**
Semen Volume	2220		1931		289			14.97
Semen Count	2207		1928		279			14.47
Semen Motility	876		789		87			11.03
Semen Morphology	16		16		0			100
Total Semen	**5319**	**2220**	**4664**	**1931**	**655**	**289**	**14.04**	**14.97**
CT PCR	2765		2577		188			7.3
NG PCR	2765		2576		189			7.34
Total PCR	**5530**	**2765**	**5153**	**2577**	**377**	**188**	**7.32**	**7.3**
IQA	**888**	**888**	**825**	**825**	**63**	**63**	**7.64**	**7.64**

	2015		2014		Difference numbers		% Change	
	Tests	Specimens	Tests	Specimens	Tests	Specimens	Tests	Specimens
MRSA	4090	2045	4214	2107	-124	-62	-2.94	-2.94
Rectal	6657	2219	7260	2420	-603	-201	-8.31	-8.31
Total Screens	**10747**	**4264**	**11474**	**4527**	**-727**	**-263**	**-6.34**	**-5.81**
Swabs	**18268**	**9134**	**18790**	**9395**	**-522**	**-261**	**-2.78**	**-2.78**
Antimicrobial Susceptibilities	**2597**		**2713**		**-116**		**-4.28**	
Total	**78775**	**42334**	**81738**	**43846**	**-2963**	**-1512**	**-3.62**	**-3.45**

PUBLICATIONS:

- RJ Drew, P Stapleton, H Abu, E Healy, W Ferguson, C DeGascun, J O'Gorman, M Eogan. Pregnancy Outcomes of mothers with detectable CMV-specific IgM antibodies: A three year review in a large Irish Tertiary Referral Maternity Hospital. *Infectious Diseases in Obstetrics and Gynecology* 2015: 218080

- M Meehan, M Cafferkey, S Corcoran, A Foran, N Hapnes, D LeBlanc, C McGuinness, U Nusgen, N O'Sullivan, R Cunney, RJ Drew. Real-time polymerase chain reaction and culture in the diagnosis of invasive group B Streptococcal disease in infants: a retrospective study. *European Journal of Clinical Microbiology and Infectious Diseases 2015*; 34: 2413-2420.

- RJ Drew, Z Fonseca-Kelly, M Eogan. A retrospective audit of clinically significant maternal bacteraemia in a specialist maternity hospital from 2001 to 2014. *Infectious Diseases in Obstetrics and Gynecology 2015*: 518562

- AD Irwin, RJ Drew, P Marshall, K Nguyen, E Hoyle, KA MacFarlane, HF Wong, E Mekonnen, M Hicks, T Steele, C Gerrard, F Hardiman, PS McNamara, PJ Diggle, ED Carrol. Etiology of childhood bacteraemia and timely antibiotics administration in the Emergency Department. *Pediatrics2015*; 135(4): 635-642.

- RJ Drew, TS Cole, W Newman. How to use... eye swabs. *Archives of Diseases of Childhood Education and Practice 2015*; 100(3): 155-161.

- RJ Drew, EE Ormandy, K Ball, SE Lambert, S Paulus, NJ Williams, NA Cunliffe. Antimicrobial susceptibility patterns among Extended spectrum beta-lactamase producing Enterobacteriaceae in a large paediatric hospital in United Kingdom. *Journal of the Pediatric Infectious Diseases Society 2015* 4(4): 147-150.

BIOCHEMISTRY:

Consultant:	Prof Philip D Mayne
Chief Medical Scientist:	Ms Gráinne Kelleher
Senior Medical Scientist:	Ms Sharon Campbell
Medical Scientists:	Ms Lorna Pentony
	Ms Miriam Blesa
Clinical Scientist:	Ms Aiveen O'Malley
Laboratory Assistants:	Mr Paul Reilly

1. General Overview, and developments during 2015
During 2015, the Biochemistry department continued to provide an extensive repertoire of investigations required for the care of women and infants, with participation in the relevant External Quality Assessment programmes.

2. Staffing
Both Sharon Campbell and Miriam Blesa returned from Maternity leave in November. Stephanie Lynch, a long term locum was appointed to a Medical Scientist post at Temple Street Children's University Hospital.

3. In-house workload
The total number of Biochemistry tests requested during 2015, comparing test for test increased by 1.6%, offsetting the decrease of 0.5 % in 2014. This increase was partially due to the inclusion of creatinine measurement in the renal profile. However, there was a general increase of approximately 1.0% in routine biochemistry testing.

The repertoire of tests performed in-house did increase due to the repatriation of a number of relatively high and low volume tests. These included AMH, Bile acids, blood lactate, γ-glutamyltransferase (GGT) , LDH and CK. These will all be included in the scope for INAB accreditation in 2016.

Twenty percent of the investigations were performed 'On Call' with 40% of these coming from NICU and the Emergency Room. There was an overall 12% increase in the number of requests for CRP but this increase rose sequentially through the year. Over a third of these requests were performed 'On Call' and this is likely to further increase during 2016 with the roll out of the septic work-up.

4. Referred workload
Table 1 shows that there was an 18% increase in the amount of samples referred to external laboratories for analysis, comparing like for like. However, there was an overall 47% reduction in the total number of samples referred as a number of tests were repatriated back into the laboratory. These included AMH, Bile acids, CK, lactate, LDH and GGT. This resulted in a significant cost saving to the hospital and an improvement in the turnaround time to resulting. This was only possible as we were able to maintain the current staffing levels and partially cover maternity leave with locums.

In late 2015, the Hospital entered a service level agreement with Temple Street to refer all hypoglycaemic work-ups. This has significantly reduced the time around time for the completion of this investigation from over a week to less than 24 hours, greatly improving the management of babies presenting with hypoglycaemia.

TABLE 14: Referral Workload in 2015 compared with 2014

Test	2014	2015	Difference	% Difference
17OH Progesterone (Adult)	10	15	5	50
25(OH)Vitamin D	76	133	57	75
Acylcarnitine Profile	43	48	5	11.6
Alpha Feto-Protein (Adult)	21	20	-1	-4.8
Ammonia	53	67	14	26.4
Androstenedione	49	47	-2	-4.1
Blood Amino acids	73	74	1	1.4
CA 19-9	60	86	26	43.3
CEA 64	89	25	39.1	
Cortisol (Adult)	24	16	-8	-33.3
DHEAS	20	27	7	35
Free T3	14	57	43	307.1
Insulin/C-Peptide	56	116	60	107.1
Iron 21	40	19	90.5	
Lamotrigine	24	32	8	33.3
Phenobarbitone (Paediatric)	44	35	-9	-20.5
Primark Test	17	1	-16	-94.1
PTH (Adult)	33	38	5	15.2
PTH (Paediatric)	13	23	10	76.9
Thyroid Receptor Ab (TRAb)	172	162	-10	-5.8
Tissue TransglutaminaseAb	13	15	2	15.4
Tri-iodoThyronine (T3)	27	15	-12	-44.4
Troponin- I	1	8	7	85.7
Troponin-T	57	22	-35	-61.4
Urine Drug screen	167	169	2	1.2
Urine Organic acids	87	116	29	33.3
Zopiclone (Urine)	27	30	3	11.1
Total	**1266**	**1501**	**235**	**18.6**

HISTOPATHOLOGY DEPARTMENT

STAFF

Consultants:	Dr. Deirdre Devaney, Dr Eibhlis O'Donovan, Dr Emma Doyle
Locum Consultant:	Dr Sean O'Briain
Chief Medical Scientist:	Colma Barnes
Senior Medical Scientist:	Ms Phil Bateson,
Medical Scientists:	Ms Aderanti Morenigbade, Mr Michael Smith, Ms Tokiko Kumasaka, Ms Miriam Hurley Lorna Thomas
Laboratory Aide	Fiona Minogue
Mortuary Manager	Bill O Neill
Anatomical Technician	Martin Fitzpatrick

PERINATAL PATHOLOGY

The perinatal autopsy service in 2015 was similar to the previous year (90 cases compared to 97 cases in 2014). Turnaround times (TATs) for these cases remained in line with previous years in that the majority of cases were reported within the recommended 8 weeks allowing the clinicians to interface with grieving parents in a timely fashion. In conjunction with this, there were no organs retained in 2014.

A full autopsy includes external examination, radiology, cytogenetics and internal examination of all three body cavities (Chest, abdomen and cranium) in conjunction with placental examination. Limited autopsy examinations are in keeping with the wishes of the parents, as expressed on the consent form eg, external examination and cytogenetics only or examination of a single body cavity – as in a case of a known congenital heart disease, the family may only wish to have the chest cavity opened. We endeavour to examine all placentas associated with fetal demise, as in a large number of cases the placenta will reveal a significant pathology which may be the cause of death.

90 cases had some form of autopsy examination in 2015(39>500g and 51<500g) leading to overall autopsy rate (AR) of 43% (39+51=90 / 209 cases through mortuary) in comparison to 37.6% in 2014 and 47.2% in 2013. The AR (Full, limited and coroners cases) for >500g was 43%(39/90) which is slightly less than last year (46.9%).The AR for the <500g was 40% (full and limited – 51/128) which is slightly higher than last year (33%). When reviewing this figure we must remember that 40/128 weighed 10g or less and were not suitable for autopsy examination. If we were to exclude cases less than 10g we would have an autopsy rate of 58% in the <500g category. Our overall autopsy rate takes into account some external transfers and late neonatal deaths.

The AR for the Rotunda cases (perinatal mortality figures) is 46.5% (33/71cases) which is in keeping with last year (45.7%) and may reflect the continued improvements in antenatal diagnostic imaging with amniocentesis confirming congenital malformations.

There were 8 limited examinations (3 in the >500g group and 5 in the <500g group).This is in comparison to 5 and 8 last year respectively. We performed 9 post mortems for the Coroner over the period, 4 of which were for outside cases (i.e. not included in the Rotunda figures). One of these cases was performed with the assistance of the State Pathology Department. This is similar to the figure of8 last year.

As mentioned above, it is our policy to examine the placenta on all cases of perinatal deaths. There were 71> 500g, 70 of these cases had placental examination. In the case that had no placental examination, the baby had an uneventful birth and was discharged well on day 5. She died in the community on day 6 of life and a coroner's case was performed.

Tulip Classification of Perinatal Mortality:
This is a Dutch Classification system that separates cause and mechanism of perinatal mortality for the purposes of counselling and prevention. The goal of the system was to identify an unambiguous single cause system aiming to identify the initial demonstrable pathophysiological entity initiating the chain of events that irreversibly led to death based on a combination of clinical findings and diagnostic tests including pathological findings. The causes of death are stratified into 6 major categories:

1. Congenital Anomaly
2. Placenta
3. Prematurity / Immaturity
4. Infection
5. Other
6. Unknown

Cause of Death: (perinatal figures Rotunda only > 500g)
We have used a modified version of the Tulip classification to classify our causes of death.

Congenital Malformation		29	(40.8%)
Placental causes:		20	(28.1%)
Cord	7		
Parenchyma	13		
Prematurity / Immaturity		4	(5.7%)
Infection		8	(11.3%)
Other		4	(5.6%)
Unexplained		6	(8.5%)

The 29 congenital malformations included 13 babies with chromosomal abnormalities (5 had trisomy 18, 3 had Trisomy 21, 2 had Trisomy 13, 2 had Monosomy X (Turners Syndrome) and 1 had an abnormal chromosome 7 and 13).There were 3 babies with congenital diaphragmatic hernias. There were 3 babies with skeletal dysplasia (1 osteogenesis imperfect, 1 thanatophoric dysplasia and 1 camptomelicdysplasia).3 babies were born with genitourinary tract abnormalities (1 bladder outlet obstruction, 1 renal agenesis and 1 multicystic renal dysplasia). There were 2 babies born with neural tube defects (1 with anencephaly and 1 with a lumbosacral spina bifida with an Arnold Chiari malformation). And there was one baby born with a hypoplastic left heart, one baby with an omphalocoele, one baby with a congenital arthrogryposis and a baby born with Cornelia de Lange. One baby was born with non immune hydrops.

In the placental category, there were 20 deaths attributed to placental pathology. These included 7 cord accidents, 4 cases of Twin to Twin transfusion syndrome, 3 cases of a fetal thrombotic vasculopathy,3 cases of chronic uteroplacental insufficiency, 2 cases of retroplacental haemorrhage and a single case of villitis of unknown aetiology.

8 deaths were attributed to infection. Of these cases, 6 were stillbirths and 2 were neonatal deaths. 7 of these were due to ascending infection. Three of these cases cultured BHS group B at post mortem (2 stillbirths and 1 neonatal death). One case cultured diptheroids and three of these cases had negative cultures at post mortem but there was histological evidence of ascending infection with a fetal response (i.e. umbilical vessel vasculitis +/- a congenital pneumonia). In our use of the Tulip classification we have modified this category – if we were to adhere to the strict classification guidelines, these 3 cases would be relegated to the unexplained category despite the fact there is histological evidence of infection. There was one case of transplacental infection by CMV.

There were 4 neonates who were assigned to the prematurity category.

The miscellaneous category included 4 cases. One case of massive fetomaternal haemorrhage. One case of a ruptured uterus.One case of an intrauterine vascular accident leading to bilateral schizencephaly and arthrogryposis and a case of sudden unexplained death in infancy.
There were 6 cases that had no identifiable cause of death giving an unexplained rate of 8.5%(in comparison to 10% last year).Only one of these cases did not have post mortem examination but had a comprehensive examination of the placenta.

Cause of Death (<500g)

128 cases:		
Congenital Malformation:		10 (7.8%)
Placental:		33 (25.8%)
Cord:	8	
Parenchyma	25	
Infection:		22(17.2%)
Unexplained:		63 (49.2%)

This cohort shows a much lower rate of congenital malformation with ascending infection and placental categories as the most prominent cause of death. The high unexplained rate reflects the fact that a significant number of these cases only had a placental examination (i.e. did not consent to a full post mortem examination and also reflects the small size of the foetuses (0.5 grams – 499grams) with 40 (31%) of these cases being 10grams or less.

Placental Examination:

The placental work load was modified in 2012. During the year we introduced a triage system for placental examination following The Royal College of Pathologists Guidelines. A protocol detailing which placentas should be examined is available on the Labour ward and includes the examination of placentas from babies admitted to the NICU, from all mothers with pyrexia, PPROM, PET, gestational diabetes mellitus, multiple gestations and as alluded to earlier, all cases of stillbirths and neonatal deaths. These placentas are sent to the laboratory and are then stratified into two groups. Group One placentas are those that require both

gross and histological examination. Whereas Group Two placentas are those cases that gross examination only is deemed as sufficient. Should the clinician specifically require a microscopic examination of these cases, it is available on request.1500 placentas were referred to the laboratory for examination in 2015. 548 (36.5%) fulfilled the criteria for gross examination only. The remaining 952 had both macroscopic and microscopic examination. The introduction of this triage system has been very beneficial in that it has succeeded in reducing the histology workload of placental examination by approximately one third, affording us extra time to devote to the cases that require a more detailed examination. Placental examination continues to reflect a significant workload for the department.

The following Tables indicate the number of autopsies (full, limited, and Coroner's) performed in 2015.

TABLE 15: AUTOPSY WORKLOAD >500GRAMS

	Full Postmortem	Limited Postmortem	Coroners case	Total
Stillbirths	21	2	1	24
Early Neonatal deaths	5	1	8	14
Late Neonatal deaths	1	0	0	1
Total	27	3	9	39
Outside cases*	0	0	4	4
% of Total PMs	30%	3%	10%	43%

*This table includes 4 autopsies from infants born in another institution (1 stillbirth and 3 early NNDs) which are not included in the Rotunda figures.

TABLE 16: AUTOPSY WORKLOAD <500GRAMS

	Full Postmortem	Limited Post mortem	Coroners case	Total
No. of PMs	46	5	0	51
% of Total PMs	51%	6%	0	57%

TABLE 17: ROTUNDA PERINATAL MORTALITY FIGURES: 2015 (0-7 DAYS)

	No examination	Limited examination	Full Post Mortem	Coroners Cases	Total
Stillbirths	20	2	21	1	44
Early Neonatal deaths	18	1	4	4	27
Total	38	3	25	5	71

TABLE 19: LLETZ & COLPOSCOPIC BIOPSY GRADING 2015

CASES	CIN 1/HPV	Dysplasia /NOS	CIN 2	CIN 3	CGIN/AIS /Adenoca	SCC incl microinvasion	Neg	Insufficient	Total
LLETZ	72	0	83	196	9	5	15	0	380
COLCBX	676	9	325	297	4	3	124	31	1469

TABLE 18: ANALYSIS OF THE SURGICAL PATHOLOGY WORKLOAD FROM 2010-2015

Surgical data 2015 (no. & % incr. from prev year	2010 No.	2010 % Incr. from 2009	2011 No.	2011 % Incr. from 2010	2012 No.	2012 % Incr. from 2010	2012 % Incr. from 2011	2013 No.	2013 % Incr. from 2010	2013 % Incr. from 2011	2013 % Incr. from 2012	2014 No.	2014 % Incr. from 2010	2014 % Incr. from 2011	2014 % Incr. from 2012	2014 Incr. from 2013	2015 No.	2015 % Incr. from 2010	2015 % Incr. from 2011	2015 % Incr. from 2012	2015 % Incr. from 2013	2015 % Incr. from 2014
Surgicals (inc lletz & colcb)																						
Total no. of Cases:	4030	28.3	4476	11.07	4420	9.68	-1.25	4333	7.52	-3.19	-1.97	4178	3.67	-6.66	-5.48	-3.58	4512	11.96	0.8	2.08	4.13	7.99
Total no. of Specimens	5454	35.5	5571	2.15	5467	0.24	-1.87	5364	-1.65	-3.72	-1.88	5177	-5.08	-7.07	-5.3	-3.49	6046	10.85	8.53	10.59	12.71	16.79
Total no. of Tissue Blocks	1161	33	13114	12.46	12464	6.89	-4.96	9567	-17.96	-27.05	-23.24	10322	-11.48	-21.29	-17.19	7.89	11531	-1.11	-12.07	-7.49	20.53	11.71
LLETZ																						
Total no. of Cases:	784	46.3	914	16.58	752	-4.08	-17.72	465	-40.69	-49.12	-38.16	528	-32.65	-42.23	-29.79	13.54	380	-51.53	-58.42	-49.47	-18.28	-28.03
Total no. of Specimens	1160	40.4	1175	1.29	910	-21.55	-22.55	520	-55.17	-55.74	-42.86	581	-49.91	-50.55	-36.15	11.73	430	-62.93	-63.4	-52.75	-17.31	-25.99
Total no. of tissue Blocks	4906	66.1	4045	23.22	4906	0	-18.84	2296	-53.2	-62.02	-53.2	3256	-33.63	-46.13	-33.63	41.81	2637	-46.25	-56.38	-46.25	14.85	-19.01
Colcb																						
Total no. of Cases	732	177.3	991	35.38	1014	38.52	2.32	1013	38.39	2.22	-0.1	1114	52.19	12.41	9.86	9.97	1469	100.68	48.23	44.87	45.01	31.87
Total no. of Specimens	915	221.5	1214	32.68	1242	35.74	2.31	1366	49.29	12.52	9.98	1491	62.95	22.82	20.05	9.15	2319	153.44	91.02	86.71	69.77	55.53
Total no. of Tissue Blocks	916	165.5	1216	32.75	1246	36.03	2.47	1374	50	12.99	10.27	1521	66.05	25.08	22.07	10.7	2386	160.48	96.22	91.49	73.65	56.87

Infection Prevention and Control

SUMMARY OF KEY ACHIEVEMENTS DURING 2015

There was one episode of MRSA Bacteraemia

There were two episodes of Clostridium Difficile Infection in the hospital.

There were no outbreaks in the NICU affecting 4 infants

The IPC Team reviewed the outstanding actions from the review of the HIQA standards for prevention and control of healthcare associated infections done in 2014 and incorporated these quality improvement plans into their service plan for 2015

The IPC Team continues to work with the neonatal team to reduce infection

The IPC team continues to support and appreciate the role of the IPC Link midwife/nurse, as providers of local training and education and local auditors.

The IPC Team have worked with the Quality Manager, Support Services Manager and Household Manager to monitor standards of cleanliness throughout the hospital

The IPC Team have significantly supported major capital developments that have improved patient experience.

The IPC team have incorporated new national guidance on MRSA Screening into IPC Policy.

The IPC team helped with the roll out of the electronic "track and trace " system for reusable invasive medical devices(RIMDs)

SERVICE OVERVIEW

The vision of this service is to provide an environment in which our patients can receive safe and effective care, in the knowledge that appropriate measures have been put in place to minimise the risk of healthcare associated infections (HCAIs). We aim to put the woman, her child and their family at the centre of everything that we do. We can put this in place by ensuring that:

- The facilities in which care is received are kept in a manner to prevent HCAIs
- Staff are educated with respect to key elements of infection control practice
- A robust and effective Infection Prevention and Control team (IPCT) is in place to assist staff in managing and preventing HCAIs
- The Health Information and Quality Authority (HIQA) National Standards for the Prevention and Control of Health Care Associated Infections 2009 are embedded into the culture of the organisation and act as a structure on which to base our continual improvement in IPC.

The Team

During 2015 the Infection prevention and Control Team (IPCT) has undergone further change. Ms Anu Binu joined the team in a .5WTE position of IPC Midwife incorporating the role of Decontamination Coordinator.

The IPCT is represented at the following Hospital Committees

- Hygiene Committee
- Quality and Safety
- Procurement
- All Departmental Patient Safety Meetings
- Clinical Midwife Managers Meetings
- Drugs and Therapeutics
- Building Planning

Role of the Infection Prevention and Control Team

The following roles are undertaken by the IPC Team:-

- ➢ Education
- ➢ Surveillance of hospital infection
- ➢ Investigation and control of outbreaks
- ➢ Development of Infection Prevention and Control policies
- ➢ Implementation and monitoring of Infection Prevention and Control policies
- ➢ Audit
- ➢ Assessment of new items of equipment
- ➢ Assessment and input into service development and buildings / estate works
- ➢ Reference source for hospital personnel

QUALITY INITIATIVES

HIQA Standards
The HIQA PCHAI standards were reviewed and form the basis of the Service Plan and the reports for the Infection Prevention and Control Committee.

In June 2015 an unannounced inspection by HIQA was undertaken on the Lillie Suite. The inspectors also revisited the areas they had inspected in 2014 to assess if the quality improvements necessary identified last year had been addressed.

The inspection focused on:

1. Hand hygiene compliance, and the systems in place in the hospital to suppport good practice with hand hygiene
2. The cleanliness of the environment and equipment.
3. The effectiveness in implementation and monitoring in use of infection prevention care bundles.

The IPC team assisted in developing the Quality Improvement Plan to address non conformances identified.

Education

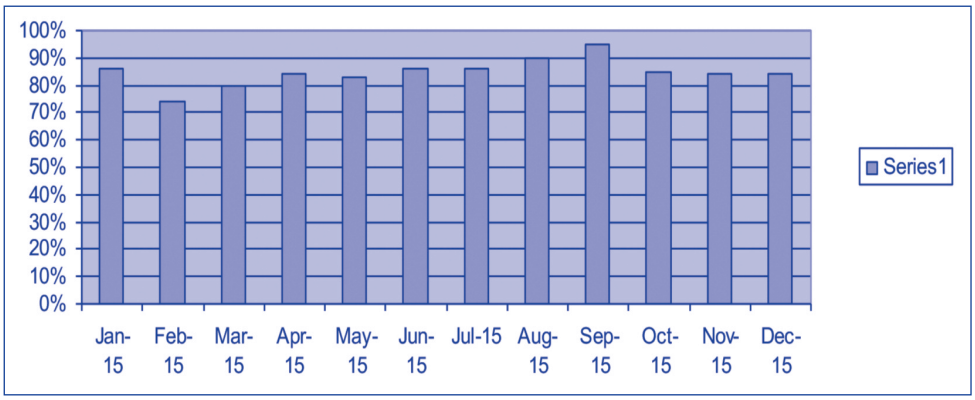
The IPCT has provided 23 general training sessions. There were also hand hygiene training sessions held at lunch time monthly from March 2015, plus 2 hand hygiene awareness days with training for all staff.

Monthly in service education programmes for midwifery nursing and care assistant staff were undertaken by the IPCT in collaboration with others including the Occupational Health Nurse and the Infectious Diseases Liaison Midwife.
This includes presentations on hand hygiene and all the standard and transmission based precautions

The IPCT also give education to all staff at induction.

Mandatory training every two years in hand hygiene is a requirement for all staff. Although the majority of this education is given directly by the Infection Prevention and Control Midwives link staff also provide this training in their own departments. Staff are also encouraged to use the HSELanD hand hygiene e learning tool and the SureWash machine.
Reports of staff who have received hand hygiene education are returned to the HSE monthly.

- % of healthcare staff with patient contact that have received mandatory induction hand hygiene training.



Guidelines

The IPCT team have incorporated new national guidance on MRSA screening and management of affected patients into IPC policy. Other policies and guidelines (10 in total) due for renewal were reviewed and updated by the Team

Environmental and Hand Hygiene Audits

The IPCT with the link midwife/nurses carried out 52 audits on the decontamination of medical equipment. The average score ranged from 84% to 98%. The target is 90%.

Hand Hygiene audits were carried out in all areas. In total 30 audits were recorded. Audits done in May and October were returned to the HSE and published as part of the National Hand Hygiene Audit. The results of these audits continue to improve on previous years and achieve the HSE target.

MAY-11	**78.60%**
OCT-11	**86.70%**
MAY-12	**83.30%**
OCT-12	**86.10%**
MAY-13	**87.60%**
OCT-13	**89%**
MAY-14	**91.40%**
OCT-14	**91.90%**
MAY-15	**92.80%**
OCT-15	**90%**

SERVICE DEVELOPMENTS

Infection Prevention and Control Committee

The IPC Committee meets quarterly and is chaired by the Master of the Rotunda. Terms of reference of the committee were reviewed. The Committee receives regular reports on infection prevention and control activities from clinical and non-clinical departments.

The IPC team (IPCT) report quarterly to IPC Committee (IPCC)
Throughout the year many changes in practice have been initiated, facilitated, supported or demanded through the work of the IPCT and IPCC.
The following detail some of the changes facilitated throughout the year.

- Introducing the electronic "track and trace system" for reusable invasive devices throughout the hospital.
- The introduction of rapid influenza PCR testing using the GeneXpert platform.
- Production of a revised MRSA screening policy which incorporates national guidelines
- Development of a quality improvement plan to address issues from the HIQA inspection

PRIORITIES FOR 2016

- Revision of the water policy to incorporate the new national guidelines.
- Production of antimicrobial consumption at a sufficient frequency to inform clinical practice
- Incorporate new national guidelines on hand hygiene into local policy
- Carry out gap analysis on National Guidelines for MRSA and C Difficile.
- Set up surveillance for deep incisional and organ space infections
- Carry out surveillance on women with antenatal and postnatal pyelonephritis
- Continue to address any outstanding issues on the quality improvement plan to rectify issues outlined at the HIQA inspection.

Ultrasound, Fetal Assessment & Prenatal Diagnosis Clinics

CONSULTANTS:

PROF. FERGAL MALONE	DR. CAROLE BARRY
DR. FIONNUALA BREATHNACH	DR. SHARON COOLEY
DR. RONAN GLEESON	DR. BARRY GAUGHAN
DR. JENNIFER DONNELLY	DR. KAREN FLOOD

MATERNAL FETAL MEDICINE FELLOW:

DR. JENNY WALSH	DR. HALA ABU SUBEIH

MIDWIFE SONOGRAPHERS:

IRENE TWOMEY CMS	DEIRDRE NOLAN CMS
GEMMA OWENS CMS (PENDING)	ALLYSON LAWLESS

HILDA O'KEEFFE (Perinatal Ireland Research Sonographer)
SUZANNE GILLEN (from December)

RADIOGRAPHERS:
MABEL BOGERABATYO
FIONA CODY (Perinatal Ireland Research Sonographer)

FETAL MEDICINE MIDWIVES:

NOLLAIG KELLIHER	CMM2	JANE DALRYMPLE	CMS
JOAN O'BEIRNES	CMM2	LAURA MCBRIDE	S/M

MARY DEERING CMM3 Antenatal Inpatients, Day Services, Incorp. Fetal Medicine

MEDICAL SOCIAL WORKER:

DEIRDRE KEEGAN	SINEAD DEVITT

ADMINISTRATION

ANITA O'REILLY	SUZANNE LARKIN	MARY MAGUIRE

2015 was another busy year in the Ultrasound, Fetal Assessment (FAU) and Prenatal Diagnosis (PND) clinics.

The core ultrasound services in The Rotunda Hospital in 2015 were provided by midwife sonographers Irene Twomey, Deirdre Nolan, Gemma Owens, Allyson Lawless, Laura McBride, Hilda O'Keeffe and radiographers Mabel Bogerabatyo, and Fiona Cody. Once again their dedication, hard work and commitment are recognised and appreciated. All patients are offered a departmental fetal anatomic survey at 20 weeks. Serial scanning services were provided for patients attending the Diabetes, Twin and Medical Clinics, as well as for patients with fetal growth restriction or fetal abnormalities. Non routine or emergency ultrasound requisitions are accommodated in addition to the scheduled workload.

DEVELOPMENTS IN 2015

- S/M Laura McBride commenced her Masters in Ultrasound.
- S/M Suzanne Gillen commenced as trainee sonographer in December
- Prof. Fionnuala Breathnach and Dr. Orla Franklin commenced a Combined Fetal Cardiac Clinic in the FAU in July.

NUMBER OF OBSTETRIC SCANS

20 Week Scan Fetal Anatomic Survey	8,499
Growth Scan	8,472
Echocardiogram	322
Others	1,388

NUMBER OF GYNAECOLOGICAL SCANS	**1,663**
Total	**20,344**

PRENATAL DIAGNOSIS CLINIC

In 2015 1,290 new patients attended for Prenatal Diagnosis. Drs. Barry, Breathnach, Cooley, Donnelly, Flood and Prof. Malone with CMS Jane Dalrymple, CMM2 Nollaig Kelliher, S/M Joan O'Beirnes and S/M Laura McBride operated 8 clinics per week.

There were 3,089 attendances as some patients were followed longitudinally. All patients had an ultrasound scan. In addition the following tests were performed:

Combined First Trimester Screening	416
Non Invasive Prenatal Testing (Cell Free Fetal DNA)	651
Amniocentesis	114
Chorionic Villus Sampling	80

Of the 194 diagnostic procedures performed, there were 63 abnormal results representing 32.5% of invasive tests.

Abnormality	CVS	Amnio	Total
Trisomy 21	13	7	20
Trisomy 18	8	8	16
Trisomy 13	0	3	3
45X	3	1	4
Triploidy	2	2	4
Mosaic	2	3	5
Translocation	0	1	1
Deletion	0	1	1
Di George	0	1	1
Sickle Cell	1	0	1
Klienfelter	0	1	1
Pallister Killian	0	1	1
Inversion	0	1	1
SMA	1	0	1
Cystic Fibrosis	1	0	1
RYR1 Mutation	0	1	1
Smith Lemi Opitz	1	0	1
Total	**32**	**31**	**63**
Failed Culture	2	0	2

Note: Six patients with positive NIPT results declined invasive testing but the following results were confirmed postnatally:

Trisomy 21	4
Klienfelters	1
Trisomy X	1

There was 1 false positive for T13 on NIPT which was a normal result on CVS .

Twenty seven invasive procedures other than amniocentesis or CVS were performed. These included:

Intrauterine Transfusion	8
Laser Ablation	19
Total	**27**

Dublin Fetal Surgery Group:

Since 2010, the fetal surgical teams at the National Maternity Hospital Dublin, and the Rotunda Hospital Dublin have collaborated jointly for the management of all cases of twin-to-twin transfusion syndrome referred to either centre. This has resulted in a single team approach to all such cases, regardless of which of the two hospital locations at which such patients are seen. Dr Stephen Carroll, Professor Fionnuala McAuliffe and Professor Fergal Malone jointly perform all such procedures.

During 2015, a total of 19 cases of severe TTTS were managed by the Dublin Fetal Surgery Group by means of fetoscopic laser ablation of placental vessels. By the end of 2015, our group had completed 136 cases of laser surgery for severe TTTS, with at least one survivor occurring in 82% of cases (112/136). These results are in line with international published experience for this complex condition and our results have been recently published (Outcome following selective fetoscopic laser ablation for twin to twin transfusion syndrome: an eight year national collaborative experience. Eur J Obstet Gynecol Reprod Biol. 2015 Aug;191:125-9).

This approach to a complex, but relatively rare, fetal problem is an excellent example of a joint collaborative management strategy that successfully optimises care for these patients. Patients are currently referred from obstetric units throughout Ireland for fetoscopic laser ablation and, where appropriate expertise is available, patients are referred back to their original obstetric centre for subsequent fetal surveillance and delivery. It is hoped that, as referral pathways become more established, the number of cases of fetoscopic laser ablation will increase further.

Major Fetal Structural Abnormality:

Excluding soft markers and chromosomal abnormalities, 209 cases of major structural abnormalities were detected and followed. These include:-
Abnormalities detected based on RCOG/RCR Classification

CNS (excluding choroid plexus cyst)	32
Head & Neck (including hygromata)	27
Cardiovascular system (excluding echogenic foci and untreated arrhythmias)	43
Renal (excluding pelvic dilatation of<10mm)	48
Renal (excluding pelvic dilatation of<10mm)	48
Abdominal contents (Including anterior abdominal wall defects and excluding echogenic bowel)	17
Skeletal	24
Thoracic (excluding cardiac abnormalities)	16
Others	2
Total	**209**

Targeted fetal echocardiograms were performed in women deemed high risk according to a specific departmental protocol or where a routine structural scan was suspicious for a cardiac abnormality. Prof. Fionnuala Breathnach performed the majority of fetal echocardiograms. A total of 322 targeted fetal echocardiograms were performed within the Department in 2015.

Where fetal congenital heart disease was identified or suspected, women were seen at our Combined Fetal Cardiology clinic which commenced in the Rotunda Hospital in July 2015, staffed by Consultant Paediatric Cardiologist Dr. Orla Franklin and Prof. Fionnuala Breathnach.

Structural Lesions

Hypoplastic Left Heart	6
Hypoplastic Right Heart	4
Complete AVSD	3
Transposition of the Great Arteries	4
VSD	7
Coarctation	1
Tetralogy of Fallot	1
Aortic Stenosis	1
Left SVC to coronary sinus	1
Total	28
Arrhythmia	
SVT	1

This is a diagnostic clinic with 60 dedicated fetal cardiac scans performed in 45 pregnancies. Most women who attend the service have already been screened by a sub-specialist fetal medicine obstetrician in the hospital.
As such 28/45 (62%) of presenting women had a major cardiac structural defect identified that required surgical intervention in the postnatal period.
In 5 additional pregnancies major extra-cardiac structural lesions all of which required postnatal surgical intervention were identified.

Multiple Pregnancy:

Dr Ronan Gleeson runs the weekly twin clinic which is conducted as part of the Team D antenatal clinic. Both mono and dichorionic twins are managed in this antenatal clinic. Twins that are considered to be higher risk –eg. monochorionic twins that develop complications are usually referred for management to the Fetal Medicine Unit. Higher order multiples are usually managed in the FAU.

Eighty one multiple pregnancies were referred to the Prenatal Diagnosis Clinic in particular high risk circumstances. These included:

Multiple Pregnancy	
Monoamniotic Twins	**2**
Structural Anomaly	1
Normal Outcome	1
MCDA Twin Pregnancies	**57**
TTTS	13
Discordant growth	24
Structural anomaly	1
Normal Outcome	19
Dichorionic Twin Pregnancies	**12**
Discordant growth	7
Structural Anomaly	4
Normal Outcome	1
MCTA Triplet Pregnancies	**1**
DCTA Triplet Pregnancies	**6**
Discordant Growth	2
Structural Abnormality	1
Normal Outcome	3
TCTA Triplet Pregnancies	**2**
Structural Abnormality	1
Normal Outcome	1
Quadruplet Pregnancies	**1**
Total	**81**

MCDA = Monochorionic Diamniotic; *MCTA = Monochorionic Triamniotic;*
DCTA = Dichorionic Triamniotic; *TCTA = Trichorionic Triamniotic*

Additional Cases Followed in Prenatal Diagnosis Clinic:

PPROM 1st & 2nd Trimester	5
IUGR (Severe 2nd trimester)	48
Polyhydramnios	13
Oligohydramnios/Anhydramnios	2
Antibodies/Rhesus	20
CMV	2
Soft Marker Normal Outcome	13
High Risk Screen Normal Outcome	13
Total	**116**

Teenage Pregnancy Clinic

DR GERALDINE CONNOLLY DEBORAH BROWN RM

Antenatal care is provided to all teenage pregnant mothers up to age 17 in the Rotunda hospital in the teenage pregnancy clinic. Girls who are older and deemed vulnerable, such as those with special needs, also attend the clinic as we feel they may benefit from continuity of care. Comparative figures for the past 9 years for the clinic are presented.

Number booked	
2007	120
2008	132
2009	145
2010	116
2011	124
2012	110
2013	112
2014	119
2015	104

	Primiparous	Multiparous
2007	113	7
2008	123	9
2009	131	6
2010	109	7
2011	115	9
2012	100	10
2013	98	14
2014	101	18
2015	91	10

	Onset of Labour	
	Spontaneous %	Induction %
2007	72	26
2008	70	30
2009	68	30
2010	69	27
2011	66	24
2012	68	31
2013	66	33
2014	68	30
2015	70	27

	Mode of Delivery %			
	SVD	Instrumental	C Section Emergency	C section No labour
2007	64.7	20.7	12	2.6
2008	59.8	28.8	11.4	0
2009	64.2	23.3	10.9	1.6
2010	58.4	19.7	17.9	3.7
2011	63.6	20	10.9	5.5
2012	61.1	21.3	15.5	1.9
2013	62	23	15	1
2014	56	27	16	1
2015	63.6	29.5	4.5	2.2

	Epidural rates %
2007	78.5
2008	71
2009	74.4
2010	66.3
2011	68
2012	66
2013	72
2014	73
2015	75

	Premature delivery %	low birth wt %
2007	5.8	3.3
2008	7.8	6.8
2009	7.6	6.5
2010	4.7	2.8
2011	7.3	9.1
2012	2.9	4.8
2013	2	3
2014	2.6	3.7
2015	6.3	5.7

	Chlamydia positive (%)	Third degree tear (n)
2007	15	1
2008	6.4	1
2009	16	3
2010	12.2	3
2011	9.6	3
2012	14.1	2
2013	9.6	4
2014	4.3	1
2015	9.18	2

	Adverse baby outcome (n)	
	intrauterine	neonatal
2007	0	1
2008	1	0
2009	2	2
2010	0	1
2011	0	2
2012	0	1
2013	0	0
2014	1	0
2015	3	1

	Attendance at Antenatal Classes %	Postnatal Clinic (%)
2007	52	50
2008	66	67
2009	55	37
2010	48	48
2011	54	41
2012	45	55
2013	40	49
2014	45	51
2015	50	50

Comment

The caesarean section rate in the teenage population is 6.7%. Our induction rate was 28% and 4% of these had an emergency caesarean section.

One patient had monochorionic twins who delivered at 20 weeks gestation. One pregnancy ended with an intrauterine death at 24 weeks gestation. There was a neonatal death of a baby born at 23+5 weeks gestation 3 weeks post delivery

Seventy one percent of attendees at the clinic were Irish. Roma patients contributed to 11.5% of the total attending the clinic and 13.5% of patients were from other ethnic groups.

Mental Health Services

DR. JOHN SHEEHAN, UCD Associate Clinical Professor
and Consultant in Perinatal Psychiatry
MS. KATHLEEN O'DONOHOE, Mental Health Support Midwife
MS. URSULA NAGLE, Mental Health Support Midwife

The mental health service at the Rotunda is a multidisciplinary service run by a part-time consultant psychiatrist and 1.5 WTE support midwives. Pre-pregnancy counselling is offered as well as assessment and management of perinatal mental health problems. As well as their clinical duties, the midwives act as a resource for information and advice and offer a telephone consultation service mainly to mothers, GP's and Public Health Nurses.

In 2015, 1599 women reported a positive history of mental health problems at their booking visit. 135 new patients were seen by Dr. Sheehan as well as 200 review/follow-up patients. The support midwives saw 335 new patients in the Health Promotion Clinic and 251 patients for follow-up. On the wards, the support midwives saw 1676 mothers and saw 236 for follow-up.

In July, Dr. Yvette Giblin, SpR in Psychiatry, started a special interest session with Dr. Sheehan in order to gain experience in perinatal psychiatry. She commenced an audit on the prevalence of antidepressant use in pregnant women attending the Rotunda.

Two research projects commenced in 2015. As part of her TCD Doctorate in Clinical Psychology, Ms. Aifric O'Kane began a study on "Exploring the effects of metacognitive processes on the development and maintenance of postnatal depression". Ms. Janet Malone, as part of her TCD Masters in Counselling Psychology, started a study on "the impact of maternal postnatal depression on men's experiences of fathering and fatherhood". Both studies were facilitated by the Rotunda Perinatal mental health service.

With regards to on-going education, the support midwives provided educational sessions to Rotunda staff on the use of the Edinburgh Postnatal Depression Scale. Prof. Sheehan provided lectures to UCD medical students and midwifery students and chaired the weekly educational Continuing Professional Development meetings.

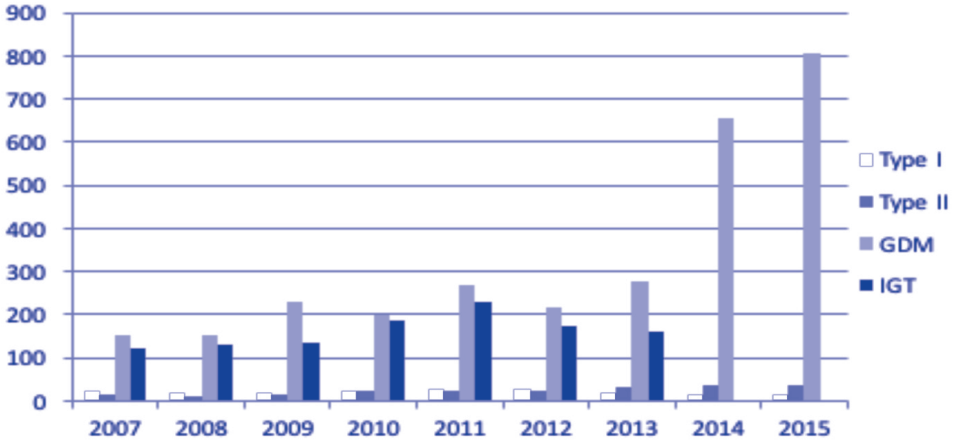
Combined Obstetric-endocrine Service for Diabetes Mellitus

DR FIONNUALA BREATHNACH	Consultant Obstetrician, Maternal-Fetal Medicine Specialist
DR MARIA BYRNE	Consultant Endocrinologist
DR SIOBHAN BACON	Specialist Registrar, Endocrinology
DR NAJIA SIDDIQUE	Research Registrar, Endocrinology
DR SIOBHAN CORCORAN	Research Registrar, Obstetrics & Gynaecology
MS JACKIE EDWARDS CMM	Specialist Diabetes Midwife
MS AILEEN FLEMING	Specialist Diabetes Midwife
MS CLAIRE KEARNEY	Specialist Diabetes Midwife
MS LAURA HARRINGTON	Senior Dietician
MS AILBHE MCCARTHY CNM1	Research

INTRODUCTION:

The Combined Obstetric Endocrine service for care of women with Diabetes Mellitus continues to represent one of the highest-risk areas of clinical care in this hospital. The population with pregestational type II diabetes now exceeds that with type I disease, and the extent to which each subgroup with diabetes (type I, type II and gestational diabetes) contributes to the population whose prenatal care is conducted through this clinic is illustrated in Figure 1:

FIGURE 1: WOMEN WITH PREGNANCIES COMPLICATED BY DIABETES AT THE ROTUNDA 2007 - 2015



The exponential increase in our Gestational Diabetes population observed in 2014 as a consequence of the transition in February 2014 from the 100g 3-hour screening test to the IADPSG-endorsed 75g 2-hour Oral Glucose tolerance test with its accompanying lower thresholds for GDM diagnosis, was sustained for 2015. The International Association of Diabetes in Pregnancy Study Group (IADPSG)

does not apply the term Impaired Glucose Tolerance (IGT) in pregnancy, and thus any deviation from threshold norms constitutes a diagnosis of GDM. Therefore, an IGT category is not considered to represent a distinct entity for this year's report.

In recent years, recognition of the expanding numbers in the GDM/ IGT category, and of the high-risk nature of our group with pre-existing diabetes, led to a decision in 2012 to establish a new model of care for this service. This model involves monitoring and surveillance for diet-controlled GDM in a midwifery-led service, with obstetric care for these women being provided through routine antenatal clinics. Attendance at the Combined Obstetric Endocrine clinic is only required for women with pregestational diabetes (type I or type II) or with gestational diabetes who require therapy beyond diet. Women with a history of gestational diabetes in a prior pregnancy attend the midwifery-led unit for regular surveillance from the first trimester of pregnancy; again with transfer to the Combined Obstetric Endocrine service only in the event that gestational diabetes is confirmed and is not adequately responding to dietary therapy.

TREATMENT FOR GESTATIONAL DIABETES:

We are hopeful in the future that resources may be provided to allow the women with more minor degrees of carbohydrate intolerance to avail of tailored specialist dietetic consultation and self-glucose monitoring in pregnancy, which is widely recognised as representing the optimal standard in pursuit of glycaemic control. Unfortunately in 2013 the HSE withdrew temporary long-term illness card coverage for the diagnosis of gestational diabetes, such that women who develop GDM and require insulin must now self-fund insulin, glucometers and glucose-strips. These costs render the condition unaffordable for a large proportion of our patient population. This team is advocating strongly for the HSE to reverse this decision and invest in maternal-fetal health for substantial long-term gain.

TABLE 1: Pregestational Diabetes: Maternal Characteristics

	TYPE 1	TYPE II
N	23	33
Age	30.9 ± 6.5	34.1 ± 4.4
DM duration (yrs)	17.9 ± 10.0	4.8 ± 3.2
DM Complications: (Expressed in ongoing viable pregnancies)		
• Chronic hypertension	3/23 (18%)	1/33 (3.03%)
• Retinopathy	1/23 (4.34%)	0/33 (0%)
• Nephropathy	0/23 (19%)	0/33 (0%)
• Neuropathy	0/23 (0%)	0
Preeclampsia	2/23 (8.7%)	2/33 (6%)
Gestation at booking	7.6 ± 4.4	8.6 ± 5.6
HbA1c at booking/IFCC	53.8± 9.9	44 ± 8
HbA1c at delivery/IFCC	51 ± 20	40 ± 6
Fructosamine at booking	323 ± 52	247 ± 32
Fructosamine at delivery	260 ± 63	227 ± 24

TABLE 2: Pregestational Diabetes: Perinatal Outcome

	TYPE 1	TYPE II
N	23	33
Spontaneous Fetal Loss (<24 weeks)	4/23 (17.39%)	6/33(18.1%)
Preterm delivery 24+0 – 36+6 weeks	4/23 (17.39%)	3/33 (9.03%)
Liveborn	19/23 (82.6%)	27/33 (81.8%)
Stillbirth	0	1 (see below)
Neonatal death	0	0
Delivered Elsewhere	0	0
Caesarean Delivery	11/23* (47.8%)	14/33* (42.23%)
Gestational age at delivery	37.9 ± 1.3	37.5 ± 3.0
Birthweight (g)	3600 ± 600	3300 ± 700
Macrosomia ffl99th centile for gestational age	4/23 (17.4%)	2/33 (6.1%)
Shoulder dystocia	0/23 (0%)	0/33 (0%)
Major congenital anomaly	0/23 (0%)	0/33 (6%)

**Ongoing viable pregnancies delivered at the Rotunda*

TABLE 3: Gestational Diabetes (GDM):

	Diet-controlled GDM	GDM ONINSULIN
N	609	166
Age	34.1 ± 5.6	33.9 +/- 1.4
Gestational age at delivery	38.6 ± 2.8	38.0 ± 1.5
Birthweight (g)	3430 ± 545	3383 ± 580
Caesarean delivery	145/609	80/166 (48.2%)
Stillbirth	1/609	0/166
Spontaneous fetal loss <24 weeks	4/609	1/166
Delivered Elsewhere	1/609	3/169

RESEARCH:

Citations from Obstetric Diabetes Service in 2015:

Bacon S, et al.The clinical management of hyperglycemia in pregnancy complicated by maturity-onset diabetes of the young. Am J Obstet Gynecol. 2015 Aug;213(2):236.e1-7. doi: 10.1016/j.ajog.2015.04.037. Epub 2015 Apr 30.

The clinical management of hyperglycemia in pregnancy complicated by maturity-onset diabetes of the young
Bacon, S, Byrne, MM et al.
Oral Scientific Presentation, NASOM, Banff, Canada, 2015

Less Favourable Outcomes in Women with Type 2 Diabetes Mellitus than Type 1 Diabetes Mellitus. Findings from a large multicentre Cohort.
Bacon, S, Kinsley, BT et al.
Oral Scientific Presentation, NASOM, Banff, Canada, 2015

The clinical management of hyperglycemia in pregnancy complicated by maturity-onset diabetes of the young
Bacon, S, Byrne, MM et al.
ENDO, 2015, San Diego

Halling C, Malone FD, Breathnach FM, Stewart M, McAuliffe F, Morrison JJ, Dicker P, Manning F, Corcoran JD. Neurodevelopmental outcome of a large cohort of growth discordant twins. Eur J Pediatr (Sept 2015)

Corcoran S, Breathnach FM, Burke G, McAuliffe F, Geary M, Daly S, Higgins J, Hunter A, Morrison JJ, Higgins S, Mahony R, Dicker P, Tully E, Malone FD. Dichorionic twin ultrasound surveillance: sonography every 4 weeks significantly underperforms sonography every 2 weeks: results of the Prospective Multicenter ESPRiT Study. Am J Obstet Gynecol. 2015 Oct; 213(4):551.e1-5. Epub 2015 Aug 7.

Murphy NC, Diviney MM, Donnelly JC, Cooley SM, Kirkham CH, Foran AM, Breathnach FM, Malone FD, Geary MP. The effect of maternal subclinical hypothyroidism on IQ in 7- to 8-year-old children: A case-control review. Aust N Z J Obstet Gynaecol. 2015 Oct; 55(5):459-63. Epub 2015 Jun 8.

Clinical Nutrition

LAURA HARRINGTON, RD, MINDI- SENIOR DIETITIAN
ANNA-CLAIRE GLYNN, SENIOR NEONATAL DIETITIAN

The Clinical and Nutrition service in the Rotunda strives to provide a patient-centred, evidenced based service for Diabetes, Obstetrics, Gynaecology and Paediatrics/Neonatology. Staffing increased from 1.0 WTE to 2.0 WTE in April 2015 with the addition of the Senior Neonatal Dietetic post.

In 2015 the Maternity Dietitian saw a total of 1053 new patients and 360 follow-up visits. This is similar to activity levels in 2014. The types of patients cared for can be classified as follows:

Referring Service	New Patient Visits	Follow-up Patient Visits	Total Patient Encounters	Percentage of Total Patient Activity
Obstetrics	205	107	312	
Diabetes	824	240	1064	
Gynaecology	9	0	9	
Postnatal	2	0	2	
Paediatrics (up to April 2015)	13	13	13	26
TOTAL	**1053**	**360**	**1413**	

In 2015, the Neonatal Dietitian saw a total of 155 new paediatric/neonatal patients and had 826 follow-up contacts. The below table only reflects outpatient and inpatient activity from May 2015.

Referring Service	New Patient Contacts	Follow-up Contacts	Total Patient Contacts	Percentage of Total Caseload
Neonatal Inpatients (includes NICU, HDU & SCBU) From May 2015	98	775	873	89.0%
Paediatric Outpatients From May 2015	57	51	108	11.0%
TOTAL	**155**	**826**	**981**	

In April 2015 we welcomed Anna-Claire Glynn, the first Neonatal Dietitian in the Clinical Nutrition Department. Anna-Claire took over and expanded the paediatric outpatients as well as creating the new service in the Neonatal Unit.

This year, Laura Harrington, Senior Dietitian, took up the role of Dietetic AHP Representative on the National Clinical Programme for Obstetrics and Gynaecology in addition to maintaining the full-time Obstetrics/Gynaecology dietetic service in the Rotunda.

Diabetes referrals continue to dominate the Obstetrics/Gynaecology dietetic services. There was an increase of over 170% in the number of new patients with gestational diabetes, in the past 2 years. This is mainly due to the adoption of new diagnostic criteria for gestational diabetes with lower thresholds. Services to general obstetrics, gynaecology and postnatal patients had to be limited in order to prioritise high risk patients with diabetes. Group patient education classes for general antenatal patients and patients with gestational diabetes were the key to accommodating large patient numbers with limited staffing levels.

The majority of dietetic referrals were for the following conditions:

- **Antenatal:** Overweight or obesity, underweight, poor weight gain, hyperemesis, multifoetal gestation, anaemia, eating disorders, IBS and Crohn's disease
- **Diabetes:** Gestational diabetes, type 1 and 2 diabetes in pregnancy
- **Gynaecology**: Polycystic ovary syndrome, poor wound healing/postoperative infection and infertility linked to overweight/obesity or underweight
- **Postnatal**: Poor wound healing, infection, underweight, constipation, IBS and incontinence
- **Paediatrics (outpatients)**: poor growth, food intolerances and allergy, behaviour related feeding issues and vitamin/mineral deficiencies
- **Neonatology (inpatients)**: parenteral and enteral nutrition support for ELBW and VLBW infants, post-surgical nutritional support, poor growth, food intolerances and allergy, biochemical and vitamin/mineral imbalances

The current level of activity in the department does not reflect the true demand for dietetic services. However, the Maternity and Neonatal Dietitian endeavours to provide a quality service within the confines of limited staffing resources.

The Maternity and Neonatal dietitian regularly gives presentations to midwifery, nursing and medical staff locally and nationally. Guidelines have also been developed locally to promote best practice. Links are maintained with the Maternity and Neonatal Dietitians in maternity services nationwide to contribute to the National Clinical Guidelines, the build of the new electronic patient health record, to create and share patient education materials and to facilitate continuing professional education.

Epilepsy clinic

DR MARY HOLOHAN

At the Epilepsy Clinic in 2015 there were 124 patients seen. For all of the patients a delivery plan was determined and if on treatment, medication optimised in conjunction with the Clinical Nurse Specialist - Epilepsy. Monitoring of the therapeutic drug levels in each trimester has significantly assisted in patient care.

During 2015, 85 of these patients delivered in the Rotunda Hospital with 6 patients transferring care to other unit in late pregnancy and 2 patients reviewed in early pregnancy had early 2nd trimester loss. 31 had continuing pregnancy at end of 2015.

30 had not required anti-convulsant treatment for some time before pregnancy and 34 patients needed anti-epilepsy drug treatment for the duration of the pregnancy. One of these patients had a dyskinesia and another an underlying metabolic disorder. 12 patients had discontinued treatment shortly before this index pregnancy. 3 of these women had a recurrence of aura or myoclonic jerks and recommenced treatment. 2 patients were under neurology review at beginning of pregnancy with treatment not deemed necessary during pregnancy. Seizure activity in 5 patients were associated with use of Benzodiazepines in the context of substance abuse.

There was 4 complications in the group of 30 patients - including 2 multiple pregnancies - not on treatment. One patient had intra-uterine fetal death at 26 weeks which was associated with placental mosaicism. There were 2 deliveries at 31 - 34 weeks. There was 1 case of significant fetal growth restriction.

Of the 34 patients on anti-epilepsy treatment regimes throughout pregnancy - 30 were on mono-therapy, 3 required 2 medications and 1 needed 3 anti-epileptic drugs. 2 of the patients had monotherapy with Sodium Valproate. 1 patient using Sodium Valproate changed to Levetiracetam in second trimester.

There were 6 pregnancy complications in patients using anti-epilepsy medications

- Microcephaly and Intra-uterine growth restriction on Valproate
- Noonans Syndrome on Levetiracetam
- Intra-uterine growth restriction on Levetiracetam
- Intra-uterine Fetal death at 28 weeks on Levetiracetam (Triploidy)
- Preterm delivery at 26 weeks on Levetiracetam
- Intra-uterine growth restriction on Levetiracetam (metabolic disorder)

One patient who required 2 medications for her epilepsy had not achieved complete seizure control before pregnancy and had a number of seizures in pregnancy, a single seizure in labour and seizures in the post natal period.

Provision of standardised care for Women with Epilepsy has been further enabled and enhanced with the development of the National Clinical Programme on Epilepsy under the direction of Dr. C. Doherty (National Clinical Lead). The national Standard Operating Procedure supporting integrated care pathways for maternity patients with epilepsy has been approved by Clinical Care Programme on Obstetrics and Gynaecology and Health Service Executive and implementation planned for 2016.

The Irish Epilepsy Association Nurse Specialist, Sinéad Murphy, attends the Epilepsy Clinic on alternate weeks and has an individual consultation with each of the patients on anti-epilepsy medications. Changing from Sodium Valproate is actively encouraged even after first trimester in view of the developmental challenges now linked to treatment with Valproate. The support, advice and care plans offered in the clinic have been enhanced by the appropriate access by the Specialist Nurse to the electronic patient record of patients attending Beaumont. The record is updated at patient visits and a printed summary placed in antenatal notes.

I am very grateful to the neurology service in the Dublin hospitals for their support in assisting with the care of the patients attending this clinic and in particular to Professor Norman Delanty and Clinical Nurse Specialist Sinéad Murphy.

PHYSIOTHERAPY

MS CINNY CUSACK, PHYSIOTHERAPY MANAGER

The Physiotherapy Department's vision is to be a centre of excellence, leading the way in the field of Women's health, Neonatology and Paediatrics within the RCSI Hospital group.

STAFFING

Our current staff compliment has increased to 5 WTE as a new senior post was created in November 2015. The increased hours will enable provision of a physiotherapy service to NICU and In house manual handling training.

The current staff are:

Cinny Cusack	Manager
Anne Duignan	Senior Physiotherapist (NICU)
Brona Fagan	Senior physiotherapist
Anna Hamill	Senior physiotherapist (Paediatrics)
Niamh Kenny	Senior physiotherapist
Sinead Lennon	Physiotherapist
Grainne Sheil	Physiotherapist

Our departmental working hours have increased from 7.30 am to 6 pm. This facilitates full use of the limited departmental space and offers increased flexibility of appointment times for outpatients.

CLINICAL ACTIVITY

Antenatal classes

Health promotion and ante natal education forms a key part of our women's health service. Mothers are empowered to take an active role in their management of pregnancy related musculoskeletal conditions, promotion of continence and the physical preparation for labour. Guidelines on participating in a healthy exercise programme during pregnancy and beyond are given through multidisciplinary patient education sessions for all mothers and specifically those with gestational diabetes.

Preparation for parenthood classes are jointly run with the Parent Education midwife. Approximately 20% of first time mothers attend these 6 classes. This year a total of 1,554 mothers commenced the course. Partners are welcome to attend classes 2 to 6.

311 attended the refresher classes provided for multigravida mums. Mothers with any special needs are catered for on an individual basis.

In 2015 there was no physiotherapy input into the Domino antenatal education classes. However, as part of the new senior post and increase in clinical hours, It is planned to introduce a physiotherapy class in 2016 to ensure equal access to all mothers attending antenatal education in the Rotunda Hospital.

INPATIENT PHYSIOTHERAPY

Prenatal physiotherapy.
Pelvic girdle pain affects approximately 20% of mothers and during 2015, 133 in patients on the prenatal ward were treated for pelvic girdle pain and difficulty mobilising.

Post natal physiotherapy
Physiotherapy is prioritised to the high risk mothers who have obstetric anal sphincter tears, an instrumental delivery , caesarean section , delivered a baby over 4kg or who have any incontinence. Mothers are encouraged to attend the postnatal class in the first 6-8 weeks post partum and to self refer to physiotherapy as an outpatient with ongoing issues of incontinence or dyspareunia in the first 6 months post partum.

In 2015, 7,249 post natal mothers were seen for advice, pelvic floor and abdominal exercises, treatment of pelvic girdle pain and mobility issues.

Gynae In patients
204 patients were seen following major surgery for advice, pelvic floor and abdominal exercises, management of reducing risk of future prolapse and how to safely return to exercise. Post op physiotherapy as an outpatient is available if required.

Urinary retention
47 patients with urinary retention were seen by physiotherapy for advice on bladder management. Those requiring self intermittent catheterisation or further treatment were followed up as an outpatient.

In 2015,there were 28 patients requiring 42 treatments for respiratory conditions.
Babies are referred as inpatients to physiotherapy for the following conditions, Torticollis, Talipes, Erbs and Plagiocephaly. 74 babies were reviewed requiring 133 treatments.

NICU: In September, a neonatal neurodevelopment, positioning and handling course was provided from Consultant Physiotherapist Adare Brady to all the physiotherapy staff. This has up skilled the staff generally and particularly for the senior physiotherapist in NICU.Training has also been completed in the Lacy Assessment of Pre term Infants (LAPI) which can be used as a predictor for cerebral palsy.

As a result of this training and increased clinical hours, 15-18 hours per week of physiotherapy clinical time is now allocated to NICU. The service includes assessment and analysis of movement patterns and postural dysfunctions, working within the neonatal individualised development care and assessment framework. (NIDCAP). Discharge planning meetings with parents for home exercise programmes to facilitate transition to outpatient physiotherapy have been set up. Links have been established with the dietician for advice on positioning for feeding and non nutrientive sucking.

OUTPATIENT PHYSIOTHERAPY

In 2015, there were 2,382 new patients appointments given with 4,167 follow up attendances. There were 553 DNA's.

The post natal class runs weekly and is open to all postnatal patients up to 8 weeks postpartum. It is an opt in service and 255 patients plus babies attended the classes held during 2015. The aim of the class is to provide an opportunity for questions, support and advice. We review pelvic floor exercises and assess for a

diastasis rectus abdominus so that exercises can be progressed to enable the mother safely return to fitness and so reduce the risk of future back pain and incontinence.

Patients suffering from post partum urinary, faecal incontinence and dyspareunia can self refer for physiotherapy during the first 6 months post partum. By using a variety of manual therapy techniques for scar release, abdominal breathing for pelvic floor release and down training, physiotherapy can have a significant positive impact on normalising pelvic floor function.

Urinary incontinence:	359
Faecal incontinence:	11
Prolapse:	76
Carpal tunnel syndrome:	56
Dyspareunia/pelvic floor pain:	32

Obstetric anal sphincter injuries (OASI): 167 patients who sustained an OASI were given a 2 week and 6 week postnatal physiotherapy follow up appointment in accordance with the 2012 HSE guideline on Management of OASI. Ongoing appointments were given as required. 15 patients who had had previous tears were also followed up during their subsequent pregnancy for advice and sphincter exercises. The physiotherapy department works closely with the perineal clinic to provide an integrated care pathway for patients with ongoing issues.

Pelvic Girdle pain (PGP) class

1,333 patients suffering with pelvic girdle pain or low back pain were referred to physiotherapy. The referrals are triaged based on their gestation and pelvic girdle questionnaire score. Patients are then given an appointment for the pelvic girdle class (818 patients) or an individual appointment (515). The aim is to give an appointment for the class within 2-3 weeks of referral. Significantly urgent patients are seen within the week. The class provides advice on ergonomics, management of activities of daily living, pacing and specific stabilising abdominal and pelvic floor exercises. Patients are assessed for use of pelvic supports and walking aids and offered one to one treatment as required.

Paediatric Patients

295 babies were referred as outpatients requiring 969 attendances for the following conditions:

Plagiocephaly and Torticollis:	97
Brachial plexus injury and upper limb:	17
Talipes and lower limb:	94
Developmental delay:	66

To facilitate links with paediatric outpatients and liaison with paediatric staff, we now run a physiotherapy clinic once a week in paediatric outpatients.

The Continence Promotion Clinic is led by Dr. Mary Holohan and Cinny Cusack Physiotherapy Manager. This clinic is aimed at providing specialised conservative management to women suffering from urinary incontinence. The clinic offers a comprehensive assessment and treatment programme including referral for physiotherapy, medication, use of pessaries and life style advice. Approximately 80% of patients can be successfully managed by the clinic with only a small percentage needing consideration for surgery. 126 patients were referred to physiotherapy from the clinic.

DEPARTMENT ACTIVITY

Physiotherapy students
The physiotherapy department has taken undergraduate students from RCSI School of Physiotherapy and Trinity School of Physiotherapy. 3 placements were offered for 3 final year students and one observational placement for a first year. The placements were successful with all key learning objectives from the placement achieved to a high standard.

A post graduate placement for the final practical assessment was also given to a student from Bradford University completing the Post graduate Physiotherapy Diploma in Continence.

Clinical research
The physiotherapy department with Deirdre Daly of the MAMMI (Maternal health and Maternal Morbidity in Ireland) are currently researching **Women's knowledge and practice of Pelvic Floor Muscle Exercises (PFME) and their opinions of PFME education at the Rotunda Hospital.**

Presentations

- Third prize winner of Rotunda Hospital Biannual Audit and Research Meeting for Clinical Audit 9-01-15 : Re audit of urinary retention C Cusack, M O'Reilly, M Holohan

- Poster presentation: Re audit of urinary retention.
  Beaumont Hospital Research and Audit day 14-05-15 C Cusack, M O'Reilly, M Holohan

- Poster presentation: Re audit of urinary retention
  St. James's Hospital 8th Annual Multidisciplinary Research, Clinical Audit & Quality Improvement Seminar 21-05-15

- Poster presentation : Re audit of urinary retention: C Cusack, M O'Reilly, M Holohan
  ISCP Annual Conference 6, 7-11-15 Croke Park

- Oral presentation: Challenges and Changes in Women's Health.
  Cinny Cusack SMISCP
  ISCP Annual Conference 6, 7-11-15 Croke Park

- Podium presentation: Improving patient safety by early recognition and intervention for Urinary Retention in the Rotunda Hospital re audit from January 2014 to July 2014. 5th National Patient Safety Conference 12 -11-15 Aviva Stadium. C Cusack, M O'Reilly

Continuous professional development (CPD)
The department actively engages in regular CPD in the form of journal club and joint treatment sessions.

Post graduate short courses attended.

- Neonatal neurodevelopment, positioning and handling course: Adare Brady Consultant Neonatal Physiotherapist June - November 2015
- Advanced manual therapy for the pelvic floor Brona Fagan
- Physiotherapy Management of patients suffering from sexual abuse. Anna Hamill
- Pelvic floor and female athlete. March 2015 Sinead Lennon
- Physiotherapy Management of endometriosis. Sinead Lennon/Niamh Kenny
- HMI Annual Conference Change for the better 20-09-15
- Peri/post natal bladder and bowel dysfunction 16-10-15
- ISCP conference November 2015
- Bradford Diploma in Continence 2015-6 Niamh Kenny
- Rotunda Hospital /RCSI Leadership course Anne Duignan

The physiotherapy department have actively participated in the

- Epidural study days
- Manual handling training programme

I would like to acknowledge the hard work, enthusiasm and dedication that the Physiotherapy staff has put in over the past year. The smooth running of this extremely busy department could not happen without the significant contribution of the physiotherapy secretary Karen Chillingworth Finan.

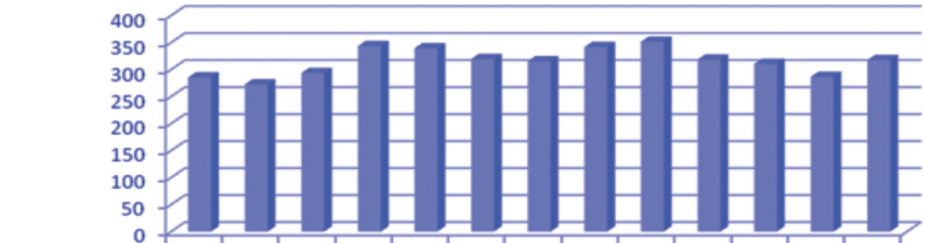
Sexual Assault Treatment Unit

DR MAEVE EOGAN

Introduction

The Rotunda SATU is one of 6 HSE supported SATUs around the country, with units established in Cork, Waterford, Mullingar, Galway and Letterkenny. Each unit provides responsive patient centred care underpinned by national interagency guidelines. This ensures that all men and women who seek care after sexual crime receive the same standard of care regardless of which SATU they present to. In 2015 the SATU at the Rotunda Hospital provided care for 317 men and women after rape or sexual assault, an increase of 31 (11%) from 2014. In total, the national SATU services saw 685 new patients in 2015.

Fig. 1: Analysis of yearly attendances 2003 to 2015



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
No. Attendances	285	272	293	343	339	319	315	341	351	318	310	286	317

Most patients (82%) presented within 7 days of an incident of sexual assault, and early presentation is optimal in terms of provision of appropriate care as well as collection of forensic evidence. In 13 cases, the incident had occurred outside of Ireland. Of the 304 cases where the incident was reported to have taken place in the Republic of Ireland, 242 (80%) of these took place in Dublin city or county. 10 other counties were also represented in the figures. In 2015, August was the busiest month and Monday was the busiest day for the unit. While 76% of attendees reported that the incident took place between 9pm and 9am, the majority of patients (218, 69%) actually attended for care within daytime hours (9am-9pm). Nevertheless approximately one third of our patients were seen between the hours of 9pm and 8.59am, which emphasises the continued need for a round-the-clock service.

The age and gender profiles of all patients is shown in Figure 2, the age range was from 13 to over 85 years. Although the remit for the Adult SATU services is for patients over 14 years, in 2015 the unit provided care for 3 female patients less than 14 years. These were instances where acute care in a paediatric service could not be arranged. Considerable developments in paediatric services remain anticipated which will mean that such patients should be appropriately accommodated in the future.

Fig. 2: Analysis of age profile of patients in relation to gender 2015

	<14	≥14-<16	≥16-<18	≥18-<25	≥25-<35	≥35-<45	≥45-<55	≥55
Female	3	33	32	102	72	32	10	7
Male		1	1	10	9	3	1	

119 (39%) patients were students, 91 (30%) were in employment and 97 (31%) were unemployed. The majority of patients (267, 84%) were single. 265 (84%) patients reported a single assailant, and 101 (32%) patients reported that the assailant was a stranger. In 23 cases the alleged assailant was reported to be an intimate (or ex-intimate) partner, and in an additional 13 cases reported to be a family member. 183 patients (57%) disclosed that they had consumed alcohol in the 12 hours preceding the assault, 8 units of alcohol being the mean number of units ingested, although many patients had an imprecise recall of the amount of alcohol ingested. 49 patients were unsure if a sexual assault had taken place, in 36 of these patients this lack of recall was due to memory loss associated with alcohol ingestion. 41 (13%) patients were concerned that drugs had been used to facilitate sexual assault and of these 39 (95%) had consumed alcohol prior to the alleged assault.

Emergency contraception (EC) was given to 141 of 238 women seen with 120 hours of an incident (the upper timeframe limit for hormonal EC). There were a range of reasons (including previous effective contraception, hysterectomy) why the remaining patients did not require EC. All SATU attendees were offered follow-up screening for sexually transmitted infections. 285 men and women accepted this offer, and 188 actually attended for screening. Such low return rates are not uncommon, both nationally and internationally, and have encouraged continued provision of routine prophylaxis for Chlamydia at the time of the patient's initial attendance. The rates of identification of Chlamydia have fallen precipitously since the introduction of routine prophylaxis. All patients are also offered a course of Hepatitis B Vaccination, and we can also offer HIV prophylaxis on-site if required following risk assessment. In 2015 41 patients received post-exposure prophylaxis for HIV.

Since 2009 we have been providing care for men and women who have experienced sexual violence but who preferred not to report the incident to An Garda Síochána. Of the 317 patients that attended the SATU, 69 (22%) patients attended without reporting the incident to An Garda Síochána. It is a welcome development that patients seek care and attention following an incident which will hopefully have a positive impact on their recovery.

A postgraduate certificate in Sexual Assault Forensic Examination was run by UCD for doctors aspiring to work in the adult and paediatric SATU services. This course provided training in care provision, and educational components were delivered

by many Rotunda SATU staff. In 2015 5 nurses completed a higher diploma programme in Sexual Assault Forensic Examination for nursing and midwifery staff at RCSI. All SATUs now depend greatly on clinical nurse/midwife specialists, and we look forward to all the trainee nurse/midwife specialists joining the SATU workforce on completion of the programme.

SATU staff remain committed to outreach education within Emergency Departments & General Practice, Mental Health Services, Prison Services, schools & universities, An Garda Síochána, and Dublin Rape Crisis Centre to raise awareness and increase understanding and recognition and to equip people better to respond to incidents of sexual violence. The strong Interagency Links that have traditionally existed, particularly with An Garda Síochána, Forensic Science Laboratory and Rape Crisis Centre were maintained over this year. The SATU Liaison group met quarterly during the year. These meetings are a valuable opportunity to discuss relevant issues pertaining to SATU facilities and care and ensure that all staff from the various agencies are aware of changes and developments, and indeed challenges, as they arise. At a national level, the 6 SATUs are a vibrant and motivated community of practitioners, who work with each other and our partner agencies to progress our services to provide the optimum response at a time when our patients are in crisis.

A definite highlight of 2015 was that the national SATU programme finally received a funding commitment to facilitate secure storage (for up to one year) of forensic evidence within the SATUs, for men and women who are uncertain as to whether or not they wish to engage with criminal justice agencies. In keeping with international best practice, we have been aspiring to offer this option to patients, as it can be difficult for them to make a decision regarding reporting to an Garda Síochána when they first present. Unfortunately, DNA evidence deteriorates quickly, so implementation of this option means that a delay in reporting may not adversely influence detection of the incident. We acknowledge COSC and the Department of Justice for their commitment to this project.

We continue to experience challenges staffing our assisting nurse/midwife rota. This meant that there were occasions when we were unable to provide an out-of-hours service and have to refer patients to the SATU at Midland Regional Hospital, Mullingar. This is not ideal for patients or An Garda Síochána and a recruitment drive has been initiated which will hopefully remedy this issue.

We acknowledge the support of the executive management, board and staff of the Rotunda, who understand and accept the nuances of the SATU services and aim to go above and beyond the call of duty to make every interaction in the Rotunda as positive as it can be for our patient cohort. In particular I would like to acknowledge the patient services staff at reception as well as the security team. Maintenance of a responsive service is only possible due to the dedication of the unit staff. All staff are extremely committed to providing exemplary care at all times and but for them the SATU of the Rotunda Hospital would not be a centre of excellence. This report highlights the significant amount of work done by a small but highly committed team, and their continued availability to provide holistic care to patients at a time of crisis does not go unnoticed.

Medical Social Work

MS. SINEAD DEVITT, HEAD MEDICAL SOCIAL WORKER

INTRODUCTION

In 2015, the Rotunda's team of social workers continued to provide a comprehensive social work service to patients, their partners and their families. Those who used the service had a broad range of needs and issues of concern. These included: bereavement, domestic violence, addiction, relationship issues, mental health issues, underage pregnancy, the birth of a baby with special needs, child protection issues, concealed pregnancy, crisis pregnancy and intellectual disability.

The Rotunda's social work service is extremely proactive and broad in its remit. It operates from the rationale that addressing problems in a timely manner can prevent there escalation and can serve to minimise the distress experienced by patients. To exploit the potential of preventative interventions, there is a social worker attached to each of the hospital's four obstetric teams and to all the larger specialist clinics and units. Patients are typically met during pregnancy so that issues of concern can be identified and alleviated.

DEMOGRAPHICS

It is interesting to note the correlation between the trend in national demographics and the Rotunda's patient profile. According to figures released by the Central Statistics office (CSO) there were 65,909 babies born in Ireland in 2015, a decrease of 1,553 on 2014. 8,362 of these babies were born in the Rotunda Hospital, which represent 12.7 per cent of the overall births in Ireland.

Nationally, more than three-quarters of the births were to Irish mothers, with just over 6 per cent to mothers from non-EU countries. In the Rotunda Hospital, there were over 870 births to non-EU mothers, over 10 per cent of total births. In Ireland in 2015 there were 224 children born to mothers who were aged 45 and over. 43 of these babies were born to patients attending the Rotunda.

Last year saw a decline in the number of teenage pregnancies in Ireland – which dropped from 1,253 in 2014 to 1,187 in 2015. 42 of these young mothers were aged under 16. 4 mothers under the age of 16 delivered in the Rotunda.

In 2015, over a third (36.4 per cent) or 23,990 births were outside marriage. The highest number of births registered was in Dublin city with 7,557 (11.5 per cent of the births in the country). 3,352 births or 40 per cent of the overall births in the Rotunda occurred outside marriage.

FAMILY TYPE

In 2015, 40.5 per cent of births outside marriage were to one parent households. Almost 215,300 children in Ireland live with a lone parent. A number of factors, including the introduction of the unmarried mother's allowance in the 1970s, made unmarried parenthood a realistic alternative to a pregnancy which previously

had tended to precipitate a marriage. However, solo parents continue to face particular income challenges. Lone parents' deprivation rate stands at 33% above those of unemployed people and 230 per cent above that of the general population.

Changes to the one parent family payment, introduced in 2013, were among the most controversial welfare reforms, with recipients becoming compelled to take up work when their youngest child reached the age of 7. The reforms led to heated protests and debate. The Budget in 2015 adjusted this decision so that recipients may still receive support until their youngest child is 14 years old without having to seek work.

The increasing fluidity and diversity of family forms has been the catalyst for the passing in 2015 of the Children and Family Relationship Act, which offers greater protection for children in all family types. The Act represents the most significant change in family law in a generation, reflecting the reality of modern family life in Ireland. It provides various new and different pathways to parentage and created new rights for parents, both biological and social and, most critically, for children.

One of the major developments in legislation is in the area of guardianship. For the first time, non-marital father's cohabitating for a specific period of time with the child's mother will be entitled to automatic guardianship once this section of the Act is commenced. This will directly affect many unmarried fathers of babies born in the Rotunda Hospital, where sometimes there is an incorrect assumption that having their names on their child's birth certificate gives them automatic guardianship rights, which it does not. It will also become possible under the legislation for a person other than the parent to apply to court to be appointed as a guardian of a child

CHILDREN

The Children First Act was enacted on 19th November 2015 and the removal of the defence of reasonable chastisement was commenced on 11th December 2015. It is expected that the Minister will be signing commencement Orders on a phased basis. The Act aims to provide greater protection to children in vulnerable positions. This means that anyone who comes into contact with children for any amount of time, especially where they provide care, will be subject to much more stringent measures to protect them.

The Child and Family Agency (Tusla) has the overall statutory responsibility for child protection in the state. They had 26,655 cases open as of the end of 2015 and 6,718 cases remained unallocated, including 999 high priority cases. However, despite some adverse findings, the Health Information and Quality Authority (HIQA) did note that management of high priority child protection cases had improved compared with 2014.

Within the Rotunda Hospital the medical social work team were involved in 96 child protection cases within the first 6 months of 2015 (1/01/15-30/06/15). During this period the medical social work team made 63 child protection referrals to local Tulsla teams. When a patient has Tusla social work involvement already, a medical social work referral may not be required. However, a patient's Tusla social worker may request regular updates about a patient's attendance at the hospital, which the medical social worker will provide. The medical social

worker will always inform the patient that this information is being shared with their Tusla social worker, unless a child is deemed to be in immediate danger.

Between January and June 2015, 17 of the serious cases were reviewed at a multidisciplinary Child Protection Case Conference. The main types of concerns where a referral was made or received from Tusla were drug use (39), domestic violence (13), underage pregnancy (19), mental health (8) and child welfare (17).

DOMESTIC VIOLENCE

In 2015, the staff in the Rotunda Hospital continued to routinely enquire about domestic violence in keeping with best national and international recommendations. Domestic violence in pregnancy is more common than gestational diabetes and hypertension and can actually begin or increase during pregnancy. It may lead to miscarriage, pre-term labour, low birth weight, fetal injury and can pose a significant health risk for both the woman and her baby.

According to Safe Ireland, almost 80 per cent of women who suffer abuse in the home never report it. Routinely asking all women during the antenatal period if they are experiencing domestic violence is a model that supports women to disclose abuse and seek support. It also serves to reduce the stigma associated with domestic violence and has the value of highlighting the prevalence of this issue to women. Research shows that many women were asked about domestic violence 11-12 times before disclosing. Women are asked about domestic violence without their partner present to ensure their safety is not compromised.

In 2015 the medical social work department audited 4 months (01/02/15 to 31/05/15) documentation of domestic violence enquiry in patient's charts to ensure there was appropriate medical social work follow up.

Of the 12 women who disclosed a history of domestic violence, 10 had a social work record created in the medical social work department. The remaining 2 women advised midwives that they were in counselling elsewhere and so referrals were not made by the midwife at the time. Subsequently the medical social work department made contact with these women and so all 12 were followed up according to the guidelines.

The medical social work team priorities all domestic violence referrals. They can assist a woman explore her options, such as, a referral to a refuge or Woman's Aid and a safety plan can be discussed. Not all domestic conflicts warrant the involvement of statutory child protection services. The level of risk to children is assessed by the medical social worker with the patient. A woman, in the majority of the cases, is the best judge of her family's safety.

HOMELESSNESS

The medical social work team continues to work with parents who are homeless and living in emergency accommodation. The Department of Environment reported that from 20 -26 April 2015 there were 504 families who were statutorily homeless in Ireland. Of that number, 322 households, or 66 per cent, were one-parent families. Not only do these children suffer materially, The Growing Up in Ireland study found that mothers under serious economic pressure had an 84 per cent

risk of suffering clinical levels of depression compared with other mothers. This stress is further increased when mothers, who have just given birth, return to emergency accommodation with a new baby. In June 2015 The Dublin Region Homeless Executive reported that the number of families being accommodated in hotels had jumped to 388 compared to 149 in June 2014.

The social, legal and economic changes which have taken place in Ireland over this year have given rise to many challenges for patients attending the hospital. This has led to an increase in the number of referrals to the social work department and has rendered the nature of our work more complex and varied. The following reports of social work involvement in the hospital's specialist clinics and units during 2015 provide a summary of the services offered by the department.

TEENAGE PREGNANCY CLINIC

In 2015, there were 166 deliveries to teenagers booked into the Teenage Clinic. This included 14 deliveries to teenagers who were 16 years of age and 4 deliveries to teenagers who were 15 years of age. In these cases, a referral is always sent by the medical social worker to the appropriate office of the Child and Family Agency (CFA). Underage consensual non-abusive sexual activity continues to be investigated by the CFA in conjunction with An Garda Siochana to satisfy relevant legal requirements.

In Ireland, the age of consent has been 17 years of age since the Criminal Law Amendment Act 1935. Ireland has one of the highest ages of consent in the EU. Sweden, Denmark, Poland, France and Greece have all set the ages of consent at 15- the most common in the Union. The Germans and Italians have opted for a year lower at 14 while the British, Dutch, Portuguese and Belgians have set the age at 16. While ministers have discussed lowering the age of consent from 17 to 16 in Ireland, in recognition that people are having sex at a younger age, it has been argued that the age of consent permits the State to continue to intervene in a way that is suitable for a teenage child.

Teenagers aged 18 and 19 years can also attend the teenage clinic if required and can be referred by the medical social worker and midwifery staff if they require the extra support the clinic provides young mothers.

For many young people, their pregnancy is unplanned and the medical social worker provides support and counselling to the young person to assist them to come to terms with the news and to provide ongoing support and assistance throughout the pregnancy. Becoming a mother at any age can be a daunting experience and young people, in particular, can feel overwhelmed about becoming parents. Attendance and participation in the antenatal class is also encouraged. The Teen Parents' Support Programmes in the young person's local area offer continued support for the mother and baby following delivery.

The medical social worker attached to the Teenage Clinic works closely with the Clinic's specialist midwife in order to provide a holistic and consistent service.

BEREAVEMENT SOCIAL WORKER

In 2015 the bereavement social worker offered a service to all women who had experienced the loss of a baby through miscarriage, ectopic pregnancy, stillbirth or neonatal death. The role of the bereavement social worker is to visit these

patients and their partners while they are in hospital or to contact them when they go home. The number of pregnancies which resulted in the involvement of the bereavement support team in 2015 was 207. The bereavement social worker, where possible, met with these patients in the hospital or made written contact with patients following their discharge home. A service was also provided to the Early Pregnancy Unit and the Recurrent Miscarriage Clinic.

Patients and their partners were offered emotional and practical support, counselling, advice on explaining the death of a baby to children, and follow-up care. They were also offered counselling and support during subsequent pregnancies and after the birth of their new baby. This follow-up care was offered both in the Rotunda Hospital and on home visits if requested. The bereavement social worker also continued to develop educational information for parents and staff regarding children and loss, this included meeting with bereaved children for bereavement counselling following the loss of a sibling.

The bereavement social worker worked with the bereavement support team in providing education and training within the Rotunda Hospital and also to colleagues from the two other maternity hospitals in Dublin, The Coombe and The National Maternity Hospital. She presented at Bereavement Study Days facilitated by the bereavement support team to improve and develop awareness and understanding around working with bereaved families in a maternity setting.

The bereavement social worker represented the hospital at remembrance services organised by A Little Lifetime Foundation, The Miscarriage Association and Feileacain. These support groups offer invaluable assistance to our bereaved patients and we aim to continue to build strong links with them.

FETAL ASSESSMENT AND PRENATAL DIAGNOSIS CLINICS

2015 was another very busy year for these Clinics, where care is provided for women with high-risk pregnancies, as well as the diagnosis of chromosomal and major structural abnormalities. The yearly number of fetal anomalies looked after in Fetal Assessment Unit (FAU) has increased from 137 in 2005 to 499 in 2015. The initial effect of hearing during your pregnancy that your baby is not the healthy baby you anticipated can be traumatic. The focus is on meeting the patient where they are at. These expectant parents can have the very real human need to be cared for and receive support when facing a difficult prenatal diagnosis.

A multi-disciplinary team approach is essential so that parents do not endure loneliness, isolation and a lack of information. Fetal medicine midwives, Nollaig Kelleher, Jane Dalrymple and Joan O'Beirnes work closely with the medical social worker in identifying patients who have been given difficult news about their baby and may need additional emotional and practical support at the time of a diagnosis and in the weeks and months that follow. Patients report how comforting it is for them to meet with the same midwives and doctors at each visit, as well as it being invaluable to have a quiet space to meet with the medical social worker and explore their feelings in confidence.

SUBSTANCE MISUSE

	2015	2014	2013	2012	2011
Deliveries to Substance Using Women		68	73	81	71
Number of Referrals to CFA	52(84%)	52 (76%)	50 (68%)	64 (79%)	41 (57.7%)
Discharge Meeting	20	19	11	19	21
Child Protection Case Conferences	21	19	21	19	8
Voluntary Care	3	7	1	6	4
Care – Court Orders	7	4	12	4	1
Mothers returned home under supervision of a non-drug using relative	8	7	11	17	14

In 2015, the medical social worker attached to the DOVE team continued to provide emotional and practical support to all women attending this specialist clinic. From an addiction perspective, this included all women who were on a methadone maintenance programme, or using illicit substances during pregnancy.

Referrals were received from the Drug Liaison Midwife and other departments within the hospital as well as from other external agencies, including community social work. The highest percentage of referrals received in 2015 was from the Drug Liaison Midwife (DLM). The DLM introduces the Social Work Department to women attending the DOVE clinic - this in turn assists in reducing women's fears and anxiety about meeting a social worker.

The DOVE medical social worker carried out psycho-social assessments with women attending the clinic and their partners, focusing on the environmental, social, emotional and physical factors in their lives. A special emphasis is placed on drug use in pregnancy and the risk this carries for a newborn baby. There is a known increase in the potential risk for harm and neglect to children whose parents misuse substances. Therefore, the medical social worker endeavours to establish whether there is a need to refer pregnancies to the Child and Family Agency.

The Child and Family Agency (CFA) is the statutory body responsible for improving wellbeing and outcomes for children. In 2016 the medical social worker referred 52 pregnancies to the Child and Family Agency – in some cases families were already known to this agency and the medical social worker liaised with their social workers during and after the birth of the baby.

The social worker attached to the CFA may convene meetings prior to the birth or discharge of a baby from the hospital, which the medical social worker is obliged to attend. The medical social worker and/or the DLMW attended 21 Child Protection Conferences during 2015 – these conferences are an interagency meeting and involve facilitating the sharing and evaluation of information between professionals and parents. The medical social worker also attended 20 discharge meetings to discuss the care of a baby in advance of discharge from the hospital.

10 babies did not return home with their biological parents immediately after discharge – 3 babies went into foster care under voluntary care orders, 7 babies went into care under Interim Care Orders and 1 baby went into care under a

private family arrangement. Three babies went with their mother's to an inpatient stabilisation centre when discharged from the hospital. The number of babies going into voluntary care has decreased since last year. However, the number of babies going into care under an Interim Care Order has increased. Overall there has been a slight decrease in the number of babies received into foster care compared with figures in 2014.

In addition to care orders, a number of babies went home with varying levels of family and community supports in place, 22 women had some form of family or community support in place as part of their care plan prior to discharge. In 6 cases mothers returned home under supervision of a non-drug using relative.

NEONATAL UNIT

The role of the medical social worker attached to the Neonatal Unit is to help families cope with the stressful experience of having a premature or sick baby. The social worker provides emotional support, information and practical assistance to parents while their baby is in the hospital and also after their baby has been discharged home. In addition, bereavement support is offered to parents if their baby dies while in neonatal care.

The social worker liaises closely with medical colleagues to ensure that parents receive holistic family-centred care. There is particularly close collaboration with the NICU Discharge Co-ordinator and with public health nurses and community-based support services to ensure continuity of care from the hospital to the home environment.

At a time when many families are experiencing financial difficulties, the social worker is involved in informing parents of their welfare entitlements and in enabling them to secure financial assistance with medical and other expenses. Grateful appreciation is expressed to community welfare officers for their support of parents and to the HSE Client Registration Unit for their assistance in processing medical cards for babies who require equipment or medication on discharge.

During 2015, there continued to be an increase in the number of babies transferred from hospitals outside Dublin to the Neonatal Unit in the Rotunda. These families had to cope with the practical and emotional difficulty of commuting long distances or of finding somewhere to stay in Dublin. The lack of supports for such families, particularly in terms of assistance with their expenses, constitutes major problem. For some parents, the transfer of their babies to Dublin means that they are unable to visit their babies as often as they would like because they can't afford the travel costs or the expense of childcare for their older children. In some instances, mothers are unable to provide their babies with expressed breast milk because they don't have the money to make the journey to Dublin on a sufficiently frequent basis.

A very welcome development over the past year was the provision of accommodation for parents from outside Dublin in Hugh's House which is situated close to the Rotunda. This charitable initiative has been set up by Ade and Marty Stack. The availability of accommodation for parents with babies in the NICU has been a source of invaluable support. The feedback from parents who have stayed there is overwhelmingly positive, with many emphasizing that the facility was vital in enabling them to cope with the difficult experience of

having a baby in neonatal care. Sincere gratitude is expressed to everyone involved in Hugh's House, most especially to Ade Stack.

Regrettably, there continues to be a lack of statutory supports for parents of premature babies. Of particular note is the fact that there is no provision for the extension of paid maternity leave beyond 26 weeks when a baby is born prematurely. This means, for example, that when a baby is born at 24 weeks' gestation, the baby's mother is expected to return to work when the baby's corrected age is only 10 weeks. Since many premature babies have a range of medical needs and require a high level of care, this is profoundly problematic. It is neither possible nor desirable for a child so young to be placed in a crèche or with a child-minder. The failure to allow mothers to have an extended period of paid maternity leave when their baby is born prematurely causes considerable hardship and impacts negatively on the wellbeing of these vulnerable children.

TRAINING - STAFF

Professional Development

S. Devitt, Interdisciplinary C.P.D. Conference – 22/06/15 – 1 day

S. Devitt, Children First Implementation Committee Meeting, RCSI – 14/09/15

R. Power, HIV Ireland (formally Dublin Aids Alliance) – HIV and STIs one day workshop – 3/11/15

R. Power, Women and Substance Use, Urrus, Ireland's Community Addiction Studies Training Centre - 17/11/15

S. Devitt, Manual Handling Training, Rotunda Hospital – 30/11/2015

S. Devitt, Always Children First: Foundation Training, HSE – 3/12/15 - 1 day

TRAINING

Training for Midwifery Students on Miscarriage, Stillbirth and Neonatal Loss – 07/04/15. D. Kirk

'Medical Social Work in the Rotunda Hospital' – talk given to graduate/post-graduate social work students, The College of Health and Human Services, University of New Hampshire, New Hampshire, USA – 26/05/15. S. Devitt

Training Day on Stillbirth and Neonatal Loss, Centre of Midwifery Education – 28/05/15 . D. Kirk

Specialist Midwifery services sessions for PHN students – Medical Social Work role/ Children First – 14/09/15. S. Devitt

AUDIT

An audit on the documentation of domestic violence enquiry at ante-natal visits and the associated Medical Social Worker – December 2015. S.Devitt

ACKNOWLEDGEMENTS

The Medical Social Work team would like to acknowledge their grateful appreciation of the following:

- The Friends of the Rotunda and the Samaritan Fund for their financial support;
- The various charitable organisations which respond so generously to our requests for assistance for families in need;
- All the voluntary community-based agencies which provide invaluable services and expertise;
- The lab staff in the Rotunda who generously donate hampers for families every Christmas;
- All our co-workers throughout the hospital, especially the midwives in Bereavement Liaison, DOVE, Drugs Liaison, Teenage Clinic, FAU and the staff of NICU and POPD

Early Pregnancy Assessment Unit

CONSULTANTS:	Dr Sam Coulter-Smith Dr. Karen Flood
ADMINISTRATIVE SUPPORT:	Ms Olivia Boylan Ms Judith Mulligan
MIDWIFERY:	Ms Suzanne Gillen
REGISTRARS:	January to December 2015

Dr Noor Mohammed	Dr Irum Farooq
Dr Kate Glennon	Dr Sahar Ahmed
Dr Nor 'Azie' Wahab	Dr Sandhya Ramesh Babu
Dr Cathy Mc Nestry	Dr Rachel Elebert
Dr Aoife Freyne	Dr Niamh Maher
Dr Gillian Ryan	Dr Nada Warreth
Dr Mashour Nansan	Dr Sanchila Talukdar
Dr Adeola Adewole	Dr Brendan Mc Donnell
Dr Tara Rigney	Dr Niamh Keating
Dr Hala Abu	Dr.Mark Hehir

The Early Pregnancy Assessment Unit (EPAU) continues to be an essential component of the Rotunda with the provision of specialized care to women in early pregnancy. In 2015, this compromised 4,305 new, return and reassurance appointments in the EPAU. Updated referral pathways, efficient appointment scheduling and continuous staff training allow the delivery of a dedicated service that manages patients in a safe, timely and supportive manner. The new separate reassurance scan list dedicated to patients with a history of previous miscarriages, ectopic pregnancy or gestational trophoblastic disease has proven to be very beneficial. This new sub-clinic has increased the availability of emergency appointments for symptomatic patients. It also serves as a focussed ultrasound list for training of junior NCHDs under direct supervision.

Other achievements in 2015 include:

- Updated support documentation for patients (also available on hospital intranet).
- Continued provision of Registrar training in Viewpoint® and early pregnancy undertaken by Dr Karen Flood and Dr. Jennifer Donnelly.
- Continued training of Senior House Officers in basic ultrasound in conjunction with the Royal College of Physicians Basic Specialist Training facilitated by Professor Fionnuala Breathnach.
- Participation in regular clinical auditing of early pregnancy key performance indicators.

Clinical activity:

	2015	(%)	2014	(%)	2013	(%)	2012	(%)
Total number of patients seen	3861		4106		4191		3106	
Repeat EPAU reviews	2197	(57)	3067	(75)	2587	(62)	231	(80)
Failure to attend for first appointments	90	(5)	63	(6)	145	(4)	200	(7)
Failure to attend for follow-up appointment	350	(16)	277	(9)	270	(10)	144	(6)
Miscarriages	1528		1260		1661		1551	
Surgical management of miscarriage	497	(33)	545	(43)	531	(32)	590	(38)
Expectant or medical management	1031	(67)	715	(57)	1130	(68)	961	(62)
Ectopic pregnancy or pregnancy of unknown location	169		187		192		123	

Recurrent pregnancy loss service

CONSULTANTS: Dr Karen Flood

MIDWIFE: Ms Patricia Fletcher

The recurrent pregnancy loss clinic was developed to provide thorough investigation and follow-up of couples with three or more consecutive miscarriage. This clinic continues to deliver an expanded service with the provision of dedicated early pregnancy support with frequent ultrasound monitoring and counselling. To ensure continuity of care, patients are then followed from their booking appointment until delivery.

All patients with histological confirmation of gestational trophoblastic disease following a miscarriage also attend this clinic for counselling and close serum βhCG monitoring with rapid access for review if complications occur.

	2015	%	2014	%	2013	(%)	2012	(%)
Total number of patient visits	735		667		499		376	
Return visits	599	(81)	510	(83)	390	(78)	292	(78)
Failure to attend for first appointments	27	(20)	21	(19)	26	(24)	18	(21)
Failure to attend for follow-up appointment	56	(9)	47	(8)	45	(12)	39	(13)
Total number of pregnant women seen	88		65		62		55	
Livebirth rate	61	(69)	44	(67)	39	(63)	43	(78)

Clinical Risk Management & Claims Department Activity

MS CLAIRE O'MAHONY, CLINICAL RISK & CLAIMS MANAGER

CONTEXT

The Clinical Risk Department is responsible for the ongoing development of a comprehensive clinical risk management programme across the hosptal including risk identification, analysis and support in incident investigation and reviews. The department manintains the clinical incident management system, notifies insures of reported incidents, produces trend reports and provides feedback to departments and committees in respect of incident trends.
Claims management is also a key function within the department and the risk management team is the key point of contact for the hospitals solicitors and the Clinical Indeminity Scheme (CIS) in this regard. The risk and claims team also analyse claims data in order for learning to be implemented within the hospital.

ACHIEVEMENTS

- Pilot use of National Incident Report form
- Lectures were continued in 2015 as part of the "Learning from Incidents, Claims, Complaints" sessions scheduled on a quarterly basis.
- Learning also continued to be shared through Clinical Risk staff training sessions and Departmental Patient Safety Meetings throughout the year.
- The hospital welcomed and analysed the State Claims Agency's report on "Clinical Incidents and Claims Report – Maternity and Gynaecology Services" in October 2015.
- Complied with regular requests for updates from both the HSE and RCSI hospital group regarding the escalation of Serious Reportable Events and updates on progress of incident investigation

SERVICE DEVELOPMENTS

National Incident Report Form/National Incident Management System

The Rotunda had commenced use of the NIMS database in September 2014 and continued to use this system throughout 2015. Significant work was carried out by the risk team to achieve meaningful report writing this time. In-house template reports and guidance were written to maximise local use of the reports function, to complement advice provided by our colleagues in the State Claims Agency. Suggestions were provided out of this experience to the State Claims Agency to inform system development and to try to encourage ease of report writing amongst other hospitals using the system.

Between January 26th and October 5th 2015 the Rotunda piloted two versions of the National Incident Report form. A three day training programme was provided by the Clinical Indemnity Scheme to roll out the implementation of the form and this was followed through with in-house training by the clinical risk and health & safety teams. Over 207 staff were trained as part of this initiative.

Feedback was sought from staff following use of the National Incident Report form and significant and detailed commentary and suggestions for improvement and modification were provided to the State Claims Agency. While some amendments were made, the hospital continued to provide feedback throughout 2015 both to the State Claims Agency and the National Implementation Steering Group on NIMS in respect of both the incident form and the content of the database, highlighting in particular the broad categories available through the taxonomy in use, the need for more specific clarity and guidance on reportable criteria in the maternity setting and the importance of local organisations being facilitated with meaningful data. In October 2015 the Rotunda took the decision to withdraw from use of the NIRF form and returned to the local incident form with plans in place to upgrade the local form in collaboration with improvements from the national form and local maternity requirements.

INCIDENT INVESTIGATIONS

Various recommendations for improvement or indeed acknowledgement of the need for on-going effort in various training initiatives were made through 2015. These initiatives continue to be hugely supported by the hospital's Practice Development Unit. The following are examples of quality initiatives introduced in 2015:

- The need for training for midwifery preceptors was supported as part of a review and training was implemented by the Practice Development Team in this regard.
- The Practice Development Team also updated the Early Warning Score tool and associated training.
- A Classification of Caesarean section guideline was made available to clinical staff across the hospital and on-going attention was drawn to the need to comply with this guideline.
- Training needs in foetal monitoring and use of Syntocinon were identified out of reviews completed in 2015 and specific measures for education, support and monitoring were put in place as a result.
- Audits were also recommended and conducted in 2015, including an audit of the discharge process and compliance with the Syntocinon guideline.
- The neonatal observation chart was updated in 2015 to support close monitoring and documentation of changes to IV sites.

PRIORITIES FOR 2016

- Progress communication workshops,
- Improvements to the patient handover process
- A scheduled audit to assess completion of the new neonatal IV template

Department of Research

DR. JOANNA GRIFFIN	Director of Research and Academic Affairs
DR. ELIZABETH TULLY	National Network Manager
COLIN KIRKHAM, B,SC	Research Officer
JESSICA COLBY MILLEY, M.SC	Research Manager
FIONA CODY, M.SC	Senior Research Sonographer
LISA MCSWEENEY, M.SC,	Senior Research Assistant
RACHEL MCDERMOTT, B.SC	Research Assistant
ROBIN GEORGE, B.SC	Research Assistant

The Rotunda research department continued to expand in 2015 with the appointment of a new research manager and several research assistants. The Research department's main remit is to facilitate and develop the hospital research programme and to assist and promote research activity.

RESEARCH INFRASTRUCTURE

Research infrastructure remains of paramount importance in order continue to develop our vision for the department as a national centre of research excellence. Designated research space within the School of Midwifery building was allocated to house the department offices, research data centre and a small dedicated research laboratory. In 2015, further cooperation between the Rotunda research department and the RCSI Department of Obstetrics & Gynaecology was promoted, as a strategic alliance to develop the growing research environment within the Rotunda. This unique partnership with our academic partner in the RCSI Hospital group has allowed the Research department to expand and progress both nationally and internationally as a centre of excellence in Perinatal research.

STRATEGIC COLLABORATIONS

An important function of the Research Department is forming key strategic collaborations with academic centres, other hospitals and industry. 2015 saw the signing of a Memorandum of Understanding (MOU) with DIT with regard to analytical research. The development of a MOU with Children's University Hospital Temple St as well as with a number of other external partners was also undertaken.

2015 saw the appointment of the first honorary research positions with our academic partners at RCSI. Together RCSI and the Rotunda have developed an agreed framework for the provision of support and conditions associated with the administration and management of research funding. We also aim to co-operate in establishing closer research and clinical links.

CLINICAL TRIALS AND CLINICAL RESEARCH STUDIES

The Rotunda hospital has a longstanding reputation for the conduct of quality clinical research and is home and headquarters to two national clinical research networks Perinatal Ireland and the newly funded HRB Mother & Baby Clinical Trials Network.

Our current portfolio of research studies span the broad fields of obstetrics, neonatology, maternal medicine, infectious disease, fetal medicine and paediatric follow up and we have over 30 ongoing studies. These include national and international Randomised Controlled Trials, prospective observational cohort studies as well as a number of patient registries.

ROTUNDA BUSINESS DEVELOPMENT UNIT (BDU)

The Rotunda business development unit was established in 2015 to solidify and promote the Rotunda Hospital's key research themes. The BDU acts as a liaison between the hospital and corporate partners including the pharmaceutical and biotechnology industries, charitable offices of large enterprises, and academic institutions.

The over-arching aim of the BDU is to build a reputation for the Rotunda Hospital as a valuable centre for research partnerships. In turn, these efforts will materialize into an increase in the quantity and diversity of research funding sources within the hospital.

THE FRIENDS OF THE ROTUNDA

The Friends of the Rotunda are generous supporters of research and researchers in the Rotunda. They continue to provide financial and other supports to researchers whose projects fit within the hospital's research ambition. The Friends of The Rotunda are committed to providing seed funding for projects with a view to funding start-ups that may then progress to applications for larger grants from outside agencies.

RESEARCH ETHICS COMMITTEE

The department plays an important role in assisting the hospital Research Ethics Committee on both an advisory and administrative capacity. In 2015, a total of 39 applications were reviewed by the hospitals Research Ethics Committee and the Research Advisory group reviewed 14 applications.

THE ROTUNDA HOSPITAL
DUBLIN

4
Friends of the Rotunda

CARING FOR GENERATIONS
SINCE 1745

THE FRIENDS OF THE ROTUNDA

The Friends of the Rotunda is the official fundraising arm of the Rotunda Hospital and a registered charity (CHY20091). It was established in 1971 and incorporated as a *Limited Company by Guarantee and Not Having a Share Capital.*

The Charity has a firm commitment to transparency, accountability and an adherence to good governance, best practice and performance. It publishes audited accounts approved by *KSi Faulkner Orr* which are submitted annually to the Revenue Commissioners.

- Charities Regulatory Authority (Registration Number 20079529)
- Tax Clearance Certification
- Tax Exemption effective for the purpose of the Charitable Donation Scheme.

In December 2015, the Directors of the Friends of the Rotunda with the consent of the Rotunda Hospital's Board of Governors, agreed to schedule an Extraordinary General Meeting in June 2016, for the purpose of adopting a new constitution and change of name of the organisation to *The Rotunda Foundation.*

OBJECTIVES

The Charity aims to provide a sustainable funding base for:-

➢ **Research** into aspects of *Maternal and Child Health*;

➢ **Additional and vital equipment** for the Hospital's Specialist Units, Services and Clinics; and

➢ **Improved amenities** for patients, their families and hospital staff.

HOW WE USE DONATIONS

The Friends of the Rotunda relies on revenue it generates annually from fundraising activities and donatio giving as it does not receive any funding from the State.

Research Projects Funded:

➢ **HRB/Medical Research Charities Group (MRCG) – Joint Funding Scheme**
The HANDLE Study – YR.2 Grant
Haemodynamic Assessment in Pregnancy and Neonatal Echocardiography Assessment
RCSI Rotunda Hospital, Principal Investigator – Professor Fergal Malone

Year 2 of the study identifying abnormal haemodynamic profiles in pregnancy as a predictor of adverse obstetric outcome and characterisation of neonatal myocardial performance in infants

- **A comparison of the rapid GeneXpert PCR system to traditional bacterial culture for the identification of S.aureus in breast milk samples from patients with mastitis with or without breast abscess: a diagnostic accuracy study**
  Dr. Richard Drew – Consultant Microbiologist, Rotunda Hospital and Temple Street Children's Hospital

- **A Pilot Study Assessing Feasibility and Impact of Maternal Group B Streptococcus Screening at the outset of Labour**
  Dr. Maeve Eogan, Infectious Disease Research Group

RESEARCH POSTS FUNDED:

- **Siobhan Corcoran**
  PEAR Study
  To complete the laboratory element of PEAR Study by processing over 300 samples collected for adiponectin testing

- **Louise Rafferty - YR.2 Post**
  Maternal Health And Maternal Morbidity in Ireland (MAMMI Study)
  Research based at Trinity College, Dublin
  Research study exploring the health and the health problems experienced by first-time mothers during pregnancy and up to 12 months after the baby's birth

- **Adam James – 1 YR Research Post (NICU)**
  The Use of Targeted Neonatal Echocardiography to Predict Short Term Clinical Sequelae Associated with a Patient Ductus Arteriosus

- **Colm Breatnach – 1YR Research Post (NICU)**
  Assessment of Cardiac Function in Preterm and Term Infants with Twin to Twin Transfer Syndrome, Intra-uterine Growth Restriction and Congenital Diaphragmatic Hernia Using Novel Echocardiography Techniques

- **Medical Safety in Neonatal Intensive Care Targeted Research Programme Pharmacist Post – 1YR**
  Lead Investigators: Prof Brian Carey, Prof. Naomi McCallion, Prof. Paul Gallagher

- **Business Development Manager – 1YR Post**
  Department of Research & Academic Affairs, Rotunda

EQUIPMENT PURCHASED:

- **Echocardiography Machine for NICU**
  Dr Afif EL-Khuffash
  A new state of the art piece of equipment for the Neonatal Unit provides a better way to care for sick infants on a daily basis and continues to provide a platform for conducting on-going novel research in the field of neonatal cardiovascular medicine.

➢ **Non-Invasive Continuous Cardiac Output Assessment and Real Time Cerebral Perfusion Monitoring in Term Infants with Neonatal Encephalopathy: The effect of Therapeutic Hypothermia**
NICOM Monitor and Sensors plus NIRS Sensors (NICU)
Dr. Afif EL-Khuffash and Dr. Adrienne Foran
This equipment has been purchased for the NICU and will be used as part of this research study to determine whether a NICOM monitor to accurately and continuously monitor a baby's heart function during a cooling process.

➢ **INVOS Cerebral / Somatic Oximeter System (NICU)**
This system provides real-time monitoring of changes in regional oxygen saturation (rSO2) in the brain and other body tissues beneath the sensor for effective oxygen monitoring in neonates. This unique equipment allows our NICU Clinicians to measure site-specific oxygen levels rather than requiring them to infer the data from systemic, whole body measures such as blood pressure and pulse oximetry. Our NICU Clinicians can now conveniently monitor multiple brain and body areas.

➢ **Video Intubation Unit (NICU)**
This highly dedicated device will be used in the NICU for neonatal video-intubation and transillumination to improve patient outcome. Our tiny babies who have difficulty in breathing will be hugely aided by this equipment. It will also be used by our Consultants to provide valuable visual training support for our junior doctors.

➢ **TCM Combi Monitor & Consumables (NICU)**

The condition of an infant can take a turn for the worse in a matter of minutes. By continuously monitoring ventilation and oxygenation, our NICU Staff can detect and quickly react to these changes, avoiding adverse patient outcomes. The TCM CombiM also provides a valuable trending tool in monitoring tcpCo2 and tcpO2 levels in the incubator or at the beside.

➢ **Developmental products for our tiny infants to assist sleep, comfort and improved positioning within incubators (NICU)**

➢ **Therapy Bench**
Rotunda Hospital's Physiotherapy Department
A small adjustable therapy bench for the treatment of the Hospital's developmental delay babies. This piece of equipment helps by being part of their developmental physiotherapy. The Hospital's Physiotherapy staff continually work at improving movement patterns for these babies which includes sit to stand, stepping and turning in preparation for walking.

➢ **Bereavement Support Services**
- *2 wall-mounted TVs for rooms 5&6 within the Delivery Suite*
- *Oak Glass Cabinet for the Mortuary Chapel to display the Hospital's Books of Condolence*
- *Framed Painting for Mortuary Chapel*
- *External planting for Mortuary Chapel*
- *A recliner armchair*

➢ **Lasting Memories** - These bags have been commissioned following feedback from bereaved parents and paid for from donations received to the Bereavement Support Services Fund. They are given to bereaved parents so that they can carefully transport baby's precious possessions and belongings home when leaving hospital.

HOW TO MAKE A DONATION

Donors can give directly to their designated fund which is managed by the *Friends of the Rotunda Charity* by using our On-line payments facility for *Donations* on **www.friendsoftherotunda.ie**

GOVERNANCE

The Friends of the Rotunda Board is committed to adopt the Principles of Good Governance as outlined in The Governance Code - A Code of Practice for Good Governance of Community, Voluntary and Charitable Organisations in Ireland.

- Directors: Andrew Wortley (Chairman) Marie Malone (Secretary), Sylvia Graham.

The Management Executive is run by Sheila Thompson who is responsible for the administration, marketing and strategic development of the organisation.

The Friends of the Rotunda Charity is a member of *The Medical Research Charities Group (MRCG), Fundraising Ireland, Philanthropy Ireland, MyCharity.ie, ICTR and the Wheel.*

FUNDRAISING & EVENTS:

The Charity does not receive any State funding and generates revenue each year by actively encouraging Rotunda staff, patients, their families and friends, to participate in fundraising activity:-

- KMS 4 Kids – 12 hours Charity Cycle Challenge
- Rotunda Golf Classic – The Masters' Cup
- Supermarket Bag Packing
- Christening Party Fundraisers
- Laughter Lounge Comedy Fundraiser in aid of Rotunda SATU
- Coffee Morning Fundraisers
- Birthday Party Fundraisers
- Sponsored Charity 5K, 10K Walks/Runs
- Vhi Women's Mini Marathon
- Hell and Back Challenge in aid of NICU
- Dublin City Marathon

- NY City Marathon
- The Mark Anthony Leo Laycock Annual 5 Aside Football Fundraiser for NICU 'Leave Your Mark!'
- Sale of Easter Eggs
- Coin Box Collections and Raffles
- Rotunda Ball Raffle in aid of Rotunda Research
- Sale of Publications gifted to Rotunda Hospital by Artists / Authors
- Sale of Football Shirts in aid of Rotunda Research Fund
- Sale of Christmas Cards
- Sale of Art illustrating the Rotunda Hospital
- Sale of Designer Silver Jewellery Collection
- Sale of Memorabilia of the Rotunda Hospital
- Tango Fiesta Annual Charity Fundraiser
- Young European Strings Chamber Orchestra Performance in the Pillar Room
- Christmas Swim Fundraiser
- Sky Dive Fundraisers
- Friends of the Rotunda Annual Membership Subscriptions
- Introduction to being a Registrar in Neonatology
- Charity Collaboration with Feileacain
- Charity Partner Collaboration with Park Rite Parnell Street Car Park
- Charity Partner Collaboration with TESCO Parnell & Winner Tesco Community Fund

www.everydayhero.ie hosts the *Friends of the Rotunda Charity* registration on its website. Fundraisers can set up a Fundraising Page with links to mobile and social media platforms.

THE ROTUNDA KNITTERS VOLUNTEER GROUP

Continue to supply the Friends of the Rotunda Charity with their amazing hand crafted knitwear for newborn and premature babies born at the Rotunda. *Complimentary Gift Packs* are frequently distributed to new parents in celebration of memorable events such as *World Prematurity Day, National Breastfeeding Week, St Patricks Day, Spring Awakening, Summer Joy, Winter Warmth and Merry Christmas!*

DONATIONS APPEAL FOR MOTHERS & BABY

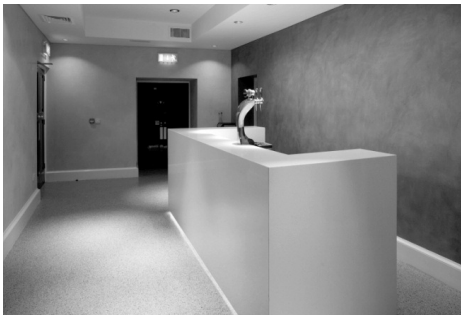
Supports the Rotunda's Medical Social Work Team who each year, need to provide support to pregnant Mothers who find themselves in a crisis situation with little or no money to care for their new born infants. The Friends of the Rotunda Donations Appeal asks for new or nearly new items of clothing and/or general overnight toiletries for both Mother and baby.

CAFÉ ROTUNDA

The Hospital Shop is located within the main reception of the Hospital and provides a café and retail service to all in the Hospital. Annual rental income from the Shop provides extra revenue to the Friends' Charity to run its administration costs.

THE ROTUNDA PILLAR ROOM

Another substantial source of revenue in aid of Rotunda Research is generated each year through the hire of *The Pillar Room Complex* as a facility for private and corporate functions. It is used by the Hospital for teaching purposes and as an examination hall.



The striking contemporary bar facility within the Pillar Room Complex. The Venue offers Conferencing and Catering facilities and is equipped with a modern PA Sound System and High-Speed Wi-Fi.

Bookings are managed by the Friends of the Rotunda office on 01 872 2377 or email *friends@rotunda.ie* .

The Board of the Friends of the Rotunda wishes to extend its gratitude to all those who organised and supported fundraising activities during 2015.

Sheila Thompson
Friends of the Rotunda
www.friendsoftherotunda.ie

THE ROTUNDA HOSPITAL DUBLIN

5 Clinical Audit Department

CARING FOR GENERATIONS SINCE 1745

CLINICAL AUDIT DEPARTMENT

Clinical Audit Team:

DR SHARON COOLEY	Clinical Audit Lead
MARY WHELAN	Clinical Audit Facilitator
VALERIE JACKSON	Surveillance Scientist
COLIN KIRKHAM	Statistician

The Rotunda Hospital Clinical Audit Department was established in June 2011 under the quality and safety initiative of the Rotunda's Strategic Plan 2011-2013. Clinical audit offers a structured approach to evaluating our care against local, national and international standards.

The Clinical Audit Department functions include:

- Education and support at all stages of the clinical audit pathway. This includes topic selection, researching standards, the application process, audit tool design, data analysis and report writing.
- Assistance in maintaining clinical audit experience which is an essential element of professional competence.
- Monitor all clinical audit activity within the hospital and routinely report on same.
- Monitor local and national audit standards and appraise hospital performance against these standards where appropriate.
- Promote a high standard of practice amongst clinical staff and all healthcare workers undertaking clinical audit.
- Provide a forum for the sharing and dissemination of clinical audit work in the Rotunda, which is facilitated by the use of the clinical audit database, the Biannual Rotunda Audit and Research Day and quarterly audit results meetings.
- Encourage presentation of audit results at inter-hospital meetings e.g. JOGS, SJH Annual Audit Day and TSH Biannual Audit Day.
- Forge professional links with other clinical audit units nationally.

Clinical Audit Group Weekly Meeting

The core group within the Clinical Audit Department meet weekly to discuss and approve audit applications.

Clinical Audit Steering Group

The Clinical Audit Steering Group meets quarterly. Membership of the steering group includes the executive management team, clinical risk department, departmental patient safety representatives, heads of departments and allied health professionals.

Other Internal Meetings

Clinical audit activity reports are submitted to the Quarterly meeting of the Board of Governors, the Patient Safety Meetings and the Monthly Quality and Safety Committee meeting. These reports include details of new audits, completed audits and any immediate actions arising from audits. In addition, any clinical audit with a plan that requires immediate action is highlighted to the Executive Management Team. Since the establishment of the Risk Subcommittee of the Board of Governors in the latter half of 2015 Clinical Audit also report to this group annually on audit activity.

Clinical Audit Database
The database of clinical audit activity in the hospital facilitates the production of weekly and quarterly reports on topics audited; departments and clinicians involved, action plans and dates for re-audit. All clinical audits conducted in the hospital are registered on the database. All health professionals who participate in completed clinical audits that have been registered with the hospital receive a certificate of participation in conjunction with their supervisors.

In total, 58 clinical audits were registered in 2015 (45 first audits, 11 re-audits and 2 continuous audits).

Clinical Audit Training
The clinical audit team regularly delivers educational sessions in-house on the clinical audit cycle across all disciplines. In 2015 there were 7 information sessions held and a total of 61 staff members attended with representatives from all clinical areas.

Rotunda Audit and Research Day
Two successful audit and research days were held within the hospital during the year and kindly sponsored by AbbVie. The Rotunda Medals were awarded to Dr Catherine Finnegan for her audit into the use of methotrexate in the management of ectopic pregnancy and Dr Siobhan Neville for her audit on enteral feeding in very low birthweight infants.

Congratulations also to all our other winners and to all who took presented and took part.

Presentations at External Meetings and Interhospital links:

Several audits were presented at national and cross-border meetings in 2015 including:

- Hospital representation at Adelaide and Meath Hospital Audit day April 2015
- A reaudit and completion of the audit cycle into the management of urinary retention by Cinny cusack , Dr Mary Holohan and Mary O Reilly was presented in poster format at the Beaumont Hospital Audit Day in May 2015
- An audit on peri -operative prevention of maternal and neonatal hypothermia was presented by Aliona Vilinsky at Beaumont Hospital Audit Day May 2015
- Hospital representation at the National Office of Clinical Audit Conference May 2015
- Hospital representation at the St James Hospital Audit Day May 2015
- Hospital representation and posters at the National Patient Safety Conference November 2015

- Clinical Audit Database and Activity posters sent to North South Audit Meeting in Armagh in October 2015

- Congratulations to Debbie Browne and the Teenage Clinic service which has evolved to meet the need of our patients, a fact recognised in a recent WHO publication: Nurses and midwives: a vital resource for health. European Compendium of Good Practices in Nursing and Midwifery towards Health 2020 goals.

New Initiatives in 2015

- Appointment of an NCHD representative to the Department. This year we welcomed the input of Dr Sandhya Babu into issues relating to clinical audit in the NCHD group

- Engagement with the Risk Subcommittee of the Board of Governors with a focus on developing links not only with other Clinical Audit Departments nationally but internationally.

TABLE OF CLINICAL AUDITS REGISTERED IN 2015

Speciality	Title of audit	Audit type
Anaesthetics	Procedural workload for the obstetric anaesthetist at night and weekend with reference to maternity unit size	First Audit
Anaesthetics	Audit to assess the conversion rate of regional to general anaesthesia for LSCS	Re-audit
Anaesthetics	Four year review of patients with cardiac morbidity	Re-audit
Clinical Nutrition	To determine the rationale for, number of, & preparation technique of powdered infant formula in NICU	First Audit
Community Midwifery	Community Midwifery completion of EPDS	First Audit
Gynaecology	Audit of LLETZ Procedures. Are we meeting NCSS Audit Standards?	First Audit
Gynaecology	Management of Pregnancy of Unknown Location	First Audit
Gynaecology	An Audit of Uterine Balloon Therapy cases in the Rotunda requiring repeat treatment	First Audit
Gynaecology	Audit of Surgical Management using Cytotec 400mcg of Miscarriage less than 12 weeks Gestation	Re-audit
Gynaecology	The uptake of medical management of pregnancy loss in the Early Pregnancy Unit	Re-audit
Laboratory Medicine	Review of RAADP (Routine Ante-natal Anti-D Prophylaxis) Programme for 2014	First Audit
Laboratory Medicine	Audit of abnormal P16 IHC	First Audit
Laboratory Medicine	Incidence of Red Cell Transfusion in NICU Rotunda Hospital 2011-2014	Re-audit
Medical Social Work	To audit the documentation of domestic violence enquiry at antenatal visits and the associated MSW follow up	First Audit
Neonatology - Medical	The Use of Inhaled Nitric Oxide in a tertiary NICU in the Republic of Ireland	First Audit
Neonatology - Medical	Audit of Enteral Feeding in Very Low Birth Weight Infants	First Audit
Neonatology - Medical	Review of Antenatal corticosteroid cover in Preterm neonates	First Audit
Neonatology - Medical	Healthcare Record Data Completion	First Audit
Neonatology - Medical	Timing of imaging in HIE	First Audit
Neonatology - Medical	Compliance with Vancomycin Dosing in NICU Neonates	First Audit
Neonatology - Medical	SBR v Bilimeter - Investigation of whether TCB readings between 200 and 250 umol/l are accurate in term babies of 72 hours of age	First Audit
Neonatology - Medical	Electrolyte Disturbance with greater than 10% weight loss in the first week of life	First Audit
Neonatology - Medical	Correlation between thrombocytopenia in pregnancy and neonatal thrombocytopenia and adherence to international guidelines	First Audit
Neonatology - Medical	Use of surfactant in very premature multips 26-36 weeks of gestation	First Audit
Neonatology - Medical	Save the date? Correct recording of day of life and CGA in NICU	First Audit
Neonatology - Medical	Audit to assess timing of ultrasound of hips for DDH	First Audit
Neonatology - Medical	Temperature stability in preterm neonates in first six hours	First Audit
Neonatology - Medical	Improving completion of neonatal exam	First Audit
Neonatology - Medical	Has the quality improved? A quality improvement study of the assessment of prolonged neonatal jaundice in POPD	Re-audit
Neonatology - Medical	Investigation of whether TCB readings between 200 and 250 umol/l are accurate in term babies of 72 hours of age	Re-audit
Neonatology - Nursing	40% Dextrose Gel for the management of Neonatal Hypoglycaemia	First Audit
Neonatology - Nursing	Time of first expressed breast milk administration for very low birth weight infants in NICU	First Audit
Nursing/Midwifery	Ongoing Audits of Registered Nurse/Midwife prescribing	Continuous
Nursing/Midwifery	Adherence to CTG guideline regarding documentation of care, review and upward	First Audit

Speciality	Title of audit	Audit type
	referral	
Nursing/Midwifery	IMEWS audit in January 2015	First Audit
Nursing/Midwifery	Audit of staff compliance on the use of LacSure	First Audit
Nursing/Midwifery	Audit of Amnisure use and outcomes	First Audit
Nursing/Midwifery	Audit of outcomes from Cold coagulation treatment for CIN 2	First Audit
Nursing/Midwifery	Audit of Postnatal discharge process, documentation and follow up	First Audit
Nursing/Midwifery	Adherence to Propess administration for Induction of Labour (in patients who required EM LSCS for failed induction)	First Audit
Nursing/Midwifery	Re Audit Of The Documentation On IMEWS And Escalation When Required	Re-audit
Nursing/Midwifery	Audit of the documentation of mental health care in the obstetric chart	Re-audit
Nursing/Midwifery	To asses adherence to guidelines on oxytocin use on the labour ward	Re-audit
Obstetrics	Intrapartum factors and HIE on our LW	First Audit
Obstetrics	An audit of gestation of first booking visit in the Rotunda OPD	First Audit
Obstetrics	A 3 year audit of fetal and maternal outcomes in cases of intra-uterine transfusion performed in the Rotunda Hospital	First Audit
Obstetrics	Use of Tocolytic in Rotunda Hospital	First Audit
Obstetrics	An audit on the adherence of staff to the algorithm in place for management of PPROM in ER	First Audit
Obstetrics	To determine if the introduction of a Hemocue 201 DM system is equivocal to Full blood count in fetal blood sampling during an intrauterine transfusion	First Audit
Obstetrics	Magnesium Sulphate administration for severe preeclampsia in HDU	First Audit
Obstetrics	Classification documented for Emergency LSCS & accuracy of use of bleep system for emergencies	First Audit
Obstetrics	The rate of sequential instrumental use at operative vaginal delivery	First Audit
Obstetrics	Audit on the Management of pregnant women positive for HBsAg	First Audit
Obstetrics	The management of pre labour rupture of membranes at term (PROM) including IOL	First Audit
Obstetrics	Audit of Inpatient Follow-up of Patients with Intrapartum Complications	Re-audit
Pathology	Blood Sampling to Transfusion – Can we time it better?	First Audit
Pharmacy	Compliance of drug kardexs with the medication management policy	Continuous
Pharmacy	An Evaluation of Antenatal Corticosteroid Prescribing in the Pre-Natal Ward and the Daycare Unit/Emergency Room	First Audit

CONCLUSION

The team would like to commend the clinical staff for their enthusiasm for clinical audit and look forward to working with them towards their clinical audit goals in 2016.

THE ROTUNDA HOSPITAL DUBLIN

6 Staff Publications

CARING FOR GENERATIONS SINCE 1745

Staff Publications 2015

EL KHUFFASH, A.,., JAMES, A. T., CLEARY, A., SEMBEROVA, J., FRANKLIN, O. & MILETIN, J. 2015. Late medical therapy of patent ductus arteriosus using intravenous paracetamol. Arch Dis Child Fetal Neonatal Ed, 100, F253-6.

ANGLIM, B., WALSH, J, DALY, S, UNTERSCHEIDER, J, GEARY, M , O DONOGHUE, K, KENNELLY, M, MCAULIFFE, F, HUNTER, A, MORRISON, J, HIGGINS, S, MAHONY, R, DICKER, P, MANNING, F, TULLY, E, MALONE, F. 2015. Cardiovascular Doppler assessments in IUGR: are they associated with adverse perinatal outcome ? Results from the multicenter Prospective PORTO Trial. American Journal of Obstetrics and Gynecology, 212.

BARRY, C. 2015. Pyometra in childhood. Obstet Gynecol, 125, 1035-8.

BOROWSKI, K. S., CLARK, E. A., LAI, Y., WAPNER, R. J., SOROKIN, Y., PEACEMAN, A. M., IAMS, J. D., LEVENO, K. J., HARPER, M., CARITIS, S. N., MIODOVNIK, M., MERCER, B. M., THORP, J. M., JR., O'SULLIVAN, M. J., RAMIN, S. M., CARPENTER, M. W., ROUSE, D. J., SIBAI, B., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Neonatal Genetic Variation in Steroid Metabolism and Key Respiratory Function Genes and Perinatal Outcomes in Single and Multiple Courses of Corticosteroids. Am J Perinatol, 32, 1126-32.

BOYLE, M., LYONS, A., RYAN, S., MALONE, F. & PORAN, A. 2015. Postnatal MRI Brain in Infants Treated for Twin-Twin Transfusion Syndrome. Ir Med J, 108, 240-3.

BOYLE, M., SHIM, R., GNANASEKARAN, R., TARRANT, A., RYAN, S., FORAN, A. & MCCALLION, N. 2015. Inclusion of extremes of prematurity in ventricular index centile charts. J Perinatol, 35, 439-43.

BREATNACH, C. R., FLANAGAN, F., JAMES, A., CORCORAN, J. D., FRANKLIN, O. & EL-KHUFFASH, A. 2015. The Use of Inhaled Nitric Oxide in a Tertiary Neonatal Intensive Care Unit. Ir Med J, 108, 275-8.

COLBERS, A., HAWKINS, D., HIDALGO-TENORIO, C., VAN DER ENDE, M., GINGELMAIER, A., WEIZSACKER, K., KABEYA, K., TAYLOR, G., ROCKSTROH, J., LAMBERT, J., MOLTO, J., WYEN, C., SADIQ, S. T., IVANOVIC, J., GIAQUINTO, C., BURGER, D. & NETWORK, P. 2015. Atazanavir exposure is effective during pregnancy regardless of tenofovir use. Antivir Ther, 20, 57-64.

CORCORAN, S., UNTERSCHEIDER, J, DALY, S, GEARY, M, KENNELLY, M, MCAULIFFE, F, O DONOGHUE, K, HUNTER, A, MORRISON, J, BURKE, G, DICKER, P, TULLY, E, MALONE, F 2015. Fetal Growth Restriction co-existing with Gestational Diabetes-impact on perinatal outcomr: results of a multi-center OPORTO study. American Journal of Obstetrics and Gynecology, 212, S126-127.

CORCORAN, S., BREATHNACH, F., BURKE, G., MCAULIFFE, F., GEARY, M., DALY, S., HIGGINS, J., HUNTER, A., MORRISON, J. J., HIGGINS, S., MAHONY, R., DICKER, P., TULLY, E. & MALONE, F. D. 2015. Dichorionic twin ultrasound surveillance: sonography every 4 weeks significantly underperforms sonography every 2 weeks: results of the Prospective Multicenter ESPRiT Study. Am J Obstet Gynecol, 213, 551 e1-5.

CORCORAN, S. & BREATHNACH, F. M. 2015. The early bird catches the worm - predicting the onset of gestational diabetes in the first trimester. J Matern Fetal Neonatal Med, 28, 823-4.

DEMPSEY, M. A., FLOOD, K., BURKE, N., FLETCHER, P., KIRKHAM, C., GEARY, M. P. & MALONE, F. D. 2015. Perinatal outcomes of women with a prior history of unexplained recurrent miscarriage. J Matern Fetal Neonatal Med, 28, 522-5.

DEMPSEY, M. A., FLOOD, K., BURKE, N., MURRAY, A., COTTER, B., MULLERS, S., DICKER, P., FLETCHER, P., GEARY, M., KENNY, D. & MALONE, F. D. 2015. Platelet function in patients with a history of unexplained recurrent miscarriage who subsequently miscarry again. Eur J Obstet Gynecol Reprod Biol, 188, 61-5.

DIVINEY, M., PINNAMANENI, R., MURPHY, J. F., LYNCH, B., RUSHE, H., MADIGAN, C., GEARY, M. & FORAN, A. 2015. Neurodevelopmental outcome at seven years in term, acidotic newborns. Ir Med J, 108, 106-9.

DREW, R. J., COLE, T. S. & NEWMAN, W. 2015. How to use... eye swabs. Arch Dis Child Educ Pract Ed, 100, 155-61.

DREW, R. J., FONSECA-KELLY, Z. & EOGAN, M. 2015. A Retrospective Audit of Clinically Significant Maternal Bacteraemia in a Specialist Maternity Hospital from 2001 to 2014. Infect Dis Obstet Gynecol, 2015, 518562.

DREW, R. J., ORMANDY, E. E., BALL, K., LAMBERT, S. E., PAULUS, S., WILLIAMS, N. J. & CUNLIFFE, N. A. 2015. Antimicrobial Susceptibility Patterns Among Extended-Spectrum beta-Lactamase-Producing Enterobacteriaceae in a Large Pediatric Hospital in the United Kingdom. J Pediatric Infect Dis Soc, 4, e147-50.

DREW, R. J., STAPLETON, P., ABU, H., HEALY, E., FERGUSON, W., DE GASCUN, C., O'GORMAN, J. & EOGAN, M. 2015. Pregnancy Outcomes of Mothers with Detectable CMV-Specific IgM Antibodies: A Three-Year Review in a Large Irish Tertiary Referral Maternity Hospital. Infect Dis Obstet Gynecol, 2015, 218080.

EGAN, K., KEVANE, B. & NI AINLE, F. 2015. Elevated venous thromboembolism risk in preeclampsia: molecular mechanisms and clinical impact. Biochem Soc Trans, 43, 696-701.

EL-KHUFFASH, A., JAMES, A. T., CORCORAN, J. D., DICKER, P., FRANKLIN, O., ELSAYED, Y. N., TING, J. Y., SEHGAL, A., MALIKIWI, A., HARABOR, A., SORAISHAM, A. S. & MCNAMARA, P. J. 2015. A Patent Ductus Arteriosus Severity Score Predicts Chronic Lung Disease or Death before Discharge. J Pediatr, 167, 1354-1361 e2.

FORMAN, E., CATHAIN, N. O., SILLS, A., CRONIN, S., FORAN, A. & MCCALLION, N. 2015. Neonatal Discharge Planning: Could Unscheduled Reviews be reduced in the First Six Weeks of Life? Ir Med J, 108, 219-20.

GORMAN, K., PINNAMANENI, RM, FRANKLIN, O, FORAN, A. 2015. Effects of Ibuprofen on cerebral and somatic regional tissue oxygenation, using nrear-infrared spectroscopy in preterm infants less than 1500g. with a patent ductus arteriosus. Journal of Clinical Neonatology, 4(3), 178-182.

HADDOW, J. E., NEVEUX, L. M., PALOMAKI, G. E., LAMBERT-MESSERLIAN, G., MALONE, F. D. & D'ALTON, M. E. 2015. An Inverse Relationship Between Weight and Free Thyroxine During Early Gestation Among Women Treated for Hypothyroidism. Thyroid, 25, 949-53.

HEHIR, A. P., BREATHNACH, F, MCAULIFFE, F, GEARY, M, DALY, S, HIGGINS, J, DORNAN, J, MORRISON, J, BURKE, G, HIGGINS, S, DICKER, P, MAHONY, R, MALONE, F. 2015. Gestational hypertensive disease in twin pregnancy: influence on outcomes in a large national prospective cohort. American Journal of Obstetrics and Gynecology, 212, S257-258.

HEHIR, M., UNTERSCHEIDER, J, DALY, S, GEARY, M, O DONOGHUE, K, KENNELLY, M, MCAULIFFE, F, HUNTER, A, MORRISON, J, BURKE. G, DICKER, P , TULLY, E, MALONE, F. 2015. The influence of growth restriction on mode of delivery: results of a multicenter prospective cohort . American Journal of Obstetrics and Gynecology, 212, S210-211.

HEHIR, M. P., DALRYMPLE, J. & MALONE, F. D. 2015. Decision-support guide and use of prenatal genetic testing. JAMA, 313, 199.

HIRTZ, D. G., WEINER, S. J., BULAS, D., DIPIETRO, M., SEIBERT, J., ROUSE, D. J., MERCER, B. M., VARNER, M. W., REDDY, U. M., IAMS, J. D., WAPNER, R. J., SOROKIN, Y., THORP, J. M., JR., RAMIN, S. M., MALONE, F. D., CARPENTER, M. W., O'SULLIVAN, M. J., PEACEMAN, A. M., HANKINS, G. D., DUDLEY, D., CARITIS, S. N., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Antenatal Magnesium and Cerebral Palsy in Preterm Infants. J Pediatr, 167, 834-839 e3.

HORTON, A. L., LAI, Y., ROUSE, D. J., SPONG, C. Y., LEVENO, K. J., VARNER, M. W., MERCER, B. M., IAMS, J. D., WAPNER, R. J., SOROKIN, Y., THORP, J. M., RAMIN, S. M., MALONE, F. D., O'SULLIVAN, M. J., HANKINS, G. D., CARITIS, S. N., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Effect of magnesium sulfate administration for neuroprotection on latency in women with preterm premature rupture of membranes. Am J Perinatol, 32, 387-92.

IRWIN, A. D., DREW, R. J., MARSHALL, P., NGUYEN, K., HOYLE, E., MACFARLANE, K. A., WONG, H. F., MEKONNEN, E., HICKS, M., STEELE, T., GERRARD, C., HARDIMAN, F., MCNAMARA, P. S., DIGGLE, P. J. & CARROL, E. D. 2015. Etiology of childhood bacteremia and timely antibiotics administration in the emergency department. Pediatrics, 135, 635-42.

JACKSON, V., FERGUSON, W., KELLEHER, T. B., LAWLESS, M., EOGAN, M., NUSGEN, U., COUGHLAN, S., CONNELL, J. & LAMBERT, J. S. 2015. Lamivudine treatment and outcome in pregnant women with high hepatitis B viral loads. Eur J Clin Microbiol Infect Dis, 34, 619-23.

JAMES, A., CORCORAN, J. D., MERTENS, L., FRANKLIN, O. & EL-KHUFFASH, A. 2015. Left Ventricular Rotational Mechanics in Preterm Infants Less Than 29 Weeks' Gestation over the First Week after Birth. J Am Soc Echocardiogr.

JAMES, A. T., BEE, C., CORCORAN, J. D., MCNAMARA, P. J., FRANKLIN, O. & EL-KHUFFASH, A. F. 2015. Treatment of premature infants with pulmonary hypertension and right ventricular dysfunction with milrinone: a case series. J Perinatol, 35, 268-73.

JAMES, A. T., CORCORAN, J. D., HAYES, B., FRANKLIN, O. & EL-KHUFFASH, A. 2015. The effect of antenatal magnesium sulfate on left ventricular afterload and myocardial function measured using deformation and rotational mechanics imaging. J Perinatol, 35, 913-8.

JAMES, A. T., CORCORAN, J. D., MCNAMARA, P. J., FRANKLIN, O. & EL-KHUFFASH, A. F. 2015. The effect of milrinone on right and left ventricular function when used as a rescue therapy for term infants with pulmonary hypertension. Cardiol Young, 1-10.

KENT, E., BREATHNACH, F, BURKE, G, MCAULIFFE, F, GEARY, M, DALY, S, HIGGINS, J, HUNTER, A. 2015. Perinatal outcome in Twins discordant for umbilical arterial Doppler abnormalities. American Journal of Obstetrics and Gynecology, 212, S170-171.

KEVANE, B., MCKENNA, P., WALSH, K., DONNELLY, J. C., FLOOD, K., CULLEN, M., BOWEN, M., THORNTON, P., LOUGHREY, J., COULTER-SMITH, S. & NI AINLE, F. 2015. Haemorrhagic and thrombotic complications in pregnant women with acquired and congenital cardiac disease. J Perinat Med, 43, 165-9.

KUPPERMANN, M. & NORTON, M. E. 2015. Decision-support guide and use of prenatal genetic testing--reply. JAMA, 313, 200-1.

LEVINE, T. A., GRUNAU, R. E., MCAULIFFE, F. M., PINNAMANENI, R., FORAN, A. & ALDERDICE, F. A. 2015. Early childhood neurodevelopment after intrauterine growth restriction: a systematic review. Pediatrics, 135, 126-41.

MCGETTRICK, P., FERGUSON, W., JACKSON, V., EOGAN, M., LAWLESS, M., CIPRIKE, V., VARUGHESE, A., COULTER-SMITH, S. & LAMBERT, J. S. 2015. Syphilis serology in pregnancy: an eight-year study (2005-2012) in a large teaching maternity hospital in Dublin, Ireland. Int J STD AIDS.

MEEHAN, M., CAFFERKEY, M., CORCORAN, S., FORAN, A., HAPNES, N., LEBLANC, D., MCGUINNESS, C., NUSGEN, U., O'SULLIVAN, N., CUNNEY, R. & DREW, R. 2015. Real-time polymerase chain reaction and culture in the diagnosis of invasive group B streptococcal disease in infants: a retrospective study. Eur J Clin Microbiol Infect Dis, 34, 2413-20.

MONTEITH, C., MULLERS, S, UNTERSCHEIDER, J, FLOOD, K, BREATHNACH, F, DALY, S, GEARY, M, KENNELLY, M, MCAULIFFE, F, O DONOGHUE, K, HUNTER, A, MORRISON, J, BURKE, P, YULLY, E, MALONE, F. 2015. Is a normalizing cerebro-placental ratio (CPR) a potential predictor for adverse outcome in intrauterine growth retardation : results of the multicenter PORTO study. American Journal of Obstetrics and Gynecology, 212.

MOORE, R., ADLER, H., JACKSON, V., LAWLESS, M., BYRNE, M., EOGAN, M. & LAMBERT, J. S. 2015. Impaired glucose metabolism in HIV-infected pregnant women: a retrospective analysis. Int J STD AIDS.

MORALES-ROSELLO, J., KHALIL, A. & PERALES-MARIN, A. 2015. The PORTO study and the importance of cerebroplacental ratio in fetal growth restriction. Am J Obstet Gynecol, 212, 551-2.

MULLERS, S. M., MCAULIFFE, F. M., KENT, E., CARROLL, S., MONE, F., BRESLIN, N., DALRYMPLE, J., MULCAHY, C., O'DONOGHUE, K., MARTIN, A. & MALONE, F. D. 2015. Outcome following selective fetoscopic laser ablation for twin to twin transfusion syndrome: an 8 year national collaborative experience. Eur J Obstet Gynecol Reprod Biol, 191, 125-9.

MURPHY, C. J., MCCAUL, C. L. & THORNTON, P. C. 2015. Maternal collapse secondary to aortocaval compression. Int J Obstet Anesth, 24, 393-4.

MURPHY, C. J., STANLEY, E., KAVANAGH, E., LENANE, P. E. & MCCAUL, C. L. 2015. Spinal dysraphisms in the parturient: implications for perioperative anaesthetic care and labour analgesia. Int J Obstet Anesth, 24, 252-63.

MURPHY, N. C., DIVINEY, M. M., DONNELLY, J. C., COOLEY, S. M., KIRKHAM, C. H., FORAN, A. M., BREATHNACH, F. M., MALONE, F. D. & GEARY, M. P. 2015. The effect of maternal subclinical hypothyroidism on IQ in 7- to 8-year-old children: A case-control review. Aust N Z J Obstet Gynaecol.

NAASAN, M. N., HARRITY, C., PENTONY, L. & MOCANU, E. 2015. Anti-Mullerian hormone normogram in an Irish subfertile population. Ir J Med Sci, 184, 213-8.

NEARY, E., MCCALLION, N., KEVANE, B., COTTER, M., EGAN, K., REGAN, I., KIRKHAM, C., MOONEY, C., COULTER-SMITH, S. & NI AINLE, F. 2015. Coagulation indices in very preterm infants from cord blood and postnatal samples. J Thromb Haemost, 13, 2021-30.

NOORI, S., MCNAMARA, P., JAIN, A., LAVOIE, P. M., WICKREMASINGHE, A., MERRITT, T. A., SOLOMON, T., SEKAR, K., ATTRIDGE, J. T., SWANSON, J. R., GILLAM-KRAKAUER, M., REESE, J., POINDEXTER, B. B., BROOK, M., AUCHUS, R. J., CLYMAN, R. I. & INVESTIGATORS, P. D. A. L. H. T. 2015. Catecholamine-resistant hypotension and myocardial performance following patent ductus arteriosus ligation. J Perinatol, 35, 123-7.

O CONNOR, H., UNTERSCHEIDER, J, DALY, S, GEARY, M, KENNELLY, M, MCAULIFFE, F, O DONOGHUE, K, HUNTER, A, MORRISON, J, BURKE, G, DICKER, P, TULLY, E, MALONE, F. 2015. Comparison of asymmetric versus symmetric IUGR-results from a National Prospective Trial. American Journal of Obstetrics and Gynecology, 212, S173-174.

OBEIDI, N., TCHRAKIAN, N., ABU SAADEH, F. & MOCANU, E. 2015. Suspected ovarian molar pregnancy after assisted reproductive technology conception: a diagnostic challenge. BMJ Case Rep, 2015.

OLSON, G., WEINER, S. J., ROUSE, D. J., REDDY, U. M., MERCER, B. M., VARNER, M. W., LEVENO, K. J., IAMS, J. D., WAPNER, R. J., RAMIN, S. M., MALONE, F. D., CARPENTER, M. W., O'SULLIVAN, M. J., DINSMOOR, M. J., HANKINS, G. D., CARITIS, S. N., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Relation between Birth Weight and Weight and Height at the Age of 2 in Children Born Preterm. Am J Perinatol, 32, 591-8.

O'REILLY, P., WALSH, O., ALLEN, N. M. & CORCORAN, J. D. 2015. The Bhutani Nomogram Reduces Incidence of Severe Hyperbilirubinaemia in Term and Near Term Infants. Ir Med J, 108, 181-2.

PALATNIK, A., MELE, L., LANDON, M. B., REDDY, U. M., RAMIN, S. M., CARPENTER, M. W., WAPNER, R. J., VARNER, M. W., ROUSE, D. J., THORP, J. M., JR., SCISCIONE, A., CATALANO, P., SAADE, G. R., CARITIS, S. N., SOROKIN, Y., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Timing of treatment initiation for mild gestational diabetes mellitus and perinatal outcomes. Am J Obstet Gynecol, 213, 560 e1-8.

PEACEMAN, A. M., LAI, Y., ROUSE, D. J., SPONG, C. Y., MERCER, B. M., VARNER, M. W., THORP, J. M., RAMIN, S. M., MALONE, F. D., O'SULLIVAN, M. J., HANKINS, G. D., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. Length of latency with preterm premature rupture of membranes before 32 weeks' gestation. Am J Perinatol, 32, 57-62.

REGAN, C., UNTERSCHEIDER, J, DALY, S, GEARY, M, KENNELLY, M, MCAULIFFE, F, O DONOGHUE, K, HUNTER, A, MORRISON, J, BURKE, G, DICKER, P, TULLY, E, MALONE, F. 2015. The effect of maternal cigarette smoking on pregnancy outcome in F. G. R. American Journal of Obstetrics and Gynecology, 212, S377.

ROCHE, A., MULLERS, S, MONTEITH, C, KENT, E, CORCORAN, S, O CONNOR, HD, FLOOD, K, COOLEY, SM, DONNELLY, J, DICKER, P, FORAN, A, MCCALLION, N, MALONE, FD, BREATHNACH, F. 2012. Customised centiles for Trisomy 21: presenting prenatal growth references for Down Syndrome. American Journal of Obstetrics and Gynecology, 212, S225-226.

STUEBE, A. M., LANDON, M. B., LAI, Y., KLEBANOFF, M., RAMIN, S. M., WAPNER, R. J., VARNER, M. W., ROUSE, D. J., SCISCIONE, A., CATALANO, P., SAADE, G., SOROKIN, Y., PEACEMAN, A. M., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS NETWORK, B. M. D. 2015. Is There a Threshold Oral Glucose Tolerance Test Value for Predicting Adverse Pregnancy Outcome? Am J Perinatol, 32, 833-8.

UNTERSCHEIDER, J., DICKER, P. & MALONE, F. D. 2015. The PORTO study and the importance of cerebroplacental ratio in fetal growth restriction. Reply. Am J Obstet Gynecol, 212, 552.

UNTERSCHEIDER, J., O'DONOGHUE, K. & MALONE, F. D. 2015. Guidelines on fetal growth restriction: a comparison of recent national publications. Am J Perinatol, 32, 307-16.

VARNER, M. W., MARSHALL, N. E., ROUSE, D. J., JABLONSKI, K. A., LEVENO, K. J., REDDY, U. M., MERCER, B. M., IAMS, J. D., WAPNER, R. J., SOROKIN, Y., THORP, J. M., MALONE, F. D., CARPENTER, M., O'SULLIVAN, M. J., PEACEMAN, A. M., HANKINS, G. D., DUDLEY, D. J., CARITIS, S. N. & FOR THE EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2015. The association of cord serum cytokines with neurodevelopmental outcomes. Am J Perinatol, 30, 115-22.

VILINSKY, A. & MCCAUL, C. 2015. Questions on prevention of newborn hypothermia after cesarean delivery. Anesth Analg, 120, 1429.

WERTH, S., BRESLIN, T., NIAINLE, F. & BEYER-WESTENDORF, J. 2015. Bleeding Risk, Management and Outcome in Patients Receiving Non-VKA Oral Anticoagulants (NOACs). Am J Cardiovasc Drugs, 15, 235-42.

WERTH, S., BRESLIN, T., NIAINLE, F. & BEYER-WESTENDORF, J. 2015. Erratum to: Bleeding Risk, Management and Outcome in Patients Receiving Non-VKA Oral Anticoagulants (NOACs). Am J Cardiovasc Drugs, 15, 451-2.

THE ROTUNDA HOSPITAL DUBLIN

7 Hospital Staff

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Director of Midwifery/Nursing	Ms M Philbin

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Ms Catherine Halloran (ADOM)
Ms M Keane (ADOM)

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Financial Controller	Mr Jim Hussey
Human Resources Manager	Mr Kieran Slevin
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