THE ROTUNDA HOSPITAL
DUBLIN

Parnell Square • Dublin 1
Tel: 01 - 817 1700 • www.rotunda.ie

Clinical Report

1st January - 31st December 2013

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 2013
Mothers who have delivered babies weighing >500 grams	8648
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1666
Hydatidiform Moles *	39
Ectopic Pregnancies	192
Total Mothers Delivered	**10314**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2013
Maternal Deaths	3

3. BIRTHS	Totals 2013
Singletons	8455
Twins	181
Triplets	8
Quadruplets	0
Total Babies Delivered weighing> 500 grams	**8841**

4. OBSTETRIC OUTCOME	Totals 2013
Spontaneous Vaginal Delivery	52%
Forceps	6%
Ventouse	11%
Caesarean Section	31%
Induction of Labour	29%

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2013
Antepartum Deaths	42
Intrapartum Deaths	0
Stillbirths	42
Early Neonatal Deaths	27
Late Neonatal Deaths	4
Congenital Anomalies	29

6. PERINATAL MORTALITY RATES

	Totals 2013
Overall Perinatal Mortality Rate per 1,000 Births	7.8
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.5
Perinatal Mortality Rate Including Late Neonatal Deaths	8.2
Perinatal Mortality Rate Excluding Unbooked Cases	7.1
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.0

7. AGE OF WOMEN

	Nullips	Multips	Total Mothers	Delivered>500g
<20 yrs	195	24	219	
20-24 yrs	595	355	950	
25-29 yrs	905	953	1858	
30-34 yrs	1211	1801	3012	
35-39 yrs	640	1459	2099	
40+ yrs	143	367	510	
Total	**3689**	**4959**	**8648**	

8. PARITY

	Totals 2012	% from Total Mothers	Delivered >500g
Para 0	3689	42.7%	
Para 1	2948	34.1%	
Para 2-4	1910	22.1%	
Para 5+	101	1.2%	
Total	**8648**	**100%**	

9. COUNTRY OF BIRTH & NATIONALITY AT DELIVERY - 2013

	2012	%	2013	%
Irish	5693	64.36%	6318	73.06%
EU	1948	22.02%	1535	17.75%
NonEU	1188	13.43%	782	9.04%
Unknown	17	0.19%	13	0.15%
Total	**8846**	**100.00%**	**8648**	**100.00%**

10. SOCIO-ECONOMIC GROUP - 2013

Socio-Group	2012	%	2013	%
1	622	7.19%	559	6.46%
2	2018	23.33%	1989	23.00%
3	1498	17.32%	1384	16.00%
4	506	5.85%	437	5.05%
5	603	6.97%	528	6.11%
6	344	3.98%	317	3.67%
7	2334	26.99%	2476	28.63%
8	1	0.01%	0	0.00%
9	2	0.02%	0	0.00%
10	918	10.62%	958	11.08%
TOTAL	**9116**	**100.00%**	**8846**	**100.00%**

11. BIRTH WEIGHT

Weights	Totals 2013
500 - 999 gms	67
1,000 - 1,499	81
1,500 - 1,999	153
2,000 - 2,499	359
2,500 - 2,999	1152
3,000 - 3,499	2883
3,500 - 3,999	2865
4,000 - 4,499	1078
4,500 - 4,999	192
>5,000	11
Total	**8841**

12. GESTATIONAL AGE

	Nullips	Multips	Totals 2013
<26 weeks	14	15	29
26 - 29 weeks + 6 days	35	29	64
30 - 33 weeks + 6 days	61	73	134
34 - 36 weeks + 6 days	180	200	380
37 - 41 weeks + 6 days	3392	4640	8032
42 + weeks	7	2	9
Total	**3689**	**4959**	**8648**

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

	Nullips	Multips	Totals 2013
Episiotomy & Extended Episiotomy	1187	296	1483
First Degree Laceration	168	389	557
Second Degree Laceration	702	1107	1809
Third Degree Anal Sphincter/Mucosa	117	62	179
Fourth Degree	4	2	6
Other { Lacerations/Grazes not requiring sutures}	241	573	814
Intact	143	1015	1158
Totals	**2562**	**3444**	**6006**

CS Deliveries not included in the above.

14. THIRD DEGREE TEARS *

	Nullips	Multips	Totals 2013
Occurring Spontaneously	44	51	95
Associated with Episiotomy	17	2	19
Associated with Forceps	21	3	24
Associated with Ventouse	30	7	37
Associated with Ventouse & Forceps	22	0	22
Associated with O.P. position	0	1	1

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

15. PERINATAL MORTALITY IN ANTEPARTUM NORMALLY FORMED STILLBORN INFANTS

	Nullips	Multips	Totals
Placental	5	5	10
Cord Accident	2	5	7
Infection	1	-	1
Feto Maternal Haemorhage	2	-	2
Prematurity	3	1	4
Unexplained	1	4	5
Total	**14**	**15**	**29**

Autopsy Totals			
Autopsy Rate	16/29	55.2%	

16. PERINATAL MORTALITY IN CONGENITALLY MALFORMED INFANTS

	Nullips	Multips	Totals 2013
CNS Lesions	2	5	7
Cardiac	1	4	5
Renal	1	1	2
Chromosomal	3	6	9
Diaphragmatic Hernia	0	1	1
Other	1	4	5
Totals	**8**	**21**	**29**

17. EARLY NEONATAL DEATHS

	Nullips	Multips	Totals
Congenital	5	11	16
Prematurity / Infection	2	8	10
Placental	1	0	1
Unexpected	0	0	0
Totals	8	19	27
Full Autopsy	12/27		
Autopsy Rate	44%		
Overall Full Autopsy total for all Perinatal Deaths			**33**
Overall Autopsy Rate			**47.8%**

18. HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Grades	Grade 1	Grade 2	Grade 3
	22	8	2

19. SEVERE MATERNAL MORBIDITY

	Nullips	Multips	Totals
Massive Obstetric Haemorrhage	9	16	25
Emergency Hysterectomy	0	3	3
Transfer To ICU/CCU	3	7	10
Uterine Rupture	0	1	1
Eclampsia	0	0	0
Pulmonary Embolus	1	2	3

20. FINANCIAL INFORMATION: Non-capital income and expenditure account
For the year ended 31 December 2013

	2013 €'000	2012 €'000
Cumulative non-capital deficit/(surplus) brought forward from previous year	**1,035**	136
Pay		
Salaries	**46,691**	48,153
Superannuation and gratuities	**3,636**	4,624
Total Pay	**50,327**	52,777
Non-Pay		
Direct patient care	**5,126**	5,100
Support services	**4,977**	4,379
Financial and administrative	**3,430**	3,253
Total Non Pay	**13,533**	12,732
Gross expenditure for the year	**64,895**	65,645
Income	**(19,464)**	(20,963)
Net expenditure for the year	**45,431**	44,682
HSE Funding notified for the year	**(45,351)**	(43,647)
Deficit for the year carried forward to following year	**80**	1,035

THE ROTUNDA HOSPITAL DUBLIN

1

Introduction

by the master

2013

CARING FOR GENERATIONS
SINCE 1745

Introduction

The Master

2013 was another very busy year for the Rotunda Hospital. The recent trend of very high activity levels, coupled with a significant reduction in budget allocation and headcount continued to pose a problem for the Hospital. Looking back at the figures over the years, the Hospital now looks after in excess of two and a half thousand more women than it did ten years ago. The fact that outcomes remain as good as they are is a great tribute to the skill and dedication of the staff of the Hospital.

There were 11,121 patients registered for antenatal care, which was 1% less than 2012. We delivered 8841 babies greater than 500 grams to 8648 women. Over a ten day period in early December, there were three 24 hour periods of time when there were 47, 43 and 42 deliveries. This is a completely unacceptable level of activity, given the resources available to the Hospital. Sadly, there were 3 deaths of mothers delivered in 2013. The corrected perinatal mortality for the year was 4.0 per thousand, which is very much in line with recent years.

There were 10 patients transferred from the Rotunda to the Mater HDU/ITU in 2013. This confirms the recent trend where we are seeing high complexity levels within our obstetric population. It also highlights the fact that the hospital is transferring its sickest patients by ambulance, due to the fact that we are not co-located with an acute adult hospital and we have no immediate access to intensive care facilities. Given the issues highlighted around the deficiencies within maternity services around the country, this is completely unacceptable in a country that purports to have a modern health service.

Maternity services in Ireland became the focus of significant attention both nationally and internationally following the tragic death of Savita Halappanavar in Galway. There was also significant media attention around the new Protection of Life During Pregnancy Bill and the Oireachtas hearings at the beginning of the year. All of this attention has focused on the lack of resources in relation to maternity services in this country. There have been a number of reports issued over the last ten years, however the inaction in relation to implementing the recommendations of these reports has led to a significant under-resourcing of services in relation to maternity and gynae care. Despite representations to the HSE and to the Department of Health, little has been done in relation to making any progress in improving infrastructure, services or staffing levels in the maternity sector. Our midwife to patient ratio is too low and we require more consultants to staff our maternity units. These issues are compounded by increasing difficulty in attracting sufficient numbers of good junior staff into the specialty.

2013 also saw the release of the long-awaited Higgins Report into the formation of hospital groups. The Rotunda is part of the RCSI Academic Hospitals Group, covering most of the North-East region and North Dublin. The Higgins report also recognised the unique relationship the Rotunda has with the Mater

Hospital, and although the Mater is not in the same group as the Rotunda, the report clearly indicates that the special relationship the Rotunda has with the Mater should continue.

The hospital will continue to work with our new partners within the RCSI Academic Hospitals Group and our long term ambition remains to be co-located with a significant acute adult hospital partner on the Northside of the city. In the meantime the urgent clinical needs of the hospital must be addressed. To this end meetings have occurred over the year and early into 2014 with Dublin City Council in an attempt to smooth the path for a West Wing Development, which would address our most urgent clinical needs. This development will include additional labour ward rooms and theatre facilities in addition to new out-patient facilities and additional postnatal beds.

One of our most significant clinical concerns is the growing waiting list for gynaecology services. There has been a huge increase in demand for access to benign gynae services within the region. The population of the region has increased significantly, which in the first instance led to a big increase in demand for maternity services, however this is now leading on to a 60% increase in demand for gynae outpatient appointments. The hospital, because of its infrastructural deficits and the need to cope with the demand led maternity services, cannot meet the current demand for benign gynaecology. This problem has been exacerbated by the fact that the acute hospitals who do some benign gynaecology are currently unable to facilitate significant amounts of benign gynae surgery, due to bed issues; and the fact that our closest neighbour, the Mater, now concentrate the majority of their gynae service on gynae oncology. The hospital has been working with the Special Delivery Unit within the Department of Health to assist with dealing with waiting lists, however work done to date has really only managed to clarify what the waiting list to be seen in out-patients actually is. A significant initiative will need to be undertaken to assist clearing this waiting list for out-patient appointments. In addition the hospital will be working with partners within the North East region to see if there is any way that spare capacity can be identified within the regional hospitals. A new West Wing Development will be beneficial, however funding will be required for additional staff for this to succeed.

Over the course of 2013, the hospital hosted three high profile educational meetings held, all of which were extremely well attended and feedback was very positive. The first was a 'Maternal Medicine Update' meeting in March; the second a 'Fetal Monitoring' study day in June. The Hospital was awarded a prize for 'Best Educational Meeting' at the Irish Healthcare Awards, for 'The Human Cost; Cerebral Palsy secondary to Birth Asphyxia in the Term Infant' which was held in September. The Hospital was also the focus of very favourable publicity at the launch of the Sustainable Energy Ireland initiative, when Minister Pat Rabbitte attended the Hospital in February of 2013.
The Bartholomew Mosse Charter Day Lecture was delivered by Professor Lisa

Introduction

Hornberger, visiting from Canada. Unfortunately the usual Charter Day dinner had to be postponed because of ongoing renovation work on the old front hall. It is hoped that this work will be completed in 2014. The hospital hosted the usual undergraduate students from RCSI and in addition a number of overseas students did elective periods during the summer of 2013. The hospital held its annual Mini Medical school in October. This was an extremely successful event and my thanks to all of the staff who gave up their time to get involved in teaching of all of the undergraduate students and the school children attending the Mini Medical school.

The Friends of the Rotunda as usual provided huge support during the year for research within the hospital and the annual Golf Classic which was again held in Milltown helped to raise important funds. My thanks to Sheila Thompson and all of those who contribute hugely to this valuable resource for the hospital.

Over the course of the year the hospital management team again put in a huge effort to bring the hospital in close to budget. Great credit is due to Pauline Treanor, Chris Kenny and the team for the work that they do in this area.

The Board of Governors continue to play a really important role in overseeing the running of the hospital and my sincere thanks to all of those on the Board who contribute hugely to, not just the General Board, but the various sub-committees of the Board. These individuals provide their services free of charge to the hospital and have contributed hugely to the developing governance systems that have been put in place over the last couple of years. The hospital continues to put in place clinical guidelines and perform gap analysis against national guidelines. Again my thanks go to all of those individuals who take part in this onerous work. The Clinical Audit Department continues to work extremely well under the stewardship of Dr. Sharon Cooley who gets through a huge amount of work with the assistance of her team. Dr. Peter McKenna as Clinical Director has put in a great deal of work on a variety of projects over the year and has been on enormous assistance to me as Master. For all of the work that he puts in, ably assisted by Anne in the office, I am deeply grateful.

To all of my consultant colleagues and to all of the NCHDs in all specialities and particularly to our midwifery colleagues, ably led by Margaret Philbin, our Director of Midwifery, I am deeply grateful for the extraordinary level of commitment that they bring to their jobs. We work out of a facility which is no longer fit for purpose and we are working very hard with the HSE and the Department of Health to progress plans to deliver a west wing development to address some of the most urgent clinical issues that we face.

I would particularly like to thank all of the heads of departments and all staff in all areas for the hugely valuable work that they do in contributing to the life and work of the hospital. I would like to thank all of those who assisted in

compilation of the annual report and all of those who have contributed to the significant number of quality initiatives that have happened in the hospital over the year. I would also like to wish Ann Frankish, our Chief Pharmacist, well; Ann retired after 26 years service, and we welcome Brian Cleary her replacement.

Towards the end of 2013 the voluntary hospitals sector became the focus of attention in relation to compliance around pay issues. The hospital is extremely concerned in relation to the reputational damage that this issue may cause. This hospital also has serious concerns in relation to the reputation of the voluntary hospitals sector in this regard. It is important that it is widely understood the value that the voluntary hospital sector has played within Irish Healthcare. A significant number of the academic and research centres within the country are housed within the voluntary hospital sector. Many of the leaders in Irish Healthcare work within these institutions. Much of the progress in terms of quality and efficiency within the Irish Health Service has arisen within the voluntary hospital sector and voluntary hospitals have a unique ability to respond to the needs of a constantly evolving population. It is vitally important that within the new hospital groups system that the value of voluntary hospitals is not undermined and that the pivotal roles that they have played within Irish Health Care is celebrated and harnessed for the future good of the Irish Health System.

2014 promises to be another difficult year with similar budgetary challenges and staffing issues being a serious concern across the country. There are large numbers of unfilled medical posts with reduced numbers of trainees making applications for the specialty and difficulty recruiting for both medical and midwifery and nursing positions which is a very serious concern for the hospital and the service in general.

Lastly I would particularly like to single out Dr. Sharon Cooley for her assistance with this report and also Mary and Anne in the Master's office for the massive effort they both put in to supporting the work that we do.

Dr. Sam Coulter-Smith.
Master.

THE ROTUNDA HOSPITAL DUBLIN

2

Statistical Tables & Summaries

CARING FOR GENERATIONS SINCE 1745

Comparative Results for 10 years

YEARS	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Babies Born	6731	6804	7325	8456	8799	8912	8792	9319	9041	8841
Perinatal Deaths	61^{+13} *	61^{+10} *	50^{+13} *	66^{+10} *	64^{+7}*	56^{+5}*	69^{+5}*	59^{+2}*	66^{+2}*	63^{+6}*
Perinatal Mortality Rate	11	9.8	8.6	9.0	8.1	6.8	8.4	6.5	7.5	7.8
Mothers Attending	7,290	7,518	8,036	9,290	9,655	9,709	9,594	10547	10397	10314
Maternal Deaths	1	0	0	0	1	2	3	3	2	3
Caesarean Section %	26.6	25.6	27.7	27.1	26.2	28.5	27.9	29	29	31
Forceps/ Ventouse %	16.5	15.3	16.8	17	20	19.8	20.5	19.4	18	17
Epidural %	48	46.7	47	47	49	49.2	46.6	46	48	47
Induction %	19	19	20	20	21	23.27	27	29	28	29

* Unbooked

Statistical Summaries

1. TOTAL MOTHERS ATTENDING	Totals 2013
Mothers who have delivered babies weighing >500 grams	8648
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1666
Hydatidiform Moles *	39
Ectopic Pregnancies	192
Total Mothers Delivered	**10314**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2013
Maternal Deaths	3

3. BIRTHS	Totals 2013
Singletons	8652
Twins	181
Triplets	8
Quadruplets	0
Total Babies Delivered weighing> 500 grams	**8841**

4. OBSTETRIC OUTCOME	Totals 2013
Spontaneous Vaginal Delivery	52%
Forceps	6%
Ventouse	11%
Caesarean Section	31%
Induction of Labour	29%

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2013
Antepartum Deaths	42
Intrapartum Deaths	0
Stillbirths	42
Early Neonatal Deaths	27
Late Neonatal Deaths	4
Congenital Anomalies	29

6. PERINATAL MORTALITY RATES

	Totals 2013
Overall Perinatal Mortality Rate per 1,000 Births	7.8
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.5
Perinatal Mortality Rate Including Late Neonatal Deaths	8.2
Perinatal Mortality Rate Excluding Unbooked Cases	7.1
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.0

7. STATISTICAL ANALYSIS OF HOSPITAL POPULATION

AGE AT DELIVERY	2007	2008	2009	2010	2011	2012	2013
<20	4.7%	4.7%	3.8%	3.5%	3.0%	2.8%	2.5%
20-24	16.2%	14.8%	14.6%	13.1%	12.4%	11.6%	11.0%
25-29	24.7%	25.7%	24.7%	24.6%	23.6%	23.2%	21.5%
30-34	30.5%	30.2%	31.6%	31.6%	33.6%	34.8%	34.8%
35-39	19.9%	20.5%	21.3%	22.2%	22.5%	22.0%	24.3%
>=40	4.0%	4.1%	4.0%	5.0%	4.9%	5.5%	5.9%

PARITY	2007	2008	2009	2010	2011	2012	2013
0	46.9%	48.9%	47.3%	45.5%	45.5%	44.4%	42.6%
1	30.9%	29.3%	31.2%	32.3%	32.8%	34.1%	34.1%
2-4	20.8%	20.8%	20.4%	21.1%	20.7%	20.3%	22.1%
5+	1.4%	1.0%	1.1%	1.1%	1.0%	1.2%	1.2%

BIRTHWEIGHT (grams)	2007	2008	2009	2010	2011	2012	2013
500-999	0.8%	0.6%	0.5%	0.6%	0.5%	0.7%	0.8%
1000-1499	1.0%	1.1%	0.9%	0.7%	0.8%	1.0%	0.9%
1500-1999	1.6%	1.6%	1.6%	1.4%	1.6%	1.5%	1.7%
2000-2499	4.2%	3.7%	3.4%	4.0%	3.8%	4.0%	4.1%
2500-2999	13.0%	13.4%	13.6%	13.1%	13.8%	12.9%	13.0%
3000-3499	33.1%	33.0%	33.5%	32.1%	32.4%	31.5%	32.6%
3500-3999	31.7%	32.3%	34.4%	32.9%	33.0%	34.1%	32.4%
4000-4499	12.5%	12.2%	10.0%	12.7%	11.8%	12.2%	12.2%
4500-4999	2.2%	2.0%	1.9%	2.3%	2.1%	2.0%	2.2%
>5000	0.2%	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%

GESTATION (Weeks)	2007	2008	2009	2010	2011	2012	2013
<26 weeks	0.3%	0.3%	0.2%	0.3%	0.2%	0.3%	0.3%
26 - 29 weeks + 6 days	0.8%	0.6%	0.6%	0.6%	0.8%	0.7%	0.7%
30 - 33 weeks + 6 days	1.7%	1.5%	1.4%	1.4%	1.3%	1.5%	1.5%
34 - 36 weeks + 6 days	4.6%	4.1%	4.1%	4.3%	4.4%	4.4%	4.4%
37 - 41 weeks + 6 days	90.1%	90.9%	92.6%	92.8%	93.2%	93.0%	93.0%
42 + weeks	2.5%	2.5%	1.1%	0.6%	0.2%	0.2%	0.1%

Fetal Loss

The Master

NOTES ON PERINATAL MORTALITY

1. The overall rate applies to all babies weighing greater than or equal to 500g who were stillborn or died in the first seven day of life (69).

2. The uncorrected perinatal mortality rate is calculated when unbooked (6) cases are excluded. Late bookers are considered as booked cases.

3. The corrected perinatal mortality rate is the uncorrected perinatal deaths (63) less the number of congenital malformations (29 – 1 unbooked = 28) = 35. This gives an uncorrected rate of 7.1 and a corrected rate of 4.0.

STILLBIRTHS

Stillbirths	42
Congenital Malformations	13
Placental	10
Cord	7
Extreme Prematurity	4
Feto Maternal Haemorrhage	2
Infection	1
Unexplained	5

Congenital (13)

1. **Age 21.** Para 0. Booked at 15 weeks gestation. Ultrasound at booking consistent with dates. Plan for combined antenatal care. No significant medical or family history. Anencephaly diagnosed at the anatomy scan at 23 weeks gestation. Amniocentesis at 31weeks gestation. Female karyotype confirmed. Spontaneous onset of labour at 32 weeks gestation and a stillborn female infant weighing 0.86 kilograms delivery. Post-mortem declined. Cause of death lethal fetal anomaly.

2. **Age 40.** Para 1. One previous caesarean section. Transfer of care from Drogheda with gestational diabetes at 29 weeks gestation and fetal superventricular tachycardia. Tachycardia resolved using flexinide 100mg three times a day. Significant fetal ascites and scalp oedema. Subsequent intrauterine fetal demise at 34 weeks gestation. Caesarean section was undertaken. Stillborn male infant weighing 3.35 kilograms delivered. Post-mortem performed. Cause of death ascribed as fetal dysrhythmia.

3. **Age 22.** Para 0+1. Booked at 14 weeks. Medical history of depression. Smoker – 10 cigarettes per day. Booking bloods normal. Anatomy scan at 21 weeks gestation showed evidence of anhydramnios, two vessel cord and a pericardial effusion. Bilateral renal agenesis diagnosed. Antenatal care in the Fetal Medicine Unit. Spontaneous onset of labour at 32 weeks gestation. Assisted breech delivery of a stillborn female infant. Subsequent post-mortem revealed evidence of sirenomelia, bilateral renal agenesis and a confirmed female karyotype. Cause of death lethal congenital anomaly.

4. **Age 25.** Para 1+1. One previous full normal delivery of a male weighing 4.05 kilograms and one first trimester loss. No significant medical or family history. Booked at 13 weeks gestation and a cystic hygroma was identified. Referred to Prenatal Diagnosis. Opted for invasive testing. Normal female karyotype. Hypoplastic left heart identified on ultrasound at 20 weeks gestation with a large atrial septic defect and a dilated right ventricle. Follow-up in the Fetal Medicine Unit. Intra-uterine fetal demise diagnosed at 23 weeks gestation. Labour induced. Stillborn female infant weighing 930g delivery. Large septic cystic hygroma secondary to congenital heart disease. Fetal demise secondary to congenital anomaly.

5. **Age 34.** Para 1+1. One previous first trimester loss and one emergency section at 41 weeks of a liveborn male infant weighing 3.37 kilograms. Indication for caesarean section was fetal distress. Booked in Mount Carmel Hospital. Care transfer to the Rotunda due to a fetal diagnosis of a left sided congenital diaphragmatic hernia. The femur length was noted to be small, less than the 5th centile and there was a two vessel cord. Forth-nightly antenatal care visits. Fetal demise was identified at 32 weeks gestation. Elective caesarean section undertaken at maternal request. Stillborn male infant weighing 1.87 kilograms was delivered. A limited post-mortem was undertaken and confirmed the left sided fetal diaphragmatic hernia. Cyto-genetics unfortunately failed to grow and

placental examination showed a hyper-coiled cord with an non-occlusive thrombi. Cause of death in the absence of a full post-mortem, placental cause may have contributed to the death however anuploid and additional anomalies cannot be excluded with a background history of a left sided congenital diaphragmatic hernia.

6. **Age 28.** Para 2. Two previous full term normal deliveries of male infants in 2010 and 2011 both normal weight. Medical history of migraine. Ultrasound at 12 weeks diagnosed anencephaly. Hospital based antenatal care. Labour induced at 39 weeks gestation. Stillborn female infant weighing 2.33 kilograms. Cause of death fetal anomaly.

7. **Age 34.** Para 1. One previous term caesarean section for fetal distress in another hospital at 41 weeks gestation. Male infant weighing 3.8 kilograms. History of postnatal depression. Non-smoker. Booked at 12 weeks gestation. Ultrasound revealed singleton fetus consistent with dates. Planned for combined antenatal care. VBAC discussed. Anatomy scan at 19 weeks gestation with sub-optimal views of the renal system. Arrangements for re-scan. Scan at 24 weeks was normal. Polyhydramnios noted at 32 weeks gestation. Ultrasound performed and revealed a growth restricted infant and a dilated right atrium, dilated loops of bowel and an abnormal fetal posture. Amniocentesis undertaken at 33 weeks. Edwards Syndrome diagnosed. Hypertension in the latter half of pregnancy. Intrauterine fetal demise at 40 weeks gestation. Labour induced. Stillborn female infant weighing 2.16 kilograms. Cause of death Edwards Syndrome.

8. **Age 32.** Para 1. Previous emergency caesarean section for failed induction. Prior gestational diabetes. Non-smoker. Booked at 14 weeks gestation. Occipital encephalcoele diagnosed on the anatomy scan at 21 weeks gestation. Intrauterine fetal demise at 23 weeks gestation. Labour induced and a stillborn male infant weighing 0.55 kilograms delivered. Normal karyotype. Cause of death lethal congenital anomaly.

9. **Age 34.** Primip. Booked at 14 weeks gestation. Medical history of depression and scoliosis. Non-smoker. Plan for combined antenatal care. Short long bones identified at the time of anatomy scan at 22 weeks gestation, with no evidence of bowing or fracturing of the bone. Amniocentesis undertaken. Confirmed Trisomy 21. Intrauterine fetal demise at 27 weeks gestation. Labour induced and stillborn male infant weighing 1.29 kilograms was delivered. No PM. Cause of death Trisomy 21.

10. **Age 25**. Para 1+1. Prior term emergency caesarean section for fetal distress of a female infant weighing 3.86 kilograms and one spontaneous loss. No significant medical history, non-smoker. Booked at 13 weeks gestation. Ultrasound at booking revealed a singleton intrauterine pregnancy consistent with dates. Arrangements were made for combined antenatal care. Planned VBAC. Normal anatomy scan at 22 weeks gestation. Subsequent small for dates infant identified at 36 weeks gestation, with an estimated fetal weight less than 5th centile and polyhydramnios.

Arrangement made for glucose tolerance test which was normal. Subsequently presented to the Emergency Room at 37+5 weeks gestation with decreased fetal movements and an intrauterine fetal demise was diagnosed. Induction of labour. Stillborn female infant delivered weighing 1.82 kilograms. Limited post-mortem performed. Multiple fetal abnormalities evident. Placental karyotype showed 46XX additional (17) (P13). Placental examination revealed a dysmorphic infant with evidence of intrauterine growth restriction and chronic utero placental insufficiency and multi focal fetal thrombotic vasculopathy. Cause of death Anuploidy.

11. **Age 39.** Para 1 +2. One previous emergency caesarean section of a live born male infant weighing 2.55 kilograms. Two subsequent first trimester losses. History of hypertension in pregnancy and a family history of congenital cardiac disease. Booked at 10 weeks gestation. First trimester screening discussed. Consultant led antenatal care. Fall off in fetal growth noted at 28 weeks gestation. Intrauterine fetal demise at 30 weeks gestation. Labour induced. Stillborn female infant weighing 1 kilogram delivered. Post-mortem revealed Trisomy 21 with congenital abnormal myelopoiesis in the form a megakaryo blastic leukaemia. Cause of death congenital myelopoiesis secondary to Trisomy 21.

12. **Age 36.** Para 1 +2. Two previous first trimester losses and one term vaginal delivery of a female infant weighing 3.32 kilograms. Past history of a pituitary tumour. Booked at 10 weeks gestation. Non smoker. Ultrasound confirmed a singleton pregnancy consistent with dates. Anatomy scan at 20 weeks gestation revealed an abnormal four chamber cardiac view and abnormal cardiac vessel alignment. Amniocentesis undertaken and cardiology referral requested. Fetal echo cardiography revealed a completed AVSD with pulmonary atresia. Poor fetal prognosis discussed. Sinus bradycardia and subsequent intrauterine demise at 25 weeks gestation. Stillborn female infant weighing 1.03 kilograms delivered. Cause of death cardiac anomaly.

13. **Age 35.** Para 1. One previous term delivery of a female infant weighing 3.65 kilograms. Booked at 12 weeks gestation. No significant medical history. Non-smoker. Ultrasound revealed a singleton pregnancy consistent with dates. Arrangements for combined antenatal care. Anatomy scan undertaken at 20 weeks gestation. Oligohydramnios at the time of the anatomy scan with an increased nuchal fold, absent stomach bubble. Dilated ureters. Abnormal heart views. Likely bladder outlet obstruction diagnosed. Feticide in another jurisdiction at 24 weeks gestation. Stillborn male infant was delivered weighing 0.625 kilograms. Normal karyotype. Cause of death feticide in another jurisdiction on the basis of prenatal diagnosis of bladder outlet obstruction.

Placental (10)

1. **Age 21.** Para 0. Booked at 19 weeks gestation. Ultrasound confirmed gestational age. No significant medical history. Non-smoker. Combined antenatal care. Normal anatomy scan at 21 weeks. Presented to the Emergency Room with decreased fetal movements at 37 weeks and intrauterine fetal demise diagnosed. Labour induced and a stillborn male infant weighing 2.94 kilograms was delivered. Negative for thrombophilia, normal thyroid function test, normal haemoglobin A1C, negative Torch screen. Post-mortem performed. Excluded congenital anomaly. Evidence of hypoxia was present. Placenta showed delayed villous maturation and a low grade ascending infection.

2. **Age 32.** Para 2. Previous emergency caesarean section at term, followed by stillborn assisted breech at 29 weeks. Booked at 12 weeks. Normal anatomy scan at 18 weeks. Serial scans performed. Normal growth and dopplers at 20, 23 and 27 weeks. Presented at 28 weeks with vaginal bleeding. Scan confirmed no fetal heart. Assisted breech delivery of a male infant weighing 1.06kgs. Blood pressure elevated postnatally, requiring treatment. Thrombophilia screen negative. Placental histology showed features of severe chronic uteroplacental insufficiency. PM declined. Cause of death: chronic uteroplacental insufficiency.

3. **Age 28.** Para 0. Referred from Mullingar Hospital at 25 weeks gestation with dichorionic diamniotic twins, both of whom showed evidence of severe growth restriction. Weekly follow-up in the Fetal Medicine Department. Intrauterine fetal demise of twin I at 26 weeks gestation. Subsequent demise of twin II at 28 weeks gestation. Twin I weighed 210g at delivery and twin II weighed 720g at delivery. PM performed. No evidence of congenital anomaly in either infant. Cause of death ascribed to both infants as chronic utero placental insufficiency. Serological investigations negative.

4. **Age 34**. Para 3. Booked at 12 weeks gestation. Prior history of preterm births. First pregnancy induced at 34 weeks gestation and a vaginal delivery of female infant weighing 2.35 kilograms. Reason for induction pre-eclampsia. In second pregnancy laboured spontaneously at 32 weeks and 6 days, twin girls, twin I – 1.8 g, normal delivery. Twin II weighed 1.75 kilograms and was an emergency caesarean section. VBAC discussed at booking. Commenced on low dose aspirin. Shared antenatal care with consultant review at each visit. Normal fetal growth throughout the pregnancy. Attended the Emergency Department at 36 weeks gestation with a history of decreased fetal movement and intrauterine fetal demise was diagnosed. Labour was subsequently induced. Stillborn female infant delivered weighing 2.92 kilograms. Post-mortem excluded congenital anomalies. Placenta showed evidence of multi focal mild to moderate villitis. Thrombophilia screen, Torch screen, thyroid function tests and haemoglobin A1C all normal. Cause of death placental villitus.

5. **Age 22.** Para 0. **Unbooked.** Presented to the Emergency Room at 24 weeks gestation with abdominal pain. Intra-uterine fetal demise diagnosed. Subsequent induction of labour and a stillborn female infant weighing 870g was delivered. Consented to limited post-mortem examination. The infant was negative for external congenital malformations. Cyto-genetics 46xx consistent with female karyotype. Placental examination showed evidence of severe chronic utero-placental insufficiency with accelerated villous maturation and significant infarction. Cause of death likely placental disease.

6. **Age 25.** Para 2+1. Two previous full term deliveries of appropriately grown infants and a first trimester loss in 2012. Past history of postnatal depression. Smoked 20 cigarettes a day at booking. Booked at 12 weeks gestation. Dates consistent with scan findings. Booked for Midwifery Led Care. Transferred to Consultant Led Care at 33 weeks gestation due to maternal history of anaemia with a haemoglobin of 8g per litre. Normal booking bloods. Haemoglobin 10g per litre at booking. Normal anatomy scan at 21 weeks. Presented to the Emergency Room at 37 weeks with concealed abruption and intrauterine fetal demise. Stillborn male infant weighing 2.17 kilograms delivered. Significant quantity of clots delivered with the placenta consistent with concealed abruption. Post-mortem declined. Placental examination showed evidence of a retro-placental haemorrhage associated with placental infarction and ascending infection. Cause of death placental abruption.

7. **Age 30.** Para 1+1. Previous emergency caesarean section for a non-reassuring CTG in early labour. Delivery of a female infant weighing 2.37 kilograms. History of anxiety. Non-smoker. Booked at 15 weeks gestation. Ultrasound consistent with dates. Combined antenatal care. Vaginal birth after sections discussed and plan for same. Noted to be large for dates at term. Referred for ultrasound. Intrauterine fetal demise diagnosed. Labour induced and still born male infant delivered, weighing 2.54 kilograms. Post-mortem performed. Excluded congenital anomalies. Delayed villous maturation on placental examination. Coagulation screen profile haemoglobin A1 screen normal. Normal thyroid function test. Cause of death delayed villous maturation in the placenta.

8. **Age 35.** Para 0. Booked at 15 weeks gestation. No significant medical history. Smoker of 10 cigarettes per day. Ultrasound at 15 weeks showed a mismatch in dates with a crown rump length of approximately 7 weeks. EDD assigned on ultrasound. Normal anatomy scan at 22 weeks gestation. Sudden onset of abdominal pain at 29 weeks gestation. Attended the Emergency Room and an intrauterine fetal demise was diagnosed. Labour was induced and a stillborn male infant weighing 1.4 kilograms was delivered. Placental examination showed evidence of retroplacental haemorrhage. Post-mortem performed and was negative for congenital malformation. Cause of death placental abruption.

9. **Age 40.** Para 1+3. Previous term assisted delivery of a live born male infant. Two previous miscarriages and one previous molar pregnancy. Non smoker. Booked at 12 weeks gestation for hospital based care. Presented at 35 weeks gestation with decreased fetal movements for the preceding two days. Intrauterine fetal demise diagnosed. Labour was induced and a stillborn female infant was delivered weighing 2.5 kilograms. Post mortem -excluded congenital anomaly. Placental history showed evidence of a multi-focal chronic villitis and intervillitis suggestive of fetal thrombotic vasculopathy and a hypocoiled cord. Cause of death placental disease.

10. **Age 36.** Para 0. Later booker at 24 weeks gestation, uncertain dates. Non-national. Non-smoker. No significant medical history. Anatomy scan at 26 weeks gestation showed no obvious fetal anomaly. Presented the clinic at 27 weeks gestation with no fetal movements. Intrauterine fetal demise diagnosed. Induction of labour. Stillborn male infant weighing 1.01 kilograms delivered. Normal haemoglobin A1C. Normal thyroid function. Kleihauer negative. Placental exam showed evidence of chronic utero-placental insufficiency with a large utero placental haemorrhage. Post-mortem performed. No obvious congenital anomaly. However mosaic karyotype identified on placental karyotyping. Possible placental mosaicism requiring referral for genetic counselling and karyotyping. Hypocoiled cord. Cause of death retroplacental haemorrhage. Genetic referral for the couple to exclude a balanced translocation and possible recurrence.

Cord (7)

1. **Age 38.** Para 2. Two previous elective caesarean sections at term for breech presentation. Pregnancy induced hypertension in both pregnancies, however no anti hypertensives required. Non smoker. Booked at 11 weeks gestation. Combined antenatal care. Plan for elective caesarean section at term. Normal anatomy scan at 20 weeks gestation. Presented at 28 weeks gestation with decreased fetal movements for the preceding 3 to 4 days. Intrauterine fetal demise diagnosed. Anhydramnios noted at the time of diagnosis. Labour induced and a stillborn male infant was delivered weighing 0.87 kilograms. Post-mortem excluded congenital anomalies. Hypercoiled cord with a true knot in the cord identified. Normal other post-mortem bloods. Cause of death cord accident.

2. **Age 32.** Para 0. Booked at 16 weeks gestation. EDD assigned based on ultrasound due to a five week discrepancy. Non-smoker. No significant medical history. Family history of muscular dystrophy. Combined antenatal care. Admitted to the hospital with a non-substantial antepartum haemorrhage at 39 weeks gestation and intra-uterine fetal demise was diagnosed. Labour induced. Stillborn male infant delivered weighing 3.35 kilograms. Thrombophilia screen negative. Torch screen negative. Normal thyroid function test and normal haemoglobin A1C. Post-mortem performed. No evidence of congenital anomalies. Placental examination revealed evidence of a cord accident with a tight nuchal cord and non occlusive thrombo in the umbilical vein with additional thrombi in larger stem vessels consistent with a cord accident.

3. **Age 29.** Para 1 +2. Previous elective caesarean section at term and two first trimester losses. Past history of dermatitis. Smoker – 10 per day. Booked at 12 weeks gestation. VBAC discussed. Singleton uterine pregnancy noted at booking consistent with dates. Normal anatomy scan at 20 weeks gestation. Combined antenatal care. Presented at 38 weeks with decreased fetal movement and intrauterine fetal demise diagnosed. Induction of labour. Stillborn male infant weighing 3.8 kilograms delivered. Placental examination showed a tight true knot in the cord with evidence of circulatory obstruction. Normal thyroid function. Normal haemoglobin. Normal coagulation profile. Post-mortem declined. Cause of death – true knot in the cord, cord accident.

4. **Age 35.** Para 1+2. History of two first trimester losses in 2002 and 2004 and an emergency caesarean section at 41 weeks of a liveborn female infant weighing 3.41 kilograms. Booked at 16 weeks gestation. On prophylactic innohep due to a strong family history of venous thrombosis and the patient's own additional risk factors which would include pregnancy and morbid obesity. Had presented with calf pain to a General Hospital early in pregnancy and commenced on innohep prior to her first visit. Normal anatomy scan at 23 weeks gestation. Presented with decreased fetal movements at 27 weeks gestation and intrauterine fetal demise was confirmed. Labour was subsequently induced and a stillborn female infant weighing 0.87 kilograms was delivered. Post-mortem showed no evidence of congenital anomalies but showed evidence of cord accident with an occlusive thrombus in the umbilical artery and an increased coiling index. Cause of death cord accident.

5. **Age 24.** Para 2. Unbooked. Booked in another jurisdiction. Diagnosed with an intrauterine fetal demise at 35 weeks. Patient was involved in a road traffic accident two weeks prior to the intrauterine fetal demise. Decided to travel home to be with family. Stillborn male infant born before arrival in the hospital. Male infant weighing 2.42 delivered. Post-mortem performed. No obvious external congenital malformations. Placental histology showed evidence of an increased coiling index in the umbilical cord with a non-occlusive thrombus in the umbilical artery and fetal stem vessels. Negative Torch screen. Normal thyroid function screen. Normal haemoglobin A1C. Cause of death cord accident.

6. **Age 21.** Para 0. Medical history of migraine and asthma. Smoker of up to 10 cigarettes a day. Booked at 14 weeks gestation for combined antenatal care. Normal anatomy scan at 20 weeks gestation. Presented to the Emergency Room at 38 weeks gestation with no fetal movements. Intrauterine fetal demise diagnosed. Labour induced. Stillborn female infant delivered weighing 2.67 kilograms. Placental examination showed a hyper-coiled cord and evidence of obstruction with the fetal circulation. Post-mortem was negative for congenital malformation. Cause of death cord accident on a background of delayed villous maturation.

7. **Age 25.** Para 1. One previous term uncomplicated vaginal delivery of a male infant weighing 2.8 kilograms. No significant medical history. Smoked 10 a day at booking. Booked at 14 weeks gestation. Singleton pregnancy consistent with dates. Plan for combined antenatal care. Normal anatomy scan undertaken during the pregnancy. Failed to attend for antenatal care after 34 weeks gestation. Presented at 38 weeks and 6 days gestation in early labour. Intrauterine fetal demise diagnosed. Post-mortem declined. Haemoglobin A1C normal. Thyroid function normal. True knot identified in the cord. Cause of death cord accident.

Extreme Prematurity (4)

1. **Age 38.** Para 0. Admitted to another Hospital at 22 weeks with PPROM and transferred to the Rotunda in the fetal interest. Anhydramnios and a breech presentation of a 500g infant identified on transfer. Subsequent onset of labour. Vaginal delivery of a stillborn female infant weighing 520g. Post-mortem declined. Normal haemoglobin A1C. Normal thyroid function. Negative Torch screen. Placental examination showed evidence of chorioamniotis. Cause of death fetal prematurity due to a gestation of 23 week and 4 days.

2. **Age 32.** Para 0+1. Previous miscarriage. Booked at 13 weeks gestation. No past history of note. O negative. Scan confirmed dates. Anatomy scan at 21 weeks showed funnelling of the cervix. Considered for rescue cerclage; however PPROM prior to procedure. Commenced on antibiotics. Proceeded to labour within 24 hours. Spontaneous vaginal delivery of stillborn male infant weighing 0.6kgs. Required manual removal of placenta. PM declined. Placental examination revealed evidence of ascending infection with PHS group B isolated from placenta. Cause of death: extreme prematurity.

3. **Age 33.** Para 2+2. Two previous term normal deliveries of female infants weighing 3 and 3.5 kilograms and two first trimester losses. No significant medical history. Non-smoker. Booked at 14 weeks gestation. Normal anatomy scan at 23 weeks gestation. PPROM at 23 weeks and 3 days gestation. Subsequent spontaneous vaginal delivery of a stillborn female infant weighing 0.59 kilograms. Post-mortem performed in conjunction with routine post-mortem investigations. Placental examination revealed evidence of ascending infection and acute suprative chorioamnionitis. Post-mortem showed evidence of fetal pneumonia. Cause of death extreme prematurity complicated by fetal pneumonia and chorioamnionitis.

4. **Age 29.** Para 0. Non-smoker. Past history of sexually transmitted infection, successfully treated. Booked at 13 weeks gestation for combined antenatal care. Normal anatomy scan at 20 weeks gestation. Preterm, pre-viability rupture of the membranes at 23 weeks gestation. Stillborn male infant delivery weighing 0.58 kilograms. Post-mortem declined. Cause of death prematurity.

Feto Maternal Haemorrhage (2)

1. **Age 27.** Para 0. Booked at 15 weeks for combined antenatal care. Past medical history of migraine with nil else of note. Non-smoker. Normal anatomy scan at 20 weeks. Routine antenatal care. Presented at 40 weeks with decreased fetal movement. Labour induced. Stillborn male infant weighing 3.6 kilograms. Post-mortem revealed no evidence of congenital malformation, however evidence of a massive feto-maternal haemorrhage. Kleihauer taken on the day of delivery showed evidence of a feto-maternal haemorrhage in excessive of 200 mls. Placental examination showed evidence of inter-villous haemorrhage consistent with fetomaternal haemorrhage. Cause of death massive feto maternal haemorrhage.

2. **Age 31.** Para 0+1. Previous termination of pregnancy. No significant medical history. Non-smoker. Booked at 13 weeks gestation. Dates assigned based on ultrasound. Plan for combined antenatal care. Uneventful antenatal care. Presented at 39 weeks gestation with decreased fetal movements and intrauterine fetal demise diagnosed. Labour induced and stillborn male infant weighing 3.24 kilograms delivered. Postnatal investigations revealed a post Khleiheur with a feto-maternal haemorrhage of approximately 94 mls. Placental histology showed evidence of feto-thrombotic vasculopathy. Cause of death feto-maternal haemorrhage.

Infection (1)

1. **Age 22.** Para 0+1. Previous termination of pregnancy in the first trimester. Late booker at 26 weeks gestation. Non national, limited English. No significant medical history. Smoker - 10 cigarettes a day. Ultrasound revealed singleton fetus consistent with dates. One subsequent visit to the hospital at 29 weeks gestation. Failed to attend glucose tolerance test. Subsequently attended the emergency room at 31 weeks gestation with decreased fetal movements and intrauterine fetal demise diagnosed. Labour induced and stillborn female infant weighing 1.62 kilograms was delivered. Limited post-mortem undertaken. It was negative for any external congenital malformations. Placental karyotype showed a normal karyotype. Histology was strongly suggestive of a suprative chorioamnionitis as being the cause of the fetal death. Thrombophylia screen normal. Thyroid function test normal. Haemoglobin A1C. Cause of death acute suprative chorioamnionitis.

Unexplained (5)

1. **Age 27.** Para 1. Previous full term assisted deliveryof a live born female infant weighing 3.33 kilograms. Past history of Bells palsy. Body mass index of 18. Non-smoker. Booked at 13 weeks gestation. Ultrasound revealed singleton fetus consistent with dates. Plan for combined antenatal care. Booking bloods normal. Regular hospital review. Presented to the Emergency Room in early labour at 39 weeks gestation and intrauterine fetal demise diagnosed. Subsequent vaginal delivery of a stillborn female infant weighing 3.85 kilograms. Post-mortem declined. Normal haemoglobin A1C. Normal thyroid function. Negative Torch screen. Normal placental histology. Cause of death unexplained.

2. **Age 36.** Para 1. Previous elective caesarean section at term for a breech presentation of a female infant weighing 3.53 kilograms. Medical history of migraine. Non-smoker. Booked at 12 weeks gestation. Ultrasound revealed a singleton pregnancy consistent with dates. Plan for combined antenatal care. Normal anatomy scan at 20 weeks gestation. Presented to the Emergency Room with migraine and dyspoenea. Referred up to the Mater at 40 weeks gestation for cranial imaging due to severe headaches and blurred vision. Normal cranial imaging and normo-tensive therefore discharged. Booked for elective caesarean section at 41 weeks if there was no spontaneous labour. Presented at 41 weeks for section and intrauterine fetal demise diagnosed. Caesarean section undertaken at maternal request and a stillborn female infant weighing 3.73 kilograms was delivered. Post-mortem excluded congenital anomaly. Placental examination showed evidence of diffuse delayed villous maturation. Glucose tolerance test negative. Torch screen negative. Thrombophilia screen negative. Cause of death unexplained.

3. **Age 27.** Para 0+1. One previous termination in the first trimester. Unbooked. Presented at 38 weeks gestation with decreased fetal movements and an intrauterine fetal demise diagnosed. Labour induced and a stillborn female infant weighing 1.54 kilograms delivered. Post-mortem investigation showed a negative Torch, negative Kleihauer, normal thyroid function tests and a normal haemoglobin A1C. Post-mortem was negative for congenital anomalies. Cause of death unexplained.

4. **Age 36.** Para 2+1. Two previous term deliveries of growth restricted infants weighing between 2 and 2.5 kilograms. Smoker of 10 per day. No significant medical history. Booked at 13 weeks gestation. Normal anatomy scan at 21 weeks gestation. Presented at 26 weeks with decreased fetal movements and intrauterine fetal demise diagnosed. Labour induced and still born female weighing 0.76 kilograms delivered. Post-mortem declined. Placental examination showed evidence of sub chorial haemorrhage, thyroid antibodies present in the thyroid function test. Cause of death unexplained.

5. **Age 39.** Para 1. Previous emergency caesarean section for fetal distress of a live born female infant weighing 3.39 kilograms. Gestational diabetes in that pregnancy. History of secondary infertility. Non-smoker. Booked at 13 weeks gestation with a di-chorionic di-amniotic twin pregnancy. Hospital based antenatal care. Normal anatomy scan at 20 weeks. Intra-uterine fetal demise of twin II at 26 weeks gestation. Subsequent caesarean section at 33 weeks gestation for antepartum haemorrhage. Stillborn female infant weighing 0.65 kilograms delivered and another female infant weighing 2.87 kilograms delivered, with Apgars 7 at 1 and 9 at 5. Cause of death unexplained.

EARLY NEONATAL DEATH

Neonatal Deaths	27
Congenital Malformations	16
Extreme Prematurity	10
Abruptio Placenta	1

Congenital Malformation (16)

1. **Age 36.** Para 0+1. Past history of hypothyroidism. Booked at 12 weeks. Anatomy scan at 20 weeks revealed complex cardiac defect. Amniocentesis confirmed trisomy 18. Caesarean section performed at 38 weeks at maternal request. Female infant, 1.77kgs. Apgars 5 at 1, 7 at 5. Baby died day 1 post-delivery. No PM. Cause of death: trisomy 18.

2. **Age 33.** Para 2+1. Two previous spontaneous vaginal deliveries at term and one 13 weeks loss. Booked at 30 weeks; referred from another hospital following scans which suggested renal abnormality. Scan confirmed megacystis, bilateral dilated ureters, severe hydronephrosis and anhydramnios. Had amnio-infusion and bladder shunt inserted. Advised of lethal prognosis. Followed up in Fetal Medicine department. Laboured spontaneously at 36 weeks. Baby born before arrival. Male infant 2.97kgs. Apgars 5 at 40 minutes. Baby died at 4 hours of age. PM declined. Cause of death: lethal renal congenital malformation.

3. **Age 33.** Para 3. **Unbooked**. Visiting Dublin from Belfast. Known multiple congenital anomalies: meningomyelocele, diaphragmatic hernia, ventriculomegaly, polyhydramnios. PPROM while visiting Dublin at 38 weeks gestation. Had planned elective caesarean section in Belfast. Delivered by elective caesarean section. Female infant 4.62kgs. Apgars 1 at 1, 1 at 5. Pronounced dead at 2 hours. No PM. Cause of death: multiple congenital abnormalities, spina bifida, diaphragmatic hernia and gross hydrocephalus.

4. **Age 37.** Nulliparous. Transferred from another hospital following diagnosis of suspected complete heart block, at 23 weeks gestation. Reviewed by cardiac team at combined Rotunda/Coombe Cardiac Clinic. Growth restriction with oligohydramnios noted at 29 weeks. Followed in Fetal Medicine department. Poor cardiac contractility noted, with poor biophysical score at 35 weeks. Elective caesarean section at 36 weeks. Male infant 2.14kgs. Apgars 3 at 1, 7 at 5. Baby transferred to NICU; RIP day 1 post delivery. Coroner's post-mortem. Cause of death: Multiple dysmorphic features, low-set ears, short neck, bilateral syndactyly and clinodactyly, bilateral talipes. Heart: biventricular hypertrophy leading to congenital arrhythmia. Karyotype normal. Cause of death: congenital cardiac abnormalities.

5. **Age 33.** Para 0+2. Two spontaneous early losses. Booked at 12 weeks gestation. BMI 38.6. Poor attender. Anatomy scan at 31 weeks revealed complex CNS abnormality. Referred to Fetal Medicine department. Confirmed large encephalocele. Also cardiac enlargement in rotation. Followed in Fetal Medicine department. Spontaneous vaginal delivery of a male infant weighing 3.86 kg at 39 weeks gestation. Apgars 2 at 1, 0 at 5. Baby RIP day 1. PM declined. Cause of death: lethal CNS abnormality.

6. **Age 20.** Para 1. Previous Ventouse delivery at term. Late booker at 23 weeks. Scan suggestive of CNS and renal abnormalities. Referred to Fetal Medicine department. Multiple abnormalities including holoprosencephaly, complex cardiac issues and ambiguous genitalia, short femur, renal pyelectasis and rocker-bottom feet. Rescan at 31 weeks suggestive of hypoplastic left heart, ventriculomegaly. Amniocentesis declined. Reviewed in combined Rotunda/Coombe Cardiac Clinic. Confirmed hypoplastic left heart. Elective caesarean section performed at 39 weeks. Indeterminate sex, weight 2.89kgs. Apgars 2 at 1, 2 at 5. Early neonatal death. Post-mortem performed. Cause of death: multiple congenital malformations.

7. **Age 34.** Para 1. Previous emergency caesarean section at term. Booked at 11 weeks. Anatomy scan at 20 weeks revealed facial abnormalities. Follow up scans in the Fetal Medicine department confirmed possibility of cleft lip and palate, with microcephaly, fused thalami and possible cardiac abnormality. Amniocentesis performed. Diagnosis: monosomy of distal arm of chromosome 13q. Laboured spontaneously at 37 weeks; spontaneous vaginal delivery. Female 1.42kgs. Apgars 2 at 1, 2 at 5. No resuscitation. Baby pronounced dead at 1 hour. PM declined. Genetic counselling organised. Cause of death: lethal chromosomal abnormality.

8. **Age 31.** Para 3. Three previous postdates deliveries of live born infants weighing between 3.4 and 3.66 kilograms. No significant medical history. Non-smoker. Booked at 14 weeks gestation. Planned combined antenatal care. Anencephaly diagnosed on anatomy scan at 22 weeks gestation with poor fetal views due to maternal habitus. Fetal Medicine follow-up. Induction of labour at 40 weeks gestation. Live born female infant was delivered weighing 1.84 kilograms. Apgars 1 at 1 and 0 at 5. Early NND. PM declined. Cause of death lethal congenital anomaly.

9. **Age 38.** Para 2. Two previous term deliveries of live born female infants. Booked in Kilkenny Hospital with dichorionic diamniotic twins. Referred for fetal assessment review due to numerous structural abnormalities identified in twin I. Suspected Trisomy 18 for twin I. Reviewed in the Fetal Medicine Unit at 23, 27, 31, 35 and 37 weeks gestation. Elective caesarean section undertaken at 37 weeks gestation. Live born female infant delivered weighing 1.3 kilograms. Apgars 6 at 1 and 6 at 5. And a live born male infant was delivered weighing 3.9 kilograms. Apgars 9 at 1 and 10 at 5. Neonatal death of twin I within the first 24 hours, with a suspected diagnosis of Trisomy 18. Post-mortem declined. Likely cause of fetal demise. Lethal congenital anomaly.

10. **Age 39.** Para 3+4. Black African. Three previous caesarean sections at 39, 40 and 29 weeks. HIV positive. Previous LLETZ. Booked at 14 weeks. Attended DOVE Clinic. Standard antiretrovirals. 20 week anatomy scan revealed significant growth restriction <5th centile for all parameters, with likely congenital cardiac abnormality. Fetal medicine referral confirmed cardiac malformation. Amniocentesis performed. Diagnosis at 27 weeks: Trisomy 18. Followed in Fetal Medicine department. Elective caesarean section at 38 weeks. Male infant 1.76kgs. Good apgars at delivery; however RIP day 3. PM declined. Cause of death: Trisomy 18, Edwards Syndrome. This patient conceived later in the year and miscarried requiring an ERPC. She died following collapse several weeks later. Coronors PM awaited.

11. **Age 37.** Gravida 5, para 4. Booked in another Hospital and transferred to the Rotunda at 12 weeks gestation with a fetal diagnosis of a cystic hygroma. History of a cystic hygroma in a previous pregnancy with a normal fetal outcome. Extensive cystic hygroma noted on ultrasound with fetal talipes. Normal karyotype identified on amniocentesis. Fetal echo cardiology arranged for 22 weeks gestation. Generalised fetal hydrops noted at this time point. Negative infection screen and a normal echo. Placenta was noted to be low lying at 22 weeks gestation and centrally covering the cervix. Maternal Balentine syndrome developing at 24 weeks gestation with significant maternal oedema, dyspnoea, proteinuria and hypertension. Deterioration in the maternal condition with evidence of maternal heart failure with bilateral plural effusions and pulmonary oedema and hypertension. Imminent risk to the mother, necessitating hysterotomy. Live born female infant weighing 900g delivered. Neonatal death day 1. PM performed. Cause of death non immune hydrops of unknown aetiology. Massive haemorrhage at the time of delivery necessitating hysterectomy. Discharged home on Labetalol 200mg on day 5 post-operatively.

12. **Age 17.** Primagravid. Booked at 11 weeks. Smoker - 10 per day. Anatomy scan at 20 weeks revealed thickened nuchal fold, unilateral talipes. Repeat scan in Fetal Medicine department revealed ventriculomegaly and hydronephrosis. Amniocentesis performed; normal karyotype. Patient presented at 22 weeks with vaginal bleeding and crampy abdominal pains. Proceeded to labour. Assisted vaginal breech delivery. Male infant, 0.5kgs. Apgars 1 at 1, 1 at 5. Baby pronounced dead shortly after delivery. Post-mortem confirmed bilateral ventriculomegaly, bilateral pyelectasis, bilateral talipes, bilateral rocker-bottom feet; however cytogenetics was normal. Cause of death: extreme prematurity with a number of associated congenital malformations.

13. **Age 36.** Para 3+4. Two previous term deliveries, one live born male infant weighing 3 kilograms and one emergency caesarean section at 39 weeks of a live born male infant weighing 2.66 kilograms. Then a subsequent fresh still birth at 24 weeks gestation. Past history of pancreatitis, anaemia, hepatitis C, depression, oesophageal varices, on Methadone maintenance therapy, heavy smoker at booking. Booked at 15 weeks gestation. Encephalocele noted at 20 weeks gestation. For Fetal Medicine follow-up. Preterm pre-labour rupture of the membranes at 34 weeks gestation with a subsequent vaginal delivery of a live born female infant weighing 1.54 kilograms. Apgars 2 at 1 and 2 at 5. Early neonatal death. PM declined. Cause of death lethal congenital anomaly.

14. **Age 24.** Nulliparous. No relevant past history. Booked at 12 weeks gestation. Anatomy scan at 20 weeks showed oligohydramnios. No history of PPROM. Referred to Fetal Medicine department. Rescan at 24 weeks revealed significant growth restriction with multiple structural abnormalities, including cleft lip, rocker-bottom feet, unusual cardiac anatomy. An amniocentesis was performed and sample sent for karyotyping. Result: Trisomy 13. Followed in the Fetal Medicine department. Admitted at 35 weeks with pre-eclampsia requiring antihypertensive treatment. Induction of labour at 36 weeks. Spontaneous vaginal delivery. Male infant 1.31kgs. Poor apgars at delivery. Baby pronounced dead after 30 minutes. Cause of death: chromosomal, trisomy 13.

15. **Age 30. Para 1.** One previous term uncomplicated vaginal delivery of a live born female infant weighing 3.57 kilograms. No significant medical history. Non smoker. Booked at 13 weeks gestation. Recurrent episodes of vaginal bleeding. Hospital based care. Alobar holoprosencephaly noted on the anatomy scan at 20 weeks gestation. Cleft lip and a midline facial defect noted. Normal karyotype on amniocentesis. Subsequent spontaneous onset of labour at 32 weeks gestation with a background history of PPROM for the preceding four days. Assisted breech delivery of a live born female infant weighing 1.81 kilograms. Apgars 2 at 1 and 2 at 5. Early neonatal death. PM peformed. Cause of death lethal congenital anomaly.

16. **Age 27. Para 1** Previous full term delivery. No medical history of noted. Booked at 12 weeks. Routine antenatal care. Anatomy scan at 21 weeks showed no obvious fetal abnormalities. Reviewed at 27 and 30 weeks with breech presentation. Scan at 33 weeks revealed evidence of fetal hydrops with bilateral hydrothorax and mediastinal shift. Delivered by caesarean at 34 weeks gestation. Male infant weighing 2 kilograms. Good Apgar scores. Transferred to NICU. NND day 2. Post-mortem revealed brocho-pulmonary sequestration causing severe fetal hydrops.

Extreme Prematurity (10)

1. **Age 36.** Para 1. Previous Ventouse delivery at term. Booked at 13 weeks. Monochorionic, diamniotic twins. Followed with serial scans. Twin-to-twin transfusion syndrome diagnosed at 23 weeks. Fetoscopic laser ablation performed. Substantial antepartum haemorrhage of 500 mls at 23 weeks and 3 days, followed by spontaneous rupture of membranes and cord prolapse. Twin 1: assisted breach delivery, 0.39kgs. Twin 2: spontaneous vaginal delivery, male infant, 0.61kgs. No resuscitation. PM declined. Cause of death: extreme prematurity following twin-to-twin transfusion syndrome and laser ablation.

2. **Age 27.** Nulliparous. Booked at 14 weeks. 20 week anatomy scan negative for malformations; suggestive of low-lying placenta. Poor attender. Scanned at 24 weeks; suggestive of oligohydramnios. History suggestive of PPROM. Admitted for observation. Laboured spontaneously at 24 weeks gestation. Forceps delivery. Male infant 0.51kgs. Apgars 0 at 1, 1 at 5. PM declined. Cause of death: extreme prematurity. Placental examination showed evidence of ascending infection with maternal and fetal response, with evidence of retroplacental haemorrhage and acute supperative chorioamnionitis.

3. **Age 41.** Para 1. Previous emergency caesarean section at 36 weeks, complicated by pre-eclampsia. Past history of depression. Booked at 19 weeks. BMI 30.42. Hypertensive at booking. Referred to Mental Health Liaison team. Anatomy scan at 24 weeks revealed evidence of growth restriction. Followed with serial ultrasounds and dopplers. Absent end diastolic flow from 25 weeks; reversed end diastolic flow noted at 27 weeks. Delivered by emergency caesarean section of a male infant weighing .75kgs at 27 weeks gestation. Apgars 4 at 1, 6 at 5. Baby transferred to NICU. RIP day 2. Coroner's PM: extreme prematurity with RDS.

4&5. **Age 37.** Para 2+1. Two previous term caesarean sections and a previous first trimester loss. Referred from Mullingar Hospital at 20 weeks gestation with monochorionic diamniotic twins and twin to twin transfusion syndrome stage II. Amnio reduction undertaken and subsequent fetoscopic laser for twin to twin transfusion syndrome stage III. Maternal pyrexia and pre-term pre-labour rupture of membranes. Variation in maternal condition requiring delivery of the infants at 23 weeks gestation. Male infants delivered weighing 0.58 and 0.51 kilograms by hysterotomy. Both twin died within an hour. PM declined. Cause of death prematurity complicated by twin to twin transfusion syndrome and ascending infection. Patient discharged home well day 6 postnatally

6. **Age 36.** Para 1+1. Unbooked. Presented at 26 weeks. Monochorionic/diamniotic twins. Antenatal care elsewhere. Regular pains. Cervix 9cms dilated. Emergency caesarean section performed. Twin I breech presentation, female 890gms, Apgars 2 at 1, 5 at 5, 9 at 10. Twin II female 850gms, apgars 3 at 1, 4 at 5, 6 at 10. Both babies transferred to NICU. Twin 1 RIP day 1; extreme prematurity. PM negative for congenital malformations. Cause of death: extreme prematurity. Twin II grade 4 IVH; care withdrawn day 16. No PM. Placental histology confirmed monochorionic diamniotic placentation. No evidence of vilitus intervilicitis infarction or retroplacental haemorrhage. Cause of death: extreme prematurity

7. **Age 34.** Para 2+1. One previous termination, one previous spontaneous vaginal delivery and a subsequent emergency caesarean in her last pregnancy in 2007. Medical history of hepatitis C. Booked at 21 weeks gestation. Uncertain of LMP. Estimated date of delivery assigned based on ultrasound at booking. Emergency room presentation at 24 weeks with vaginal bleeding and a diagnosis of a revealed abruption. Emergency classical caesarean section at 24 weeks and a live born male infant weighing 640g delivered. Apgars 7 at 1, 8 at 5 and 8 at 10. Intubated and transferred to the special care baby unit. Early neonatal death. Total maternal blood loss 3.5 litres. Seven units of blood transfused, two units of fibrinogen and four units of octoplas. Discharged home well on day 7 post caesarean section with arrangements for follow-up.

8. **Age 35 year old.** Nulliparous patient. Transferred from another hospital at 18 weeks gestation following a diagnosis of PPROM at 17 weeks. Admitted for monitoring and observation. Followed in the Fetal Medicine department. Emergency caesarean section at 26 weeks with suspected chorioamnionitis. Male infant 0.86kgs. Apgars 0 at1, 4 at 5, 6 at 10. Baby RIP day 3. Day 4 post-delivery, significant pulmonary hypoplasia. PM declined. Placental examination confirmed evidence of ascending infection. Cause of death: extreme prematurity and pulmonary hypoplasia.

9.&10. **Age 37.** Para 1. Previous preterm vaginal delivery at 36 weeks gestation of a live born female infant weighing 2.84 kilograms. No significant medical history. Non-smoker. Booked at 12 weeks gestation with a monochorionic diamniotic pregnancy. Chorionicity confirmed and arrangements made for hospital based care according to the monochorionic twin pregnancy protocol. Normal anatomy scan at 21 weeks gestation. Presented at 23 weeks gestation with both infants having been born prior to arrival in the hospital. The first infant was a male infant weighing 0.62 kilograms and the second was a male infant weighing 0.517 kilograms. Twin I Apgars of 2 at 38 minutes of age. Twin II RIP in the immediate postnatal period. Twin I RIP died day 2. Twin II Coroners PM. Twin I no pm. Cause of death extreme prematurity.

Abruptio Placenta (1)

1. **Age 31.** Nulliparous. Seen in the Diabetic Clinic. History of insulin dependent diabetes and hypothyroidism. Anatomy scans at 20 weeks negative for malformations. Regular attender at the clinic. Admitted at 34 weeks with suspected pre-eclampsia. Commenced on Labetalol. Induction of labour planned for 37 weeks, but reduced fetal movements reported at 36+3 weeks. Non-reassuring CTG. Emergency caesarean section performed. Male infant weighing 2.84 kilograms delivered. Apgars 0 at 1, 2 at 5 and 3 at 10 minutes. Neonatal death on day 2. At time of caesarean section placenta abruption noted with estimated blood of 1000mls. Coroners post-mortem examination confirmed placental abruption. Negative for congenital malformations. Three months postnatally patient required coronary artery stents.

MATERNAL MORTALITY 3

1. **Age 37.** Para 4. Past history of depression and intellectual disability. Late booker at 37 weeks. Breech presentation. Unsuccessful ECV at 39 weeks. Booked for planned elective caesarean section. Uneventful delivery and postnatal care. Routine thrombo-phrophylaxis. Seen by Mental Health Liaison team and follow-up organised with GP and Community teams. Forty-seven days postpartum patient taken to general hospital by ambulance with difficulty breathing, suffered cardiac arrest in transit and pronounced dead on arrival in A&E Department. A Coroners PM was performed. Cause of death acute pulmonary embolus and sub-acute pulmonary embolus due to deep vein thrombosis of the leg and pelvic veins.

2. **Age 34.** Para 3+1. Two previous caesarean sections. Booked at 10 weeks. Early scan revealed oligohydramnios. Follow-up by the Fetal Medicine Department. Continued oligohydramnios with a low lying globular placenta. Delivered by emergency caesarean section at 26 weeks. Female infant weighing 0.89 kilograms. Placenta acreta. Per-operative blood loss 1200 mls. Post-operatively transferred to High Dependency. Maternal collapse day 1 post delivery. Patient resuscitated, intubated and transferred to the Mater Intensive Care Unit, where she deteriorated steadily over several days and died day 4 post delivery. Coroner's post mortem: cause of death massive pulmonary embolism.

3. **Age 39.** Four previous caesarean sections and four TOPs. Past history of neonatal death from Trisomy 18. HIV positive. Presented at 9 weeks gestation. Scan confirmed no fetal heart. Diagnosed silent miscarriage. ERPC under ultrasound guidance. Presented to Emergency Room five days post ERPC with significant headache, gradually getting worse. Patient referred to the Mater Hospital for assessment. Patient was admitted to Connolly Hospital some days later having collapsed. Coroners PM. Report awaited.

Maternal Mortality

Year	Total	Total Number of Mothers Attending
2004	1	7290
2005	0	7518
2006	0	8036
2007	0	9290
2008	1	9655
2009	2	9709
2010	3	9594
2011	3	10547
2012	2	10397
2013	3	10514
Total	**15**	**92550**

Maternal Mortality Rate **16.2/100,000**

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.

Dr. Sam Coulter Smith
Master

Severe Maternal Morbidity

Dr. Sharon Cooley & Dr. Michael Geary

The Rotunda continued to prospectively monitor severe maternal morbidity during 2013.

In total there are 40 patients reported on and 53 events. The incidence of severe morbidity for 2013 was 0.46%. The incidence of severe maternal morbidity events was 0.61%.

Similar to 2012 there were no episodes of eclamptic seizure. Our number of cases with major obstetric haemorrhage rose in 2013 (from 18 to 25). This is similar to the incidence in 2011. The number of cases requiring hysterectomy in 2013 was three which is more than halved when compared with 2012. All of our caesarean hysterectomies were in cases complicated by placenta praevia or placenta percreta.

Our number of cases requiring transfer for intensive care or coronary care management was ten. This includes five of our patients that required delivery in the Mater Misercordiae hospital.

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

Major Maternal Morbidity	Number of cases 2012	Number of cases 2013
Transfusion more than 5 units or Estimated Blood loss more than 2.5L or Treated for coagulopathy	18	25
ICU/CCU Transfer	15	10
Peripartum hysterectomy	7 (6 Rotunda and one in the Mater)	3
Pulmonary oedema or acute respiratory dysfunction	3	3
Pulmonary embolism	2	3
Renal or liver dysfunction	3	2
Uterine rupture	1	1
Anaesthetic issue	1	1
Coma	0	1
Cardiac arrest	2	1
Status epilepticus	0	0
Septicaemic shock	3	0
Cerebrovascular accident	0	0
Eclampsia	0	0
Maternal deaths	2	3

Massive Obstetric Haemorrhage (25)

1. **Age 24.** Para 2+2. Non-national. Booked at 12 weeks gestation with a history of two previous emergency caesarean sections and two previous miscarriages. Additional medical history of sickle cell trait and anaemia. Posterior placenta praevia identified. Admitted with abdominal pain at 36 weeks gestation with a background history of urinary tract infection. Antepartum haemorrhage. Emergency caesarean section undertaken at 36 weeks and 6 days gestation. Live born male infant weighing 3.335 kilograms. Apgars 9 at 1, 10 at 5 and 10 at 10. Total blood loss 2500 mls inter-operatively, requiring transfusion of two units of packed red cells. Discharged home well on day 5 postnatal. Failed to attend for postnatal review at 6 weeks.

2. **Age 29.** Para 0. Known history of infertility. Investigated in another hospital and diagnosised as having a bicornuate uterus. Spontaneous pregnancy. Booked at 11 weeks gestation and notes were requested from the referring hospital. Pregnancy identified in the left horn of the uterus at 8 weeks gestation. Subsequently referred as an emergency from a General Hospital with a haemo-peritoneum at 15 weeks gestation and maternal collapse. Laparotomy undertaken, ruptured uterine horn identified and loss. Uterus repaired. Total blood loss 2.6 litres. Total blood transfused 6 units, one gram of fibrinogen and two units of octoplas. Uneventful post-operative recovery and discharged home day 6 with arrangements for follow-up.

3. **Age 37.** Para 2. Booked at 13 weeks gestation with a history of a previous emergency caesarean section and a subsequent VBAC. No significant medical history. Hospital based antenatal care. Subsequent spontaneous rupture of membranes at 40 weeks gestation. Pains failed to establish and an elective caesarean section was done thereafter. Live born male infant weighing 3.9 kilograms, Apgars 9 at 1 and 10 at 5. Patient was returned to theatre from the recovery room with hypotension and a retro-peritoneal haemorrhage was identified and the abdominal cavity was packed. Total blood loss 3.3 litres. Subsequent return to theatre and left uterine artery ligated. Total blood transfused 5 units of packed red cells, 6 units of FFP and 2 pools of platelets. Discharged home day 8 post caesarean section.

4. **Age 28.** Para 0. Booked for midwifery led care at 12 weeks gestation. Induction of labour at 41 weeks and 1 day secondary to maternal hypertension. Prostaglandin induction with a 7 hour labour. Ventouse-assisted vaginal delivery in theatre of a male infant weighing 4.48 kilograms. Apgars 9 at 1 and 10 at 5. Subsequent atonic uterus and 2.7 litre blood loss. Transfused two units of packed red cells in the immediate post partum period. High dependency care. Discharged home well day 3 postnatal.

5. **Age 30.** Para 0+0. Spontaneous onset of labour at 40 weeks gestation with no antenatal risk factors. IVF pregnancy. Syntocinon to augment progress in labour. A failed instrumental at full dilation. Emergency caesarean section. Live born male infant weighing 4.37 kilograms, Apgars 9 at 10, 10 at 5. Atonic uterus and subsequent 2.5 litre blood loss. Two units of packed red cells transfused. Discharged home well day 5 postnatal.

6. **Age 39.** Para 1. History of bilateral oophrectomy for ovarian cancer. Donor egg. Booked at 13 weeks gestation. Combined antenatal care. Induced at 40 weeks gestation. Spontaneous vaginal delivery. Subsequent vaginal wall tear and atonic uterus and 2.5 litre blood loss. Four units of cross matched blood transfused, 3 grams of fibrinogen and 3 units of octoplas. Intra-uterine balloon tampenade. Balloon removed day 1 postnatal. Discharged home well day 3 post delivery.

7. **Age 25.** Para 0. Booked for antenatal care at 11 weeks gestation in England where a DCDA pregnancy was diagnosed. Antenatal care was provided between the Rotunda Hospital Dublin and London with subsequent return for hospital based care in Dublin from 30 weeks gestation. Induced at 37 weeks for pregnancy induced hypertension. Vaginal delivery of a male infant weighing 2.58 kilograms, Apgars 9 at 1 and 9 at 5, and a female infant weighing 1.98 kilograms, Apgars 9 at 1 and 10 at 5. Subsequent retained placenta requiring a manual removal of placenta in theatre and an atonic uterus requiring a return to theatre. RUSHE balloon inserted. Total blood loss two litres. Total blood transfused 4 units of cross matched blood, 4 grams of fibrinogen, 2 pools of platelets and 4 units of octoplas. Postnatal period complicated by pulmonary oedema and acute renal failure. Multi-disciplinary high dependency care provided. Blood pressure stabilised and renal function and respiratory function improved over the 8 days postnatally. Discharged home well day 8, with arrangements for further follow-up.

8. **Age 37.** Para 4. Referred from another hospital, with a fetal cystic hygroma at 15 weeks gestation. Amniocentesis undertaken at 17 weeks gestation confirmed a normal female karyotype. Severe hydrops fetalis. At 22 weeks gestation maternal condition deteriorated with significant proteinuria, dyspnoea, fetal oedema. Admitted for stabilisation with a suspected diagnosis of Ballantyne syndrome. Delivered mandated in the maternal interest at 22 weeks gestation. Known low lying placenta. Hysterotomy undertaken. Four litre intra-operative blood loss. Difficulty with haemostasis despite numerous conservative measures. Hysterectomy undertaken. Total blood loss 4 litres. Transfused with 4 units or cross matched blood and 1 unit of octoplas. Discharge home well on day 5 postnatally.

9. **Age 37.** Para 4 +2. Previous emergency caesarean section. Pre-eclampsia in first pregnancy, followed by subsequent 3 term vaginal births after section and two miscarriages. Morbid obesity with a body mass index of 38 at booking. Booked at 15 weeks gestation. Normal glucose tolerance test. Subsequent spontaneous onset of labour at 40 weeks gestation, precipitous labour and a live born male infant weighing 3.51 kilograms was delivery, Apgars 9 at 1 and 10 at 5. 3.6 litre primary postpartum haemorrhage secondary to uterine atony. Examination under anaesthetic in theatre and intra-uterine balloon tampenade in conjunction with oxytocics. Transfused 2 units of packed red cells, 2 units of octoplas and 1 unit of fibrinogen concentrate. High dependency care. Discharged home well on day 5 postnatal.

10. **Age 39.** Para 11. Booked at 12 weeks gestation for combined antenatal care. Maternal Parvo virus during the first month of pregnancy. Routine follow-up in the Fetal Medicine Unit for the following 10 weeks with no evidence of fetal anaemia. Presented to the emergency room at 35 weeks gestation with pains. Bradycardia and suspected placental abruption. Live born male infant weighing 2.70 kilograms. Apgars 3 at 1, 6 at 5 and 7 at 10. Cord pH 6.9. Placental abruption confirmed at emergency caesarean section. Extension of the uterine angle at caesarean section and a subsequent 1.8 litre blood loss requiring 2 units of packed red cells and 2 units of fresh frozen plasma. High dependency care and discharged home day 6 post caesarean section.

11. **Age 32.** Primip. Booked at 13 weeks gestation. Body mass index of 37. Combined antenatal care with a normal glucose tolerance test at 28 weeks. Presented in spontaneous labour at 40 weeks gestation. Emergency caesareans section for failure to advance at 3 centimetres dilatation. Lateral extension of the caesarean uterine incision with a subsequent 2.5 litre blood loss. Four units of packed red cells transfused and care post-operatively in the high dependency unit. Discharged home well on day 5 postnatal.

12. **Age 33.** Para 2. Booked at 12 weeks gestation with confirmed dates. Two previous caesarean sections. Hospital based antenatal care. Low lying placenta noted at 20 weeks. Elective caesarean section at 38 weeks. Live born female infant weighing 3.01 kilograms delivered. Apgars 9 at 1 and 10 at 5. Four litre intra-operative blood loss with a morbidly adherent placenta. Partial separation of the placenta. High dependency care post-operatively. Discharged home well day 6 post operatively with arrangements for follow-up. Total blood loss four litres. Three units of red cells transfused and two units of octoplas.

13. **Age 40.** Primip. Booked at 15 weeks gestation. ICCSI pregnancy. Known uterine fibroids. Medical history of hyperthyroidism, asthma. Combined antenatal care. Spontaneous onset of labour at 40 weeks gestation. Ventouse-assisted delivery of a live born female infant weighing 3.18 kilograms. Apgars 9 at 1 and 10 at 5. Primary post-partum haemorrhage of 3 litres requiring transfer to theatre. Retained placental tissue removed. RUSHE balloon tamponade. In total 8 units of blood transfused. One pool of platelets and three units of octoplas. Discharged home well day 6 postnatal.

14. **Age 33.** Para 0. Booked at 11 weeks gestation. Combined antenatal care. No significant medical history. Induced for post dates at 41 weeks and 4 days gestation. Emergency caesarean section at full dilatation for high presenting part and failure to advance in the second stage. Primary post-partum haemorrhage secondary to uterine atony. Total blood loss 3.5 litres. Two units of red cells transfused, four units of fresh frozen plasma and two grams of fibrinogen. Discharged home well day 6 postnatally.

15. **Age 39.** Para 1+1. Previous emergency caesarean section at full dilatation for failed instrumental. Booked at 13 weeks gestation. Dates assigned. Hospital based care. Placenta praevia noted at 20 weeks gestation. Admitted with an antepartum haemorrhage at 31 weeks gestation. No subsequent blood loss thereafter. Elective caesarean section at 37 weeks gestation for placenta praevia. 800 ml intra-operative loss. Subsequent post-partum haemorrhage. Total blood loss 2.5 litres. Four units of blood transfused. No additional blood products required. Discharged home well on day 5.

16. **Age 34.** Para 2+1. One previous termination, one previous spontaneous vaginal delivery and a subsequent emergency caesarean in her last pregnancy in 2007. Medical history of hepatitis C. Booked at 21 weeks gestation. Uncertain of LMP. Estimated date of delivery assigned based on ultrasound at booking. Emergency room presentation at 24 weeks with vaginal bleeding and a diagnosis of a revealed abruption. Emergency classical caesarean section at 24 weeks and a live born male infant weighing 640g delivered. Apgars 7 at 1, 8 at 5 and 8 at 10. Intubated and transferred to the special care baby unit. Early neonatal death. Total maternal blood loss 3.5 litres. Seven units of blood transfused, two units of fibrinogen and four units of octoplas. Discharged home well on day 7 post caesarean section with arrangements for follow-up.

17. **Age 29.** Para 1. One previous term assisted vaginal delivery in 2010. Booked for midwifery led care at 14 weeks gestation. Presented at 40 weeks with decreased fetal movements. Induction of labour undertaken for same. Spontaneous vaginal delivery of a live born female infant weighing 3.87 kilograms. Apgars 9 at 1 and 10 at 5. Subsequent primary and secondary postpartum haemorrhage. Estimated blood loss in the immediate 24 hours following delivery 1.6 litres. Subsequent blood loss and re-admission with a secondary postpartum haemorrhage requiring re-examination under anaesthetic and removal of placental tissue. In total two units of cross matched blood transfused, two grams of fibrinogen and two units of octoplas. Fourteen days between the primary and secondary postpartum haemorrhage. Discharge home well six days after her second admission.

18. **Age 28.** Para 2+1. Booked at 12 weeks gestation. Past history of a previous miscarriage in 2002, spontaneous vaginal delivery of a liveborn female weighing 3.06 kilograms in 2005 and an emergency caesarean section for placental abruption at 28 weeks gestation of a liveborn male infant. Medical history of anaemia and depression, recurrent urinary tract infections and was methadone maintenance therapy at booking. Smoker in excess of 20 per day. Hospital based care. Old notes requested from the maternity hospital where she delivered previously. Poor attender for antenatal care. Presented with a significant antepartum haemorrhage at 31 weeks and 4 days gestation. Admitted for steroids. Subsequent suspected abruption and a category I emergency caesarean section undertaken. Liveborn male infant weighing 1.83 kilograms with Apgars 6 at 1 and 9 at 5. Placental abruption confirmed. 2.7 litre loss at the time of closure at section. Hypovolemic and tachycardiac post-operatively requiring a return to theatre. Total blood loss 6 litre. Seven units of cross matched blood, two grams of fibrinogen and four units of octoplas administered. Discharged home day 5 post section.

19. **Age 45.** Para 1. Booked at 20 weeks gestation. Mono-chorionic diamniotic twins. Normotensive at booking. Body mass index of 33. Large mid-line periumbilical hernia. Previous gastric band surgery. Pre-eclampsia in first pregnancy 13 years previously. On labetalol at booking and aspirin. Hospital based care. Static fetal growth at 36 weeks gestation. Labour induced. Spontaneous vaginal delivery of twin I weighing 2.31 kilograms, Apgars 9 at 1 and 10 at 5 and spontaneous vaginal delivery of twin II weighing 2.62, Apgars 9 at 1 and 10 at 5. Primary postpartum haemorrhage of 3 litres. Transferred to theatre for examination under anaesthetic and RUSHE balloon insertion. Total blood loss of 3 litres. Four units of blood transfused. Discharged home well on day 3 post delivery.

20. **Age 39.** Primip. Booked at 18 weeks gestation, fetal size consistent with gestation. Combined antenatal care. No significant medical history. Normal body mass index. Smoker of 10 cigarettes per day. Spontaneous onset of labour at 38 weeks gestation. Failed instrumental at full dilatation and subsequent emergency caesarean section. Primary postpartum haemorrhage requiring return to theatre three hours post section for laparotomy. Total blood loss 4.3. Required 2 units of O negative blood, 3 units of cross matched blood, 2 units of fibrinogen, 1 pool of platelets and 7 units of octoplas. Post-natal period complicated by sub-acute ileus. Discharged home on day 7 postnatal.

21. **Age 30.** Para 0+3. Booked at 14 weeks gestation. No significant medical history. Midwifery led care with a plan for a home birth. Transferred to hospital in spontaneous labour at 41 weeks + 1 day gestation due to prolonged rupture of membranes for oxytocin augmentation. Emergency caesarean section at full dilatation for fetal bradycardia, followed by a return to theatre four hours later with maternal hypotension and tachycardia. Midline laparotomy with consultant vascular surgeon in attendance. Re-suturing of uterine angle. Spleen and liver explored. No definitive cause of blood loss identified. Total blood loss 5 litres. Total blood transfused 1 unit of O negative blood, 6 units of cross matched blood, 3 units of fibrinogen, 2 pools of platelets and 6 units of octoplas. Discharged home will on day 8 postnatal.

22. **Age 34.** Para 3. Booked at 11 weeks gestation. Routine anatomy scan at 20 weeks showed evidence of short long bones and talipes. Subsequent Fetal Medicine review and follow-up. Past medical history of postnatal depression but nil else of note. Three previous full term appropriately grown infants. Normal karyotype at amniocentesis. Induction of labour at 36 weeks due to intrauterine growth restriction. Subsequent emergency caesarean section at full dilatation. Live born male infant delivered weighing 2.36 kilograms. Apgars 9 at 1 and 10 at 5. Intra-operative blood loss 3.5 litres in total. Units of blood transfused. Mother and baby discharged home well on day 5 for follow-up with the geneticist.

23. **Age 31.** Para 3+3. Booked at 15 weeks gestation. Prior history of an assisted vaginal delivery, two caesarean section and 3 first trimester losses. Pregnancy induced hypertension in the last pregnancy. Family history of venous thromboembolism. Normotensive on booking. Placenta noted to be anterior and low lying covering the cervix at 20 weeks gestation with loss of the bladder uterine interface. Possibility of placenta accreta or percreta. No bleeding. Managed as an outpatient with arrangements for review at 24 and 28 weeks and anaesthetic follow-up. Seen in the clinic at 24, 28, 30 and 31 weeks. Presented to the Emergency Room at 31 weeks and 1 day with a non-substantial antepartum haemorrhage. Admitted. Continuing light vaginal bleeding. Significant antepartum haemorrhage at 33 weeks gestation requiring emergency caesarean section. Live born female infant weighing 2.39 kilograms delivered. Apgars 2 at 1, 6 at 5 and 9 at 10 minutes. Classical caesarean section undertaken. Placenta left insutu. Two litre postpartum haemorrhage in the immediate post-operative period. Patient returned to theatre for a sub-total hysterectomy. Stabilised and transferred to the Mater Intensive Care Unit post-operatively. Total blood loss six litres. Ten units of crossed matched blood, 4 grams of fibrinogen, 2 pools of platelets and 8 units of octoplas transfused. Transferred back to the Rotunda day 2 post-operatively. Post-natal recovery complicated by bilateral pneumonia emboli ileus. Wound infection on day 13. Discharged home day 19 post-operatively with follow-up arranged for two weeks and 6 weeks post natal.

24. **Age 22.** Para 2+1. Two previous term deliveries. Booked at 11 weeks gestation. Combined antenatal care. Normal anatomy scan at 21 weeks gestation. Spontaneous onset of labour at 40 weeks gestation. Live born male infant weighing 4.62 kilograms delivered. Apgars 9 at 1 and 10 at 5 minutes. Subsequent postpartum haemorrhage secondary to a retained placenta. Total blood loss 3 litres. Four units of blood transfused, 2 grams of fibrinogen and 3 units of octoplas. RUSHE balloon inserted in theatre. Discharged home well day 3 postnatal.

25. **Age 37.** Para 1+1. Presented to the emergency room at 6 weeks gestation with a sudden onset of lower abdominal pain and shoulder tip pain, on a background history of two years of infertility. No significant medical history. Collapse on admission. Pelvic examination and abdominal ultrasound suggestive of a right-sided ectopic, with a haemoperitoneum identified. Patient stabilised and transferred to theatre for emergency laparotomy and right salpingectomy. Left tube appeared normal. Total blood loss 2 litres. Total blood transfusion of 4 units of packed red cells and 6 units of octoplas. Discharged home well on day 4 post laparotomy, with arrangements for follow up for serial bHCG.

Transferred to Mater (10)

1. **Age 32.** Para 2. Two previous term deliveries. Booked at 12 weeks gestation. Combined antenatal care. Admitted at 33 weeks gestation to the Intensive care unit in the Mater Hospital with Streptococcal pneumonia. Lower sector caesarean section at 33 weeks and 5 days gestation. Live born female infant weighing 2.17 kilograms. Apgars 7 at 1 and 10 at 5. Total intra-operative blood loss 780 mls. Postnatal recovery in the Mater Hospital.

2. **Age 30,** para 0+1, with a previous second trimester loss at 21 weeks gestation in 1999. Maternal history of congenitally corrected transposition of the great arteries and tricuspid regurgitation. Booked at 9 weeks gestation for multidisciplinary hospital-based care, in view of the cardiac history. On carvedilol 3.125mgs twice daily at booking. Severe tricuspid regurgitation prior to pregnancy. Consultant-led care, with cardiology and anaesthetic input. Elective caesarean section in the Mater Hospital at 35 weeks gestation, of a liveborn male infant, weighing 2.6kgs; apgars 9 at 1, 10 at 5. Discharged home well on day 5 postnatally, for cardiac follow up.

3. **Age 29,** para 0. Booked at 12 weeks gestation. Past history of Crohn's disease, pernicious anaemia and a bowel resection in 1999, with dilatation of a bowel stricture in 2006. Booked for combined antenatal care. Midline laparatomy and a bowel stoma noted. Normal anatomy scan at 20 weeks gestation. Presented at 36 weeks gestation with a prolapsed stoma. Emergency caesarean section at 36 weeks gestation in the Mater Hospital and a liveborn male infant weighing 2.54 kilograms was delivered. Apgars 9 at 1 and 10 at 5. Discharged home well day 6, postnatally.

4. **Age 35.** Para 1. Previous caesarean section. Transferred from the Coombe Women and Infants University Hospital at 33 weeks and 6 days with maternal history of a heart and lung transplant in 2007 and a renal transplant in 2009. Transfer was indicated in maternal interest due to superimposed pre-eclampsia and pre-term pre-labour rupture of membranes and deterioration in the maternal condition. Emergency caesarean section undertaken in the Mater Hospital of a liveborn female infant weighing 2.34 kilograms. Apgars 5 at 1 and 7 at 5. Uneventful postnatal recovery. Patient was discharged on day 6 postnatal.

5. **Age 37.** Para 2. Two previous term uncomplicated deliveries in 2007 and 2008 of liveborn male infants weighing 4.2 and 3.9 kilograms. Medical history of maternal super ventricle tachycardia in 2012 and pulmonary sarcoidosis. Transferred from Limerick Hospital at 33 weeks gestation with a dichorionic diamniotic twin pregnancy and recurrent episodes of maternal fast atrial fibrillation despite the use of beta blockers. Transferred to the care of Cardiology in the Mater Hospital. Cardio version undertaken in the Mater Hospital. Discharge home day 4 post cardio version to continue care in the referring hospital.

6. **Age 29.** Para 1. One previous precipitous delivery in 2011 of a liveborn infant. Medical history of cardio myopathy with myocardio fibrosis and arrhythmia refractory true oblation. Booked in the Coombe Women's and Infants University Hospital. On Methoprolol 50mg twice daily and Flecainide 50mg twice daily. Transferred from the Coombe Women's and Infants University Hospital to the Rotunda at 31 weeks gestation with a growth restricted infant and intermittent absent end diastolic flow. Estimated fetal weight at transfer was 1.35 kilograms. Delivery required in the fetal interest. Elective caesarean section undertaken in the Mater Misericordiae Hospital due to the maternal cardiac condition at 31 weeks gestation. Live born female infant was delivered weighing 1.38 kilograms . Apgars 8 at 1 and 9 at 5. Transferred back from the Mater to the Rotunda in the early postnatal period. Maternal heart rate well controlled on Flecainide 50mg twice daily and Methoprolol 50mg twice daily over the postnatal period. Discharged home with arrangements for cardiac follow-up day 4 post section.

7. **Age 33.** Para 0. Maternal history of anxiety. Booked at 15 weeks gestation. Combined antenatal care. Presented in spontaneous labour at 40 weeks and 3 days gestation. Maternal collapse at full dilatation and maternal (assist a lay?) requiring cardiac compression for a period of three minutes. Assisted vaginal delivery of a live born male infant weighing 3.6 kilograms. Apgars 9 at 1 and 9 at 5. Atonic postpartum haemorrhage of 1 litre. Provisional diagnosis of possible eclamptic seizure or under lying cardiac disease. Maternal pulse irregular. R and tachycardia noted in the early postnatal period. Runs of atrial fibrillation. Transferred to the Coronary Care Unit in the Mater Hospital for further investigations on day 1 postanatally.

8. See Massive Obstetric Haemorrhage (3)
9. See Massive Obstetric Haemorrhage (23)
10. See Master's Report on Maternal Deaths (2).

Peripartum Hysterectomy (3)

1. **Age 34.** Para 3. Three previous caesarean sections. History of pre-eclampsia in pregnancies. Known HIV positive. Non-smoker. Body mass index of 33. Booked at 24 weeks gestation. Admitted with antepartum haemorrhage and a background diagnosis of a low lying placenta at 25 weeks gestation. Emergency caesarean section at 37 weeks gestation for a non-reassuring CTG. Placenta noted to be morbidly adherent at the time of delivery. 1.2 litre blood loss. Placenta protruding through the lower uterine segment. Sub-total hysterectomy undertaken. Admitted to the High Dependency Unit following delivery. Ileus post-operatively. Discharge home well on day 6 postnatally with arrangement for follow-up MRI in the Mater Hospital. Follow-up also arranged for six weeks postnatally.

2. See Massive Obstetric Haemorrhage (8)

3. See Massive Obstetric Haemorrhage (23)

Pulmonary Oedema or Acute Respiratory Dysfunction (3)

1. See Massive Obstetric Haemorrhage (7)
2. See Massive Obstetric Haemorrhage (8)
3. See Transfer Out (1)

Pulmonary Embolism (3)

1. **Age 34.** Para 0. Booked at 12 weeks gestation. Medical history of asthma and a prior laparotomy for bowel obstruction with a background history of ulcer colitis. Pulmonary embolism at 35 weeks gestation. Commenced on therapeutic low molecular weight heparin with transition to unfractionated heparin for induction of labour at 39 weeks gestation. Spontaneous vaginal delivery of live born male infant weighing 2.79 kilograms. Apgars 9 at 1 and 10 at 5. Total estimated blood loss 350 mls. Transitioned back onto low molecular weight heparin to complete a three month course of anticoagulation.

2. **Age 27.** Para 2. Two previous full term uncomplicated normal deliveries. Booked at 14 weeks gestation. Combined antenatal care. Medical history of asthma and recurrent urinary tract infections. Provoked pulmonary embolism at 37 weeks gestation. Therapeutic anticoagulation and timed induction of labour at 38 weeks gestation. Spontaneous vaginal delivery of a female infant weighing 3.42 kilograms. Apgars 9 at 1 and 10 at 5. Therapeutic anti coagulation recommenced postnatally. Patient discharge home well on day 3 postnatally with haematology follow-up.

3. See Massive Obstetric Haemorrhage (23).

Renal or Liver Dysfunction (2)

1. **Age 38.** Para 0. Booked at 17 weeks. Hospital based care. Past history of resection of a uterine septum. Primary infertility. Normo-tensive at booking. Admitted at 30 weeks gestation with abdominal pain and hypotension and acute renal failure. Caesarean section. Live born female infant weighing 1.61 kilograms delivered. Apgars 8 at 1 and 8 at 5. Subsequent transfer of the patient to the High Dependency Unit postnatal with renal team review. Gradual resolution of acute renal failure. Postnatal period complicated by maternal sepsis. Positive maternal blood cultures. Subsequently discharged home well on day 8 postnatally.

2. **Age 34.** Para 0. Transferred from another hospital in maternal interest at 24 weeks gestation with a suspected diagnosis of HELLP syndrome. Emergency classical section at 26 weeks gestation for a non-reassuring fetal CTG. Live born male infant delivered weighing 545g. Apgars 7 at 1 and 9 at 5. Gradual resolution of hepatic dysfunction. Discharged home well on day 6 postnatally with arrangements for follow-up.

Uterine Rupture (1)

1. **Age 30.** Para 1. Previous emergency LSCS at 39 weeks gestation. Booked at 14 weeks. Body mass index of 33. Normotensive at booking. Medical history of spondylosis. Gestation diabetes in first pregnancy requiring insulin at 30 weeks. Commenced on insulin at 15 weeks in this pregnancy. Poor attender to the combined multi-disciplinary diabetic clinic. Mode of delivery discussed. Keen for VBAC. Elective LSCS booked for 40 weeks and 3 days. Spontaneous labour at 39 weeks and 2 days. Emergency caesarean section at 2 centimetres dilatation for suspected uterine rupture. Uterine rupture confirmed at section. Live born male infant weighing 3.83 kilograms. Apgars 8 at 1 and 7 at 5 and 10 at 10. Discharged home well day 5 post section.

Anaesthetic Issue (1)

1. **Age 45.** Para 0+1. IVF pregnancy. Booked at 12 weeks gestation. Combined antenatal care. No significant medical history. Normal body mass index. Presented at term with an non-reassuring CTG and a high fetal part on the day of planned induction. Emergency caesarean section. Live born male infant weighing 3.3 kilograms. Apgars 9 at 1 and 10 at 5. Maternal anaphylactic shock. Exact precipitant unidentified. Admitted to the High Dependency Unit. Discharged home day 4 post section for review in Beaumont Hospital for allergy testing.

Cardiac Arrest (1)

See Master's Report on Maternal Mortality

Coma (1)

See Master's Report on Maternal Mortality

Maternal Death (3)

See Master's Report on Maternal Mortality

Complicated Postnatal Clinic

Dr Maeve Eogan

This clinic primarily offers postnatal review to women who sustain anal sphincter injury at vaginal delivery. The Royal College of Obstetricians and Gynaecologists recommend that such patients are 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

This 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 and dyspareunia.

419 new patients were seen in the clinic in 2013, an increase of 22 patients compared with 2012. The indications for their attendances are tabulated below:

Indication for Attendance	Number of Patients Seen
Postnatal Third Degree Tear (includes patients referred from other institutions)	180
Postnatal Fourth Degree Tear (includes patients referred from other institutions)	7
Postnatal Perineal Infection or Pain	62
Faecal Incontinence	8
Antenatal Assessment (next pregnancy)	109
Other (incl perineal pain, dyspareunia)	53
Total	**419**

The largest group of patients seen were those who attended after obstetric anal sphincter injury. 185 patients sustained anal sphincter injury in the year 2013, 179 of whom had third degree tear, while 6 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	96	3
Ventouse	37	1
Ventouse & Forceps	22	0
Forceps	24	2
Born before arrival	0	0
Total	**179**	**6**

Clinic review after anal sphincter injury takes place after the 6th postnatal week. However, all patients will have been offered physiotherapy follow-up prior to that and the clinic works closely the Department of Physiotherapy. A 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 and to discuss mode of future deliveries.

44 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)	10
Treatment of granulation tissue (OPD)	10
Fenton's procedure / perineal revision (day case)	11
Perineal injection (day case)	4
Referral to colorectal service	9

A number of patients who have undergone female genital mutilation (FGM) as children have also attended the clinic. Some presented prior to pregnancy requesting reversal to facilitate intercourse while some women were referred after a pregnancy when FGM had first been noted during delivery. As providers of care for these patients it is important that, as always, we provide a supportive and responsive service.

I am very grateful to Ms Ann Brannigan at the Department of Colorectal Surgery, Mater Misericordiae University Hospital for both clinic and operative support and also to Cinny Cusack and all staff of the Physiotherapy Department at the Rotunda Hospital for their ongoing care.

The clinic undertook a retrospective study of patients' preference regarding mode of delivery following previous anal sphincter injury (ASI) which also evaluated perineal outcome following subsequent vaginal birth. This identified an approximate 15% recurrence risk following previous third degree tear and we find it helpful to have local results to inform practice. This work has been published in the European Journal of Obstetrics, Gynaecology and Reproductive Biology (Ali A, Glennon K, Kirkham C, Yousif S, Eogan M. Delivery outcomes and events in subsequent pregnancies after previous anal sphincter injury. European Journal of Obstetrics, Gynaecology and Reproductive Biology Dec 2013-Epub ahead of print).

.

Hypertension with Proteinuria

The Master

YEARS	2012	2013
Total number of cases	**249**	**199**
Booked	245	198
Unbooked	4	1
Incidence against delivery	3.0%	2.3%
Eclampsia %	0.00%	0.50%
Stillbirths	2	1
Neonatal Deaths	0	3
Multiple pregnancy	23	21

Parity of Patients at Delivery

0	165	125
1	49	49
2	21	14
3	8	6
4 plus	6	5
Total	**249**	**199**

Gestation of Patients at Delivery

< 28 weeks	3	3
28 - 29 weeks	5	3
30 - 31 weeks	7	8
32 - 33 weeks	11	10
34 - 35 weeks	23	25
36 weeks plus	200	150
Total	**249**	**199**

Induction of Labour

The Master

The rate of induction of labour for the year 2013 was 29%, one percent up on 2012, but identical to 2011. The indications for induction were broadly similar. There were slightly fewer inductions for post dates pregnancies.

INDUCTIONS OVER 5 YEARS

Year	Nullip	%	Multip	%	Total	%
2009	1147	56%	885	44%	2032	23%
2010	1326	57%	1008	43%	2334	27%
2011	1482	57%	1134	43%	2616	29%
2012	1414	57%	1064	43%	2478	28%
2013	1372	54%	1151	46%	2523	29%

INDICATIONS FOR INDUCTIONS 2013

REASONS	TOTAL	%
Post Dates	822	32.6%
Prolonged SROM	427	16.9%
Reduced Fetal Movements	84	3.3%
Diabetes	70	2.8%
Hypertension	259	10.3%
Heart Disease	2	0.1%
IUD	27	1.1%
Anomaly	17	0.7%
Antibodies *	3	0.1%
Diminished Liquor	112	4.4%
IUGR	158	6.3%
Large Baby	33	1.3%
Medical/Social	216	8.6%
Multiple Births	23	0.9%
Other	183	7.2%
Poor Obstetric History	72	2.9%
Decreased Placental Function	11	0.4%
Poor Byphysical Score	4	0.2%
Total	**2523**	**100%**

* Anti D detected or Anti E

INDUCTION OF LABOUR

YEARS	2012	2013
Total No. of cases	2478	2523
Incidence against deliveries >500	28%	29%
No. of Caesarean sections for Inductions	549	537
Stillbirths	24	28
Neonatal Deaths	6	3

METHOD OF INDUCTION

YEARS	2012	2013
ARM	207	182
ARM + Synto	510	471
Prostin + ARM + Syntocinon	595	678
Prostin + ARM	387	410
Prostin	268	305
Cytotec	13	22
Prostin + Syntocinon	208	176
Syntocinon	290	279

Caesarean Section

The Master

The overall caesarean section rate for 2013 was 31% which was 2% up on the previous year, but in line with recent trends. The principle reason for the rise was in group nullip single cephalic term in spontaneous labour which rose from 10.3% to 12%. All of the other categories were broadly similar.

YEARS	2012	2013
Total number of cases	2538	2650
Incidence against total deliveries > 500g	28.7%	30.6%
Maternal Mortality	2	2
Primary C.S.	58.5%	58.9%
Repeat C.S.	41.5%	41.1%
Classical C.S	2	2
Tubal Ligation at C.S.	64	91
C/S Hysterectomy	5	3

CAESAREAN SECTION ANALYSIS

All Deliveries for 2013	**8549**
All Caesarean Sections	2650
Section Rate	31.0%
Group 1 - Nullip Single Ceph Term Spont Lab	204/1707
Section Rate	12.0%
Group 2 - Nullip Single Ceph Term Induced	414/1315
Section Rate	31.5%
Group 2a - Nullip Single Ceph Term CS Before Labour	195
Group 3 - Multip Single Ceph Term Spont Labour	54/2095
Section Rate	2.6%
Group 4 - Multip Single Ceph Term Induced	64/1041
Section Rate	6.1%
Group 4a - Multip Single Ceph Term CS before Labour	158
Group 5 - Prev Section Single Ceph Term	920/1180
Section Rate	78.0%
Group 6 - All Nullip Breeches	147/154
Section Rate	95.4%
Group 7 - All Multip Breeches	145/156
Section Rate	92.9%
Group 8 - All Multiple Pregnancies	139/190
Section Rate	73.2%
Group 9 - All Abnormal Lies	20/20
Section Rate	100.0%
Group 10 - All Preterm Single Ceph	190/438
Section Rate	43.4%
Elective Caesarean Section Total	1343
Emergency Caesarean Section Total	1307
Total Multips	**4982**
Total Primips	**3668**

INDICATION FOR PRIMARY SECTIONS 2013

DELIVERY METHOD INDICATION	2012	2013
Fetal Distress {Antepartum & Intrapartum}	498	511
Failure to progress 1st stage	121	132
Failure to progress 2nd stage	49	46
Breech	225	218
Abruption/APH	11	23
P.E.T.	26	24
Transverse Lie/Oblique	14	16
Pyrexia	16	13
Placenta Praevia	34	30
Poor Obstetric History	13	27
Cord Prolapse/Presentation	11	6
Disproportion & Deep Transverse arrest	0	0
Failed Forceps/Ventouse	24	21
Face/Brow Presentation	6	5
Multiple Birth	44	39
Failed Induction	80	74
Prematurity	7	7
Hypertension	9	20
Emergency CS Scheduled for Elective CS	10	16
I.U.G.R.	17	25
Maternal Request	20	22
Medical Disorders	37	41
Poor Biophysical Profile	1	1
Other	160	174
Recurring indications	4	2
Rhesus Antibodies	0	0
Previous 3/4th degree tear	38	52
Malpresentaion in labour	10	15
Total	**1485**	**1560**

INDICATION FOR REPEAT SECTIONS 2013

DELIVERY METHOD INDICATION	Elective	Emergency
Failure to progress 1st stage	0	28
Failure to progress 2nd stage	0	2
Fetal distress	0	60
Disproportion(Malpresentation in Labour)		0 2
Breech	24	7
Hypertension	3	4
Placenta praevia	2	4
P.E.T.	8	4
Poor obstetric history	3	2
Previous LSCS	729	75
Previous classical CS	4	2
Multiple birth	5	1
Abruption / APH	0	6
Failed induction	2	12
Antepartum fetal distress	0	2
Emergency CS scheduled for elective CS	0	12
Failed forceps/ventouse	0	0
I.U.G.R.	6	6
Medical disorders	6	1
Transverse lie / Oblique lie	3	1
Other	43	10
Maternal request	2	1
Prematurity	2	2
Previous 3/4th Degree tear	2	2
TOTAL	**844**	**246**

** These reasons are the First reason for Caesarean Section

Outpatient Activity Data 2013

CLINIC	New Attendances	Return Attendances	Total
Antenatal & Postnatal	10,403	35,477	45,880
Gynaecology	3,783	7,119	10,902
Paediatrics	5,663	3,085	8,748
Endocrinology	2,833	2,736	5,569
Gastroenterology	28	25	53
Haematology	332	506	838
Anaesthetics	456	0	456
Nephrology	242	576	818
Psychiatry	393	391	784
Dove Medical	130	173	303
Allied Health Clinics	3,215	3,093	6,308
Diagnostic Clinics	11,720	19,472	31,192
Total	**39,198**	**72,653**	**111,851**

THE ROTUNDA HOSPITAL DUBLIN

3 Departmental Reports

CARING FOR GENERATIONS SINCE 1745

Department of Gynaecology

OPERATION CATEGORIES

	2009	2010	2011	2012	2013
Obstetrical Majors	2556	2469	2745	2604	2717
Obstetrical Minors	1189	1273	1287	1284	1259
Vaginal Surgery	512	677	626	610	609
Abdominal:Uterus	130	113	110	125	93
Abdominal:Tubes & Ovaries	344	360	336	317	311
Other procedures	2170	2760	2615	2365	2245

THEATRE GYNAECOLOGIC WORKLOAD

VAGINAL SURGERY	2012	2013
Vaginal hysterectomy	33	13
Manchester repair	1	0
Pelvic Floor Repair	27	48
Vaginal Hysterectomy & AP Repair	53	35
Sacro Spinous Colpopexy	13	8
Removal of IUCD	94	134
Insertion of IUCD	379	357
Other	10	14
Total	**610**	**609**

ABDOMINAL OPERATIONS OF THE UTERUS	2012	2013
Total Abdominal Hysterectomy	49	33
Myomectomy	29	17
TAH & Bilateral Salpingo-oophorectomy	28	23
Sub Total Hysterectomy	19	20
Total	**125**	**93**

THEATRE GYNAECOLOGIC WORKLOAD

ABDOMINAL: TUBES AND OVARIES	2012	2013
Tubal Surgery	28	2
Laparoscopic Sterilisation	25	33
Tubal Ligation at Caesarean Section	64	91
Salpingectomy	82	73
Ovarian Cystectomy	82	73
Oophorectomy	14	17
Ovarian Biopsy	5	7
Salpingo-oophorectomy	17	15
Total	**317**	**311**

OTHER PROCEDURES	2011	2012
Laparoscopy	269	297
Laparoscopy and Dye	242	216
Hysteroscopy	276	199
D&C/H&C	733	853
UBT	76	46
EUA	47	46
Cystoscopy	20	18
Laparotomy	58	48
Excision Bartholins Cyst	47	36
Fentons	9	4
Diathermy Vulval Warts	2	1
Operative Hysteroscopy	6	4
Endometrial Ablation {Rollerball}	14	14
Laparoscopic division of Adhesions	44	47
Laparoscopic Ablation of Endometriosis/Argan	125	124
Polypectomy	61	71
TVT	16	10
Punch Biopsy of Cervix	11	12
LLETZ	78	21
Other Gynae Surgery	184	136
Other Surgery - fetal/anaesthetic	47	42
Total	**2365**	**2245**

GRAND TOTAL		
Gynae Grand Total Minors & Majors	**3441**	**3258**

Colposcopy Service

Consultant Colposcopists	DR. PAUL BYRNE (Director Of Colposcopy)
	DR. TOM WALSH
	DR. YAHYA KAMAL (locum)
	DR IRAM BASIT (locum)
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. MARGARET CARROLL
	MS. ANNA WILSON
Colposcopy Team Leader	MS. CATHY HAYES (JANUARY 2012)
	MS. SUSAN DALY (FROM FEBRUARY 2013)
Administrative Support	MS. ÉILIS DALTON
	MS. NIAMH O'CARROLL
	MS. OLGA PEARSON
	MS. MARITA PABERZA

Our Service Level Agreement with the National Cancer Screening Service was to see 1500 new patients in 2013. During the year 1569 new patients were seen and there were 3235 return visits, giving a total of 4776 patient visits (Table 1). This represents a slight increase compared to the previous year. Compared to 2012, the number return visits was higher. We believe that this is in part due to the new HPV "test of cure" which was introduced last year. Our DNA rate is 9% for first visits and 13% for return visits. These figures are close to the National Cervical Screening Programme target of <10%.

Table 1. Clinic Attendances

	2010	2011	2012	2013
New attendances	1664	1908	1563	1569
Return visits	2568	2769	3159	3325
Total	**4232**	**4677**	**4722**	**4776**

Of the 1569 new referrals, 300 (19%) had smears showing HSIL (moderate or severe dyskaryosis) as shown in Table 2. However, 383 (24%) were referred with ASCUS (borderline) smears. This shows that women with borderline smears continue to represent a significant burden on the clinical workload despite the fact that these women have a very low risk of developing cervical cancer.

Table 2. Cytology on referral of new patients (n=1569)

	ASCUS	LSIL	HSIL	ASCUSG	Clinical	Other	Total
Number	383	440	300	52	245	149	1569
%	24	27	19	3	16	10	100

The downward trend in the number of LLETZ treatments continued in 2013 (Table 3). This reflects the fact that for the last two years we are reluctant to consider LLETZ treatment in women with CIN1 unless there are strong clinical indications for this. Our aim is to avoid treating women with low-grade lesions, but this requires the reassurance of a biopsy-proven diagnosis.

Table 3. Biopsies and treatments

	2010	2011	2012	2013
Biopsies	732	991	1014	1013
LLETZ	784	914	752	465
Total	**1516**	**1905**	**1966**	**1478**

There were 13 cases of invasive disease in 2013. The histological diagnosis in LLETZ and biopsy specimens is shown in Table 4. This highlights that 9 women who had a LLETZ treatment for what was presumed to be pre-invasive disease were found to have invasive disease when assessed histologically. Another four women had colposcopic features of invasive disease that was confirmed on biopsy.

Table 4. Histology of LLETZ and Colposcopic Biopsies

	CIN 1	CIN 2	CIN 3	CGIN/AIS	SCC Incl. Microinvasion	Adenoca.
LLETZ	127	126	162	3	7	2
Biopsies	493	191	125	2	2	2

The provision of the colposcopy service in the Rotunda Hospital is based on the Quality Standards set out by the National Cervical Screening Programme (NCSS). These standards cover every aspect of the screening pathway. Some of the key administrative and clinical targets are shown in Tables 5 and 6. The fact that we have exceeded most of the targets in 2013 is a reflection of the hard work and dedication of all members of the Colposcopy Department. 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 increase our clinical workload.

Table 5.

Administrative Standards	Rotunda	Target
Proportion referred with HSIL seen within 4 weeks	88%	>90%
Proportion referred with LSIL seen within 8 weeks	92%	>90%
Proportion of appointments that were unattended	12%	<10%
New appointments	9%	
Follow-up appointments	13%	

Table 6.

Clinical Standards	Rotunda	Target
Proportion of LLETZ as outpatients	98%	>80%
Proportion of women with CIN on histology		
LLETZ	96%	>85%
Biopsy	89%	>85%
Proportion of women treated at first visit with CIN on histology	99%	>90%
Proportion of women admitted as inpatients following LLETZ	<1%	<2%

All of our consultants are BSCCP accredited colposcopists. The clinics are supported by specialist registrars. Dr Byrne is a BSCCP accredited trainer and oversees the training of the registrars and nurses, all of whom are working towards BSCCP accreditation

In 2013 we introduced a weekly nurses colposcopy clinic. At present, this is confined to the investigation of women with low-grade smears. However, the plan is to introduce a nurse led-colposcopy clinics which will include management of women with high-grade abnormalities. We also plan to introduce the treatment modality of "Cold Coagulation" in the near future. This is a less invasive treatment than LLETZ and is ideal for the management of women with persistent low-grade abnormalities.

Monthly Multidisciplinary Team (MDT) meetings are held. We are most grateful to Dr. Eibhlis O'Donovan and her team for their support. We recognise that these meetings represent a significant workload for the Histopathology Department. These meetings are not made any easier by the fact that the smears are processed and reported in the USA by Quest laboratories. This inevitably leads to difficulties when trying to correlate the cytology and histological diagnoses for the meetings. In an ideal world, smears taken from women in Ireland would be processed and reported in this country.

We are also grateful to Dr Boyd and Dr Walsh who take over the management of all cases of invasive cancer in the Gynaecology Oncology Department in the Mater Hospital. Women diagnosed with vaginal intraepithelial neoplasia (VAIN) are also referred to the Mater for LASER therapy.

Department of Paediatrics

DR. D. CORCORAN , DR. A. FORAN (CLINICAL DIRECTOR),
PROF. N. MCCALLION, DR A. EL KHUFFASH, DR B. HAYES,
PROF. M. D. KING, DR. S. KEANE

ADMISSIONS TABLES (1.1-1.10)

2013 was an exceptionally busy year for the neonatal unit, overall our staff cared for 2,177 babies. The total number of admissions to the unit increased by 14% compared to 2012 (1,323 Vs 1,135) with an average occupancy rate of 93% which peaked in July and August. There was a similar increase in the numbers treated from the wards (854 Vs 720) without any increase in resources. At times close to 20 babies were being treated in the 13 bedded. It is a credit to all our staff especially frontline nursing staff that we managed to achieve such good results overall, but this cannot be sustained. At a national level the clinical lead for neonatology is seeking significant increases in whole time equivalent nurses and consultants for baby units throughout the country, we whole heartedly support this. In the interim we have submitted a business case to the Clinical Director Dr Mc Kenna to seek one more neonatal consultant as a matter of urgency to increase consultant delivered care in the key critical front line area of intensive care. We are also pleased that executive management in the new hospital strategy supports our bid to develop a transitional care unit. Close to 300 babies admitted to NICU with birth weights > 2Kg could have been treated in such a unit. We see this expansion of the neonatal unit foot print in the hospital as a high priority, to facilitate maintaining a high intensity case mix, thus preventing intensive care cots being filled by high dependency or special care babies.

This is the first 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)**

This was our busiest year for admissions < 1500g with a total of 134 babies. Table 2.2 and 2.3 show our survival rates by gestation at delivery and birthweight. The survival rate for infants of 24 to 26 weeks gestation is over 70%, however birth weight remains an important predictor of outcome, we have a 65% mortality rate for infants who weigh less than 700g at birth.

Table 2.4 shows morbidities and interventions in infants < 1500g compared to the Network.
Our outcomes for key indicators are generally consistent with the network averages, though our interventions show some variation. We have a high rate of multiple births compared to the network. There is a trend towards less invasive respiratory support in preterm infants, and our rates of ventilation and early surfactant use, though falling year on year, are higher than the network average. We have recently purchased high flow units which will increase our use of non invasive ventilation. We have a high availability of neonatal functional echocardiography

in our unit and this increases our rate of diagnosis of patent ductus arteriosus and also our use of nitric oxide to treat pulmonary hypertension in preterm infants. Our nosocomial infection rates are lower than the network averages.

Table 2.5 shows our most important outcomes for preterm babies which are adjusted for birth weight and gestation, and are compared to average outcomes of over 50000 infants for the Vermont Oxford Network of neonatal units, and are also compared to our outcomes over a 3 year period. A standardized rate of < 1 indicates a better than average outcome, if the upper confidence limit is also less than 1. Our adjusted outcomes for mortality, late onset sepsis and nosocomial infection, severe intra ventricular haemorrages and chronic lung disease are all comparable to network averages, and the trends for these indicators are improving. Our necrotizing enterocolitis rates are higher than average, which is a source of concern.

NEONATAL MORTALITY (< 28 DAYS)(TABLES 3.2 AND 3.3)

Congenital Malformations (3.2)

There were 18 neonatal deaths attributed to congenital anomalies or malformations. Their gestation at birth spanned from 22 to 40 weeks. All of those were identified antenatally with the exception of 1 infant with Pallister Killian Syndrome and perisylvian polymicrogyria. The majority of infants were delivered by elective caesarean section. Most deaths occurred within the first 3 days of life.

Deaths of Normally formed infants receiving intensive care (3.3)

Overall mortality was less than in 2012. There were 15 deaths of normally formed infants. The majority were preterm (13) with 7 being 23 weeks gestation, 2 of whom were born before arrival. Most deaths occurred within the first week of life. Of the 2 term babies who died one was external and both were due to severe asphyxia where intensive care was withdrawn. The challenge in 2014 will be to review our policy and decide whether we actively resuscitate all babies from 23 weeks gestation.

Neonatal Encephalopathy (Table 3.1)

There were a total of 38 babies with hypoxic ischaemic encephalopathy (HIE). Of these, 24 had signs of mild (Grade 1) encephalopathy and did not meet criteria for therapeutic hypothermia. Two of these were out born babies transferred in for cooling assessment. Ten babies (2 out born) had evidence of moderate (Grade 2) HIE. All but one of these received therapeutic hypothermia. Follow up is available on the 8 inborn babies. Of whom, 7 had an essentially normal MRI of the brain and have normal development to date. The remaining baby had significant brain MRI changes in the initial neonatal period and is showing signs of evolving cerebral palsy. There were 4 babies (2 out born) classified with severe (Grade 3) HIE. All of whom received cooling. Intensive care was withdrawn on 2 of these babies (1 inborn, 1 out born) .The remaining 2 babies had a normal MRI brain following cooling. There were a further 8 term babies with encephalopathy and seizures not attributed to HIE (6 inborn).Four had normal MRI brain imaging and have normal neurodevelopmental progress to date. The remaining four babies had abnormal neuroimaging. Neonatal presentation and neuroimaging abnormalities were due to infection in two cases [bacterial meningitis (1); congenital CMV infection (1)]. A diagnosis of KCN Q2 encephalopathy has been confirmed in another child.

The remaining child as yet has no confirmed diagnosis but has normal neurodevelopmental progress to date and follow up is ongoing.

Follow-up of babies <1500g

All very low birth weight infants i.e. <1500g, born in or who were admitted to Rotunda N.I.C.U. are eligible for neurodevelopmental follow up at 2 years corrected. There were 109 children in the birth year 2011 to be assessed. All of these were sent appointments at 2 years corrected and a total of 81 attended. Follow up rate of 74%. Following assessment 14 were referred for speech and language therapy (10M:4F). 6 were diagnosed with cerebral palsy (4M:2F) and 2 were thought to have autistic spectrum disorder. We thank Dr Keane for providing this service.

This information has facilitated us developing a more streamlined follow up for very low birth weight infants. All these high risk babies are now offered formal physiotherapy follow up at 4-6 months post discharge and targeted neurodevelopmental follow up at 4 and 9 months corrected gestation in a bid to improve earlier detection of problems. We are grateful to our colleagues in physiotherapy for helping us develop a more systematic developmental follow up programme. Accessing early intervention services for children particularly those from the greater Dublin area has become very challenging with further cut backs.

COMMENTS

In 2013 the neonatal unit was asked by executive management to pilot managing its own budget. Monthly meetings took place between the director Dr Foran, Orla O Byrne and Kathy Conway. Key stake holders were then invited intermittently e.g. HR, laboratory, pharmacy etc., to inform decisions. We could highlight issues with NCHD and nursing overtime and identify trends such as significant reductions in laboratory costs with the continued role out of more near patient testing. It also facilitated succession planning for the retirement of Ann Frankish Chief pharmacist and our no longer being in a position to make TPN on site. While anticipated TPN costs were expected to reach 500,000 euro we managed to keep them under 300,000 by the development of an approach used in Hammersmith London. Brian Cleary our new chief pharmacist undertook a huge amount of work with the help of one of our senior registrars Alina Zidura and our ANP Christine Mc Dermott. He has developed a user friendly software package which allows in the main to give generic TPN rather than patient specific in the first 7-10 days, without compromising nutrient content. We have been invited to share this with the national neonatal TPN consortium and with adequate resources i.e. a dietician and a neonatal pharmacist we could facilitate this and roll it out regionally then nationally. A business case for a dietician was submitted to executive management in March 2013.While there are many things we have little control over, overall managing the NICU budget has been a very informative process. We will continue to hold monthly business meetings in 2014.

Paediatric outpatients attendances remained high at 8,748 but saw a drop of almost 17% from 2012 (10,547) and 25 % from 2011 (12,032). An audit was carried out towards the end of 2013 to examine in more detail the babies being referred back to the SHO clinic. The vast majority of referrals were for jaundice review. Despite this only 31% of jaundice reviews needed bloods done and only 3.7% required admission. There were high numbers of babies being reviewed for what are more commonly seen as primary care issues e.g. 2 week baby check, sacral dimple,

umbilical granulomas, constipation etc. Some presentations were referred by SHOs unnecessarily. A more thorough education program at induction for new NCHDs might cut down on numbers being brought back to clinic. Overall there are areas that need to be improved. Our plan is to extend this audit to Temple Street Emergency Department and to a local GP practice. We will review if mothers are presenting to the appropriate services. Following the results of both audits we hope to introduce an information leaflet for new mothers outlining the services available to them and a GP education leaflet for the local GPs in the area outlining common neonatal problems and their solutions could help save costs. Prof Mc Callion is hoping to run a targeted GP study day in 2014 to address some of these common referrals.

The Dublin North East neonatal network (encompassing the Rotunda, Drogheda and Cavan) continues to evolve. Forty five babies were transferred to the rotunda either in or ex utero, contributing to 279 maternal and 599 NICU bed days in the Rotunda respectively. Quarterly education meetings continued and audit of transfers both to and back from the Rotunda continue. We have been able to demonstrate that compared to 71% in 2012, in 2013 95% of high risk babies were born within the network. In comparison to 2010 before the formalization of the network when over 20% of babies < 27 weeks were born outside a tertiary unit only 9% in 2013.The plan to develop joint guidelines e.g. infectious diseases are being progressed to improve uniformity. The network was set up and funded mainly to improve care for babies < 27 weeks gestation. Funding may be needed to facilitate the care of older babies especially those requiring therapeutic hypothermia.

The neonatal transport finally moved to 24/7 in December 2013. This will significantly improve the quality and timely delivery of tertiary services to babies form the country as a whole. A transport consultant Jan Franta was appointed between the 3 Dublin maternity hospitals in late 2013, he will take up his post in April 2014. Given the significant increase in work load and call outs between 5pm-8am careful audit, staff training and the development of a retro transfer retrieval service are probably all needed.

The neonatal unit continues its active role in research, and during 2013 there were a total of four higher degree candidates in the Department of Paediatrics: Drs Michael Boyle, Adam James, Elaine Neary and Raga Malika. 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 hospital continues to support staff wishing to undertake the Postgraduate Diploma in Neonatal Nursing in partnership with the other Dublin Maternity Hospitals and the RCSI. Three staff completed the program in 2013. A new foundation program (level 1) in neonatal nursing was developed in 2012 in partnership with the three Dublin Maternity hospitals. The program focuses on nursing care of babies requiring special care and is for both new staff and updating current staff who have not undertaken the Post Graduate Diploma. To date 4 nurses have completed the program. In 2014 a Level 2 foundation program will focus on High Dependency and Intensive Care and we are facilitating 2 staff to do this 7 week course. The expansion of the ANP role within the unit is progressing. With significant charitable donations from parents, the parents waiting room was renovated. This is a key facility for parents during a very stressful time. Going forward we hope to improve breast milk expressing facilities, develop a counselling room and overnight accommodation for parents from outside Dublin. We thank

these parents for their very generous and thoughtful donations. We would also like to thank all those who fundraise on our behalf including the ride out for prems and premature babies Ireland organizations. We would especially like to thank Sheila Thompson and the board of the Friends for their continued support.

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. We would especially like to thank Ann Frankish for her long years of service to the NICU. We wish her every success with her retirement.

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

SECTION 1

TABLE 1.1
ADMISSION & DISCHARGE TO THE NEONATAL UNIT

ADMISSIONS	1,323
DISCHARGES	1,315
INFANTS > 1.5Kg	1,174
INFANTS TREATED ON WARD	854

**Including readmissions*

TABLE 1.2
ADMISSION WEIGHT TO THE NEONATAL UNIT

500 - 1000grms	57
1001 - 1500grms	84
1501 - 2000grms	159
2001 - 2500grms	213
Over 2500grms	802
TOTAL INFANTS DISCHARGED	**1,315**

** Based on Infants Discharged from NICU*

TABLE 1.3
MAIN INDICATIONS FOR ADMISSION TO THE NEONATAL UNIT

RESPIRATORY SYMTOMATOLOGY	497
PREMATURITY < 37 WEEKS	426
JAUNDICE	410
LOW BIRTH WEIGHT < 2.5Kg	343
HYPOGLYCAEMIA	239
CONGENITAL ABNORMALITIES	222
SUSPECTED SEPSIS	46
NEONATAL ABSTINENCE SYNDROME	35
SEIZURES	26
HIE	38
GASTRO-INTESTINAL SYMPTOMS	13
SOCIAL	11
DEHYDRATION	10

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

MORBIDITY TABLES FOR PATIENTS ADMITTED TO THE NEONATAL UNIT

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

TRANSIENT TACHYPNOEA OF THE NEWBORN	195
MECONIUM ASPIRATION SYNDROME	26
PERSISTENT PULMONARY HYPERTENSION OF THE NEWBORN	23
RESPIRATORY DISTRESS SYNDROME	21
STRIDOR	13
CONGENITAL PNEUMONIA	9
AIR LEAK	2
CONGENITAL DIAPHRAGMATIC HERNIA	2
LARYNGOMALACIA	1
TRACHEO-OESPHAGEAL FISTULA	1
CONGENITAL CYSTIC ADENOMATOID MALFORMATION	1
PULMONARY HYPOPLASIA	1

TABLE 1.5
CONGENITAL HEART DISEASE (ALL GESTATION)

PATENT DUCTUS ARTERIOSUS	91
DYSRHYTHMIA	53
PERSISTENT PULMONARY HYPERTENSION OF THE NEWBORN	41
VENTRICULAR SEPTAL DEFECT	27
ATRIAL SEPTAL DEFECT	9
ATRIOVENTRICULAR SEPTAL DEFECT	4
HYPOPLASTIC LEFT HEART SYNDROME	4
TRANSPOSITION OF THE GREAT ARTERIES	3
TETRALOGY OF FALLOT	1

TABLE 1.6
GASTROINTESTINAL ANOMALIES

GASTRO-OESOPHAGEAL REFLUX	15
INGUINAL HERNIA	7
CLEFT PALATE ONLY	5
OMPHALOCOELE	3
CLEFT LIP AND PALATE	2
GASTROSCHISIS	2
SPONTANEOUS PERFORATION	2
IMPERFORATE ANUS	1
BOWEL ATERESIA	1
TRACHEO-OESPHAGEAL FISTULA	1
PYLORIC STENOSIS	1

TABLE 1.7
CENTRAL NERVOUS SYSTEM ABNORMALITIES

NEONATAL ABSTINENCE SYNDROME	35
SEIZURES NOT HIE	26
HIE	38
MEINGITIS	5
HYDROCEPHALUS	4
ERB'S PALSY	3
MICROCEPHALY	3
SCHIZENCEPHALY	2
SUBDURAL HAEMORRHAGE	1

TABLE 1.8
METABOLIC / ENDOCRINE /HAEMATOLOGICAL ABNORMALITIES

HYPOGLYCAEMIA	218
ANAEMIA OF PREMATURITY	104
THROMBOCYTOPENIA	35
DISSEMINATED INTRAVASCULAR COAGULOPATHY	33
HYPERGLYCAEMIA	23
POLYCYTHAEMIA	20
ANAEMIA(NOT INCL OF PREMATURITY)	7
HYPOTHYROIDISM	3
SIADH	3
HYPERINSULINISM	2
GALACTOSAEMIA	2
HAEMOLYTIC DISEASE OF NEWBORN	1

TABLE 1.9
DYSMORPHIC SYNDROMES

TRISOMY 21	*17
DYSMORPHIC FEATURES (NO FINAL DIAGNOSIS)	10
TRISOMY 18 (EDWARDS)	2
TRISOMY 13 (PATAU)	0

** 22 Infants born with T21, 17 aadmitted to NICU*

TABLE 1.10
JAUNDICE IN TERM BABIES > 37 WEEKS

NON-HAEMOLYTIC		132
HAEMOLYTIC		
	ABO	26
	RH	2

TABLE 2.1
NUMBER OF CASES REPORTED TO VON 2013

Anomalies	All Cases	Excluding Congenital
Infants < 401g but >22 wks gestation	0	0
Infants 401-500g	1	1
Infants 501-1500g	131	122
Infants > 1500g but ffi29 wks gestation	2	1
Total	**134**	**124**

TABLE 2.2
GESTATIONAL AGE BREAKDOWN AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2013 (N=134)

Gestational Age (completed) weeks	Inborn Infants	Survival to 28 days	%	Survival to Discharge	%	Outborn Infants	Survival to 28 days	%	Survival to Discharge	%	Total Survival to Discharge	%
21	0	0	(0%)	0	(0%)	0	0	(0%)	0	(0%)	0	(0%)
22	0	0	(0%)	0	(0%)	0	0	(0%)	0	(0%)	0	(0%)
23	5	0	(0%)	0	(0%)	0	0	(0%)	0	(0%)	1	(0%)
24	8	6	(75%)	6	(75%)	0	0	(0%)	0	(0%)	6	(75%)
25	6	4	(67%)	4	(67%)	1	1	(100%)	1	(100%)	5	(71%)
26	20	18	(90%)	16	(80%)	3	1	(33%)	1	(33%)	18	(74%)
27	18	17	(94%)	16	(89%)	0	0	(0%)	0	(0%)	16	(89%)
28	20	20	(100%)	20	(100%)	2	2	(100%)	2	(100%)	22	(100%)
29	10	10	(100%)	10	(100%)	3	3	(100%)	3	(100%)	13	(100%)
30	6	6	(100%)	6	(100%)	0	0	(0%)	0	(0%)	6	(100%)
31	10	10	(100%)	10	(100%)	1	1	(100%)	1	(100%)	11	(100%)
32	9	9	(100%)	9	(100%)	1	1	(100%)	1	(100%)	10	(100%)
> 32	9	7	(78%)	7	(78%)	1	1	(100%)	1	(100%)	10	(80%)
Total	**121**	**109**	**(90%)**	**107**	**(88%)**	**12**	**11**	**(92%)**	**11**	**(92%)**	**118**	**(89%)**

TABLE 2.3
BIRTH WEIGHT AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2013 (N=134)

Birth Weight (grams)	Inborn Infants	Survival to 28 days	%	Survival to Discharge	%	Outborn Infants	Survival to 28 days	%	Survival to Discharge	%	Total Survival to Discharge	%
<500	1	0	(0%)	0	(0%)	0	0	(0%)	0	(0%)	0	(0%)
501-600	7	2	(29%)	1	(14%)	1	0	(0%)	0	(0%)	4	(12%)
601-700	7	4	(57%)	4	(57%)	0	0	(0%)	0	(0%)	4	(57%)
701-800	12	11	(92%)	11	(92%)	0	0	(0%)	0	(0%)	11	(92%)
801-900	16	13	(81%)	13	(81%)	2	1	(50%)	1	(50%)	16	(78%)
901-1000	7	7	(100%)	6	(86%)	0	0	(0%)	0	(0%)	7	(86%)
1001-1100	12	12	(100%)	12	(100%)	1	1	(100%)	1	(100%)	13	(100%)
1101-1200	15	15	(100%)	15	(100%)	2	2	(100%)	2	(100%)	17	(100%)
1201-1300	14	14	(100%)	14	(100%)	1	1	(100%)	1	(100%)	15	(100%)
1301-1400	15	13	(87%)	13	(87%)	1	1	(100%)	1	(100%)	15	(88%)
>1400	15	15	(100%)	15	(100%)	4	4	(100%)	4	(100%)	16	(100%)
Total	**122**	**109**	**(89%)**	**108**	**(89%)**	**12**	**8**	**-(67%)**	**8**	**(67%)**	**118**	**(87%)**

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

	N	Rotunda (n=131)	VON n=60047
Inborn	134	122 (91%)	87%
Male	134	66 (49%)	51%
Antenatal Steroids (partial or complete)	126	104(83%)	81%
C/S	131	95 (73%)	73%
Antenatal Magnesium Sulphate	126	67 (53%)	48%
Multiple Gestation	131	48 (37%)	28%
Any major birth defect	131	8(7%)	5%
Small for gestational age	131	28 (22%)	24%
Surfactant in DR	131	87 (66%)	28%
Conventional Ventilation	130	86 (66%)	58%
High Frequency Ventilation	130	30 (23%)	21%
Any Ventilation	127	87 (69%)	60%
High Flow Nasal Cannula	130	2 (2%)	51%
Nasal IMV/SIMV	130	3 (2%)	28%
Nasal CPAP	129	106 (82%)	74%
Nasal CPAP before ETT Ventilation	104	28 (27%)	53%
Ventilation after Early CPAP	28	11 (39%)	37%
Surfactant at any time	131	97 (74%)	59%
Steroids for CLD	130	6 (5%)	9%
Inhaled Nitric Oxide	130	21(16%)	5%
RDS	113	97 (86%)	71%
Pneumothorax	127	9(7%)	4%
Chronic Lung Disease (at 36 wks)	113	17 (15%)	23%
Chronic Lung Disease, Infants <33 wks	95	16 (17%)	26%
Early Bacterial Infection	128	0	2%
Late Bacterial Infection	125	6 (5%)	8%
Coagulase Negative Staphylococcus Infection	125	7 (6%)	5%
Nosocomial Bacterial Infection	125	13 (10%)	12%
Fungal Infection	125	0	1%
Any Late Infection (Bacterial or Fungal)	123	12(10%)	12%
NEC Surgery	127	7 (6%)	3%
PDA ligation	127	3 (2%)	5%
Surgery for ROP	127	4 (3%)	3%
Any Grade of IVH (Grade 1-4)	113	27(24%)	20%
Severe IVH (Grade3-4)	122	8 (7%)	8%
Cystic PVL	124	4 (3%)	3%
Retinopathy of Prematurity	98	16 (16%)	31%
Severe ROP (Stage 3 or more)	97	6 (6%)	6%
Anti-VEGF Drug	130	0(0%)	1%
Focal GI perforation	130	2(2%)	2%
Indomethacin	130	1 (1%)	14%
NEC	127	18 (14%)	5%
PDA	130	49 (38%)	29%
Ibuprofen for PDA	130	25 (19%)	8%
Probiotics	128	116 (91%)	11%
Mortality	133	20 (15%)	15%
Mortality excluding Early Deaths	125	14 (11%)	9%
Survival	133	113 (85%)	85%
Survival without Specified Morbidities	133	79 (59%)	56%

TABLE 2.5

	SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2013				SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2011- 2013 INCLUSIVE			
Measure	N	SMR	SMR 95% Lower	SMR 95% Upper	N	SMR	SMR 95% Lower	SMR 95% Upper
Mortality	130	1.1	0.7	1.6	379	1.3	1	1.6
Mortality Excl Early Deaths	125	1.2	0.7	1.8	368	1.3	1	1.7
Death or Morbidity	130	0.9	0.7	1.2	379	1	0.9	1.1
Chronic Lung Disease	102	0.8	0.5	1.2	315	1	0.8	1.2
CLD, Infants < 33 Weeks	95	0.8	0.5	1.1	295	1	0.8	1.2
NEC, Any Location	127	2.1	1.3	3	372	1.5	1.1	2
Late Bact Infection, Any Location	123	0.6	0.3	1.2	354	0.8	0.5	1.1
Coag Neg Staph, Any Location	123	0.9	0.4	1.7	354	0.9	0.5	1.3
Nosocomial Infection, Any Location	123	0.8	0.5	1.3	354	0.8	0.5	1.1
Fungal Infection, Any Location	123	0.2	0	1.2	354	0.1	0	0.6
Any Late Infection, Any Location	123	0.8	0.4	1.2	354	0.8	0.5	1
Any IVH, Any Location	122	1.2	0.9	1.5	358	1.3	1.1	1.6
Severe IVH	122	1	0.6	1.5	358	1.3	0.9	1.7
Pneumothorax, Any Location	127	1.3	0.7	2	373	1.3	0.9	1.8
Cystic PVL	124	1.1	0.4	2.2	360	1.1	0.6	1.8
Any ROP	97	0.6	0.4	0.9	318	0.5	0.4	0.7
Severe ROP	97	1.2	0.5	2	318	0.7	0.3	1.1

SECTION 3 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY AND MORTALITY TABLES

TABLE 3.1 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY (HIE)

	Inborn	Outborn
TOTAL	32	6
Mild HIE (Grade 1)	22	2
Moderate HIE (Grade 2)	8	2
Severe HIE (Grade 3)	2	2
Therapeutic Hypothermia	9	4

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

Gestation (weeks)	Age at Death (Days)	Birth weight (g)	Gender	Delivery	Apgars	Inborn Outborn	Congenital Anomaly / Malformation
22	1	500	Male	Vaginal Breech	1 & 1	Inborn	Ventriculomegaly / Pyelectasis / Rocker Bottom Feet
31	1	1540	Female	SVD	2 & 2	Inborn	Encephalocele
32	1	1810	Female	Vaginal Breech	2 & 2	Inborn	Hydrocephalus / Alobar Holoprosencephaly
33	> 7 days	2220	Female	EL LSCS	9 & 9	Inborn	Severe asymetrical Hydrocephalus / large VSD & DORV
33	2	3190	Male	EL LSCS	2 & 7	Inborn	Hydrops Fetalis / Right bronchopulmonary sequestration
33	70	3330	Male	EM LSCS	3 & 7	Inborn	Pallister Killian Syndrome / Perisylvian Polymicrogyria
36	1	1310	Male	SVD	1 & 1	Inborn	Trisomy 13
36	1	2970	Male	SVD		Outborn	Megacystis / Hydroureter / anhydramnious
36	2	2140	Male	EL LSCS	3 & 7	Inborn	Congenital Heart block / Biventricular hypertrophy
36	1	1420	Female	SVD	2 & 2	Inborn	Monosomy 13q
37	1	1390	Female	EL LSCS	6 & 6	Inborn	Trisomy 18 / Cardiac Malfomations
37	> 7 days	3520	Female	EL LSCS	5 & 8	Inborn	Grade 4 posterior fossa Medulloblastoma
37	1	2890	Male	EL LSCS	2 & 2	Inborn	Severe Hydrocephalus
38	1	4620	Female	EL LSCS	1 & 0	Inborn	Hydrocephalus / large meningomylocele
38	2	1770	Female	EL LSCS	5 & 7	Inborn	Trisomy 18
38	3	1760	Male	EL LSCS	9 & 10	Inborn	Trisomy 18 / hypoplastic left heart
38	1	3860	Male	SVD	2 & 2	Inborn	Large Encephalocele
40	1	3000 (est)	Female	EM LSCS	1 & 0	Inborn	Anencephaly

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

Gest (weeks)	BW (g)	Age (days)	Gender	Mode of delivery	Apgars	Principle Cause Death
23+3	570	1	M	SVD	N/A	Extreme prematurity, born at home, unresponsive to resuscitation on arrival in hospital
23+3	620	2	M	SVD	N/A	Extreme prematurity, born at home, resuscitated on arrival, sever RDS, anaemia, hypotension, pulmonary haemorrhage, bilateral grade 2 IVH.
23+5	750	19	M	vaginal breech	1,4,6	Extreme prematurity, pulmonary haemorrhage, perforated necrotizing enterocolitis
23+5	640	23	M	EMLSCS	7,7,8	Extreme prematurity, antepartum haemorrhage, chronic lung disease,HFOV, pulmonary hypertension, renal failure.
23+6	510	1	M	EMLSCS	0,1,0	Extreme prematurity
25+6	860	6	M	SVD	0,4,6	Extreme prematurity, PPROM from 18 weeks, severe pulmonary hypoplasia, severe pulmonary hypertension, bilateral pneumothoraces, Pulmonary interstitial emphysema, Grade 3 and Grade 4 IVH, refractory hypotension.
26	990	33	M	EMLSCS	4,4,9	Gram negative septicaemia (Klebsiella Oxytoca), extreme prematurity, respiratory distress syndrome.
26+4	890	2	F	LSCS	2,4,9	Extreme prematurity, severe RDS, bilateral pneumothoraces, refractory hypotension.
26+4	850	18	F	LSCS	3,4,6,9	Extreme prematurity, severe RDS, recurrent pneumothoraces, grade IV IVH.
27+2	540	31	F	EMLSCS	9,10	Prematurity, Chronic lung disease, pulmonary hypertension, severe bilateral periventricular leucomalacia, intensive care withdrawn.
27+3	700	2	M	EMLSCS	4,6	Prematurity, IUGR due to PET, Severe RDS, pneumonia.
36+3	2840	2	M	EMLSCS	0,2,4	Placental abruption, severe hypoxic ischaemic encephalopathy, withdrawal of intensive care.
40+3	3600	2	M	EMLSCS Cavan	2,4	Postnatal transfer from Cavan, Uterine rupture, Severe neonatal encephalopathy, seizures, intensive care withdrawn.

ACADEMIC ACTIVITIES

Peer reviewed Publications

1. Neary E, Okafor I, Al-Awaysheh F, Kirkham C, Sheehan K, Foran A, Corcoran JD, Ni Ainle F, Cotter M, McCallion N. Laboratory coagulation parameters in extremely premature infants born earlier than 27 weeks upon admission to a neonatal intensive care unit. Neonatology. 2013;104(3):222-7.

2. Hayes BC, McGarvey C, Mulvany S, Geary MP, Matthews TG, King MD. A Case/Control Study of Hypoxic Ischaemic Encephalopathy in Infants Greater than 36 Weeks Gestation. Am J Obstet Gynecol. 2013;209(1):29.e1-29.e19.

3. Hayes BC, Cooley S, J Donnelly, Doherty E, Grehan A, Madigan C, McGarvey C, Mulvany S, Ryan S, Gillian J, Geary MP, Matthews TG, King MD.The placenta in infants >36 weeks gestation with neonatal encephalopathy: a case control study. Arch Dis Child Fetal Neonatal Ed. Arch Dis Child Fetal Neonatal Ed. 2013 May;98(3):F233-9.

4. Leslie A, EL-Khuffash A, Jain A, Keyzers M, Rogerson S, McNamara PJ. Evaluation of Cerebral Electrical Activity and Cardiac Output after Patent Ductus Arteriosus Ligation in Preterm Infants. J Perinatol, 2013;33(11):861-6.

5. EL-Khuffash A, Herbozo C, Jain A, Lapointes A, McNamara PJ. Targeted Neonatal Echocardiography (TNECHO) Service in a Canadian Neonatal Intensive Care Unit- a 4 Year Experience. J Perinatol, 2013 2013;33(9):687-90.

6. Saleemi S, Bruton K, EL-Khuffash A, Kirkham C, Franklin O, Corcoran JD. Myocardial assessment using Tissue Doppler Imaging (TDI) in preterm very low birth weight infants before and after red blood cell transfusion. J Perinatol. 2013;33(9):681-6.

7. EL-Khuffash A, McNamara PJ, Lapointe A, Jain A. Adrenal Function in Preterm Infants Undergoing Patent Ductus Arteriosus Ligation . Neonatology. 2013 Apr 25;104(1):28-33.

8. EL-Khuffash A, Jain A, McNamara PJ. Ligation of the Patent Ductus Arteriosus in Preterm Infants: Understanding the Physiology. J Pediatr. 2013;162(6):1100-6.

Book Chapters

1. Breda C Hayes, Kalpathy S Krishnamoorthy, Janet S Soul. Neonatal Neurology Chapter 19 Handbook of Pediatric Neurology 1st Edition. Lippinott Williams &Wilkins; November 2013. ISBN 9781451175486

International Presentations

1. Afif F EL-Khuffash, Amish Jain, Dany Weisz, Luc Mertens, and Patrick J McNamara. Cardiac Troponin, Myocardial Tissue Doppler Velocities and Strain Values in Infants at Risk of Post Ligation Cardiac Syndrome (PLCS) Following Patent Ductus Arteriosus (PDA) Ligation. Paediatric Academic Society Meeting. Washington DC, May 2013.

2. Amish Jain, Afif El-Khuffash, Adel Mohamed, Patrick J McNamara, Luc Mertens. Myocardial Performance Index (MPI) and Tricuspid annular plane systolic excursion (TAPSE) using Traditional vs. Tissue Doppler Imaging - A comparison of technique reliability. Paediatric Academic Society Meeting. Washington DC, May 2013.

3. Dany Weisz, Amish Jain, Patrick J McNamara, Afif F EL-Khuffash. Non-invasive Cardiac Output Monitoring (NICOM) in Preterm Infants post Patent Ductus Arteriosus (PDA) Ligation: A Comparison with Echocardiography. Paediatric Academic Society Meeting. Washington DC, May 2013.

4. Amish Jain, Afif El-Khuffash, Prakesh S Shah, Christopher W Hooper, Naoko Brown, Stanley D Poole, Jeff Reese, Patrick J McNamara. Efficacy of Acetaminophen on Patent Ductus Arteriosus Closure May be Dose Dependent: Evidence From Murine and Human Studies. Paediatric Academic Society Meeting. Washington DC, May 2013.

5. Amish Jain, MD, Adel Mohamed, Afif El-Khuffash, Patrick J McNamara, Luc Mertens, Robert P Jankov. Quantitative Echocardiography Assessment of Right Ventricular Dimensions in neonates: Normal Reference Ranges. Paediatric Academic Society Meeting. Washington DC, May 2013.

6. Amish Jain, Adel Mohamed, Afif El-Khuffash, Robert p Jankov, Luc Mertens, Patrick J McNamara. Prospective Study to Establish Quantitative Indices of Normal Right Ventricular Function in Newborn Infants Using Echocardiography. Paediatric Academic Society Meeting. Washington DC, May 2013.

7. Michael Boyle, David Watson, Ailbhe Tarrant, Stephanie Ryan, James Meaney, Martin McGinnity, Adrinne Foran. Resting state fMRI connectivity analysis of the intra-uterine growth restricted infant brain. Irish Paediatric Association Meeting, Dublin, Nov 2013 *Best Investigator Award and Research Bursary g1000*

8. Michael Boyle, Aisling Lyons, Stephanie Ryan, Fergal Malone, Adrienne Foran. Neonatal MRI brain following fetoscopic laser surgery for twin-twin transfusion syndrome: Implications for clinical practice. Society for Maternal Fetal Medicine Meeting. San Francisco, Feb 2013.

9. Prematurity Versus Growth Discordance: Impact on Cognition in a Cohort of Twins. Cecilie Halling, Fionnula M. Breathnach, Fergal D. Malone, Elizabeth Tully, Patrick Dicker, John D. Corcoran. Paediatric Academic Society Meeting. Washington DC, May 2013.

10. Growth Discordance and Development: Is the Smaller Twin at Risk?
Cecilie Halling, Fionnula M. Breathnach, Fergal D. Malone, Elizabeth Tully, Patrick Dicker, John D. Corcoran. Paediatric Academic Society Meeting. Washington DC, May 2013.

Research Awards

1. David Corcoran: Collaborator. Management of Hypotension In the Preterm Extremely Low Gestational Age Newborn. g200,000

2. Adrienne Foran: Collaborator. Wellcome Trust Strategic Award for Multicentre national study of a seizure detection EEG algorithm for newborns Principal Investigator: Professor Geraldine Boylan UCC – g3,000,000 (Research Fellow RagaMallika Pinnamaneni)

3. Adrienne Foran: Principal Investigator/MD supervisor 3.0 T MRI imaging of growth restricted newborns - g260,000 (Research Fellow Mike Boyle)

4. Adrienne Foran: Principal Investigator/MSC supervisor Long-term follow-up of babies who are acidotic at birth - g 75,000

5. Adrienne Foran. Principal Investigator/SpR supervisor NIRS monitoring of babies in NICU - g 25,000

6. Afif EL-Khuffash. Co-principal Investigator: The HANDLE Study: Haemodynamic Assessment iN pregnancy anD neonataL Echocardiography assessment - MRCG/HRB/Friends of the Rotunda g188,125

7. Afif EL-Khuffash. Principal Applicant. The Use of Targeted Neonatal Echocardiography to Predict Short Term Clinical Sequelae Associated with a Patent Ductus Arteriosus - Friends of the Rotunda g38,745 (Research Fellow Adam James)

8. Naomi McCallion: Principle investigator. To determine reference ranges for coagulation parameters and to characterize thrombin generation in very preterm infants g195,375 (Research Fellow Elaine Neary).

Department of Orthopaedic Surgery

CONSULTANT SURGEON	Mr. Paul Connolly FRCSI, FRCSOrth
ORTHOPAEDIC PHYSICIAN	Dr. Hilary Lane MB, PhD

The Orthopaedic Service in the Rotunda hospital provides a neonatal screening service for Developmental Dysplasia of the Hip (DDH) as follows:

1.) Clinical examination for hip instability in the neonatal period by experienced clinicians.

2.) Ultrasound examination of the hips in at-risk babies in the late neonatal period. Risk factors which warrant hip ultrasound screening are:
- unstable/ dislocated hip on clinical examination,
- positive family history of DDH (first and second degree relatives),
- breech presentation
- congenital malformations of the foot
- oligohydramnios
- ligamentous laxity

The use of hip ultrasonography has replaced hip radiographs as the principal screening method for the majority of our at-risk neonates. Hip xrays are used to follow-up a subset of infants who require further surveillance. Those undergoing treatment for hip instability and dysplasia are rountinely followed-up with serial hip xrays.

Inpatient and Outpatient Activity

Total No. Patients	2009	2010	2011	2012	2013
In-Patient activity	5847	5724	5577	5172	5348
Out-Patient					
Activity	539	761	916	786	978
Hip radiographs reviewed	1642	1392	1924	1453	1281

Since the introduction of hip ultrasound as the principal tool for DDH screening for babies at risk of dysplasia or hip instability by The Master, Dr. Sam Coulter –Smith, the incidence of operative intervention for DDH has fallen.*
The number of hip radiographs has also decreased.
There has been an increased number of detections of DDH.

DATA FROM THE DDH SCREENING SERVICE

	2009	2010	2011	2012	2013
Total No. of babies with Hip Instability Clinical Diagnosis	55	66	82	77	81
Total No. of babies with Hip Instability/ dysplasia; US/X-raydiagnosis	20	37	39	42	44
Total No. of babies treated for DDH in Pavlik harness	69	103	111	108	103
Total No. of babies treated for DDH in Abduction Brace	6	7	10	11	22
Total No. of babies treated for DDH	75	110	121	119	125
Total no of babies requiring surgery for DDH in CUH, Temple Street	20	15*	12*	16*	7*

In 2013 a total of 125 babies born in the Rotunda were treated for DDH.
103 babies were treated in Pavlik harness.
22 were treated in abduction braces.
81 cases of DDH were picked up on clinical examination as hip instability.
44 cases were picked up on US or x-ray screening.
There has been a steady improvement in the rate of pick-up of DDH since the introduction of selective hip ultrasound screening.
This has been associated with a decline in number of operations for DDH. (New cases may yet come to light*).

*The figures given above need to be amended as new information comes to light. If operative intervention is required, these babies are included in the cohort with whom they were born(*) not the year in which the operation took place.

In 2011, one baby required operative intervention for persistently dislocated left related to non-compliance.
In 2012, 2 babies diagnosed with dislocated hips in the early neonatal period eventually required surgery.
They had intercurrent medical and surgical issues which needed to be prioritised over the dislocated hip.

Currently in The Rotunda DDH screening takes the form of : clinical examination in the early neonatal period by experienced clinicians coupled with ultrasound screening of the hip for those babies at-risk for DDH. However,we continue to advocate for a Universal Ultrasound Hip Screening Programme for every neonate. We propose a trial of Universal Hip Ultrasound of ten thousand babies born in the Rotunda to ascertain the true incidence of DDH in an Irish population and the potential cost benefit (or not) of preventative screening.

Department of Anaesthesia

DR. MARY BOWEN, DR. NIAMH HAYES, DR. JOHN LOUGHREY
DR. CONAN MC CAUL, DR. ROISIN NI MHUIRCHEARTHAIGH,
DR. PATRICK THORNTON.

Dr. Patrick Thornton was appointed as Consultant Anaesthetist this year. We are delighted to welcome him to our Department on a permanent basis. Dr. Conan Mc Caul remained as College of Anaesthetists Tutor. Dr. John Loughrey resigned from the Departmental Chair and Dr. Mary Bowen took up the post as Director of Anaesthesia. We would like to thank John for all his dedication in this capacity. Dr. Niamh Hayes continued in her position as Director of Simulation Training in the College of Anaesthetists of Ireland and continues to run the RHOET courses on a regular basis.

Non-Consultant Hospital Doctors:

The Department continues to provide training in Obstetrical Anaesthesia and to avail of five trainees from the National training programme, two other NCHDs and one Fellow in Obstetrical Anaesthesia. We would like to congratulate Dr. Emma Mc Murray who joined the SPR scheme in Northern Ireland. Also Dr. Kim Caulfield and Dr. Laura Mac Darby who both passed their Part 1 FCA examinations.

The Department continues to participate in high risk cardiac obstetrical 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 Mc Kenna, Consultant Obstetrician Gynaecologist/Clinical Director.

DELIVERY SUITE ACTIVITY

DELIVERIES UNDER EPIDURAL

The number of deliveries under epidural remains high, a similar rate to the previous year. Patients receiving epidurals continue to receive patient controlled epidural infusions PCEA with a background infusion .

Labour Analgesia is also provided by Entonox, TENS and and Remifentanil PCA. A remifentanil PCA is available to patients in whom epidurals are contraindicated or who want an alternative to epidural analgesia. 33 patients availed of a remifentanil PCA in 2013.

	2012	%	2013	%
Nulliparous {%of Primups less C/S before labour {2012-3533} {2013-3247}	2571	73%	2327	72%
Multiparous {%of Multips less C/S before labour {2012-3796} {2013-3740}	1672	44%	1697	45%
TOTAL {Multips & Primips excluding Emerg/Elec Onsets of labour {2012-7329} {2013-6987}	4243		4024	

Mode of Delivery for Parturients who Select Epidural Analgesia

NULLIPAROUS

Mode of Delivery	2012	%	2013	%
Normal	892	34.7%	778	33.4%
Forceps	286	11.1%	298	12.8%
Vacuum	843	32.8%	715	30.7%
L.S.C.S	546	21.2%	535	23.0%
Breech	4	0.2%	1	0.04%
Total	**2571**		**2327**	

MULTIPAROUS

Mode of Delivery	2012	%	2013	%
Normal	1258	75.2%	1294	76.3%
Forceps	41	2.5%	58	3.4%
Vacuum	209	12.5%	193	11.4%
L.S.C.S	161	9.6%	146	8.6%
Breech	3	0.2%	6	0.4%
Total	**1672**		**1697**	

Epidural	%	CSE	%
2104	64.8%	263	8.1%
1495	40.0%	226	6.0%
3599		489	

Some patients had CSE + Epidural so combined totals different

The obstetrical outcomes for parturients receiving epidural analgesia remains consistent with low dose techniques with 33.4% of primiparous patients and 76.3% of mutiparous patients having normal unassisted deliveries.

CAESAREAN SECTION RATE 2012- 2013

2012

Mode of Anaesthesia	Elective	%	Emergency	%
Spinal	1214	96.3%	499	35.2%
GA	12	1.0%	182	12.8%
Epidural	9	0.7%	641	45.2%
CSE	25	2.0%	95	6.7%
Total	**1260**		**1417**	

Some patients had more than 1 analgesia during Caesarean Section

2013

Mode of Anaesthesia	Elective	%	Emergency	%
Spinal	1312	96.8%	573	39.6%
GA	10	0.7%	160	11.1%
Epidural	2	0.1%	612	42.3%
CSE	32	2.4%	102	7.0%
Total	**1356**		**1447**	

OPERATING THEATRE ACTIVITY

GYNAECOLOGICAL REPORT

Operation Categories	2009	2010	2011	2012	2013
Obstetrical Majors	2556	2469	2745	2604	2717
Obstetrical Minors	1189	1273	1287	1284	1259
Vaginal Surgery	512	677	626	610	609
Abdominal:Uterus	130	113	110	125	93
Abdominal:Tubes & Ovaries	344	360	336	317	311
Other procedures	2170	2760	2615	2365	2245

ANAESTHESIA OUTPATIENT CLINIC

The Pre-Anaesthesia Assessment Clinic continues on a weekly basis with 456 attendees.

A separate clinic has been established for the Cardiac Obstertical patients. This is held on a monthly basis.

POST DURAL-PUNCTURE HEADACHE (PDPH)

There were 4024 epidurals performed and 1885 obstetric spinal anaesthetics and 650combined spinal epidurals CSEs .

32 patients had documented post dural puncture headaches and 13 patients required blood patches. One of these patients required a repeat blood patch and a CT scan for a persistent headache. The CT scan was negative and the headache resolved.

High Dependency Unit

DR. MARY BOWEN CONSULTANT ANAESTHETIST

Obstetrics 179 95.9% of total admissions

Obstetric Category	Number	% Overall	% Obstetric Admissions
Haemorrhage (APH/PPH)	**74**	**38%**	**41%**
PET/Eclampsia/ HELLP	**49**	**24%**	**27%**
Sepsis	**15**	**8%**	**8%**
Cardiac Disease	**11**	**6%**	**6%**
Miscellaneous	**30**	**15%**	**17%**

Miscellaneous Obstetric HDU Admissions included cases of:-
Persistent Tachycardia for Investigation
Deep Venous Thrombosis
Cardiac – Fast Atrial Fibrillation for Stabilisation
Anaphylaxis
Pain Control
Urinary Retention/Renal Injury Post-Caesarean Section
Post-Chemotherapy Pyrexia (Known Breast CA)
Moya-Moya Syndrome Post Caesarean Section Monitoring
Known Crohn's disease with ileostomy. Developed bowel obstruction. Had emergency LSCS at MMUH and end to end bowel anastomosis *
Aplastic Anaemia Platelet Transfusion Pre Caesarean Section
Nephrotic Syndrome With Stage 3 Chronic Kidney Disease
Smoker, Desaturation Post Caesarean Section Requiring Oxygen Therapy
High BMI Ruptured Ectopic Pregnancy
Type 1 Diabetes. Post Renal and Pancreatic Transplant Post Caesarean Section
Uterine Rupture, Emergency Caesarean Section Post-Operative Care
Maternal Cardiac Arrest During Second Stage Labour Requiring CPR (Troponin Rise And ECG Changes), Cardiac Monitoring MMUH CCU and Rotunda HDU
Goodpasture's Syndrome With Renal Transplant And Autoimmune Thrombocytopenia Post Caesarean Section
H1N1 Influenza (Antepartum Care)

Gynaecology 18 patients (9% of total admissions)

Gynaecology Category		Number	% gynae admissions
Assisted reproduction:	OHSS	1	6%
	Bleed after egg retrieval	1	6%
Pain control		3	16%
Sepsis		2	11%
Bleeding		6	33%
Miscellaneous		5	28%

Miscellaneous Gynaecology HDU Admissions

	Post-operative Laryngospasm	1
	Post-operative Bronchospasm	1
	Post-operative status Epilepticus	1
	Hyponatremia Post-TCRE	1
	Observation for Excessive Sedation	1

Transfers to Mater Misericordiae University Hospital (7)

1	Known placenta accreta. Required emergency Caesarean Hysterectomy. Massive transfusion. Transferred for continuing management
2	Patient complaining of neck stiffness and headache. Hypertensive. No PET in ante partum period. Sent for neurology opinion and investigations > CT Brain and Lumbar Puncture
3	Known case of HOCM. Had LSCS under CSE. Transferred for post-op telemetry in CCU
4	Elective LSCS under Spinal. Bleeding from broad ligament. Re-laparotomy for control of haemorrhage. Massive transfusion
5	Elective LSCS at MMUH for Cardiomyopathy. Transferred back to Rotunda. Developed tachyarrthymias. Transferred to MMUH for telemetry in CCU
6	Patient collapsed while pushing in second stage labour. Needed CPR. ECG changes and raised troponin levels post event. Transferred to CCU for monitoring
7	Emergency LSCS under GA for placenta accreta & concurrent sepsis. Patient collapsed on ward D1 post-CS. CPR, defibrillated and transferred to MMUH. RIP

Transfers from Mater Misericordiae University Hospital (3)

1	Elective LSCS at MMUH for significant cardiac anomaly
2	Known Crohn's disease with ileostomy. Developed bowel obstruction. Had emergency LSCS at MMUH and end to end bowel anastomosis *
3	Triple transplant recipient (patient booked at Coombe Women's Hospital: Heart, Lungs and kidneys. Elective LSCS at MMUH and return to Rotunda for post-op care

Caesarean Hysterectomies (2)

Maternal Death: (1) patient

Emergency LSCS under GA for placenta accreta & concurrent sepsis. Patient collapsed on ward D1 post-CS. CPR, defibrillated and transferred to MMUH. RIP

Additional/Invasive Monitoring.

Arterial Line	41
Central Line/Vasocath	5
Long Line	1
Cerebral Oximetry	1

Dove Clinic

DR JACK LAMBERT, Consultant in Infectious Diseases
DR MAEVE EOGAN, Consultant Obstetrician and Gynaecologist
DR WENDY FERGUSON, Infectious Diseases Associate Paediatric Specialist
(The Rainbow team)
DR BARRY KELLEHER, Consultant in GI/Hepatology
DR URSULA NUSGEN, Consultant Microbiologist
MS MAIREAD LAWLESS, ID Liaison Midwife
MR JUSTIN GLEESON, Drug Liaison Midwife
MS NICOLA ROGERS, Medical Social Worker
DR VALERIE JACKSON, Clinical Audit & Surveillance Scientist

INTRODUCTION

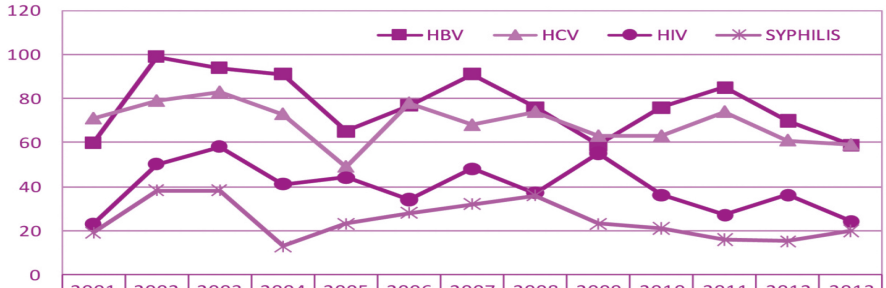
The DOVE clinic was set up to look after the specific needs of women who have or are at risk of blood and sexually transmitted bacterial and viral infections. This could be through drug use, unprotected sex, or any contact with infected blood or body fluid.

DOVE BOOKINGS IN 2013

During 2013, 206 women booked into the DOVE clinic for their antenatal care. Of these,

- 59 (28% of bookings) women were positive for Hepatitis B surface antigen, representing a decrease of 17% compared to 2012 (Fig 1).
- 59 (28%) women were positive for Hepatitis C antibody, a decrease of 5% compared to 2012.
- 24 (12%) were positive for HIV infection, a decrease of 33% compared to 2012.
- 20 (10%) women had positive Treponemal serology, an increase of 33% compared to 2012.
- 48 (23%) women were known to be on prescribed methadone programs

Fig 1: DOVE Bookings by Year



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

DOVE DELIVERIES 2013

Deliveries to HIV Positive Mothers 2013	
Total Mothers Delivered <500g (incl miscarriage)	0
Total Mothers Delivered >500g	30
Total Mothers Delivered	**30**
Live Infants	31 (1 set of twins; incl 1 NND)
Miscarriage	0
Stillbirths	0
Infants <37 weeks gestation	4
Infants ffl37 weeks gestation	27
Infants delivered by Caesarean Section	16
HIV Positive Infants	0
Maternal Data (n=30)	
Median Age	34
Newly Diagnosed at ANS	6

NND = neonatal death

Deliveries to HCV Positive Mothers 2013	
Total Mothers Delivered <500g (incl miscarriage)	7
Total Mothers Delivered >500g	51
Total Mothers Delivered	**58**
Live Infants	53 (incl 3 NND)
Miscarriage	5
Stillbirths	0
Infants <37 weeks gestation	12
Infants ffl37 weeks gestation	41
Infants delivered by Caesarean Section	15
HCV Positive Infants	3*
Maternal Data (n=58)	
Median Age	32
Newly Diagnosed at ANS	6

*NND = neonatal death; *Final serology not yet available for all infants, Results presented for 46/50 live infants*

Deliveries to HBV Positive Mothers 2013	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	52
Total Mothers Delivered	**53**
Live Infants	52
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	4
Infants ffl37 weeks gestation	48
Infants delivered by Caesarean Section	17
HBV Positive Infants	0*
Maternal Data (n=53)	
Median Age	28
Newly Diagnosed at ANS	11

**Final serology not yet available for all infants, Results presented for 25/48 live infants*

Deliveries to Syphilis Positive Mothers 2013	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	9
Total Mothers Delivered	**10**
Live Infants	9
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	1
Infants ffl37 weeks gestation	8
Infants delivered by Caesarean Section	3
Syphilis Positive Infants	0
Maternal Data (n=10)	
Median Age	34.5
Newly Diagnosed at ANS	2

Deliveries to Mothers under DLM* service 2013	
Total Mothers Delivered <500g (incl miscarriage)	5
Total Mothers Delivered >500g	73
Total Mothers Delivered	**78**
Live Infants	74 (1 set of twins)
Miscarriage	5
Stillbirths	0
Infants <37 weeks gestation	16
Infants ffl37 weeks gestation	58
Infants delivered by Caesarean Section	20
NICU admissions for NAS	16

**DLM: Drug Liaison Midwife*

In 2013, 270 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 are actively involved in undergraduate, postgraduate and hospital education programmes.
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. The course ran in June and November 2013 and provided multidisciplinary training in the attitudes, skills, and knowledge required for the prevention and management of STIs. Further courses are planned for 2014.
The Sexual Health Awareness Week (SHAW) took place on 12 - 14 November 2013 at the Royal College of Physicians of Ireland – Dr Maeve Eogan was on the organising committee. The theme was Communication and Sexual Health and there was a broad range of events during SHAW including sexual health and education needs of young people, practitioners' obligations in reporting child protection concerns, and preventing sexual violence.

RESEARCH ACTIVITIES OF THE DOVE CLINIC

There are several research projects ongoing, many in collaboration 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.

A 2-year study of universal screening for genital *Chlamydia trachomatis* infection in, all sexually active women presenting for care who are <26 years old, was completed in December 2013. Data is currently being analysed and a paper will be prepared for publication.

STAFF CHANGES

After many years of loyal service as the Medical Social Worker with the DOVE clinic, Ms Nicola Rogers left the DOVE team in December 2013. Her longstanding commitment to the team is gratefully acknowledged and we wish her every success with her new life in Canada.

PUBLICATIONS AND PRESENTATIONS

1. Ali A, Glennon K, Kelleher B, Eogan M, Jackson V, Brennan M, Lawless M, Ferguson W, Lambert J. *Five year retrospective review of antenatal Lamivudine (LAM) to reduce the perinatal transmission of Hepatitis B (HBV).* Presented at the British Maternal and Fetal Medicine Society 16TH Annual Conference, 26th April 2013, Dublin. Printed in Arch Dis Child Fetal Neonatal Ed 2013;98:Suppl 1 A42-A43 doi:10.1136/archdischild-2013-303966.144

2. A Varughese, V. Jackson, M .Cafferkey, M. Brennan, M. Lawless, V .Ciprike, M. Eogan, W. Ferguson, S. Coulter- Smith, J. Lambert. *Syphilis Serology in Pregnant Women Over a Period of 7 Years (2005–2011) in a Large Maternity Hospital in Dublin, Ireland*. Presented at the British Maternal and Fetal Medicine Society 16TH Annual Conference, 26th April 2013, Dublin. Printed in Arch Dis Child Fetal Neonatal Ed 2013;98:Suppl 1 A53 doi:10.1136/archdischild-2013-303966.180

3. JS Lambert, V Jackson, M Lawless, W Ferguson, M Eogan, M Brennan, L Else, S Khoo. *Transplacental Passage of Atazanavir and Neonatal Hyperbilirubinaemia.* 14th International Workshop on Clinical Pharmacology of HIV Therapy 22 – 24 April 2013, Amsterdam, The Netherlands

4. JS Lambert, V Jackson, M Lawless, W Ferguson, M Eogan, M Brennan, L Else, S Khoo. *Placental Transfer of Atazanavir and Neonatal Hyperbilirubinaemia*. CHIVA Annual Conference 2013, 10th May 2013 Leeds

5. JS Lambert, V Jackson, M Lawless, W Ferguson, M Eogan, M Brennan, L Else, S Khoo. *Atazanavir in pregnancy: transplacental transfer and neonatal hyperbilirubinaemia*. 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention 30 June– 3 July 2013, Kuala Lumpur, Malaysia

6. JS Lambert, V Jackson, L Else, M Lawless, W Ferguson, M Eogan, G McDonald, D Le Blanc, M Brennan, S Khoo . *Transplacental transfer of Atazanavir and the incidence of neonatal hyperbilirubinaemia.* 14th European AIDS Conference/EACS Brussels, Belgium from October 16-19, 2013.

7. C. Finnegan, R. Moore, M. Lawless, V. Jackson, M. Eogan, J. Lambert. *An audit of compliance with glucose tolerance testing among HIV infected pregnant women taking protease inhibitors*. Lifespan Diabetes Research November 14th 2013 – World Diabetes Day The Pillar Room, Rotunda Hospital, Dublin

8. R. Moore. *An audit of compliance with glucose tolerance testing among HIV infected pregnant women taking protease inhibitors.* Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Friday, 29th November 2013. Royal College of Physicians of Ireland, No 6 Kildare Street, Dublin 2

9. C. Finnegan. *Anti-retroviral use during labour – an audit of compliance with Rainbow Clinic guidelines*. Junior Obstetrics & Gynaecology Society Annual Scientific Meeting, Friday, 29th November 2013. Royal College of Physicians of Ireland, No 6 Kildare Street, Dublin 2

* * *

1. J Lambert, V Jackson, S Coulter-Smith, M Brennan, M Geary, TB Kelleher, M O'Reilly, K Grundy, N Sammon, M Cafferkey. *Universal Antenatal Screening for Hepatitis C*. Irish Medical Journal May 2013, Vol 106 (5).

2. C Monteith, F Ní Áinle, S Cooley, J Lambert, B Kelleher, V Jackson, M Eogan. *Hepatitis C virus-associated thrombocytopenia in pregnancy: impact upon multidisciplinary care provision*. Journal of Perinatal Medicine. 2013. Vol 42 (1) 135–138.

Radiology/ Paediatric Ultrasound

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

The radiology department in the Rotunda Hospital performed 7,335 exams in 2013 representing no significant change in activity over 2012 figures. Our department images both adults and children. 7% of these were adult examinations and 93% were paediatric examinations.

We continue to train radiographers in ultrasonography and in particular in hip sonography and continue to provide a neonatal hip screening programme. We have set up a quality improvement and audit programme and have quarterly meetings to review progress in this area.

ADULT RADIOLOGY

The adult radiology service in the Rotunda Hospital is provided by Dr. Neil Hickey. In 2013 a total of 385 adult radiological examinations were performed of which 138 (36%) 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 93% of the workload in the Department of Radiology. In 2013, a total of 6,823 paediatric studies were performed. Of these, 3,034 were paediatric ultrasound examinations. Half of these examinations, 1,515 scans, were hip ultrasound examinations done on outpatient babies. As the hip screening service is well established now, there is no significant change in the number of hip ultrasound scans performed this year, when compared to 2012. The number of hip x-rays performed was 1,295, an increase of 13% compared with the same period in 2012. In addition 66 fluoroscopic studies were performed predominantly for investigation of the upper GI tract (60), but also for evaluation of the lower GI tract (6), often as an emergency out of hours study. There has been an increase in the number of modified feeding studies done 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 114 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.

14 paediatric patients were referred to Temple Street for CT scanning. Fetal MR imaging was also done in Temple Street for 27 obstetric patients at the Rotunda. 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.

TABLE 1: STAFF COMPLIMENT

	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

ADULT EXAMS	385
HSG	138
PAEDS (X-ray & US)	6,823
TOT PAEDS US	3,034
CRANIAL	1,067
NICU US & CR	3,573
HIP US	1,515
NEONATAL FLUOROSCOPY	67

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS 2013

1. Hayes B, Cooley S; Donnelly J; Doherty E; Grehan A; Madigan C; McGarvey C; Mulvany S; Ryan S; Gillian J; Geary MP; Matthews TJ; King MD. The Placenta in Infants more than 36 weeks Gestation with Neonatal Encephalopathy: A Case Control Study. Arch Dis Child Arch Dis Child Fetal Neonatal Ed. 2013 98(3):F233-9

2. Barrett MJ, Donoghue V, Mooney EE, Slevin M, Persaud T, Twomey E, Ryan S; Laffan E; Twomey A. Isolated acute non-cystic white matter injury in term infants presenting with neonatal encephalopathy. Arch Dis Child Fetal Neonatal Ed 2013;98(2):F158-160.

3. Butler G, Assaf N, Tarrant A, Ryan S, EL-Khuffash A. Using Lateral Radiographs to Determine Umbilical Venous Catheter Tip Position in Neonates: A Comparison with Anteroposterior Films. IMJ Article s-5596 Accepted Dec 2013

PUBLICATIONS ON EURORAD: European Assoc Radiology On line Case studies file

1. Case 10675 Adrenoleukodystrophy. Ryan J, Bolster F, Crosbie I, Ryan S. Feb 2013

2. Case 10891 Aicardi Goutieres Syndrome. Bolster F, Ryan S. July 2013

AUDITS

1. Quantification of cranial ultrasound anomalies identified in moderately premature infants. Aoife Cahalin, Ayesha Suliman, Stephanie Ryan, Ailbhe Tarrant, Elaine Neary, Naomi McCallion

2. Using Lateral Radiographs to Determine Umbilical Venous Catheter Tip Position in Neonates: A Comparison with Anteroposterior Films. Butler G, Assaf N, Tarrant A, Ryan S, EL-Khuffash A.

3. Audit of Gastrojejunal tubes placed in Temple Street Hospital over a two year period. Mc Mahon J, Macken S, Ryan S, Laffan E. Presented at Temple Street Hospital Audit day , 21 June 13

4. Assessment of the success of Radiological Reduction of Intussusception in Children – A Clinical Audit. Siobhan Hoare, Eoghan Laffan, S Ryan; VB Donoghue, E Twomey, E Kelliher, I Robinson. Presented at Temple Street Hospital Audit Day, 13 Dec 2013

5. Do recurrent respiratory infections predict an abnormal Videofluoroscopic Swallowing Study? Siobhan Hoare, Joy Tan, Imogen Carter, Noirin Carroll, Sharon Keogh, Tanya Gilroy, Claire Salley, Stephanie Ryan. Presented at Temple Street Hospital Audit Day, 13 Dec 2013

INVITED LECTURES

1. CXR in Children – radiologists's perspective on technique. Paediatric Imaging – considerations and concerns. University College Dublin 2 Mar 2013
2. The Radiology conference – at the Centre of Multidisciplinary Team Work. Temple Street 140 symposium. Royal College of Physicians, Dublin Nov 13

3. Cranial US: Technique and Pathology. Cranial Ultrasound Study Day, Rotunda Hospital, Dublin, June 2013.

Department of Midwifery/Nursing

MS. MARGARET PHILBIN, DIRECTOR OF MIDWIFERY/NURSING

The hospital again experienced high levels of activity throughout 2013. Midwives and Nurses continued to meet the challenges posed by capacity and activity issues. The team worked with skill and dedication to provide high quality care for women, babies and families both within the hospital and in the community. 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. T. McCluskey	Assistant Director of Midwifery/Nursing (resigned November 2013)
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	Acting Night Superintendent
Ms. M. Whelan	Clinical Audit Facilitator

STAFF IN POST AT 31ST DECEMBER 2013

POST	WTE in Post
Director of Midwifery/Nursing	1
Midwifery/Nursing Administration	5
Practice Development Co-ordinators	1.60
Advanced Nurse Practitioner (Neonatology)	2
CMM/CNM 3	5.77
Clinical Skills Co-ordinator	1.90
Clinical Placement Co-ordinator (BSc Midwifery)	2
Allocations Officer (BSc Midwifery)	0.5
PGDM Clinical Co-ordinator	1
Neonatal Discharge Co-ordinator	1
Colposcopy Nurse Co-ordinators	2
CMM/CNM 2	25.62
CMS/CNS	10.60
CMM/CNM 1	26.60
Staff Midwives	145.72
Staff Nurses	76.91
Student Midwives	19.40
Maternity Care Assistants	27.39
Total	**329.67**

APPOINTMENTS WTE	
Midwives and Nurses	**Midwifery Students**
29.46	38
TOTAL: 67.46	

RESIGNATIONS/ RETIREMENTS	
Midwives and Nurses	**Midwifery Students**
24.59	43
TOTAL: 67.79	

RETIREMENTS/RESIGNATIONS

There were no retirements from the Midwifery and Nursing staff in 2013. One notable resignation was that of Ms. Teresa McCluskey, Assistant Director of Midwifery and Nursing, who left the service in November 2013. Teresa worked for a relatively short time in the hospital but was responsible for the introduction of a number of initiatives which contributed greatly to the quality and safety agenda. We offer thanks and best wishes to Teresa.

RECRUITMENT AND RETENTION

Recruitment and retention of appropriately trained and skilled Midwifery and Nursing staff continued to be a major focus for the hospital in 2013 as in previous years. The HSE moratorium on recruitment continued to impact on our ability to recruit staff in the numbers required for service provision. Despite this, of the twenty-five Higher Diploma and eighteen Undergraduate Midwifery Students who graduated in September a substantial number were offered employment.

HOSPITAL BASED MIDWIFERY AND NURSING SERVICES

Staff in the Adult Outpatients Department facilitated a total of 42,038 attendances of pregnant women with an additional 6,321 attending the various specialist clinics in the department. There were a total of 19,338 attendances at Ultrasound, Fetal Assessment and Prenatal Diagnosis clinics and a further 5,124 attendances at the Early Pregnancy Unit. Midwives and Nurses attended 8,647 women during labour and delivery and cared for 8,649 babies in the postnatal wards.

The Nurses and Midwives in the Neonatal Unit faced another year of high activity with 1,331 babies admitted to the unit with varying requirements for care while continuing to provide intensive and specialist care for ill newborn infants referred from hospitals throughout the country. Staff in the Paediatric Outpatient Department facilitated 8,748 neonatal reviews.

Staff in Theatre continued to work to full capacity with an increasingly complex workload. Cell Salvage was successfully used on a number of patients during the year. Two Theatre Nurses have been trained in the use of this device to date.

The Midwifery and Nursing staff in the Gynaecological Department faced a challenging environment with 2,068 admissions with a diverse mixture of antenatal and postnatal women, high dependency and bereaved patients and elective and day work being undertaken in that department.

Clinical Audit
Clinical audit offers a structured approach to evaluating care against local, national and international standards of best practice. Ms Mary Whelan, Audit Facilitator, continued to assist and support Midwifery and Nursing staff to plan and conduct audits across all clinical areas. In 2013 there were sixteen formal audits undertaken by Midwifery and Nursing staff. Outcomes from all audits were presented at the monthly Quality and Safety Committee meetings and at the quarterly and bi-annual Audit Results meetings. Recommendations for actions resulting from audits requiring immediate attention are circulated to the Executive Management Team and reported quarterly to the Board of Governors.

Maternity Care Assistants
Maternity Care Assistants continued to play a pivotal role in assisting Midwifery and Nursing staff in the provision of care for women and babies during 2013. They are important members of the team who contribute to the work of the hospital with energy and commitment and are deserving of our sincere thanks.

COMMUNITY MIDWIFERY SERVICES

The Community Midwifery Services at the Rotunda Hospital have been in place since 2005 with the service developing over the years to meet the requirements of those who attend for care. 2013 was no exception with the team successfully establishing a service in the Coolock catchment area. This clinic initially had an attendance rate of 2-4 women per clinic which had risen to 20 per clinic by the end of 2013. There are now 17 Midwives working in the Community Service. The team provide all aspects of antenatal care including home booking and currently provide antenatal clinics in the following areas/sites (Table 1):

Table 1 Community Midwifery Antenatal Care Clinics

Blanchardstown	Monday	17.00hrs-20.00hrs
Coolock	Tuesday	17.00hrs-20.00hrs (2013)
Finglas	Wednesday	14.00hrs-17.00hrs
Swords	Wednesday	17.00hrs-20.00hrs
Ballymun	Thursday	14.00hrs-16.00hrs
Cabra	Friday	09.00hrs-11.00hrs
Rotunda Hospital	Friday	16.00hrs-18.00hrs

The service offers access to midwife-led or managed care during the antenatal, intrapartum and postnatal periods. Women availing of the Community Midwifery Services are considered to be 'low risk' in that they have no major health or obstetric problems. The Midwifery Team offer community based booking and antenatal review clinics. In the event that a woman encounters complications in pregnancy care is carried out by the Community Midwifery Team in conjunction with the Obstetric Team where it is considered safe to do so. A mobile phone service is also available to all women attending the community service. This service is operational from 08.00hrs-20.00hrs with direct access to a Community Midwife.

In 2013, a total of 235 women were booked directly for care with the Community Team of Midwives with a further 396 women referred from the Adult Outpatient Department to the Community Services following their initial booking visit. Women are encouraged to book into the service before 8 weeks gestation. Of those who originally booked, 15 women were deemed unsuitable for community

care and a further 40 women were referred back to the obstetric led service due to developing a variety of pregnancy related medical complications during their pregnancy. Five women transferred their care to a Self Employed Community Midwife to facilitate a home delivery which is not available via the Rotunda service and a further 7 women moved out of the catchment area during the course of their pregnancy.

A total of 631 women remained with the service up to the point of delivery. This figure represented an increase of 120 women from the 2012 numbers. Of that number 63% (n=406) of women achieved a spontaneous vertex delivery. The percentage of women who required an emergency caesarean section was 12% (n=76) an increase of 2.6% or 28 women on the previous year, while 3% (n=19) of women underwent an elective caesarean section. Other statistics pertaining to this group of women are reflected in Table 2:

Table 2 Community Midwifery Service outcomes

Total number of deliveries 2013	631	100%
SVD	406	63.0%
Emergency C/S	76	12.0%
Elective C/S	19	3.0%
Ventouse	92	15.0%
Forceps	30	5.0%
Ventouse/Forceps	8	2.0%
BBA	0	0%
Stillborn	0	0%
Inductions	177	28.1%
Spontaneous Onset of Labour	423	67.3%
Pain Relief		
Entonox	358	56.7%
Epidural	346	54.8%
Entonox + Epidural	418	66.3%
General Anaesthetic	7	1.0%
Spinal +CSE	94	14.9%
Tens	25	3.9%
Pethidine	34	5.4%
No analgesia	73	11.6%

Women continued to be offered early discharge between 6-48 hours post delivery, a total of 2,941 women availed of the service, an increase on the previous year. The Community Team carried out a total of 8,785 post natal visits in 2013 with each woman receiving an average of 3 visits in the home. Midwifery and Nursing staff continuously enhance their skills to provide the highest standard of care for women and babies. The Community Midwifery Team is no exception with staff successfully undertaking education programmes in newborn examination, midwife prescribing, scanning and at Master of Science level.

Midwifery Education/Practice Development Unit

The Practice Development Department provides practice and educational support to Midwifery and Nursing Students and ongoing learning and development opportunities for qualified staff. In addition, the Practice Development Team work in collaboration with the Centre for Midwifery Education in the development,

implementation and evaluation of professional advancement for staff. The Rotunda Hospital and the University of Dublin, Trinity College, its academic partner for midwifery education have also continued to work closely together as in previous years.

In the first nine months of 2013 the Practice Development Team provided support for 98 midwifery students (73 undergraduate and 25 higher diploma) and a further 39 students who commenced in September. In addition, the team supported 115 general/paediatric/public health students during their obstetric clinical module placement and provided education sessions to the midwifery students in Trinity College.

The Practice Development Team supported staff at ward level on a number of quality initiatives throughout the year. Work continued on the Productive Ward series. This initiative resulted in an 11% increase in direct patient care and significant financial savings. The Productive Ward Team submitted a poster presentation entitled 'the well organised ward' at the All Ireland Productive Ward Conference in the autumn and were awarded first prize. Congratulations are extended to all involved in this venture. Moving forward this initiative will be rolled out to other departments in 2014.

The recording of Nursing and Midwifery Metrics was introduced in the Delivery Suite and Theatre Department in 2013. The purpose of this project was to introduce standards of measurement for midwifery and nursing care, which can be monitored against agreed standards. Due to the success of the pilot phase, the team continued to work on the Regional Steering Group to develop further metrics for the antenatal and postnatal departments which will be implemented in the early months of 2014.

During the month of April staff throughout the hospital participated in the pilot phase of the roll out of the national I-MEWS observation chart and the Practice Development Team were also champions in organising a patient safety awareness day in May which was extremely well received by the hospital staff.

The Practice Development Team continued to co-ordinate the Midwifery/Nursing Prescribing initiative and facilitated a number of workshops including IV cannulation, IV medication administration, bladder care and Preceptorship programmes.

The hospital supported Midwives to undertake education at Master's, Diploma and Degree level in 2013. Funding and study leave was also provided to staff to attend Basic Life Support, Neonatal Resuscitation, Newborn Examination, RHOET, Lactation and Management programmes. Staff were facilitated to attend National Conferences and continuous professional development programmes in conjunction with the Centre for Midwifery Education with a total of 907 days allocated to further education and training in 2013 thus enhancing skills and supporting the clinical environment.

The Clinical Skills Facilitator continued to offer support and guidance to new and established staff in relation to clinical practice. In particular, she focussed on the uptake of the K2 CTG training package and by using a number of strategies increased the uptake of this training package for staff from 13.5% in 2012 to 91% by mid May 2013 which is a hugely significant increase in compliance.

I would like to acknowledge the work and dedication of all of the staff in the department and thank them for their commitment to improving the quality of care provided by Midwives and Nurses throughout the organisation.

LACTATION SERVICES

The Rotunda Hospital remains the only Dublin Maternity Hospital to have achieved the Baby Friendly Hospital Accreditation Award. We continue to protect, promote and support breastfeeding as the optimum way for mothers to feed their babies.

During 2013 the breast feeding initiation rate remained at 70% which is the highest rate in the country. The Lactation Specialists promote and support breastfeeding throughout the hospital and saw 550 new patients during the year. In addition, the service received 800 calls from postnatal mothers with queries in relation to breastfeeding. A total of 507 antenatal women attended the breastfeeding workshops in the Outpatients Department and 615 mothers attended the breastfeeding support sessions on the postnatal wards.

Mothers and babies are supported in a variety of ways throughout their clinical journey.

Antenatal Support

- Breastfeeding information is given on an individual basis as required in the antenatal clinics.
- Pregnant women and their partners who attend antenatal education programmes provided by the hospital are informed of the benefits and management of breastfeeding.
- A breastfeeding workshop is provided by the Lactation Specialists and other Midwives every Tuesday and Thursday evening.

Delivery Suite Support

- Hospital policies include mother friendly labour and birthing practices.
- Skin to skin contact is policy for all mothers including those following Caesarean Section.
- Initiation of breastfeeding is also encouraged within the first hour of birth.

Postnatal Support

- Individual assistance and support with early breastfeeding problems is available from ward staff and Lactation Specialists when required.
- Rooming-in to promote the mother and baby bonding process.

Support Following Discharge

- An Outpatient service is available for mothers with breastfeeding issues from Monday to Friday.
- A phone service is available Monday to Friday for counselling and advice.
- A Breastfeeding Support Group is held every Thursday from 11.30 to 12.30 hrs.
- Community links with Public Health Nurses, General Practitioners and voluntary support groups are maintained with mothers referred to these services when appropriate.

Breastfeeding Committee

The Breastfeeding Committee, a multi disciplinary committee which includes members from the voluntary breastfeeding support groups held a total of four meetings during the year. Breastfeeding education workshops and lectures were included in all orientation sessions for new staff. Lectures were also provided for Medical Students and those attending the Higher Diploma in Neonatal Nursing programme. National Breastfeeding Week was celebrated with a breastfeeding information stand situated in the main reception area for all staff, expectant and delivered mothers and their families. This stand was extremely well attended. Other activities scheduled for that week included a coffee morning for mothers and babies and a hospital wide breastfeeding quiz. The Rotunda Hospital continues to participate in the HPH/BFHI Breastfeeding Supportive Workplace Initiative and maintains a Breastfeeding Supportive Workplace Silver Award.

OCCUPATIONAL HEALTH SERVICE

The Occupational Health Department looks after the health, safety and welfare of the workforce. The service is readily accessible to all employees and plays an extremely important role in employee welfare. Many of the services provided by the Occupational Health Department are underpinned by the Safety, Health and Welfare at Work Act 2005. The management of occupational blood and body fluid exposures is an important occupational health role. Induction education for all employees and in-service education is an ongoing measure to heighten awareness and reduce exposures in the workplace.

A Consultant led routine clinic is held one morning per week. Consultations are by appointment but very urgent consultations are facilitated as required. The department has walk in phlebotomy and vaccination clinics. Any staff member with a work related health matter can contact the Occupational Health Department for assistance and advice.

The "Sharps" EU Directive was introduced in 2010 is still waiting to be transposed into Irish Legislation. The aim of the EU directive is to eliminate or minimise the risk of a sharps injury to an employee. Staff in the Occupational Health Department chaired a sub-committee for the EU Directive that risk assessed all known sharp devices in every department in the hospital with a view to eliminate or minimise the risk of a sharps injury. New safety sharp devices were evaluated by the end users, user training for the safety devices was provided and work continues on this matter.

Occupational blood/body fluid exposure management and prevention is one of the major occupational health roles within the organisation. Induction training is provided to all new staff and in-service education is facilitated to raise employee awareness and reduce exposures on an ongoing basis.

The influenza vaccine is offered to all employees each year. These vaccination clinics commenced in October 2013. From October to December a total of 32% of staff from all disciplines availed of the vaccine, this campaign will be ongoing until April 2014.

There was a national increase in the number of people presenting with whooping cough in 2012. As a consequence a campaign for all health care workers to receive the Pertussis vaccine commenced in January 2013. Pertussis vaccination clinics were held throughout the year and the vaccine continues to be offered to all employees.

MENTAL HEALTH SUPPORT

The Midwives working in the Perinatal Mental Health Service in the Rotunda continued to see a growing demand for their services in 2013. A total of 1,659 women gave a history of mental health illness at their booking visit, an increase of 226 on the previous year. This represented 19% of the total number of women delivered in 2013. The following table (Table 3) provides a breakdown of the mental health illnesses reported at booking.

Table 3 Mental Illness History at booking visit

Depression no treatment	151
Depression	14
Anxiety	396
BPAD	13
Depression requiring treatment	478
No diagnosis	0
Manic Depression	1
Other	294
PND	249
Puerperal depression needing treatment	58
Schizophrenia	5
Total	1659

A total of 478 women gave a history of depression requiring treatment. A further 396 gave a history of anxiety with some women declaring co-morbidities. A small number of women (n=5) gave a diagnosis of schizophrenia and 14 gave a history of Bi-polar disorder/Manic depression. Asking about personal and family history of mental illness is recognised as best practise as a history of mental illness is a predictor of perinatal mental illness.

The Mental Health Support Midwives saw 513 women in the health promotion clinic. These women are seen individually for up to an hour each. Many of these women attend for assessment, for talk therapy and support in the antenatal and postnatal periods. Women are welcome to return to the support midwifery service up to six months following their delivery. A further 1,629 women with a mental health history were reviewed at ward level for brief intervention, including health promotion, mental health management and follow up advice.

All women are offered the opportunity to complete the Edinburgh Postnatal Depression Score (EPDS) document prior to discharge. The EPDS is a self reporting assessment tool to monitor mood. An audit of completion of EPDS on discharge was commenced in the latter part of 2012. The results showed that 71% of women discharged home from the Rotunda completed the EPDS. As it would be preferable to have a higher completion rate the mental health midwives collaborated with colleagues on postnatal wards and in the community to educate midwives about the value of the EPDS and the value of offering women the opportunity to complete the tool. A further audit is planned for early 2014.

World Mental Health Week (October 2013) was marked by the Mental Health Midwife developing a colourful poster and leaflet stand at the main reception area of the hospital to raise awareness of mental health. The stand created much interest as evidenced by the numbers of leaflets taken and enquiries raised with the team.

As a quality initiative the team have developed a mental health referral form. These forms, used in the outpatient and community clinics, provide a uniform referral pathway for patients where a mental health concern is raised and increase the communication between disciplines in relation to the treatment and support of this cohort of women attending for care.

There was a steady demand for the Mental Health Support Team to present to Midwifery Students in TCD, midwifery interns and Public Health Nurses. The team also worked closely with the Perinatal Mental Health providers in the National Maternity and the Coombe hospitals. This collaboration led to the development of a very successful study day for midwives hosted in the National Maternity Hospital on May 29th 2013. The aim of the study day was threefold;

- To increase clinicians knowledge and awareness of Perinatal Mental Health
- Reduce the stigma of Mental Heath Disease
- Ensure that women with a mental health history receive the best possible care

It is envisaged that this study day will continue as an annual event.

PARENT EDUCATION

The Parent Education Midwife working closely with the Physiotherapy Department continued to provide an extensive range of education sessions to both in-patients and outpatients during 2013 with 7,159 women availing of this service. 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

BEREAVEMENT SUPPORT AND CHAPLAINCY SERVICES

The Rotunda Hospital acknowledges that the loss of a baby before or shortly after birth is one of the most painful experiences imaginable in any parent's life. We offer a range of services through the Bereavement Team, Recurrent Pregnancy Loss and Fetal Anomaly Clinics to afford bereaved parents the necessary support to meet their individual needs. The entire Bereavement Team comprising of the Bereavement Support Midwife, dedicated Medical Social Worker, Chaplain, Administrative Assistant and Anatomical Pathology Technicians offered support to the families of the 222 babies who died at all gestations during 2013 endeavouring to provide sensitive, compassionate and individualised care to those families.

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 and families and staff is very much appreciated. The presence of a lay Chaplain on staff has added enormously to the service provided within the organisation.

Service of Remembrance
The annual Service of Remembrance was again held in the Pro Cathedral in November 2013 with an attendance of over 1,100 families, parents and hospital staff. We are extremely grateful for the continued assistance of Cannon Damien O'Reilly in facilitating this important event. The service was led by the Chaplains from the main churches with bereaved parents, staff members and members of the Board of Governors present. The occasion was enhanced by the presence of soloist Mary Flynn and harpist Denise Kelly to whom we send a sincere thanks for their involvement. Many staff volunteered to assist on the day and our gratitude is extended to them also.

Health Promoting Hospitals
The Rotunda Hospital is a committed member of the Health Promoting Hospitals Network. Work in particular continued on the important role of support for those seeking to reduce or cease smoking. Extensive work was undertaken during the year which culminated in the Rotunda becoming a 'Smoke Free Campus' in November 2013. I wish to acknowledge the work and commitment of all staff in supporting this initiative which will result in a healthier environment for patients and staff alike.

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 in 2013. 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. I would like to extend my appreciation to Medical, Allied Health and 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 and the Hospital throughout the year especially Ms. Eithne Cusack, Director, Nursing and Midwifery Planning and Development, Dublin North East and Ms. Kathryn Muldoon, Assistant Professor of Midwifery, Head of Discipline of Midwifery, Director of Midwifery Programme, School of Nursing & Midwifery, Trinity College, Dublin.

The hospital could not run as effectively or efficiently without the dedicated Midwifery and Nursing Team who have continued to provide such high quality care despite the many challenges they face. I am indebted to them for their endless enthusiasm 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 and Ger in my office for their loyal and endless assistance. They continue to meet the ever increasing demands on their time and talents with patience and enthusiasm.

Ms Margaret Philbin
Director of Midwifery/Nursing
2013

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

CONSULTANT SENIOR LECTURERS
Paul Byrne MD, FRCOG, FRCPI
Fionnuala Breathnach MD, MRCOG FRCPI DCH DipGUMed
Ronan Gleeson MA MD, FRCOG FRCPI

HONORARY CLINICAL PROFESSOR
Sam Coulter Smith, MB, BCH, LCRPI & SI, FRCOG

HONORARY CONSULTANT SENIOR LECTURERS
Carole Barry MD, FRCOG
Mary Holohan FRCOG
Edgar Mocanu, MD, MRCOG

MATERNAL FETAL MEDICINE SUBSPECIALTY FELLOW
Etaoin Kent MD, MRCPI, MRCOG (from 1st January 2013)
Julia Unterscheider MD, MRCPI MRCOG (from July 2013)

SPECIALIST REGISTRAR LECTURERS
Naomi Burke MRCPI, MRCOG (to June 2013)
Siglinde Muellers MRCPI (from July 2012)
Siobhan Corcoran MRCPI (from July 2013)
Morgan Kearney MRCPI (from Jan to June 2013)
Hugh O'Connor MRCPI (from June to Dec 2013)

CLINICAL RESEARCH STAFF
Claire O'Rourke (Midwife Sonographer)
Ann Fleming (Midwife Sonographer)
Elizabeth Tully (Research Manager)
Grainne Mc Sorley (Research Nurse)
Patrick Dicker (Epidemiologist / Statistician)

ADMINISTRATIVE STAFF
Suzanne Kehoe (Administrative Assistant)
Michelle Creaven (Administrative Assistant)
Paula Carty (Administrative Assistant)
Lorraine Harte (Administrative Assistant) (covering maternity leave until Feb 2013)

2. 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 2013 a total of 3666 fetal ultrasound examinations were performed at the Centre. This included a total of 928 first trimester assessments for fetal aneuploidy, based on combined nuchal translucency and serum screening. The RCSI Fetal Medicine Centre operates a one-stop clinic for assessment of risk of fetal aneuploidy, using the Brahms Kryptor biochemistry platform. Management of multiple gestations contributed a significant workload to the Centre, with 50 twin pregnancies, 2 triplet pregnancies and 1 higher order multiple gestation managed through our unit. A new development this year was the implementation of non-invasive prenatal testing for fetal aneuploidy, by examining fetal DNA from the maternal circulation: a total of 44 such tests were performed in 2013.

3. TEACHING SERVICES

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

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.

4. RESEARCH OUTPUT

a) Research Grants and Awards:

- Health Research Board, Ireland
  - Medical Research Charities Group
  - Hemodynamic Assessment in Pregnancy and Neonatal Echocardiography Assessment; The HANDLE Study
  - A. El-Khufash, E. Kent and F. Malone, Co-Principal Investigators
  - Total support €188,126
  - 2014 – 2016

- Health Research Board, Ireland
  - Novel Approaches to Determining Procoagulant State in Early Onset Preeclampsia
  - F. Ni Ainle, Principal Investigator
  - F. Malone, MD, Co-Investigator
  - Total support €326,940
  - 2013 – 2016

PERINATAL IRELAND UPDATE 2013

Perinatal Ireland is a multi-centre, all-Ireland research consortium focusing on carrying out research into women's and children's health. The consortium, 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 Dept of Obstetrics & Gynaecology at the Rotunda Hospital and is active in obstetric and paediatric research.

In addition to its clinical research activities, the Perinatal Ireland network is also active in other educational activities and methods of advancing clinical care including: 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, and contribution to international guidelines; development of new information technology systems that underpin obstetric ultrasound equipment based on data developed from Perinatal Ireland research data.

The existing Perinatal Ireland Research Consortium provides a unique, world-class research infrastructure, comprising universal participation by the Irish MFM community, together with central research, management support and robust governance. The consortium has a full suite of ultrasound equipment ring-fenced for conducting research, together with collaboration with other services including neonatology, other pediatric specialties, midwifery, radiology, pathology, epidemiology, and biostatistics. Each of the consortium partners is represented by clinician scientists - each having a wealth of practical experience and distinguished publication records.

A hallmark of Perinatal Ireland is selecting obstetric challenges of significant importance to public health - delivering results that positively impact maternal and child health at a population level – as evidenced by the publication of 2 national HSE guidelines.

In 2013, Perinatal Ireland underwent its second external review by international experts - the most recent concluding that the research outputs:

"...have had a tangible impact on clinical care, and that the level of outputs for the stage of development of Perinatal Ireland is high."

Since its inception, Perinatal Ireland has published 21 articles in leading obstetric journals and has made 53 research presentations at major international scientific meetings in the US and Europe, and authored 2 HSE-approved national guidelines.

b) Scientific Publications – Peer-Reviewed Journals

- Bodnar LM, Rouse DJ, Momirova V, Peaceman AM, Sciscione A, Spong CY, Varner MW, Malone FD, Iams JD, Mercer BM, Thorp JM, Sorokin Y, Carpenter MW, Lo J, Ramin SM, Harper M. "Maternal 25-Hydroxyvitamin D and Preterm Birth in Twin Gestations." *Obstetrics & Gynecology* 122:91-98, 2013.
- Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD. "Optimizing the Definition of Intrauterine Growth Restriction: the Multicenter Prospective PORTO Study." *American Journal of Obstetrics and Gynecology* 208:290.e1-6, 2013.
- Unterscheider J, Geary MP, Daly S, McAuliffe FM, Kennelly MM, Dornan J, Morrison JJ, Burke G, Francis A, Gardosi J, Malone FD. "The Customised Fetal Growth Potential: A Standard for Ireland." *European Journal of Obstetrics Gynecology and Reproductive Biology*, 166:14-17, 2013.
- King T, Bergin D, Kent E, Manning F, Reeves E, Dicker P, McElvaney G, Sreenan S, Malone F, McDermott J. "Endothelial Progenitor Cells in Mothers of Low Birthweight Infants: A Link Between Defective Placental Vascularisation and Increased Cardiovascular Risk?" *Journal of Clinical Endocrinology and Metabolism*, 98:E33-39, 2013.
- Haddow JE, Craig WY, Palomaki GE, Neveux LM, Lambert-Messerlian G, Canick JA, Malone FD, D'Alton ME. "Impact of Adjusting for the Reciprocal Relationship Between Maternal Weight and Free Thyroxine During Early Pregnancy." *Thyroid*, 23:225-230, 2013.
- Barker ED, McAuliffe FM, Alderdice F, Unterscheider J, Daly S, Geary MP, Kennelly MM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD. "The Role of Growth Trajectories in Classifying Fetal Growth Restriction." *Obstetrics & Gynecology* 122:248-254, 2013.
- Costantine MM, Lai Y, Bloom SL, Spong CY, Varner MW, Rouse DJ, Ramin SM, Caritis SN, Peaceman AM, Sorokin Y, Sciscione A, Mercer BM, Thorp JM, Malone FD, Harper M, Iams JD. "Population Versus Customized Fetal Growth Norms and Adverse Outcomes in an Intrapartum Cohort." *American Journal of Perinatology*, 30:335-342, 2013.
- Gilbert SA, Grobman WA, Landon MB, Spong CY, Rouse DJ, Leveno KJ, et al. "Cost-effectiveness of Trial of Labor After Previous Cesarean in a Minimally Biased Cohort." *American Journal of Perinatology*, 30:11-20, 2013.
- Figueroa D, Landon MB, Mele L, Spong CY, Ramin SM, Casey B, et al. "Relationship Between 1-Hour Glucose Challenge Test Results and Perinatal Outcomes." *Obstetrics & Gynecology* 121:1241-1247, 2013.
- Breathnach FM, Donnelly J, Cooley SM, Geary M, Malone FD. "Subclinical Hypothyroidism as a Risk Factor for Placental Abruption: Evidence from a Low Risk Primigravid Population." *Australian and New Zealand Journal of Obstetrics and Gynaecology* 53:553-560, 2013.
- Gilbert SA, Grobman WA, Landon MB, Varner MW, Wapner RJ, Sorokin Y, et al. "Lifetime Cost-effectiveness of Trial of Labor After Cesarean in the United States." *Value Health* 16:953-964, 2013.

- Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD."Predictable Progressive Doppler Deterioration in IUGR: Does it Really Exist?" *American Journal of Obstetrics and Gynecology* 209:539,e1-7, 2013.
- Burke N, Flood K, Murray A, Cotter B, Dempsey M, Fay L, Dicker P, Geary M, Kenny D, Malone F. "Platelet Reactivity Changes Significantly Throughout All Trimesters of Pregnancy Compared with the Nonpregnant State: A Prospective Study." BJOG: *British Journal of Obstetrics and Gynaecology*, 120:1599-1604, 2013.
- Grobman WA, Lai Y, Rouse DJ, Spong CY, Varner MW, Mercer BM, Leveno KJ, Iams JD, Wapner RJ, Sorokin Y, Thorp JM, Ramin SM, Malone FD, O'Sullivan MJ, Hankins GD, Caritis SN. "The Association of Cerebral Palsy and Death with Small for Gestational Age Birthweight in Preterm Neonates by Individualized and Population Based Percentiles. *American Journal of Obstetrics and Gynecology* 209:340.e1-5, 2013.
- O'Connor C, McAuliffe FM, Breathnach FM, Geary M, Daly S, Higgins JR, Dornan J, Morrison JJ, Burke G, Higgins S, Mooney E, Dicker P, Manning F, McParland P, Malone FD. "Prediction of Outcome in Twin Pregnancy with First and Early Second Trimester Ultrasound." *Journal of Maternal Fetal and Neonatal Medicine* 26:1030-1035, 2013.
- Hehir MP, O'Connor HD, Higgins S, Robson MS, McAuliffe FM, Boylan PC, Malone FD, Mahony R. "Obstetric Anal Sphincter Injury, Risk Factors and Method of Delivery – An 8-Year Analysis Across 2 Tertiary Referral Centers." *Journal of Maternal Fetal and Neonatal Medicine* 26:1514-1516, 2013.
- O'Connor HD, Hehir MP, Kent EM, Foley ME, Fitzpatrick C, Geary MP, Malone FD. "Eclampsia: Trends in Incidence and Outcomes over 30 Years." *American Journal of Perinatology* 30:661-664, 2013.
- Ma KK, Mele L, Landon MB, Spong CY, Ramin SM, Casey B, et al. "The Obstetric and Neonatal Implications of a Low Value on the 50g Glucose Screening Test." *American Journal of Perinatology* 30:715-722, 2013.
- Costantine MM, Mele L, Landon MB, Spong CY, Ramin SM, Casey B, et al. "Customized Versus Population Approach for Evaluation of Fetal Overgrowth." *American Journal of Perinatology* 30:566-572, 2013.
- Unterscheider J, Ryan H, Morrison JJ, Malone FD. "Intrauterine Red Cell Transfusion for Anti-Kell Isoimmunization in a Fetus with Glanzmann's Thrombasthenia." *Prenatal Diagnosis*, In Press, 2013.
- Graves SW, Esplin MS, McGee P, Rouse DJ, Leveno KJ, Mercer BM, Iams JD, Wapner RJ, Sorokin Y, Thorp JM, Ramin SM, Malone FD, O'Sullivan MJ, Peaceman AM, Hankins GD, Dudley DJ, Caritis SN. "Association of Cord Blood Digitalis-Like Factor and Necrotizing Enterocolitis." *American Journal of Obstetrics and Gynecology*, Nov 8, 2013.
- Ryan HM, Morrison JJ, Breathnach FM, McAuliff FM, Geary MP, Daly S, Higgins JR, Hunter A, Burke G, Higgins S, Mahony R, Dicker P, Manning F, Tully E, Malone FD. "The Influence of Maternal Body Mass Index on Fetal Weight Estimate in Twin Pregnancy." *American Journal of Obstetrics and Gynecology*, Nov 8, 2013.

- Alderdice F, Savage-McGlynn E, Martin CR, McAuliffe FM, Hunter A, Unterscheider J, Daly S, Geary MP, Kennelly MM, O'Donoghue K, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD. The Prenatal Distress Questionnaire: An Investigation of Factor Structure in a High Risk Population. Journal of Reproductive and Infant Psychology 2013;31(5):456-64.
- M Ma'ayeh, N Purandare, M Flanagan, S Ash, M Geary, FM Breathnach. Ruptured broad ligament ectopic gestation in a Jehovah's Witness with a negative pregnancy test. Med Legal J Irl 2013(19):37-39.
- Corcoran S, Donnelly J, Breathnach FM. Managing the emerging clinical risk of cutaneous bullae and decubitus ulcers in obstetric patients. Int J Obstet Gynaecol 2013 Mar; 120(3):285-6.

c) Invited Lectures and Oral Scientific Presentations:

- Malone FD, "Ultrasound Diagnosis of Neural Tube Defects" – Institute of Obstetricians and Gynaecologists of Ireland, Neural Tube Defect National Meeting, Dublin Castle, Dublin, Ireland, September 2013.
- J Unterscheider on Behalf of Perinatal Ireland. Stillbirth: The importance of fetal growth restriction. The Impact of Stillbirth Conference, Cork, 2 November 2013
- J Unterscheider on Behalf of Perinatal Ireland. IUGR - New Directions from the PORTO Study Data. 2nd International Conference on Fetal Growth, Baltimore, 21 September 2013
- J Unterscheider on Behalf of Perinatal Ireland. Perinatal Mortality & IUGR – The PORTO Study. 2nd International Conference on Fetal Growth, Baltimore, 19 September 2013
- J Unterscheider. IUGR: New Directions from the PORTO Study Data. Summer Meeting, Ulster Obstetrical & Gynaecological Society, Belfast, 14 June 2013
- J Unterscheider, S Daly, MP Geary, FM McAuliffe, MM Kennelly, JJ Morrison, K O'Donoghue, A Hunter, G Burke, P Dicker, E Tully, FD Malone. Perinatal outcome of IUGR pregnancies with normal and abnormal Doppler studies – The Prospective Multicentre PORTO Trial. Oral Platform Poster, 16th Annual Conference, BMFMS, Dublin, 25 April 2013
- J Unterscheider, S Daly, MP Geary, FM McAuliffe, MM Kennelly, JJ Morrison, K O'Donoghue, A Hunter, G Burke, P Dicker, E Tully, FD Malone. The Optimal Definition of Intrauterine Growth Restriction Based on Perinatal Morbidity and Mortality – The Results of the National Multicenter Prospective PORTO Trial. 33rd Annual SMFM Meeting, San Francisco, 14 February 2013
- J Unterscheider, S Daly, MP Geary, FM McAuliffe, MM Kennelly, JJ Morrison, K O'Donoghue, A Hunter, G Burke, P Dicker, E Tully, FD Malone. Sequential Doppler changes in IUGR: is there a benefit of advanced multivessel Doppler assessment? – Results of the National Multicenter Prospective PORTO Trial. 33rd Annual SMFM Meeting, San Francisco, 14 February 2013

- J Unterscheider, S Daly, MP Geary, MM Kennelly, FM McAuliffe, JJ Morrison, K O'Donoghue, A Hunter, G Burke, P Dicker, E Tully, FD Malone. Does having an EFW less than the 10th centile really matter? – Results of the multicenter prospective observational PORTO Trial. 33rd Annual SMFM Meeting, San Francisco, 14 February 2013

- F Breathnach. 'Right Ventricle Abnormalitie's. Irish Congenital Heart Foundation Scientific Meeting, Carton House, Maynooth, November 2013

- F Breathnach. 'Congenital Heart Disease and Structural Abnormality'. Irish Congenital Heart Foundation Scientific Meeting, Carton House, Maynooth, November 2013

- F Breathnach. 'Investigating the Role of Early Low-dose Aspirin in Diabetes; The Ireland Study'. North Dublin Voluntary Hospitals Diabetes Study Day, Nov 2013

- F Breathnach. 'Discordant twin growth'. 22nd International Malaysian Congress of Obstetrics and Gynecology, Kuala Lumpur, May 2013

- F Breathnach. 'Optimising Timing of Delivery of Uncomplicated Twins'. 22nd International Malaysian Congress of Obstetrics and Gynecology, Kuala Lumpur, May 2013

- F Breathnach. 'First Trimester Screening for Fetal Aneuploidy'. RCSI Malaysia, Visiting Lecture for Undergraduates and Faculty

- Alternative models of prenatal care for pregnancies complicated by gestational diabetes. Kearney M(1), Corcoran S(1), Byrne M(2), Breathnach F(1)
  1. Rotunda Hospital, Royal College of Surgeons Ireland 2. Dept of Endocrinology, Rotunda Hospital. NDVF Lifespan Diabetes Research Program on Nov 14 3013

- Accuracy of Third Trimester Ultrasound in Predicting Macrosomia in Patients with Diabetes in Pregnancy S Corcoran, M Kearney, D Vaughan, E Tully, P Dicker, K Flood, F. Breathnach. RCSI, Rotunda Hospital. NDVF Lifespan Diabetes Research Program on Nov 14 3013

- Horgan R, Byrne P. How Accurate are Colposcopically Directed Biopsies? Junior Obstetrical and Gynaecological Society. November 2013. (oral presentation)

d) Abstracts:

- 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 Optimal Definition of intrauterine growth restriction based on perinatal morbidity and mortality – results of the National Multicenter Prospective PORTO trial." *American Journal of Obstetrics and Gynecology*, 208, S13, 2013.

- 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. "Sequential Doppler changes in IUGR: Is there a benefit of advanced multivessel Doppler assessment? Results of the National Multicenter Prospective PORTO trial." *American Journal of Obstetrics and Gynecology*, 208, S15, 2013.

- 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. "Does having an EFW less than the 10th centile really matter? Results of the National Multicenter Prospective PORTO trial." *American Journal of Obstetrics and Gynecology*, 208, S17, 2013.

- Murphy N, Diviney M, Donnelly J, Cooley S, Kirkham C, Foran A, Breathnach F, Malone F, Geary M. "The effect of subclinical hypothyroidism on IQ in seven to eight year old children." *American Journal of Obstetrics and Gynecology*, 208, S85, 2013.

- Boyle M, Lyons A, Ryan S, Malone F, Foran A. "Neonatal MRI brain following fetoscopic laser surgery for twin-twin transfusion syndrome: Implications for clinical practice." *American Journal of Obstetrics and Gynecology*, 208, S88, 2013.

- Dempsey M, Flood K, Burke N, Cotter B, Fay L, Fletcher P, Murray A, Geary M, Kenny D, Malone F. "Platelet reactivity in recurrent miscarriage patients during pregnancy." *American Journal of Obstetrics and Gynecology*, 208, S102, 2013.

- Khalifeh A, Malone F, Lavelanet A, Chamchad D, Gerson A. "Comparative analysis of two- versus three-dimensional sonography for nuchal translucency (NT) measurement." *American Journal of Obstetrics and Gynecology*, 208, S156, 2013.

- Flood K, Ali A, Breathnach F, McAuliffe F, Geary M, Daly S, Higgins J, Fogarty A, Morrison J, Burke G, Higgins S, Dicker P, Tully E, Carroll S, Malone F. "Expectant management of monochorionic diamniotic twins with selective intrauterine growth restriction." *American Journal of Obstetrics and Gynecology*, 208, S164, 2013.

- 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. "Advanced multi-vessel Doppler assessment in fetal growth restriction: learning curve and factors influencing successful acquisition – Results of the National Multicenter Prospective PORTO trial." *American Journal of Obstetrics and Gynecology*, 208, S172, 2013.

- Mullers S, Flood K, Burke N, Malone F, Breathnach F. "Can ductus venosus waveforms help modify counseling in the setting of first trimester septated cystic hygroma?" *American Journal of Obstetrics and Gynecology*, 208, S196, 2013.

- Kent E, Breathnach F, Gillan J, McAuliffe F, Geary M, Daly S, Higgins J, Hunter A, Morrison J, Burke G, Higgins S, Carroll S, Dicker P, Tully E, Malone F. "Relationship between placental characteristics and antenatal ultrasound Doppler indices in twin pregnancies – results of the ESPRIT study." *American Journal of Obstetrics and Gynecology,* 208, S237, 2103.

- Accuracy of third trimester ultrasound in predicting macrosomia in patients with diabetes in pregnancy Siobhan Corcoran, Morgan Kearney, Denis Vaughan, Elizabeth Tully, Pat Dicker, Karen Flood, Fionnuala Breathnach *American Journal of Obstetrics & Gynecology* - January 2014 (Vol. 210, Issue 1, Supplement, Page S174, DOI: 10.1016/j.ajog.2013.10.368

Human Assisted Reproduction Ireland

DIRECTOR
Michael Darling MD. FRCOG.

CONSULTANTS
Edgar Mocanu MD, FRCOG, Dip Med Mgt, Dip Ethics
Rishi Roopnarinesingh MD, MRCPI, MRCOG
Carol Coughlan MD, MRCPI, MRCOG

CEO
Raymond T. Skelly BComm, FCA

CLINICIANS
Subspecialty Trainee in Reproductive Medicine and Surgery (from November 2013)
Dr Nikhil C Purandare MD MRCOG MRCPI

SpR in Obstetrics and Gynaecology Fellow (from July 2013)
Dr Srwa Khalid MRCOPG MRCPI

FULL TIME CLINICIANS
Dr Sajida Parveen Detho MRCOG up to July 2013
Dr Shazia Afridi MRCOG up to January 2013
Dr Mashour Naasan MRCOG up to January 2013
Dr Vineta Ciprike MRCOG up to October 2013
Dr Conor Harrity MRCOG MRCPI up to April 2013
Dr Manal Mahdi up to November 2013
Dr Poh Vei Ooi MRCOG MRCPI

VISITING AND OVERSEAS PROGRAMMES
Dr Syeda Zaibunnisa MRCOG
Dr Khaled Darhouse MRCOG
Dr Noemie Ranisavijev

NURSES
Joan Kelly SRN. SCM. MBA.
Teresa Woods SRN. SCM.
Kitty Lowry SRN. SCM. SRCN.
Linda Finnamore SRN. SCM.
Ruth O'Toole SRN. SCM
Deirdre Ramkaun SRN. SCM
Margaret Brophy SRN. SCM.
Sheila Sweeney SRN
Cathy Anne Berney SRN
Rebecca Rice RGN, RM, BSc.
Fiona Sutton RGN, BSc.

LABORATORY
Ciara Hughes B.Med. Sc MSc.
Lisa Burke MSc.
John Furlong BSc.
Catherine Lawson MSc.
Barbara Hughes MSc.
Fiona O'Reilly BSc
Eimer Dempsey
Jemma Matthewson BSc., MSc.
Wendy Griffin MSc.
Karen Deignan PhD.
Geraldine Emerson MSc.
Karolina Piersa BSc MSc
Lynne O'Shea BSc PhD

QUALITY
Padraig Kelly MBA. BEng.
Audrai Hooper
Deirdre Quinn BSc Msc

FINANCE
Paul Delaney B.Comm, M.Econ.Sc, ACCA, AITI

COUNSELLORS
Joan Hamilton SRN., Dip.C (TCD)
Bonnie Maher M.Psych.Sc., MIACT.
Helga Behan DipC. (TCD)
Roisin Venables
Cyntha Moorhead
Alison Bough Cert. Soc. Sci., BSc. (Hons) Psych., PG Dip. Lang. Path. MA Psych. (CBT)

ADMINISTRATION
Moira Carberry
Laura Behan
Deirdre McCarthy
Keith O'Toole
Phyllis Agbi
Natalie L'Estrange
Mary Broderick
Adrienne Coote
Natasha O'Sullivan
Suzanne Naughton
Mary Moore
Mark O'Dwyer

HOUSEKEEPING
Ann Mulligan
Ana Skorik Nurses Aide

1. SERVICE

During 2013, the HARI Unit provided Assisted Reproductive Technology services which included IVF, ICSI, frozen embryo transfers, natural cycles (IVF and ICSI), follicle tracking with or without ovarian stimulation (anti-oestrogens, FSH), donor egg monitoring, testicular biopsy, embryo freezing, oncology stimulation and subsequent gamete and embryo cryopreservation to couples referred from throughout Ireland. In 2013, the Unit had on average 50 staff delivering medical care.

NURSING SERVICES
The Nursing department prides itself on recognizing each individual's needs and delivering tailored treatment. HARI nursing staff provides a high standard of care to couples attending the Unit whilst maintaining a safe, efficient and friendly service. The treatments and services provided range from ultrasound scanning and hormonal monitoring, patient education and training to scheduling procedures and intrauterine inseminations. Nursing staff participates in continuous professional development through regular meetings at national and international level as well as training of new staff. The role of the fertility nurse is unique, delivering continual care and support for a complex reproductive treatment journey involving two patients.

COUNSELLING SERVICES
Our team offers a comprehensive counselling and support service at HARI to our ART and oncology patients. The services range from psychological and emotional support before, during and after treatment to mind/ body medicine, CBT and stress management services. Our counselling team comprise of highly skilled individuals specifically trained in the area of infertility. They work as an integral part of our multi disciplinary group.

2. ART DEMOGRAPHICS AND OUTCOMES

ART Activity

The female age among our IVF/ ICSI patients is a key determinant of the likelihood of conception. In 2013 the mean ages were 35.7 years for females and 37.5 years for males. The mean duration of infertility of those undergoing fresh cycles was 3.6 years. The main indications for IVF or ICSI therapy were male factor (40%), tubal and endometriosis (18%), unexplained (17%), ovarian (10%) and others (15%).

In these 12 months, 1,291 cycles were undertaken - 415 IVF, 487 ICSI and 421 frozen. Of the 902 fresh cycles commenced, 798 had oocytes collected (IVF 365, ICSI 433). Embryos were transferred in 1048 cases (IVF 305, ICSI 354 and frozen 389). A total of 393 clinical pregnancies were achieved, 246 after IVF/ ICSI cycles and 147 in frozen embryo transfer cycles.

TABLE 1. Overall IVF/ ICSI activity (2013)

	IVF	ICSI	FZT
Cycles started	415	487	421
Cycles abandoned	44	48	-
Oocyte collections	365	433	-
Zygote transfers	305	354	389
Clinical pregnancies	105	141	147

PREGNANCY RATES

Pregnancy rates shown below are clinical pregnancy rates. All types of fresh treatments are included, namely: long protocol, antagonist, flare, and natural. The terms used are defined below:

Clinical Pregnancy = all cases where an intrauterine visible pregnancy sac has been identified to include ectopic pregnancies (ESHRE definition).

Clinical Pregnancy Rate per Cycle Started = number of clinical pregnancies per number of patients that commenced therapy.

Clinical Pregnancy Rate per Oocyte Recovery = number of clinical pregnancies per number of patients that had an oocyte recovery.

Clinical Pregnant Rate per Zygote Transfer = number of clinical pregnancies per number of patients that had zygotes transferred.

Delivery Rate = number of delivery episodes of babies weighing more than 500 grams (per cycle started, per oocyte recovery, per zygote transfer).

TABLE 2. Clinical pregnancy rates (2013)

	Overall (n = 393)	Overall (n=246)	IVF (n = 105)	ICSI (n = 141)	FZT (n=147)
Per cycle started	31%	27%	25%	29%	35%
Per oocyte recovery	N/A	31%	29%	33%	N/A
Per embryo transfer	38%	37%	34%	40%	38%

n= total number of patients ()= number of pregnancies

These figures are interpreted as follows: the overall likelihood to have a clinical pregnancy after IVF/ICSI was **27%** per cycle started, **31%** per oocyte recovery and **37%** per zygote transfer. The clinical pregnancy rates for patients undergoing frozen cycle transfers were **35%** per thaw and **38%** per embryo transfer.

TABLE 3. CLINICAL (IVF AND ICSI) PREGNANCY RATES ACCORDING TO FEMALE AGE (2013)				
	Age	**Overall (n = 902)**	**IVF (n = 415)**	**ICSI (n = 487)**
Per Cycle Started				
	≤ 35	31% (n=429)	29% (n=174)	31% (n=255)
	36-39	27% (n=303)	24% (n=144)	30% (n=159)
	≥ 40	12% (n=170)	10% (n=97)	15% (n=73)
Per Oocyte Recovery				
	≤ 35	34% (n=388)	32% (n=159)	35% (n=229)
	36-39	32% (n=256)	28% (n=125)	36% (n=131)
	≥ 40	14% (n=154)	12% (n=81)	15% (n=73)
Per ZygoteTransfer				
	≤ 35	45% (n=293)	40% (n=127)	48% (n=166)
	36-39	35% (n=233)	33% (n=107)	37% (n=126)
	≥ 40	16% (n=133)	14% (n=71)	18% (n=62)

A female of age 35 years old or younger, undergoing fresh ART treatment had a 31% chance of a clinical pregnancy per cycle started, 34% per oocyte recovery and 45% per embryo transfer.

Single blastocyst transfer programme

The HARI elective Single Blastocyst Transfer (eSBT) programme continued in 2013. Details of pregnancy rates after ICSI, IVF and FZT since 2008 are presented in Table 4. Pregnancy rates are expressed as positive test per eSBT and clinical pregnancy rate per eSBT.

TABLE 4. Pregnancy rates after eSBT (2013)				
ICSI eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 40**
hCG+ve/eSBT	343/600(57%)	228/389(59%)	100/162(62%)	15/49(30%)
CPR/eSBT	274/600(44.2%)	184/389(47%)	84/162(52%)	6/49(12%)
IVF eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 40**
hCG+ve/eSBT	356/691(51%)	204/365(56%)	129/254(51%)	23/72(32%)
CPR/eSBT	294/691(42%)	168/365(46%)	111/254(44%)	15/72(21%)
FZT eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 40**
hCG+ve/eSBT	252/563(48%)	148/303(49%)	83/195(43%)	21/65(32%)
CPR/eSBT	200/563(35%)	115/303(38%)	70/195(36%)	15/65(23%)

The introduction of the eSBT was driven by the desire to reduce multiple pregnancies while maintaining respectable pregnancy rates from one oocyte recovery. As shown below, this approach offers an excellent chance of pregnancy as cumulative clinical pregnancy rates, since the commencement of this programme, were as high as 64% (Table 5) with an average multiple pregnancy rate of only 1.9% after fresh transfers (Table 6). The value in pursuing eSBT lies in the enormous savings to the public purse in terms of prevention of prematurity-related intensive neonatal care expenses. Such savings should be made available for the provision of free IVF to couples attending ART services that support elective single embryo transfers.

TABLE 5. Female age related cumulative pregnancy rates after eSBT (2008-2013)

Day 5 transfers	≤ 35	35-39 years	≥ 40 years
CPR	47%	47%	17%
Cumulative CPR (One fresh and first frozen transfer)	57%	64%	38%

TABLE 6. Multiple pregnancy rates for eSBT (2013)

	IVF	ICSI	FZT
Singleton	98.3%	96.9%	98.7%
Twins	1.7%	3.1%	1.3%
Triplets	0%	0%	0%

3. NATIONAL ONCOLOGY CRYOPRESERVATION SERVICES

The activity of the National Oncology Cryopreservation Centre includes emergency onco-fertility consultations, counselling and gamete/zygote preservation prior to gonadotoxic intervention, offered to all females and males diagnosed with cancer referred by a Consultant. In 2013, 155 male oncology patients attended HARI and 140 patients had sperm cryopreserved. The demand for female cryopreservation services saw a further surge compared to 2012, with 82 patients attending, 52 started therapy and 46 reaching either egg or embryo freezing. New clinical protocols ensure, in suitable cases, commencement of therapy at presentation, irrespective if the patient presents in the proliferative or the luteal phase of the cycle. This eliminates the need to delay lifesaving oncology treatments in order to pursue fertility cryopreservation.

TABLE 7. Oncology cryopreservation data

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Males attended				114	142	142	158	186	174	163	173	127	155
Males with samples frozen	63	131	98	102	127	132	141	170	155	149	157	111	140
Not suitable /No sample	11	21	15	12	15	10	17	16	19	14	16	16	15
Female attendances			5	5	5	6	14	12	23	25	32	62	82
Pursued cryopres ervation			3	4	0	1	10	4	7	19	22	32	52
Oocyte/ embryo cryopres ervation			3	4	0	0	5	3	5	16	22	25	46

4. RECOGNITION

Training in Reproductive Medicine (RM)

HARI continues as the main RM teaching centre in Ireland. In 2013, Dr Srwa Khalid commenced training as a Fellow in Reproductive Medicine and Surgery (RMS) part of the SpR in Obstetrics and Gynaecology HARI Scheme recognised by the Institute of Obstetricians and Gynaecologists and RCPI. This facilitates SpR's with an interest in RM to receive 12 months of training in HARI.

The British Fertility Society continued HARI recognition for medical training in the following certified special skills modules: Pelvic Ultrasound, Embryo Transfer/IUI, Management of the Infertile Couple and Assisted Conception. HARI is also certified as the only RCOG subspecialty training centre in Reproductive Medicine and Surgery in Ireland. In November, Dr Nikhil Purandare was appointed as a Subspecialty Trainee in Reproductive Medicine and Surgery for a duration of 2 years, training recognized by the RCOG.

The unit is similarly recognised for training purposes by the Association of Clinical Embryologists, UK. Ms Ciara Hughes and Ms. Gerri Emerson are certified embryology trainers, three embryologists have completed their training and a further two embryologists were undergoing the ESHRE training programmes in 2013-2014.

Staff recognition nationally and internationally

Ciara Hughes continued her roles as Chair of the Irish Clinical Embryology Society (ICE) and executive member on the ACE committee, and has been appointed to update the joint BFS and ACE single embryo transfer guidelines. Gerri Emerson continued as the Irish Clinical Scientist National Representative to ESHRE (European Society of Human Reproduction and Embryology). Dr Karen Deignan has qualified as Senior Embryologist on the ESHRE certification scheme.
Mrs. Joan Hamilton continued as the Chairperson of the Irish Fertility Counsellor Association (IFCA).
Dr. Edgar Mocanu continued as member of Board of Directors of the International Federation of Fertility Societies (IFFS), Treasurer of the Federation, chair the EUTCD ESHRE Task Force and member of the Clinical Advisory Group of the Institute of Obstetricians and Gynaecologists. He was also nominated National Advisor Oncofertility to the National Cancer Control Programme (NCCP).

5. QUALITY AND SERVICE IMPROVEMENTS

Quality and patient safety are the cornerstones of the culture within HARI with a very successful audit taking in place in February 2013 by the Irish Medicines Board. . Our dedicated Quality Department works closely with all staff within the unit to ensure that the best possible care is provided in an environment of optimal patient safety. Key to this has been the implementation of an extensive Quality Management System (QMS). The effectiveness of the QMS is maintained through teamwork and the commitment of staff. As part of our dedication to continuous quality improvement all our staff members receive ongoing education on the importance of their contributions to quality and patient safety and their role as part of the healthcare team.

IT system

Appointments are managed more easily and clients now received SMS alerts as reminders. As part of the clinical review meeting, the team are now able to view a summary of the entire patients history on screen. This improves decision making skills for further treatment plans. An activity system has been derived on the system

which allows staff to inform colleagues if they need to contact patients or follow up on any urgent actions with the aim of improving timely response and better patient care. A chart tagging system was introduced which allows the tracking of charts to all areas. This was combined with an over haul of the chart filing system which is now a much more efficient system for filing and retrieval. Portable phones and direct dial numbers have been issued to key staff and departments to ensure easy access to the appropriate people with increased efficiency.

Embryology

The embryology laboratory continues to be at the forefront of developments in Reproductive technology with the introduction of laser technology and also a computer aided semen assessment system. The laser technology is used to assist the hatching of embryos with the aim of improving implantation. It is also used to collapse blastocyst embryos prior to freezing as this has shown to improve survival rates. The computer aided semen assessment has offered HARI are more accurate and consistent method of assessing concentration and motility.

In 2013, the HARI laboratory was the first in Ireland to introduce continuous culture media for embryo development. Being able to support the embryos by ensuring that they get the correct nutrients when they require them with the additional benefit of not having to disturb them in culture has significant potential to increase success rates for couples. The addition of an embryology consult at time of treatment ensures that the couples understand the details of the procedures as they go through treatment. After a robust research and validation program the unit introduced single step culture media to support development of zygotes. The research and validation process identified that this change might offer patients increased success rates going forward.

Clinical

Natural cycle IVF where the ovaries are not stimulated has been successfully introduced initially as an end of the line therapy prior to donor oocytes. Success rates below 40 years of age reached 13%. At present we are exploring this therapy for couples where the female is young (<30 years of age) and a male factor is present.

6. ACADEMIC ACTIVITY

The teaching in Reproductive Medicine of students from Trinity College and the Royal College of Surgeons in Ireland continued in the Rotunda and the HARI Unit. Attendance at infertility clinics, theatre and ward rounds were routine during the academic year. The RCSI Consultant Senior Lecturer attended regular student tutorials in HARI and participated as a final year examiner for RCSI and TCD students.

From a scientific point of view, during a very busy and successful year HARI staff engaged in numerous activities at national, European and international level, as presented below. Dr Mocanu was invited as Editorial Board member of Human Fertility, the official journal of the British Fertility Society and continues the ad-hoc referee activity for 5 other journals in the Reproductive Medicine arena.

Scientific publications (peer reviewed Journals)

Straub, A Aslani, K Enohumah, R Rahore, I Conrick-Martin, D Kumar, M Campbell, P Dicker, E Mocanu, JP Loughrey, NE Hayes, CL McCaul. Evaluation of the effect of intra-operative intravenous fluid on post-operative pain and pulmonary function: a randomized trial comparing 10 and 30 ml kg– 1 of crystalloid. BD Ir J Med Sci. 2013 Dec 10. [Epub ahead of print] PMID: 24323549.

Emerson G, Deignan K, O'Toole R, Afridi S, Hughes C, Roopnarinesingh R, Mocanu E. Clinical pregnancy from a vitrified/ warmed human blastocyst. Ir Med J. 2013 Oct;106(9):280-1.

AP Ferraretti, V Goossens, M Kupka, S Bhattacharya, J de Mouzon, et al., Assisted reproductive technology in Europe, 2009: results generated from European registers by ESHRE. Human Reproduction 2013, 28 (9), 2318-2331.

Book chapters

1. Mocanu E, Kelly J. Towards and Ovarian hyperstimulation syndrome (OHSS) free clinic. In Proceedings of the IFFS 21st World Congress on Fertility and Sterility. (2013).

Peer reviewed published abstracts

1. B Hughes Lynch, G Emerson, C Hughes, E Mocanu. Cumulative clinical pregnancy rates (CCPR) and implantation rates in patients undergoing intra cytoplasmic sperm injection (ICSI) with cryopreserved testicular aspirated sperm (Cryo-TESE). Fertility and Sterility 100 (3), S29-S29.

2. C Harrity, D Vaughan, G Emerson, E Mocanu. Effect of blastocyst stage and grade on successful embryo transfer. Fertility and Sterility 100 (3), S288-S288.

3. C Harrity, V Denis, V Ciprike, G Emerson, E Mocanu. Does past exposure to hepatitis B virus effect ART outcomes? Fertility and Sterility 100 (3), S474-S475.

4. V Ciprike, C Harrity, PVW Ooi, G Emerson, EV Mocanu. Should oestradiol levels be routinely performed in hormone replacement therapy (HRT) controlled frozen embryo transfer (FET) cycles? Fertility and Sterility 100 (3), S96-S96.

5. DA Vaughan, H Conor, E Mocanu. The oestradiol/oocyte ratio predicts the outcome of assisted reproductive technology (ART) treatments. Fertility and Sterility 100 (3), S466-S466.

6. PVW Ooi, SP Detho, V Ciprike, C Harrity, EV Mocanu. The application of natural IVF/ICSI treatments in an Irish setting. Fertility and Sterility 100 (3), S458-S459.

7. F Sutton, G Emerson, J Kelly, E Mocanu. Cumulative clinical pregnancy rates (CCPR) and laboratory outcomes in females with elevated anti-mullerian hormone (AMH) level compared to females with normal AMH levels. Fertility and Sterility 100 (3), S352-S353.

8. K Deignan, G Emerson, E Mocanu. Blastocyst gender bias. Fertility and Sterility. Fertility and Sterility 100 (3), S480-S480.

9. RAM Rice, C Harrity, E Mocanu, G Emerson, J Kelly. Have advancements in ovarian reserve testing resulted in a decline in the number of stopped cycles in ART? Fertility and Sterility 100 (3), S62-S62.

Scientific presentations (oral and posters)

1. B Hughes, G Emerson, C Hughes, E Mocanu. Reproductive outcomes in young females with different aetiologies undergoing ART. Oral presentation. 16th May 2013, IFS Meeting. Athlone.

2. V Ciprike, C Harrity, PVW Ooi, G Emerson, EV Mocanu. Should oestradiol levels be routinely performed in hormone replacement therapy (HRT) controlled frozen embryo transfer (FET) cycles? O-313. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.

3. B Hughes Lynch, G Emerson, C Hughes, E Mocanu. Cumulative clinical pregnancy rates (CCPR) and implantation rates in patients undergoing intra cytoplasmic sperm injection (ICSI) with cryopreserved testicular aspirated sperm (Cryo-TESE). O-92. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
4. RAM Rice, C Harrity, E Mocanu, G Emerson, J Kelly. Have advancements in ovarian reserve testing resulted in a decline in the number of stopped cycles in art? O-205. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
5. PVW Ooi, SP Detho, V Ciprike, C Harrity, EV Mocanu. The application of natural IVF/ICSI treatments in an Irish setting. P-1075. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
6. F Sutton, G Emerson, J Kelly, E Mocanu. Cumulative clinical pregnancy rates (CCPR) and laboratory outcomes in females with elevated anti-mullerian hormone (AMH) level compared to females with normal AMH levels. P-708. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
7. C Harrity, V Denis, V Ciprike, G Emerson, E Mocanu. Does past exposure to hepatitis B virus effect ART outcomes? P-1134. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
8. DA Vaughan, H Conor, E Mocanu. The oestradiol/oocyte ratio predicts the outcome of assisted reproductive technology (ART) treatments. P-1102. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
9. K Deignan, G Emerson, E Mocanu. Blastocyst gender bias. Fertility and Sterility. P-1154. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.
10. C Harrity, D Vaughan, G Emerson, E Mocanu. Effect of blastocyst stage and grade on successful embryo transfer. P-484. IFFS ASRM Conjoint Meeting, October, 2013, Boston, USA.

Invited lectures, chairs, media appearances

Chairs
Mocanu EV:

Chair and Organiser	Winter Forum Conference, Cluj Napoca, Romania. Session VI, *Patient centered ART- synergizing our efforts*.
Chair	The impact of reproductive surgery in increasing pregnancy rates in ART. ESHRE Campus: *Session 9. Laparoscopy in ART. April, Iasi, Romania.*
Chair	Viral disease in reproduction. Session 36. 29th ESHRE *Annual Meeting*, 9th July. 2013. London
Chair	Scientific Program Prize Paper Abstract Session 1, 14th October. IFFS ASRM *Conjoint Meeting, 2013, Boston, USA*
Moderator	RTW33 OHSS Free Clinic- Possible and How? 16th October. *IFFS ASRM Conjoint Meeting, 2013, Boston, USA*

Invited lectures:

Hughes C

Hughes C.	Preserving Fertility with Cancer- Post Graduate Course, School of Nursing , UCD, Dublin January 20131

Hughes C. Preserving Fertility for Breast Cancer Patients, Post Graduate school of Nursing , Advanced Breast Care Nursing UCD. May 2013

Hughes C. Preserving Fertility for Breast Cancer Patients, Educational Meeting, Mater Private Hospital , Dublin. September 20131

Hughes C. How technology can improve outcomes – a guide to developments in embryology. Lomond Park, Limerick September 2014.

Hughes C. Fertility Preservation: Fertility and the Haematology Patient, Post Graduate Nursing in Oncology and Haematology, Beaumont HospitalHaematology Education Programme, St James Hospital September 2013

Hughes C. Sharing Best Practice in Fertility Nursing – Preserving Fertility for Oncology Patients, Croke Park Hotel, Dublin, Ireland November 2011

Hughes C. Post-Graduate Diploma in Haematology Nursing Lecture, St James's Hospital November December 2013

Hughes C Sessional tutor for RCSI 4th yr Medical students – Introduction to Embryology 1

Mocanu EV:

The role of natural killer cells in ART. St James's Hospital Immunology Grand rounds. Dublin, January 2013

Mocanu EV: *Prognostic and complications of reproductive surgery.* ESHRE Campus Symposium: The impact of Reproductive Surgery in increasing pregnancy rates in ART, Iasi, Romania, 12th April 2013.

Mocanu EV: *Fertility following breast cancer treatment*. IANO 31st Annual Conference, Dublin, 19th April 2013.

Mocanu EV: *Fertility Issues for cancer patients*: what are they and how can we help? Hot topics in Oncology Meeting, Dublin, 27th April 2013.

Mocanu EV: The role of the European Tissue Directive on TQM. ESHRE 2013 Pre Congress Course 12, 7th July, London.

Mocanu EV: Towards an ovarian hyperstimulation syndrome-free clinic. IFFS ASRM Conjoint Meeting, Trilogy 12- Safety in ART. 16th October, 2013, Boston, USA.

Mocanu EV: Polish Session. Facilitating the couple, protecting the practitioners, Regulation of ART. IFFS Regional Meeting. Fertility and Sterility Special Interest Group Polish Gynaecological Society. IFFS ASRM Conjoint Meeting Boston, 15th October, 2013.

Mocanu EV: Infections from conception to birth-role of ART. Implications of the EU Tissue Directive. 8th November, ESHRE Campus, 2013, Berlin.

Courses organised

Hughes C. ICE Scientific Day – Basic Microscopy Training (Research Instrument UK Micron Optical, Rob Watkins Grafton Suite, Dublin May 2013.

Hughes C. ACE Microscope Practical Training Course October 2013, Cambridge IVF

Conference Course Attendance

Deignan, K	Practical training in Embryo and Blastocyst Biopsy, UCL October 2013
Emerson G	Irish Fertility Society Annual Meeting, Athlone, May 2013
Emerson G	ICE Scientific Day – Basic Microscopy Training (Research Instrument UK Micron Optical, Rob Watkins Grafton Suite, Dublin May 2013.
Furlong J	Irish Clinical Embryologist Meeting- PGD Workshop, November 2013 Dublin
Furling J	ICE Scientific Day – Basic Microscopy Training (Research Instrument UK Micron Optical, Rob Watkins Grafton Suite, Dublin, May 2013.
Hughes B Lawson C.	ESHRE, 28th Annual Meeting London July 2013
Hughes B	ASRM 69th Annual General Meeting, Boston, October 2013
Hughes B	Irish Clinical Embryologist Meeting- PGD Workshop, November 2013 Dublin
Hughes B	ICE Scientific Day – Basic Microscopy Training (Research Instrument UK Micron Optical,) Rob Watkins Grafton Suite, Dublin May 2013.
Berney C.A.	BFS, June 2011,
Finnamore L.	BFS, June 2011
Furlong J.	IVI Hands on Workshop for Vitrification, Valencia, Spain, April 2011
Hughes C.	ACE Annual Conference – January 2013, Liverpool
Hughes C.	Best Practice Meeting (Association of Clinical Embryologists) Sheffield 22nd May 2013
Hughes C Emerson G.	ESHRE, 287th Annual Meeting London July 2013
Hughes C	ASRM 69th Annual General Meeting, Boston, October 2013
Johnson J	ICE Scientific Day – Basic Microscopy Training (Research Instrument UK Micron Optical, Rob Watkins Grafton Suite, Dublin, May 2013.
Johnson J	Irish Clinical Embryologist Meeting- PGD Workshop, November 2013 Dublin
Larkin L.	ESHRE, 28th Annual Meeting London July 2013
Larkin L	Practical training in Embryo and Blastocyst Biopsy, UCL October 2013
O'Reilly F	NEQAS Training Day Semen Assessment, Manchester, March 2013
Piersa K	NEQAS Training Day Semen Assessment, Manchester, March 2013

Acknowledgements

In the circumstances of a very competitive environment HARI continues to deliver a state of the art service to couples requiring medical intervention in order to fulfill their dreams for a family. I would like to acknowledge and thank all HARI staff for their dedication and continuous strive towards better patient care. I would also like to thank all Rotunda staff for their essential contribution.
.

Edgar Mocanu, 2014

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 the shortlisting of the Rotunda Hospital Laboratory as finalist in the 2013 Irish Medical Laboratory of the Year awards and in continuing accreditation to International Organisation for Standardisation ISO15189 requirements across all departments. The Laboratory Annual Management Review, User Surveys and Users Committee meetings inform the laboratory management of any concerns regarding the services provided and also any changes in the requirements of service users. Quality objectives are in place to ensure that the needs and requirements of users are met; these quality objectives are reviewed annually.

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

TABLE 1: TESTS PERFORMED IN-HOUSE IN 2013

Department	Specimens / Cases*	% Change over 2012	Tests / Blocks*	% Change over 2012
Haematology	47,201	-1	665,287	-1
Blood Group Serology	30,661	7.9	30,661	7.9
Transfusion	4,887	13	4,887	13
Clinical Microbiology	45,748	-6.3	88,805	-4.3
Virology / Serology	13,236	-3.2	30,427	-8.1
Biochemistry	22,543	-11	198,600	-8
Histopathology	4,333	-2.0	9,567	-23.2

*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 2013

	Specimens	% Change over 2012	Tests	% Change over 2012
Haematology	1,646	-25.7	3,950	-17.1
Biochemistry*	4,173	11.7	7,692	-1.8
Microbiology	4,524	-0.2	19,480	7.07
Rubella/VZ/Syphilis	30,228	-1.5	30,515	-1.2

* Serology Confirmation and other specialized tests
VZ: Varicella Zoster

STAFFING

Consultant posts
Dr Fionnuala Ni Ainle was appointed as Consultant Haematologist in March 2012. Dr John Gillan, Consultant Histopathologist retired.

Laboratory manager
Following continued effort in 2013 by Laboratory Management and the Hospital Executive Team, the necessary HSE approval and funding for a shared post of Consultant Microbiologist was achieved. Dr Richard Drew was subsequently appointed as Consultant Microbiologist in early 2014. Dr Andrea Malone joined as part-time temporary Consultant Paediatric Haematologist in February 2013. Dr Ursula Nusgen joined as part-time temporary Consultant Microbiologist in January 2013.

Medical Scientist posts
Ms Gemma Tyrell and Ms Michelle Burns joined the departments of microbiology and haematology respectively in May 2013.

QUALITY DEPARTMENT:

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

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

The Department of Laboratory Medicine is assessed by the Irish National Accreditation Board (INAB) against ISO standards 15189 and 22870. In addition, the departments of Blood transfusion and Haemovigilance are inspected against the EU directive 'minimum requirements for Blood Bank Compliance', article 14 (traceability) and article 15 (notification of serious adverse reaction and events).

In 2013, following an inspection by INAB, the accreditation of the department of laboratory medicine was renewed in all disciplines including point of care testing (POCT). The accreditation process was extended to POCT in 2013 as assessed to the standard ISO 22870 for the first time with respect to blood gas and Hemocue analysis. The INAB assessment process examined POCT across the clinical and laboratory environment. INAB assessed the ability of the laboratory to provide governance and a service to facilitate evaluation of new or alternative POCT instruments /systems. The standard mandates that procedures and policies exist governing purchase, installation, validation and running of equipment, maintenance of consumables and reagents and provision of training to POCT operators. A documented procedure for quality control and quality assurance is in place. Ms Jane Halligan should be acknowledged for her work in enabling us achieve accreditation in this joint area of providing a near patient test service.

An up-to–date record of the status of the accreditation of the Department of Laboratory Medicine can be found on the following websites: www.inab.ie. The assessment team commended the laboratory on the quality management system in place. An inspection is always challenging but is a great learning opportunity for all involved. The inclusion of all staff in the laboratory in the accreditation process has been recognised in the reports of the inspection bodies over the recent years, which is gratifying.

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. This is achieved through documented procedures in testing, management and day to day running of the laboratory being systematically reviewed. An audit calendar is drawn up at the beginning of each year. In 2013 the laboratory was involved in the planning and execution in a number of clinical audits to address trends identified by monitoring non-conformances and complaints.

The laboratory consults users through surveys and user group meetings. In 2013 an in-house user survey was completed during the first quarter. External users of the Andrology services were surveyed in the final quarter on their satisfaction of the service provided and the patient experience.

The laboratory information management system APEX was upgraded to APEX version 5.8 in July 2013 and the Q-Pulse system was upgraded to Q-Pulse version 5.9 in 2013.

The laboratory submits an Annual Report for Blood Transfusion to 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 2013. The annual report for Blood Transfusion for 2011 submitted to the Irish Medicines Board (IMB). This was satisfactory and no visit was deemed necessary.

The quality management system is embedded across the laboratory services and is dependent on all those working in the laboratory. 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.

HISTOPATHOLOGY DEPARTMENT

STAFF

Consultants:	Dr. Deirdre Devaney, Dr Eibhlis O'Donovan, Dr Emma Doyle
Locum Consultant:	Dr Sean O'Briain
Registrars:	Dr Alan Beausang, Dr Ruth Law
Chief Medical Scientist:	Colma Barnes
Senior Medical Scientist:	Ms Phil Bateson,
Medical scientists:	Ms Sarah Morris, Ms Aderanti Morenigbade, Mr Michael Smith, Ms Tokiko Kumasaka, Ms Miriam Hurley
Senior Anatomical Technician:	Mr Bill O'Neill
Laboratory Aide:	Mr. Martin Fitzpatrick

The following Tables indicate the number of autopsies (full, limited, and Coroner's) performed in 2013.

TABLE 3: AUTOPSY WORKLOAD >500GRAMS

	Full Postmortem	Limited Postmortem	Coroners case	Total
Stillbirths	21	6	1	28
Early Neonatal deaths	7	2	5	14
Late Neonatal deaths	0	0	0	0
Total	28	8	6	42
Outside cases*	0	0	1*	
% of Total PMs	27.2%	7.8%	5.8%	40.8%

*Includes 1 outside case.

TABLE 4: AUTOPSY WORKLOAD <500GRAMS

	Full Postmortem	Limited Post mortem	Coroners case	Total
No. of PMs	53	6	2	61
% of Total PMs	51.5%	5.8%	1.9	59.2%

TABLE 5: ROTUNDA PERINATAL MORTALITY FIGURES: 2013 (0-7DAYS)

	No examination	Limited examination	Full Post Mortem	Coroners Cases	Total
Stillbirths	14	6	21	1	42
Early Neonatal deaths	14	2	7	4	27
Total	28	8	28	5	69

PERINATAL PATHOLOGY

The perinatal autopsy service in 2013 was as busy as the previous year (103 cases in 2013 with 101 cases in 2012). 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 2013.

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 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 endeavor 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.

103 autopsies were performed in 2013 (42 >500g and 61 <500g) leading to an overall autopsy rate (AR) of 47.2% (42+61=103/218 cases through mortuary) in comparison to 45.3% in 2012 and 42.3% in 2011. The AR (Full, limited and coroners cases) for >500 g was 54.5% (42/77) and 43.3% (full and limited – 61/141) for <500g. These figures take into account some external transfers and late neonatal deaths. The AR for the Rotunda cases (perinatal mortality figures) is 59.4% (41/69 cases) up from 50% last year We performed 8 post mortem examinations at the request of the coroner (in comparison to 15 last year) 1 of these was an external case and 2 were below 500g.

As mentioned above, it is our policy to examine the placenta on all cases of perinatal deaths. There were 69 > 500g, 67 of these cases had placental examination. In the other two cases, one baby had a known Trisomy 18, the other however had no post mortem and no placental examination.

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.

69 cases:			
Congenital Malformation		29	(42%)
Placental causes:		21	(30.4%)
Cord	7		
Parenchyma	14		
Prematurity / Immaturity		1	(1.5%)
Infection		8	(11.6%)
Other		2	(2.9%)
Unknown		8	(11.6%)

The 29 congenital malformations included 8 babies with chromosomal abnormalities (2 babies had trisomy 21 and 3 had trisomy 18, 1 had trisomy 13 ,1 had monosomy 13q and 1 had an abnormal karyotype), 6 babies were born with neural tube defects (3 with anencephaly and 3 with encephalocoeles), 3 babies had cardiac malformations /congenital arrhythmias, 1 with a diaphragmatic hernia, 2 babies had bladder outlet obstruction. There was 1 case of sirenomelia and 4 cases of multiple congenital anomalies. There was 1 case of holoprosencephaly, 1 case of hydrops consequent upon bronchopulmonary dysplasia and 1 case of polysplenia / asplenia/ heterotaxy complex, and one further case of hydnops.

In the placental category, there were 7 cord accidents identified. There was evidence of chronic uteroplacental insufficiency in 10 (including 4 cases of placental abruption) cases. There were 2 cases of villitis, 1 case of delayed villous maturation and 1 cases of a neonatal death due to twin to twin transfusion syndrome.

8 deaths were attributed to infection. All of these were ascending infection. In the ascending infection group, E. Coli was isolated from 3 babies and Group B streptococcus was isolated from 1 baby. Four babies had negative cultures 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 four cases would be relegated to the unexplained category despite the fact there is histological evidence of infection.

There was one neonate who was assigned to the prematurity category.

The miscellaneous category included two cases of fetomaternal haemorrhage.

There were 8 cases that had no identifiable cause of death giving an unexplained rate of 11.6% (in comparison to 8.8 % last year). Significantly 5 of these 8 cases did not have any form of post mortem examination.

Cause of Death (<500g)

141 cases:	
Congenital Malformation:	15 (10.6%)
Placental:	29 (20.6%)
Infection:	35 (24.8%)
Other:	1 (0.7%)
Unexplained:	61 (43.3%)

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 (1.22grams – 499grams) with 39 (27.6%) of these cases being 10 grams or less.

Placental Examination:

The placental work load was modified in 2012. During that year we introduced a triage system for placental examination following 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. 1629 placentas were referred to the laboratory for examination in 2013. 590 (36.2%) fulfilled the criteria for gross examination only. The remaining 1039 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.

Surgical pathology:

The Histopathology department continued to provide a diagnostic service to the colposcopy clinic, supporting the activity generated by the NCSS programme. Multidisciplinary meetings for the colposcopy service were held on a regular basis. The department continues to participate in the National Quality Assurance programme in Histopathology with data submitted centrally to NQAIS.

TABLE 6: ANALYSIS OF THE SURGICAL PATHOLOGY WORKLOAD FROM 2010-2013

Surgical data (no. & % increase from prev year	2010 no.	2010 % Incre-ase from 2009	2011 no.	2011 % Incre-ase from 2010	2012 no.	2012 % Incre-ase from 2010	2012 % Incre-ase from 2011	2013 no.	2013 % Incre-ase from 2010	2013 % Incre-ase from 2011	2013 % Incre-ase from 2012
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
Total no. of Specimens	5454	35.5	5571	2.15	5467	0.24	-1.87	5364	-1.65	-3.72	-1.88
Total no. of Tissue Blocks	11661	33	13114	12.46	12464	6.89	-4.96	9567	-17.96	-27.05	-23.24
LLETZ											
Total no. of Cases:	783	46.3	914	16.58	752	-4.08	-17.72	465	-40.69	-49.12	-38.16
Total no. of Specimens	1160	40.4	1175	1.29	910	-21.55	-22.55	520	-55.17	-55.74	-42.86
Total no. of Tissue Blocks	4906	66.1	6045	23.22	4906	0	-18.84	2296	-53.2	-62.02	-53.2
Colcb											
Total no. of Cases	732	177.3	991	35.38	1014	38.52	2.32	1013	38.39	2.22	-0.1
Total no. of Specimens	915	221.5	1214	32.68	1242	35.74	2.31	1366	49.29	12.52	9.98
Total no. of Tissue Blocks	916	165.5	1216	32.75	1246	36.03	2.47	1374	50	12.99	10.27

TABLE 7: LLETZ & COLPOSCOPIC BIOPSY GRADING 2013

CASES	CIN 1	CIN 2	CIN 3	CGIN/AIS	SCC incl microinvasion	Adenoca
LLETZ	127	126	162	3	7	2
COLCB	493	191	125	2	2	2

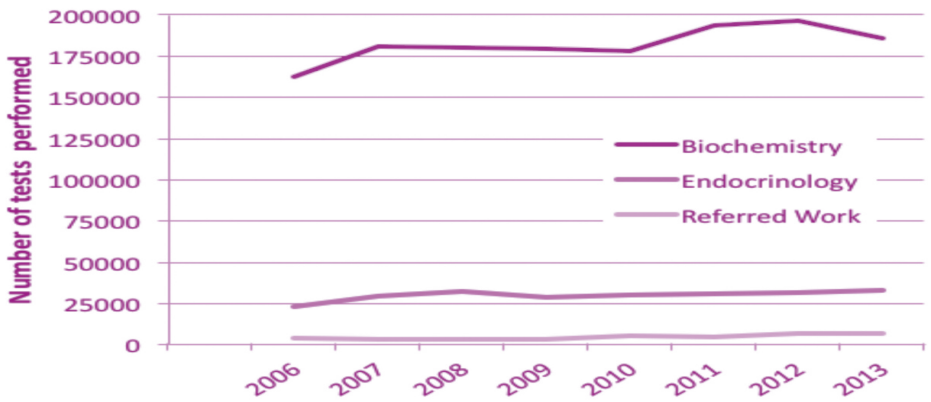
BIOCHEMISTRY:

Consultant:	Prof Philip D Mayne
Chief Medical Scientist:	Ms Ann Downey
Senior Medical Scientist:	Ms Sharon Campbell
Medical Scientists:	Ms Lorna Pentony
	Mr Damian Lally
Clinical Scientist:	Ms Aiveen O'Malley
Laboratory Assistants:	Mr Paul Reilly

Following a year of significant staff changes, 2013 was relatively quiet. Ms Ann Downey, Chief Medical Scientist resigned her position toward the end of the year. Approval was granted to advertise the post and an appointment will be made in early 2014.

The total number of Biochemistry tests requested during 2013 dropped slightly by 5.7% (Table 8), corresponding to a slight decrease in the number of individual patient samples received. However, there was a modest increase in number of endocrine investigations performed and samples referred to external laboratories, both in Ireland and abroad.

TABLE 8: Biochemistry Departmental Workload



A review of the changes in the number of individual tests requested showed quite a variance with some increasing significantly by more than 50% while others, requested in relatively small numbers, decreased by more than 40% (Table 9). There was a significant increase in the number of samples analysed for glucose due to an increase in the number of glucose tolerance tests (GTT) performed. However, following the adoption of the HSE national guidelines for the management of pre-gestational and gestational diabetes, it is anticipated that although the number of GTTs might continue to increase, the total number of samples analysed for glucose should fall due to the implementation of the revised GTT protocol.

As there had been a sustained increase in the number of requests for B12 and folate analyses, it was agreed to repatriate these investigations as part of cost containment. In contrast, there was a significant decrease in the numbers of requests for CK, LDH and GGT, such that it was no longer appropriate that these non-urgent tests should be performed on-site. These samples are now referred out and the tests removed from the Biochemistry in-house testing repertoire and scope. A decrease in the number of requests for fasting lipids was also noted.

TABLE 9: Significant changes in requesting patterns of some biochemical tests.

Test – marked increase	Change%
Glucose	20%
B12	52%
Folate	61%
Ferritin	68%
CA125	15%
Test - Marked decrease	**Change**
Lipid profile	72%
CK	66%
GGT	43%
LDH	49%

The Point of Care Testing (POCT) Committee met on a number of occasions during the year. The poor analytical precision when measuring low blood glucose levels was addressed and the policy for referring samples to the laboratory in such situations amended. In-house POCT training was undertaken through-out the year. The Biochemistry laboratory experienced its second INAB inspection in May 2013 for compliance with ISO 15189. No non-conformances were reported by the INAB assessors. Point of Care Testing was also successfully assessed for compliance with ISO 22870. All staff are to be congratulated on a successful outcome and thanked for their hard work throughout the year.

HAEMATOLOGY and BLOOD TRANSFUSION:

Consultant: Dr Fionnuala Ní Áinle (Adult Haematology)
Dr Melanie Cotter (Paediatric Haematology)
Dr Andrea Malone (Locum Paediatric Haematologist)

Chief Medical Scientist: Ms. Deirdre Murphy

Senior Medical Scientists: Mr Ciaran Mooney,
Ms Deirdre O'Neill (returned from leave Sept 2013)
Ms Emily Forde

Medical Scientists: Ms Liliana Rasidovic,
Ms Edel Cussen (commenced career break December 2013),
Ms Noreen Brady (on leave from April 2013),
Ms Deirdre Corcoran (commenced maternity leave November 2013),
Ms Aileen Carr,
Ms Michelle Burns (commenced May 2013),
Ms Áine Meenaghan (locum post; commenced May 2013)

Laboratory Aide: Ms. Karen Fennelly

1. General Overview, and developments during 2013

During 2013, the Haematology and Blood Transfusion Laboratories continued to provide an extensive repertoire of investigations required for care of women and infants, with participation in the relevant External Quality Assessment programmes

in the United Kingdom and Ireland. In addition to routine tests (including full blood counts and coagulation screens), specialized testing including haemoglobinopathy screening by high performance liquid chromatography, thrombophilia screening and flow cytometry for quantification of feto-maternal haemorrhage are all provided in-house.

In July 2013, following extensive development of guidelines and care pathways, Hospital Management approved the launch of a programme to provide routine antenatal anti-D prophylaxis (RAADP) to all Rhesus D (RhD) negative pregnant patients, in line with national and international recommendations on prevention of RhD sensitization. The Rotunda Hospital is the largest maternity unit to implement such a programme in the Republic of Ireland to date, and the first of the Dublin Maternity Hospitals to do so.

2. Training and development initiatives

The department was approached by Dublin Institute of Technology, Kevin Street in Sept. 2012 to provide in service training for 2012/2013 Degree students. Provision of Blood Transfusion training commenced in January 2013.

Another staff member successfully completed a masters degree in 2012; since then, this excellent work has been has been accepted for peer-reviewed publication in 2014.

3. In-house workload (Table 10)

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. Consequently, a large reduction in thrombophilia testing was observed in 2013.

Table 10: Haematology in-house workload

Test Name	2013	Change	2012
Full blood count	41,302	4.8%	39,408
Manual differential	1,421	-40.4%	2.385
Manual Platelet count	8	-33.3%	12
Reticulocyte count	413	-9.6%	457
Sickledex screen	92	-17.9%	112
Prothrombin Time	2,734	-13.0%	3,144
APTT	2,970	-13.5%	3,433
Fibrinogen	2,738	-12.9%	3,144
Lupus anticoagulant	207	-22.5%	267
Kleihauer	363	2.3%	355
Haemoglobinopathy	2,558	-2.8%	2,632
Malaria	2	-80%	10
Thrombophilia	74	-74.7%	293
Total tests	**72,689**	**-14.1%**	**84,621**

APTT: activated partial thromboplastin time

4. Referred workload (Table 11)

Large reductions in the referred components of the thrombophilia screen and in requests for the plasma Anti-FXa assay were observed, following the implementation of updated evidence-based practice guidelines.

TABLE 11: HAEMATOLOGY REFERRED WORKLOAD

TEST	TESTS	% CHANGE OVER 2012
Immunology	248	-16.5
Thrombophilia (referred component)	67	-75
Haemoglobinopathy confirmation	147	10
Lymphocyte subsets	105	-37
Factor Assays	146	-15
Cytogenetics	563	-17
Molecular Genetics	61	-21
YDNA	52	-28
CG by PCR	68	-30
ESR	16	-27
D-Dimer	11	-15
Anti-Xa assay	19	-85
Homocysteine	3	-83
Haptoglobin	2	-50
Factor V Leiden	5	-100
Anti-D quantitation	83	-18
Anti-C quantitation	6	-60
Total	**3950**	**-17.1**

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

5. Blood Group Serology (Tables 12 and 13)

A 10% increase in Blood Grouping was observed as a consequence of a change in neonatal blood grouping introduced during 2013.

TABLE 12: BLOOD GROUP SEROLOGY WORKLOAD

Test	2013	Change	2012
ABO Group	22606	10.1%	20527
Rhesus (Rh) Group	21934	6.9%	20527
Antibody Screen	18437	7.7%	17120
Direct Coomb's Test	3231	3.4%	3125
Antibody Identification panel	610	-28.8%	843
Genotype	600	40.8%	426
Antibody Titre	85	14.9%	74
Antibody Elution	85	66.6%	51
Weak/Partial RhD Typing	49	63.3%	30
Flow Cytometry	817	-7.7%	885
Total Specimens	**21934**	**6.9%**	**20527**

TABLE 13: DETAILS OF RED BLOOD CELL ALLOANTIBODIES DETECTED

Antibody	Number	Antibody	Number
D	23	C	3
E	11	Fya	5
C + D	6	M	28
Cw	12	Lea	18
c +/- E	9	Leb	4
D + E	1	Jka	4
K	12	Jkb	1
E	5	Jka + Fya	1
Le a+b	4	Lea + M	1
Lea +D	1	K+E+Fya	1
Jka+Cw	1	D+C+Fyb	1
TOTAL	**152**		

6. Blood transfusion

There has been a modest increase in the number of patients transfused overall. Interestingly, an increase in fibrinogen usage and a decrease in red cell units transfused per patient were noted. A significant improvement in the cross-match to transfusion ratio was observed (Table 14), reflecting introduction of new clinical guidelines. Ongoing targeted audit aims to further improve this figure. Blood wastage remains low, particularly in the most commonly prescribed product, red cells. An increase in Anti-D use reflects the launch of the RAADP programme in 2013.

TABLE 14: BLOOD TRANSFUSION WORKLOAD

Test	2013	Change	2012
Group and save	6974	18.3%	5894
Crossmatch	1492	-19.1%	1844
Patients crossmatched	705	15.8%	609
Red Cell Units transfused	689	-7.6%	746
Patients Transfused	377	7.4%	351
Crossmatch: transfusion ratio	2.1:1	-19.2%	2.6:1
IUT (red cell units)	12	50%	8
Pedipack units transfused	104 babies	-26.7%	142 babies
Transfused Components	**2013**	**Change**	**2012**
Plasma (adult)	66	-65%	189
Plasma (paediatric)	43	72%	25
Platelets (adult)	11	120%	5
Platelets (paediatric)	42	8.7%	46
Fibrinogen (adult)	68	25.9%	54
Fibrinogen (paediatric)	35	29.6%	27
Novoseven	0	N/A	0
Anti-D	2207	41.5%	1560
Wastage:	**2013**	**Change**	**2012**
Red cell (concentrated)	1.8%	-48.6%	3.5 %
Platelets	15.9%	43.2%	11.1%
Plasma	19.9%	165%	7.5

IUT: intrauterine transfusion

7. Haemovigilance

The haemovigilance officer (HVO) continues to provide extensive education on the process of blood transfusion to clinical staff. During 2013, 154 Nurses, Midwives and Student Midwives and 54 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. The most common indication for blood transfusion in the obstetric setting remains post-partum haemorrhage. 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) or reactions to the NHO. Two SAE and one near-miss event were reported to the NHO during 2013, both of which pertained to delayed 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.

As detailed above, 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.

CLINICAL MICROBIOLOGY

1. Overview of Department of Microbiology

The role of the department of Microbiology is to assist clinicians in the investigation and management of infections. The department also contributes to the infection control programme of the hospital by generating antimicrobial resistance data, and monitoring for emerging trends in terms of healthcare associated infections.

2. Staff of the Microbiology Department

Consultant:	Dr. Ursula Nusgen (locum)
Chief Medical Scientist:	Mr David LeBlanc
Senior Medical Scientists:	Ms. Niamh Cahill
	Ms Deirdre Cafferty
Medical Scientists:	Ms Ita Cahill (0.5 WTE),
	Ms Patricia Baynes,
	Ms Ann Lamont (0.5 WTE),
	Ms Bernadette Lennon (0.5 WTE),
	Ms Ellen Lennon (0.5 WTE),
	Ms Gemma Tyrrell (started June)
	Ms Komal Lakho (started in June).
Laboratory Aide:	Ms Grainne McDonald

The department has a close working relationship and is supported by the assistance of other staff from across the hospital, namely;

- Ms. Marian Brennan, Assistant Director of Midwifery/Nursing in Infection Prevention and Control
- Ms Alva Fitzgibbon, Infection Prevention and Control Midwife
- Ms Mairead Lawless, Infectious Diseases Liaison Midwife
- Dr. Wendy Ferguson, Associate Paediatric Specialist in Infectious Diseases
- Dr. Jack Lambert, Consultant in Infectious Disease

3. Key Functions of the Microbiology Laboratory

3.1 General Microbiology Workload

The general microbiology workload incorporates the processing of clinical samples for predominantly bacterial culture. The main samples that are received are urine samples, blood cultures and swabs from non-sterile sites for culture. Overall there was a slight decrease in the number of specimens (-4.27%) and the number of tests (-6.26%) performed in the laboratory, which is in line with overall hospital activity (Table 15).

TABLE 15: Overall general microbiology activity in the department.

Sample types	Specimens 2013	% Difference over 2012	Tests 2013	% Difference over 2012
Urine	21036	-3.47	33930	-5.66
Swabs	9881	-3.18	19762	-3.18
CSF	232	-21.62	751	-19.42
Blood Cultures	2868	14.31	2868	14.31
Placenta	217	-42.13	217	-42.13
Semen	1710	-10.56	4229	-8.07
Pregnancy Tests	152	20.63	152	20.63
Screening	5896	-9.83		
PCR *(C.trachomatis and N.gonorrheae)*	2913	-6.30	2854	-7.76
IQA	843	-8.96	843	-8.96
Total specimens	**45748**	**-4.27**	**88805**	**-6.26**

CSF: cerebrospinal fluid; IQA: Internal Quality Assurance; PCR: Polymerase Chain Reaction

The largest rise in absolute specimen numbers was seen in blood cultures, with an associated rise in pregnancy tests. Typically pregnancy tests are performed as a point of care test, however the number sent to the laboratory increased in 2013.

There was a general decrease seen across other specimens sent for culture such as urines and swabs for culture. Although cerebrospinal fluid sample numbers had decreased by 21% this year, the number was still above the figure for 2011. A new category of testing was introduced in 2012 called IQA (Internal Quality Assurance), which is a required standard for ISO: 15189 Accreditation. There was an almost 9% positive reduction in this category of testing which was achieved through improved stock management and a rationalisation of the variety of test kits used.

3.1 Screening for resistant organisms

A key role of the Microbiology Department is to perform surveillance screening for resistant organisms across the hospital. This allows for outbreaks to be detected early, and also ensures that patients with resistant organisms are identified, and can then be isolated appropriately. The neonatal intensive care unit is an area where screening is particularly important to ensure the welfare of patients. The key organisms that the laboratory performs screening for are (Table 16):

- Meticillin resistant Staphylococcus aureus (MRSA)
- Rectal screens for
  - Vancomycin resistant Enterococcus (VRE)
  - Extended spectrum β-lactamases (ESBLs)
  - Carbapenem resistant Enterobacteriaceae (CRE)
  - *Pseudomonas aeruginosa*

TABLE 16: SURVEILLANCE SWABS 2013.

TEST	SPECIMENS IN 2013	% DIFFERENCE FROM 2012
MRSA Screen	5326	-6.89
Rectal Screen	12932	-12.12

The rectal screen incorporates screening for Vancomycin resistant Enterococci, extended spectrum β-lactamases, carbapenem resistant Enterobacteriaceae (CREs) and Pseudomonas aeruginosa.

3.1 Virology/Serology workload

The number of antenatal booking bloods tested is similar with the number for 2012; however the overall in-house virology testing is down on 2012 (Table 17). The laboratory continues to provide testing for the HARI unit, in line with European Union Tissue Directive. The 26% reduction in cytomegalovirus IgG testing is due to a change in practice in the HARI unit regarding testing.

During 2013 there have been some significant changes in practice:

- As part of a cost saving initiative, urgent varicella zoster IgG tests and confirmation of hepatitis B core antibody levels are now sent to the National Virus Reference Laboratory (NVRL).
- The Abbott Architect analyser now performs testing 4 days a week instead of 5 days a week in order to help rationalise the amount of internal quality assurance that is required. This has allowed for the deployment of staff to other duties within the department.
- An income-generating service level agreement with MedLab pathology was signed to perform a selection of urgent virology tests.
- The situation of sending booking bloods for Rubella, Varicella Zoster IgG and *Treponema pallidum* (syphilis) to two outside laboratories continued in 2013. This arose out of historical reasons but requires a re-examination. Of note, there is no direct electronic link with these outside laboratories, and all data has to be entered on the computer when the results are received. This situation is being reviewed as both staff time and resources may be better utilised if these tests were to be performed on-site.

TABLE 17: SUMMARY OF VIROLOGY AND SEROLOGY WORKLOAD

Sample types	Specimens 2013	% Difference over 2012	Tests 2013	% Difference over 2012
Tests performed in Rotunda hospital				
HIV			11265	-4.03
HbsAg			11269	-3.98
Hepatitis B Core			1922	-23.94
HepC Antibody			4435	-8.54
CMV IgG			1517	-26.61
Hep B core - vidas			12	-85.19
VZ IgG - vidas			7	-92.47
Total in-house Virology/Serology	13236	-3.22	30427	-8.05
Tests referred to other laboratories				
Rubella			10724	-1.35
Varicella IgG			9568	0
Treponemal tests	9936	+0.15	10223	-0.49
Parvovirus B19			510	58.88
Confirmation and other specialist tests referred externally (MA)			1052	-2.32
Confirmation and other specialist tests referred externally	4524	-0.20	10480	+7.07
Total number of referred tests			**42557**	**1.57**

3.4 Andrology workload

Semen analysis for infertility testing and post vasectomy testing continued into 2013 and was fully accredited to ISO: 15189 in early 2013. Semen analysis for infertility is by appointment from Monday through Wednesday in the morning, and for the first time a medical scientist has specifically been assigned to carry out these tests. In view of accreditation, new forms were designed to facilitate reporting of results, which has had an adverse impact on turnaround time for reporting of results. Sample numbers for infertility were up slightly in 2013 (3.71%), however overall numbers for semen analysis were down by 10.56%, reflecting a drop in samples for post vasectomy testing.

3.5 Accreditation workload

Work involved in continuation of the ISO: 15189 standards continue to be both challenging and time consuming. Batch acceptance (Internal Quality Assurance) of all reagents, media, antibiotics and kits, began in 2012 and continued into 2013. This is an important part of providing a quality service and although IQA was down slightly in 2013 from 2012, this does not capture all the work involved.

Accreditation also involves updating standard operating procedures (SOPs) on a continual basis, to ensure that they remain in line with 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 other new staff members or returning staff members from 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 and is looking forward to implementing the new ISO standards for 2012.

The laboratory was again inspected by INAB in 2013, and continues to enjoy ISO: 15189 Accreditation.

4. Surveillance

Surveillance of resistant organisms continues to be a major part of the work of the Microbiology department, on one hand the laboratory processing of the samples but on the other hand the collection and analysis of surveillance data. Data is presented to the infection control committee and this data contains information regarding infection clusters, blood stream infections and antimicrobial resistance patters. Surveillance data is also presented to the Neonatal Infection Prevention and Control group to allow for monitoring of the situation in the neonatal intensive care unit (NICU). The infection control report that has been completed for the Board will contain the detailed analysis of the surveillance data for the year; however some key points have been included below:

- Surveillance of the adult blood cultures saw a continuation of contamination among the positive blood cultures (4.85%), which is slightly up on the 2012 figure (4.15%). Data sharing between the other two Dublin maternity hospitals began in late 2013 and blood culture numbers and rates of contamination can be compared.
- During 2013 the rectal screening of patients in the NICU yielded results that were similar to that of 2012. In 2013 the incidence of each of the resistant organisms is shown below:
    - 24 Gentamicin resistant Coliforms,
    - 14 AmpC producing Coliforms,
    - 6 ESBL producing Coliforms,
    - 10 *Pseudomonas spp*
    - 75 *Candida sp.* (Candida screening ceased in December 2013)
- Screening for MRSA continued, yielding a total of 36 positives patients in 2013, 8 of which were in the NICU. These results are similar to previous years and the Rotunda continues to enjoy low rates of MRSA.
- All cases of bacteraemia due to the organisms of interest as specified in the Enhanced Antimicrobial Resistance Surveillance System (EARSS) were reported. In total 14 cases were reported
    - 11 *E. coli*
    - 2 *Staphylococcus aureus*
    - 1 *Enterococcus. feacalis*,

- A surveillance folder was set up in 2013 on a shared drive and is only accessible by the Microbiology staff, Surveillance Scientist, Consultant Microbiologist and Infection control team. This is a database where numbers and rates of positive blood cultures, MRSA, resistant Gram-negative bacilli and other pertinent data are kept. It is reviewed on a daily basis and kept up to date by the Microbiology team.
- A new selective screening agar has been introduced for the neonatal unit to detect *Pseudomonas aeruginosa*, a Gram-negative organism which can lead to septicaemia.
- There were two cases of *Clostridium difficile* associated diarrhoea in 2013 and both were community acquired.
- There were 4 positive test results for Norovirus as tested by PCR

5. Changes in Laboratory Equipment and testing procedures

5.1 Validation of EUCAST

Komal Lakho (Final Year Medical Scientist Student) was given a placement in the Microbiology department during the spring of 2013. Her final year project was to validate the EUCAST susceptibility standards against the currently in-use CLSI standards. This was an extensive piece of work involving the validation of different agar and susceptibility testing on the Vitek 2 for a number of different antimicrobials. Komal wrote her thesis entitled: "Validation of EUCAST and comparison with CLSI in a Clinical Laboratory setting" on this project for which she was awarded her degree. EUCAST was implemented for clinical testing in late 2013.

5.2 Changes in agar media

MacConkey agar media was replaced with urine chromogenic UTI media and the number of samples requiring neomycin agar media was reduced. Some agar media (UTI & MRSA) is now been sourced at an alternative supplier and a much-reduced cost. All of these changes in agar media has resulted in cost-savings to the department. New *Pseudomonas aeruginosa* selective agar was introduced to improve the turnaround time for screening in the NICU.

5.3 Changes in Urine testing

A number a small changes occurred on urine testing to improve turnaround times, reduce waste and be more cost effective.

- New selective agar was introduced which had a cheaper cost price
- Blood agar was dropped from Catheter specimen urines as it was regarded as non-beneficial to the results
- Urine chemistry dipsticks were dropped from baby samples as it was not clinically relevant or viable as a testing option

5.4 *Chlamydia trachomatis & Neisseria gonorrhoeae* Polymerase Chain reaction analysis

The cobas TaqMan 48 analyser for performing molecular testing of both First Visit Urines and Endocervical swabs for Chlamydia and gonorrhoea was replaced with the much-improved Cobas 4800 (x and z) analyser. This was a free upgrade, which allows the scientist to walk away from the analyser once the samples are on, enabling the scientist to perform other important duties.

The cost of performing the tests was halved and the chances of repeating a test on the specimen is dramatically reduced due to the low numbers of inhibitors present compared with the older analyser. Also, the analyser is validated for any urine type, high vaginal swabs, cervical swabs and endocervical swabs. Of note, turnaround times, have been greatly improved since upgrading to the platform and the system is now fully accredited to ISO: 15189.

5.5 Blood Culture Reporting times

Blood cultures are now loaded onto the BacT Alert 3D analyser as soon as they reach the laboratory 24/7. Also, blood culture results are reported negative at 36 hours instead of 48 hours, allowing the patient to be removed from antibiotics sooner and freeing up the bed space quicker, having the overall effect of cutting costs.

5.6 Group B Streptococcus screening

All High vaginal swabs are now been screened for GBS using a chromogenic ID agar. In general if GBS is present it is simply reported and an antimicrobial screen is not performed, as all GBS are sensitive to penicillin. However, if a susceptibility result is required, then this can be performed quickly. By not performing antimicrobial tests on these isolates, this has reduced the use of Vitek 2 cards and overall spends on these expensive tests.

5.7 New Automated Gram Stain analyser

Gram staining is an important part of a microbiological test and can influence clinicians on which antibiotic is most appropriate to treat with, particularly regarding positive blood cultures or cerebrospinal fluids. To help speed up Gram staining times and improve Gram-staining results, an analyser was sourced by tender. The Gram stain analyser that was chosen was purchased on a reagent deal and so was cost neutral. Since its introduction it has greatly improved staining results particularly from non-microbiology on-call staff.

5.8 Medibridge Link with NVRL

In 2013 SARI (Strategy for the Control of Antimicrobial Resistance in Ireland) provided funding for an electronic link with the NVRL for the upload of requests and download of results. Work on this began in late 2013 and it is hoped that after a validation process it will go live in early 2014. This will improve turnaround times for referred tests to the NVRL and reduce the time need to report these results.

6. Summary

2013 has been a good year for the Microbiology department with some key improvements made, particularly around the area of screening and surveillance. New agar for the screening of group B Streptococcus and *Pseudomonas aeruginosa* should lead to an overall improvement in the detection of these organisms. The Medibridge link will improve the turnaround time for tests sent to the National Virus Reference Laboratory, however a more detailed analysis will be done in 2014 to assess if it is possible to repatriate several serology tests into the routine service at the Rotunda to reduce the volume of blood required from patients and improve turnaround times.

APPENDIX 1. OVERALL TABLE OF TESTS PERFORMED IN THE MICROBIOLOGY LABORATORY

	2013		2012		Difference numbers		% Change	
	Tests	Specimens	Tests	Specimens	Tests	Specimens	Tests	Specimens
MSU Microscopy's	12644		13723		-1079		-7.86	
MSU Culture	12699		13790		-1091		--7.91	
MSU Dipstick	4	201	--197	-98.01				
Total MSU	25347	12680	27714	13761	-2367	-1081	-8.54	-7.86
First visit	8583	8356	8252	8031	331	325	4.01	4.05
Total Urine	**33930**	**21036**	**35966**	**21792**	**2036**	**756**	**5.66**	**3.47**
Pregnancy Tests	**152**	**152**	**126**	**126**	**26**	**26**	**20.63**	**20.63**
Blood Culture (sets)	2868	2868	2509	2509	359	359	14.31	14.31
Placenta	217	217	375	375	-158	-158	-42.13	-42.13
Total Blood Culture	**3085**	**3085**	**2884**	**2884**	**201**	**201**	**6.97**	**6.97**
CSF Culture	232		296					
CSF Gram	232		293					
CSF Cell Count	225		289					
CSF Diff	62		54					
Total CSF	**751**	**232**	**932**	**296**	**181**	**64**	**19.42**	**21.62**
Semen Volume	1710		1906		-196		-10.28	
Semen Count	1704		1912		-208		-10.88	
Semen Motility	811		782		29		3.71	
Semen Morphology	4		0		4		100.00	
Total Semen	**4229**	**1710**	**4600**	**1912**	**371**	**202**	**8.07**	**10.56**
CT PCR	2913		3109		-196		-6.30	
NG PCR	2854		3094		-240		-7.76	
Total PCR	**5767**	**2913**	**6203**	**3109**	**436**	**196**	**7.03**	**6.30**
IQA	**843**	**843**	**926**	**926**	**83**	**83**	**8.96**	**8.96**
MRSA	5326	2663	5720	2860	-394	-197	-6.89	-6.89
Rectal	12932	3233	14716	3679	-1784	-446	-12.12	-12.12
Total Screens	**18258**	**5896**	**20436**	**6539**	**2178**	**643**	**10.66**	**9.83**
Swabs	**19762**	**9881**	**20412**	**10206**	**650**	**325**	**3.18**	**3.18**
Sensitivities	**2028**		**2254**		**226**		**10.03**	
Total	**88805**	**45748**	**94739**	**47790**	**5934**	**2042**	**6.26**	**4.27**

PUBLICATIONS AND ABSTRACTS AT INTERNATIONAL CONFERENCES:

Peer reviewed Journals

Coss KP, Doran PP, Owoeye C, Codd MD, Hamid N, Mayne PD, Crushell E, Knerr I, Monavari AA, Treacy EP. Classical Galactosaemia in Ireland: 40 years incidence rates, Complications and outcome of treatment. JIMD 2013;36:21-7

Lynch M, Devaney D, Khaw Y, O'Donnell B. Bullae of the hands, feet, and perioral area in a 3-month-old infant. Bullous pemphigoid. Pediatr Dermatol. 2013 Jan-Feb;30(1):135-6.

Lynch M, O'Loughlin A, Devaney D, O'Donnell B. Fabry's Disease in a Female, Still an Under-Recognised Disease. Ir Med J. 2013 May 106 (5): 158.

Treacy A, Cryan J, McGarvey C, Devaney D, Matthews TG. Sudden Unexpected Death in Childhood. An audit of the quality of autopsy reporting.
Ir Med J. 2013 Mar;106(3):70-2.

Corcoran D, Donnelly J, Murphy D, Ní Áinle F. The prevalence of maternal F-cells in a pregnant population and its consequence on the overestimation of fetomaternal haemorrhage. Blood Transfusion 2014 (in press)

Kevane Barry, Donnelly JC, D'Alton M, Cooley SM, Preston RJS, Ní Áinle F. Risk factors for pregnancy-associated venous thromboembolism: a review. J Perinat Med. 2013 Dec 13:1-9. doi: 10.1515/jpm-2013-0207. [Epub ahead of print]

Donnelly JC, Cooley SM, Doyle A, Murphy D, Corcoran D, Kumpel B, Ní Áinle F. False positive maternal Kleihauer-Betke (acid elution) test caused by elevated maternal haemoglobin (F cells). Eur J Obstet Gynecol Reprod Biol. 2013 Oct 17. doi:pii: S0301-2115(13)00511-3. 10.1016/j.ejogrb.2013.10.012. [Epub ahead of print]

Gleeson EM, O'Donnell JS, Hams E, Ní Áinle F, Kenny BA, Fallon PG, Preston RJ. Activated factor X signaling via protease-activated receptor 2 suppresses pro-inflammatory cytokine production from LPS-stimulated myeloid cells. Haematologica. 2013 Jul 19. [Epub ahead of print]

Monteith C, Ní Áinle F, Lambert J, Cooley S, Kelleher B, Jackson V, Eogan M. Hepatitis C virus-associated thrombocytopenia in pregnancy: impact upon multidisciplinary care. Journal of Perinatal Medicine Sep 4:1-4. doi: 10.1515/jpm-2013-0080. [Epub ahead of print]

Neary E, Ofakor I, Al-Awayshen F, Kirkham C, Sheehan K, Mooney C, Foran A, Corcoran A, Ní Áinle F, Cotter M, McCallion N. Laboratory coagulation parameters in extremely premature infants born earlier than 27 gestational weeks upon admission to a neonatal intensive care unit. Neonatology 2013;104(3):222-7. doi: 10.1159/000353366. Epub 2013 Sep 12.

Abstracts of oral presentations and posters

Howard C, Maris I, Joyce C, Ellard S, Flanagan S, Murphy N, Devaney D Green A, O'Riordan SMP, O'Connell SM. Characterisation of cases of congenital hyperinsulinism in a tertiary Paediatric Endocrinology clinic: high yield from genetic testing and prevalence of dominantly inherited ABCC8 mutations. European Society of Paediatric Endocrinology, September 2013.

Shilling C, Matthews T, McGarvey C, Hamilton K, Devaney D. Review of National Paediatric Mortality Statistics in Ireland, 2006-2012. Are Some Deaths Preventable? Prize winning Poster at Paediatric Pathology Society, St Petersburg, Russia, September 2013

Urbano Blanco G, Fitzsimons PE, Devaney D, Murphy AM, Kirk R, Olpin S, Mayne PD. Post-mortem diagnosis of carnitine-acylcarnitine translocase deficiency. ICIEM Symposium, Barcelona, September 2013

Fitzsimons PE, Borovickova I, Trench C, Durkie M, Tops B, Hughes J, Monavari AA, Mayne PD. Fumarate dehydratase deficiency in Ireland – the importance of carrier detection. ICIEM Symposium, Barcelona, September 2013

Murray C, Fitzsimons PE, Elebert G, O'Shea A, Awan A, Dolan N, Mayne PD. Unusual clinical presentation of Cystinosis, important role of the laboratory. ACBI 36th Annual Symposium, Dublin, Ireland October 2013

Mayne PD, Fitzsimons PE, Gibbons F, Stearn M. Managing workload in a tertiary referral laboratory. ACBI 36th Annual Symposium, Dublin, Ireland October 2013

O Connor Kate, O Donovan Eibhlis. Signet ring carcinoma of the cervix.
Royal Academy of Medicine in Ireland, Royal College of Physicians, January 2013.

Gleeson E, Ní Áinle F, Kenny Bridget-Anne, O'Donnell JS, Preston RJ. Activated protein C glycosylation status dictates protease-activated receptor 1 proteolysis and anti-inflammatory signaling efficacy. Journal of Thrombosis and Haemostasis July 2013; 11(supplement S2):1-1322. Doi/10.1111/jth.2013.11.issue-s2/issuetoc

Ryan K, Goodyer M, O'Connell N, Gilmore R, Ní Áinle F, Jenkins V, Fagan P, Young V, O'Donnell JS. Anticoagulation for patients with antiphospholipid antibodies undergoing cardiopulmonary bypass - a novel strategy for optimisation of heparin anticoagulation. Journal of Thrombosis and Haemostasis July 2013; 11(supplement S2):1-1322. Doi/10.1111/jth.2013.11.issue-s2/issuetoc

Hazell M, Reyland L, Ní Áinle F, Donnelly JC, Kumpel B. Persistence of fetal haemoglobin as a cause of false positive kleihauer-betke (acid elution) tests and excessive prophylactic Anti-D administration. Vox Sanguinis 2013. Sp. Iss vol 155 Suppl S1 p1-316

Monteith C, Eogan M, Cooley S, Lambert J, Kelleher B, Ní Áinle F. Hepatitis C virus associated immune thrombocytopenia in pregnancy: pregnancy management and morbidity. J Perinatal Med. 2014 Jan;42(1):135-8. Doi:10.1515/jpm-2013-0080
Doyle A, Donnelly J, Cooley S, Campbell S, Murphy D, Corcoran D, Kumpel B, Ní Áinle F. Testing for fetomaternal haemorrhage by acid elution can yield false positive results in the presence of elevated maternal fetal haemoglobin. Arch Dis Child Fetal Neonatal Ed 2013 98: A48 doi:10.1136/archdischild-2013-303966. 164

Infection Prevention and Control

INTRODUCTION

Infection control is about ensuring the safety of patients and their families that that attend our hospital. This is achieved by maintaining an effective programme for the prevention of hospital acquired infections and the containment of infections brought into the hospital by staff visitors or patients in line with Health Information and Quality Authority (HIQA) standards. The core Infection Prevention and Control Team (IPCT) comprises a Consultant Microbiologist (CM), 1 WTE Assistant Director of Midwifery/Nursing (Infection Prevention and Control) and 1 WTE Infection Prevention and Control Midwife/Nurse Specialist (both referred to as IPCM/N). The IPCM/N visits all clinical areas daily and participates in ward rounds in the Neonatal Unit once/twice weekly and as required. The CM participates in ward rounds in the Neonatal Unit on a weekly basis and more often when required as well as other areas where indicated. The IPCT liaises daily with the Microbiology departmental staff and the CM.

Meetings of the Infection Prevention and Control Committee

Formal meetings of the Infection Prevention and Control Committee take place quarterly and also as required. The Terms of Reference for this Committee were reviewed and key performance indicators identified. Progress on these will be presented to the committee at each meeting. Much additional work relating to Infection Prevention and Control was progressed through the Property Committee, the Quality and Safety Committee, the Hygiene Services Committee the Neonatal Infection Prevention and Control Working Group and the Decontamination Committee.

INFECTION PREVENTION AND CONTROL PROGRAMME FOR 2013

The Infection Prevention and Control programme for 2013 included the following:

Education

Monthly in service education programmes for midwifery and nursing staff were undertaken by the IPCMs in collaboration with others e.g., Decontamination Co-ordinator, Occupational Health, Infectious Diseases Liaison Midwife, and Health and Safety.

- Hand Hygiene
- Standard Precautions
- Aseptic non-touch technique
- Transmission Based precautions
- Blood/body fluid exposure awareness and management
- “Sharps” injury awareness, prevention and management
- Use of Personal protective equipment
- Segregation of waste and clinical waste management
- Management of laundry
- Decontamination of patient equipment
- Decontamination of Reusable Invasive Medical Devices
- Prevention of mother-to-child transmission of blood-borne viruses
- Management and prevention of Influenza

Hand hygiene Education

Improving hand hygiene compliance for healthcare workers remained a priority for the hospital. It is recognised as the key component in the prevention of healthcare associated infections.

An application to the HSE DNE HCAI AMR Committee for funding for a Sure Wash machine was successful. This is a mobile hand hygiene training unit. It uses camera and game technology for training and assessment of hand hygiene education, according to WHO hand hygiene protocols. Having successfully completed training on the unit it is possible using employee ID numbers to record the training.

Education sessions were offered to all new staff at induction, at the monthly in service days for midwifery and nursing staff at the breakfast meetings for consultants and for non consultant hospital doctors and on visiting clinical areas. Open days were held for all on two occasions (in May and September). Here staff members were educated about the WHO 5 moments for hand hygiene and given demonstrations on the correct technique for performing hand hygiene. They were also assessed on their technique using the ultraviolet "glo germ box" and using the Surewash machine.

In March 2013 the HSE launched a programme for hand hygiene on their e-learning platform HSELanD. Initially all staff in the hospital were encouraged to log on and use this facility. From November 2013 new staff members have to complete this programme before commencement of employment.
Records of staff attending hand hygiene education are maintained with the support of the HR department. Non attendees can be identified and targeted. Since November 2013, following a request from the National Director for Quality and Patient Safety a report is returned to the Regional Director of Performance and Integration. This is a monthly report of two indicators namely

- % of new healthcare staff that have received mandatory induction hand hygiene training.
- % of existing healthcare staff that have received mandatory hand hygiene training within the last two years.

REPORT MONTH / YEAR	DEC-13
For new staff: % healthcare staff that have received mandatory induction training hand hygiene training	75%
For existing staff: % current healthcare staff that have received mandatory hand hygiene training in the last 2 years	85%

Hand Hygiene Audits

Hand hygiene audits are carried out throughout the Hospital on a regular basis in all departments; in the NICU audits take place twice per month. During 2013 it was agreed to increase the frequency of audits done in the Delivery Suite. To facilitate this one midwife from the department attended a training day on hand hygiene auditing. Following this audits this midwife did education with staff and internal audits. These audits have shown an increase in hand hygiene compliance in Delivery Suite from 80% in May to 93% in October.

As part of the National hygiene audit, during the months of June and October 2013, the IPCMs were required to measure healthcare worker compliance against 30 hand hygiene opportunities for each of seven randomly selected wards, resulting in 210 opportunities per hospital.

The WHO methodology for undertaking hand hygiene observational audits was used. Healthcare workers were observed for their compliance against the WHO '5 moments of hand hygiene':

The HSE set a target of achieving >90% compliance in 2013.

The compliance rate was 87.6% in June and 89% in October.

Multimodal plan

In October 2013 the National Director for Quality and Patient Safety requested the development of a multimodal hygiene programme for the hospital. This was developed by the IPC team and approved by the IPC Committee. It was based on the WHO multimodal programme and was inclusive of hand hygiene and hospital/hygiene standards. There were 42 quality improvement plans (QIP)s developed which addressed areas of non compliance. A progress report on the status of implementation of the QIP is required by the end of March 2014.

Auditing of decontamination of medical equipment

Auditing of medical equipment in clinical areas continued in 2013. Ward managers, infection control link midwives and care assistants are assisting the IPC/Decontamination team when carrying out the audits.

High risk areas are audited monthly: Neonatal Unit, Delivery Suite, Emergency Room, Theatre and CSSD.

All other areas are considered low risk areas and are audited quarterly.
Results are available on a traffic light system and can be downloaded on the intranet. These results are presented at Midwife Managers' meetings and at the Decontamination Committee Meeting.

Ongoing Surveillance and Audit of Infection with multiple antimicrobial resistant organisms

In line with best practice and in the interests of patient safety, screening for multidrug resistant organisms (MDROs) including MRSA, VRE, and ESBLs and in identifiable at risk groups in adults was continued.

The surveillance screening of infants in the Neonatal Unit for carriage of MRSA or aerobic Gram negative bacilli resistant to aminoglycosides and/or third generation cephalosporins was carried out weekly. The findings were reviewed at meetings of the IPC Team and the Neonatal Unit IPC team, and reported to the IPCC. In late 2013 it was decided that only infants admitted to the ICU area of the unit would be screened on admission and only infants > 7 days old would be screened weekly throughout the Unit.

UNANNOUNCED VISIT

An unannounced HIQA inspection took place on 15th May. HIQA inspectors visited the hospital to assess compliance with two of the National Standards for the

Prevention and Control of Healthcare Associated Infections namely

Standard 3 – Environment and Facilities Management

Standard 6 - Hand Hygiene

The two clinical areas inspected were the general prenatal and general postnatal wards. Overall, the Authority found these areas to be generally clean, with some areas for improvement identified. They acknowledged the challenges of an older listed building Paintwork throughout the wards including radiators, walls and skirting boards required attention. There were no designated "clean" or "dirty" utility rooms. The findings also reported evidence of good practice in waste segregation, linen management, and in the management of the cleaning equipment.

The authority found evidence of good practice in relation to hand hygiene but reported that a culture of hand hygiene is not yet operationally embedded within all staff specialties.

The findings in the report back from HIQA were reviewed and QIPs developed that prioritises the improvements necessary to fully comply with the standards. The QIP was published by the hospital on the website within six weeks of publication of the report, as requested by HIQA.

Antimicrobial Stewardship

Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. The antimicrobial stewardship team seeks to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of health care for infections, and limit the selection for antimicrobial resistant strains.

The antimicrobial stewardship team was set up in the Rotunda Hospital in May 2011 and has members from Infection Control, Microbiology, Infectious Diseases and Pharmacy. The team currently takes part in twice weekly antimicrobial rounds.
Due to a staff shortage within the Pharmacy Department between April and July 2013 there was no Pharmacist available to contribute to antimicrobial stewardship rounds. The Pharmacy department contributes antimicrobial consumption data every six months to a national surveillance system coordinated by the Health Protection and Surveillance Centre.

In late 2013 the Chief Pharmacist, Microbiologist and Infectious Disease Consultant developed a business case for an Antimicrobial Pharmacist post. This business case has been submitted by the Secretary General Manager to the HSE. The principle aim of the business case is to facilitate the implementation of a robust, multifaceted Antimicrobial Stewardship Programme to ensure better outcomes and safer care for women and babies.

Continuous Professional Development
During 2013 the IPC Team attended relevant master classes, workshops and conferences. In addition the ADOM graduated from RCSI with an MSc in IPC Nursing and the CMM finished her Post Graduate Diploma in IPC Nursing

Ultrasound, Fetal Assessment & Prenatal Diagnosis Clinics

CONSULTANTS:

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

MATERNAL FETAL MEDICINE FELLOW:

DR. JENNIFER DONNELLY

MIDWIFE SONOGRAPHERS:

IRENE TWOMEY CMS
GEMMA OWENS ACTING CMM2
DEIRDRE NOLAN CMS
HILDA O'KEEFFE (PERINATAL IRELAND RESEARCH SONOGRAPHER)

RADIOGRAPHERS:

MABEL BOGERABATYO
MARIE FINNERTY
FIONA CODY (PERINATAL IRELAND RESEARCH SONOGRAPHER)

FETAL MEDICINE MIDWIVES:

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

2013 was another busy year in the Ultrasound, Fetal Assessment (FAU) and Prenatal Diagnosis (PND) clinics.

The core ultrasound services in The Rotunda Hospital in 2013 were provided by midwife sonographers Irene Twomey, Deirdre Nolan, Gemma Owens, Hilda O'Keeffe and radiographers Marie Finnerty and Mabel Bogerabatyo and Fiona Cody. Once again their dedication, hard work and commitment are recognised. 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. Non routine or emergency ultrasound requisitions are accommodated in addition to the scheduled workload.

Fiona Cody and Hilda O'Keeffe of Perinatal Ireland contributed enormously to the FAU this year. A total of 906 scans were performed.

Mary Deering has been CMM3 for Antenatal Inpatients and Day Services, incorporating Fetal Medicine since 2011.

DEVELOPMENTS IN 2013

3 New E8 Ultrasound Machines were purchased for the unit.

CMS Irene Twomey and Radiographer Mabel Bogerabatyo commenced their Masters in Ultrasound.

Dr. Jennifer Donnelly completed her fellowship in Feto-maternal medicine.

Radiographer Marie Finnerty emigrated - We wish her well.

NUMBER OF OBSTETRIC SCANS

20 Week Scan Fetal Anatomic Survey	8,958
Growth Scan	7,735
Echocardiogram	179
Others	1,296
NUMBER OF GYNAECOLOGICAL SCANS	**1,514**
Total	**19,682**

FETAL ASSESSMENT UNIT

Dr. Gleeson, and Dr. Gaughan with CMM2 Nollaig Kelliher, S/M Joan O'Beirnes and S/M Laura McBride provided longitudinal follow up for women with high risk pregnancies in the Fetal Assessment Unit. This was a diverse group of patients including women with obstetric cholestasis (67), preterm pre-labour rupture of membranes (17), IUGR (64), multiple pregnancies (92) and breech presentation (71). Fetal biometry, biophysical score (409), CTG (846) and serial laboratory evaluation facilitated outpatient management. Altogether there were 1,838 attendances.

PRENATAL DIAGNOSIS CLINIC

In 2013 1,469 new patients attended for Prenatal Diagnosis. Drs. Geary, Barry, Breathnach, Cooley, Flood and Prof. Malone with CMS Jane Dalrymple, CMM2 Nollaig Kelliher, S/M Joan O'Beirnes and S/M Laura McBride operated 7 clinics per week.

There were 3,628 attendances as some patients were followed longitudinally. All patients had an ultrasound scan. In addition the following tests were performed:

Combined First Trimester Screening	1,151
Second Trimester Screening (Intmark)	52
Amniocentesis	163
Chorionic Villus Sampling	105

Of the 268 diagnostic procedures performed, there were 58 abnormal results representing 21.5% of invasive tests.

Abnormality	CVS	Amnio	Total
Trisomy 21	8	11	19
Trisomy 18	7	9	16
Trisomy 13	1	2	3
45X	5	1	6
Triploidy	1	1	2
Mosaic	1	1	2
Translocation	2	2	4
Deletion	0	1	1
22q1.1 Microdeletion	0	1	1
Sickle Cell	1	0	1
CPS1 Deficiency	1	0	1
Ring Chromosome	0	1	1
COL2A1 Mutation	1	0	1
Total	**28**	**30**	**58**
Failed Culture	0	1 .4%	

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

Fetal Bladder Shunts	3
Cordocentesis	9
Intrauteine Transfusion	11
Laser Ablation (see Note Below)	20
Total	**43**

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. Professor Fergal Malone, Professor Fionnuala McAuliffe and Dr Stephen Carroll jointly perform all such procedures.

During 2013, a total of 20 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 2013, our group had completed 102 cases of laser surgery for severe TTTS, with at least one survivor occurring in 75% of cases (76/102). These results are in line with international published experience for this complex condition.

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, 210 cases of major structural abnormalities were detected and followed. These include:-

Cardiac	44
CNS	42
Renal	43
Abdominal/GIT	8
Skeletal	22
Multiple	15
Head / Neck incl. Cystic Hygroma	7
Cleft Lip & Palate	5
Thoracic	11
Hydrops	2
Amniotic Band	4
Conjoined Twins	1
Teratoma	2
Other	4
Total	**210**

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. Dr Fionnuala Breathnach performed the majority of fetal echocardiograms. A total of 179 targeted fetal echocardiograms were performed within the Department in 2013, with 44/179 (25%) cases having confirmed structural congenital heart disease.

Where fetal congenital heart disease was identified or suspected, women were seen at our Combined Fetal Cardiology clinic based at the Coombe Hospital, staffed by Consultant Paediatric Cardiologist Dr. Orla Franklin and by consultants in Maternal Fetal Medicine Prof. Sean Daly and Dr. Fionnuala Breathnach.

Established in 2009, this collaborative clinic offers a seamless transition from prenatal to neonatal care for infants diagnosed in-utero with congenital heart disease. This approach allows for individualized care, to include prenatal counseling and formulation of delivery and perinatal care plans. This clinic continues to expand, and caters for referrals from all maternity units in Ireland.

In November 2013, the Irish Congenital Heart Foundation was established by Drs Franklin, Daly and Breathnach. A National Fetal Echocardiography meeting was convened in Carton House, Maynooth and was attended by physicians and sonographers from across the country. This study day comprised a series of talks in addition to live scanning sessions and was hugely successful.

In 2013, 317 patients were referred for targeted fetal echocardiogram at our combined service.

The table below illustrates the group of patients seen at the Combined Fetal Cardiology clinic in 2013 who had a prenatal diagnosis of a fetal cardiac abnormality, and therefore includes patients who delivered in the Coombe Hospital, and those referred from other hospitals.

Major Cardiac Lesions seen at Combined Rotunda-Coombe Fetal Cardiology Clinic:

Cardiac Lesion	2011	2012	2013
Atrioventricular septal defect/ VSD	20	28	38
Hypoplastic left heart syndrome	12	7	14
Hypoplastic right heart syndrome	2	9	6
Outflow Tract Abnormalities	28	11	23
Isometric Heart Lesions	3	2	5
Arrythmia		11	11
Others	4	8	6
Total	**69**	**76**	**104**

We estimate that two-thirds of infants born with single-ventricle physiology in Ireland attend our combined service for prenatal consultation.

Multiple Pregnancy:

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

Multiple Pregnancy	
Monoamniotic Twins	**2**
MCDA Twins	**47**
TTTS	15/47
Discordant growth	12/47
Structural anomaly	3/47
Other	17/47
Dichorionic Twins	
Discordant growth	7
Structural Anomaly	2
MCTA Triplets	**1**
DCTA Triplets	**4**
TCTA Triplets	**1**
TCDA Triplets Discordant for Growth	**1**
Total	**65**

Excludes women undergoing laser therapy for TTTS In the Dublin Fetal Surgery Group

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

Additional Cases Followed in Prenatal Diagnosis Clinic:

PPROM 1st & 2nd Trimester	3
IUGR (Severe 2nd trimester)	26
Polyhydramnios	7
Oligohydramnios	2
Rhesus	3
Antibodies	17
CMV	1
Toxoplasmosis	2
Parvovirus	18
Soft Marker Normal Outcome	24
High Risk Screen Normal Outcome	58
Total	**161**

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, may also attend the clinic as we feel they may benefit from continuity of care. Comparative figures for the past 7 years for the clinic are presented.

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

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

	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

	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

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

	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

	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	4.8

	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

	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

Comment

The caesarean section rate in the teenage population is 16% which is significantly lower that the overall hospital population. Two patients attended the pre-natal diagnosis clinic. One had transposition of the great vessels and was delivered liveborn at 37 weeks. The other had non-specific abnormalities noted at the anatomy scan with a normal amniocentesis. She spontaneously laboured at 22 weeks and declined post mortem.

Attendance at the postnatal clinic was less this year and we hope to improve this. We inserted a mirena IUS into 24% of those who attended. Breast feeding was initiated in 32%. Chlamydia positive rate was 9.6% somewhat less than last year. Two percent had premature deliveries. Three babies weighed above 4.5Kg and 3 babies had IUGR at term.

Mental Health Services

DR. JOHN SHEEHAN
MS. KATHLEEN O'DONOHOE
MS. LOUISE RAFFERTY

2013 was another busy year for the Mental Health Service in the Rotunda. 151 new patients were seen by D. Sheehan as well as 208 review patients in the Out-Patient Clinic. The Support Midwives saw 513 patients in the Health Promotion Clinic and 1629 patients on the wards. Pre-pregnancy counselling was offered as well as assessment and management of perinatal mental health problems. The midwives and Dr. Sheehan also provided a telephone consultation service mainly to GP's and Public Health Nurses acting as a resource for information and services.

In April, a new Perinatal Mental Health referral form was introduced. In June, Ms. Louise Rafferty had an article published in Practicing Midwife on perinatal mental health.

Lectures were provided to doctors, medical students and midwifery students. Training and education was provided to midwifery interns and midwives.
Dr. Sheehan started a monthly CPD meeting for the perinatal mental health team in 2013.

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 SAAD ABDULGHAFOUR	Research Registrar, Endocrinology
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 CARLA MORALES	Lead Midwife for Midwifery-Led Gestational Diabetes Service
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 continues to grow, 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 attending Combined Obstetric Endocrine Service 2007-2013

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/ IGT 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.

A prospectively-conducted audit of the new model of care, comparing perinatal outcomes in a consecutive cohort of diet-controlled GDM women attending the consultant-provided Combined Obstetric-Endocrine service in 2009 with those attending the new midwifery-led model of glycaemic surveillance has demonstrated the following favourable outcomes, that indicate that this model offers a safe alternative to attendance at the combined clinic (See table 1). Furthermore, women attending the midwifery-led clinic have shorter waiting times and report high levels of satisfaction with this strategy. Reserving the Combined Obstetric Endocrine clinic for those with high-risk pre-existing diabetes or insulin-dependent GDM also allows for closer maternal and fetal surveillance for those patients at highest risk for adverse perinatal outcome.

TABLE 1: Perinatal Outcome among a prospectively-recruited cohort attending the Combined Obstetric Endocrine Service (CLC) (2009) and a Midwifery-led Glycaemic Surveillance Service (MLC) (2012):

Outcome	MLC (%)	CLC (%)	p value
N	**116**	**109**	
Mode of Delivery			
Vaginal	77 (66.4)	58 (53.2)	0.044*
Caesarean	39 (33.6)	51 (46.8)	
Elective	26 (22.4)	41 (37.6)	0.14
Emergency	13 (11.2)	10 (9.2)	
Deaths			
Stillbirth	1 (0.9)	0	1.00
Neonatal Death	0	0	
Shoulder Dystocia	**0**	**0**	
Admission to NICU	15 (12.9)	19 (16.4)	0.23
Birthweight-gm (SD)	3436 (±664)	3440 (±565)	0.60
>98th for Gestation and Gender	18 (15.5)	9 (7.8)	0.09
<9th for Gestation and Gender	6 (5.2)	1 (0.9)	0.12
Congenital Anomalies	4 (3.4)	3 (2.6)	1.00

SCREENING FOR GESTATIONAL DIABETES:

The Rotunda was not in a position to introduce the IADPSG guidelines on screening for gestational diabetes, which endorse the criteria for diagnosis of GDM that were used in the HAPO study, until these changes in the structure of the clinic were introduced. These proposed thresholds for identification of GDM would be expected to translate into a vast expansion in the number of women who are conferred a diagnosis of gestational diabetes. The vast majority of such

women have minor degrees of carbohydrate intolerance, which should be managed with dietary modification and exercise advice. Unfortunately, the Rotunda has one dietician on staff, and this group feels strongly that without any provision of the resources that would be required to provide dietary consultation and glycaemic surveillance to an additional 30% of our obstetric population, it would compromise our existing high-risk Diabetes population if our resources were to be spread over a wider and lower risk group. Introduction of the new IADPSG thresholds for diagnosis of GDM proceeded in February 2014 and the impact of this change will therefore not be reflected in this year's report.

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 2: Pregestational Diabetes: Maternal Characteristics

	TYPE 1	TYPE II
N	19	31
Age	30.2 ± 6.9	34.1 ± 4.7
DM duration (yrs)	15.3 ± 7.0	4.3 ± 4.3
DM Complications: (Expressed in ongoing viable pregnancies)		
•Chronic hypertension	1/16 (6%)	2/21 (10%)
•Retinopathy	3/16 (19%)	2/21 (10%)
•Nephropathy	1/16 (6%)	2/21 (10%)
•Neuropathy	1/16 (6%)	0
Preeclampsia	1/16 (6%)	1/21 (5%)
Gestation at booking	9.0 ± 7.7	7.9 ± 3.4
HbA1c at booking/IFCC	65 ± 17	49 ± 14.3
HbA1c at delivery/IFCC	47 ± 8.0	41 ± 9.0
Fructosamine at booking	357 ± 59	240 ± 52
Fructosamine at delivery	228 ± 25	186 ± 23

TABLE 3: Pregestational Diabetes: Perinatal Outcome

	TYPE 1	TYPE II
N	19	31
Spontaneous Fetal Loss (<24 weeks)	3/19 (16%)	10/31 (32%)
Preterm delivery 24+0 – 36+6 weeks	9/16 (47%)	3/19 (15.8%)
Liveborn	13/16 (81%)	21/21 (100%) 2 sets twins
Stillbirth	0	0
Neonatal death	1 (See Case Study #1)	0
Delivered Elsewhere	3 (16%)	2/19 (11%)
Caesarean Delivery	10/13* (77%)	13/19* (68%)
Gestational age at delivery	36.9 ± 1.5	37.4 ± 3.0
Birthweight (g)	3400 ± 800	3200 ± 800
Macrosomia ≥95th centile for gestational age	3 (23.1%)	2 (9.5%)
Shoulder dystocia	0	0
Major congenital anomaly	0	0

**Ongoing viable pregnancies delivered at the Rotunda*

TABLE 4: Gestational Diabetes (GDM) And Impaired Glucose Tolerance (IGT):

	Diet-controlled GDM	Diet-controlled IGT	GDM/ IGT ON INSULIN
N	133	139	164
Age	33.7 ± 5.0	32.5 ± 4.9	33.9 ± 4.7
Gestational age at delivery	38.4 ± 2.9	38.9 ± 2.0	38.1 ± 2.0
Birthweight (g)	3440 ± 700	3430 ± 600	3390 ± 680
Caesarean delivery	47/119* (39%)	53/132* (40%)	79/155 (51%)
Stillbirth	1/119 (1%) (See case study #2)	0	0
Spontaneous fetal loss <24 weeks	N/A 6	N/A	N/A 1
Delivered Elsewhere	10/133 (8%)	7/139 (5%)	9/164 (6%)
Preeclampsia	N/A**	6 (4.3%)	3 (2.2%)
Macrosomia ≥95th centile for gestation	14 (11.9%)	17 (12.8%)	16 (9.8%)

**Ongoing viable pregnancies delivered at the Rotunda*
***Preeclampsia rate for women with GDM is not available*

CASE STUDY 1:

31 y.o. Para 1+0. Type I diabetes mellitus for 15 years with known diabetic nephropathy. Registered for prenatal care with the Combined Obstetric Diabetes service at 5 weeks' gestational age. IFCC at booking 71mmol/mol, fructosamine 368. IFCC at delivery 50mmol/mol, fructosamine 233. Acute placental abruption at 36+3. Birthweight 2.84kg. Neonatal death on day 1 of life. Post mortem findings: Severe hypoxic ischaemic encephalopathy due to placental abruption.

CASE STUDY 2:

32 y.o. Para 1+0. Previous GDM 2011 (GTT 7.1/14.3/9.1/7.5). Fetal anatomic survey demonstrated occipital encephalocele and ventriculomegaly. Delivered at 23+4 following fetocide in another jurisdiction. Birthweight 550g.

Clinical Nutrition

LAURA HARRINGTON, RD, MINDI- SENIOR DIETITIAN

In 2013 the dietitian held a total of 1083 patient visits; 671 new patients and 412 reviews. This decrease in activity from 2012 reflects the decrease in overall hospital activity. The types of patients cared for can be classified in the table below:

Referring Service	New Patient Visits (in- and outpatients)	Follow-up Patient visits (in-and outpatients)	Percentage of Total Patient Visits	Total Patient Patient visits
Antenatal	163	69	21.4%	
Diabetes	448	272	66.5 %	
Gynaecology	16	10	2.4 %	
Neonatology/Paeds	39	58	9.0 %	
Postnatal	5	3	0.7 %	
TOTAL	**671**	**412**		**1083**

The majority of dietetic referrals are for the following conditions:

- **Antenatal:** Overweight or obesity, maternal underweight, poor weight gain, hyperemesis, multifoetal gestations, anaemia, history of eating disorder, Crohn's disease and other conditions that impact on nutritional status
- **Diabetes:** Gestational diabetes, type 1 and 2 diabetes in pregnancy and impaired glucose tolerance
- **Gynaecology:** Polycystic ovary syndrome and infertility linked to overweight/obesity or underweight
- **Neonatology/Paeds:** Poor weight gain, faltering growth, food intolerances and allergy
- **Postnatal:** Poor wound healing, underweight and low intestinal transit time (IBS/incontinence).

Diabetes referrals continue to dominate the dietetic service. The percent of the total patient case load dedicated to diabetes has risen by 7.4% in the last 5 years. To manage this increased demand, the dietitian set up multi-disciplinary group education sessions for patients newly diagnosed with gestational diabetes.

The dietitian also gives presentations in the antenatal classes up to twice weekly and presents to midwifery staff in diabetes study days yearly.

Links are maintained with the dietitians at The Coombe Women and Infants University Hospital and The National Maternity Hospital to create best practice guidelines, contribute to the National Clinical Guidelines, create and update patient education materials and encourage continuing professional education.

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

Epilepsy clinic

DR MARY HOLOHAN

At the Epilepsy Clinic in 2013 there were 128 patients seen. For all of the patients a delivery plan was determined and if on treatment, medication optimised in conjunction with the Epilepsy Specialist Nurse. Monitoring of the therapeutic drug levels especially has significantly assisted in patient care.

During 2013, 106 of these patients delivered in the Rotunda Hospital with 2 patients transferring care to other unit in late pregnancy. 49 had not required anti-convulsant treatment for some time before pregnancy and 41 patients needed anti-epilepsy drug treatment for the duration of the pregnancy. 6 patients had discontinued treatment shortly before this index pregnancy remaining symptom free during the pregnancy. 2 patients had first seizure during this index pregnancy with 1 starting treatment (Levetiracetam). Seizure activity in 8 patients were associated with use of Benzodiazepines.

There was 8 complications in the group of 49 patients not on treatment. There were 2 deliveries at 26 - 27 weeks. There were 3 cases of significant fetal growth restriction. APH requiring emergency delivery at term occurred in two cases. One baby had an X linked chromosomal abnormality. 3 patients had uncomplicated twin pregnancies.

Of the 41 patients on anti-epilepsy treatment regimes throughout pregnancy, 28 were on mono-therapy,10 required 2 medications and 3 patients were on 3 medications. (One of these patients had an uncomplicated pregnancy on Carbamazepine for neuralgia.) Prior to pregnancy, a patient had vagal nerve stimulator in addition to medication - this was inactivated for the duration of gestation. 2 of the patients had monotherapy with SodiumValproate and one patient was on a combination of Valproate and Carbamazepine.

There were 9 pregnancy complications in patients using anti-epilepsy medications

- Tetralogy of Fallot on Lamotrigine
- Ventricular Septal Defect on Lamotrigine
- Pregnancy Induced Hypertension on Lamotrigine
- Tachypnoea of Newborn after induction for Cholestasis on Lamotrigine
- Trisomy 21 on Valproate
- Preterm Delivery on Valproate
- Talipes on Lamotrigine and Levetiracetam
- PPH of 2 litres on Valproate and Carbamazepine
- Post Natal Depression on Levetiracetam

In 2 patients, epilepsy was a feature of complex neurological conditions requiring considerable multidisciplinary input. One patient on monotherapy had an uncomplicated twin pregnancy.

There were no pregnancy complications in the 8 patients whose seizures related to Benzodiazepine use.

The Irish Epilepsy Association Nurse Specialist, Sinéad Murphy, continues to attend the Epilepsy Clinic on alternate weeks. Sinéad had 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 Nurse Specialist Sinéad Murphy.

Physiotherapy

MS CINNY CUSACK, PHYSIOTHERAPY MANAGER

The Physiotherapy Department's mission is to provide patient centred, innovative and evidenced based care in the management and treatment of obstetric (pre and post natal), gynaecology and paediatric conditions. Our current staff compliment of 3.3 WTE.

Health promotion and patient education forms a key part of our women's health service. This empowers women to take an active role in their preparation for parenthood, management of pregnancy related musculoskeletal conditions, incontinence and promotes participation in a healthy exercise programme not just for during pregnancy but for motherhood and beyond. There have been 2 new health promotion initiatives in 2013.

THE DEVELOPMENT OF 4 EDUCATIONAL VIDEOS AIMED AT INCREASING WOMEN'S UNDERSTANDING OF HOW AND WHEN TO DO THEIR PELVIC FLOOR MUSCLE EXERCISES (PFME).

Early findings from the MAMMI (Maternal health And Maternal Morbidity in Ireland) show that 1 in 5 women leak urine before pregnancy. During pregnancy, 1 in 3 leak urine and 1 in 2 leak 3 months postpartum. PFME, shown to be preventative and curative, are recommended as the first line of treatment and should be taught to all pregnant women (NICE guideline 2013).

In 2013, four self-help educational videos on urinary incontinence (UI) and PFME were developed in collaboration with Deirdre Daly (Lecturer in Midwifery/HRB, Research Fellow MAMMI study) in response to awareness that fewer than half of pregnant women attending the Rotunda Hospital attend parenthood preparation classes so were not taught formally how to do PFME. The videos are designed to increase women's knowledge of PFME and UI and will help women take more responsibility for managing their continence. These videos will be released in 2014 and will form part of an ongoing research evaluation of the effectiveness of physiotherapy interventions.

PROMOTION OF HEALTHY LIFE STYLE ADVICE FOR MANAGEMENT OF GESTATIONAL DIABETES MELLITUS (GDM)

The role of exercise in the management of GDM has been highlighted by the HSE guidelines 2010 and the benefits of healthy exercises are highlighted in the 'Exercise in pregnancy 'Royal College of Obstetricians (RCOG) statement 4 in 2006. 30 minutes of moderate exercise on most, if not all days of the week is encouraged for women who have no medical or obstetrical risks and is easily monitored by the talk test.

In 2013, a new initiative was introduced by the senior dietitian, diabetic nursing staff and physiotherapy. A multidisciplinary group education session was introduced for mothers with raised blood sugars or newly diagnosed with GDM. These classes are now held on a weekly basis with additional input from the cessation of smoking programme.

URINARY RETENTION GUIDELINES 2013

The urinary retention guideline was updated and published in June 2013. The guideline was co authored by Mary O'Reilly Practice Development and Cinny Cusack Physiotherapy manager and authorised by Dr. Mary Holohan. The urinary retention patients are reviewed by physiotherapists on the wards and followed up as outpatients if required. Our role is to increase the patients understanding of good bladder health, management of bladder retraining with the use of frequency volume charts, fluid advice and pelvic floor exercises and bladder emptying techniques.

OBSTETRIC PHYSIOTHERAPY - ANTENATAL

Preparation for parenthood classes are jointly run with the parent education midwives. The physiotherapy department gives 3 of the 6 classes. A total of 4,849 patients commenced the course of parenthood classes in 2013.

Class 1 promotes a healthy life style during pregnancy. This includes, exercise guidelines, healthy bladder and bowel advice. How and when to do pelvic floor exercises, postural and movement advice aimed at reducing back and pregnancy related pelvic girdle pain. The management of other pregnancy related musculoskeletal conditions.

Classes 2 and 6 deals with coping skills and non pharmacological methods for managing pain during labour, the role of the pelvic floor during birth. We give advice on baby handling and the importance of tummy time. Post natal advice and exercises and relaxation which will improve the women's well being during pregnancy.

Early attendance for the class is recommended and any special needs are catered for on an individual basis. Refresher classes are provided for multigravida mums. Partners are welcome to attend classes 2 and 6.

INPATIENT POSTNATAL PHYSIOTHERAPY

7,457 physiotherapy attendances were given to post natal mothers for advice and exercises, treatment of pelvic girdle pain and mobility issues. Our focus is on the high risk mothers who have anal sphincter tears, caesarean section, an operative delivery , have a baby over 4kg or who have any incontinence.

OUTPATIENT POSTNATAL PHYSIOTHERAPY

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 285 patients plus babies attended the classes held during 2013; an increase of 36 patients from 2012. The aim of the class is to provide an opportunity for questions, support and advice. We review the pelvic floor exercises and assess for a diastasis rectus abdominus so that exercises can be progressed safely to enable the mother return to fitness and so reduce the risk of future back pain and incontinence.

Patients suffering from post partum urinary and faecal incontinence can self refer for physiotherapy during the first 6 months postpartum. However, in the first 6 weeks, they are encouraged to attend the post natal class.

CLINICAL AUDIT ON THE PHYSIOTHERAPY MANAGEMENT OF OBSTETRIC ANAL SPHINCTER INJURIES.

A clinical audit was completed and presented at the biannual audit and research meeting and was awarded first prize. All women who sustained a third/fourth degree tear are routinely followed up at 2 weeks and 6-8 weeks post natally. Ongoing treatment is provided to all women who remain symptomatic. We aim to review these women at 20 weeks gestation in a subsequent pregnancy.

GYNAECOLOGY PATIENTS

The Continence promotion Clinic is led by Dr. Mary Holohan and Cinny Cusack. 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 prior to consideration for surgery. Gynae In patients are seen following all major surgery for advice, pelvic floor and abdominal exercises, management of reducing risk of future prolapse and safe return to exercise. Patients requiring chest physiotherapy are also referred for treatment. In 2013 there were a total of 217 patient treatments given, an increase on 91 from 2012.

PELVIC GIRDLE PAIN (PGP)CLASS

All patients referred to physiotherapy with pelvic girdle pain are triaged based on their gestation and pelvic girdle questionnaire. Patients are then given an appointment for the pelvic girdle class or an individual appointment. The aim is to give an appointment within 2-3 weeks of referral. Significantly urgent patients may be seen sooner. The class provides advice on ergonomics, management of activities of daily living, pacing and specific stabilising abdominal and pelvic floor exercises. Patients who may require further treatment are triaged through this class and assessed for use of pelvic support s and walking aids.

There were 1,092 patient referred with low back pain and PGP. 591 attended a PGP class initially.

PAEDIATRIC PATIENTS

Babies are referred to physiotherapy as inpatients for the following conditions, Torticollis, Talipes, Erbs and Plagiocephaly. 44 babies were reviewed requiring 55 treatments. Due to current staffing levels we are unable to provide a routine input into NICU but individual babies are referred for treatment when required .

A further 334 babies were referred as outpatients requiring 870 attendances for the following conditions: Plagiocephaly and Torticollis 117, brachial plexus injury and upper limb 15. Talipes and lower limb 96 and developmental delay 106. Treatment times are limited by space issues due to the high level of gym occupancy for classes.

DEPARTMENT ACTIVITY

In 2013 there were 4,544 outpatient attendances to the physiotherapy department NOT including the preparation for parenthood classes or the inpatients seen on the wards. The overall numbers treated in the department have remained similar to 2012 as we are working at full capacity.

Manual handling training is now provided by the Physiotherapy manager and sessions are provided monthly.

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.

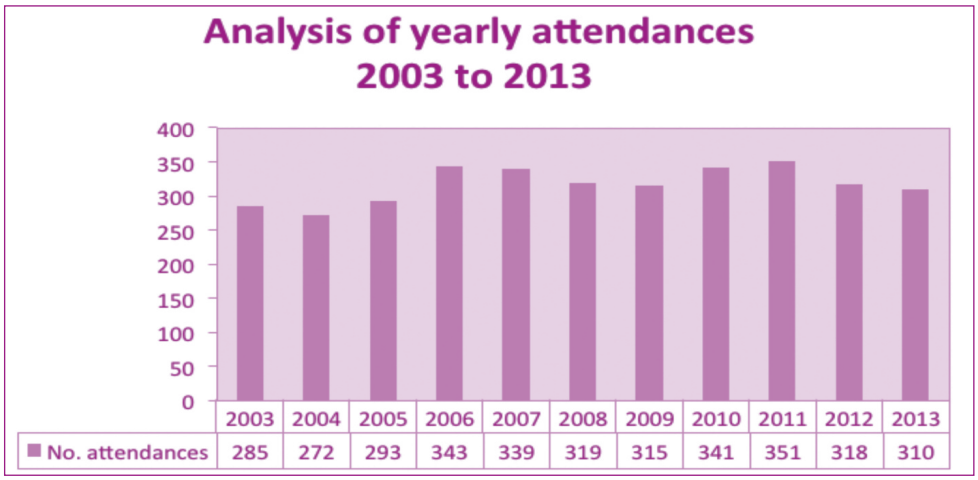
Cinny Cusack. Physiotherapy Manager. 2013

Sexual Assault Treatment Unit

DR MAEVE EOGAN

Introduction

The Rotunda unit is now one of 6 HSE supported SATUs around the country, with units established in Cork, Waterford, Mullingar, Galway and Letterkenny. In 2013 the SATU at the Rotunda Hospital provided care for 310 men and women after rape or sexual assault, a decrease of 8 patients (3%) from 2012.



Most patients (78%) presented within 7 days of an incident of sexual assault, with 9 patients disclosing long-term abuse. Early presentation is optimal in terms of provision of appropriate care as well as collection of forensic evidence. In 19 cases, the incident had occurred outside of Ireland. Of the 291 cases where the incident was reported to have taken place in the Republic of Ireland, 228 of these took place in Dublin city or county. 12 other counties were also represented in the figures. July was the busiest month and Monday and Tuesday were equally busy days. We strive to see all patients as soon as possible after an incident and , in 2013, 98 (32%) patients were seen between the hours of 9pm and 8.59am, which underpins the 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 12 to 65 years. Although the remit for the Adult SATU services is for patients over 14 years, in 2013 the unit provided care for 9 girls less than 14 years. These were instances where acute care in a paediatric service could not be arranged. Considerable developments in paediatric services are underway with the anticipation that such patients can be appropriately accommodated in the future.

112 (36%) patients were students, 93 (30%) were in employment and 101 (33%) were unemployed. The majority of patients 267 (86%) were single. 251 (81%) patients reported a single assailant, and 107 (35%) patients reported that the assailant was a stranger. In 20 cases the alleged assailant was reported to be an intimate (or ex-intimate) partner, and in an additional 5 cases reported to be a

Fig. 6: Gender breakdown 2003 - 2013

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Female	269	255	277	320	318	301	300	317	327	288	300
Male	14	17	16	19	17	18	15	24	24	30	10

family member. 218 patients (70%) had consumed alcohol in the 12 hours prior to the assault, 12 units of alcohol being the mean number of units ingested. That being said, many patients had an imprecise recall of the amount of alcohol ingested. 41 patients were unsure if a sexual assault had taken place, due to memory loss associated with alcohol ingestion.

Emergency contraception (EC) was given to 140 of 200 women seen with 72 hours of an incident. An additional 6 women received EC after 72 hours, facilitated by the licensing and availability of a new EC medication (Ulipristal Acetate) which can be administered up to 120 hours following an incident. 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. 284 men and women accepted this offer, but only 160 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. This policy was introduced in 2009 and I would like to acknowledge the ongoing support of the ID Services at the Mater University Hospital. We also offer HIV prophylaxis on-site if required following risk assessment. In 2013 26 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 310 patients who attended the SATU, 76 (25%) 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 service. This course provided training in both adult and paediatric care provision, and educational components were delivered by many Rotunda SATU staff. There has not been a higher diploma programme run for nursing and midwifery staff for a number of years now, hopefully 2014 will show progress in that regard as our service now depends greatly on an appropriately trained cohort of clinical nurse/midwife specialists.

Aideen Walsh completed a Masters in Science programme in Advanced Nurse/Midwife Practice at RCSI. This will provide her with the academic qualification to develop advanced nursing practice within the SATU. Deirdra Richardson continues to offer the risk reduction programme to schools in the Dublin area. SATU staffs are also actively involved in outreach education within Emergency Departments & General Practice, Mental Health Services, Prison Services, 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.

The Annual Interagency Study Day took place in the Pillar Room of the Rotunda in October 2013. This was attended by delegates from a range of agencies involved in taking care of men and women after sexual violence. We were particularly pleased to welcome our colleagues from Northern Ireland who showcased their recently opened state of the art combined facility for both adults and children. This is a model of high quality, responsive and patient focussed care we should aspire to. We acknowledge both the Manuela Riedo Foundation and The Friends of the Rotunda, the study day would not have taken place without their significant and much appreciated support.

As is highlighted annually, the SATU has, yet again, outgrown its physical space. As a service we are confident that we will be considered for expansion and relocation in conjunction with any on-site hospital developments.

Similar to every health care setting in this country, we remain limited by both head count and funding restrictions. As the longest established SATU in Europe, we continue to be proud of our heritage and ambitious for the future. Nevertheless, we rely to a significant degree on the support of the Master, Director of Midwifery, Management and Board of the Rotunda Hospital, and for their ongoing and unwavering support, even in these times of immense budgetary restrictions, we are extremely grateful.

As we continue to negotiate this challenging environment, I acknowledge the assistance of all SATU staff over the past year. Maintenance of a responsive 24 hour service was possible throughout the year, 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 availability to provide holistic care to patients at a time of crisis is acknowledged.

PUBLISHED PAPERS (2013)

Eogan M, McHugh A, Holohan M. The role of the Sexual Assault Centre. Best Practice & Research Obstetrics and Gynacology 2013;27:47-58.

Walsh A, McHugh A, Eogan M. (2013) Sexual Assault services – an overview. Forum, Journal of the Irish College of General Practitioners 2013; 30:(6) 48-49.

Medical Social Work

SINEAD DEVITT (ACTING HEAD MEDICAL SOCIAL WORKER)

INTRODUCTION

In 2013, 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 exceptionally proactive and broad in its remit. It operates from the rationale that addressing problems in a timely manner can prevent their 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.

FINANCIAL ADVERSITY

Throughout 2013, it was evident that the economic crisis has impacted significantly on patients and their families. The cumulative effect of unemployment, budgetary cutbacks and difficulties in obtaining social welfare support was that many patients were faced with acute financial hardship.

In 2013, maternity benefit became liable for tax for the first time. It was announced in the 2013 budget that child benefit would be standardised for each child. A higher rate had traditionally been paid for third and subsequent children. The Department of Social Protection announced a restriction of emergency needs payments, which are given to the less well-off for unforeseen spending needs. These restrictions affected payments towards purchasing baby-related items and had a direct impact on many patients attending the Rotunda Hospital.

These restrictions have surely contributed to the increase in calls to the Society of St Vincent de Paul in 2013. They reported the number of calls that the charity receives for financial help has doubled over the last five years. However, the profile of those seeking help has radically changed. Families they now visit include people in low-paid employment, the self-employed and people in good employment with debts they can't handle.

Official figures also indicate that 10% of the population, and 21% of children don't always have enough to eat. Many pregnant women attending the hospital report how a lack of financial resources contributes towards their inability to buy suitable food. This is very worrying as in utero malnutrition adversely impacts the health of the fetus and leads to increased risk for future disease. Also for patients, being unable to consume a balanced diet, leads to increased rates of chronic diseases, such as diabetes.

Financial difficulties led to a marked increase in the numbers seeking help and support from the social work department, both in terms of their money problems and also in terms of their emotional distress and other associated difficulties.

DEMOGRAPHICS

Figures from the Economic and Social Research Institute (ERSI) indicate that despite the recession and a resumption of emigration, Ireland's population continues to grow. In 2013, the number of deliveries in the Rotunda fell to 8,649 compared to 8,846 the previous year. This reflects the small decline reported by the ESRI in the number of live births during the past three years. However, the Irish birth rate remains the highest within the European Union, some 50% higher than the European average. Eurostat projects the Irish population is to increase from 4.5 million to 6.5 million between 2010 and 2060, a 47% increase.

Population growth can also be attributed to significant inward migration. Many young families and women move to Ireland to find work and contribute to Irish society. In 2013, 2,198 foreign nationals delivered their babies in the Rotunda Hospital, which represented 25% of all the births that year. These trends help counteract the possibility of an economically unbalanced, aging population.

There is evidence that some women may be postponing having children because of the recession. The average age of mothers giving birth increased by more than a year, to 31.9 years, within the last decade.

Ireland has become an urban society, with 60% of people living in villages, towns and cities. The children being born today will accelerate that trend and have implications for transport, energy, housing, job creation and a variety of social services. Long term planning in healthcare, education and housing is therefore essential. It is important to get this correct to ensure greater equality for the next generation.

HOUSING CRISIS

In 2013, the number of private rental properties available to rent in Dublin continued to decrease. In November 2013, Daft.ie reported that this number had fallen to about 1,500 whereas there were 6,700 such properties for rent the same day 4 years previously. The cost of renting property continued to rise across the country, and at a quicker rate in Dublin, due to the shrinking number of properties available. It is of note that the State has reduced its investment in social housing over the years and has traditionally relied on the private rented sector to meet the housing needs of social housing applicants. Those on the social housing waiting list, and qualifying for Supplementary Rent Allowance (SRA), are now often faced with landlords' reluctance or refusal to accept SRA. This has had a disproportionate impact on low-income households. Focus Ireland reported a rise in families becoming homeless. At the end of 2013, the charity highlighted how the number of families becoming homeless in Dublin each month has increased from 8 to 16. Many patients attending the Rotunda Hospital are struggling to find suitable places to live prior to the birth of their baby. This is a major source of stress when many families find themselves living in poor, inappropriate housing conditions or are in danger oflosing their home.

Indeed, the social and economic changes which have taken place in Ireland over recent years 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 2013 provide a summary of the services offered by the department.

TEENAGE PREGNANCY CLINIC

In 2013, there were 113 deliveries to teenagers booked into the Teenage Clinic. This included 30 deliveries to teenagers who were 16 and 15 years of age. In these cases, a referral was always sent by the medical social worker to the appropriate HSE Child and Family Service. Where abuse is not suspected or alleged, but the girl or boy is underage, the HSE will still work with An Garda Siochana to explore the young woman's circumstances. They acknowledge the sensitivity required in order to facilitate a young mother availing of all necessary services, while at the same time satisfying relevant legal requirements. The medical social worker also continued to meet teenagers aged 18 or 19 who required additional support, whereas traditionally the Teenage Clinic was for adolescents aged 17 years or under.

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 classes 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 2013, 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 was to visit these patients and their partners while they were in hospital or to contact them when they went home. They 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. The follow-up care was offered both in the Rotunda and on home visits if requested. The bereavement social worker saw 102 patients for follow up care after their discharge from hospital and carried out 235 hours of counselling sessions in 2013.

The bereavement social worker also coordinated and facilitated a Bereavement Group for parents in February 2013, along with other members of the social work team. The evaluation from this group was very positive. We use the feedback from parents to restructure the group content so that it evolves with each session. Feedback from this group was also brought to the Bereavement Working Group Meeting. The bereavement social worker continues to build strong links with the

multidisciplinary team at these meetings and also with the bereavement midwife on a daily basis to ensure optimal care for the patient and family.

The bereavement social worker represented the hospital at remembrance services organised by A Little Lifetime Foundation, The Miscarriage Association and Felician. These support groups offer invaluable assistance to our bereaved patients and we aim to continue to build strong links to them in the community.

FETAL ASSESSMENT AND PRENATAL DIAGNOSIS CLINICS

2013 was a very busy year for these clinics which provide care for women with high risk pregnancies or who have received the diagnosis of chromosomal and major structural abnormalities. Fetal Medicine Midwives - Nollaig Kelleher, Jane Dalrymple, Joan O'Beirnes and Laura McBride - work closely with the medical social worker in identifying patients who have been given difficult news about their baby and who may need additional emotional and practical support at the time of a diagnosis and in the weeks and months that follow.

Getting the news that an expected baby may have a problem changes everything for parents. As part of the team caring for and supporting parents during this difficult time, the medical social worker offers a confidential counselling and support service to all patients attending the FAU. Patients are informed of this service around the time of their first attendance and invited to meet with the medical social worker if they are open to doing so. Meeting with the medical social worker, even briefly at this time, allows patients to identify another source of support available to them throughout their pregnancy and after their baby's birth.

SUBSTANCE MISUSE

2013	2012	2011	2010	2009	2008
73	81	71	71	76	76

Deliveries to substance abusing women in the Rotunda Hospital.

In 2013 the social worker within the Danger of Viral Exposure (DOVE) Clinic met with all women who were undertaking a drug treatment programme such as a methadone maintenance programme, and with women who were actively using illicit drugs.

Women were referred to the social work department by the drug liaison midwife. The relationship and communication between the social work department and drug liaison midwife is vital to early intervention with women.
The medical social worker will introduce their role to women and begin their assessment which involves looking at the environmental, social, emotional and physical factors in the woman's life. From this assessment, the medical social worker will be better able to establish the necessary supports for her and her baby.

In 2013 the medical social worker continued to have a role in working to ensure the welfare and safety of newborn babies. Where necessary she reported any drug-related child protection concerns to the Health Service Executive. A total of 50 referrals were made to the HSE Child and Family Services in 2013 – representing 68% of women attending the clinic.

As a result of these concerns, the medical social worker and drug liaison midwife attended 11 discharge meetings to discuss the care of the baby after birth. 21 Child Protection Conferences took place in 2013. This conference is an interagency and inter-professional meeting within the HSE and involves facilitating the sharing and evaluation of information between professionals and parents. This conference formulates a child protection plan which sets in place the actions needed to ensure the child's continued protection and well-being.

In 2013, 13 babies did not return home with their biological parents immediately after discharge –one baby was placed in care following an emergency care order, one baby was placed in care under a voluntary care order and eleven babies were placed in care under interim care orders. This is an increase on the figures from the previous year which indicate that 9 babies did not return with their parents due to drug-related concerns following their birth. In addition 11 mothers were required to return home under the supervision of a non-drug using relative for a period of time until stability was assured.

The medical social worker continued to work as a support to all women attending the DOVE clinic throughout her pregnancy and provided information in relation to benefits and entitlements.

INFECTIOUS DISEASES

Since 1st January 2012, HIV cases have been reported to the Health Protection Surveillance Centre (HPSC) on a weekly basis using the Computerised Infectious Disease Reporting (CIDR) system. 347 cases of HIV were notified to the HPSC in 2013 – this is an increase of 6 cases when compared to last year's figures.

In 2013, 6 women in the Rotunda were newly diagnosed with HIV infection at their antenatal screening. 30 women with HIV infection delivered babies in the Rotunda in this year.

The medical social worker continued to adopt a non-judgemental, respectful and anti-oppressive approach to working with all women who attended the DOVE clinic. She provided pre- and post- test counselling to patients and ensured women of her availability for support throughout and after their pregnancy. Counselling is offered to women to assist them in processing their feelings around their new diagnosis and in coping with the impact that this may have on their lives. The medical social worker has an in-depth knowledge of the community supports available for women and during 2013 she continued to foster positive relationships with these services in order to best meet the needs of these women.

The medical social worker liaises closely with the Infectious Disease Midwife to effectively meet the needs of many women.

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 and nursing colleagues to ensure that parents receive holistic family-centred care. There is particularly close collaboration with the NICU Discharge Co-ordinator and with community-based services and support agencies to promote 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 and to HSE offices throughout the country for their co-operation.

During 2013, 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 accommodation for parents, the high cost of car-parking in the city centre and the absence of adequate financial supports for such families constitute major problems.

A positive development over the past year was the continued success of a monthly parents' support group which is facilitated by the medical social worker in conjunction with representatives from the Irish Premature Babies Support Organization. These representatives are parents who have previously had premature babies in the Rotunda's neonatal unit. The objective of the group meetings is to give parents the opportunity to support each other through the difficult experience of having a baby in neonatal care. They provide a safe environment in which parents can express their feelings and share their knowledge. Sincere gratitude is expressed to the representatives from 'Irish Premature Babies' who provided invaluable support and advice.

DOMESTIC VIOLENCE

In 2013, the Rotunda Hospital introduced a routine enquiry into 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. A study carried out in the Rotunda Hospital in 2000 showed that 12.5% (1 in 8) of a pregnant sample group experienced violence in pregnancy.

Research demonstrates that a system of routinely asking all women during the ante-natal 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.

It is often thought that women will find it unacceptable to be asked about experiences of abuse. However, research carried out in the Rotunda Hospital in 2004 on the acceptability of routine enquiry indicated that 99.4% thought the questions were acceptable and 99.6% thought it would be helpful to ask all women attending the hospital about domestic violence. Women are asked about domestic violence without their partner present to ensure their safety is not compromised.

The medical social work team prioritise all domestic violence referrals. It is important to explore with the woman where she is at in the domestic violence cycle. She could be only defining what is happening to her as an abuse or may be at the point of leaving a relationship. The medical social worker 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.

TRAINING - STAFF

Training Day on Stillbirth and Neonatal Loss, Centre of Midwifery Education – 05/06/13 . D. Kir

In-service Training for Midwifery Staff on Miscarriage, Stillbirth and Neonatal Loss – 31/01/13. D. Kirk

Training for Midwifery Students on Miscarriage, Stillbirth and Neonatal Loss – 09/04/13, 08/05/13. D. Kirk

PROFESSIONAL DEVELOPMENT

D. Kirk attended a one day workshop on Anxiety: A Cognitive Behaviour Approach.09/03/13 PCI College, Dublin

D. Kirk, Bereavement Social Worker, continued to attend quarterly meetings of the Irish Association of Paediatric Palliative Care in 2013

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 Sharon Cooley (Locum), Dr. Karen Flood (Locum)

ADMINISTRATOR: Ms Olivia Boylan

MIDWIFERY: Care and support was provided by the midwives attached to the Antenatal Clinic on a rotation basis.

REGISTRARS: January to December 2013

Dr Nikhil Purandare
Dr Allan Varghese
Dr Adam Mackie
Dr Niamh Daly
Dr Claire O'Connor
Dr Uzma Mahmood
Dr Noha Bozreiba
Dr Sanchila Talukdar
Dr Pooja Sibartie
Dr Amanda Ali
Dr Jennifer Donnelly
Dr Audris Wong
Dr Fergus Mc Carthy
Dr Jennifer Hogan
Dr Tasneem Ramhendar
Dr Aoife Doyle
Dr Niamh Murphy
Dr Cathy Monteith
Dr Rebecca Moore

The Early Pregnancy Assessment Unit (EPAU) is a specialised clinic dedicated to providing care to women in early pregnancy. Approximately 12-15% of women will experience bleeding and/or pain in early pregnancy and the majority of these patients will seek medical treatment. In 2013, this compromised 5551 new, return and reassurance visits to the EPAU. The EPAU is an essential component of the Rotunda Hospital and strives to deliver a service that will manage patients in a safe, timely and supportive manner.

Since its establishment in 2008, the EPAU has undergone changes in line with recommendations from the Directorate of Quality and Clinical Care in the Health Services Executive, the Royal College of Physicians of Ireland and the Institute of Obstetricians and Gynaecologists. Further achievements in 2013 include:

- Provision of training for University College Dublin Graduate Certificate in Obstetric Ultrasound Module 1 for Dr Sanchila Talukdar and Dr. Audris Wong by Dr Sharon Cooley and Dr. Karen Flood.
- Development of standard operating procedures to streamline referrals to the EPAU.
- Reconfiguration of appointment schedules to improve day-to-day efficiency.

- Provision of support documentation for patients (also available on hospital intranet).
- Continued provision of Registrar training in Viewpoint® and early pregnancy undertaken by Dr Sharon Cooley and Dr Karen Flood.
- Continued provision of Senior House Officer training in basic ultrasound in conjunction with the Royal College of Physicians Basic Specialist Training by Dr Fionnuala Breathnach.
- Participation in regular clinical auditing of early pregnancy key performance indicators.

Clinical activity:

	2013	(%)	2012	(%)	2011	(%)
Total number of appointments	5551		5221		5709	
Total number of patients seen	4191		3106		3116	
Repeat EPAU reviews	2587	(62)	2315	(80)	2214	(71)
Failure to attend for first appointments	145	(4)	200	(7)	114	(4)
Failure to attend for follow-up appointment	270	(10)	144	(6)	178	(8)
Miscarriages	1661	(30)	1551	(30)	605	(19)
Surgical management of miscarriage	531	32)	590	(38)	247	(41)
Expectant or medical management	1130	(68)	961	(62)	358	(59)
Ectopic pregnancy or pregnancy of unknown location	192	(4)	123	(4)	51	(2)

Recurrent pregnancy loss service

CONSULTANTS: Dr Karen Flood
Dr Sharon Cooley
MIDWIFE: Patricia Fletcher

This specialised clinic offers a comprehensive service for women, and their partners, who have had three or more consecutive miscarriages. This includes thorough investigation of any underlying causes, provision of information and support, with the aim of achieving a successful pregnancy. We link closely with the counselling service, radiology and other clinics in the hospital. This clinic is also dedicated to provide continuity of care with rapid access to review and frequent ultrasound monitoring for women from early pregnancy until their booking appointment.

	2013	(%)	2012	(%)
Total number of patient visits	499		376	
Return visits	390	(78)	292	(78)
Failure to attend for first appointments	26	(24)	18	(21)
Failure to attend for follow-up appointment	45	(12)	39	(13)
Total number of pregnant women seen	62	55		
Livebirth rate	39	(63)	4	(78)

Clinical Risk Management & Claims Department Activity

MS CLAIRE O'MAHONY, CLINICAL RISK MANAGER

CLINICAL RISK & CLAIMS DEPARTMENT

The Clinical Risk & Claims Department is responsible for the ongoing development of a comprehensive clinical risk management programme across the hospital, including risk identification, analysis and support in incident investigation.

Education is delivered across the hospital highlighting incident reporting, incident management and investigation responsibilities. The department maintains the clinical incident management system, notifies insurers of reported incidents, produces trend reports and provides feedback to departments and committees in respect of incident trends.

Claims management is a key function within the the department and the risk management team is the key point of contact for hospital solicitors and the Clinical Indemnity Scheme (CIS) in this regard. The risk & claims team also analyse claims data in order for learning to be implemented within the hospital.

The department has a role in the implementation of patient safety projects across the hospital and has significant involvement in departmental patient safety meetings.

INCIDENT REPORTING

The STARS web records 2,976 clinical events reported in 2013. This is a reduction of 1.3% from incident reporting on the previous year. Following analysis the reduction is likely to reflect efforts put into training and communication through 2013 to reduce unnecessary reporting or reporting that is not in line with recognised incident reporting requirements.

Statistics and trends in respect of incident reporting continue to be shared with the Clinical Managers in an annual departmental report and in the quarterly reports prior to each Departmental Patient Safety Meeting.

Clinical Risk Committee

The Clinical Risk Management Committee has responsibility for overseeing the risk management programme in the Rotunda Hospital in relation to the management of clinical risk. The purpose of the Clinical Risk Management Committee is to support the Master in improving patient safety and the quality of patient care by the analysis of clinical incidents reported. The Hospital wishes to promote the reporting of actual or potential risks in a blame-free culture.

The Committee meets on a bi-monthly basis and its responsibilities include monitoring incident trends and the progress of incident reviews and implementation of recommendations.

FAIR REVIEWS/FOLLOW UP REVIEWS:

14 recommendations were made in 2013 out of reviews into clinical incidents. Of these, 13 actions are complete. One recommendation involves a shared guideline with another organisation. A draft guideline has been forwarded for approval /amendment.

Recommendation Made:	Number complete	Actions ongoing	Actions
Promotion/Training of Existing Guidelines	2	2	0
SBAR/Communication	0	0	0
MEWS	0	0	0
Update to existing guideline required	1	1	0
New guideline/SOP required	2	1	1
Amended process	2	2	0
Clinical Audits			
Documentation			
IT improvement	1	1	0
Totals	**8**	**7**	**1**

RISK MANAGEMENT POLICY

The National Incident Management Policy was reviewed in 2013 and guidance from this document was evaluated by the Clinical Risk Committee for adaptation within our processes and policy. Work is ongoing in respect of updating the hospital's risk management policy.

A number of improvements were implemented in 2013 in the interim. This included the introduction of a factual accuracy check whereby draft review reports are circulated to all individuals interviewed as part of a FAIR review, including the patient or family and the clinicians involved in the patient's care. The process for communication with the patient/NOK was also further developed in 2013 to incorporate a structured approach to patient or family involvement in FAIR reviews and a standardised approach to information provision in advance of this process.

Work was undertaken in Quarter 4 to develop a Rotunda Learning Notice following an incident, inquest or claim in order to facilitate the documented sharing of lessons following a review of an untoward event. Sharing of the learning notices is now in place via the hospital's intranet.

The Voluntary Hospitals Risk Management Forum "Overview of the Basics of Risk Management" staff handbook was adopted for use within the hospital, is referenced in the risk management policy and is available to staff via the hospital intranet.

PATIENT SAFETY INITIATIVES FOLLOWING INCIDENT TREND ANALYSIS

Further work was implemented on the following topics following analysis of incident trends and clinical risks:

FALLS ASSESSMENT TOOL:

Work was undertaken in 2013 in collaboration with the Practice Development Unit in developing guidelines for falls assessment.

CONSENT:

An awareness campaign was undertaken in the form of reminders regarding clinicians' responsibilities pertaining to informed consent and their responsibilities to seek written consent at an appropriate time in the patient's care pathway. The ACTIVATE tool is an education tool which was created by the Rotunda Hospital in September 2012 in order to facilitate learning around clinicians' responsibilities in the consent process. The tool was regularly presented at Risk Management training sessions and other forums throughout 2013 and was displayed across all ward areas and at the Patient Safety Day. It was also incorporated within the HSE Toolbox Talks within the Dublin North East Region. The National Consent Policy was launched in the Rotunda at a presentation open to all staff on 20th August 2013.

TOOLBOX TALKS:

The Toolbox Talk initiative was formally launched at the Patient Safety Day on 15th May 2013 with support from HSE Dublin North East in its roll out. It facilitates a process whereby short discussions or presentations are made by line managers to their staff which is generally focused on one specific topic, which is addressed in simple terms. These talks are an opportunity for staff to be briefed, reminded and prompted in regards to applying the principles of practice in delivering high quality safe care to patients.

PATIENT SAFETY DAY:

The hospital's first Patient Safety Day was held on 15th May 2013. A risk management stand was set up with information displayed in respect of FAIR reviews, follow-up reviews, open disclosure, never events, incident trend graphs and shared learning from risk management data. Information leaflets and handouts were distributed including "What to expect following a Serious Adverse Event", clinical abbreviation booklets and the ACTIVATE Consent tool.

NATIONAL ADVERSE EVENT MANAGEMENT SYSTEM:

The Risk Team have engaged in consultation with the CIS in respect of the intended National Adverse Event Management System and have provided feedback in respect of incident categories, practicalities and layout.
Following trends identified or proactive risk identification monitored by the Clinical Risk Committee, the following measures were implemented by various disciplines across the hospital and supported with the help of the Practice Development Unit. Gratitude is expressed to all those who were involved in the following improvement initiatives:

RISK MANAGEMENT TRAINING

146 staff members were trained in Risk Management & Documentation in 2013 along with additional attendances at specific training or feedback sessions.

The Risk & Claims Managers continued our participation in a joint initiative "Legal Study Day" organised by the Centre for Midwifery Education which aims to educate clinicians in respect of risk management, key patient safety issues and medico-legal processes. The course has been very successful to date with good feedback from attendees and an attendance record of 127 clinicians since the development of its commencement in May 2012.

66 members of staff attended a joint lecture presented by the Clinical Indemnity Scheme(CIS)/A&L Goodbody in 2013 in respect of the clinical claims process.

CLAIMS/LEGAL:

The Voluntary Hospital Group's "Updated Guidance preparing staff for attending Inquests" and associated DVD was used several times during the year and feedback was very positive in this regard.

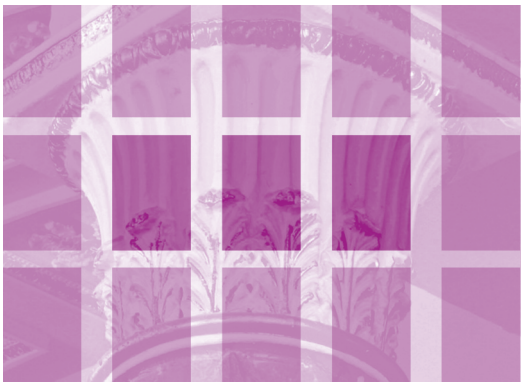
The hospital implemented learning following the medico-legal claims process during the year, and continues to share lessons learned via the Departmental Patient Safety Meetings, other multi-disciplinary meetings and the Learning Template following incidents, claims and inquests.

CLINICAL RISK & CLAIMS TEAM

I would like to thank the Clinical Risk & Claims team who are always extremely hard-working and motivated and who all contribute in a meaningful and effective way to the risk and claims processes within the hospital.

THE ROTUNDA HOSPITAL DUBLIN

4 Friends of the Rotunda



CARING FOR GENERATIONS SINCE 1745

THE FRIENDS OF THE ROTUNDA is the official fundraising arm and registered Charity (CHY20091) of the Rotunda Hospital.

Its Main Objective is to provide a sustainable funding base for:-

- Research into aspects of Maternal and Child Health;
- Additional and vital equipment and support services for the Hospital's Specialist Units, Services and Clinics; and
- Improved amenities for patients, their families and hospital staff.

The Charity does not receive any State funding and raises revenue each year by actively encouraging Rotunda staff, patients, their families and friends, to participate in fundraising activity.

Donor Giving also provides designated funding for additional vital equipment for the Neonatal Unit, Bereavement Support Services and improved amenities within the Hospital that would otherwise not be provided for by the State.

The Friends of the Rotunda Charity was formed in 1971 and incorporated as a *Limited Company by Guarantee and Not Having a Share Capital*. It publishes annual *Audited Accounts* that have been approved by the organisation's external auditors, *KSi Faulkner Orr*. The Charity aims to demonstrate that it has a firm commitment to transparency, accountability and an adherence to best practice and performance.

The Friends' *Council* is the Charity's Governing Body and meets quarterly each year:

- Chairperson: Dr. Frances Gardiner
- Directors: Marie Malone (Honorary Secretary), Dr. James Gardiner, Marese Cooney and Kim Mc Cann.
- Officers: Professor Alan Johnson, Dara Walsh, Sylvia Graham, Joan Dillon, and Judith Woodworth.

The Management Executive is run by Sheila Thompson who is responsible for the administration and marketing & development of the organisation.

The Friends' of the Rotunda awarded over €94,000 in grant awards during the year to fund the following Research Projects and provide financial support for services:

- To Investigate and Characterise Modulators of Primary Haemostasis and Thrombin Generation in Early Onset Preeclampsia

  Principal Investigators: Dr. Fionnuala Ní Áinle, Dr. Mike Geary and Dr. Sharon Cooley.

- The RCSI PORTO Study: YR 2 Funding
- Rotunda's Bereavement Support Services
- Rotunda's Sexual Assault Treatment Unit – 2013 National Conference

FUNDRAISING EVENTS THAT TOOK PLACE DURING THE YEAR INCLUDED:

- Rotunda Golf Classic – The Masters' Cup
- Christening Party Fundraisers
- Coffee Morning Fundraisers
- Birthday Party Fundraisers
- Sponsored Walks

- Flora Women's Mini Marathon to Fundraise for Rotunda Neonatal Unit
- Dublin City Marathon
- NY City Marathon
- Sale of Easter Eggs
- Coin Box Collections and Raffles
- 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 Fundraiser
- Young European Strings Chamber Orchestra Performance in the Pillar Room
- Christmas Swim Fundraiser
- Sky Dive Fundraisers
- Friends of the Rotunda Annual Membership Subscriptions
- Charity Collaboration with 'Ride out for Prems' – Irish Premature Babies Organisation
- Charity Collaboration with Feileacain

DONATIONS

On-line payments facility for Donations was introduced in September 2009 on the Friends' Web Site (www.friendsoftherotunda.ie). Revenue has since been collected to support each of the following areas:

- Bereavement Support
- The Delivery Suite
- The Early Pregnancy Unit
- Rotunda Families in Need
- Fetal Assessment Unit
- Maternity Day Care Unit
- Neonatal Intensive Care Unit
- Rotunda Research Fund
- Sexual Assault Treatment Unit
- Essential Equipment Wish list

Additional essential equipment purchased by the Friends during the year supported the Rotunda's newly refurbished Neonatal Unit's Parent's Room.

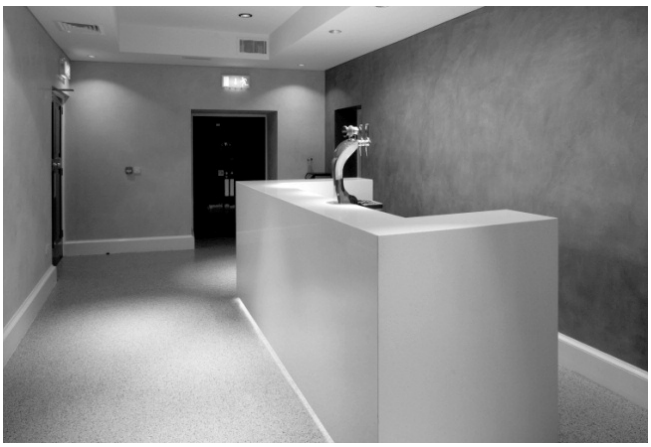
www.MyCharity.ie now hosts the Friends of the Rotunda Charity registration on its website. Fundraisers can set up a Fundraising Page with links to mobile and social media connections.

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 for the Friends' Charity to run its administration costs.

THE HIRE OF THE 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 also used by the Hospital as a teaching & examinations / conference centre. Bookings are managed by the Friends of the Rotunda office on 01 872 2377 or email friends@rotunda.ie.



Pictured above is the striking contemporary bar facility within the Pillar Room Complex. The Venue offers Conferencing and Catering facilities and is equipped with a PA system and Wi-Fi.

The Council of the Friends of the Rotunda wishes to extend its gratitude to all those who organised and supported fundraising activities during 2013.

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..

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 61 clinical audits were registered in 2013 (51 first audits, 7 re-audits and 3 continuous audits).

Clinical Audit Training
The clinical audit team regularly delivers educational sessions in-house on the clinical audit cycle across all disciplines. In 2013 there were 8 information sessions held and a total of 68 staff members attended with representatives from all clinical areas. In addition, external sessions are delivered to midwifery students at Trinity College Dublin.

Clinical Audit Intranet Page
The department has developed a designated page on the hospital intranet where the application forms, excel tool template, guide to clinical audit, key steps to audit success, draft action plan and report template are available to download. Annual and Monthly clinical audit reports are also available to download.

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 Naomi Burke and Ms Cinny Cusack.

Presentations at External Meetings
Ms Debbie Browne Teenage Support Midwife "An audit of the risk status of teenagers at the booking visit and throughout pregnancy" presented at St James Hospital 6th Annual multidisciplinary Research, Clinical Audit and Quality Improvement Seminar.
Dr Kate Glennon "An Audit of Postnatal Hospital Readmissions with Perineal Infection" presented at JOGS
Dr Rebecca Moore "An audit of compliance with glucose tolerance testing among pregnant HIV positive women on protease inhibitors" presented at JOGS

New Initiatives in 2012
- The Hospital Clinical Audit Policy document was reviewed an updated at the end of 2013. The new policy states "When audits extend beyond the agreed date of completion, an additional "grace period" of three months is given automatically, after which time the audit supervisor is requested to provide an update on the expected completion date.
- The Clinical Audit Department now provides encrypted USB's to audit leads if necessary.
- The Clinical Audit Facilitator sits on and reports to the Monthly Quality and Safety Committee.
- Each department was issued an audit calendar early in 2013 to propose/plan audit activity for the year ahead.

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 2014.

Speciality	Clinical Audits registered in 2013 Title of Audit	Audit Type
Anaesthetics	Audit of Epidural Analgesia in Labour	First Audit
Anaesthetics	Auditing of Hospital Compliance with Updated Recommendations by the BCSH 2012 Guidelines on Blood Grouping	First Audit
Gynaecology	Miscarriage & ERPC	First Audit
Gynaecology	An audit of Cervical Biopsy Practice in the Rotunda Colposcopy Clinic	First Audit
Gynaecology	Audit of compliance in respect of the timing and checks for written consent to elective treatment.	First Audit
Gynaecology	Audit of Early Pregnancy attendances and referrals	First Audit
Gynaecology	Incidence of HPV on LLETZ samples	First Audit
Haematology	An audit of the outcomes of CTPA and Doppler ultrasound investigations in the antenatal and postnatal population of the Rotunda Hospital.	First Audit
Infection Control	Aseptic-non-touch-technique (ANTT) for peripheral access intravenous therapy in adults	Continuous
Laboratory Medicine	Incidence of Red Cell Transfusion in NICU Rotunda Hospital 2011 & 2012	First Audit
Mental Health	Edinburgh Postnatal Depression Scale	First Audit
Neonatology - Medical	Neurological and Respiratory Function following Magnesium Sulphate Neuroprohylaxis	First Audit
Neonatology - Medical	Lumbar puncture - Can we implement the use of normalized Cerebrospinal Fluid (CSF) parameters in the Rotunda population?	First Audit
Neonatology - Medical	To determine if the introduction of the clinical application of the Bhutani Nomogram reduced NICU admissions for phototherapy & exchange transfusions	First Audit
Neonatology - Medical	Audit of the use of Lateral Radiographs to assess Umbilical Venous Catheter Placement in Neonates.	First Audit
Neonatology - Medical	Evaluation of risk management in compliance with neonatal septic screening guidelines	First Audit
Neonatology - Medical	Neonatal Group B Streptococcus Infection	First Audit
Neonatology - Medical	Assessment of the number of extubation attempts in ventilated in neonates <1500g weight	First Audit
Neonatology - Medical	TPN practice (babies <1500g)	First Audit
Neonatology - Medical	Quantification of cranial ultrasound anomalies identified in moderately premature infants.	First Audit
Neonatology - Medical	Evaluation of documented resuscitation of very low birth weight infants during the "Golden Hour"	First Audit
Neonatology - Medical	Audit of thyroid function testing in newborn infants	First Audit
Neonatology - Medical	Audit of attendances to the Paediatric Out Patient Department.	First Audit
Neonatology - Medical	Audit of inotrope administration in hypotensive babies of less than 1500 grams in last 6 months from April to Sep 13.	First Audit
Neonatology - Medical	The use of targeted neonatal echocardiography to confirm placement of Umbilical Venous Catheters in neonates	First Audit
Neonatology - Nursing	Vermont Oxford Network (VON) Quality Audits - Neonatal Abstinence Syndrome 2013	Continuous
Neonatology - Nursing	Neonatal Iv Infusion Labels	Re-audit
Neonatology - Nursing	Baby temperature in recovery	Re-audit

Nursing/Midwifery	Compliance with levels of supervision in the administration of medication by Midwifery Students	First Audit
Nursing/Midwifery	Compliance with the swab count SOP in Delivery Suite	First Audit
Nursing/Midwifery	Management of PPH occurring on Postnatal Wards	First Audit
Nursing/Midwifery	Early Skin to skin contact delivery suite	First Audit
Nursing/Midwifery	Compliance with completing physiological observations on the EWS chart	Re-audit
Nursing/Midwifery	Audit of Postnatal Haemoglobin and Anaemia	First Audit
Nursing/Midwifery	Outcomes of primagravid induction of labour	First Audit
Nursing/Midwifery	Audit of IOL bookings in DS IOL Diary with PAS IOL report, DS Birth Register & GPN diary for low risk night time inductions and Gynaecology Diary for IUD inductions >24 weeks gestation.	First Audit
Nursing/Midwifery	Re-audit: Review of ultrasound recall indications	Re-audit
Nursing/Midwifery	Emergency Room (ER) Triage	First Audit
Nursing/Midwifery	Audit of Midwife Newborn Examiners documentation	First Audit
Nursing/Midwifery	Audit of Neonatal Temperature Loss in Operating Theatre Department.	First Audit
Nursing/Midwifery	Re-Audit of Neonatal Temperature loss in Theatre Department	Re-audit
Nursing/Midwifery	Postnatal Glucose Tolerance Test (GTT) attendance by GDM patients	First Audit
Nursing/Midwifery	Audit of the process used to identify and recruit rhesus negative patients to the Routine Antenatal Anti-D Prophylaxis (RAADP) clinic.	First Audit
Nursing/Midwifery	Re-Audit of compliance with An Bord Altranais guidelines in respect to midwifery documentation in the semi-private clinic	Re-audit
Obstetrics	Audit on the use of Amnisure as an aid in the diagnosis of the preterm prelabour rupture of membranes	First Audit
Obstetrics	Prevalence of Iron deficiency Anaemia in pregnancy	First Audit
Obstetrics	Compliance with Induction of Labour Decision Making Performa	First Audit
Obstetrics	An Audit of Postnatal Hospital Readmissions with Perineal Infection	First Audit
Obstetrics	An audit of aspirin prophylaxis for the prevention of pre-eclampsia	First Audit
Obstetrics	Clinical management of Stillbirth >= 24 weeks	First Audit
Obstetrics	Audit of Antiretroviral Therapy Use in Labour	First Audit
Obstetrics	An audit of compliance with glucose tolerance testing among pregnant HIV positive women on protease inhibitors	First Audit
Obstetrics	Management of multiple pregnancy induction of labour from April 1st to September 30th 2013	First Audit
Obstetrics	Use of methotrexate (MTX) in the management of ectopic pregnancy	First Audit
Obstetrics	An audit of antenatal management of women with a previous history of early preterm labour	First Audit
Pathology	Perinatal Post-mortem reporting in the Rotunda Hospital 2012	First Audit
Pathology/Bereavement	Audit of all documentation in the Pathology, Obstetric and Paediatric files relating to Post-mortem	First Audit
Pathology/Bereavement	Documentation in Pathology, Obstetric and Paediatric files relating to Post-mortem.	Continuous
Physiotherapy	Review of physiotherapy management of 3rd and 4th degree tears	First Audit
SATU	Documentation of medication administration to patients who attend the Sexual Assault Treatment Unit (SATU).	First Audit
SATU	Re-audit of documentation of prescription practice and medication administration to patients who attend the Sexual Assault Treatment Unit (SATU).	Re-audit

THE ROTUNDA HOSPITAL
DUBLIN

6 Staff Publications

CARING FOR GENERATIONS
SINCE 1745

Staff Publications 2013

Alderdice, F, Savage-McGlynn, E, Martin, CR, McAuliffe, FM, Hunter, A , Unterscheider, J, Daly, S, Geary, MP, Kennelly, MM, O Donoghue, K, Morrison, JJ, Burke, G, Dicker, P, Tully, EC, and Malone, FD. The prenatal distress questionnaire: an investigation of factor structure in a high risk population.
Journal of Reproductive and Infant Psychology 31 (5): 456-464, 2013.

Ali, A, Glennon, K, Kirkham, C, Yousif, S and Eogan, M. Delivery outcomes and events in subsequent pregnancies after previous anal sphincter injury.
European Journal of Obstetrics, Gynaecology and Reproductive Biology E Pub, Dec, 2013.

Anbazhagan, A, Hunter, A, Breathnach, FM, McAuliffe, FM, Geary, MP, Daly, S, Higgins, JR, Morrison, JJ, Burke, G, Higgins, S, Dicker, P, Tully, E, Carroll, S and Malone, FD. Comparison of outcomes of twins conceived spontaneously and by artificial reproductive therapy.
Journal of Maternal Fetal and Neonatal Medicine E Pub, July 19th, 2013.

Barker, ED, McAuliffe, FM, Alderdice, F, Unterscheider, J, Daly, S, Geary, MP, Kennelly, MM, O Donoghue K, Hunter, A, Morrison, JJ, Burke, G, Dicker, P, Tully, E and Malone, FD. The role of growth trajectories in classifying fetal growth restriction.
Obstetrics and Gynecology 122(2 Part1): 248-254, 2013.

Bodnar, LM, Rouse, DJ, Momirova, V, Peaceman, AM, Sciscione, A, Spong, CY, Varner, MW, Malone, FD, Iamss, JD, Mercer, BM, Thorp, JM, Sorokin, Y, Carpenter, MW, Lo, J, Ramin, SM, and Harper, M. Material 25-Hydroxyvitamin D and preterm birth in twin gestations.
Obstetrics and Gynecology 122: 91-98, 2013.

Breathnach, FM, Donnelly, J, Cooley, SM, Geary, M and Malone, FD. Subclinical hypothyroidism as a risk factor for placental abruption: evidence from a low risk primgravid population.
Australian New Zealand Journal of Obstetrics and Gynaecology 53(6): 553-560, 2013

Burke, N, Flood, K, Murray, A, Cotter, B, Dempsey, M, Fay, L, Dicker, P, Geary, M, Kenny, D and Malone, F. Platelet reactivity changes significantly throughout all trimesters of pregnancy compared with non-pregnant state: a prospective study.
BJOG: British Journal of Obstetrics and Gynaecology 120: 1599-1604, 2013.

Burke, N, Flood, K, Said, S, Mueller, S, Breathnach, F, Barry, C, Geary, M and Malone, FD. Expectant management of prenatally diagnosed Fetal Aneuploidy.
Archives of Disease of Childhood: Fetal and Neonatal edition 98: Suppl 1: A18.2013.

Cleary, BJ, Reynolds, K, Eogan, M, O Connell, MP, Fahey, T, Gallagher, PJ, Clarke, T, White, MJ, McDermott, C, O Sullivan, A, Carmody, D, Gleeson, J and Murphy, DJ. Methadone dosing and prescribed medication use in a prospective cohort of opoid-dependent pregnant women.
Addiction 108(4): 762-770, E Pub Feb 11, 2013.

Constantine, MM, Lai, YY, Bloom, SL, Spong, CY, Varner, MW, Rouse, DJ, Ramin, SM, Caritis, SN, Peaceman, AM, Sorokin, Y, Sciscone, Y, Sciscone, A, Mercer, BM, Thorp, JM, Malone, FD, Harper, M and Iams, JD. Population versus customized fetal growth norms and adverse outcomes in an intrapartum cohort.
American Journal of Perinatology 30 (4): 335-342, 2013.

Constantine, MM, Mele, L, Landon, MB, Spong, CY, Ramin, SM, Casey, B, Malone, FD. Customized versus population approach for evaluation of fetal overgrowth.
American Journal of Perinatology 30 (4): 566-572, 2013.

Cooley, SM, Donnelly, JC, Walsh, T, McMahon, C, Gillan, J, and Geary, MP. The correlation of ultrasonic placental architecture with placental histology in the low risk primgravid population.
Journal of Perinatal Medicine 41(5): 1-5, 505-509, 2013.

Corcoran, S, Jackson, V, Coulter-Smith, S, Loughrey, J, McKenna, P and Cafferkey, M. Surgical site infection after Caesarean Section: implementing three changes to improve the quality of patient care.
American Journal of Infection Control 41(12): 1258-1263, 2013.

Corcoran, S, Daly, N, Eogan, M, Holohan, M, Clarke, T and Geary, M. How safe is preterm operative vaginal delivery and which is the instrument of choice.
Journal of Perinatal Medicine 41 (1): 57-60, 2013.

Corcoran, S, Donnelly, JC and Breathnach, F. Managing the emerging clinical risk of cutaneous bullae and decubitus ulcers in obstetric patients.
International Journal of Gynaecology and Obstetrics 120(3): 285-286, 2013.

Dempsey, M, Flood, K, Burke, N, Murray, A, Mullers, S, Cotter, B, Fletcher, P, Geary, M, and Malone, FD. The impact of unexplained recurrent miscarriage on subsequent pregnancy outcomes.
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: Suppl. 1: A92. 2013.

Dempsey, M, Flood, K, Burke, N, and Malone, FD. Abnormal platelet function seen in women with unexplained recurrent miscarriage during pregnancy.
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: Suppl1: A7. 2013.

Dempsey, M, Flood, K, Burke, N, Muller, S, Cotter, B. Geary, M,Kenny, D and Malone, FD. Platelet reactivity in recurrent miscarriage patients during pregnancy.
American Journal of Obstetrics and Gynaecology 208(10): Suppl : S102. 2013.

Dixon, PH, Wadsworth, CA, Chambers, J, Donnelly, J, Cooley, S, Buckley, R, Mannino, R, Jarvis, S, Syngelaki, A, Geenes, V, Paul, P, Sothinathan, M, Kubitz, R, Lammert, F, Tribe, RM, Ch'ng, Cl, Marshall, HU, Glantz, A, Khan, SA, Nicolaides, K, Whittaker, J, Geary, M and Williamson, C. A comprehensive analysis of genetic variation around six candidate Loci for intrahepatic cholestasis of pregnancy.
American Journal of Gastroenterology 109(1): 76-84, 2014.

Donnelly, JC, Cooley, SM, Walsh, TA, Smith, OP, Gillan, J, McMahon, C and Geary , MP. Circulating pro and anti-coagulant levels in normal and complicated primgravid pregnancies and their relationship to placental pathology.
Journal of Obstetrics and Gynecology 33(3): 264-268, 2013.

Donnelly, JC, Cooley, SM, Doyle, A, Murphy, D, Corcoran, D, Kumpel, B, and Ni Ainle, F. False positive maternal Kleihauer-betke(acid edition) test caused by elevated maternal haemoglobin (F cells).
European Journal of Obstetrics Gynaecology and Reproductive Biology E Pub, Oct 2013.

Doyle, A, Donnelly, J, Cooley, S, Campbell, S, Murphy, D, Corcoran, D, Kumpel, B, and Ni Ainle, F. Testing for fetomaternal haemorrhage by acid elution can yield false positive results in the presence of elevated maternal fetal haemoglobin.
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: A48, 2013.

Eogan, M, McHugh, A and Holohan, M. The role of the Sexual Assault Centre.
Best Practice and Research Obstetrics and Gynaecology 27(1 : 47-58, 2013.

Figueroa, D, Landon, MB, Mele, L, Spong, CY, Rouse, DJ, Leveno, KJ, and Malone, FD. Relationship between one hour glucose challenge test results and perinatal outcomes.
Obstetrics and Gynecology 121(): 1241-1247, 2013.

Flood, K, Burke, N, Mullers, S and Malone, FD. Complicated sequelae of parvovirus affected pregnancies.Archives of Disease in Childhood: Fetal and Neonatal Edition 98: Suppl 1: A21-22.2013.

Flood, K, Ali, A, Breathach, FM, McAuliffe, FM, Geary, M, Daly, S, Higgins, JR, Dornan, J, Morrison, JJ, Burke, G, Higgins, S, Dicker, P, Tully, E, Carroll, S and Malone, FD. Perinatal Ireland Research Consortium. Expectant management of monochorionic diamniotic twins with selective intrauterine growth restriction.
American Journal of Obstetrics and Gynecology 208(1): Suppl : S164. 2013.

Gilbert, SA, Grobman, WA, Landon, MB, Spong, CY, Rouse, DJ, Leveno, KJ, Varner, MW, Wapner, RJ, Sorokin, Y,O Sullivan, MJ, Sibai, BM, Thorp, JM, Ramin, SM, Mercer, BM and Malone FD. Cost-effectiveness of trial of labor after previous caesarean section in a minimally biased cohort.
American Journal of Perinatology 30 (1): 11-20, 2013.

Gilbert, SA, Grobman, WA, Landon, MB, Varnar, MW, Mercer, BM, Leveno,KJ, Iams, JD, Wapner, RJ, Sorokin, Y, and Malone, FD. Lifetime cost-effectiveness of trial of labor after caesarean in the United States. **Value Health 16 (6): 954-964, 2013.**

Gleeson, EM, O Donnell, JS, Hams, E, Ni Ainle, F, Kenny, BA, Fallon, PG, and Preston, RJ. Activated Factor X signalling via protease activated receptor 2 suppresses pro –inflammatory cytokine production from LPS-stimulated myeloid cells.
Haematologica E Pub Jul 19, 2013.

Gleeson ,E, Ni Ainle, F, Kenny, BA, O Donnell, JS, Preston , RJ. Activated protein C glycosylation status dictates protease-activated receptor 1 proteolysis and anti-inflammatory signalling efficacy.
Journal of Thrombosis and Haemostasis 11 : Suppl 2: 1-1322, 2013.

Graves, SW, Esplin, MS, McGee, P, Rouse, DJ, Leveno, KJ, Mercer, BM, Iams, JD, Wapner, RJ, Sorokin, Y, Thorp, JM, Ramin, SM, Malone, FD, O Sullivan, MJ, Peaceman, AM, Hankins, GD, Dudley, DJ, and Caritis, SN. Association of cord blood digitalis-like factor and necrotizing enterocolitis.
American Journal of Obstetrics and Gynecology E Pub Nov. 8 , 2013.

Grobman, WA, Lai, Y, Rouse, DJ, Spong, CY, Varner, MW, Mercer, BM, Leveno, KJ, Iams, JD, Wapner, RJ, Sorokin, Y, Thorp, JM, Ramin, SM, Malone, FD, O Sullivan, MJ, Hankins, GD, and Caritis, SN. The association of cerebral palsy and death with small for gestational age birthweight in preterm neonates by individualized and population based percentiles.
American Journal of Obstetrics and Gynecology 209: 340, e1-5, 2013.

Haddow, JE, Craig, WY, Palomaki, GE, Neveux, LM, Lambert-Messerlian, G, Canick, JA, Malone, FD and D'Alton, ME. Impact of adjusting for the reciprocal relationship between maternal weight and free throxine during early pregnancy.
Thyroid 23 (2): 225-230, 2013.

Hayes, BC, McGarvey, C, Mulvany, S, Kennedy, J, Geary, MP, Matthews, TG and King, MD. A case –control study of hypoxic-ischemic encephalopathy in newborn infants at greater than 36 weeks gestation.
American Journal of Obstetrics and Gynecology 209(1): 1-29, 2013.

Hayes, BC, Cooley, S, Donnelly, J, Doherty, E, Grehan, A, Madigan, C, Ryan, S, Gillan, J, Matthews, TG and King, MD. The placenta in infants greater than 36 weeks gestation with neonatal encephalopathy: a case control study.
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: F233-239, 2013.

Hayes, CB, Collins, C, O Carroll, H, Wyse, E, Gunning, M, Geary, M and Kelleher, CC. Effectiveness of motivational interviewing in influencing smoking cessation in pregnant and postpartum disadvantaged women.
Nicotine Tobacco Research 15 (5): 969-977, 2013.

Hazell, M, Reyland, L, Ni Ainle, F, Donnelly, JC, and Kumpel, B. Persistence of fatal haemoglobin as a cause of false positive Kleihauer-betke (acid elution) tests and excessive prophylactic Anti-d administration.
Vox Sanguinis 155 Suppl 1: 1-316.

Hehir, MP, O Connor, HD, Higgins, S, Robson, MS, McAuliffe, FM, Boylan, PC, Malone, FD, and Mahony, R. Obstetric and anal Sphincter Injury, risk factors and methods of delivery: an eight year analysis across two tertiary referral centres.
Journal of Maternal Fetal and Neonatal Medicine 26 (15): 1514-1516, 2013.

Higgins, M, Eogan, M, O Donoghue, K and Russell, N. How to write an abstract that will be accepted.
BMJ Careers, May 2013.

http://careers.bmj.com/careers/advice/view-article.html?id=20012422

Kayemba-Kay, S, Peters, C, Geary, MP, Hill, NR, Matthews, DR, Hindmarsh, PC. Maternal hyperinsulisim and glycaemic status in the first trimester of pregnancy are associated with the development of pregnancy induced hypertension and gestational diabetes.
European Journal of Endocrinology 168(3): 413-418, 2013.

Kevane, B, Donnelly, JC, D'Alton, M, Cooley, SM, Preston, RJS, and Ni Ainle, F. Risk factors for pregnancy related venous thromboembolism.
Perinatal Medicine 13 (12): 1-9, 2013.

King, T, Bergin, D, Kent, E, Manning, F, Reeves, E, Dicker, P, McElvaney, G, Sreenan, S, Malone, FD and McDermott, J. Endothelial Progenitor cells in mothers of low birthweight infants: a link between defective placental vascularisation and increased vascular risk.
Journal of Clinical Endocrinology and Metabolism 98 (1): E33-39, 2013.

Lambert, J, Jackson, V, Coulter-Smith, S, Brennan, M, Geary, M, Kelleher, TB, O Reilly, M, Grundy, K, Sammon, N and Cafferky, M. Universal antenatal screening in Hepatitis C.
Irish Medical Journal 106(5): 136-139, 2013.

Long, N, Ng, S, Donnelly, G, Owens, M, McNicholas, M, McCarthy, K and McCaul, CL. Anatomical characterisation of the cricothyroid membrane in females of childbearing age using computed tomography.
International Journal of Obstetric Anesthesia E Pub Nov 28, 2013.

Ma, KK, Mele, L, Landon, MB, Spong, CY, Ramin, SM, Casey, B , and Malone, FD. The obstetric and neonatal implications of a low value on the 50g glucose screening test.
American Journal of Perinatology 30 (9): 715-722, 2013.

Maayeh, M, Purandere, N, Flanagan, M, Ash, S, Geary, M, and Breathnach, FM. Ruptured broad ligament ectopic gestation in a Jehovah's Witness with a negative pregnancy test.
Medico Legal Journal of Ireland 19 (1): 37-39, 2013.

Monteith, C , Ni Ainle, F, Lambert, J, Coley, S, Kelleher, B, Jackson, V, Eogan, M. Hepatitis C Virus associated thrombocytopenia in pregnancy: impact upon multidisciplinary care provision.
Journal of Perinatal Medicine 42 (1): 135-138, 2013.

Monteith, C, Flood, K, Jaleel, S, Hayes, B, Barry, C, Geary, M and Malone, FD. Prenatal diagnosis of moderate and severe cerebral ventriculomegaly- our experience in a single tertiary referral centre.
Archives of Disease in Childhood :Fetal and Neonatal Edition 98: Suppl1: A17. 2013.

Mullers, S, Flood, K, Burke, N, Geary, M, Barry, C, Breathnach, FM, and Malone, FD. Should we consider the elective mode of delivery in Gastroschisis?
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: Suppl 1: A12. 2013.

Mullers, S, Burke, N, Flood, K, O Connor, H, Dempsey, M, Cotter, B, Tully, E, Dicker, P, Geary, M, Kenny, D and Malone, FD. Abnormal platelet reactivity in pregnancies complicated by Intrauterine Growth Restriction.
Archives of Disease in Childhood: Fetal and Neonatal Edition 98: Suppl1: A5, 2013.

Murphy, DJ, Mullaly, A, Cleary, BJ, Fahey, T and Barry, J. Behavioural change in relation to alcohol exposure in early pregnancy and impact on perinatal outcomes- a prospective cohort study.
BMC Pregnancy Childbirth Jan 16; 13:8.

Neary, E, Okafor, I, Al-Awaysheh, F, Kirkham, C, Sheehan, K, Mooney, CD, Foran, AD, Corcoran, JD, Ni Ainle, F, Cotter, M and McCallion, M. Laboratory coagulation parameters in extremely premature infants born earlier than 27 gestational weeks upon admission to a neonatal intensive care unit.
Neonatology 104(3): 222-227, 2013.

O Connor, C, McAuliffe, FM, Breathnach, FM, Geary, M, Daly, S, Higgins, JR, Dornan, J, Morrison, JJ, Burke, G, Higgins, S, Mooney, E, Dicker, P, Manning, F, McParland, P, Malone, FD. Prediction of outcome in twin pregnancy with first and second trimester ultrasound.
Journal of Maternal Fetal Neonatal Medicine 26(10): 1030-1035, 2013.

O Connor, HD, Hehir, MP, Kent, EM, Foley, ME, Fitzpatrick, C, Geary, MP, and Malone, FD. Eclampsia: trends in incidence and outcomes over thirty years.
American Journal of Perinatology 30 (8): 661-664, 2013.

Pratt, IS, Anderson, WA, Crowley, D, Daly, SF, Evans, RI, Fernandes, AR, Fitzgerald, M, Geary, MP, Keane, DP, Morrison, JJ, Reilly A and Tlustos, C . Brominated and fluorinated organic pollutants in the breast milk of first-time mothers : relationship to levels in food.
Food Additives and Contaminants E Pub Aug 6th, 2013.

Ramon, A. "The Productive Ward".
Irish Nurses and Midwives Organisation Magazine, Nov. 2013.

Rigney, T, Cooley, S, Kevane, B, Ryan, K, Byrne, M and Ni Ainle, F. Antenatal identification of Factor VII Padua during a healthy pregnancy: facilitation of a straightforward labour and delivery.
Case Reports in Perinatal Medicine 2013.

Ryan, HM, Morrison, JJ, Breathnach, FM, McAuliffe, FM, Geary, MP, Daly, S, Higgins, JR, Hunter, A, Burke, G, Higgins, S, Mahony, R, Dicker, P, Manning, F, Tully, E and Malone, FD. The influence of maternal body mass index on fetal weight estimation in twin pregnancy.
American Journal of Obstetrics and Gynecology E Pub Nov 8th, 2013.

Ryan, K, Goodyer, M, O Connell, N, Gilmore, R, Ni Ainle, F, Jenkins, V, Fagan, P, Young, V and O Donnell, JS. Anticoagulation for patients with antiphospholipid antibodies undergoing cardiopulmonary bypass- a novel strategy for optimisation of heparin anticoagulation.
Journal of Thrombosis and Haemostasis 11: Suppl 2: 1-1322, 2013.

Straub, DB, Aslani, N, Enohumah, K, Rahore, R, Conrick-Martin, I, Kumar, D, Campbell, M, Dicker, P, Mocanu, E, Loughrey, J, Hayes, NE, and McCaul, CL. Evaluation of the effect of intra-operative intravenous fluid on post-operative pain and pulmonary function: a randomized trial comparing ten 30 ml. Kg-1 of crystalloid.
Irish Journal of Medical Science, E Pub Dec 10th, 2013.

Talukdar, S, Purandare, N, Coulter-Smith, S and Geary, MP. Is it time to rejuvenate the forceps?
Journal of Obstetrics and Gynaecology India 63(4): 218-222, 2013.

Toher, C, Lindsay, K, McKenna, M, Kilbane, M, Curran, S, Harrington, L, Udama, O, McAuliffe, FM. Relationship between Vitamin D Knowledge and 25-hydroxyvitamin D levels amongst pregnant women.
Journal of Human Nutrition and Dietetics E Pub Aug 24, 2013.

Unterscheider, J, Daly, S, Geary, MP, Kennelly, MM, McAuliffe, FM, O Donoghue, K, Hunter, A, Morrison, JJ, Burke, G, Dicker, P, Tully, EC, and Malone, FD. Predictable progressive Doppler deterioration in IUGR; does it really exist?
American Journal of Obstetrics and Gynecology 209(6): 539 e1-7, 2013.

Unterscheider, J, Ryan, H, Morrison, JJ, and Malone, FD. Intrauterine red cell transfusion for anti-Kell isoimmunisation in a fetus with Glanzmann's thrombasthemia.
Prenatal Diagnosis 33 (11): 1107-1109, 2013.

Unterscheider, J, Daly, S, Geary, MP, McAuliffe, FM , Kennelly, MM, O Donoghue, K, Hunter, A, Morrison, JJ, Burke, G, Dicker, P, Tully, EC, and Malone, FD. Optimizing the definition of intrauterine growth restriction: results of the Multicenter prospective PORTO Study.
American Journal of Obstetrics and Gynecology 208(4): 290 e1-6, 2013.

Unterscheider, J, Geary, MP, Daly, S, McAuliffe, FM , Kennelly, MM, Dornan, J, Morrison, JJ, Burke, G, Francis, A, Gardosi, J and Malone, FD. The customised fetal growth potential: a standard for Ireland.
European Journal of Obstetrics, Gynaecology and Reproductive Biology 166 (1): 14-17, 2013.

Unterscheider, J, Daly, S, Geary, MP, Kennelly, MM, McAuliffe, FM, O Donoghue, K, Hunter, A, Morrison, JJ, Burke, G, Dicker, P, Tully, EC, and Malone, FD. Definition and management of fetal growth restriction: a survey of contemporary attitudes.
European Journal of Obstetrics, Gynaecology and Reproductive Biology E Pub, Dec, 2013.

Walsh, A, McHugh, A, and Eogan, M. Sexual Assault services- an overview.
Journal of the Irish College of General Practitioners 30(6): 48-49, 2013.

THE ROTUNDA HOSPITAL DUBLIN

7 Hospital Staff

CARING FOR GENERATIONS SINCE 1745

MASTER
Dr. S. Coulter-Smith

Secretary/ General Manager	Ms P Treanor
Director of Midwifery/Nursing	Ms M Philbin

MIDWIFERY
Senior Staff

Ms P Williamson (ADOM)
Ms F Hanrahan (ADOM)
Ms M Brennan (Infection Prevention & Control)
Ms T Mc Cluskey (ADOM)
Ms M Keane (ADOM)

Clinical Midwife Manager III

Ms O. O'Byrne Ms A Keenan Ms. J. Hickey
Ms C Cannon Ms M Deering Ms S Finn Heaney

PARAMEDICAL HEADS OF DEPARTMENT

Chief Pharmacist	**Snr Physiotherapist**	**Snr Radiographer**	**Laboratory Manager**
Ms A Frankish/Mr B Cleary	Ms C Cusack	Ms S Gibson	Mr J O'Loughlin

Acting Head Medical Social Worker	**Senior Dietitian**
Ms S Devitt/Ms P Forster	Ms L Harrington

ADMINISTRATIVE HEADS OF DEPARTMENT

Patient Services Manager	Ms C Ryan Hyland / Ms N Moore
Financial Controller	Mr C Kenny
Human Resources Manager	Mr K Slevin
Information Manager	Ms L Sibley
Materials Manager	Mr S Williamson
Head Librarian	Ms A O'Byrne
Quality Manager	Ms S Breen
Clinical Risk Manager	Ms. C. O'Mahony
Information Technology Manager	Mr. N. Carberry

SUPPORT DEPARTMENT STAFF HEADS

Support Services Manager	Mr R Philpott
Technical Services	Mr B Memery
Catering Officer	Ms P Ryan Mohammed
Clinical Engineering	Mr H Gelera
Household Services Manager	Ms C L'Estrange
Head Porter	Mr P Shields

CHAPLAINS

Ms A Charlton
Rev D Gillespie
Rev J Stephens
Ms S Dawson
Fr D O'Reilly
Rev A Boal
Ms G Stephens
The Dominican Community