THE ROTUNDA HOSPITAL DUBLIN

CLINICAL REPORT 2012

Caring for Generations
Since 1745

MASTER
Dr Sam Coulter Smith

CONSULTANTS IN OBSTETRICS & GYNAECOLOGY

Dr S Coulter Smith
Dr M Geary
Dr P Mc Kenna
Dr C Barry
Dr B Gaughan
Dr M Holohan
Dr R Gleeson
Dr W Boyd
Dr G Connolly
Dr E Mocanu
Dr R Roopnarinesingh
Dr P Byrne
Dr M Eogan
Dr T Walsh
Dr F Breathnach
Dr S Cooley

PAEDIATRIC CONSULTANTS

Dr D Corcoran
Dr A Foran
Dr N Mc Callion
Dr A ElKuffash
Dr B Hayes
Dr B Paturi
Dr K Butler
Dr S Keane
Dr M King

ANAESTHESIA

Dr J Loughrey
Dr M Bowen
Dr C Mc Caul
Dr N Hayes
Dr I Hayes
Dr Ni Mhuircheartaigh
Dr P Thornton
Dr I ElSaid
Dr N Assaf

ROYAL COLLEGE OF SURGEONS IN IRELAND UNIT
Professor Fergal Malone

CONSULTANT PATHOLOGIST
Dr J E Gillan (Retired Feb 12)
Dr D Devaney
Dr E O'Donovan
Dr E Doyle

CONSULTANT PAEDIATRIC HAEMATOLOGIST
Dr M Cotter

CONSULTANT MICROBIOLOGIST
Dr S Corcoran

CONSULTANT MEDICAL PATHOLOGIST
Dr P Mayne

CONSULTANT INFECTIOUS DISEASES
Dr J Lambert
Dr P Gavin

PAEDIATRIC CARDIOLOGIST
Dr O Franklin

CONSULTANT GASTROOENTEROLOGIST
Dr P Mac Mathuna

CONSULTANT ORTHOPAEDIC
Dr P Connolly

CONSULTANT OPTHALMOLOGIST
Dr M O'Keeffe

CONSULTANT CARDIOLOGIST
Dr N Mahon

CONSULTANT HAEMATOLOGIST
Dr F Ni Ainle

CONSULTANT COLORECTAL SURGEON
Dr A Brannigan

CONSULTANT ENDOCRINOLOGIST
Dr R Firth Dr M Byrne
Dr B Kinsley

CONSULTANT RADIOLOGIST
Dr N Hickey (Locum)
Dr A Tarrant

PAEDIATRIC RADIOLOGIST
Dr S Ryan

CONSULTANT PSYCHIATRIST
Dr J Sheehan

CONSULTANT NEPHROLOGIST
Professor J.J. Walshe
Dr. C Magee

CONSULTANT PHYSICIAN & GASTROENTEROLOGIST
Dr B Kelleher

LEAD AUDIT CLINICIAN
Dr S Cooley

OCCASIONAL CONSULTANTS FOR SPECIAL PURPOSES

Professor T Gorey
Dr D Sugrue
Mr K O'Malley
Mr T Corrigan
Mr T Creagh
Dr H Mc Cann

THE ROTUNDA HOSPITAL
DUBLIN

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Clinical Report

1st January - 31st December 2012

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 2012
Mothers who have delivered babies weighing >500 grams	8846
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1551
Hydatidiform Moles *	27
Ectopic Pregnancies	123
Total Mothers Delivered	**10397**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2012
Maternal Deaths	2

3. BIRTHS	Totals 2012
Singletons	8653
Twins	364
Triplets	24
Quadruplets	0
Total Babies Delivered weighing> 500 grams	**9041**

4. OBSTETRIC OUTCOME	Totals 2012
Spontaneous Vaginal Delivery	53%
Forceps	4%
Ventouse	14%
Caesarean Section	29%
Induction of Labour	28%

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2012
Antepartum Deaths	38
Intrapartum Deaths	4
Stillbirths	42
Early Neonatal Deaths	26
Late Neonatal Deaths	9
Congenital Anomalies	24

6. PERINATAL MORTALITY RATES

	Totals 2012
Overall Perinatal Mortality Rate per 1,000 Births	7.5
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.9
Perinatal Mortality Rate Including Late Neonatal Deaths	8.5
Perinatal Mortality Rate Excluding Unbooked Cases	7.3
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.6

7. AGE OF WOMEN

	Nullips	Multips	Total Mothers	Delivered>500g
<20 yrs	213	34	247	
20-24 yrs	659	369	1028	
25-29 yrs	1031	1025	2056	
30-34 yrs	1307	1772	3079	
35-39 yrs	577	1373	1950	
40+ yrs	141	345	486	
Total	**3928**	**4918**	**8846**	

8. PARITY

	Totals 2012	% from Total Mothers	Delivered >500g
Para 0	3928		44.4%
Para 1	3013		34.1%
Para 2-4	1796		20.3%
Para 5+	109		1.2%
Total	**8846**		**100%**

9. COUNTRY OF BIRTH & NATIONALITY

	2011	%	2012	%
Irish	5957	65.35%	5693	64.36%
EU	1929	21.16%	1948	22.02%
NonEU	1217	13.35%	1188	13.43%
Unknown	13	0.14%	17	0.19%
Total	**9116**	**100.00%**	**8846**	**100.00%**

10. SOCIO-ECONOMIC GROUP

Socio-Group	2010	%	2011	%	2012	%
1	536	6.22%	647	7.10%	622	7.03%
2	1926	22.36%	2034	22.31%	2018	22.81%
3	1452	16.86%	1569	17.21%	1498	16.93%
4	577	6.70%	563	6.18%	506	5.72%
5	595	6.91%	596	6.54%	603	6.82%
6	328	3.81%	381	4.18%	344	3.89%
7	2380	27.63%	2469	27.08%	2334	26.38%
8	1	0.01%	1	0.01%	1	0.01%
9	3	0.03%	1	0.01%	2	0.02%
10	816	9.47%	855	9.38%	918	10.38%
TOTAL	**8614**	**100.00%**	**9116**	**100.00%**	**8846**	**100.00%**

11. BIRTH WEIGHT

Weights	Totals 2012
500 - 999 gms	69
1,000 - 1,499	81
1,500 - 1,999	132
2,000 - 2,499	368
2,500 - 2,999	1,168
3,000 - 3,499	2,844
3,500 - 3,999	3,086
4,000 - 4,499	1,104
4,500 - 4,999	177
>5,000	12
Total	**9041**

12. GESTATIONAL AGE

	Nullips	Multips	Totals 2012
<26 weeks	16	10	26
26 - 29 weeks + 6 days	30	28	58
30 - 33 weeks + 6 days	67	69	136
34 - 36 weeks + 6 days	210	176	386
37 - 41 weeks + 6 days	3628	4595	8223
42 + weeks	11	6	17
Total	**3962**	**4884**	**8846**

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

	Nullips	Multips	Totals 2012
Episiotomy & Extended Episiotomy	1306	262	1568
	20.7%	4.2%	24.9%
First Degree Laceration	261	783	1044
	4.1%	12.4%	16.6%
Second Degree Laceration	753	1118	1871
	11.9%	17.7%	29.7%
Third Degree Anal Sphincter/Mucosa	157	54	211
	2.5%	0.9%	3.3%
Fourth Degree	4	3	7
	0.06%	0.05%	0.1%
Other { Lacerations/Grazes not	195	239	434
requiring sutures}	3.1%	3.8%	6.9%
Intact	147	1026	1173
	2.3%	16.3%	18.6%
Totals	**2823**	**3485**	**6308**
	44.8%	**55.2%**	

14. THIRD DEGREE TEARS *

	Nullips	Multips	Totals 2012
Occurring Spontaneously	71	38	109
Associated with Episiotomy	23	0	23
Associated with Forceps	24	5	29
Associated with Ventouse	48	13	61
Associated with Ventouse & Forceps	18	0	18
Associated with O.P. position	15	2	17

*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 INFANTS

	Nullips	Multips	Totals
Utero-Placental Insufficiency	7	5	12
Cord Accident	1	4	5
Infection	1	2	3
Abruption	0	2	2
Prematurity	1	0	1
Unexplained	4	2	6
Total	**14**	**15**	**29**

Autopsy Totals		
Autopsy Rate	17/29	58.9%

16. PERINATAL MORTALITY IN CONGENITALLY MALFORMED INFANTS

	Nullips	Multips	Totals 2012
CNS Lesions	3	0	3
Cardiac	2	0	2
Renal	1	0	1
Chromosomal	2	9	11
Diaphragmatic Hernia	0	1	1
Other	4	2	6
Totals	**12**	**12**	**24**

17. EARLY NEONATAL DEATHS

	Nullips	Multips	Totals
Congenital	6	5	11
Prematurity / Infection	8	4	12
Other	2	0	2
Unexpected	1	0	1
Totals	17	9	26
Full Autopsy	10/26		
Autopsy Rate	38%		
Overall Full Autopsy total for all Perinatal Deaths			**33**
Overall Autopsy Rate			**48.5%**

18. HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Grades	Grade 1	Grade 2	Grade 3
	16	4	7

19. SEVERE MATERNAL MORBIDITY

	Nullips	Multips	Totals
Massive Obstetric Haemorrhage	7	11	18
Emergency Hysterectomy	1	6	7
Transfer To ICU/CCU	7	7	14
Uterine Rupture	0	1	1
Eclampsia	0	0	0
Pulmonary Embolus	0	2	2

20. FINANCIAL INFORMATION: Non-capital income and expenditure account
For the year ended 31 December 2012

	2012 €'000	2011 €'000
Cumulative non-capital deficit/(surplus) brought forward from previous year	**136**	66
Pay		
Salaries	**48,153**	46,837
Superannuation and gratuities	**4,624**	4,291
Total Pay	**52,777**	51,128
Non-Pay		
Direct patient care	**5,100**	5,309
Support services	**4,379**	4,177
Financial and administrative	**3,253**	3,436
Total Non Pay	**12,732**	12,922
Gross expenditure for the year	**65,645**	64,116
Income	**(20,963)**	(19,001)
Net expenditure for the year	**44,682**	45,115
HSE Funding notified for the year	**(43,647)**	(44,979)
Deficit for the year carried forward to following year	**1,035**	136

THE ROTUNDA HOSPITAL
DUBLIN

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Introduction
by the master

2012

CARING FOR GENERATIONS
SINCE 1745

Introduction

The Master

2012 was the second busiest year in the history of the hospital. 11,000 women booked for maternity care. 8, 846 mothers were delivered of 9,041 babies greater than or equal to 500g. This was a slight reduction of approximately 3% on the previous year, but the extraordinarily high level of activity is maintained evidenced by the fact that over one 24 hour period in late December there were 42 deliveries. This level of activity is unsustainable, particularly when simultaneous emergencies occur and it is a credit to the hospital front line staff that the safety levels are maintained. The HSE and the Department of Health have been notified on multiple occasions during the year of the intolerably high levels of activity and the clinical risks that arise and we will continue to address this issue with our funders. The corrected perinatal mortality rate for the year was 5.0 per 1,000 and the caesarean section rate is maintained at a constant level of 29%. This has remained virtually unchanged for the last number of years.

2012 marked a sad year for the hospital with the sudden tragic death of Mr. Ken Grundy, our Laboratory Services Manager. Ken was a hugely valued member of the laboratory team who over the years had put in an enormous amount of work into making the lab a world class facility. He will be sadly missed by all his friends and colleagues at the Rotunda.

There were a number of significant retirements during the year including Bernie Beirne Assistant Director of Midwifery, Margaret Sheridan Specialist Midwife on the Mental Health Team, Eilish McDonnell, Head of the Social Work Department, Dr. John Gillan Consultant Histopathologist and Professor Joe Walshe, Consultant Nephrologist. In addition there were a large group of staff from across the hospital who retired as part of the early retirement package from the HSE. This loss of very experienced staff obviously has had a big impact on the hospital with additional strain put on the departments that have been left with reduced staffing levels. I wish them all a long and happy retirement.

There were a number of new consultant posts filled during the year. Dr. Fionnuala NiAinle commenced as consultant adult Haematologist between the Mater and ourselves. Dr. Afif El-Khuffash and Dr. Breda Hayes were new appointments to the Neonatal Services and Dr. Roisin Ni Mhuircheartaigh was appointed jointly between the Rotunda and the Mater as a consultant anaesthetist. Mr. John O'Loughlin was appointed as the Laboratory Services Manager and Ms. Anne McLellan took on the role of Director and Academic Affairs in September 2012. I would like to welcome all of our new staff to the hospital and wish them well in their posts.

There was also a very significant retirement from the Joint Maternities Committee, Dr. Miriam Hederman O'Brien stepped down as Chair of the Joint Maternities in September 2012. Miriam had played an enormous role in keeping maternity services on the political agenda and will be sadly missed. I wish Miriam well in her retirement.

The Department of Health Report into the practice of Symphysiotomy was produced in July 2012. The report on the final outcome of the site for the New National Children's Hospital was released in late 2012. The outcome of this report was extremely disappointing for the Rotunda given the expectation following 2008 KPMG report where the Rotunda was due to tri-locate with the new Mater Adult Hospital and the New Children's Hospital on the Mater site. A lot of time, effort and significant resources had been put into putting the case for the Rotunda to be part of this tri-location and this has been a significant set back for the hospitals strategic plans. We will continue to work with the HSE and the Department of Health in trying to improve the infrastructure of the hospital and provide facilities to deal with the huge increase in the level of activity that has occurred over the last 5 to 6 years.

The Charter Day Lecture was given by Professor Sir Arulkumaran. His lecture 'Fetal surveillance – A tragedy – Is it time to act' was very well received. The Hospital held a staff ball in the Four Seasons Hotel to mark the tercentenary of the birth of the Hospitals founder Dr. Bartholomew Mosse. The ball was attended by over 370 staff and partners and was a great success. The annual Remembrance Service for patients who have been bereaved was held in the Pro-cathedral on the 18th November and was as always extremely well attended.

Under the auspices of the North Dublin Hospitals Group the Rotunda hosted a North Dublin Hospitals Research Day on 29th November to showcase collaborative research between our Hospitals. This was very well attended and plans are currently being made for a second meeting to be held in mid November of 2013.

The Friends of the Rotunda continue to provide hugely valuable support for research within the hospital. Their annual golf classic was again held in Milltown Golf Club and as always this was a very successful social and fund raising event.

The Hospital Management Team worked extremely hard and diligently during another difficult year to bring the hospital close to budget. However this was only achieved with a series of one off savings and next year promises to be an even more difficult year with further budget cuts signalled.

Introduction

The Board of Governors of the Hospital continue to take a very keen interest in the running of the hospital and take their role of governance extremely seriously. The recommendations which arose from the HIQA report into Tallaght Hospital were published in 2012 and the Board has undertaken a self assessment review against these recommendations. This has led to a number of actions for the Board and for the Executive Management Team. The tragic death of Savitha Halapanavar in Galway late in the year will no doubt lead to further recommendations in relation to maternal health care and the hospital will undertake to self assess against any recommendations that emerge from the investigations into this sad event. Over the last couple of years there have been significant improvements in the area of governance with improvements in the risk management process, clinical audit, education, research, revision of terms of reference of hospital committees and revision of the organisational structure. The appointment of the Clinical Director to assist the Master has been hugely helpful.

In my previous reports I have always commented on the fact that the job of Master would be impossible without the enormous support and commitment of my consultant colleagues from all specialties and all of the junior hospital doctors, but especially the Assistant Masters. All of our medical staff put in an enormous effort into to ensuring the hospital remains safe. Due to the huge numbers of patients that are being put through the system we still have too many simultaneous emergencies which pose a significant clinical risk and this has not changed since my report last year.

Our midwifery and nursing colleagues bring an extraordinary level of skill and commitment to their jobs and it is due to their tireless efforts that we are able to maintain good quality care to our patients. However there is no doubt that a midwife to patient ratio of 1:50 is completely inappropriate for any busy tertiary referral unit and this is something that will have to be addressed. The clinical services of the hospital are backed up and supported by an incredibly dedicated group of hospital staff who assist in the delivery of care to our patients and together they ensure that the environment that we work in is maintained to the highest possible standards and they deserve huge credit for the hard work that they do. The Hospital Executive Management Team and Senior Management Team worked extremely hard all year to ensure the hospital ran as efficiently as possible. Unfortunately next year will be just as tough.

Lastly I would like to thank my colleagues who had contributed to the annual report and assisted in its compilation, particularly Dr Sharon Cooley. I would also like to thank Mary and Anne in the Master's Office for their continued support in putting the report together and for their assistance in making the job of Master just that little bit easier.

THE ROTUNDA HOSPITAL
DUBLIN

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Statistical Tables & Summaries

CARING FOR GENERATIONS
SINCE 1745

Comparative Results for 10 years

YEARS	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Babies Born	6790	6731	6804	7325	8456	8799	8912	8792	9319	9041
Perinatal Deaths	58^{+12} *	61^{+13} *	61^{+10} *	50^{+13} *	66^{+10} *	64^{+7}*	56^{+5}*	69^{+5}*	59^{+2}*	66^{+2}*
Perinatal Mortality Rate	10.3	11	9.8	8.6	9.0	8.1	6.8	8.4	6.5	7.5
Mothers Attending	7,577	7,290	7,518	8,036	9,290	9,655	9,709	9,594	10547	10397
Maternal Deaths	2	1	0	0	0	1	2	3	3	2
Caesarean Section %	28.2	26.6	25.6	27.7	27.1	26.2	28.5	27.9	29	29
Forceps/ Ventouse %	16	16.5	15.3	16.8	17	20	19.8	20.5	19.4	18
Epidural %	46	48	46.7	47	47	49	49.2	46.6	46	48
Induction %	18	19	19	20	20	21	23.27	27	29	28

* Unbooked

Statistical Summaries

1. TOTAL MOTHERS ATTENDING	Totals 2012
Mothers who have delivered babies weighing >500 grams	8846
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Total Mothers Delivered	**10397**

*This figure includes complete & Partial Hydatidform Moles

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Maternal Deaths	2

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Antepartum Deaths	38
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Early Neonatal Deaths	26
Late Neonatal Deaths	9
Congenital Anomalies	24

6. PERINATAL MORTALITY RATES

	Totals 2012
Overall Perinatal Mortality Rate per 1,000 Births	7.5
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.9
Perinatal Mortality Rate Including Late Neonatal Deaths	8.5
Perinatal Mortality Rate Excluding Unbooked Cases	7.3
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.6

7. STATISTICAL ANALYSIS OF HOSPITAL POPULATION

AGE AT DELIVERY	2006	2007	2008	2009	2010	2011	2012
<20	4.7%	4.7%	4.7%	3.8%	3.5%	3.0%	2.8%
20-24	16.5%	16.2%	14.8%	14.6%	13.1%	12.4%	11.6%
25-29	24.7%	24.7%	25.7%	24.7%	24.6%	23.6%	23.2%
30-34	29.8%	30.5%	30.2%	31.6%	31.6%	33.6%	34.8%
35-39	19.2%	19.9%	20.5%	21.3%	22.2%	22.5%	22.0%
>=40	4.0%	4.0%	4.1%	4.0%	5.0%	4.9%	5.5%

PARITY	2006	2007	2008	2009	2010	2011	2012
0	46.3%	46.9%	48.9%	47.3%	45.5%	45.5%	44.4%
1	30.0%	30.9%	29.3%	31.2%	32.3%	32.8%	34.1%
2-4	22.3%	20.8%	20.8%	20.4%	21.1%	20.7%	20.3%
5+	1.4%	1.4%	1.0%	1.1%	1.1%	1.0%	1.2%

BIRTHWEIGHT (grams)	2006	2007	2008	2009	2010	2011	2012
500-999	0.8%	0.8%	0.6%	0.5%	0.6%	0.5%	0.7%
1000-1499	0.9%	1.0%	1.1%	0.9%	0.7%	0.8%	1.0%
1500-1999	1.4%	1.6%	1.6%	1.6%	1.4%	1.6%	1.5%
2000-2499	3.9%	4.2%	3.7%	3.4%	4.0%	3.8%	4.0%
2500-2999	13.5%	13.0%	13.4%	13.6%	13.1%	13.8%	12.9%
3000-3499	32.9%	33.1%	33.0%	33.5%	32.1%	32.4%	31.5%
3500-3999	32.4%	31.7%	32.3%	34.4%	32.9%	33.0%	34.1%
4000-4499	12.0%	12.5%	12.2%	10.0%	12.7%	11.8%	12.2%
4500-4999	2.0%	2.2%	2.0%	1.9%	2.3%	2.1%	2.0%
>5000	0.2%	0.2%	0.3%	0.2%	0.2%	0.2%	0.1%

GESTATION (Weeks)	2006	2007	2008	2009	2010	2011	2012
<26 weeks	0.3%	0.3%	0.3%	0.2%	0.3%	0.2%	0.3%
26 - 29 weeks + 6 days	0.7%	0.8%	0.6%	0.6%	0.6%	0.8%	0.7%
30 - 33 weeks + 6 days	1.4%	1.7%	1.5%	1.4%	1.4%	1.3%	1.5%
34 - 36 weeks + 6 days	4.4%	4.6%	4.1%	4.1%	4.3%	4.4%	4.4%
37 - 41 weeks + 6 days	90.4%	90.1%	90.9%	92.6%	92.8%	93.2%	93.0%
42 + weeks	2.6%	2.5%	2.5%	1.1%	0.6%	0.2%	0.2%

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 days of life (68).

2. The uncorrected perinatal mortality rate is calculated when 2 transfers from other hospitals are excluded. Later bookers are considered as booked cases.

3. The corrected perinatal mortality rate is the uncorrected perinatal deaths (66) less the number of congenital abnormalities (24) = 42. This gives an uncorrected rate of 7.3 and a corrected rate of 4.6.

4. There was 4 intrapartum deaths. Two were known Trisomy 18, one was a placental abruption and the fourth was an extremeley premature breech 2nd twin.

STILLBIRTHS

Stillbirths	**42**
Congenital Malformation	13
Placental	12
Cord	5
Abruption/Rupture	2
Infection	3
Prematurity	1
Unexplained	6

Congenital (13)

1. **Age 19.** Primigravid. Booked at 16 weeks gestation. Body stalk abnormality subsequently confirmed at the anatomy scan at 23 weeks gestation. Hospital based care, under the care of the Fetal Medicine Team. Review at 26, 32 and 34 weeks gestation. Presented with an intrauterine fetal death at 38 weeks gestation. Assisted breech delivery of an infant weighing 1.43 kg. Cause of death lethal fetal anomaly. PM declined.

2. **Age 34.** Para 1+1. Previous term delivery and 1st trimester loss. No contributory medical or surgical history. Booked at 15 weeks gestation. Arnold Chiari malformation diagnosed at the anatomy scan at 20 weeks gestation and scan features suggestive of spina bifida and moderate ventriculmegaly, abnormal heart view. Amniocentesis undertaken. Confirmed Trisomy 18. Hospital based care with subsequent review at 21, 24, 28, 36 and 38 weeks. Intrauterine fetal demise at 38+5 weeks. Stillborn female infant weighing 1.62 kilograms. Cause of death Trisomy 18. PM declined.

3. **Age 32.** Para 2. Two previous full term uncomplicated normal deliveries. Booked at 11 weeks gestation. Short long bones identified on the fetus on the anatomy scan at 22 weeks gestation. Subsequent fetal medicine review identified a growth restricted infant with normal liquor. The possibility of aneuploidy was discussed and declined. Review at 25 weeks, 29 polyhydramnios was identified and amniocentesis discussed and declined. At 31 and 32 weeks worsening polyhydramnios and an amniocentesis amnio drainage was undertaken with a diagnosis of Trisomy 18. Subsequent review at 34, 35 and 36 weeks gestation. Induction of labour at 37 weeks gestation. Subsequent vaginal delivery of a female infant weighing 1.81 kilograms. Agpars 0 at 1 and 0 at 5. Cause of death Trisomy 18. PM declined.

4. **Age 35.** Para 0+0. Booked at 11 weeks. Previous history of HTN, no treatment. Booking BP 140/92. Referred to Medical Clinic at 14 weeks – Labetalol 100mg bd commenced, increased to tid at 18 weeks. Regular CANC – seen at 28, 32 and 34 weeks. Presented at 38+1with irregular pains and reduced fetal movements. BP 137/103, ++ proteinuria. IUD confirmed. ARM, meconium Grade III. Forceps delivery, with 3rd degree tear, of stillborn male infant weighing 3.04 kgs. Loose nuchal cord x 1. TORCH and Thrombophlia screen negative. Post mortem. Cause of death Trisomy 21.

5. **Age 35.** Para 0+1. Booked at 12 weeks gestation with certain dates and di-chorionic di-amniotic pregnancy was diagnosed. No significant medical history. Pregnancy induced hypertension at 31 weeks gestation. Commenced on Labetalol. Admitted at 31 weeks gestation with decreased variability in twin 1 and decreased fetal movement. Steroids administered. Routine fetal ultrasound in accordance with the twin guideline. At 31 weeks gestation high output cardiac failure identified in fetus 1 with tricuspus regurgitation and a diagnosis of a vein of Galen aneurism. Subsequent fetal demise at 31 weeks and 5 days gestation of fetus 1 secondary to heart failure. Elective caesarean section at 34 weeks gestation of a stillborn male infant weighting 1.42 kilograms and a live male infant weighing 2 kilograms with Apgars 9 at 1 and 10 at 5. Cause of fetal demise twin I vein of galen aneurism.PM declined.

6. **Age 38.** Para 3. First delivery emergency caesarean sections at 41+6 weeks, second pregnancy stillborn male infant delivered weighing 3.1 kilograms at 40+6 weeks, third pregnancy elective caesarean section at 38 weeks. Booked at 11 weeks gestation where mono-chorionic di-amniotic pregnancy was diagnosed. Subsequent follow-up in accordance with the twin protocol and review at 16, 20, 22, 24, 26, 28 and 30 weeks. Subsequent short femur identified in fetus 2 and a decision for amniocentesis was made on both twins. Trisomy 21 identified in both infants with a small AVSD identified in Twin 1 and talipes in Twin II. Subsequently emergency caesarean section at 34 weeks gestation for fetal bradycardia in twin I and an intrauterine demise in twin II. Twin I was a male infant weighing 2.55 kilograms, Apgars 0 at 1 and 0 at 5 and 10 at two minutes of age. Twin II, a male infant weighed 2.6 kilograms and was a fresh stillbirth. Early neonatal death in twin 1. Cause of death Trisomy 21. PM declined.

7. **Age 41.** Para O. Booked at 11 weeks. IVF pregnancy. MCDA twins confirmed. Normal anatomy scan at 21 weeks and follow-up in accordance with the multiple pregnancy protocol. At 27 weeks gestation mild ascites and a pericardial effusion were noted in twin II. No growth discordance. Admitted with elevated blood pressure. In-patient care for the remainder of the pregnancy. Negative infection screen. The possibility of a small a sacro teratoma. Suspected Ballantyne syndrome in the mother due to hydrops in one of the foetuses necessitated delivery at 28 weeks gestation in association with demise of the hydropic fetus. Twin I femal infant weighing 1.14 kilograms, Apgars 5 at 1 and 8 at 5 minutes of age. Twin II fresh stillborn female infant weighing 1.81 kilogram, Apgars 0 at 1 and 0 at 5. Post-mortem showed evidence of congenital megakaryoblastic leukaemia in association with Trisomy 21 Mosaic in twin II. Trisomy 21 Mosaicism also confirmed in twin I. Cause of death congenital megakaryoblastic leukaemia with a background of Trisomy 21 Mosaicism.

8. **Age 33.** Para 1. Booked at another hospital . Previous 40 weeks elective LSCS, 4.25 kg. 20 week scan sacrococcygeal teratoma. 25+4 polyhydramnios teratoma 12x10x9. MRI :cystic masses, old haemorrhage, extension into pelvis. 26+4 absent flow. 27+3 IUD – LSCS. PM – cause of death sacrococcygeal teratoma.

9. **Age 26.** Para 0. Booked at 8 weeks. Seen at 14+3, 20+3, 21+3 weeks. Hydrops ? T18. 21+3 amniotcentesis: normal karyotyple. Reviewed by Fetal Medicine at 23 weeks. 26+1 severe hydrops Parvo/Torch –ve. 27+3 IUD diagnosed. SVD stillborn female infant weighing 0.83 kg. PM. Congenital Anthrogyphosis multiplex, possible contributing congenital myopathy. Placenta normal. Cause of death lethal fetal anomaly.

10. **Age 31.** Para 1+1. One previous full term uncomplicated normal delivery and a subsequent trimester loss. Background history of anaemia. Booked at 11 weeks gestation and an ultrasound confirmed the estimated date of delivery. Combined antenatal care. Intra-thoracic mass identified on the anatomy scan at 19 weeks gestation. Fetal medicine review. Extra thoracic and intra thoracic components. Fetal Medicine follow-up at 20, 23 and 27 weeks. Normal karyotype . MRI booked for 32 weeks. Presented at 27+3 weeks with decreased fetal movement. Intra-uterine fetal demise confirmed. Labour induced. Stillborn female infant weighing 1.5 kilograms delivered at 28 weeks gestation. PM showed evidence of a large congenital cystic lymphangyoma with a massive haemorrhage into the lymphangyoma leading to fetal anaemia and hypoxia and resulting fetal death. Cause of death fetal anomaly.

11. **Age 36.** Para 2+1 (2 vag births). Booked at 14 weeks. 20 weeks fetal heart dextroposition, vsd. Amnio – T18. Seen at 30, 32, 35 and 37 weeks. IOL at 37+4. Breech delivery of a stillborn female weighing 1.81 kg. PM declined. Cause of death Trisomy 18 – lethal fetal anomaly.

12. **Age 26.** Para 0+1. Booked at 8 weeks. Methadone therapy. Oligohydramnios at 17 weeks. Scan at 16, 17, 19, 20, 23, 26, 29, 32 weeks. At 20 weeks – no left kidney and right kidney abnormal. Anhydramnios from 20 weeks. 34+1 sol, footling breech, stillborn delivered 1.1 kg infant. PM – Sirenomelia. Cause of death lethal fetal anomaly.

13. **Age 42.** Para 6+4. Booked at 12+4. Three previous LSCS, 1 previous MCDA pair – miscarriage at 12 weeks. BMI 26.85. Anatomical survey at 21+2 weeks – EFW <5th centile, CPC, 2VC, unilateral Talipes, a VSD. Amniocentesis performed – Trisomy 18. Presented in labour at 31 weeks gestation, IUD noted. Breech delivery of a stillborn female infant weighing 720g. PM declined. Cause of death Trisomy 18.

Placental (12)

1. **Age 28.** Para 0+0. Booked at 12 weeks. Primary infertility x 5 years, spontaneous conception. History of thrombocytopenia – booking platelets 146, repeat platelets at 16 weeks 96. Coagulation clinic at 26 weeks – platelets 160. Presented at 27 weeks and 3 days with no fetal movements for 2 days. Pregnancy induced hypertension diagnosed. IUD confirmed. Mifepristone/misoprostol IOL. Stillborn female infant weighing 830g delivered, Nuchal cord x 1. PM done. Cause of death placental insufficiency.

2. **Age 36.** Para 0+0. Booked at 12 weeks. Recurrent first trimester bleed from 5/40 – 14/40. First trimester screening reassuring. Normal 20 weeks ultrasound. Regular combined antenatal care. Presented at 38+5 with 12 hours history of reduced fetal movements. IUD confirmed. Mifespristone/misoprostol induction of labour. SVD stillborn female infant weighing 2.6kg. Nuchal cord x 5. Manual removal of placenta – bicornuate uterus. Thrombophilia and TORCH screen negative. TFTs and HbA1c normal. PM: no congenital anomaly. Placenta: diffuse chronic villitis of unknown aetiology.

3. **Age 32.** Para 2+1. Transferred from another hospital at 28+3 weeks with PET. Past obstetric history of one first trimester miscarriage, a placental abruption at 32 weeks – LSCS, NND, subsequent elective LSCS at term. History of SLE: skin and joint involvement. Anti-Ro positive. BP 129/93 – 97, significant proteinuria, creatinine 81. USS – oligohydramnios, EFW < 5th centile, normal dopplers. Plan for delivery next morning following corticosteroids and $MgSO_4$. Developed abdominal pain, tachycardia – suspected abruption. Emergency LSCS. Stillborn male infant delivered weighing 950g. Placental abruption confirmed, EBL 1000mls. Coroners PM: no congenital anomaly. Thrombophilia negative. Cause of death: placental abruption (background of PET & SLE).

4. **Age 35.** Para 0+0. Previous myomectomy. Primary infertility x 8 years. 3rd cycle IVF. Booked at 15 weeks. Scan revealed 4 centimetre wall fibroid. Regular CANC. Presented to ER at 34+6 with non-substantial antepartum haemorrhage and abdominal pain. USS confirmed IUD. Mifepristone IOL. Stillborn male infant delivery weighing 2.11 kgs. TORCH and Thrompbophilia screen negative. Postmortem – normal. Placental histology – retroplacental haemorrhage. Cause of death retroplacental haemorrhage.

5. **Age 28.** Para 1. Previous emergency LSCS for failed induction at term and pre-eclampsia. Booked at 9 weeks gestation. Normal anatomy scan at 19 weeks. Combined antenatal care. Subsequently noted to be small for gestational age at 32 weeks gestation with a fetal weight less than the 5th centile. Admitted for fetal surveillance at 32+2 weeks gestation. Blood pressure 138/79. Significant proteinuria of 1.72 grams per litre in 24 hours. Subsequent fetal demise. Induced. Stillborn female infant weighing 1.41 kilograms delivered. PM declined. Persistent pre-eclampsia in the early postnatal period. Cause of death chronic utero placental insufficiency secondary to maternal pre-eclampsia.

6. **Age 27.** Para 2. One previous assisted delivery at term and a subsequent caesarean section in the following pregnancy for breech pregnancy. Booked at 20 weeks gestation. Smoker. Size consistent with dates. Normal anatomy scan at 23 weeks gestation. Subsequent fetal growth scan at 27 weeks gestation showed normal fetal growth. Presented with severe headache at 28 weeks gestation with recurrent episodes of headache throughout the pregnancy. Normotensive at each review however proteinuria developed at 26 weeks gestation. Subsequent ambulance admission at 30 weeks and six days with severe abdominal pain. Fetal heart pulsation was absent on attendance and diagnosis of placental abruption was suspected. Ultrasound showed a fetal heart rate of less than 60 and a category 1 caesarean section was undertaken. A male infant weighing 1.49 kilograms was delivered. Apgars 0 at 1 and 0 at 5. 1.8 litre blood loss intra-operatively with a large retro-placental clot identified. Cause of death placental abruption. Fresh retro-placental haemorrhage identified on histology. PM declined.

7. **Age 32.** Para 1. Booked at 13 weeks. One previous LSCS at 39 weeks. Partial thyroidectomy in 2009. Normal anatomy scan at 21 weeks. At 28+4 diagnosed with polyhydramnios, growth on 63rd centile. Impaired glucose tolerance. Diet controlled. Seen at 32 and 34 weeks. 36+6 referred with reduced FM. IUD. IOL and SVD of a female infant weighing 3060g. ACLA, APLA negative, TORCH negative. PM - normal. Placenta – severe villitis. Cause of death severe placental villitus of unknown aetiology.

8. **Age 21.** Para 0. Later booker at 23 weeks. Very little English. Ultrasound at booking was consistent with dates. Subsequently reviewed at 28 and 34 weeks gestation. At 34 weeks gestation was noted to be small for dates and departmental ultrasound was requested. Presented 24 hours later with an intra-uterine fetal demise. In spontaneous labour. Vaginal delivery of a stillborn male infant weighing 3.7 kilograms. Coroners PM excluded congenital malformation. Placental examination showed chronic utero-placental insufficiency and a small placenta and an un-occlusive thrombus in the umbilical vein. Cause of death utero-placental insufficiency with a super-imposed cord accident.

9. **Age 35.** Para 0. History of insulin dependent diabetes mellitus since age 12. Booked at 7 weeks gestation. Hospital based multi-disciplinary care. Subsequent review at 9, 11, 16, 20, 26, 28, 30 and 34 weeks gestation. Did not attend for three appointments during the course of her antenatal care. Normal first trimester screen. Normal anatomy scan and appropriate grown fetus throughout the course of her pregnancy. Presented at 35 weeks gestation with an intrauterine fetal demise. Induced. Stillborn male infant weighing 2.36 kilograms delivered. PM declined. Placental histology showed evidence of chronic utero-placental insufficiency. Cause of death placental insufficiency secondary to maternal insulin dependent diabetes.

10. **Age 22.** Para 1+2. Previous term SVD and two first trimester losses. Smoker. EPAU 11 weeks – normal scan. Booked at 17 weeks. Anatomy scan at 22 weeks. Presented at 24+2 with pv bleed, no fetal heart pulsation. Mifepristone induction, SVD at 24+6. Female infant weighing 610g. ACLA –ve, TORCH –ve, thrombophilia screen negative. PM declined. Histology – chronic uteroplacental insufficiency with 80% placenta infarction. Increased coiling index. Cause of death placental infarction.

11. **Age 20.** Para 0+0. Booked at 11+4 with uncertain dates. Recurrent UTIs. Advised MSU at each visit. Anatomical survey at 20+3 days – NAD. DNA further appointments until 28+6 - +3 nitrates on urine stick, Hb 70g/dl – Galfer BD advised. MSU – Staph aureus (>100,000 orgs) script sent. Presented to ER at 30+1 weeks with irregular pains. NIL. CTG reactive. Steroids given, discharged home on po Flucloxacillin and Galfer BD. Re-presented to ER at 32+5 with irregular lower abdominal pains and no FM x 2 weeks. On review BP 110/68, fundus measured 26 cm, no FH auscultated. IUD confirmed by Registrar on-call. Breech presentation, patient distressed with pains. Transferred to DS. Delivered stillborn male infant weighing 1.25 kg. PM declined. LFTs, TFTs, HbAIC, APA. Placental histology consistent with severe uteroplacental insufficiency. Cause of death placental insufficiency.

12. **Age 31.** Para 0. Booked at 13 weeks. History of hypothyroidism, on Eltroxin. Booking bloods otherwise normal. Negative anatomy scan at 21 weeks. Regular attender at clinic. Attended the Emergency Room at 27 weeks with reduced fetal movements. Scan confirmed IUD. Medical induction of labour. Assisted breech delivery of a male infant weighing 800g. PM negative for congenital malformations. Placental examination revealed severe chronic utero-placental insufficiency. Cause of death hypoxia secondary to severe chronic utero placental insufficiency with 90% placental infarction.

Cord (5)

1. **Age 29.** Para 0. No significant medical history. Booked at 11 weeks gestation. Ultrasound confirmed gestation. Low lying placenta noted at 20 weeks. Normal anatomy scan. Hospital based care. Subsequently presented with abdominal pain at 29 weeks gestation. Re-attended three days later with a fetal demise. Labour induced and a male infant 1.59 kilograms was delivered. PM excluded congenital anomalies. Placenta examination showed a hypocoiled cord. Cause of death cord accident.

2. **Age 35.** Para 1, previous SVD. Booked at 12 weeks. Seen at 19, 28, and 33 weeks. At 37 weeks AC > 95th centile – planned IOL at 40 weeks. 39+1 IUD. At delivery loose loop of cord round leg, meconium grade II. IUD bloods normal. Female infant weighing 3.64 kilograms. PM – no obvious fetal abnormality identified. History showed an increased coiling index on the umbilical cord with thrombus formation. Cause of death cord accident.

3. **Age 36.** Para 1. Booked at 12 weeks. Previous SVD. Seen at 12, 20, 29, 33, 36, 38, 39 and 40 weeks. Anatomy scan NAD. Seen at 40+ - IOL booked. Seen at 41+1 SOL 8 cms. SVD of stillborn female infant weighing 3.89kilograms. PM – normal. Placenta – normal. Cause of death probable cord accident.

4. **Age 33.** Para 1. Previous ventouse delivery at term. Booked at 13 weeks. Seen at 27, 34 and 38 weeks. Normal anatomy scan. Self referral at 39 week gestation in labour. No FH. SVD, stillborn male infant weighing 3590g. Mec grade II. Bloods normal. PM – normal. Placenta – hypercoiled with non-occlusive thrombus in artery & vein. Cause of death cord accident.

5. **Age 39.** Para 2. Previous emergency caesarean section at 35 weeks and successful VBAC at 40+6 weels. History of PIH and PET. Smoker. Booked at 8 weeks. 30 weeks c/o pain. Seen at 34, 39 and 40+1 weeks. Presented at 40+4, CTG normal. ARM, meconium grade 2/3. FH post ARM 95, difficult ausculation. Crash LSCS. Macerated male, 3.4 kg. PM – normal. Placenta – cord accident. Cause of death cord accident.

Infection (3)

1. **Age 35.** Para 3. Booked at other hospital. Anomaly scan at 21+2 – fetal hydrops, elevated PSV on MCA Doppler. USS at 21+6. IUD confirmed the following day at 22 weeks. Medical IOL. Stillborn hydropic male infant weighing 800g. Parvovirus confirmed. PM: no congenital anomaly. Cause of death: non-immune hydrops due to acute parvovirus B19 infection.

2. **Age 32.** Para 0+0. Booked at 12 weeks. Abnormal GTT at 28 weeks, commenced on diet. USS at 34 weeks, all well, EFW 82nd centile. Antenatal visits at 27, 35 and 37+5 (BP 140/90). Presented at 38+5 with 1 day history of no FM. IUD confirmed. Admitted. Pregnancy induced hypertension diagnosed, Labetalol commenced. Prostin IOL. SVD, stillborn female infant weighing, 2.78kg. PM and placental histology – ascending infection and retroplacental haemorrhage.

3. **Age 39.** Para 1. SVD 36+2. Booked at 12 weeks. IVF twin pregnancy. Haemochromatosis carrier. 16 weeks DCDA, growing well. PROM at 22 weeks. Delivered twin I cephalic, 435g. Twin II female 570g, footling breech delivered 10 days later still born. PM declined. Cause of death an acute chorio-amnionitis.

Abruption/Rupture (2)

1. **Age 31.** Para 1 +1. Booked at 15 weeks. Antenatal care at 28 and 32 weeks gestation. Presented at 32+5 with abdominal pain. BP 131/91, proteinuria +++. USS confirmed IUD. Mifepristone given, admitted in view of BP. Reviewed two hours later with increasing abdominal pain. Clinical abruption. Oxytocin IOL. Stillborn male infant weighing 1.88 kg delivered. PPH 1200mls. No PM. Cause of death abruption.

2. **Age 29.** Para 3. Late booker at 30 weeks. Two previous term deliveries and one previous LSCS, successful VBAC in the third pregnancy. Rhesus negative. Presented with pains at 40+5 weeks. Discharged home. Subsequently presented in labour at 41 weeks gestation. Bradycardia at full dilatation. Emergency caesarean section. Stillborn female infant delivered weighing 3.73 kilograms. Ruptured uterus noted at the time of caesarean section with 800 mls intra-operative blood loss. PM declined. Placental examination normal. Cause of death fetal demise secondary to uterine rupture.

Prematurity (1)

1. **Age 35.** Para O. Booked at 12 weeks. DCDA IVF pregnancy. On Eltroxin and Prednisolone until 12 weeks. Plasminogen Activator heterozygous deficiency. Scan at 14 weeks – NAD. Scan at 17 weeks – cyst 7x10 cms. Scan at 20 weeks – NAD. 20+5 PROM, Twin I oligo, Twin II LV normal. 22+1 EFW < 5th centile Twin I, Twin II normal. Delivered twin I stillborn female infant at 23 weeks, 540g. 23+6 $MgSO_4$ given. Twin II delivered 24 weeks 690g, live born male infant, Apgars 8 at 1 and 10 at 5. Transferred to NICU. PM. Twin I cause of death prematurity. Twin II late neonatal death secondary to complications of prematurity.

Unexplained (6)

1. **Age 46.** Para 0+0. Booked at other Hospital. Booking bloods normal. Combined first trimester screening at Rotunda. T21 risk 1:340 (background 1:17), T18/12 risk 1:91 (background 1:30). Declined diagnostic testing. 21 week anatomy scan - normal fetal anatomy, but 12x8cm fibroid. **Planned elective LSCS in another hospital**. IUD diagnosed at 35 weeks. Transferred to Rotunda. MRI – broad ligament fibroid below fetal presenting part. LSCS male infant weighing 1.05 kg. Macerated breech cord tightly coiled. PM declined. Postnatal – elevated TPO antibody and elevated HbA1c. Cause of death unexplained.

2. **Age 22.** Para 0+0. Booked at 17 weeks. Smoker 1-2 per day. Seen in Midwives Clinic at 28, 32 and 36 weeks. SGA fetus identified at 36 weeks. USS confirmed IUD. Mifepristone/misoprostol IOL. Stillborn male infant delivered weighing 2.19kg. TORCH and Thrombophilia negative. Post-mortem declined. Cause of death unexplained.

3. **Age 35.** Para 0. Booked at 13 weeks gestation with a singleton pregnancy. Ultrasound confirmed gestation. History of hyperthyroidism, on Neomercazole. Combined multidisciplinary antenatal care. Seen at 27 weeks, 30 weeks, 33 weeks, 37 weeks. Complained of generalised itch at 37 weeks. Liver function tests checked and were normal. Subsequently presented at 39 weeks with decreased fetal movement and intrauterine fetal demise was confirmed. Labour was induced. Stillborn male infant, 3.75kgs, delivered. Normal liver function tests at delivery and uthyroid on medication. Negative thrombophilia screen. The post-mortem was negative for congenital anomalies and the placenta appeared normal. Cause of death: unexplained

4. **Age 33.** Para O. Booked at 12 weeks. Seen at 16,20,25 and 29 weeks. 19 week anatomy scan normal. 25+2 normal growth, low lying placenta. 30+4 AC,5th centile/ LV + Doppler normal. IUD diagnosed at 32+4 weeks/Anhydramnios 1210g. Bloods AST 69, ALT 89. PM – no obvious fetal abnormality. Placenta normal. Cause of death unexplained.

5. **Age 27.** Para 1, previous SVD at term. Smoker. Booked at 12 weeks. SGA identified at anatomy scan. Combined care. Seen at 28 and 34 weeks. 37+1 referred with no fetal movements x 2 days, IUD diagnosed. IOL – SVD, male infant weighing 2700g. Declined PM. Bloods normal. Increased coiling index in cord. No thrombus identified. Cause of death unexplained.

6. **Age 42.** Para 3+1. Three previous term deliveries. Prior history of gestational diabetes. Booked at 13 weeks gestation and fetal size was consistent with dates. Glucose tolerance test booked for 28 weeks gestation. Showed evidence of impaired glucose tolerance which was controlled with diet. Subsequently presented at 34 weeks gestation with flu like illness and decreased fetal movements. Intrauterine fetal demise was diagnosed. Subsequent vaginal delivery of a female infant weighing 1.87 kilograms at 34 weeks gestation. PM declined. Placental examination showed no obvious cause for the fetal demise. Hyperthyroidism identified postnatally. Negative thrombophilia screen and negative for acute rubella, toxoplasmosis or CMV. Cause of death unexplained.

EARLY NEONATAL DEATH

Neonatal Deaths	26
Congenital Malformations	11
Prematurity/Infection	12
Meconium Aspiration	1
Hypoxia	1
Unexplained	1

Congenital Malformation (11)

1. **Age 31.** Para 0+0. Booked at 11 weeks. USS at 21+6 weeks – anhydramnios, ? left multicystic kidney/cystic mass, right kidney not visualised. Short long bones, small thorax. Regular USS – findings unchanged. Counselled re poor prognosis. Presented to ER at 34 weeks in labour. Assisted breech delivery of live born male infant weighing 2.18 kg, Apgars 2 at 1 and 1 at 5 minutes. Limited PM. Cause of death: Potter sequence.

2. **Age 37.** Para 1. Referred from other hospital at 32 weeks. Polyhydramnios. Prenatal diagnosis Clinics at 32 weeks U/S – Polyhydramnios with duodenal atresia. Amniocentesis: T21. 33 weeks obstetric cholestasis. At 35 weeks US – IUGR with reversed EDF. EFW < 5th centile. Admitted for IOL. Forceps delivery of male infant weighing 2.14 kg. Early NND on day 4. Coroners PM. Histology: increased coiling index. Cause of death Trisomy 21.

3. **Age 35.** Para 0+0. IVF. DCDA twin pregnancy. Booked at 13 weeks. Anomaly USS – NAD. 14% growth discordance. Regular uncomplicated antenatal care until 33+4. Itch, elevated BP 166/93, no protein. Admitted and commenced on Aldomet. LFTs normal. BP stabilised and discharged home after 3 days. Reviewed at 34+4. Fall off in growth in Twin II. Plan for FAU one week later. USS at 35+3 – oligohydramnios both twins. Normal UA dopplers. Admitted. Commenced steroids. 35+6 cervix favourable for IOL. Twin I female infant weighing 2.46kg delivered, Apgars 4 at 1 and 5 at 5 minutes. Twin II forceps delivery of a female infant weighing 2.1 kgs, Apgars 1 at 1 and 1 at 5. Twin II early NND at 1 ½ hours. Coroners PM. Cause of death Arthrogryposis.

4. **Age 30.** Para 3+0. Booked at 13 weeks. Anomaly scan at 21+3 – diaphraghmatic hernia with mediastinal shift. PND scan confirmed left sided diaphraghmatic hernia containing stomach and bowel. LHR 0.9. Amniocentesis performed. Regular ultrasounds. IOL at 39+6. Ventouse delivery of live born male infant weighing 3.5 kg. Apgars 5 at 1, 6 at 5 and 6 at 10. Cord pH 7.41/7.42. Lived x 12 hours. PM declined. Cause of death congenital anomaly.

5. **Age 21.** Para 0+0. Booked at 13 weeks – MCDA twin pregnancy. USS at 13+6 – twin II prominent bladder with small adjacent cystic structure. Scan at 16+3 – twin II bilateral ventriculomegaly and oligohydramnios, bladder normal. Scan at 18+3 – similar findings, ? abnormal perineum with cystic structure. Oligohydramnios. USS at 20+3 – Twin II Anhydramnios. Poor prognosis explained. 24+6 – polyhydramnios, Twin I. Admitted for inpatient monitoring. Discharged home at 25+3. Readmitted at 28+3 for daily monitoring. Elective LSCS at 34+2. Twin I live born male weighing 2.77kg. Apgars 9 at 1, and 10 at 5. Twin II live born male weighing 2.14kg, Apgars 6 at 1 and 8 at 5. RIP day 1. Placenta normal. PM: VACTERL Syndrome. Cause of death lethal fetal anomaly.

6. **Age 34.** Para 0+1. USS at 10 weeks – dichorionic triamniotic triplets. USS at 22 weeks ? Hypoplastic left heart. Fetal echo confirmed HLHS in one of the monochorionic twin pair. IUGR in this triplet with AEDF from 28 weeks. Admitted for daily monitoring from 28+1. Discharged home at 29+3 for outpatient monitoring with daily CTG and Dopplers. Presented in labour at 30 weeks. LSCS. Triplet I 890g, Apgars 3 at 1 and 6 at 5. Triplet II 1.15kg. Apgars 5 at 1 and 8 at 5. Triplet III 1.55kg. Apgars 9 at 1 and 10 at 5. Triplet I HLHS Palliative care. RIP. PM declined. Cause of death fetal anomaly.

7. **Age 28.** Para 1. Previous emergency LSCS preterm for pregnancy induced hypertension. Medical history of polycystic ovaries and epilepsy. Booked at 13 weeks gestation. Singleton fetus consistent with dates. Normal anatomy scan at 20 weeks gestation. Planned for serial fetal ultrasounds in view of chronic maternal illness. Appropriately grown infant at 26 weeks gestation and 30 weeks gestation. Planned for glucose test in light of the polycystic ovarian syndrome and two abnormal readings on the glucose tolerance test with a diagnosis of impaired glucose tolerance controlled with diet. Presented to the Emergency Room at 31+5 days gestation with reduced fetal movements. Fetal bradycardia identified at admission. Category 1 caesarean section. Live born female infant weighing 2.4 kilogram. Apgars 0 at 1, 1 at 5 minutes of age and 4 at 10 minutes of age. Subsequent neonatal death day 1 of age. PM showed Trisomy 21 and congenital megakaryoblastic leukaemia. Cause of death Trisomy 21.

8. **Age 33.** Para 1. Previous term uncomplicated normal delivery. No significant contributing medical history. Booked at 11 weeks with a di-chorionic di-amniotic pregnancy confirmed. Subsequent follow-up in accordance with the multiple pregnancy protocol. Isolated plural effusion noted in twin II at 19 weeks gestation. Amniocentesis discussed but declined. Marked increase in the hydrothorax of twin II noted at 23 weeks gestation and a short femur was noted at 24 weeks gestation. Associated media stinal shift secondary to the hydrothorax and cardiac review organised. Fetal cardiac function appeared normal. Hydrothorax resolving from 25 weeks gestation with a normal scan at 26 weeks gestation. Presented with threatened preterm labour at 29 weeks gestation. Steroids administered. Subsequent emergency caesarean section. Twin I – live born male infant weighing 1.43 kilograms, Apgars 9 at 1 minute and 9 at 5 minutes. Twin II was a male infant weighing 1.34 kilogrrams, Apgars 6 at 1 minute and 6 at 5 minutes of age. Twin II karyotype showed Nonne's Syndrome. Neonatal death: cause Nonne's syndrome and prematurity. PM declined.

9. **Age 38.** Para 3. First delivery emergency caesarean sections at 41+6 weeks, second pregnancy stillborn male infant delivered weighing 3.1 kilograms at 40+6 weeks, third pregnancy elective caesarean section at 38 weeks. Booked at 11 weeks gestation where mono-chorionic di-amniotic pregnancy was diagnosed. Subsequent follow-up in accordance with the twin protocol and review at 16, 20, 22, 24, 26, 28 and 30 weeks. Subsequent short femur identified in fetus 2 and a decision for amniocentesis was made on both twins. Trisomy 21 identified in both infants with a small AVSD identified in Twin 1 and talipes in Twin II. Subsequently emergency caesarean section at 34 weeks gestation for fetal bradycardia in twin I and an intrauterine demise in twin II. Twin I was a male infant weighing 2.55 kilograms, Apgars 0 at 1 and 0 at 5 and 10 at two minutes of age. Twin II, a male infant weighed 2.6 kilograms and was a fresh stillbirth. Early neonatal death in twin 1. Cause of death Trisomy 21. PM declined.

10. **Age 28.** Para 0+1. Booked at 20 weeks. Oligohydramnios. 22 weeks infantile PCOS + oligo +VSD. 24+2 anhydramnios. Scanned at 28+, 31, 34+3 weeks. SOL, SVD at 34+5 of male infant weighing2.380kg., Apgars 6,5,2. RIP one hour of age. Limited PM. Cause of death lethal fetal anomaly.

11. **Age 17.** Para 0. Booked at 11 weeks. Anencephaly diagnosed at 20 weeks. Amniocentesis: normal karyotype. Scan at 27, 31, 34, 36, 37 and 38 weeks. IOL: delivered as face presentation. Female infant weighing 2290g. Lived for approx. 30 minutes. PM declined. Cause of death lethal fetal anomaly.

Prematurity / Infection (12)

1. **Age 30.** Para 0+1 (Top at 6 weeks). Booked at 14 weeks. History of CIN – previous LLETZ. USS at 8 weeks (hyperemesis) – DCDA twin pregnancy. Reviewed in twin clinic at 21 weeks – plan for cervical length at next scan. Presented at 22 weeks with PROM. Admitted. Discharged home 4 days later for outpatient management. Presented 2 days later at 23+1 weeks in labour. Two doses of dexamethasone. Pains settled and transferred to GPN, 20 minutes later fully dilated. SVD live born female infant weighing 460g, Apgars 5 at 1 and 3 at 5 minutes. No response to BMV in Twin I, intubated at 5 minutes without improvement, handed to parents. NND. Two hours later SROM Twin II. SVD of live born female infant weighing 530g, Apgars 7 at 1, 9 at 5 and 10. NND. PM declined. Cause of death prematurity.

2. **Age 23.** Para 0+1. Previous 1st trimester miscarriage. Transferred from other hospital at 23+4 weeks. PPROM at 17 weeks. Methadone 45 ml – ex-drug abuser. Smoker. 23+4 growth < 5th centile, anhydramnios. 25+4 growth < 5th centile, anhydramnios. 27 weeks meconium grade I, oblique breech. LSCS – 890g, no liquor, Apgars 2 and 3. Early NND on day 1. Placenta – acute chorioamnionitis. PM declined. Cause of death extreme prematurity and infection.

3. **Age 27.** Para 0+1. Booked at 12 weeks. H/o 18+3 TOP for bladder outlet obstruction. EPAU at 6+5. Scanned at 12 weeks and 17 weeks periembranous vsd. Offered 2nd trimester screed risk 1:450. No vsd seen at 20 weeks. Scan at 23weeks NAD. 24+6 c/o ? leak – nil seen. 24+6 PPROM, cont 5:10. Temperature 37.6, pulse 102. Cx 1 finger. Delivered by LSCS, B.W. 830g, baby flat at delivery. RIP in NICU on day 2. PM declined. Cause of death extreme prematurity.

4. **Age 36.** Para 1. Previous uncomplicated term delivery. No significant medical history. Booked at 12 weeks gestation and a singleton pregnancy consistent with dates was identified. Decision for combined antenatal care. Uterine fibroid identified in the lower segment at 23 weeks gestation, measuring 8 x 8 centimetres. Persistent transverse lie of the fetus from 33 weeks gestation, appropriately grown fetus. Presented with a cephalic presentation at 39 weeks gestation and spontaneous onset of labour at 42 weeks gestation. Spontaneous vaginal delivery of a live born male infant weighing 4.35 kilograms. Apgars 9 at 1 and 10 at 5 minutes. Poor fetal oxygenation noted on the postnatal ward. Baby admitted to NICU for observation. Neonatal death day 1 of age. Diagnosis of acute broncho-pneumonia and secondary right ventricular heart failure. Cause of death fetal acute broncho-pneumonia secondary to ascending infection identified on histology. Coroners PM.

5. **Age 29.** Para 1. Booked at 13 weeks. Previous SVD at 40+3 weeks. Seen at 13, 18 and 24 weeks. Scan at 12, 20 weeks NAD. 22+2 pv bleed – admitted. 24 weeks steroids. Exophytic cervical mass biopsied. 28+1 PPROM. Prem breech in labour 955gm. Live born female infant. Placental Toxoplasma Gondii. Coroners PM. Cause of death Toxoplasmosis.

6. **Age 37.** Para 0. Referred from another maternity hospital with ruptured membranes at 23 weeks gestation. History of anaemia and a multiple fibroid uterus. Admitted. Prophylactic antibiotics. Steroids administered at 26 weeks gestation. Antenatal neonatology review. Spontaneous labour at 29 weeks gestation. Transverse lie. Classical caesarean section. Liveborn male infant delivered 1.17Kg. Apgar score 2 at 1 minute, 2 at 5 minutes and 2 at 10 minutes. Early neonatal death. 1 litre intraoperative blood loss. Sepsis 2 days postnatally. Triple therapy antibiotics instigated. Failure to respond to treatment. Transferred to the Mater Intensive Care Unit. PM declined. Cause of death ascending infection and extreme prematurity.

7. **Age 30.** Para 1. Previous pre-term delivery at 36 weeks gestation. No other contributing medical history. Late booker at 20 weeks gestation with a di-chorionic di-amniotic pregnancy. Subsequent follow-up in accordance with the multiple pregnancy protocol. Twin I noted to be less than the 5th centile at the anatomy scan at 23 weeks gestation. Twin II also noted to be less than the 5th centile at the anatomy scan with some media stinal shift. Prenatal diagnosis undertaken. Fetal anatomy appeared appropriate for gestation with both foetuses less than the 5th centile. Presented at 26 weeks gestation with threatened preterm labour. Twin I cephalic. Dexamethasone and magnesium sulphate administered. Spontaneous vaginal delivery of twin I of a male infant weighing 0.74 kilograms. Apgars 6 at 1 and 6 at 5. Subsequent assisted breech delivery of a female infant weighing 0.78 kilograms. Agpars 2 at 1 and 5 at 5 minutes. Both infants septic in the early postnatal period, with twin I being an early neonatal death. PM declined. Subsequent fetal demise of twin II. Histology showed evidence of extensive ascending infection with maternal and fetal response and both placentae cultured Ecoli and streptococcus group D. Cause of death prematurity secondary to ascending infection and sepsis.

8. **Age 24.** Para 0. No medical history of note. Booked at 17 weeks gestation. Failed to attend for anatomy scan. Presented to the Emergency Room at 26 weeks gestation having delivered at home a live born male infant weighing 0.89 kilograms. Neonatal death at 17 hours of age. Coroners PM showed evidence of hyaline membrane disease and pneumonia. Placental examination showed ascending infection with maternal chorioamnionitis and fetal response. Cause of death prematurity with respiratory distress syndrome and ascending infection.

9. **Age 33.** Para 0+0. Booked at 14 weeks. Cornual pregnancy from HARI. Recurrent early pregnancy bleeding. EPAU at 7,8, 9 and 11 weeks – all normal. Anomaly scan at 21 weeks normal, fibroids noted. Presented to ER at 26+2 with SROM and pains. SSE – confirmed PROM. USS – breech, oligohydramnios, cx funnelling. 4g bolus of Mg SO4 given. Admitted for 14 days and discharged home at 28+2 weeks for out-patient management. Presented to ER at 30+5 weeks with irregular pains. Not in labour. Admitted to ward. Mild pains all day. Severe pains that evening. Assessed – fully dilated, footling breech. Emergency LSCS. Live born male infant, weighing 1.78 kg, Apgars 5 at 1, 6 at 5 and 9 at 10. Cord pH 7.29/7.30. NND day 1. PM. Cause of death – hyaline membrane disease.

10. **Age 38.** Para 0. Booked at 13 weeks. History of IgA nephropathy as a child. Scan at 20 weeks NAD. Scan at 23 weeks oligohydramnios, Doppler NAD, 12th centile. PPROM at 19 weeks. Scan 24+1 anhydramnios, scan at 24+4 anhydramnios, BPP 8/8. C/o pains. Breech in vagina. MgSO4. SVD 630g live born female. Placenta: chorioamniotis. Early neonatal death on day 2 secondary to pulmonary hypoplasia. PM declined.

11. **Age 37.** Para 1. Passed history of neonatal death at 25 weeks following delivery for severe pre-eclampsia at 24+ weeks in another hospital. Transferred from another institution at 24 weeks with severe pre-eclampsia, with biophysical profile and Dopplers indicating delivery required. Emergency caesarean section performed. Male infant weighing .73kg delivered. Apgars 0 at 1, 2 at 5. Full cardio pulmonary resuscitation. Transferred to NICU. Baby died day 2. PM declined.Cause of death extreme prematurity. Mother transferred to HDU. Blood pressure subsequently settled on treatment. Placental histology revealed accelerated villus maturation and retroplacental haemorrhage.

12. **Age 44.** Para 0+4. Four previous 1st trimester miscarriages. Passed medical history of migraine, bronchitis, meningitis and degenerative discs and hypothyroidism.Booked at 12 weeks. Twin pregnancy. Routine attender for antenatal care and ultrasound scans. Attended with PPROM at 23 weeks. Emergency caesarean section at 24+6 weeks. Twin female infants weighing 0.69 and 061 kg. Twin I neonatal death on day 4 and twin II neonatal death on day 56. PM declined. Cause of death extreme prematurity.

Meconium Aspiration & Pulmonary Haemorrhage (1)

1. **Age 39.** Para 0+2 (TOP T18 and Miscarriage). Booked at 17 weeks. Booking bloods normal. Anatomy scan normal. Seen in ANC at 28, 31, 35, 38, 39, term and term +. Spontaneous labour at T+2. Forceps delivery of female infant weighing 3.99 kg. pH 7.15 BE – 7.8/pH 7.26 BE – 4.0. Baby to paeds. Early NND. Coroners PM. Placenta normal. Cause of death meconium aspiration and pulmonary haemorrhage.

Hypoxia (1)

1. **Age 29.** Para 0+0. Booked at 14+1 weeks. BMI 28.04. IVF pregnancy. Two previous failed attempts at IVF. FTS at 12+1 – low risk of aneuploidy. Bleeding at 15 and 16 weeks – cervical erosion noted. Anatomical survey performed at 20 weeks – NAD. Attended ER with reduced fetal movements at 23 and 28+5 weeks. Growth scan at 28/40 –EFW < 10th centile, normal UA Doppler, AFI 23.4 cm; 30/40 – EFW < 10th centile, good interval growth, AFI 12 cm, normal UA Doppler; 33/40 – EFW 12th centile, AFI 12.6, normal UA Doppler; 35/40 EFW <10th centile, normal fluid and Doppler; 37/40 EFW 11th centile 2.5 kg, AFI 10.8 cm, Normal UA Doppler. Antenatal visits at 23, 26, 29, 31, 33, 35, 36, 37 weeks. Attended ANC at 38 weeks, BP 145/80. 158/77 referred to DCU for review. Other issue – unable to pass urine that day. Admitted. Trial of urination unsuccessful – catheter inserted. MSU C/S > 100,000 Pseudomonas Aeruginosa. Reviewed by microbiology. Commenced on IV cetazonie and IV Gentamicin. Later that day in labour. Category I LSCS called. GA – LSCS, no fetal heart documented in OT. Hemoperitoneium noted at time of LSCS. Transfused 5 units of RCC, 4 Octobplas and 4g of Fibrinogen. Male infant 2.58 kg, no signs of life. Apgar 0 at 1, and 2 at 5, 5 at 10 minutes. NND day 5. PM declined. Placental histology: no clear aetiology. Referral made to Mater for MRI pelvis to out rule AV malformation. Cause of death hypoxia secondary to acute maternal blood loss.

Unexplained (1)

1. **Age 30.** Para 0. History of epilepsy, however had not been requiring medication for epilepsy for the preceding three years prior to pregnancy. Booked at 12 weeks gestation. Ultrasound confirmed a singleton intrauterine pregnancy and established an EDD consistent with dates. Combined antenatal care with review at 28 weeks, 34 weeks, 37 weeks and 39 weeks. Normal anatomy scan at 20 weeks. Presented at 40 weeks gestation in spontaneous labour and fully dilated. Fetal bradycardia auscultated. Spontaneous vaginal delivery. Female infant weighing 3.6kgs. Apgars 0 at 1, 0 at 5 and 0 at 10. Palliative care for baby day 6 of life. Neonatal death. Placental examination: normal. Coroners PM: no obvious congenital anomaly. Infection screen: negative. Cause of death: unexplained. Placental examination: normal.

MATERNAL MORTALITY 2

1. **Age 34.** Para 2+1. Two previous vaginal deliveries uncomplicated. Booked at 12 weeks. Diagnosed twin pregnancy. Scan confirmed di-chorionic di-amniotic twins. Regular attender at twin clinic. Attended Mental Heath Liaison Team. Scan at 34+5 weeks revealed well grown healthy babies. At 35½ weeks gestation patient went missing and was discovered RIP at the cliffs in Howth. A coroners PM delivered an open verdict.

2. **Age 34.** Para 4. Uneventful obstetric history and no past history of significant medical issues. Uncomplicated spontaneous vaginal delivery. Female infant 3.8 kilograms. Patient mildly hypertensive requiring treatment. Discharged home day 3 post delivery. Did not attend for postnatal check-up. Patient brought into General Hospital by ambulance three months post delivery with collapse secondary to cardiac arrest. Patient RIP. Coroners case and inquest awaited.

There were no direct maternal deaths in 2012.

I am reporting on this maternal death as she was a patient of this hospital, however I will not be counting her in the maternal death figures as she died outside the jurisdiction and will be counted in the U.K. statistics.

Age 31. Para 3 +1. Black African. Past history of stillborn twins at 32 weeks gestation in another country. One spontaneous miscarriage at 12 weeks and an emergency caesarean section at 39 weeks, live born 3.6 kilograms. Past history of multiple fibroids and past history of postnatal depression. Booked at 19 weeks. Was considering elective termination of pregnancy in the U.K. and travelled to the U.K. for same. Patient RIP as a result of complication of termination of pregnancy in the U.K.

Maternal Mortality

Year	Total	Total Number of Mothers Attending
2003	2	7577
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
Total	**14**	**89613**

Maternal Mortality Rate **15.6/100,000**

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 Michael Geary, Dr Sharon Cooley

The Rotunda continued to prospectively monitor severe maternal morbidity during 2012. In total there were 29 patients reported on and 54 events. This number is an increase on previous years as it reflects the expanded National Perinatal Epidemiology Centre classification of maternal morbidity.

The incidence of severe morbidity for 2012 was 0.3%. The incidence of severe maternal morbidity events was 0.6% (54/8846). This is because many of our severe maternal morbidity cases had more than one severe maternal morbidity with one patient having three separate events.

Similar to 2011 there were no episodes of eclamptic seizure. Our number of cases with major obstetric haemorrhage fell in 2012 (from 24 to 18) which may reflect earlier identification and improved management of cases complicated by haemorrhage. This is despite a doubling in the number of cases requiring hysterectomy between 2011 and 2012. Four were in women with previous caesarean sections and three of these were complicated by placenta praevia.

Almost one third of our cases of major maternal morbidity occurred in women above the age of 35 years (10/29) and 27.5% (8/29) were in women who were obese or morbidly obese at booking.

Our number of cases requiring transfer for intensive care or coronary care management more than tripled in 2012. This highlights the importance of allied healthcare professions in providing safe maternity care. This number does not reflect those women delivered in the Mater Misercordiae Hospital or those women transferred for radiological investigation, medical or surgical review.

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
Transfusion more than 5 units or Estimated Blood loss more than 2.5L or Treated for coagulopathy	18
Uterine rupture	1
Peripartum hysterectomy	7 (6 Rotunda and one in the Mater)
Eclampsia	0
Renal or liver dysfunction	3
Pulmonary oedema or acute respiratory dysfunction	3
Pulmonary embolism	2
Cardiac arrest	2
Coma	0
Cerebrovascular accident	0
Status epilepticus	0
Septicaemic shock	3
Anaesthetic issue	1
ICU/CCU Transfer	14

Massive Obstetric Haemorrhage (18)

1. **Age 24.** Full term normal delivery in 2009 with birth weight 4.07 kilograms. Spontaneous miscarriage 2011 at 13 weeks gestation. History of asthma, anxiety and postnatal depression. Booked at 12 weeks gestation. EDD confirmed by ultrasound. Booking weight 82 kilograms. Normal anatomy scan at 21+ weeks gestation. Uneventful antenatal care. Labour induced at 41+ weeks gestation. Haemoglobin 8.7g at time of induction. Prostaglandin gel x 2. ARM. Uneventful labour and spontaneous vaginal delivery. Live born female infant weighing 3.96 kilograms. Retained placenta and manual removal of placenta performed in theatre. Antibiotic prophylaxis given. Cytotec 1 grams pr and syntocinon infusion commenced. Two hour following MROP maternal collapse occurred on the postnatal ward, secondary to massive PPH (2.5 litres) related to an atonic uterus. PPH protocol commenced. Bi-manual compression of uterus followed by syntometrine IM and haemobate. Syntocinon infusion continued. One unit of O negative blood transfused, followed by one unit of cross matched blood. Two grams of fibrinogen administered. Good response to resuscitation and transferred to HDU for further monitoring. Responded well to conservative treatment with good recovery. Mother and baby discharged home on day 3.

2. **Age 29.** Previous ectopic pregnancy in 2005 – right salpingectomy. History of anaemia and anxiety. Booked at 14 weeks gestation. Dichorionic diamniotic twin pregnancy noted. Significant growth discordance noted at 25 weeks gestation. Intensive fetal surveillance. Admitted at 30 weeks gestation because of absent end diastolic flow in twin II associated with oligohydramnios and poor interval growth. Emergency caesarean section two days following admission at 30 weeks because of a non-reassuring CTG. Twin I live born male with birth weight of 1.86 kilograms. Twin II live born female with birth of 900g. Posterior placenta morbidly adherent and removed piecemeal. Ongoing persistent bleeding from placental bed. Haemorrhage prophylaxis instigated. Syntocinon 5 units, syntocinon 40 unit infusion, and cytotec 600 milligrams in to uterine cavity. Extra sutures required to placenta bed. IM haemobate administered. Total perioperative blood loss 4.2 litres. Transfused 3 units red cells. IV antibiotic prophylaxis. Transferred to HDU. Recovered very well and discharged home on day 6.

3. **Age 33.** Primigravid. Booked at 14 weeks gestation. EDD confirmed by ultrasound. Heart murmur as a child. Previous LLETZ 2006. Father known type II diabetic. Uneventful antenatal care. Normal anatomy scan at 22 weeks gestation. Normal GTT at 28 weeks gestation. Prostaglandin induction of labour at 41+ weeks gestation. Short active labour of 3 hours 34 minutes. Spontaneous vaginal delivery of a live born male infant weighing 3.43 kilograms. Significant PPH at time of delivery of placenta. IM Syntometrine given. IV line sited. 40 unit infusion commenced. One gram cytotec pr given. Foley catheter inserted. Second IV line and Hartmanns infusion commenced. Clots evacuated from vagina with additional piece of placenta and membranes. Bleeding settled very well. Third degree tear identified and plan to suture in theatre. Delay in proceeding with this, as labour ward extremely busy. Brought to theatre 2 hours following delivery. At time of repair exploration of uterine cavity performed.

Additional piece of placenta removed. Despite prophylactic oxytocics uterus remained very atonic post emptying of uterine cavity. Syntometrine IM repeated. Syntocinon infusion continued. A further one gram of cytotec given pr. Estimated blood loss approximately 3 litres. Consultant present. Rusch® balloon inserted into uterine cavity. Third degree tear repaired. Transfused with 2 units of O negative blood and 3 units of cross matched blood. Four units of octoplas given and four grams of fibrinogen administered. Bleeding settled and transferred to HDU. Rusch® balloon removed 24 hours later and patient stable. Developed significant pyrexia on day 2 and treated with triple IV antibiotics. Subsequently recovered well and discharged home on day 6.

4. **Age 38.** SVD at 34 weeks gestation in 2009. Idiopathic preterm birth. History of endometriosis in 1998. Mother has diabetes. Booked at 11 weeks gestation. EDD confirmed by scan. Normal anatomy scan at 21 weeks gestation but estimated fetal weight less than the 10th centile. Fetal growth monitored regularly. Growth persisted along 10th centile for gestational age. Normal GTT at 28 weeks. Presented at 36 weeks gestation with contractions 1:3. Blood pressure on admission 140/91. CTG non-reassuring and ARM performed. Large volume of clear liquor noted. Late decelerations noted. Cervix 2 centimetres dilated and while attempting fetal blood sample large gush of fresh PV bleeding noted. Clinical suspicion of placental abruption and emergency caesarean section performed. Live born male infant weighing 2.04 kilograms. Apgars 2 at 1 and 6 at 5 minutes. Abruption confirmed. Uterus atonic and prophylactic oxytocics given – syntocinon 5 units IV, followed by 40 units syntocinon infusion. One gram of cytotec also administered to uterine cavity. Bleeding settled but perioperative blood loss noted as 1200 mls. Approximately 6 hours post-operatively patient noted to have oliguria and complained of significant abdominal pain associated with abdominal distension. FBC checked – haemoglobin 6.5 grams (significant drop from pre-operative haemoglobin). Also noted to be hypertensive. Gelofusion commenced, patient stabilised and decision to take back to theatre to rule out intraperitoneal bleed. At laparotomy approximately 1600mls of blood clot removed from abdominal cavity. Ongoing ooze noted from left uterine angle and sutures inserted to good effect. Coagulopathy noted with platelet count of 36 and reduced fibrinogen. Transfused 5 units RCC, 4 units FFP, 1 gram of fibrinogen, 2 grams of Cyklokapron and one pool of platelets. Transferred to HDU. Also treated with magnesium sulphate prophylaxis in view of ongoing evidence of pre-eclampsia. Labetalol 300 qds to control hypertension. Improved very well over the first two days postnatally but at 72 hours post op developed significant abdominal pain and distension. Concern regarding bowel obstruction both clinically and by x-ray. Transferred to the Mater for CT scan. Reviewed by surgical team and decision to do laparotomy. Caecal volvulus noted and surgery performed to excise. End to end anastomosis performed. Remained in the Mater Hospital and discharged home approximately day 14. Reviewed at 6 weeks postnatally and mother and baby both doing well.

5. **Age 43.** Previous elective caesarean section in 2008. Chronic hypertension and diabetic on insulin. Booked at 10 weeks gestation. EDD confirmed by ultrasound. Seen regularly in the diabetic clinic. Normal anatomy scan at 20 weeks gestation. Normal fetal echo at 23 weeks gestation. Ongoing normal fetal growth. Presented at 28 weeks gestation with chest discomfort and pain. Myocardial infarction diagnosed. Transferred to Coronary Care Unit Mater Hospital. Significant right coronary artery narrowing noted and bare metal stent inserted. Subsequently closely monitored in the Diabetic, Cardiac and Haematology Clinics. Scheduled for an elective caesarean section and tubal ligation at 38 weeks gestation. Live born male infant weighing 4.02 kilograms. Apgars 9 at 1 and 10 at 5 minutes. Bilateral tubal ligation performed. Ongoing persistent bleeding from left uterine angle because of extension into the broad ligament. Extra sutures required but difficult to control ongoing persistent ooze. Uterine arteries ligated. Tissues very friable and decision made to proceed with sub-total hysterectomy. Perioperative blood loss 3.6 litres. Transferred to HDU and recovered very well. Discharged home on day 5. Continued with Innohep prophylaxis. Despite this developed bilateral pulmonary emboli approximately 4 weeks postnatal. Admitted to Mater Hospital and commenced on therapeutic Innohep. Seen for postnatal visit at 9 weeks and was doing very well. Ongoing follow-up in the Mater Hospital re: MI and Pulmonary emboli.

6. **Age 29.** Primigravid. Booked at 11 weeks gestation. Dichorionic diamniotic twin pregnancy noted. EDD confirmed by ultrasound. Uneventful antenatal care until 28 weeks gestation when admitted with antepartum haemorrhage. Prophylactic steroids given. Settled and discharged home. Re-admitted at 30 gestation with obstetric cholestasis. Retained in hospital. Subsequent scan revealed evidence of placenta praevia and therefore retained in hospital until delivery. Elective caesarean section performed at 36 weeks gestation. Twin 1 live born male infant weighing 2.94 kilograms. Twin II live born male infant weighing 2.2 kilograms. Anterior placenta praevia at caesarean section. Perioperative blood loss 600 mls. Prophylactic oxytocics – syntocinon 5 units with 40 units of syntocinon infusion. Cytotec 600 micrograms into uterine cavity. Ongoing post-partum haemorrhage in recovery and therefore brought back to theatre for a laparotomy. Some fresh blood and blood clot noted in the abdomen. Significantly hypotonic uterus. Uterine cavity carefully explored with no obvious placenta or membranes found. Persistent ooze from the placental bed and extra sutures required. Haemobate also given. B-Lynch suture used. Overall blood loss 2.6 litres. Transfused three units RCC. Subsequently transferred to HDU. Recovered well and discharged home on day 5.

7. **Age 35.** Primigravid. Booked at 16 weeks gestation. EDD confirmed by ultrasound. Normal anatomy scan at 21 weeks gestation. Patients mother known insulin dependant diabetic. Subsequent abnormal GTT at 28 weeks and sugars controlled well with diet. Antenatal care otherwise uneventful. Induction of labour at term + 10. One dose of prostaglandin gel. Progressed to 3 centimetres. Emergency caesarean section performed for non reassuring CTG. Live born female infant weighing 3.44 kilograms.

Apgars 9 at 1 and 10 at 5 minutes. Uterus atonic following delivery. Five units of syntocinon given. 40 units syntocinon infusion commenced, one gram of cytotec placed in uterine cavity. Continued to bleed heavily. IM Ergometrine given, followed by three doses of haemobate intra-myometrially. Attempt at insertion of Rusch® balloon. Unable to place easily due to significant bleeding. B-Lynch suture inserted. Continue bi-manual compression and second B-Lynch suture inserted. Ongoing significant haemorrhage. Total blood loss approximately 5 litres and decision taken to do **caesarean hysterectomy**. Total transfusion – 2 units of O negative blood, 7 further units of RCC, 4 grams of fibrinogen, 2 pools of platelets and 5 units of octoplas. In view of coagulopathy and persistent ooze abdomen packed with large swabs and closed. **Transferred to Mater ICU**. Stable 24 to 48 hours later and pack removed from the abdomen. No further bleeding noted. Patient returned to the Rotunda HDU on day 3. Discharged home well on day 11.

8. **Age 30.** Primigravid. Booked at 10 weeks gestation. EDD confirmed by ultrasound. Normal anatomy scan 20 weeks. Uneventful antenatal care. Normal growth scan at 33 weeks gestation. Presented in spontaneous labour at 40 weeks gestation. On admission blood pressure 165/105 and complained of associated epigastric pain and blurred vision. Diagnosis of pre-eclampsia and commenced on magnesium sulphate prophylaxis. Cervix 4 centimetres dilated and ARM performed. Short labour of 4 hours duration. Forceps delivery for delay in the second stage. Live born female infant weighing 3.62 kilograms. Apgars 9 at 1 and 10 at 5 minutes. High vaginal tear following forceps delivery repaired. Uterus atonic. Total blood loss 1700 mls. On day one postnatal developed post partum HELLP syndrome. AST and ALT grossly elevated. Creatinine elevated, significant drop in haemoglobin. Abnormal fibrinogen and coagulation screen. LDH significantly raised. Transferred to HDU and transfused 2 units of FPC, 1 gram fibrinogen and 2 units octoplas. Significant secondary PPH on day 2 of approximately 1 litre. Examination under anaesthesia. Haemobate x 3. Rusch® balloon inserted. Bleeding settled. Transfused a further three RCC. Balloon removed 24 hours later when stable. Bloods gradually improved over the following three days. Very well on day 6 and discharged home. Reviewed at 6 weeks postnatal. Mother and baby well.

9. **Age 38.** Para 3+2. Emergency caesarean section in 2003 at twenty-nine weeks gestation. Neonatal death four weeks later due to Myotubular Myopathy. Elective caesarean section in 2005 at thirty-seven weeks gestation. Normal outcome. Subsequent miscarriages associated with Myotubular Myopathy. Emergency caesarean section in 2008 at thirty weeks gestation because of spontaneous onset of labour. Early reassurance scan in this pregnancy at eight weeks gestation. EDD confirmed by ultrasound. Uncomplicated CVS at eleven weeks gestation. Normal karyotype and fetus not affected by Myotubular Myopathy. TVS at fourteen weeks gestation – cervix 25mms. In view of previous history commenced on Progesterone injections at sixteen weeks gestation. Cervix remained at 25/26mms. Normal anatomy scan at 20 weeks gestation. Pregnancy uneventful until 34+ weeks when admitted with non substantial antepartum haemorrhage, spontaneous onset of labour one day later. Emergency caesarean section.

At caesarean section significantly increased vascularity on lower segment and uterovesical peritoneal fold. Bladder reflected and incision made high on the lower segment. Grade I placenta praevia noted (not seen antenatally on ultrasound). Live male infant delivered in good condition. Birth weight 2.52kg. Apgars 9 at 1 and 10 at 5 minutes. Perioperative blood loss 2000 mls. Third stage complete. No obvious increased bleeding from placental bed at closing. Transferred to Recovery Room and stable. Further ongoing blood loss per vagina in Recovery Room. Evacuated 300mls from vagina. Decision to transfer back to theatre for assessment and Rusch® balloon was used, initially with 2units of RCC. Rusch® balloon inserted in theatre under ultrasound guidance. Haemostasis achieved. Syntocinon infusion continued. Cytotec 1g PR given earlier. Uterus very well contracted. Remained stable with minimal blood loss in Recovery Room for about two hours. Bleeding recommenced. Decision to bring back to theatre for laparotomy. Rusch® balloon removed. 300-400mls of blood removed from vagina. At laparotomy significant bleeding noted from placental bed, particularly low down close to cervix. Deep sutures placed in the placental bed. Tissues noted to be friable. Fibrinogen decreased. Ongoing transfusion with RCC and Fresh Frozen Plasma and Fibrinogen. CVP and Arterial Lines inserted. Uterus became atonic and intramyometrial haemabate administered. Uterus remained atonic and haemobate repeated. Decision to perform **total abdominal hysterectomy**. TAH performed. Deeper lower segment sutures noted to incorporate bladder and removed. Bladder repaired with 2/0 Vicryl. Urology opinion sought and suprapubic and urethral catheter left in for four weeks. Intravenous triple antibiotic cover. Total blood loss estimated at 10L. Total transfusion 16RCC, 10FFP, 3 pools of platelets and 4 units of Fibrinogen. **Transferred to Mater Misericordiae University Hospital ICU**. Subsequently returned to the Rotunda Hospital on day 3 after surgery. Discharged home on day 10. Mother and baby well. Cystogram on day 28 normal. Subsequent cystoscopy normal. Physically well three months post-partum.

10. **Age 38.** Previous ectopic pregnancy 2011. IVF pregnancy. Early scan reassuring and EDD confirmed. Booking examination normal. Normal anatomy scan at 21 weeks. Admitted with antepartum haemorrhage at 23 weeks gestation. Bulging membranes noted on admission. Recurrent antepartum haemorrhage over the following two days. Blood stained liquor two days after admission. PPROM confirmed. Antibiotic prophylaxis given. Steroids administered at 24 weeks gestation. Retained in hospital for expectant management. Clinical evidence of chorioamnionitis at 26 weeks gestation and decision made to do emergency caesarean section. Live born female infant delivered weighing 750g. Transferred to NICU. At delivery liquor noted to be foul smelling. Placenta very adherent to lower segment on anterior and posterior uterine walls. Placenta removed piece meal. Significant bowel adhesions on the posterior aspect to the uterus. Atonic uterus treated with syntocinon 5 IU, syntocinon infusion, ergometrine IM and two doses of haemobate intra-myometrially. Significant bleeding of approximately 2.5 litres. Transfused four units of blood. Bleeding controlled. 1 grams of cytotec PR. Patient transferred to HDU. Remained septic in HDU and covered with triple intravenous antibiotics.

Haemoglobin < 7grams postnatally and transfused with 2 further units RCC. Improved well and discharged home on day 9. Readmitted on day 23 with suspected endometritis. Ultrasound suggestive of retained products of conception. Management conservatively initially but as no significant improvement, ERPC performed. Fragmented degenerative tissue removed. Subsequent histology confirmed decidua only and no chorionic villi. Improved very well following ERPC and discharged home two days later.

11. **Age 28.** Primigravid. Booked at 12 weeks gestation. EDD confirmed by ultrasound. Normal booking examination. Normal anatomy scan at 21 weeks gestation. Spontaneous onset of labour at 39 weeks gestation. Short labour of three hours. Spontaneous vaginal delivery. Live born male infant weighing 3.21 kilograms. Apgars 9 at 1 and 10 at 5. Episiotomy and significant vaginal tear. Initial blood loss approximately 1500 mls. Uterus well contracted with syntocinon 5IU IV and syntocinon infusion. Registrar called. Vaginal tissue quite friable. Ongoing bleeding from vaginal area. Transfused with three units of O negative blood. Episiotomy and vaginal tear repaired. Managed with vaginal pack and catheter. Total blood loss over time approximately 3.5 litres. Transfusion of 4 units RCC. Transferred to HDU with CVP line. Two subsequent units of RCC (total transfusion 6 units RCC). Recovered well over the following two days. Catheter pack and CVP line removed on day 2 and returned to postnatal ward. Good recovery and mother and baby discharged home well on day 4.

12. **Age 26.** Para 1. Transfer of care from another maternity hospital with a suspected Twin to Twin Transfusion syndrome in a monochorionic diamniotic pregnancy. Twin to twin transfusion syndrome Stage 3 confirmed and fetoscopic laser ablation at 21 weeks gestation. Morbid maternal obesity with body mass index of 46 and maternal cardio-vascular collapse intraoperatively requiring evacuation of the uterus in the maternal interest. 2L blood loss. Two units of emergency O negative blood, three units of cross matched blood and 1.5 litres of crystalloid and colloid transfused. Transferred to the Mater Intensive Care Unit following surgery once the maternal condition was stabilised. Transferred back to the Rotunda following extubation day 1 post hysterotomy. Discharged home day 6, with arrangements for followup in the referral centre. Cardiac follow-up recommended.

13. **Age 38.** Para 1. Booked at 12 weeks gestation with a dichorionic diamniotic pregnancy. Ultrasound confirmed gestation. Prior history of elective caesarean section for placenta praevia at term. Consultant led antenatal care. Presented at 33 weeks with pre-eclampsia. Worsening symptomatology necessitated admission and delivery at 33 weeks gestation. Delivered by emergency caesarean section. One litre intra-operative blood loss and haemostatic sutures required to the placental bed. Syntocinon infusion and cytotec administered intra-operatively. Hypotensive post-operatively and maternal tachycardia noted. Return to theatre for explorative laparotomy. Two further litres of free fluid evacuated from the abdomen. No obvious cause for the intraperitoneal bleed identified. Total 3 L blood loss. Transfused four units of red cells, four units of fresh frozen plasma and two units of fibrinogen. Five day High Dependency Unit care. Discharged home well with routine follow-up. Mother and baby well

14. **Age 18.** Primip. Booked at 10 weeks gestation. Ultrasound confirmed gestation. Background history of depression and methadone maintenance therapy. Smokes 10 cigarettes per day. Hospital led antenatal care. Normal anatomy scan at 20 weeks with appropriate fetal growth. Presented in spontaneous labour at 40 weeks 3 days gestation. Oxytocin commenced to augment progress. Maternal blood pressure noted to be elevated during the course of labour and +2 proteinuria on urinalysis. Blood pressure stabilised. Emergency caesarean section done at 3 centimetres dilatation for failure to advance. 800 ml intra-operative loss and a live born male weighing 3.14 kilograms delivered with an Apgar score of 9 at 1 minute and 10 at 5 minutes. Syntocinon 5IU and syntocinon infusion commenced. Further 1 litre blood loss with clots evacuated from the uterus immediately postoperatively. Atonic uterus. In total 2 litre loss following delivery requiring 2 units of cross matched blood, 2 fibrinogen concentrates and 2 octoplas. Responded well to syntocinon intravenously, syntocinon infusion, cytotec and haemobate. On antibiotics for a post-operative wound infection. Discharged home well five days post-operatively. Mother and baby well.

15. **Age 30.** Para 2+2. Booked at 12 weeks + 3 days gestation. Ultrasound at booking confirmed gestation and established her estimated date of delivery. Back ground history of two previous caesarean sections and two miscarriages and a history of a possible allergic reaction to pethidine following her first emergency caesarean section. Additional medical history of anxiety disorder and epilepsy. Shared care with the GP. Major placenta praevia noted at 20 weeks gestation. In addition at the time of the 20 week ultrasound some free fluid was noted in the abdomen and the cause of which was not identified. A review in the Mater was arranged and a diagnostic laparoscopy was undertaken. At the time two litres of a haemoperitoneum was identified and two units of packed red cells were transfused and the patient was subsequently managed expectantly. No definitive cause for the bleed identified. Multi-disciplinary management in light of placenta praevia and epilepsy. Antenatal steroids administered at 33 weeks gestation. MRI undertaken at 20 weeks gestation suggesting placenta percreta extending into the bladder. Repeat MRI was undertaken at 36 weeks gestation on admission, again suggesting bladder wall involvement. An elective caesarean section undertaken at 37 weeks gestation. Placenta percreta confirmed following delivery of a live born female infant weighing 3.25 kilograms with Apgars of 8 at 1 minute and 10 at 5 minutes. Four litres intra-operative blood loss despite haemorrhage protocol. Sub-total hysterectomy performed. Two of red cells transfused intra-operatively and three units (1000 mls) of maternal cells transfused following use of cell salvage. Total 4L blood loss. Transferred to the High Dependency Unit where there was an uncomplicated postnatal recovery. Discharged home day 5 post-operatively following review.

16. **Age 27.** Para 1+1. Presented originally at 6 weeks gestation in August of 2012 falling beta HCGs and features suggestive of a spontaneous pregnancy loss. Subsequently transferred from another hospital in October of 2012 with abdominal pain and bleeding necessitating a transfer to theatre for laparotomy with suspicion of an ectopic pregnancy. Declining all blood products as a member of the Jehovah Witness faith.

Right adnexal ectopic identified adherent to the broad ligament and right salpingectomy performed. Cell salvage performed used and 770 mls of the patients own blood was transfused. 3.5 litre blood loss in total. **Transferred to the Mater Hospital intensive unit** care post-operatively with abdominal packs in-situ. Subsequently transferred back to the Rotunda Hospital on day 8 post-operatively. Postoperative recovery complicated by a history of a pleural effusion and a lower lobar lung collapse on day 4 post-operatively. Haemoglobin on return was 8 grams per decilitre having reached a nadir of 3 grams per decilitre intraoperatively. She was subsequently discharged home on day 12 post-operatively with a haemoglobin of 8.9 grams per decilitre. Mother well postnatally. Multidisciplinary followup. **Major maternal morbidity. Transfer to Mater ICU**.

17. **Age 29.** Primip. Booked at 14 weeks gestation. Combined antenatal care. History of endometriosis and assisted fertility. Episodes of hypertension during the course of her pregnancy. Resolved without medication. Serial fetal ultrasounds for fetal growth and maternal reassurance. Fetal growth along normal parameters. Presented at 38 weeks gestation in urinary retention. Spontaneous labour. Fetal bradycardia at 2cms dilatation. Suspected placental abruption. Emergency caesarean section. Haemoperitoneum and numerous bleeding uterine varices identified. Male infant weighing 2.58 kilograms delivered. Apgars of 0 at 1 minute of age, 2 at 5 minutes of age and 5 at 10 minutes of age. Infant demise in the early neonatal period. Atonic uterus. Extensive bleeding from the varices requiring extension of the pfannenstiel incision. Haemostasis obtained. Abdomen packed and the patient was stabilised. **Transferred to the Mater Intensive care unit.** Intraoperative blood loss of 3.5L. Five units of O negative blood were transfused in conjunction with 4 units of octoplas and 4 units of fibrinogen. Postoperative ileus. Abdominal packs removed day 2. Transferred back from the Mater Hospital on Day 3 postnatal and discharged home day 8 post caesarean section. Mother well.

18. **Age 24.** Para 2. Two previous caesarean sections. Booked at 12 weeks gestation. EDD confirmed by ultrasound. Medical history of polycystic ovarian syndrome and depression. Body mass index of 44. Cigarettes- 11 to 20 per day. Anterior low lying placenta identified on anatomy scan at 22 weeks gestation. Re-scan at 26 and 34 weeks gestation showed a central praevia covering the cervix. Antepartum haemorrhage at 24 weeks and 37 weeks gestation. Emergency LSCS at 37 weeks gestation. Placenta morbidly adherent to the cervix anteriorly at the time of surgery with an intra-operative blood loss of 3.4L and subsequent requirement for a **subtotal abdominal hysterectomy**. Placenta accreta. Live born male infant weighing 2.56 kilograms with Apgars of 8 at 1 minute and 10 at 5 minutes. Discharged home day 5 postnatally. Mother and baby well.

Peripartum Hysterectomy (7)

1. **Age 36.** Para 3. Developed pulmonary hypertension in pregnancy secondary to a pulmonary embolus. Planned elective caesarean section at 37 weeks gestation in the Mater Hospital. Postpartum haemorrhage secondary to an atonic uterus requiring subtotal hysterectomy. Discharged home well Day 6. Followup in the Mater.

2. Reported in Major Obstetric Haemorrhage – No. 5
3. Reported in Major Obstetric Haemorrhage – No. 7
4. Reported in Major Obstetric Haemorrhage – No. 9
5.. Reported in Major Obstetric Haemorrhage – No. 12
6. Reported in Major Obstetric Haemorrhage – No. 15
7. Reported in Major Obstetric Haemorrhage – No. 18

Ruptured Uterus (1)

1. **Age 29.** Para 3. Late booker at 30 weeks. Two previous term deliveries and one previous LSCS, successful VBAC in the third pregnancy. Rhesus negative. Presented with pains at 40+5 weeks. Discharged home. Subsequently presented in labour at 41 weeks gestation. Bradycardia at full dilatation. Emergency caesarean section. Stillborn female infant delivered weighing 3.73 kilograms. Ruptured uterus noted at the time of caesarean section with 800 mls intra-operative blood loss. PM declined. Placental examination normal. Cause of death fetal demise secondary to uterine rupture.

Transfers to the Mater Misericordia Hospital (14)

1. **Age 36.** Para 1 Presented to the emergency services at nine weeks gestation with a 24 hour history of bleeding, pain and vomiting. Hypotensive, pyrexial, hypothermic and tachycardic on attendance. Diagnosis of septic miscarriage suspected. Poor response to antibiotics and IV fluids. The patient was stabilised and transferred to theatre where an evacuation of the retained products of conception was undertaken. Subsequent transfer to the Mater Intensive Care Unit in the immediate postoperative period. Discharged home well.

2. **Age 28.** Para 0. Monochorionic diamniotic twins diagnosed. EDD assigned. Fetal surveillance as per protocol. Twin to Twin Transfusion Syndrome at 24 weeks gestation requiring fetoscopic laser ablation. Developed dyspnoea and chest pain three days postoperatively. Suspected pulmonary embolus. Desaturating on room air. Transferred to the Mater Intensive care unit. Cardiomegaly noted on echocardiography. Dyspnoea resolved and CTPA failed to show evidence of a pulmonary embolus. Discharged home. Followup antenatal care in the Rotunda. Delivered by elective caesarean section secondary to fetal growth restriction at 34 weeks gestation. Two female infants 2.14Kg and 2.02 Kg. Discharged home well Day 5 postoperatively. Neonatal and maternal followup with cardiology. Mother and babies well.

3. **Age 35.** Para 0. Booked at 12 weeks gestation. EDD confirmed. No medical history. Family history of hypertension and diabetes. Combined antenatal care. Induction of labour and SVD at 41 weeks 5 days. No immediate postnatal complications. Mother and baby discharged home well on Day 3 postnatal. Presented 12 days postnatally with elevated BP and disorientated. Commenced on Magnesium sulphate and labetalol infusions. Tachypnoea and cerebral signs with a diagnosis of PET. Transferred to the Mater Hospital Intensive care unit for maternal care and cranial imaging. Discharged home well. Mother and baby well.

4. **Age 28.** Para 1+0. Booked at 11 weeks in her second pregnancy. EDD confirmed. On methyldopa for a background history of hypertension. Previous preterm delivery secondary to pre-term pre-labour rupture of the membranes at 35 weeks and 2 days gestation. Delivered a live born male infant weighing 2.7 kilograms. History of hypertension secondary to renal artery stenosis, anaemia and recurrent kidney tract infections. Body mass index of 32 on booking. Base line renal profile and renal clinic referral arranged. Hospital based consultant-led multidisciplinary care. Methyldopa titrated to 500 mg qds by the 36th week of pregnancy and subsequent admission at 36 weeks and four days with elevated blood pressure and an abnormal renal profile. Blood pressure on admission was 125/100 and labetalol 200mg 3 times a day was commenced. Fetal bradycardia and fetal abruption diagnosed day following admission. An emergency Caesarean section was performed. A live born female infant weighing 2.51 kilograms was delivered. Apgars 1 at 1 and 9 at 5 minutes. Intra-operative blood loss of 600 mls and a concealed placental abruption was confirmed. Subsequent postnatal care provided in the High Dependency Unit. Intravenous labetalol was continued and continuous maternal monitoring. Blood pressure stabilised on labetalol. Renal function deteriorated over the 24 hours following delivery. Creatinine rose from 55 to 155 in the context of oliguria. Urea also rose from 2.5 to 7.4. Poor response to fluid challenge and diuretics. Renal team review requested. Further deterioration in renal function. Provisional diagnosis of acute renal failure. Transfer was arranged to the Renal Team in the Mater Hospital for further management and follow-up.

5. **Age 26.** Para 0+0. Booked at 18 weeks gestation in her first pregnancy with a personal history of sickle cell disease. Had hospital based consultant-led care. Presented at 29 weeks with sepsis induced sickle cell crisis. Required transfer to the Mater Hospital. Crisis settled with supportive management and antibiotics. Subsequently discharged home well. Presented at 38 weeks gestation in spontaneous labour and had a vaginal delivery of a live born male infant weighing 2.86 kilograms. Apgars 9 at 1 and 10 at 5 minutes.

6. **Age 46.** Para 2. Background history of menorrhagia, presented five days following hysteroscopy and D&C with abdominal pain and distension, pyrexia tachycardia and neutropenia. Suspected bowel perforation. Patient stabilised. Surgical consult sought. Transferred to the surgical intensive care unit in the Mater Hospital for supportive care and further management.

7. **Age 34.** Para 0. Transferred at 31 weeks gestation in the fetal interest from another maternity with preterm, prelabour rupture of the membranes. Spontaneous normal vaginal delivery of a live born male infant day 1 following transfer Infant weight 2.05 kilograms. Apgars 9 at 1 and 9 at 5 minutes of age. Retained placenta requiring a manual removal of placenta in theatre. In total 1L blood loss. Difficult MROP. Placenta removed piecemeal. Discharged home day 3 postnatal. Represented to the referral hospital two weeks postnatally with secondary postpartum haemorrhage secondary to sepsis and retained placental tissue. Haemoglobin of 7.9 g/dl. She was commenced on triple antibiotics. Examination under anaesthetic. Multidrug resistant E coli identified on culture and ten days of intravenous antibiotics required. Discharged home well day 21 postnatally. Mother and baby well.

8. **Age 37.** Para 0. Referred from another maternity hospital with ruptured membranes at 23 weeks gestation. History of anaemia and a multiple fibroid uterus. Admitted. Prophylactic antibiotics. Steroids administered at 26 weeks gestation. Antenatal neonatology review. Spontaneous labour at 29 weeks gestation. Transverse lie. Classical caesarean section. Liveborn male infant delivered 1.17Kg. Apgar score 2 at 1 minute, 2 at 5 minutes and 2 at 10 minutes. Early neonatal death. 1l Intraoperative blood loss. Sepsis 2 days postnatally. Triple therapy antibiotics instigated. Failure to respond to treatment. Transferred to the Mater Intensive Care Unit.

9. Major Obstetric Haemorrhage Case 5.

10. Major Obstetric Haemorrhage Case 7.

11. Major Obstetric Haemorrhage Case 9.

12. Major Obstetric Haemorrhage Case 12.

13. Major Obstetric Haemorrhage Case 16.

14. Major Obstetric Haemorrhage Case 17.

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.

397 new patients were seen in the clinic in 2012, an increase of 70 patients compared with 2011. 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)	200
Postnatal Fourth Degree Tear (includes patients referred from other institutions)	12
Postnatal Perineal Infection or Pain	45
Faecal Incontinence	10
Antenatal Assessment (next pregnancy)	105
Other (incl perineal pain, dyspareunia)	25
Total	**397**

The largest group of patients seen were those who attended after obstetric anal sphincter injury. 219 patients sustained anal sphincter injury in the year 2012, 212 of whom had third degree tear, while 7 patients sustained fourth degree tear (extending to involve anal mucosa). 73.3% of women who sustained anal sphincter injury were primigravid. The position of the vertex was OA in the majority (89.9%) of patients. The modes of delivery of those who sustained anal sphincter injury are tabulated below:

Mode of Delivery	Third Degree Tear	Fourth Degree Tear
SVD	108	2
Ventouse	59	2
Ventouse & Forceps	16	2
Forceps	28	1
Born before arrival	1	0
Total	**212**	**7**

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 with 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.

48 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)	14
Fenton's procedure / perineal revision (day case)	8
Perineal injection (day case)	2
Referral to colorectal service	12

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.

A joint Clinical Practice Guideline by the HSE and Institute of Obstetrics and Gynaecology on Management of Obstetric Anal Sphincter Injury was published in April 2012. We welcome this comprehensive document to guide best practice and to provide a basis for clinical audit.

In 2012 we 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 10% recurrence risk following previous third degree tear and we find it helpful to have local results to inform practice. This work was presented by Dr Amanda Ali at the Irish Congress of Obstetrics, Gynaecology and Perinatal Medicine and is currently being prepared for publication.

Hypertension with Proteinuria

The Master

YEARS	2011	2012
Total number of cases	**273**	**249**
Booked	269	245
Unbooked	4	4
Incidence against delivery	3.0%	3.0%
Eclampsia %	0.04%	0.02%
Stillbirths	4	2
Neonatal Deaths	0	0
Multiple pregnancy	22	23

Parity of Patients at Delivery

0	190	165
1	48	49
2	20	21
3	11	8
4 plus	4	6
Total	**273**	**249**

Gestation of Patients at Delivery

< 28 weeks	8	3
28 - 29 weeks	6	5
30 - 31 weeks	8	7
32 - 33 weeks	10	11
34 - 35 weeks	21	23
36 weeks plus	220	200
Total	**273**	**249**

Induction of Labour

The Master

The rate for induction of labour for the year 2012 was 28%. This is 1% down on the previous year and very much in keeping with the recent trends. The indications for induction were broadly similar. There were fewer inductions for diabetes and fewer inductions for abnormal biophysical scores.

INDUCTIONS OVER 5 YEARS

Year	Nullip	%	Multip	%	Total	%
2008	1025	57%	760	43%	1785	21%
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%

INDICATIONS FOR INDUCTIONS 2012

REASONS	TOTAL	%
Post Dates	905	37%
Prolonged SROM	477	19%
Reduced Fetal Movements	55	2.20%
Diabetes	57	2.3%
Hypertension	261	10.5%
Heart Disease	0	
IUD	22	0.9%
Anomaly	17	0.7%
Antibodies *	5	0.2%
Diminished Liquor	66	2.7%
IUGR	122	4.9%
Large Baby	33	1.3%
Medical/Social	143	5.8%
Multiple Births	21	0.8%
Other	246	9.9%
Poor Obstetric History	44	1.8%
Decreased Placental Function	3	0.12%
Poor Byphysical Score	1	0.04%
Total	**2478**	**100%**

* Anti D detected or Anti E

INDUCTION OF LABOUR

YEARS	2011	2012
Total Number of Cases	2616	2478
Incidence against deliveries >500	29%	28%
No. of Caesarean sections for Inductions	572	549
Stillbirths	34	24
Neonatal Deaths	4	6

METHOD OF INDUCTION

YEARS	2011	2012
ARM	240	207
ARM + Synto	543	510
Prostin + ARM + Syntocinon	677	595
Prostin + ARM	409	387
Prostin	267	268
Cytotec	25	13
Prostin + Syntocinon	197	208
Syntocinon	258	290

Caesarean Section

The Master

The caesarean section rate for 2012 was 28.7%. This was a reduction of almost 1% on the previous year. The caesarean section rate for Group 1, nullips in spontaneous labour was 10.3%, which was 1% lower than the previous year. The caesarean section rate for group III multips in spontaneous labour was 2.1% which was ½ % reduction on the previous year. Induction rates for both nullips induced and multips induced groups 2 and 4 was identical to previous years and there was no significant difference in any of the other groups noted.

YEARS	2011	2012
Total number of cases	2689	2538
Incidence against total deliveries > 500g	29.5%	28.7%
Maternal Mortality	2	2
Primary C.S.	59.0%	58.5%
Repeat C.S.	41.0%	41.5%
Classical C.S	4	2
Tubal Ligation at C.S.	80	64
C/S Hysterectomy	3	5

CAESAREAN SECTION ANALYSIS

All Deliveries for 2012	**8846**
All Caesarean Sections	2538
Section Rate	28.7%
Group 1 - Nullip Single Ceph Term Spont Lab	199/1941
Section Rate	10.3%
Group 2 - Nullip Single Ceph Term Induced	436/1360
Section Rate	32.1%
Group 2a - Nullip Single Ceph Term CS Before Labour	161
Group 3 - Multip Single Ceph Term Spont Labour	45/2192
Section Rate	2.1%
Group 4 - Multip Single Ceph Term Induced	51/950
Section Rate	5.4%
Group 4a - Multip Single Ceph Term CS before Labour	116
Group 5 - Prev Section Single Ceph Term	905/1191
Section Rate	76.0%
Group 6 - All Nullip Breeches	152/161
Section Rate	94.4%
Group 7 - All Multip Breeches	139/153
Section Rate	90.8%
Group 8 - All Multiple Pregnancies	133/194
Section Rate	68.6%
Group 9 - All Abnormal Lies	17/18
Section Rate	94.4%
Group 10 - All Preterm Single Ceph	184/409
Section Rate	45.0%
Elective Caesarean Section Total	1245
Emergency Caesarean Section Total	1293
Total Multips	**4939**
Total Primips	**3907**

INDICATION FOR PRIMARY SECTIONS 2012

DELIVERY METHOD INDICATION	2011	2012
Fetal Distress {Antepartum & Intrapartum}	544	498
Failure to progress 1st stage	156	121
Failure to progress 2nd stage	34	49
Breech	235	225
Abruption/APH	28	11
P.E.T.	24	26
Transverse Lie/Oblique	25	14
Pyrexia	17	16
Placenta Praevia	28	34
Poor Obstetric History	9	13
Cord Prolapse/Presentation	5	11
Disproportion & Deep Transverse arrest	1	0
Failed Forceps/Ventouse	21	24
Face/Brow Presentation	4	6
Multiple Birth	40	44
Failed Induction	76	80
Prematurity	5	7
Hypertension	32	9
Emergency CS Scheduled for Elective CS	20	10
I.U.G.R.	17	17
Maternal Request	14	20
Medical Disorders	31	37
Poor Biophysical Profile	3	1
Other	160	160
Recurring indications	3	4
Rhesus Antibodies	0	0
Previous 3/4th degree tear	31	38
Malpresentaion in labour	27	10
Total	**1590**	**1485**

INDICATION FOR REPEAT SECTIONS 2012

DELIVERY METHOD INDICATION	Elective	Emergency
Failure to progress 1st stage	0	36
Failure to progress 2nd stage	0	4
Fetal distress	0	84
Disproportion(Malpresentation in Labour)	0	2
Breech	1	0
Hypertension	8	4
Placenta praevia	3	3
P.E.T.	6	5
Poor obstetric history	4	2
Previous LSCS	656	73
Previous classical CS	2	2
Multiple birth	8	0
Abruption / APH	1	7
Failed induction	0	7
Antepartum fetal distress	0	0
Emergency CS scheduled for elective CS	0	15
Failed forceps/ventouse	0	0
I.U.G.R.	13	1
Medical disorders	4	1
Transverse lie / Oblique lie	4	3
Other	37	38
Maternal request	13	2
Prematurity	0	3
Previous 3/4th Degree tear	1	0
TOTAL	**761**	**292**

** These reasons are the First reason for Caesarean Section

Outpatient Activity Data 2012

CLINIC	New Attendances	Return Attendances	Total
Antenatal & Postnatal	13,454	40,694	54,148
Gynaecology	4,520	7,543	12,063
Paediatrics	7,628	2,919	10,547
Endocrinology	588	2,330	2,918
Nephrology	298	421	719
Other Specialist Clinics	1,397	803	2,200
Total	27,885	54,710	82,595

THE ROTUNDA HOSPITAL
DUBLIN

3
Departmental Reports

CARING FOR GENERATIONS
SINCE 1745

Department of Gynaecology

OPERATION CATEGORIES

	2008	2009	2010	2011	2012
Obstetrical Majors	2348	2556	2469	2745	2604
Obstetrical Minors	987	1189	1273	1287	1284
Vaginal Surgery	574	512	677	626	710
Abdominal:Uterus	135	130	113	110	125
Abdominal:Tubes & Ovaries	281	344	360	336	309
Other procedures	2138	2170	2760	2615	2397

THEATRE GYNAECOLOGIC WORKLOAD

VAGINAL SURGERY	2011	2012
Vaginal hysterectomy	45	33
Manchester repair	2	1
Pelvic Floor Repair	31	27
Vaginal Hysterectomy & AP Repair	43	53
Sacro Spinous Colpopexy	17	13
Removal of IUCD	123	94
Insertion of IUCD	359	379
Other	6	10
Total	**626**	**710**

ABDOMINAL OPERATIONS OF THE UTERUS	2011	2012
Total Abdominal Hysterectomy	39	49
Myomectomy	26	29
TAH & Bilateral Salpingo-oophorectomy	27	28
Sub Total Hysterectomy	18	19
Total	**110**	**125**

THEATRE GYNAECOLOGIC WORKLOAD

ABDOMINAL: TUBES AND OVARIES	2011	2012
Tubal Surgery	6	28
Laparoscopic Sterilisation	24	25
Tubal Ligation at Caesarean Section	91	64
Salpingectomy	89	82
Ovarian Cystectomy	95	82
Oophorectomy	12	14
Ovarian Biopsy	5	5
Salpingo-oophorectomy	14	17
Total	**336**	**317**

OTHER PROCEDURES	2011	2012
Laparoscopy	263	269
Laparoscopy and Dye	303	242
Hysteroscopy	257	276
D&C/H&C	723	733
UBT	67	76
EUA	60	47
Cystoscopy	8	20
Laparotomy	49	58
Excision Bartholins Cyst	21	47
Fentons	9	9
Diathermy Vulval Warts	2	2
Operative Hysteroscopy	21	6
Endometrial Ablation {Rollerball}	6	14
Laparoscopic division of Adhesions	56	44
Laparoscopic Ablation of Endometriosis/Argan	154	125
Polypectomy	81	61
TVT	7	16
Punch Biopsy of Cervix	18	11
LLETZ	152	78
Other Gynae Surgery	292	184
Other Surgery - fetal/anaesthetic	66	47
Total	**2615**	**2365**

GRAND TOTAL		
Gynae (Minors & Majors)	**3687**	**3441**

Colposcopy Service

Consultant Colposcopists	DR. PAUL BYRNE (Director Of Colposcopy)
	DR. TOM WALSH
	DR. YAHYA KAMAL
Lead Nurse Coordinator	MS. SELINA IGOE
Nurses	MS. ROSE THORNE
	MS. CAROLE O'ROURKE
	MS. JENNIFER O'NEILL
	MS. VIRGINIE BOLGER
Health Care Assistants	MS. TRISH O'DONOVAN
	MS. NICOLA BOYD
	MS. NANCY FAGAN (RETIRED IN 2012)
Colposcopy Team Leader	MS. CATHY HAYES
Administrative Support	MS. SUSAN DALY
	MS. ÉILIS DALTON
	MS. NIAMH O'CARROLL

There are four consultant led clinics each week. Each consultant led clinic is also staffed by a trainee, some of whom are BSCCP accredited while others are working towards their accreditation. One of our trainees, Dr Tom O'Gorman, left the service in 2012 to take up a consultant post in Our Lady of Lourdes Hospital. Dr Bill Boyd also left the service during the year. His sessions are now done by Dr Yahya Kamal. Three of our nurses are working towards BSCCP accreditation and it is our aim in the coming year is to establish nurse colposcopy clinics.

During 2012 there were 4722 patient visits to the colposcopy clinic, representing a slight increase compared to the previous year. Fewer new patients were seen, but the number of return visits was higher (Table 1). Our DNA rate is 7% for first visits and 10% for return visits. These figures are below the National Cervical Screening Programme target of <15%.

Table 1. Clinic Attendances

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

Of the 1563 new referrals, 373 (24%) had smears showing HSIL (moderate or severe dyskaryosis) Table 2. However, 423 (27%) were referred with ASCUS (borderline) smears. We hope that the introduction of the HPV triage test in the near future will reduce the number of referrals with borderline smears, as these represent a significant burden on the clinical workload.

Table 2. Cytology on referral of new patients (n=1563)

	ASCUS	LSIL	HSIL	ASCUSG	Clinical	Other	Total
Number	423	539	373	96	80	52	1563
%	27	35	24	6	5	3	100

Fewer LLETZ treatments were done in 2012 compared to the previous year, reflecting the reduced number of new referrals. However, there was a significant increase in the number of biopsies taken. This is due to the fact that 62% of our referrals had either ASCUS (borderline) smears or LSIL (mild dyskaryosis). Our aim is to avoid treating women with low grade lesions at the first visit, but this requires the reassurance of a biopsy-proven diagnosis (Table 3).

Table 3. Biopsies and treatments

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

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. During the year one of our trainees, Dr Amanda Ali completed a study on the histological outcome in women referred with borderline glandular smears. The findings of this study allowed us to alter and improve the way we manage these women. Dr Ali subsequently presented her findings at the Irish Congress of Obstetrics, Gyneacology and Perinatal Medicine.

Towards the latter part of 2012, the HPV 'test of cure' was introduced. This alters the way we follow women who have had a LLETZ treatment. Ultimately, this should allow women to return to routine screening after having two tests. This is good news for our patients, however it is likely to result in an increase in the need for follow-up colposcopy visits.

One of the rate limiting steps in allowing us to increase the number of referrals is our limited clinical space. 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. Despite these limitations, the clinic is running well and we continue to improve in terms of reaching the targets set by the National Cervical Screening Programme. Credit for this goes to all of the team for their hard work, dedication and commitment.

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 TABLE (see TABLE 1)

The neonatal unit was again busy in 2012. The total number of admissions was 1135. The monthly occupancy rate was 83-92%, with an average of 89.30% for the year. A further 720 babies had treatment < 4 hours on the unit (septic work ups, observations, scans etc.,) while these contacts are brief they contribute to workload of staff.

Last year the unit cared for 127 Very Low Birth Weight (VLBW) infants weighing between 501-1500g. This year we have collaborated with the directors of the other three tertiary neonatal centres in the country (Coombe Women and Infant University Hospital, The National Maternity Hospital and Cork University Maternity Hospital) to compare outcome data. All 4 centres have agreed to present a number of common tables to make comparison easier. We have strived to have the same tables, but limitations in time allocated to data management personnel means we cannot produce all tables requested. We hope to have all tables for the 2013 report, if additional data management support is available going forward.

NEONATAL MORTALITY (< 28 DAYS)(TABLES 2)

Deaths of normally formed infants receiving intensive care (see Table 2A)

There were 19 deaths of normally formed infants in the NICU. Eight of these infants had a birth weight of < 750g, and a further 5 had birth weights between 750-1000g. 12 were < 27 weeks gestation. Of the preterm deaths, 3 were due to pulmonary hypoplasia secondary to anhydramnios. Twelve infants died in the first week of life.

There were 7 deaths of normally formed infants of over 1500g birth weight. One was a baby of 30 weeks gestation (birth weight of 1780g) who had severe pulmonary hypoplasia secondary to anhydramnios. 3 full term babies died with severe HIE. One baby who was found to have low oxygen saturations at discharge (6 hours)subsequently developed severe PPHN and arrested at 36 hours in the NICU. Post mortem revealed severe group B strep infection. Another baby had poor feeding and encephalopathy of unknown origin, despite extensive neurometabolic workup and a full post mortem.

Congenital Malformations (see Table 2B)

There were 16 neonatal deaths associated with congenital malformations. Three had chromosomal disorders. One had VACTERL syndrome with imperforate anus. One had Noonan's syndrome associated with acute renal failure, congenital hydrothorax and refractory hypotension. Two had severe renal anomalies (Potter's sequence and infant polycystic disease). Two had diaphragmatic hernias.

Two had complex congenital heart disease (hypoplastic left heart, double outlet right ventricle). One had anencephaly and one had a massive posterior fossa tumor with hydrocephalus. Two had severe arthrogryphosis.

Neonatal Encephalopathy (see Table 3)

There were 16 babies with mild HIE (grade 1), none of whom met the criteria for cooling. All were normal and discharged at follow up. There were four inborn babies with moderate HIE (grade 2). All were treated with cooling (therapeutic hypothermia), all had normal brain imaging and are normal at follow up to date. There were seven inborn babies with severe HIE (grade 3). All were treated with therapeutic hypothermia. Three died, three have a normal outcome to date and 1 has evolving cerebral palsy (CP). Seven babies were transferred from elsewhere for therapeutic hypothermia.

***Vermont Oxford* Network (see Table 4)**

The VON network is an international collaboration of over 800 neonatal units worldwide. The information obtained from this database allows us to benchmark our care of infants born < 1500g on a national and international level. The Rotunda compares favorably to the VON across most markers of neonatal outcome, especially late onset sepsis (8.7% vs 12.8%). This reflects a huge amount of work from our infection control colleagues and our ANP Edna Woolhead. Since our concerted effort at the start of 2010 we have continued to see a significant drop in infection rates: little or no CONS and consistent rates < 10%. All late onset infections get a full and detailed root cause analysis. However, this does not mean we can be complacent: two babies died during 2012 from late onset sepsis, one of which was due to pseudomonas. Following the outbreak in Belfast we had a full internal enquiry addressing all areas where pseudomonas could potentially be sourced (taps etc.,) to no avail. No other cases were identified, but we continue to monitor this very closely.

Our mortality rates are higher than 2011. This is something we are auditing but is in the context of an Irish setting where we had 12.3% of babies < 1500g, born with a major birth defect compared to 4.7% in the VON network. Our standardized mortality rate for 2010-2012 is 1.3 and our standardized death or morbidity for the same epoch is 1.1.

Our rates of chronic lung disease (CLD) have consistently increased over the past 2 years. This reflected higher rates of chorioamnionitis (25% Vs12.8%); a drop in antenatal steroid use (76%Vs 87.3%) or higher rates of multiple deliveries (41.8% Vs 27.5%). However it is something we need to address.

We are fortunate to have consistent and experienced personnel (consultant radiologists) doing our head scans, which ensures that even the most minor abnormalities are identified. We are pleased to report that there were no cases of cystic PVL in 2012 (VON 2.8%)

Follow-up of babies <1500g

All infants with birth weights </= 1500g are seen in clinics and offered formal developmental follow up at 2 years. Our follow-up rates continue to improve,

reaching 83% in 2012. Close to 40% needed some early intervention referral - the majority (64%) requiring speech and language intervention. One of the biggest challenges is accessing services for these children.There are long waiting times, particularly for early intervention teams and speech and language therapy. We thank Susan Keane for compiling this follow-up data.

COMMENTS

We are delighted to welcome two new neonatal consultant colleagues. Dr Afif El Khuffash took up his post in September this year. He has already proven to be a great addition to our team, bringing back advanced echocardiography skills from his training in Toronto and an uncanny knowledge of information technology. This will be a great asset going forward in both assessing babies heart function on the NICU and for research. We were finally able to advertise and appoint a permanent consultant for Prof McCallion's original job. Dr Breda Hayes was appointed in October 2012. Breda is a Rotunda trainee who completed her training in Boston and has special areas of interest in newborn neurology and EEG monitoring in the NICU, areas we wish to develop as a sub specialty interest for the unit.

At directorate level, and with the support of Dr McKenna and Pauline Treanor, we have strived to develop a EWTD compliant Rota for our NCHDs. The developing role of discharge midwives has reduced SHO hours at weekends. The neonatal unit has an approved head count of 72 WTE nurses. In 2012 the nursing staff levels were 67.88 WTE, with maternity leave and sick leave not being replaced. As the HSE continue to seek greater productivity and flexibility at lower cost, our front line staff are experiencing increasing pressure of work without the support, recognition or access to work enablers they require to sustain high levels of performance.

Universal newborn hearing screening was introduced in September 2012. To date we have picked up 3 babies with significant nerve deafness. We'd like to thank Lorraine Sibley and Patricia Williamson particularly and all the ward staff for facilitating this new service.

Paediatric outpatients attendances remained high at 10,547, but saw a drop of almost 15% overall from 2011 (12,032). Working with Prof King, Dr Hayes and Physiotherapy we have streamlined the developmental follow up of very low birth weight infants, ensuring they are assessed at 6 weeks, 4 months and 9 months corrected gestation with a formal physiotherapy assessment at 6 months corrected. This has led to a 40% reduction in POPD consultant neurodevelopmental clinic attendances. This has facilitated a reduction in NCHD numbers at consultants clinics, moving to a consultant-led model.Midwifery led clinic attendances (weight checks, newborn screening checks etc.,) remain static at circa 2,000 p.a..The challenge for 2013 is to reduce the attendances (6,000) at the SHO clinic.

One of our SpRs (K Gorman) published an article in the Irish medical times suggesting a national guideline for primary care POPD referrals. With EWTD compliance and NCHD recruitment being a challenge and a priority, the target for 2013-2015 is to reduce unnecessary attendances by 25% over three years, giving more responsibility to GPs, PHNs and parents themselves. Earlier discharge means jaundice may not be detected during the hospital stay, but DOMINO midwives carry transcutaneous bilimeters to check babies bilirubin levels in the community. Rolling out such bilimeters to PHNs nationally would be a major advance in community care of the newborn. An ongoing audit of SHO POPD attendances will take place in 2013.

The Dublin North East neonatal network (encompassing the Rotunda, Drogheda and Cavan) continues to evolve. Quarterly education meetings continue and staff from these units attending Rotunda Grand Rounds on an ongoing basis. An audit of network function was undertaken by Cavan, highlighting instances where network babies were not accepted in the Rotunda. It was decided at executive management level that any woman booked at Drogheda or Cavan would be considered a Rotunda patient should transfer be required. This has resulted in a significant increase in utero transfers and OPD referrals from antenatal clinics. Kathy Conway is helping us to capture this data accurately so we get a true reflection of the work load undertaken by the Rotunda.

We finally received confirmation late in 2012 that the neonatal transport will move to 24/7 in 2013. This is a vital but long overdue service which will need extra nurses, NCHDS and the appointment of a transport consultant to oversee the running of this important national service.

The Rotunda continues its active role in research, and during 2012 there were a total of two MD candidates in the Department of Paediatrics: Drs Cecile Halling and Michael Boyle. Funding was also secured for three further post doc research projects and these three registrars will take up posts in 2013. We continue to provide ongoing support for neonatal staff undertaking the post graduate Diploma in Neonatal Nursing at the RCSI. 3 staff completed the program in 2012. In collaboration with the RCSI the first National Masters Program for training Nurse Practitioners in Neonatology (ANNP) took place. Professor Naomi McCallion was instrumental in developing the ANNP program and it is anticipated that the Rotunda Hospital will support staff wishing to undertake the program in the near future, and continue to develop and expand the ANNP role in the Unit.

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.

Dr. Adrienne Foran, Dr. David Corcoran, Prof. Naomi McCallion

TABLE 1 ADMISSION TO NEONATAL UNIT 2012

Admission From	Count	Percentage
Delivery Suite/Theatre	749	68.04%
Home	76	6.90%
Other Hospital	30	2.72%
Postnatal Ward	246	22.34%
Total Admission	**1,101**	**100.00%**

Admission Type Description	Count	Percentage
First admission	1,101	96.33%
Re-admission	42	3.67%
Total Admission	**1,143**	**100.00%**

TABLE 2A: NICU DEATHS OF NORMALLY FORMED INFANTS <1500g

GEST	BW (g)	Age (Days)	Sex	Mode of delivery	Apgars	Principle Cause of death
24	730	2	M	EMLSCS	"0,2"	"APH, bilateral Grade 3 IVH, cerebellar haemorrhage, intensive care withdrawn "
24	530	6	F	SVD	"7,9"	"Twin, coagulopathy, large Left grade 4 IVH"
24	600	4	F	EMLSCS	"5,6"	"Twin, bilateral grade 3 IVH, refractory hypotension,acute renal failure"
24	630	2	F	BREECH	"3,5"	"Anhydramnios from 23 weeks, intestinal perforation, refractory hypotension, severe pulmonary hypoplasia."
24	830	2	M	EMLSCS	"5,8"	"Right Grade 4 left Grade 2 IVH, chorioamnionitis, RDS, care withdrawn "
24	500	23	F	SVD	"5,8"	"Twin-twin transfusion syndrome, Right grade 4 IVH, PDA , acute renal failure"
24	500	20	F	SVD	"3,3"	Terminal apnoeic event; Severe hypoxic ischaemic encephalopathy seen on PM
25	680	16	F	SVD	"3,7"	"Bilateral grade 3 IVH, late onset pseudomonas sepsis"
26	740	0	M	SVD	"6,6"	"Early onset Coliform sepsis, intestinal perforation, bilateral grade 4 IVH"
26	785	8 days	F	Breech	"2,5"	"Bilateral grade 4 IVH, early onset coliform sepsis, pneumothorax, intestinal perforation"
26	890	1	M	"SVD, home delivery"	N/A	"Hypothermia, hypotension, severe respiratory distress syndrome and pneumonia"
27	890	2	M	EMLSCS	"2,3"	"PPROM from 17 weeks, anhydramnios, contractures, severe pulmonary hypoplasia"
28	955	2	F	EMLSCS APH	"5,7"	"PPROM at 24 week, DIC, exchange transfusion, PPHN, intracerebral haemorrhage intensive care withdrawn"
30	1780	1	M	EMLSCS	"5,6"	"PPROM at 26 weeks, oligohydramnios, chorioamnionitis, RDS, acute renal failure"
37	2890	25	F	SVD	"7,9"	"Failure to thrive, poor feeding, respiratory failure, encephalopathy of unknown cause"
38	2580	4	M	EMLSCS abruptio placenta	"0,2"	"Severe neonatal encephalopathy, thalamic echogenicity,intensive care withdrawn"
40	3600	6	F	EMLSCS	"3,3"	"Twin-twin transfusion syndrome, Bilateral grade 1 IVH, PDA , pulmonary hypertension, chronic lung disease"
40	3990	0	F	SVD	"0,0"	"Severe neonatal encephalopathy, thalamic echogenicity,intensive care withdrawn"
42	4350	1	M	SVD	"9,10"	"Admitted with low saturations at 6 hours, Severe PPHN, group B spreptococcal pneumonia "

TABLE 2B: DEATHS RELATED TO CONGENITAL MALFORMATIONS/ DEFORMATIONS

GEST	BW (g)	Age (Days)	Sex	Mode of delivery	Apgars	Principle Cause of death	Inborn /outborn
29	890	1	F	EMLSCS	"5,8"	Hypoplastic left heart syndrome	
29	1170	0	M	EMLSCS	"2,2"	"Arthrogryphosis with severe facial deformity, PROM at 20 weeks with anhydramnios, pulmonary hypoplasia"	
29	1340	6	M	EMCS	"6,6"	"Acute renal failure, congenital hydrothorax, refractory hypotension, Noonans syndrome"	
31	2400	0	F	EMCS	"0,1"	"non immune hydrops, congenital megakaryoblastic leukemia, trisomy 21"	
34	2180	0	M	BREECH	"2,1"	"Potters syndrome, renal agenesis, bladder hypoplasia"	
34	2140	1	M (anhydramnios)	ELSCS	"6,8"	"VACTERL syndrome, imperforate anus, hydrocephalus, pulmonary hypoplasia, Right renal agenesis, left dysplastic kidney"	
34	2380	0	M	SVD	"6,5"	Antenatal diagnosis of Infant polycystic disease with Potters sequence	
34	2550	0	M	EMLSCS	"0,0"	"twin-twin transfusion, trisomy 21, refractory bradycardia, hypotension, PPHN, congenital heart disease"	
35	2140	4		Forceps	"0,0"	"Trisomy 21, duodenal atresia, severe neonatal encephalopathy"	
36	2460	0	F	SVD	"1,1"	"arthrogryphosis, oligohydramnios, pneumothorax, no cause identified "	
37	2210	21	M	EMLSCS	"5,7"	Right Diaphragmatic hernia	
37	3520	9	F	ELLSCS	"5,8"	"Posterior fossa tumour and hydrocephalus, inoperable"	
38	2290	1	F	SVD	"3,3"	anencepcephaly	
39	2330	24	M	SVD	"6,8"	"Trisomy 18, ASD,VSD"	
39	3500	1	M	vacuum	"5,6"	"Large Left Diaphragmatic hernia, severe pulmonary hypoplasia, Multiple Ventricular Septal Defect "	
39	3470	9	M	SVD	"9,9"	"Double outlet right ventricle, coarctation,total anomolous pulmonary venous drainage"	

TABLE 3: NEONATAL ENCEPHALOPATHY

Grade NE	Gest	Mode of Delivery	Apgars 1,5,10 Mins	In/Out Born	Therapeutic Hypothermia	Cord Ph	1st gas	BE	Neuro Imaging	Outcome
2	41	Em Lscs	"4,5,6"	IN	Yes	6.96		-12.3	Normal MRI d8	normal at 4 months
2	38	El Lscs	"9,10"	IN	Yes	7.33		-7.3	Normal MRI d5	normal at 1 yr
2	40	Em Lscs	"1,2,5"	IN	Yes	7.21		-1.7	Normal MRI d5	normal at 10 months
2	40	SVD	"3,4,6"	IN	Yes	7.17	7.12	-7.1	Normal MRI d4	normal at 4 months
2	40	Ventouse / forceps	"1,4,5"	OUT	Yes	6.87		-23.3	Normal MRI d7	normal at 10 months
2	39	SVD	"2,6"	OUT	Yes		6.98	-13.6	MRI - extensive *WM changes.	profound hypoglycemia combined endo & neuro f/u
3	35	Forceps	"0,0,0"	IN	No	7.02		-12.4	CRUS d2 - abn ^BGT and WM	"Withdrawal of care, RIP d4; T21"
3	40	Forceps	"0,0,0"	IN	Yes	7.19	6.73	-19.9	CRUS d1 - abn Thalami	"Withdrawal of care, RIP d1 "
3	41	Em Lscs	"0,1,2"	IN	Yes	6.91		-14.8	MRI d8 - Suble changes in BGT	normal at 11 months
3	39	SVD	"1,4,5"	IN	Yes		7.14	-15.8	MRI d5 - abn BGT	spastic quadriparesis CP .
3	38	Em Lscs	"0,2,4"	IN	Yes	7.14		-15.7	Mri d4 - abn BGT and WM	"Withdrawal of care, RIP d5 "
3	38	Em Lscs	"0,0,0"	IN	Yes	7	6.98	-9.2	Mri d9 - rt occipital infarction	normal at 14 months
3	34	SVD	"0,1,5"	IN	Yes	6.98		-12.5	Normal MRI d10	normal at 1 yr
3	41	Em Lscs	"1,1,3"	OUT	No		6.82	-19	Mri d7 - parietal lobe changes	normal at 6 months
3	41	Em Lscs	"0,0,0"	OUT	Yes		6.8	-20.2	No	"Withdrawal of care, RIP d2 "
3	39	Em Lscs	"0,0"	OUT	Yes	7.12	6.7	-25.6	CRUS d2- abn BGT	"Withdrawal of care, RIP d2 "
3	41	SVD	"0,3,6"	OUT	Yes	7	6.65	-20.6	Normal MRI d6	1 yr right hemiplegia
3	38	"SVD, breech"	"3,5,5"	OUT	Yes		6.95	-11.5	CRUS D2 - severe PVL	"Withdrawal of care, RIP d3"

*WM denotes white matter

^BGT denotes basal ganglia and thalami

TABLE 4: Vermont Oxford Network Data (VON)

	Rotunda Infants 501-1500g n=127		Vermont Oxford Network 2012 Infants 501-1500g
Measure Infant Characteristics	**Cases**	**%**	**%**
Antenatal Steroids, All Infants	92	76.0%	87.3%
C-Section	89	72.4%	72.2%
Multiple Gestation	51	41.8%	27.5%
Any Major Birth Defect	15	12.3%	4.7%
Small for gestational age	29	23.6%	23.30%
Chorioramnionitis	29	25.0%	12.80%
Interventions and Outcomes			
Apgar 1 minute < 4	20	16.4%	25.7%
Any initial rescucitation	117	95.1%	88.5%
Admission Temperature< 36.0	22	18.3%	19.5%
Mortality	19	15.8%	12.0%
Surfactant at any time	80	66.1%	60.1
Inhaled Nitric Oxide	10	8.5%	4.6%
Patent Ductus Arteriosus Ligation	5	4.1%	5.4%
Late Bacterial Infection	9	7.1%	8%
Coagulase Negative Staph	2	1.6%	6.0%
Fungal Infection	0	0.0%	1.0%
Any Late Infection	11	8.7%	12.8%
Necrotizing Enterocolitis	7	5.8%	5.4%
Severe Intraventricular Haemorrhage	4	4.0%	7.8%
Severe ROP (Retinopathy of prematurity)	1	1.0%	6.0%
ROP surgery	2	1.7%	2.8%
Periventricular leukomalacia	0	0.0%	2.8%
Chronic Lung Disease < 33 weeks	29	29.9%	25.4%
Chronic Lung Disease (36 weeks)	27	26.70%	24%

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 full neonatal screening service with an emphasis on screening for Developmental Dysplasia of the Hip (DDH). Here we outline the DDH screening program, which has been developed in conjunction with the Dept. of Orthopaedic Surgery, Children's University Hospital Temple Street.

Rotunda Hospital Infant Developmental Dysplasia of the Hip Screening Programme

1.) All neonates undergo clinical examination for hip instability, preferably by an experienced clinical examiner.

2.) A subset of neonates are selected for hip ultrasound at 6 weeks and hip xray at 4 months, on the basis of the following criteria:
   a. Positive family history of DDH
   b. Breech presentation at birth
   c. Talipes Equinovarus, Calcaneovalgus, Metatarsus Varus.
   d. Oligohydramnios
   e. Ligamentous laxity on clinical examination

3.) Babies who have hip instability or hip dysplasia detected on clinical examination or ultrasound are treated for an initial period of 6-8 weeks in a Pavlik harness.

4.) Treatment progress is monitored using hip ultrasound at 2 weeks and 6-8 weeks.

5.) If dysplasia is still present after 6-8 weeks in a Pavlik harness, treatment is continued for a further 6 weeks.

6.) Follow-up xrays of the hips are performed at 4, 8-10 and 15-18 months of age.

7.) Babies are referred to Children's University Hospital, Temple St. for follow-up surgery as required based on xray and clinical findings.

DATA FROM THE DDH SCREENING SERVICE

	2008	2009	2010	2011	2012
Total No. of babies diagnosed with unstable hip clinically	40	55	66	82	77
Total No. of babies diagnosed with dysplastic hip on ultrasound requiring treatment	21	14	37	39	31
Total No. of babies treated for DDH in Pavlik harness (Dysplasia and dislocation)	61	69	103	121	108
Total No. of babies referred for further non-operative intervention for DDH	4	6	7	10	13
No. of cases of DDH referred to CUH, Temple St. for surgery for DDH†	29	20	12*	10*	11*

† As new cases come to light, the data is added to the birth cohort. These cases include babies treated for unstable hip who go on to develop persistent stable dysplasia refractory to bracing treatment, requiring Salter, Pemberton and/ or Femoral Osteotomies.

* A fall in the number of babies requiring operative intervention is noted after the introduction of hip ultrasound screening in the neonatal period. This was introduced by The Master, Dr Sam Coulter-Smith, in 2010.

Department of Anaesthesia

DR MARY BOWEN, DR JOHN LOUGHREY, DR CONAN MCCAUL,
DR NIAMH HAYES, DR ROISIN NIMHUIRCHEARTAIGH,
DR PATRICK THORNTON.

Dr Ivan Hayes left in his capacity as locum Consultant to take up a permanent position at Cork University Hospital. Dr Ismat ElSaigh departed to take up a position of Consultant Anaesthetist in Qatar. The department wish them every success in their careers. Dr McCaul remained as College of Anaesthetists Tutor and Dr Loughrey as Department Chairman. Dr Patrick Thornton was appointed temporary Consultant Anaesthetist. He has previously trained in Vancouver and at the Heart Hospital in London. The department was delighted to welcome the appointment of Dr Roisin Ni Mhuircheartaigh as Consultant Anaesthetist on a permanent basis. Roisin was awarded a PhD from Oxford University in 2012. All Consultant posts are held on a joint sessional basis with the Mater Misercordiae Hospital.

Non-Consultant Hospital Doctors:

The Department was fortunate to avail of the opportunity to provide training in obstetric anaesthesia for Trainees rotating on the College of Anaesthetists national training programme. A high level of experience on behalf of the trainees is relied upon to provide quality Anaesthesia services at the Rotunda. The staffing consists of 5 Trainees from the National training programme, 2 other NCHD's and one Fellow in Obstetric Anaesthesia. Dr Aisling McMahon was the recipient of The James Gardiner Rotunda Anaesthesia medal for 2012.

DELIVERY SUITE ACTIVITY

DELIVERIES UNDER EPIDURAL

	2011	%	2012	%
Nulliparous	2569	70%	2571	73%
Multiparous	1582	42%	1672	44%
TOTAL	4151		4243	

A wide range of analgesic options are utilised by labouring women, including nitrous oxide inhalation, opioids and non-pharmacologic techniques such as relaxation and TENS (transcutaneous electrical neuro stimulation). The maternal uptake of epidural analgesia in labour are shown above and procedural activity remains high. All parturients receive patient-controlled epidural analgesia (PCEA). Combined spinal-epidural techniques are also employed. The small number of parturients in whom an epidural is contra-indicated can use remifentanil patient-controlled administration as a high quality analgesic alternative option although the number of patients receiving this method in 2012 was 35.

Mode of Delivery for Parturients who Select Epidural Analgesia

NULLIPAROUS

Mode of Delivery	2011	%	2012	%
Normal	832	32.4%	892	34.7%
Forceps	337	13.1%	286	11.1%
Vacuum	811	31.6%	843	32.8%
L.S.C.S	585	22.8%	546	21.2%
Breech	4	0.2%	4	0.2%
Total	**2569**	**100%**	**2571**	**100%**

MULTIPAROUS

Mode of Delivery	2011	%	2012	%
Normal	1150	72.7%	1258	75.2%
Forceps	58	3.7%	41	2.5%
Vacuum	222	14%	209	12.5%
L.S.C.S	151	9.5%	161	9.6%
Breech	1	0.1%	3	0.2%
Total	**1582**	**100%**	**1672**	**100%**

The obstetric outcomes of women who select epidural analgesia are compatible with low dose techniques employed, with over 34% of primiparous women and over 75% of multiparous women experiencing normal unassisted vaginal delivery.

POST DURAL-PUNCTURE HEADACHE (PDPH)

In 2012, 4,243 epidurals and 1,713 obstetric spinal anaesthetics were performed. 24 women had a known dural puncture recorded at epidural placement. 13 patients had epidural blood patches (EBP) performed and no women required repeat procedures. 10 blood patches were post-labour epidural and 3 post-spinal anaesthesia.

OPERATING THEATRE ACTIVITY

ANAESTHESIA FOR OBSTETRIC AND GYNAECOLOGICAL PROCEDURES

The theatre activity across the 2 elective and one emergency operating theatres is very high. A total of 3541 Gynaecology procedures were performed with the majority on a day-case or 24 hour basis.

In addition the department provided anaesthesia services for 3883 obstetric procedures incorporating Caesarean deliveries and 1284 other obstetric procedures during 2012 at the Rotunda. An increasing number of laparoscopic procedures are being performed including surgical management of emergency ectopic pregnancy. We provide a 6 day/week service at the HARI unit for women undergoing oocyte retrieval procedures related to IVF treatments. These are performed under a propofol-based technique with an anaesthetist present.

CAESAREAN SECTION - Anaesthesia Technique

2011

Mode of Anaesthesia	Elective	%	Emergency	%
Spinal	1250	96.2%	593	37.7%
GA	30	2.3%	201	12.8%
Epidural	7	0.5%	656	41.7%
CSE	12	0.9%	123	7.8 %
Total	**1299**		**1573**	

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**	

The regional anaesthesia rates for caesarean delivery are 87.2% and 99% respectively for non-elective and elective cases. Non-elective cases include category 1-3 deliveries by Caesarean. We utilize low dose neuraxial opioid as part of a multi-modal technique for post-caesarean analgesia.

ANAESTHESIA OUTPATIENT CLINIC

Pre-Anaesthesia assessment is performed for in-patients or on an outpatient basis for defined referral criteria. The clinic ran weekly with a total of up to 10 attendances per week, with a total of 446 attendances. Both obstetrical and gynaecological cases are reviewed. The service is limited to patients whose care needs to be planned in advance of hospital admission. A specialised assessment service for women with congenital cardiac disease is also run in conjunction with the Mater Hospital to provide rapid multi-disciplinary assessment. Patients with gynaecological and obstetrical pain are also reviewed on a consult basis.

PEER REVIEWED PUBLICATIONS

Hayes I, Rathore R, Enohumah K, Mocanu E, Kumar D, McCaul C. The effect of crystalloid versus medium molecular weight colloid solution on post-operative nausea and vomiting after ambulatory gynecological surgery - a prospective randomized trial. BMC Anesthesiol. 2012 Jul 31;12:15.

2: Aslani A, Ng SC, Hurley M, McCarthy KF, McNicholas M, McCaul CL. Accuracy of identification of the cricothyroid membrane in female subjects using palpation: an observational study. Anesth Analg. 2012 May;114(5):987-92.

3: Aslani A, Husarova V, Ecimovic P, Loughrey J, McCaul C. Anaesthetic outcomes in obese parturients: the effect of assessment in the high-risk clinic. Ir J Med Sci. 2012 Mar;181(1):93-7.

High Dependency Unit

DR. MARY BOWEN CONSULTANT ANAESTHETIST

Admissions	NUMBER	%
Total	193	
Obstetric	174	90.1
Gynaecology	19	9.8

Obstetric Admissions	Number	%	% Total
Peripartum Haemorrhage	66	37.9	34.2%
Pre-eclampsia	52	29.9	26.9%
HELLP	3	1.7	1.55%
Peripartum Sepsis	31	17.8	16%
Others	31	17.8	16%
Congenital Cardiac Obstetric Patients	7	4	2%

CONGENITAL CARDIAC OBSTETRIC PATIENTS (7)	
1	Tetralogy of Fallot for elective caesarean section.
2	Lowe-Ganong-Lewine Syndrome. Elective caesarean section at Mater Misericordiae University Hospital Patient developed Post partum haemorrhage and required hysterectomy.
3	Submembranous aortic stenosis. Elective caesarean section in Rotunda Hospital.
4	Tetralogy of Fallot, Addison's Disease, Biliary Thrombosis, Asthma and Epilepsy. Elective caesarean section.
5	Transposition of Great Vessels. Elective caesarean section.
6	Dextrocardia and Coarctation of Aorta. Elective caesarean section.
7	Transposition of great vessels. Elective caesarean section.

Others (31 patients)	
1	Patient with histiocytosis. Caesarean section in Mater Misericordiae University Hospital.
2	Patient with Gitelman's Syndrome post caesarean section in Rotunda Hospital.
3	Patient with Pulmonary Hypertension due to multiple Pulmonary Embolisms. Caesarean section at Mater Misericordiae University Hospital. Post partum haemorrhage. Proceeded to hysterectomy.
4	Cachectic patient for Caesarean section with a low Potassium and Magnesium
5	Pregnant patient with Addison's Disease
6	Tachypnoea and tachycardia post caesarean section. Found to have Pulmonary embolism.
7	Patient with Freidrich's Ataxia post spontaneous vaginal delivery.

8	Patient with history of Osteosarcoma who developed Sodium losing enteropathy post amputation of lower limb. Elective caesarean section at Mater Misericordiae University Hospital.
9	Cornual ectopic patient.
10	Patient with history of previous cerebellar infarct post caesarean section.
11	Severe headache with normal blood pressure. For investigations post spontaneous vaginal delivery.
12	Patient for analgesia post caesarean section (x 2 patients)*
13	Patient with Fibrotic lung disease. Caesarean section in Mater Misericordiae University Hospital
14	Patient who desaturated post SVD, developed pulmonary oedema
15	Patient with IUD. Grand mal seizure following Pethidine injection
16	Patient with anaphylactoid reaction to Oxytocin. Developed post partum Haemorrhage post elective caesarean section.
17	Patient for elective caesarean section for twins developed perioperative dysrhythmias
18	Patient for elective caesarean section with multiple antibodies in blood. Cell salvage required.
19	Pregnant patient developed severe headache and visual disturbances during caesarean section.
20	Pregnant patient with Acute Coronary Syndrome due to cocaine abuse.
21	Patient who developed Atrial Fibrillation post caesarean section.
22	Patient with pulmonary embolus post spontaneous vaginal delivery.
23	Patient with a history of Opiate allergy requiring epidural infusion post caesarean section.
24	Patient who had elective caesarean section. She had an MI at 26 weeks gestation and two previous caesarean sections.. Patient developed PPH requiring hysterectomy.
25	Patient developed wound dehiscence and bowel protrusion five days post caesarean section. Developed bronchospasm and subsequently pulmonary oedema.
26	Patient arrested after spinal for Laser for Twin to Twin transfusion.
27	Patient at 23 weeks gestation, Type 2 Diabetes Mellitus with Diabetic Ketoacidosis
28	Patient 17 weeks gestation with Hyperemesis and Hypokalaemia
29	Caesarean section for placenta accreta. Cardiac arrest on operating table. Potential Amniotic Fluid Embolus. Transferred to Mater Misericordiae University Hospital.
30	Patient with laser for twin to twin transfusion syndrome, developed chest pain and Shortness of breath. Pulmonary Embolism /H1N1. Transferred to Mater Misericordiae University Hospital
31	Patient with Hyponatraemia, Hypokalemia, Coagulopathy and Sickle cell trait at 29 weeks gestation. Transferred to Mater Misericordiae University Hospital

Gynaecological Patients (19)	
Intraoperative Bleeding	6
Sepsis	2
Post Operative Analgesia.	5
History of fibromyalgia	1
Hyponatremia post roller ball procedure	1
Hypotension post laparoscopy	1
History of cardiac disease – post hysterectomy.	1
Pulmonary oedema post laparoscopy for ectopic pregnancy.	1
Patient having TVT had intravascular injection of local anaesthetic.	1

Caesarean Hysterectomies	6
Ectopics	6
ERPC	3

INVASIVE MONITORING		
Arterial line	33	17%
CVP	8	4%

Transfers to Mater Misericordiae University Hospital (15)	
1	Patient who had laser for twin to twin transfusion and developed chest pain and shortness of breath.
2	Septic miscarriage.
3	Patient became septic 6 days post hysteroscopy and Mirena insertion. Had perforated uterus. Required hysterectomy.
4	Patient who had TVT under spinal. Developed tachycardia and ST elevation following LA infiltration. Chest pain in recovery.
5	29/40 with sickle cell trait with abnormal electrolytes
6	Patient with PPH - 6 litres. Had hysterectomy
7	Patient with Hypertension,Renal artery stenosis. Had emergency LSCS under GA. Deteriorating renal function post LSCS
8	Patient who had Emergency LSCS for APH. Previous caesarean sections x3. Had Hysterectomy
9	Patient who had 2 previous caesarean section and MI at 26/40. Had stent inserted. PPH at LSCS> Hysterectomy.
10	Patient who arrested after spinal for laser for twin to twin transfusion. Transferred for cooling
11	Patient who had haemoperitoneum at Category I caesarean section. Found to have abnormal vasculature over uterus.
12	Elelvated blood pressure and disorientation 12 days postnatally. PET. Patient admitted. Transferred to Mater for management and cranial imaging.
13	Patient transferred to Rotunda Hospital from other hospital. Post Partum Haemorrhage + sepsis multiresistent E.coli.
14	Multifibroid uterus. Classical caesarean section with blood loss and sepsis. Transferred to ICU, Mater Hospital.
15	Jehovah's Witness patient with Ectopic pregnancy. Transferred to Rotunda Hospital from other hospital. Major haemorrhage 2.5l. blood loss. Cell salvage required. Discharged to Mater ICU.

Dove Clinic

DR JACK LAMBERT, Consultant in Infectious Diseases
DR MAEVE EOGAN, Consultant Obstetrician and Gynaecologist
DR WENDY FERGUSON, Associate Specialist Paediatrician with the Paediatric Infectious Diseases Service (The Rainbow Team)
DR BARRY KELLEHER, Consultant in GI/Hepatology
DR SUZANNE CORCORAN, 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

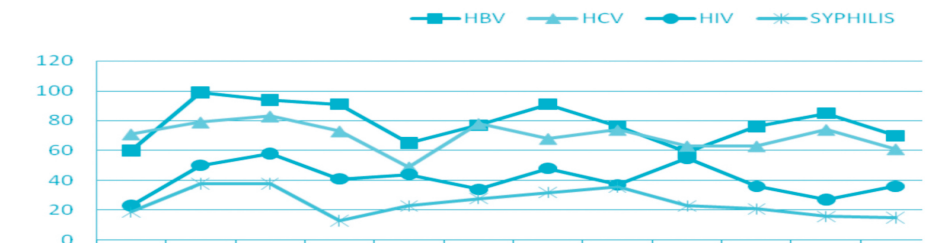
The DOVE clinic was set up to look after the specific needs of women who have or are at risk of blood and sexually transmitted bacterial and viral infections. This could be through drug use, unprotected sex, or any contact with infected blood or body fluid.

DOVE BOOKINGS IN 2012

During 2012, 227 women booked into the DOVE clinic for their antenatal care. Of these,

- 70 (31% of bookings) women were positive for Hepatitis B surface antigen, representing a decrease of 18% compared to 2011 (Fig 1).
- 61 (27%) women were positive for Hepatitis C antibody, a decrease of 23% compared to 2011.
- 36 (16%) were positive for HIV infection, an increase of 33% compared to 2011.
- 15 (7%) women had positive Treponemal serology, a decrease of 6% compared to 2011.
- 73 (33%) 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
HBV	60	99	94	91	65	77	91	76	59	76	85	70
HCV	71	79	83	73	49	78	68	74	63	63	74	61
HIV	23	50	58	41	44	34	48	37	55	36	27	36
SYPHILIS	19	38	38	13	23	28	32	36	23	21	16	15

DOVE DELIVERIES 2012

Deliveries to HIV Positive Mothers 2012	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	30
Total Mothers Delivered	**31**
Live Infants	30
Miscarriage	3 (1 set of triplets)
Stillbirths	0
Infants <37 weeks gestation	2
Infants ff37 weeks gestation	28
Infants delivered by Caesarean Section	18
HIV Positive Infants	0
Maternal Data (n=31)	
Median Age	32
Newly Diagnosed at ANS	7

Deliveries to HCV Positive Mothers 2012	
Total Mothers Delivered <500g (incl miscarriage)	2
Total Mothers Delivered >500g	68
Total Mothers Delivered	**70**
Live Infants	71 (incl 3 sets of twins)
Miscarriage	2
Stillbirths	0
Infants <37 weeks gestation	14 (incl 3 sets of twins)
Infants ff37 weeks gestation	54
Infants delivered by Caesarean Section	22
HCV Positive Infants	0
Maternal Data (n=67)	
Median Age	30
Newly Diagnosed at ANS	12

Deliveries to HBV Positive Mothers 2012	
Total Mothers Delivered <500g (incl miscarriage)	3
Total Mothers Delivered >500g	73
Total Mothers Delivered	**76**
Live Infants	73
Miscarriage	3
Stillbirths	0
Infants <37 weeks gestation	5
Infants ff37 weeks gestation	68
Infants delivered by Caesarean Section	19
HBV Positive Infants	0
Maternal Data (n=70)	
Median Age	28
Newly Diagnosed at ANS	15

Deliveries to Syphilis Positive Mothers 2012	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	17
Total Mothers Delivered	**18**
Live Infants	17
Miscarriage	3 (1 set of triplets)
Stillbirths	0
Infants <37 weeks gestation	0
Infants fl37 weeks gestation	17
Infants delivered by Caesarean Section	6
Syphilis Positive Infants	0
Maternal Data (n=18)	
Median Age	30.5
Newly Diagnosed at ANS	11

Deliveries to Mothers under DLM* service 2012	
Total Mothers Delivered <500g (incl miscarriage)	8
Total Mothers Delivered >500g	81
Total Mothers Delivered	89
Live Infants	82 (incl. 2 sets twins)
Miscarriage	8
Stillbirths	1
Infants <37 weeks gestation	18
Infants fl37 weeks gestation	64
Infants delivered by Caesarean Section	25
NICU admissions for NAS	14

**DLM: Drug Liaison Midwife*

In 2012, 299 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 in the Rotunda Hospital, with Dr Lambert acting as course director. The course ran in September and December 2012 and provided multidisciplinary training in the attitudes, skills, and knowledge required for the prevention and management of STIs. Further courses are planned for 2013.

The Royal College of Physicians in Ireland established a Sexual Health Policy Group in 2010, which worked on position statements in various aspects of sexual health. Members of the DOVE team were actively involved with the education and prevention subcommittees and Dr Lambert was co-chairperson of the Policy Group. The Policy Group launched its first set of position statements on education, prevention and clinical services for STIs at the Sexual Health Awareness Week (28 May - 31 May 2012).

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.

The DOVE clinic has collaborated with the obstetric, paediatric and pharmacy departments of the Coombe Women and Infants University Hospital to investigate the effect of methadone and maternal drug use on perinatal outcomes. This work has resulted in two peer-reviewed publication in the journal Addiction.

A study of universal screening for genital Chlamydia trachomatis infection in, all sexually active women presenting for care who are <26 years old, commenced in December 2011. This study is ongoing.

Other Developments

In 2012 the DOVE team produced a patient information booklet which is given to all patients who attend the clinic and is also available to download from the hospital website. The booklet gives information on the staff and services of the clinic including infection specific information on what to expect as a DOVE patient.

STAFF CHANGES

In January 2012, Dr Wendy Ferguson was appointed associate specialist paediatrician with the paediatric infectious disease service. This affiliation is with the national paediatric infectious disease service otherwise known as The Rainbow Team with its members based primarily at Our Lady's Children's Hospital Crumlin.

PUBLICATIONS AND PRESENTATIONS

B J Cleary, M Eogan, M P O' Connell, T Fahey, P J Gallagher, T Clarke, M J White, C Mc Dermott, A O'Sullivan, D Carmody, J Gleeson & D. J. Murphy, (2012a) Methadone and perinatal outcomes: a prospective cohort study. Addiction, 107, 1482-1492.

B. J Cleary, K Reynolds, M Eogan, M. P O' Connell, T Fahey, P.J Gallagher, T Clarke, M.J White, C Mc Dermott, A O'Sullivan, D Carmody, J Gleeson & D. J Murphy,. (2012b) Methadone dosing and prescribed medication use in a prospective cohort of opioid-dependent pregnant women.. Addiction, doi:1111/add.12078.

L Else, V Jackson, M Brennan, J Breiden, M Lawless, S Coulter-Smith, D Back, S Khoo , J S Lambert. Therapeutic Drug Monitoring (TDM) of Atazanavir in Pregnancy. 11th International Congress on Drug Therapy in HIV Infection 11-15th November 2012 Glasgow

A. Varughese, V .Ciprike, V. Jackson, M .Cafferkey, S. Corcoran, M. Brennan, M. Lawless , M. Eogan, W. Ferguson, S. Coulter- Smith, J. Lambert. Auditing syphilis serology in pregnant women over a period of 7 years (2005-2011) in a large maternity hospital in Dublin, Ireland. 2012 NDHG Inaugural Conference on Collaborative Lifespan Research, 29th November 2012, The Rotunda Hospital, Dublin

A Ali, K Glennon, B Kelleher, M Eogan, V Jackson, M Brennan, M Lawless, W Ferguson, J Lambert. Five year retrospective review of antenatal Lamivudine (LAM) to reduce the perinatal transmission of Hepatitis B (HBV). 2nd Irish Congress of Obstetrics Gynaecology and Perinatal Medicine. 30th Nov - 1st December 2012. Druids Glen .Co Wicklow.

A. Varughese, V .Ciprike, V. Jackson, M .Cafferkey, S. Corcoran, M. Brennan, M. Lawless , M. Eogan, W. Ferguson, S. Coulter- Smith, J. Lambert. Auditing syphilis serology in pregnant women over a period of 7 years (2005-2011) in a large maternity hospital in Dublin, Ireland. 2nd Irish Congress of Obstetrics Gynaecology and Perinatal Medicine. 30th Nov - 1st December 2012. Druids Glen .Co Wicklow.

A O'Higgins, V Jackson, G Connolly, S Corcoran, J Lambert. Screening for asymptomatic urogenital Chlamydia trachomatis infection: results of a pilot study. 2nd Irish Congress of Obstetrics Gynaecology and Perinatal Medicine. 30th Nov - 1st December 2012. Druids Glen .Co Wicklow.

M Eogan, J Gleeson. Managing a pregnant substance misuser. Irish College of General Practitioners Summer School, June 2012.

Radiology/ Paediatric Ultrasound

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

The radiology department in the Rotunda Hospital performed 7,532 exams in 2012 representing a 9% increase in activity over 2011 figures. This department images both adults and children. 7.3% of these were adult examinations and 92.7% were paediatric examinations.

We continue to train radiographers in ultrasonography and in particular in hip sonography. We have set up a quality improvement and audit programme and have quarterly meetings to review progress in this area. In 2012 we were the first radiology department in the country to begin recording peer review.

ADULT RADIOLOGY

The adult radiology service in the Rotunda Hospital is provided by Dr. Neil Hickey. In 2012 a total of 710 adult radiological examinations were performed of which 63% were hysterosalpingograms, performed as part of the fertility clinic work up. Other examinations also include other fluoroscopic procedures such as cystograms and plain films performed on Rotunda inpatients.

PAEDIATRIC RADIOLOGY

A total of 6,753 paediatric studies were performed in 2012. Of these, 2,972 were paediatric ultrasound examinations representing a 43% increase over 2011 figures. The majority of these examinations, 1,512 scans, were hip ultrasound examinations done on outpatient babies. The increase in hip ultrasound scanning is appropriately associated with a corresponding decrease in the number of hip X-rays performed to 1,144, a decrease of 30% compared with the same period in 2011. In addition 72 fluoroscopic studies were performed predominantly for investigation of the GI tract, often as an emergency out of hours studies.

The MRI unit at the Children's University Hospital, Temple Street, which has state of the art neonatal monitoring equipment, scanned a total of 118 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. Twelve paediatric patients were referred to TSH for CT scanning. Fetal MR imaging is also done in Temple Street for obstetric patients at the Rotunda.

Both Drs Ryan and Tarrant are actively involved in training at several levels and in paediatric radiology research. Dr Ryan published a book chapter on imaging of congenital abnormalities of the gastrointestinal tract. There were several publications from our department as well as presentations and lectures at national and international 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	710
HSG	450
PAEDS (X-ray & US)	6753
TOT PAEDS US	2972
CRANIAL	1144
NICU US & CR	2130

BIBLIOGRAPHY RADIOLOGY DEPARTMENT

Book Chapters

1. Pablo Caro and Stephanie Ryan. Normal Anatomy and congenital anomalies In Imaging of Gastrointestinal Tract. Springer Verlag. Berlin Heidelberg 2012

PUBLICATIONS

1. Bracken J, Heaslip I, Ryan S, Chloral hydrate sedation in radiology: a retrospective audit of reduced dose. Pediatr Radiol (2012) 42:349-354.

2. 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 Pub on line ahead of print 12 Jul 2012

PUBLICATIONS ON EURORAD:

European Assoc Radiology On line Case studies file

Case 9584 Fatal infantile encephalopathy due to complex 1 deficiency – a mitochondrial DNA mutation disorder. Walshe T, Browne AM, Ryan S. Aug 12

PRESENTATIONS

1. Audit of Micturating Cystourethrograms performed over 1 year in a Children's Hospital. Lyons K, Sorensen J, Twomey EL, Donoghue VB, O Riordan M, Ryan S. ECR annual meeting Vienna March 2012.

2. Correlation between MR imaging of the brain and biochemical abnormalities of children with oxidative phosphorylation disorders Caro P, Donoghue V, Ryan S Monovari A. European Society of Paediatric Radiology Annual Meeting, Athens. June 2012

3. Audit of yield of GP referrals for Ultrasound in Children with UTI. Pienaar M, Donoghue V, Laffan E, Twomey E, Ryan S. Children's university Hospital Temple Street Audit and Research Day 29 June 2012

4. 3T Magnetic Resonance Imaging of the brain at term in growth restricted infants. A short –term surrogate outcome of infants enrolled in the Perinatal Ireland PORTO Study (StOOPS) Boyle M, Meaney J, Tarrant A, Ryan S, Foran A. Awarded second prize. Children's University Hospital Temple Street Audit and Research Day 29 June 2012

5. Injection of submandibular gland for drooling. Davies K, Ryan S and O'Dwyer T.Irish Otoloryngology Society Meeting, Oct 2012

6. Ventricular Index remains static between 24 and 34 weeks Shim R, Boyle M, Gnanasekaran R, Tarrant A, Ryan S, McCallion N. Irish-American Pediatric Society Meeting, , Belfast, Northern Ireland. September 2012

7. The relationship between Levene Index and grouped gestational ages in preterm infants. Gnanasekaran R, Boyle M, Shim R, Tarrant A, Ryan S, McCallion N. Irish-American Pediatric Society Meeting, Belfast, Northern Ireland. September 2012

8. Expansion of Ventricular Indices to Include Extremes of Prematurity. Boyle M, Shim R, Gnanasekaran R, Tarrant A, Ryan S, McCallion N. Neonatal Society Meeting, London; November 2012.

INVITED LECTURES

1. Chest radiograph in Children. Radiology trainee forum. S Ryan. Eur Congress of Radiology March 2012, Vienna, Austria

2. Cranial Ultrasound, technique, normal findings and intraventricular haemorrhage. A Tarrant. PVL and Beyond. S Ryan. Cranial Ultrasound for Neonatologist Course. Rotunda Hospital 8 June 12

3. Paediatric Imaging and the GP. S Ryan. Paediatric Study day for General Practitioners, Children's Hospital, Temple Street. October 12. Paediatric Imaging and the GP.

Department of Midwifery/Nursing

MS. MARGARET PHILBIN, DIRECTOR OF MIDWIFERY/NURSING

In 2012 the hospital again experienced very high levels of activity. Midwives and Nurses who continue to constitute the largest cohort of staff in the hospital met the challenges posed by capacity and acuity issues by continuing to provide a wide range of support and care services for women, babies and families both within the hospital and in the community. Headcount and financial constraints again placed further pressure on all grades of staff and the Midwifery and Nursing team worked with skill, dedication and enthusiasm to meet ever increasing demands. 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
Mrs. B. Beirne-Moore	Part-time Assistant Director of Midwifery and Nursing (retired January 2012)
Ms. T. McCluskey	Assistant Director of Midwifery/ Nursing (joined 10th April 2012)
Ms. M. O'Reilly	Practice Development Co-ordinator
Ms. A. O'Byrne	Part-time 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

OTHER GRADES IN POST AT 31ST DECEMBER 2012

POST	WTE in Post
Director of Midwifery/Nursing	1
Midwifery/Nursing Administration	6
Practice Development Co-ordinators	1.38
Advanced Nurse Practitioner (Neonatology)	2
CMM/CNM 3	5.85
Clinical Skills Co-ordinator	1.9
Clinical Placement Co-ordinator (BSc Midwifery)	3
Allocations Officer (BSc Midwifery)	0.5
PGDM Clinical Co-ordinator	1
Neonatal Discharge Co-ordinator	1
Colposcopy Nurse Co-ordinators	1.65
CMM 2	23.45
CMS/CNS	10.10
CMM1	29.23
Staff Midwives	143.13
Staff Nurses	75.40
Student Midwives	25.50
Maternity Care Assistants	27.39
Total	359.48

APPOINTMENTS WTE	
Midwives and Nurses	**Midwifery Students**
11	21
TOTAL:	**33**

RESIGNATIONS/ RETIREMENTS	
Midwives and Nurses	**Midwifery Students**
22.02	25
TOTAL:	**47.02**

RETIREMENTS

In total 12 staff members retired from the hospital in 2012. Mrs. Bernie Beirne-Moore retired from her post as Assistant Director of Midwifery/Nursing at the end of January. Bernie had been on staff for over 34 years and was a great loss to the service. Mrs. Nuala McInerney (CMM2 Colposcopy) and Mrs. Rosemary Hennessy (S/M POPD) also retired in January.

In February Mrs. Mary O'Connell (CMM2 Theatre), Mrs. Annette Carroll (CNM2 NICU), Ms. Kathleen Scully (CMM3 OPD), Ms. Bridget Bourke (S/M OPD), Ms. Margaret Sheridan (CMM2 Mental Health Services), Mrs. Nora Breen (CNM2 NICU), Ms. Margaret Brophy (CMM2 Theatre), Mrs. Jean Breen (S/M NICU) and Mrs. Christine Sammon (CMM1 OPD) all retired from the hospital. These colleagues were senior staff members with a combined wealth of experience and expertise. We wish them health and every happiness in the future.

RECRUITMENT AND RETENTION

Recruitment and retention of Midwifery Students, Midwives and Nurses continued to be a major focus for the hospital in 2012 as it has in previous years. The HSE moratorium on recruitment continued to have an impact on our ability to recruit staff in the numbers required for service provision. Despite this situation we were able to introduce some new staff members into the service during the course of the year and we were delighted to welcome them to the Rotunda Hospital. In particular we welcomed Mrs. Teresa McCluskey to the post of Assistant Director of Midwifery/Nursing. Teresa brings many years of experience at a senior management level which will be of great benefit to the hospital.
Staff continued to provide the high standard of care for which the hospital is renowned. Appreciation is extended to all of the Midwifery and Nursing Team including the Midwifery Students and Maternity Health Care Assistants who continue to work tirelessly in pursuit of excellence in the care they provide.

HOSPITAL BASED MIDWIFERY AND NURSING SERVICES

2012 was again a very busy year with large numbers of women and babies requiring care and the response from staff was outstanding.

Midwives and Nurses throughout the hospital assisted 11,081 women who registered for pregnancy related care during 2012. They attended 8,845 women during labour and delivery and cared for 9,041 babies in the postnatal wards.

The Neonatal Nurses and Midwives faced another year of high activity with 1,089 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 Theatre continued to work to full capacity with an increasingly complex workload. The Midwifery and Nursing staff in the Gynaecological Department faced a challenging environment with 4,289 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 way to assess and improve patient care and uphold professional standards. Ms. Mary Whelan, Audit Facilitator, continued to assist and support clinical staff to plan their audit activity. In 2012 there was a significant increase in the number of audit's undertaken by midwifery and nursing staff which will no doubt increase the quality of care provided for all of the women and babies who utilise our services.

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 2012. They are important members of the team who contribute to the work of the hospital with energy and commitment and are richly deserving of our sincere thanks.

COMMUNITY MIDWIFERY SERVICES

The Community Midwifery Services at the Rotunda Hospital have been in place for 7 years with the service developing over the years to meet the requirements of those who attend for care. In 2012 the team successfully expanded clinical services into the Ballymun catchment area.

The aim of the service is to offer 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. The feedback from the service users continues to be very positive. In addition, the team offer antenatal parent education classes to women and partners twice a month.

In 2012, a total of 264 women were booked directly for care with the community team of Midwives with a further 372 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, 35 suffered an early miscarriage, 55 women were referred from the community service due to the development of various medical or pregnancy related complications and 4 women transferred their care to facilitate a home delivery which is not available via the Rotunda service. A total of 511 women remained with the service up to the point of delivery. Of that number 64.4% (n=329) of women achieved a spontaneous vertex delivery. The percentage of women who required an emergency caesarean section was 9.4% (n=48), while 3.5% (n=18) of women underwent an elective caesarean section. Other statistics pertaining to this group of women are reflected in Table 1:

Table 1 Community Midwifery Service outcomes

Total number of deliveries 2012	511	100%
SVD	329	64.4%
Emergency C/S	48	9.4%
Elective C/S	18	3.5%
Ventouse	95	18.6%
Forceps	12	2.3%
Ventouse/Forceps	6	1.2%
BBA	2	0.4%
Stillborn	1	0.2%
Inductions	140	27.4%
Spontaneous Onset of Labour	37	67.9%
Pain Relief		
Entonox	279	54.6%
Epidural	252	49.3%
Entonox + Epidural	139	27.2%
General Anaesthetic	5	1.0%
Spinal	13	2.5%
CSE	34	6.7%
Tens	18	3.5%
Pethidine	31	6.1%
No analgesia	50	6.1%

A total of 4 babies were admitted to the NICU where the team continued to offer support and assistance to the mother's where possible.

Women continued to be offered early discharge between 6-12 hours post delivery, with 2,812 women availing of the service. The community team carried out a total of 8,494 post natal visits in 2012 with each woman receiving an average of 3 postnatal visits in the home. The team continued to enhance their skills to meet the requirements of the service with staff members completing the Newborn Discharge Course in Belfast, undertaking studies at Advanced Practice and Master's level, undertaking the Midwife/Nurse Prescribers programme and one staff member receiving re-accreditation as a Lactation Consultant.

Midwifery Education/Practice Development Unit

The Rotunda Hospital and the University of Dublin, Trinity College, its academic partner for Midwifery education have continued to work closely to ensure the high standards of previous years were maintained and improved upon.

The Midwifery / Nursing Practice Development Unit continued to facilitate the development, implementation and evaluation of ongoing comprehensive student midwifery education programmes during 2012. In addition, the unit provided professional learning and development opportunities for qualified midwives and nurses within the organisation. Supporting staff by facilitating access to education and research opportunities enhances their knowledge and promotes the use of current and evidence based practice which ultimately enables an improvement in the patient's experience of care.

During 2012 a total of 169 students obtained clinical experience within the Rotunda Hospital. Students attended from a number of disciplines including undergraduate and postgraduate midwifery and nursing programmes as outlined in Table 2:

Table 2 Education Programmes

Education Programme	Number	College Link
Higher Diploma in Midwifery	25	Rotunda Hospital /University of Dublin Trinity College
Bachelor of Science in Midwifery	20	Rotunda Hospital /University of Dublin Trinity College
Undergraduate Nursing	89	Beaumont and Connolly Hospital/Dublin City University
Undergraduate Children	15	Tallaght University and General Nursing Hospital/University of Dublin Trinity College
Public Health Nursing	6	University College Dublin

In addition, a number of external students attended on elective placement from midwifery and nursing educational centres in Ireland and the UK.

The Post Graduate Diploma in Nursing (Neonatal Intensive Care)
The Higher Diploma in Nursing (Neonatal Intensive Care) programme is run jointly between the three Dublin Maternity Hospitals and the RCSI. This programme continued to be successful with three Neonatal Staff Nurses completing studies in 2012. Neonatal Intensive Care is a very challenging and demanding area requiring continuous adaptation to new technologies and medical advances. Ongoing support for this course is imperative in ensuring and maintaining a highly skilled workforce.

Continuing Education and Development
During 2012, members of the Practice Development Unit, the Clinical Skills Facilitator and staff throughout the hospital worked in partnership with the Centre for Midwifery Education to devise and develop a number of educational courses for continued professional development of staff relevant to their area of practice.

Courses facilitated included:

- Anaphylaxis Training
- Productive Ward
- Preceptorship
- Diabetes update
- 20hr Breast feeding
- IV Cannulation
- CTG workshops
- Customer care
- Perineal Suturing
- Wound care
- Nursing /Midwifery care for the critically ill patient in conjunction with the Mater Hospital ICU

Courses provided on site included:

Consent
Basic Life Support (BLS)
Neonatal Resuscitation (NRP)
Emergency Skills (RHOET)
Infection Control and Decontamination
Audit Training
Leadership
Performance Planning and Development
Systems analysis
Pressure Sore Prevention
Bereavement
Clinical Risk
Infection Prevention and Control
IV Medication Workshop

Staff continued to be given the opportunity to attend conferences of interest both in Ireland and abroad with 852 training/study days allocated to staff during the year. Additional Midwives completed the Newborn Examination programme and the Midwife/Nurse Prescribing Programme. Thirteen staff commenced education programmes at Master's level with one Midwife continuing her studies at PhD level. Congratulations are extended to those who successfully completed these programmes.

LACTATION SERVICES

The Rotunda Hospital remains the only Dublin Maternity Hospital to have achieved the Baby Friendly Hospital Accreditation Award. In July 2012 the BFHI award was presented to the hospital by Dr. Genevieve Becker, National Co-ordinator for the Baby Friendly Hospital Initiative. We continue to protect, promote and support breastfeeding as the optimum way for mothers to feed their babies.

During 2012, 70% of mothers initiated breastfeeding. A total of 690 new patients were seen by the Lactation Specialists with 530 calls to the service. 135 postnatal women attended the support groups throughout the year and 536 attended information sessions.

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

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 delivery.

Postnatal Support

- Individual assistance and support with early breastfeeding problems is available from ward staff and Lactation Specialists when required.

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 Meetings 2012
This is a multi disciplinary committee which also includes members from the voluntary breastfeeding support groups. There were four meetings held during the year.

Breast Feeding Education Workshops 2012
Breastfeeding lectures were included in all orientation days for all new staff. Lectures were provided for Medical Students and those attending the Higher Diploma in Neonatal Nursing programme.

National Breastfeeding Week
National Breastfeeding week was celebrated in a number of ways in the hospital with information stands providing a wealth of information for mothers and staff alike.

Breastfeeding Supportive Workplace
The Rotunda hospital continues to hold a Breastfeeding Supportive Workplace Silver Award.

OCCUPATIONAL HEALTH SERVICE

The Occupational Health Department endeavours to protect, maintain and promote the health of all employees of the Rotunda Hospital. 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.

Main Services Provided

- Health assessment/ screening of all prospective employees.
- Sickness absence management and return to work assessments.
- Administration of vaccination programmes e.g. Hepatitis B, MMR, chicken pox, flu, and the provision of advice on travel vaccines.
- Provision of First Aid treatment to employees who sustain injuries or accidents while at work.
- Counselling of staff, post incidents e.g. needle stick, blood/body fluid exposure, and referral to an Infectious Diseases Consultant if required.
- Provision of information to all employees on all health-related matters and in particular, assisting the provision of advice on measures to eliminate/reduce occupational ill health & injury.
- Protection against hepatitis B and staff carrying out exposure prone procedures are checked to ensure that not only do they have adequate protection against the disease, but that they are also not infectious carriers of the disease.

The seasonal flu vaccine programme continued in 2012 with a large number of staff vaccinated between October and December.

MENTAL HEALTH SUPPORT

The Perinatal Mental Health Service in the Rotunda saw a change in personnel in 2012. Ms. Margaret Sheridan a pivotal member of the team retired. Margaret was the first Perinatal Mental Health Midwife in the Republic of Ireland who worked tirelessly in the service of women attending the Rotunda Hospital for the past decade. The service welcomed a new staff member Ms. Kathleen O 'Donohoe. Kathleen is a Nurse, Midwife and Public Health Nurse with many years experience working with women with post natal depression in the community. Kathleen is also a fully accredited member of the Irish Association of Counsellors and Psychotherapists, her expertise will enhance the services already provided.

There was a growing demand for the Mental Health Support Services with a total of 1,433 women giving a mental health history at their booking visit. This represented 16% of the total number of women delivered in 2012. The support Midwives saw 579 women in the health promotion clinic. Many of these women attended for assessment, talk therapy and antenatal and postnatal support. A further 1,305 women with a mental health history were reviewed at ward level for brief intervention, including health promotion, mental health management and follow up advice.

Audit featured strongly in relation to this service in 2012. An audit of the "Completion of the Edinburgh Postnatal Depression Scale" (EPDS) was conducted in August. The EPDS is a self reporting assessment tool to monitor mood and the audit indicated that 71% of women discharged from the hospital had completed the documentation. As a result further collaboration between the support midwives and those at ward level has taken place to increase the opportunity for women to complete this assessment tool.

The team continued to provide education on the topic of Perinatal Mental Health. They support education sessions in-house for staff, Public Health Nurses and Students in Trinity College. In addition, they worked closely with colleagues in the National Maternity and The Coombe Hospitals' which culminated in a very successful study day on Perinatal Mental Health in February 2012.

PARENT EDUCATION

The Parent Education Midwife continued to provide an extensive range of education sessions to both in-patients and outpatients during 2012. 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

Attendance was high with over 5,000 women attending the daytime education classes. Ms. Margaret Merrigan Feenan deserves a big thank you for facilitating these education sessions for so many expectant mothers.

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 and we offered a range of services through the Bereavement, Recurrent Pregnancy Loss and Fetal Anomaly Clinics to afford bereaved parents the necessary support to meet their individual needs. The entire Bereavement team offered support to families who suffered bereavement during 2012 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 for patients and staff.

Service of Remembrance

The annual Service of Remembrance was again held in the Pro Cathedral in November 2012. This year over 1,100 bereaved families attended the event, the largest number to date. We are extremely grateful for the continued assistance of the Very Rev. 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. The Smoking Cessation Service continued to focus on the important role of support for those working to reduce or cease smoking. This was particularly important in 2012 in advance of the Hospital becoming a Smoke Free Campus in 2013.

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 2012. 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. 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 thank our Medical, Allied Health and Support 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. I would like to add a special word of thanks to the Assistant Directors of Midwifery/Nursing for their loyal and endless assistance. They continue to meet the ever increasing demands on their time and talents with patience and enthusiasm.

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 LECTURER
Paul Byrne MD, FRCOG, FRCPI
Fionnuala Breathnach MD, MRCOG FRCPI DCH DipGUMed
Ronan Gleeson MA MD, FRCOG FRCPI
Sharon Cooley MD, MRCOG MRCPI (covering maternity leave)

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
Jennifer Donnelly MD, MRCOG (to June 2012)
Karen Flood MD, MRCOG (from July to Dec 2012)

SPECIALIST REGISTRAR LECTURERS
Naomi Burke MRCOG (from July 2011)
Aoife Murray MRCPI (to July 2012)
Siglinde Muellers MRCPI (from July 2012)
Mark Dempsey MRCPI (from July to Dec 2012)

CLINICAL RESEARCH STAFF
Claire O'Rourke (Midwife Sonographer)
Ann Fleming (Midwife Sonographer) (from Sept 2012)
Siobhan NiScanaill (Midwife Sonographer) (covering maternity leave until Aug '12)
Fiona Cody (Midwife Sonographer) (covering maternity leave until Aug '12)
Elizabeth Tully (Research Manager)
Grainne Mc Sorley (Research Nurse)
Patrick Dicker (Epidemiologist / Statistician)
Brain Cotter (Research Assistant) (Until Feb 2012)

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

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 2012 a total of 3118 fetal ultrasound examinations were performed at the Centre. This included a total of 998 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 46 twin pregnancies, and 2 triplet pregnancies managed through our unit.

3. TEACHING SERVICES

Two hundred and sixty nine 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 seventy two 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:

- Children's University Hospital Temple Street, Dublin
  - Magnetic Resonance Imaging of Neonatal Survivors of IUGR Pregnancy
  - M. Boyle, A. Foran / Perinatal Ireland and RCSI
- Friends of the Rotunda Hospital, Dublin, Ireland
  - Platelet Hyper-reactivity and Recurrent Miscarriage
  - A. Murray, K. Flood, F. Malone

PERINATAL IRELAND UPDATE 2012

Perinatal Ireland is a multi-centre, all-Ireland research consortium focused on research into women's and children's health. It is primarily funded through an Imaging Award from the Health Research Board (HRB) and links the seven main academic obstetric units across the island, harnessing the expertise of Ireland's leading maternal fetal medicine specialists. The consortium provides a unique, world-class research infrastructure comprising of state-of-the-art imaging equipment, dedicated research personnel and a central management and governance structure. With access to large patient populations (50,000+ births pa.), Perinatal Ireland is uniquely positioned to carry-out innovative and ground-breaking clinical and translational research.

The National Twin study, ESPRiT was a two year research programme which recruited over 1000 twin pregnancies. In 2012, Dr Fionnuala Breathnach (Lead Researcher) used the results of the ESPRiT study to publish guidelines on the management of twin pregnancies which was endorsed by the Institute of Obstetricians and Gynaecologists Clinical Advisory Group in RCPI and by the National Working Party in the HSE Programme in Obstetrics and Gynaecology. The following outputs from ESPRiT were also published during 2012.

- Optimum timing for planned delivery of uncomplicated monochorionic and dichorionic twin pregnancies. Breathnach FM, McAuliffe FM, Geary M, Daly S, Higgins JR, Dornan J, Morrison JJ, Burke G, Higgins S, Dicker P, Manning F, Carroll S, Malone FD; Perinatal Ireland Research Consortium. Obstet Gynecol. 2012 Jan;119(1):50-9
- Placental pathology, birthweight discordance, and growth restriction in twin pregnancy - results of the national prospective ESPRiT Study. Kent EM, Breathnach FM, Gillan JE, McAuliffe FM, Geary MP, Daly S, Higgins JR, Morrison JJ, Burke G, Higgins S, Carroll S, Dicker P, Manning F, Tully E, Malone FD. Am J Obstet Gynecol, 207:220, 2012.

The PORTO study began in January 2010 looking at the effects of Intrauterine Growth Restriction (IUGR) on pregnancies using sophisticated ultrasound techniques. PORTO finished recruiting a cohort of over 1200 patients in June 2012. The main objective was the study of advanced multi-vessel Doppler changes in babies with an estimated weight <10th centile. The significance of these changes evaluated and correlated with short and long term paediatric morbidity.

Preliminary results from PORTO were presented at the Fetal Growth Meeting in Birmingham in September 2012 and a number of primary output abstracts were submitted for presentation at the annual Society for Maternal Fetal Medicine Meeting in February of 2013. The following paper was also accepted for publication in 2012

- The customised fetal growth potential: a standard for Ireland – Unterscheider J, Geary MP, Daly S, McAuliffe F, Dornan J, Morrison JJ, Burke G, Francis A, Gardosi J, Malone FD, European Journal of Obstetrics & Gynecology and Reproductive Biology, Accepted Sept 2012

b) Scientific Publications – Peer-Reviewed Journals

- Donnelly JC, Byrne J, Murphy K, McAuliffe FM. Obstetric outcome with low molecular weight heparin therapy during pregnancy IMJ 2012:105(1);27-29.

- Cooley SM, Donnelly JC, Walsh TA, MacMahon C, Gillan J, Geary MP Ponderal Index (PI) versus Birthweight centiles in the low-risk primigravid population: Which is the better predictor of fetal wellbeing? Journal of Obstetrics and Gynaecology July 2012, Vol. 32, No. 5 , Pages 439-443

- Breathnach FM, McAuliffe FM, Geary M, Daly S, Higgins JR, Dornan J, Morrison JJ, Burke G, Higgins S, Dicker P, Manning F, Carroll S, Malone FD. "Optimum Timing for Planned Delivery of Uncomplicated Monochorionic and Dichorionic Twin Pregnancies." Obstetrics and Gynecology 119:50-59, 2012.

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- Tita AT, Lai Y, Bloom SL, Spong CY, Varner MW, Ramin SM, Caritis SN, Grobman WA, Sorokin Y, Sciscione A, Carpenter MW, Mercer BM, Thorp JM, Malone FD, Harper M, Iams JD. "Timing of Delivery and Pregnancy Outcomes Among Laboring Nulliparous Women." American Journal of Obstetrics and Gynecology, 206:239, e1-8, 2012.
- Segel SY, Carreno CA, Weiner SJ, Bloom SL, Spong CY, Varner MW, Rouse DJ, Caritis SN, Grobman WA, Sorokin Y, Sciscione A, Mercer BM, Thorp JM, Malone FD, Harper M, Iams JD. "Relationship Between Fetal Station and Successful Vaginal Delivery in Nulliparous Women." American Journal of Perinatology 29:723-730, 2012.
- Gyamfi-Bannerman C, Gilbert S, Landon MB, Spong CY, Rouse DJ, Varner MW, et al. "Effect of antenatal corticosteroids on respiratory morbidity in singletons and late-preterm birth." Obstetrics & Gynecology 119:555-559, 2012.
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- Vaughan D, Byrne P. "An evaluation of the simultaneous use of the levonrgestrel releasing intrauterine device (LNG-IUS, Mirena ®) combined with endomentrial ablation in the management of Menorrhagia" Journal of Obstetrics and Gynaecology, 2012; 32: 372-374

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c) Scientific Publications – Book Chapters and Other Journals

- Donnelly JC, Kearney M, Ni Ainle F. Obstetric haematology: Treatment and prevention of VTE in pregnancy Hospital Doctor, Jan 2012

- Donnelly JC, Malone FD. "Early Fetal Anatomical Sonography." Best Practice Research in Clinical Obstetrics and Gynaecology, 26:561-573, 2012.

- Breathnach FM, Malone FD. "Fetal Growth Disorders in Twin Gestations." Seminars in Perinatology, 36:175-181, 2012.

- Flood K, Malone FD. "Prevention of Preterm Birth". Seminars in Fetal and Neonatal Medicine, 17:58-63, 2012.

- Donnelly J, Geary M, Barry C, Breathnach FM, Malone F. Monochorionic Monoamniotic Twins- A Five Year Review.. (BMFMS Annual Scientific meeting Glasgow April 2012)

- Aoife Murray, Karen Flood, Julia Unterscheider, Carol Barry, Michael Geary, Fionnuala Breathnach, Fergal Malone. When identical twins are different. (BMFMS Annual Scientific Meeting, Glasgow April 2012)

d) Invited Lectures and Oral Scientific Presentations:

- Donnelly JC, Monoamniotic Twins – a five year review: Royal Academy of Medicine in Ireland, Dublin, Jan 2012

- Malone FD, "Magnesium in Obstetrics – New Indications" – Irish Society of Obstetric Anaesthesia, Annual Clinical Meeting, Dublin, Ireland, December 2012.

- Malone FD, "Obstetric Ultrasound Debate – Optimal Timing of Obstetric Ultrasonography" – Institute of Obstetricians and Gynaecologists Annual General Meeting, Dublin, Ireland, September 2012.

- Malone FD, "Irish Obstetric Ultrasound: What Should Happen in the Future?" – National Maternity Hospital Annual Fetal Medicine Meeting, Dublin, Ireland, January 2012.

Human Assisted Reproduction Ireland

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Phyllis Agbi
Natalie L'Estrange

HOUSEKEEPING
Ann Mulligan
Ana Skorik Nurses Aide

1. SERVICE

During 2012, under the guidelines of the Medical Council, the HARI Unit provided a full range of Assisted Reproductive Technology services to couples referred from throughout Ireland. The services included: IVF, ICSI, frozen embryo transfers, natural cycles (IVF and ICSI) follicle tracking with or without ovarian stimulation (anti-oestrogens, FSH), testicular biopsy, embryo freezing and oncology stimulation and subsequent gamete and embryo cryopreservation . In 2012, the Unit had on average 52 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 both 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 2012 the mean ages were 35.3 years for females and 36.9 years for males. The mean duration of infertility of those undergoing fresh cycles was 2.15 years. The main indications for IVF or ICSI therapy were male factor (39%), tubal and endometriosis (22.5%), unexplained (23%), and others (15.5%).

In these 12 months, 1,330 cycles were undertaken - 453 IVF, 480 ICSI and 397 frozen. Of the 933 fresh cycles commenced, 799 had oocytes collected (IVF 369, ICSI 430). Zygotes were transferred in 1079 cases (IVF 331, ICSI 377 and frozen 371). A total of 375 clinical pregnancies were achieved, 277 in the IVF/ ICSI cycles and 98 in the frozen zygote transfer cycles.

TABLE 1. Overall IVF/ ICSI activity (2012)

	IVF	ICSI	FZT
Cycles started	453	480	397
Cycles abandoned	55	41	-
Oocyte collections	369	430	-
Zygote transfers	331	377	371
Clinical pregnancies	127	150	98

PREGNANCY RATES

Pregnancy rates shown below are clinical pregnancy rates. All types of fresh treatments are included, namely: long protocol, antagonist, flare, 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 (2012)

	Overall n = 1330 (375)	Overall n=933 (277)	IVF n = 453 (127)	ICSI n = 480 (150)	FZT n=397 (98)
Per Cycle Started	28%	30%	28%	31%	25%
Per Oocyte Recovery	N/A	35%	34%	35%	N/A
Per Zygote Transfers	35 %	39%	38%	40%	26%

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 30% per cycle started, 35% per oocyte recovery and 39% per zygote transfer. The clinical pregnancy rates for patients undergoing frozen cycle transfers were 24% per thaw and 26% per zygote transfer.

TABLE 3. CLINICAL (IVF AND ICSI) PREGNANCY RATES ACCORDING TO FEMALE AGE (2012)

	Age	Overall n = 933	IVF n = 453	ICSI n = 397
Per Cycle Started				
	≤ 35	34.4% (n=488)	34% (n=223)	35% (n=265)
	36-39	29% (n=302)	26% (n=155)	32% (n=147)
	≥ 40	13.3% (n=143)	12% (n=75)	15% (n=68)
			Total: 45	*Total: 48*
Per Oocyte Recovery				
	≤ 35	40% (n=416)	42% (n=176)	39% (n=240)
	36-39	32% (n=267)	29% (n=132)	35% (n=135)
	≥ 40	15.5% (n=116)	13% (n=61)	18% (n=55)
			Total: 36	*Total: 43*
Per ZygoteTransfer				
	≤ 35	44% (n=367)	43% (n=159)	45% (n=208)
	36-39	37% (n=237)	42% (n=116)	39% (n=121)
	≥ 40	18.3% (n=104)	25% (n=56)	21% (n=48)
			Total: 33	*Total: 37*

A female of age 35 years old or younger, undergoing fresh ART treatment had a 34.4% chance of a clinical pregnancy per cycle started, 40% per oocyte recovery and 46% per zygote transfer.

Single blastocyst transfer programme

The HARI elective Single Blastocyst Transfer (eSBT) programme continued in 2012. 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 (2012)

ICSI eSBT	All ages	≤ 35	36-39	≥ 40
hCG+ve/eSBT	244/421 (58%)	168/283 (59.4%)	66/105 (63%)	10/33 (30.3%)
CPR/eSBT	186/421 (44.2%)	129/283 (45.6%)	52/105 (49.5%)	5/33(15%)
IVF eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 40**
hCG+ve/eSBT	290/541 (53.6%)	166/294 (56.5%)	104/199 (52.3%)	20/48 (41.7%)
CPR/eSBT	232/541 (43%)	134/294 (45.6%)	86/199 (43.2%)	12/48 (25%)
FZT eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 40**
hCG+ve/eSBT	96/244 (39.3%)	64/151 (42.4%)	24/73 (32.9%)	8/203 (40%)
CPR/eSBT	63/244 (26%)	46/151 (30.5%)	15/73 (20.5%)	2/20 (10%)

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 59% (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 (2008-2012)

Day 5 transfers	≤ 35	35-39 years	≥ 40 years
CPR	**46%**	**44.2%**	**28%**
Cumulative CPR (One fresh and first frozen transfer)	**58.5%**	**53.7%**	**39.3%**

TABLE 6. Multiple pregnancy rates for eSBT (2012)

	IVF	ICSI	FZT
Singleton	97.3%	97.1%	98.2%
Twins	2.7%	2.9%	1.8%
Triplets	0%	0%	0%

Take home baby rates are always one year behind, the figures shown are therefore purely for the year 2011, calculated from the throughput of these year alone.

TABLE 7. DELIVERY RATES AFTER TREATMENT IN 2011 (At least one baby 500grams+)			
Total patients treated (clinical pregnancies)	**IVF n=376 (109)**	**ICSI n=456 (121)**	**Frozen n=348 (77)**
Deliveries	99	112	52
Per Cycle Started	26.3%	24.6%	14.9%
Per Oocyte Recovery	27.3%	25.2%	-
Per Zygote Transfers	29.6%	29.5%	15.3%

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

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 2012, 191 male oncology patients attended HARI and 169 patients had sperm cryopreserved. The increase in demand for female cryopreservation services continued, with 38 referrals being received and 25 patients proceeding to oocyte or zygote freeze. New cryopreservation protocols (vitrification) were introduced during the year. Studies have shown that these lead to better survival of embryos and eggs and, consequently, to improved success in assisted reproduction treatments.

TABLE 8. Oncology cryopreservation data

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Males attended				114	142	142	158	186	174	163	173	191
Males with samples frozen	63	131	98	102	127	132	141	170	155	149	157	169
Not suitable /No sample	11	21	15	12	15	10	17	16	19	14	16	18
Female attendances			5	5	5	6	14	12	23	25	32	38
Pursued cryopres -ervation			3	4	0	1	10	4	7	19	22	25
Oocyte/ embryo cryopres -ervation			3	4	0	0	5	3	5	16	22	25

4. RECOGNITION

Training in Reproductive Medicine (RM)

HARI continues as the main RM teaching centre in Ireland. Up to July 2012, Dr Gbenga Oluyede filled the SpR in Obstetrics and Gynaecology position recognised by the HARI/ Institute of Obstetricians and Gynaecologists scheme allowing SpR's with interest in RM to receive 12 months of training.

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.

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, two embryologists have completed their training and a further two embryologists were undergoing the ESHRE training programmes in 2012.

Staff recognition nationally and internationally

Gerri Emerson continued as the Irish Clinical Scientist National Representative to ESHRE (European Society of Human Reproduction and Embryology). Ciara Hughes continued her roles as Chair of the Irish Clinical Embryology Society (ICE) and executive member on the ACE committee, appointed to update their Good Practice Guidelines.
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) and Treasurer of the Federation. He continued as chair the EUTCD ESHRE Task Force and member of the Clinical Advisory Group of the Institute of Obstetricians and Gynaecologists.

5. QUALITY AND SERVICE IMPROVEMENTS

Quality and patient safety are the cornerstones of the culture within HARI. The dedicated quality department works closely with all departments to provide appropriate solutions to ensure best practices, resulting in quality patient care and service. Using improvement techniques, departments work together to maximize the work environment and processes involved in daily patient care

Some of the initiatives are detailed below:

- After undertaking extensive training, the patient support team introduced the "HARI Fertility Well Being Programme". The one-day workshop is designed to give patients practical help and information to maximize their chance of achieving a pregnancy. The aim of the workshop is to give guidance and advice on fertility issues and to help patients prepare for assisted reproductive treatments.

- Authorisation was received from the Irish Medicines board to introduce Vitrification. This is a specialised freezing technique, where oocytes or embryos are frozen so quickly, ice crystals do not have time to form, thus offering patients undertaking frozen cycles of treatment a higher success rate.

- During the year a number key improvements were introduced within the HARI Laboratory. To improve air quality for embryo culturing, carbon filters were installed across the entire laboratory and theatre air handling systems. A substantial investment was also made in updating ICSI capabilities by introducing an additional ICSI workstation.

- To ensure continuity of care, the clinic introduced a satellite monitoring service for HARI patients who have to travel abroad to avail of treatments not available in Ireland. Although ultimately under the medical care and responsibility of the foreign clinic, this service allows former HARI clients who choose to attend a foreign clinic for egg donation to benefit from blood hormone and ultrasound monitoring locally. The results are then forwarded to the chosen clinic

- During the year the clinic undertook a major review and update of the entire HARI website to make it more user friendly and informative to first time users and patients.

- At the start of the year we undertook a major overhaul of the patient administration system. Firstly, we introduce a wireless medical chart tracking system so that the exact location of each chart could be monitored and tracked. In tandem we updated the patient registration and scheduling systems. These changes will support the introduction of SMS appointment confirmation and reminders to all patients in early 2013

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.

Higher degrees and awards

Deignan, K. (2012)
Examination: ESHRE Senior Clinical Embryology Certification
European Society of Human Reproduction and Embryology (ESHRE) 28th Annual Meeting – Turkey, July 2012

Awards

Clinical Science Award for Poster Presentation (ESHRE 2012)

Naasan, M., Oluyede, G., Kirkham, C., Ciprike, V., Mocanu, E.
Is ovarian reserve in female cancer patients attending for cryopreservation different compared to age matched infertile patients?
European Society of Human Reproduction and Embryology (ESHRE) 28th Annual Meeting – Turkey, July 2012

Scientific publications (peer reviewed Journals)

Mocanu E.
Facts and myths in serological screening of ART couples.
FVV in ObGyn. 2012, 4(3): 198-202.

Wong VV, Emerson G, Mocanu E.
When no choice of embryos exists, the multiple pregnancy risk is still high.
J Obstet Gynaecol. 2012 Oct; 32(7): 676-9.

Hayes I, Rathore R, Enohumah K, Mocanu E, Kumar D, McCaul CL.
The effect of crystalloid versus Low molecular weight colloid solution on post-operative nausea and vomiting after ambulatory gynecological surgery - a prospective randomized trial. Anesthesiol. 2012 Jul 31; 12(1): 15

Naasan M, Waterstone J, Johnson MM, Nolan A, Egan D, Shamoun O, Thompson W, Roopnarinesingh R, Wingfield M, Harrison RF, Mocanu E.
Assisted Reproductive Technology Treatment Outcomes.
Ir Med J. 2012 May;105(5):136-9.

Basit I, Johnson SN, Mocanu E, Geary M, Daly S, Wingfield M.
Mode of conception of triplets and high order multiple pregnancies.
Ir Med J. 2012 Mar;105(3):80-3.

Scientific presentations (oral and posters)

1. Emerson G, Hughes C, Mocanu E. Male cryopreservation: clinical relevance of a diagnosis of testicular cancer on spermatogenesis. ESHRE 28th Annual Meeting, Istanbul, July 2012.

2. Naasan M, Oluyede G, Kirkham C, Ciprike V, Mocanu E. Is ovarian reserve in female cancer patients attending for cryopreservation different compared to age matched infertile patients. ESHRE 28th Annual Meeting, Istanbul, July 2012.

3. G Emerson, C Hughes, C Harrity, E. Mocanu. Elective single embryo transfer. Where have all the twins gone? 2nd ICOGPM Druids Glen, Wicklow, November 2012.

4. S Detho, C Harrity, S Afridi, E Mocanu, G Emerson. Initial experience of natural cycle IVF in Ireland. 2nd ICOGPM Druids Glen, Wicklow, November 2012.

5. J McInerney, M Dempsey, C Kirkham, E Mocanu. Quality of life among those attending for fertility investigations and treatments. 2nd ICOGPM Druids Glen, Wicklow, November 2012.

6. WPV Ooi, M Naasan, V Ciprike, C Harrity, E Mocanu. Outcomes of pulsatile Gn-RH treatment in women with hypogonadotrophic hypogonadism- an Irish experience. 2nd ICOGPM Druids Glen, Wicklow, November 2012.

7. F Sutton, E Mocanu, CA Berney, L Finnamore, S Sweeney, J Kelly. Intra-uterine insemination-should the oocyte be kept waiting? 2nd ICOGPM Druids Glen, Wicklow, November 2012.

8. N Abdul Aziz, C Harity, E Mocanu. Anti-mullerian hormone: a non-invasive screening test for the presence of endometriosis? 2nd ICOGPM Druids Glen, Wicklow, November 2012.

9. Mocanu E. EIM Irish Report 2009. Irish Fertility Society Annual Meeting, Malahide, May 2012.

10. Ciprike V, Emerson G, Mocanu E. A 10-year review of live birth rates after ART in serodiscordant couples who are positive for either hepatitis B (HBV) or hepatitis C (HCV) infection. IFS Annual Meeting, Malahide, May 2012, Dublin.

11. Hooper A, Emerson G, Kelly P, Mocanu E. Temperature changes in culture media lag behind air temperature changes in the transport environment. 8th Annual Irish Fertility Society Meeting, Malahide, May 2012.

Peer reviewed published abstracts

1. Emerson G, Hughes C, Mocanu E. Male cryopreservation: clinical relevance of a diagnosis of testicular cancer on spermatogenesis. Hum Reprod. (2012) 27 (suppl 2): ii64-ii65.

2. Naasan M, Oluyede G, Kirkham C, Ciprike V, Mocanu E. Is ovarian reserve in female cancer patients attending for cryopreservation different compared to age matched infertile patients. Hum Reprod. (2012) 27 (suppl 2) ii248-ii261.

3. G Emerson, C Hughes, C Harrity, E. Mocanu. Elective single embryo transfer. Where have all the twins gone? 2nd ICOGPM Abstract book, 2012, p178.

4. S Detho, C Harrity, S Afridi, E Mocanu, G Emerson. Initial experience of natural cycle IVF in Ireland. 2nd ICOGPM Abstract book, 2012, p180.

5. WPV Ooi, M Naasan, V Ciprike, C Harrity, E Mocanu. Outcomes of pulsatile Gn-RH treatment in women with hypogonadotrophic hypogonadism- an Irish experience. 2nd ICOGPM Abstract book, 2012, p182.

6. J McInerney, M Dempsey, C Kirkham, E Mocanu. Quality of life among those attending for fertility investigations and treatments. 2nd ICOGPM Abstract book, 2012, p185.

7. F Sutton, E Mocanu, CA Berney, L Finnamore, S Sweeney, J Kelly. Intra-uterine insemination-should the oocyte be kept waiting? 2nd ICOGPM Abstract book, 2012, p181.

8. N Abdul Aziz, C Harity, E Mocanu. Anti-mullerian hormone: a non-invasive screening test for the presence of endometriosis? 2nd ICOGPM Abstract book, 2012, p262.
9. Ciprike V, Emerson G, Mocanu E. A 10-year review of live birth rates after ART in serodiscordant couples who are positive for either hepatitis B (HBV) or hepatitis C (HCV) infection. IFS Annual Meeting, Malahide, May 2012, Dublin.

10. Hooper A, Emerson G, Kelly P, Mocanu E. Temperature changes in culture media lag behind air temperature changes in the transport environment. 8th Annual Irish Fertility Society Meeting, Malahide, May 2012.

11. Mocanu E. EIM Irish Report 2009. Irish Fertility Society Annual Meeting, Malahide, May 2012.

Invited lectures, chairs, media appearances

Chairs
Mocanu EV:

Chair and Organiser	2nd Irish Congress of Obstetrics, Gynaecology and Perinatal Medicine (ICOGPM). December, Wicklow
Chair	Breast cancer in young women conference. European Conference *Session VII: Fertility and adoption*. November, Dublin
Co-chair; Organiser	Regulation of quality and safety in ART. ESHRE Campus, September, Dublin
Chair	ESHRE Annual Meeting, Istanbul: Session 23: *Mystery or fiction: progesterone in the follicular phase.*

Invited lectures:

Mocanu EV:

1. *Optimal management of fertility in pre-menopausal women*. Breast study day, Cork University Hospital, 25th February 2012.
2. *Reproductive Medicine – a true carrier in Obstetrics and Gynaecology*. RCSI Obs&Gyn Society, 23rd March 2012.
3. *Female fertility cryopreservation: current options and limitations*. 8th Conference on clinical management of breast cancer. Kildare, 21st April 2012.
4. *ART result in Ireland*. IFS Annual Meeting, Dublin, 11th May 2012.
5. *Ethical issues in Assisted Reproduction*. Ethics IV: End of life issues, RCPI, Dublin, 22nd June 2012.
6. *Human Assisted Reproduction*. ICGP Summer School 2012. Kilkenny, 23rd June 2012.
7. *Assisted Reproduction-an update*. Endocrine Grand rounds, SVUH, 10th September 2012.
8. *Vigilance in ART*. Regulation of quality and safety in ART-the EU Tissues and Cells Directive perspective. ESHRE Campus Symposium, Dublin 14th September 2012.
9. TCM and WM-do the roads ever meet? NRRI Symposium, Dublin, 15th September 2012

Hughes C:

January 2012	Graduate Diploma in Nursing Studies (Cancer Nursing) UCD
August 2012	Breast Care Mater Hospital – Preserving Fertility for Breast cancer patients
September 2013	Preserving Fertility Lecture for Post Graduate Diploma in Haematology HOPE Directorate St James
September 2012	Preserving Fertility for the Post Graduate Diploma in Oncology Nursing
17th November 2012	Updates in Fertility Preservation – Irish Cancer Nurses – Carton House, Maynooth
November 2012	Visit from HOPE directorate post-graduate nurses for lecture and tour of Hari Unit

Conference Course Attendance

January	ACE Annual Conference– Leeds	Ciara Hughes Barbara Hughes
May	Irish Fertility Society	Jemma Johnston
		Edgar Mocanu
June	ESHRE	Gerri Emerson John Furlong Karen Deignan Edgar Mocanu
September	ESHRE – Quality Meeting	Gerri Emerson Ciara Hughes
December	ICOGPM	Gerri Emerson Ciara Hughes Edgar Mocanu
	Vitrolife Workshop	Gerri Emerson

Acknowledgements

At the end of a challenging year, I would like to acknowledge and thank all HARI staff for their dedication and continuous strive towards bringing the dream of a family to so many couples attending our services. I would also like to thank Rotunda staff for their complementary services facilitating the smooth care for HARI patients.

Edgar Mocanu, 2013

Department of Laboratory Medicine

DR. EIBHLIS O'DONOVAN (DIRECTOR)
MS. GWEN O'CONNOR (ACTING LABORATORY MANAGER, JAN-AUG 2012);
MR JOHN O LOUGHLIN (APPOINTED LABORATORY MANAGER AUG 2012)

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 now well embedded in the culture of the department. 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.

TABLE 1: DEPARTMENT OF LABORATORY MEDICINE WORKLOADS FOR 2012 COMPARED TO 2011; TESTS PERFORMED IN-HOUSE

Department	Specimens	% Change in specimens over 2011	Number of Tests	% Change in tests over 2012
Haematology	48,635	-5.4	64,199	-1.9
Blood Group Serology	23,614	2.85	69,207	-3.1
Transfusion	6,503	-5.5	7,738	-5.5
Clinical Microbiology	47,792	7.9	87,052	-6.9
Virology / Serology	13,676	-12	33,091	-33
Clinical Chemistry Endocrinology	57,003	-2.4	203,528	-8
Histopathology				
- Surgicals	4,420	-1.3	12,464 (blocks)	-4.96
- Placentae	1,463	-10.4	5,056 (blocks)	-57
- Autopsies	93	22.4	1909	-29.9
- Fluids	175	10.8	214	13.2

TABLE 2: REFERRED WORKLOAD FOR 2012 COMPARED TO 2011

	Specimens	% Change over 2011	Tests	% Change over 2011
Haematology	2,706	-8	3,144	-8
Biochemistry*	3,736	-3.9	7,553	-11.4
Microbiology **serology confirmation and otherspecialized tests**	4,533	22.3	11,186	-9
Rubella/Syphilis	10,871	-5.8	20,792	-6.7

* This includes many diverse tests such as drug, screens, metabolic screens, ceroplastin, antenatal predictive screens, endocrinology, vitamin B12, folate, iron, anti-Mullerian Hormone, and investigation of low glucose concentration in neonates (Newcastle workup).

STAFFING

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

Laboratory manager
Mr John O' Loughlin was appointed Laboratory manager in August 2012. Mr Ken Grundy who had filled the position in an acting capacity and worked for many years as Chief Medical Scientist in Microbiology very sadly passed away in January 2012. His tremendous contribution to the laboratory is acknowledged.

Medical Scientist posts
Mr David Le Blanc was appointed Chief Medical Scientist in Microbiology.

Ms Rosie Hickey, Chief Medical Scientist in Biochemistry retired in February 2012. Ms Ann Downey was subsequently appointed as Chief Medical Scientist, Biochemistry in May 2012.

Ms Niamh Cahill and Ms Deirdre Cafferty were appointed as Senior Medical Scientists in Microbiology.

Ms Asun McGrath vacated her position as Senior Medical Scientist in Biochemistry. Ms Sharon Campbell was subsequently appointed to the post.

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	(Mr Ken Grundy* January 2012)

(These roles are in addition to the existing work and responsibilities of these individual medical scientists and have been undertaken without the provision of additional human resources.)*

The laboratory was granted accreditation status with *Clinical Pathology Accreditation Limited (UK)* - CPA in 2008. This accreditation status was maintained until January 2013. It was agreed by laboratory management that the laboratory would withdraw from the CPA accreditation scheme. This decision was made as all departments were moving to gaining accreditation through INAB in 2012.

During 2012 all departments within the laboratory gained accreditation against ISO 15189 Medical Laboratories –Requirements for quality and competency and against ISO 22870 Point of Care Testing- Requirements for quality and competency. Blood transfusion and Haemovigilance continue to comply with the requirements of the EU directive 'minimum requirements for Blood Bank Compliance with article 14(traceability) and article 15 (notification of serious adverse reaction and events). This was achieved due to the hard work and commitment of all laboratory staff during a difficult year when faced with the unexpected loss of a dear friend and colleague Ken Grundy.

The accreditation process was extended to Point of Care testing under the scope of ISO 15189 and ISO 22870 for the first time. This ensured that the laboratory provided governance and a service to facilitate evaluation of new or alternative POCT instruments /systems, consider the end users proposals and protocols, purchase, installation and validation of equipment, maintenance of consumables and reagents, provide training to POCT operators and ensure the required quality control and quality assurance. Ms Jane Halligan is acknowledged for her work in enabling us achieve accreditation in this joint area of providing a near patient test service.

The mortuary services were accredited with CPA (UK). The possibility of continuing accreditation with INAB was explored against the standard ISO 17020:1998 Conforming assessment –Requirements for the operation of various types of bodies performing inspection, however after initially confirming that this may be feasible, INAB later stated that they were not in a position to assess the mortuary services. The Mortuary services were reviewed against the HSE Standards and Recommended practices for Post Mortem Examinations Services in 2012 by means of a gap analysis. These standards ensure high quality care to service users and their families.

An up-to–date record of the status of the accreditation of the Department of Laboratory Medicine can be found on the following website: www.inab.ie

The laboratory is required to submit an Annual Report for Blood Transfusion to the Irish Medicines Board (IMB). This report confirms to the IMB the Blood Transfusion activity for the previous year, states blood usage and wastage, status of accreditation and informs of any planned future changes. The report was reviewed and was satisfactory. No visit was deemed necessary.

The quality management system is now embedded in the routine culture of the laboratory. To ensure the QMS is maintained and to encourage continual improvement, the laboratory processes are reviewed by means of a scheduled audit calendar, assessment of user's satisfaction and requirements, review of supplier's performance, monitoring and assessment of non conformances and ongoing training and competency testing of all scientific and clinical staff involved in providing the testing service.

HISTOPATHOLOGY DEPARTMENT

STAFF

Consultants:	Dr J E Gillan, Dr Deirdre Devaney, Dr Eibhlis O'Donovan
Locum Consultant:	Dr Emma Doyle
Registrars:	Dr A McCarthy, Dr Kate O Connor
Chief Medical Scientist:	Colma Barnes
Senior Medical Scientist:	Ms Phil Bateson,
Medical scientists:	Ms Miriam Hurley, Ms Aderanti Morenigbade, Mr. Michael Smith, Ms.Tokiko Kumasako, Ms Sarah Morris.
Electron Microscopist:	Dr Aiveen O'Malley,
Senior anatomical technician:	Mr Bill O'Neill
Anatomical technician:	Ms Karen Fennelly
Laboratory Aide:	Mr. Martin Fitzpatrick

PERINATAL PATHOLOGY

The following Tables indicate the number of autopsies (full, limited, and Coroner's) performed in 2012.

TABLE 3: AUTOPSY WORKLOAD >500GRAMS

	Full Postmortem	Limited Postmortem	Coroners case	Total
Stillbirths	21	0	2	23
Early Neonatal deaths	3	2	10	15
Late Neonatal deaths			3	3
Total	24	2	15	41
Outside cases*	1*	0	4*	5*
% of Total PMs	23.8%	1.9%	14.9%	40.6%

*This table includes 5 autopsies from infants born in another institution which are not included in the Rotunda figures.

TABLE 4: AUTOPSY WORKLOAD <500GRAMS

	Full Postmortem	Limited Post mortem	Coroners case	Total
No. of PMs	54	6	0	60
% of Total PMs	53.5%	5.9%	0	59.4%

TABLE 5: ROTUNDA PERINATAL MORTALITY FIGURES: 2012 (0-7DAYS)

	No examination	Limited examination	Full Post Mortem	Coroners Cases	Total
Stillbirths	20	0	20	2	42
Early Neonatal deaths	14	2	3	7	26
Total	34	2	23	9	68

The perinatal autopsy service in 2012 was busier than the previous year (101 cases compared to 92 cases in 2011). 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 2012. 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.

101 autopsies were performed in 2012 (41 >500g and 60 <500g) in comparison to 92 in 2011, leading to overall autopsy rate (AR) of 45.3% (41+60=101 / 223 cases through mortuary) in comparison to 42.3% in 2011 and 50% in 2010. The AR (Full, limited and coroners cases) for >500 g was 50.6% (41/81) and 42.3% (full and limited – 60/142) for <500g. These figures take into account some external transfers and late neonatal deaths. The AR for the Rotunda cases (perinatal mortality figures) is 50% (34/68 cases). The reduction of the AR in the > 500g group probably continues to reflect the improvements in antenatal diagnostic imaging and amniocentesis confirming congenital malformations. However 45.8% (11/24) of our congenital malformations had a post mortem examination compared with only 20.8% last year. We continued to see a reduction in the number of limited examinations with only 2 in the >500g group and 6 in the < 500g group (compared with 1 and 9 respectively in 2011 and 7 and 23 in 2010). We saw an increase in the number of coroners cases (15) compared to previous years (6 in 2011 and 10 in 2010). These included 4 outside cases and 3 late neonatal deaths (i.e. not in the Rotunda figures). The majority of these cases were neonatal deaths (13/15).

As mentioned above, it is our policy to examine the placenta on all cases of perinatal deaths. There were 68 > 500g, 66 of these cases had placental examination. In the other two cases, one baby had a known congenital anomaly, 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.

68 cases:			
Congenital Malformation		24	(35.3%)
Placental causes:		21	(30.9%)
Cord	6		
Parenchyma	15		
Prematurity / Immaturity		1	(1.5%)
Infection		13	(19.1%)
Other		3	(4.4%)
Unknown		6	(8.8%)

The 24 congenital malformations included 11 babies with chromosomal abnormalities (6 babies had trisomy 21 and 4 had trisomy 18), 1 baby was born with renal malformations, 2 babies with a cardiac malformation, 1 with a diaphragmatic hernia, 1 with a body stalk malformation, 1 neural tube defect (anencephaly), 1 VACTERL malformation, 2 Arthrogryposis, 1 sirenomelia and 2 congenital tumours (1 saccrococcygeal teratom and 1 lymphangioma) and 1 vein of Galen malformation. In the placental category, there were 6 cord accidents identified. There was evidence of chronic uteroplacental insufficiency in 7 cases. Placental abruption accounted for four deaths and four cases had a moderate to severe villitis to which death was ascribed.
13 deaths were attributed to infection. 12 of these were ascending infection and 1 was hydrops secondary to Parvovirus infection. One baby had both ascending and transplacental infection with toxoplasmosis. In the ascending infection group, E. Coli and Group B streptococcus was isolated from two babies and from another infant a bacillus species was isolated. Nine 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 nine 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 3 cases. There were two cases of hypoxic ischaemic encephalopathy of undetermined cause with one case of uterine rupture leading to fetal demise.

There were 6 cases that had no identifiable cause of death giving an unexplained rate of 8.8% (in comparison to 14.7 % last year). Significantly 4 of these 6 cases did not have any form of post mortem examination.

Cause of Death (<500g)

142 cases	
Congenital Malformation	13 (9.2%)
Placental:	32 (22.5%)
Infection:	30 (21.1%)
Other:	5 (3.5%)
Unexplained:	62 (43.7%)

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 29 (19.7%) of these cases being 10 grams or less.

Placental Examination:

The placental work load was modified in 2012. During the 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. 1463 placentas were referred to the laboratory for examination in 2012. 488 (33.3%) fulfilled the criteria for gross examination only. The remaining 975 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 team meetings for the colposcopy service were held on a regular basis.

A new digital recording system improved workflow. The department continues to participate in the National Quality Assurance programme in Histopathology with data submitted centrally to NQAIS. The department was awarded INAB accreditation following a full assessment in October 2012. The hard work and dedication of all staff is acknowledged.

TABLE 6: ANALYSIS OF THE SURGICAL PATHOLOGY WORKLOAD FROM 2009 - 2012

Surgical data 2012 (no. & % increase from prev year	2009 no.	2010 no.	2010 % Increase from 2009	2011 no.	2011 % Increase from 2009	2011 % Increase from 2010	2012 no.	2012 % Increase from 2009	2012 % Increase from 2010	2012 % Increase from 2011
Surgicals (inc lletz & colcb)										
Total no. of Cases:	3140	4030	28.3	4476	42.55	11.07	4420	40.76	9.68	-1.25
Total no. of Specimens	4025	5454	35.5	5571	38.41	2.15	5467	35.83	0.24	-1.87
Total no. of Tissue Blocks	8765	11661	33	13114	49.62	12.46	12464	42.2	6.89	-4.96
LLETZ										
Total no. of Cases:	536	783	46.3	914	70.52	16.58	752	40.3	-4.08	-17.72
Total no. of Specimens	826	1160	40.4	1175	42.25	1.29	910	10.17	-21.55	-22.55
Total no. of Tissue Blocks	2954	4906	66.1	6045	104.64	23.22	4906	66.08	0	-18.84
Colcb										
Total no. of Cases	264	732	177.3	991	275.38	35.38	1014	284.09	38.52	2.32
Total no. of Specimens	285	915	221.5	1214	325.96	32.68	1242	335.79	35.74	2.31
Total no. of Tissue Blocks	345	916	165.5	1216	252.46	32.75	1246	261.16	36.03	2.47

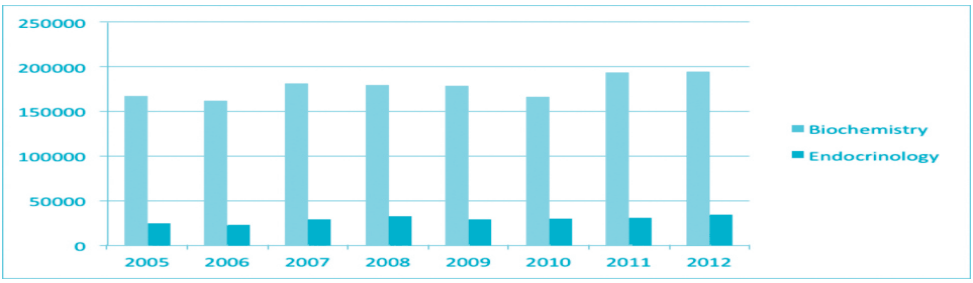
TABLE 7: LLETZ & COLPOSCOPIC BIOPSY GRADING 2012

2011	CIN 1	CIN 2	CIN 3	CGIN/AIS	SCC incl microinvasion	Adenoca
Cases						
LLETZ	209	188	285	6	10	1
COLCB	411	227	131	4	2	0

BIOCHEMISTRY:

Consultant:	Prof Philip Mayne
Chief Medical Scientist:	Ms Rosie Hickey,
	Ms Ann Downey (commenced May)
Senior Medical Scientist:	Ms Asun McGrath,
	Ms Sharon Campbell (commenced September)
Medical Scientists:	Ms Lorna Pentony Mr. Damien Lally,
Laboratory Aide:	Mr Paul Reilly
POCT manager:	Ms Jane Halligan

The overall workload for general biochemistry showed no major change on the previous year and for endocrine testing we saw an increase in tests performed. The overall pattern suggests that there may be a tendency towards opportunistic screening with a 75% increase in lipid testing and a 150% increase in Vitamin D testing. The numbers associated with these investigations are relatively small at present but the adoption of national guidelines and further screening could significantly impact on the workload in future.



Creatinine measurements on both plasma and urine are now performed using the enzymatic method only replacing the traditional Jaffe method which is subject to interference by a number of substances including bilirubin and some drugs.
Spectrophotometric measurement of plasma haemolysis and lipaemia was introduced midway through the year. These measurements feed in to manufacturer-specified cut-offs which have been optimised and verified by the laboratory.

There were some initial difficulties due to the not unexpected increase in the incidence of the reporting of lipaemia, particularly with neonates on TPN. The reflexive reporting of a plasma triglyceride in these instances has aided the interpretation of these findings. Indices measurement has improved the quality of reporting from the laboratory which no longer relies on subjective notation of sample quality.

Reflex testing for anti-thyroxine peroxidise antibody on samples from adult females with a TSH greater than 2.0 mU/L as per HSE guidelines was also introduced.

The Point of Care Testing (POCT) Steering Committee met on a number of occasions during the year. Glucose HemoCue units are provided to the Gynae and prenatal wards and NICU. PSNT commenced using the Haemoglobin HemoCue in March 2012. This has improved discharge times on the ward.

The department including POCT experienced it's first inspection for accreditation by INAB for compliance with ISO 15189 in 2012. All staff are to be congratulated on a successful outcome and thanked for their hard work throughout the year.

TABLE 8: SUMMARY OF BIOCHEMISTRY WORKLOAD 2012				
	Specimen Numbers	% Difference over 2010	Test Numbers	% Difference over 2010
General Biochemistry	40450	-4	195894	No change
Endocrinology (in house)	16553	No change	34073	9
Referred work	3867	No change	8533	-10
TOTAL	**60870**	**-2.4**	**238500**	**4**

Test – marked increase	Change%
Amylase	36
CSF Protein and Glucose	25
Cholesterol	73
Total Bile Acids	30
Vit D	155
Marked decrease	
CK	-23
Gent	-26
Ferritin	-21
Progesterone	-25

TABLE 9: BIOCHEMISTRY WORKLOAD (TESTS) 2005-2012

Total Specimens	2005	2006	2007	2008	2009	2010	2011	2012	% Difference 2005-2012
General Biochemistry	166,818	162,079	180,945	179,892	178,939	178,135	193,228	194,201	**16%**
% Difference over previous year	34%	-2.8%	11.6%	-0.6%	0.4	-0.4%	8.47%	-4%	
Endocrinology	24,625	23,106	29,382	32,449	29,137	30,008	31,192	34,073	**38%**
% Difference over previous year	-16.1%	-6.1%	27.2%	10.4%	-10.2%	3.0%	3.9%	**9%**	
Referred work	2,701	3,690	3,320	2,846	3,334	5,427	4,545	**8533***	**NA**
% Difference over previous year	-55%	36.6%	-10.0	-14.3%	17.1	62.77	-16.3%	**-10%**	**-24.6%**
TOTAL								236,807	

*Some screens i.e. metabolic screens were counted per test as each of these screens were made up of individual tests. These are not fully comparable year-on-year.

HAEMATOLOGY and BLOOD TRANSFUSION:

Consultant:	Dr. Melanie Cotter, Dr Fionnuala Ni Ainle
Chief Medical Scientist:	Ms. Deirdre Murphy
Senior Medical Scientists:	Mr Ciaran Mooney; Ms Deirdre O'Neill Ms Emily Forde
Medical Scientists:	Ms Liliana Rasidovic, Ms Edel Cussen; Ms Noreen Brady; Ms Deirdre Corcoran, Ms Aileen Carr
Laboratory Aide:	Ms. Karen Fennelly

1. In- house workload

Numbers of FBC samples processed during 2012 were broadly similar to those processed in 2011. Of note, FBC samples received from the paediatric OPD department and from the postnatal ward were significantly reduced compared with the previous 12 month period. Coagulation workload was reduced overall, with a ~50% reduction in samples received from the emergency department and a ~30% in samples received from postnatal ward and delivery suite. This likely reflects improved implementation of criteria for coagulation testing by clinical staff. Haemoglobinopathy screening requests rose, likely due to improved identification of target groups. Thrombophilia testing was reduced by 24% following introduction of evidence-based guidelines during the latter quarter of 2012. Further reductions are anticipated, with significant continuing cost savings to the laboratory

2. Referred workload

Overall a 14% reduction was observed, with significant predicted associated cost savings. Of note, new Anti-Xa testing guidelines reflecting contributed to an approx. 50% reduction in requests.

3. Serology

Workload remained broadly similar to last year's. Minor reductions were observed in blood products transfused, samples received for blood grouping, antibody screening and direct Coombs test. Conversely, there was a minor increases in samples referred for flow cytometry. These observations are in line with general hospital activity.

4. Blood Transfusion

A 100% traceability of all blood components issued was again recorded, reflecting a continuing high standard of haemovigilance in the Rotunda Hospital.

TABLE 10: HAEMATOLOGY: IN-HOUSE WORKLOAD 2012

TEST	2012	2011	CHANGE	% CHANGE
FBC				
Total	43735	45041	1306	-2.9
Adult	38291	39953	1662	-4.2
Paeds	5443	5090	-353	6.9
NICU	4066	3927	-139	3.5
POPD	334	383	49	-12.8
OPD	14906	14066	-840	6.0
ER	2133	2129	-4	0.2
DS	1134	1314	180	-13.7
GW	3556	3435	-121	3.5
LILS	1409	1745	336	-19.3
GPN	3038	3714	676	-18.2
PSNT	2341	3951	1610	-40.7
PC	3045	3283	238	-7.2
COAG				
Total	3373	4168	-795	-19.1
Adult	2940	3764	-824	-21.9
Paeds	433	403	30	7.4
NICU	338	323	15	4.6
POPD	18	23	-5	-21.7
OPD	203	246	-43	-17.5
ER	85	187	-102	-54.5
DS	246	365	-119	-32.6
GW	711	849	-138	-16.3
LILS	154	179	-25	-14.0
GPN	451	648	-197	-30.4
PSNT	321	434	-113	-26.0
PC	121	142	-21	-14.8
Theatre	50	66	-16	-24.2
Thrombophilia Screens				
Total	219	287	-68	-23.7
Adult	214	284	-70	-24.6
Paeds	5	3	2	66.7
COAG Clinic	32	32	0	0.0
PC	25	57	-32	-56.1
HARI	25	17	8	47.1
Mocanu	79	95	-16	-16.8
OPD	31	43	-12	-27.9

TABLE 11: REFERRED WORKLOAD 2012

Referred Tests				
Test	**2012**	**2011**	**Change**	**% Change**
Immunology	1225	1561	-336	-21.5
Prothrombin 2 mutation + PS	279	294	-15	-5.1
Lymph Subsets	143	81	62	76.5
Cytogenetics	678	613	65	10.6
Mol Genetics	78	51	27	52.9
Ddimers	14	12	2	16.7
Haptoglobins	4	5	-1	-20.0
Factor Assays	221	193	28	14.5
Xa	64	130	-66	-50.8

TABLE 12: HAEMATOLOGY IN-HOUSE WORKLOAD, 2005-2012

TESTS	2005	2006	2007	2008	2009	2010	2011	2012	% CHANGE OVER 7 YEARS
Tests inhouse	43,113	48,276	52,137	56,016	58,149	63,749	65,469	58565	51.8
% Change over previous year	-13.6	+12.0	+8.0	+7.5	+3.8	+8.59	2.7	-3.9	

TABLE 13: BLOOD GROUP SEROLOGY WORKLOAD 2012

TEST TYPE	NUMBER	% DIFFERENCE OVER 2011
ABO Groups	20527	-10%
Rh Groups	20527	-10%
Antibody screens	17120	-11%
Direct Coomb's Test	3125	-2.6%
Antibody Identification panels	1232	-31%
Genotypes-5.1	426	-24%
Titres74	-50%	
T Activation	0	-----
Elutions	51	4%
Weak/Partial D Typing	30	-46%
Flow Cytometry	885	9%
Total Tests	**63,997**	**-10%**

DETAILS OF ANTIBODIES DETECTED 2012

Antibody	No of patients
D+C	3
Auto e	1
c	1
C	1
Cw	7
Cw+ Jka	1
D	12
D+C+Fya	1
D+E	1
D+G	1
E	7
e	2
E+c	3
Fya	1
Jk3	1
K	6
Lea	3
Leb	1
M	14
s	1
TOTAL	**68**

TABLE 14: BLOOD GROUP SEROLOGY FIGURES OVER LAST 7 YEARS

Tests	2005	2006	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**% Difference 7-year**
Tests	48,220	51,648	57,245	66,429	65,108	69,708	71,483	63,621	
% Change from previous year								**-10%**	**+32%**

TABLE 15: BLOOD TRANSFUSION WORKLOAD 2012

TESTS	2012	% DIFFERENCE OVER 2011
Group/save	5894	-5.9
X-match performed; units	1844	-4
Patients x-matched(Adults)	609	-1
Units Transfused(adults)	517	-16
Patients Transfused	199	-14.6
X-match transfusion ratio	2.6:1	-0.5
IUT blood	8 units	Small Nos
Pedipacks	142 babies rec'd 439 units	No change
Specimen	5894	-14
Wastage		
Red cell (concentrated)	3.5 %	1.4%
Platelets	11.1%	-15%
Plasma	7.5%	+7.5%
Transfused Components		
Plasma Adult	187	186%
Plasma Paediatric	55	12.2%
Platelets-Adult	9	-60% (Small Nos)
Platelets-Paed	46	142%
Fibrinogen-Adult	27	No change
Fibrinogen-Paed	38	192%
Novo seven Adult	-	-------
Novoseven-Paed	-	-----
Factor 8	0	-------
Anti-D	1560	No change
Total tests	**7738**	**-5.5%**
Total Specimens	**6503**	**-5.5%**

CLINICAL MICROBIOLOGY

Consultant:	Dr. Suzanne Corcoran Prof Mary Cafferkey (locum cover for leave)
Specialist Registrar:	Ciara Keating & Sarah Bergin
Associate Paediatric Specialist in Infectious Diseases:	Dr Wendy Ferguson
Chief Medical Scientist:	Mr David LeBlanc
Senior Medical Scientists:	Ms Niamh Cahill (Feb-Dec), Ms Deirdre Cafferty (May-Dec)
Medical Scientists:	Ms Ita Cahill (0.5), Ms Patricia Baynes, Ms Ann Lamont, Ms Bernadette Lennon (0.5), Ms Ellen Lennon, Ms Gemma Tyrrell (Jan-April), Ms Anne Dalton (Jan-May), Mr John Williams (Jan-March), Mr Michael Hennessy (July-Sept).
Laboratory Aide:	Ms Grainne McDonald
Assistant Director of Midwifery/Nursing, Infection Prevention and Control:	Ms Marian Brennan
Infection Prevention and Control Midwife:	Ms Alva Fitzgibbon
Infectious Diseases Liaison Midwife:	Ms Mairead Lawless.

TABLE 16: Overall Microbiology Workload in 2012 compared with 2011

	2012		% change	
	Tests	Specimens	Tests	Specimens
Testing in-house				
General Microbiology	87,052	47,790	7.63	7.62
Virology/Serology	33,091	13,676	-32.57	-14.84
Total tested in-house	120,143	61,466	-7.55	1.66
Referred				
Rubella	10871	10871	-5.31	-5.31
VZG	9568	9568	***	***
Treponemal tests	10273	9921	-5.53	-4.94
Confirmation and other specialist tests referred externally**	11186	4533	27.91	23.99
Total Referred	41898	27075	19.11	0.54

GENERAL MICROBIOLOGY WORKLOAD
The increased activity and increased complexity of the hospital workload and that of the Neonatal Unit contributed significantly to continuing high workload.

The numbers of swabs at first instance appear down by 11.41%, but this is due to the fact that screening swabs (Rectal & MRSA) were removed from this category and put in a category of their own. Screening swabs are up by 37.37% on the previous year. Urine specimens are slightly down by 2.6%, with also a reduction in pregnancy testing by 4.55%. There is a big increase in both CSF (26.5%) and Blood Culture (11.36%) testing, however the cultures for placenta are significantly down (-64.95%) due to the fact that these numbers were reduced during the course of 2012 as a cost saving initiative. Specimens for testing for Chlamydia trachomatis PCR increased significantly as did N. gonorrhoea PCR analysis. These tests were up by 98.53% on the previous year. There was a new category of tests introduced in 2012 called IQA (Internal Quality Assurance), which is a required standard for ISO: 15189 Accreditation. Overall there has been a 7.62% increase in clinical Microbiology specimens and a 7.63% rise in clinical Microbiology tests.

General Microbiology was inspected by INAB in early 2012 and again in late 2012 and was fully compliant. These inspections were an extension to the existing scope for the department and resulted in full ISO: 15189 Accreditation been awarded in all areas examined.

SURVEILLANCE SCREENING
In line with best practice and in the interests of patient safety, screening for multi-drug resistant organisms (MDRO's) including MRSA, VRE, ESBL's and CRE in identifiable 'at risk' groups in adults continued in 2012.

2012 saw continued surveillance screening for the entire hospital. This included figures for adult & paediatric blood cultures, figures for Chlamydia and N. gonorrhoea PCR, and screening of the NICU for resistant Coliforms, VRE, pseudomonas, Candida and MRSA. All these figures are presented at the NICU and infection control meetings, which take place quarterly.

Also presented at these meetings are any infection clusters (Influenza, Norovirus etc), all EARSS data and resistance patterns on various antibiotics.
Surveillance of the adult blood cultures saw a continuation of contamination among the positive blood cultures (4.15%) although this was a marked reduction from 2011 (8.04%). A contamination rate of <3% is desirable. This had led to the infection control team to look at novel ways of reducing these numbers and so preventing unnecessary treatment.

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

During 2012 the rectal screening of the NICU yielded 7 Gentamicin resistant Coliforms, 10 AmpC producing Coliforms, 4 ESBL producing Coliforms, 12 P. aeruginosa and 69 Candida sp. This was the first year that the resistant Coliforms were grouped as either AmpC or ESBL producers and so it is difficult to compare with 2011, which had 13 Cefotaxime resistant Coliforms. Candida was cultured in 69 patients (11.3%), compared with 7.8% in 2011. There was a total of 12 P. aeruginosa isolated from the NICU in 2012 representing a 1.97% isolation rate compared with 0.36% in 2011. There was no VRE or CRE isolated in 2012.

Screening for MRSA continued, yielding a total of 33 positives in 2012, 5 of which were in the NICU. These results are similar to previous years and the Rotunda continues to enjoy low rates of MRSA among patients due to its policy of 'seek and destroy'. Occupational health continues to yield high numbers of positive MRSA, highlighting the continued need to screen all new staff at clinical areas. Quarterly reporting of EARSS organisms continued in 2012 and results were as follows. 18 E. coli, 2 E. feacalis, 6 S. aureus (No MRSA), 1 P. aeruginosa and no K. pneumoniae, E. feacium or S. pneumoniae. All positive isolates were isolated from Blood Cultures and not from CSF cultures.

There was no case of invasive infection with multiple antimicrobial resistant Gram-negative bacilli in the Neonatal Unit throughout 2011 and this continued in 2012.

TABLE 17: CLINICAL MICROBIOLOGY WORKLOAD IN 2012 COMPARED WITH 2011 BY SPECIMEN TYPES AND TEST NUMBERS

Specimens	**2012**	**% Difference over 2011**
Urine	21792	-2.6
Swabs	10206	-11.41
CSF	296	26.5
Blood Cultures	2509	11.36
Placenta	375	-64.95
Semen	1912	-4.02
Pregnancy Tests	126	-4.55
Screening	6539	37.37
Chlamydia trachomatis NeisseriaG PCR	3109	98.53
Total specimens	**47790**	**7.62**
Tests		
Urines	35926	1.39
Swabs	20412	-11.41
CSF	643	31.22
Blood Cultures	2509	11.36
Placenta	375	-64.95
MRSA Screen	5720	-15.36
Rectal Screen	7358	166.4
Semen	4600	-4.66
Antimicrobial Cards	2254	9.15
Pregnancy Tests	126	-4.55
Chlamydia trachomatis	3109	98.53
GC PCR	3094	551.37
IQA	926	No figures
Total Tests	**87052**	**7.63**

VIROLOGY/SEROLOGY WORKLOAD

The virology/serology for the HARI Unit continues to be performed in the virology/serology section of the Microbiology laboratory. Under the EU Tissue Directive, it is a legal requirement that this testing can be only performed in a laboratory that is fully accredited to ISO. The laboratory was again inspected by INAB in 2012, and continues to enjoy ISO: 15189 Accreditation. Following the November inspection, serology reports were changed from 'Negative' to 'Not Detected' and 'Positive' to 'Detected'.

The number of antenatal booking bloods tested is similar with the number for 2011, however the overall in-house virology testing is down on 2011. Overall virology testing is down by 21.96% and this reflects a large decrease in virology testing from the HARI unit, due to new national policy in blood screening for IVF patients. CMV IgG testing is down by 44.76% and best reflects this drop in HARI blood testing. The number of specimens referred for testing at outside laboratories increased by 0.54% with an increase of 19.11% in lab tests. This is best represented by the fact that testing for Varicella Zoster IgG which was traditionally done in-house, is now been sent to the NVRL for analysis.

COMMENTS ON REFERRED SEROLOGY WORKLOAD

The situation whereby for historical and financial reasons outside our control, bloods for screening for Rubella, Varicella Zoster IgG and Treponema pallidum (syphilis) are referred to two outside laboratories continued in 2012. This situation exists because it has not proven possible to secure the budget from the funding agency (the HSE) to perform this testing at the Rotunda. 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, which can cause delays in reporting. To reiterate from the 2011 report, it would be both time-efficient and cost-effective to perform Rubella, VZ IgG and the Treponema screening tests in-house, with only problematical samples referred and those testing positive on screening for confirmatory and/or additional testing. It is important to note, that the analyser for performing all these tests is already in operation in the Rotunda performing other vital tests and is fully ISO: 15189 compliant, something the referral laboratories do not enjoy.

TABLE 18: WORKLOAD IN VIROLOGY/SEROLOGY 2012

Tested in-house	2012	% Change over 2011
HIV	11738	-16.74
HbsAg	11736	-16.88
Hepatitis B Core	2527	-39.15
HepC Antibody	4849	-20.00
CMV IgG	2067	-44.76
Hep B core - vidas	81	-24.30
VZ IgG - vidas	93	-497
Total	**33091**	**-32.57**
Specimens Referred		
Referral laboratory 1		
TPE	9921	-5.53
RPR	144	12.5
TPEM	64	28.0
TPPA	144	13.39
Sub Total (a)	**10273**	**-4.94**
Referral laboratory 2		
Rubella	10871	-5.31
VZ IgG - Liason	9568	13.89
Sub Total	20439	30.81
Confirmation and other specialist tests referred externally	11186	27.91
Total referred	**41898**	**19.11**

CHANGES IN LABORATORY EQUIPMENT AND TESTING PROCEDURES
INTRODUCTION AND VALIDATION OF A NEW SYSTEM FOR BATCH ACCEPTING OF REAGENTS

From January 2012 all reagents, kits and media (agar etc) were recorded electronically on the LIMS using a unique identifier and assigned a laboratory specimen number (MQ number). The purpose of this was to record electronically internal quality assurance of these reagents. Previously the IQA was recorded on paper, which was cumbersome and time consuming and accumulated excessive paperwork. This has all been eliminated now and records are much tidier and more readily available to view. It has also meant that the work put in by the staff can be quantified and compared yearly. IQA or batch acceptance is a standard required by ISO: 15189 for accreditation.

INTRODUCTION OF NEW QUALITY CONTROLS FOR TRAINING ON URINES AND CSF

2012 saw the introduction of internal quality controls for both urine microscopy and CSF microscopy for the purpose of training both new microbiology staff members and also non-microbiology scientists for on-call. These controls are an important tool in not only training but also to control the counting chambers in which these tests are performed. The introduction of these controls eliminated the need to make up mock samples for the purpose of training and quality. These controls have a multi-purpose use and are also employed as a positive and negative control to QC pregnancy tests.

VITEK 2

The VITEK 2 compact software was upgraded during 2012 and is now fully compliant for both CLSI and EUCAST susceptibility testing. Although CLSI was still used during 2012 it is hoped that validation of both the Vitek and Disc diffusion for EUCAST will begin in early 2013.
A number of new Vitek antimicrobial cards were introduced during 2012, which contained new antibiotic formulas and concentrations, which replaced older concentrations. These were all fully validated and implemented into the working day.

SEMEN ANALYSIS

The SQA-V semen analyser was upgraded to the new WHO recommendations for semen analysis. This was fully validated, tested and implemented during the middle part of 2012. This involved retraining of all staff members on the new recommendations and reference ranges provided by the WHO. It involved rewriting procedures and methods and informing the users of the change over and rewording of specimen report forms. It is hoped that semen analysis will be added to the scope of accreditation for 2013.

COMPUTERISED INFECTIOUS DISEASES REPORTING (CIDR)

Reporting of all notifiable diseases continued in 2012 using the CIDR link and the list of notifiable diseases was updated in early 2012.

Group B Streptococcus
A new chromogenic agar media was validated in 2011 for the isolation of Streptococcus group B. This has increased our turnaround time (TAT) in reporting of GBS isolates in patients. All vaginal swabs on pregnant patients will now routinely be screened for GBS using the chromogenic agar, and other specimens on request. This was introduced in 2012 as a cost saving initiative and to improve TAT. It has reduced the need to perform costly manual grouping on these isolates. It is hoped that this will ultimately reduce the numbers of paedriatic sepsis with GBS.

Blood cultures
The recording of blood volumes of paediatric blood added to blood culture bottles was introduced in July 2012 to estimate if volume has an impact on rate of positivity. This continued throughout 2012.

Chlamydia Study
The Chlamydia study took place in 2012 on all patients <27 years of age. It involved testing first void urine for both CT and GC PCR. There was about a 50% uptake in the study and the DOVE team headed by Dr Jack Lambert are due to publish the findings in 2013. For 2012 the rate of positive CT among the patients tested at the Rotunda was roughly 3% and 0.3% for GC. These figures are roughly in line with national figures.

New Equipment
A new fridge for storing of agar and growth media was procured in 2012; it replaced an over 10-year-old fridge, which consistently failed calibration tests, leaving it no longer fit for purpose.

CLUSTERS OF UNUSUAL INFECTION AND INVESTIGATION OF THESE OUTBREAKS

MRSA

The VITEK 2 compact software was upgraded during 2012 and is now fully compliant for both CLS
595 neonates (NICU) screened yielding 5 positives = 0.84%
673 adults (including staff) screened yielding 18 positives = 2.7%. Ten further patients cultured positive for MRSA from routine clinical specimens. This means a total of 33 patients or staff members were found to be either colonized or infected by MRSA in 2012.

PSEUDOMONAS AERUGINOSA

There was a total of 12 P aeruginosa isolates from the NICU in 2012. This marked a large increase from previous years (2 in 2011). February yielded 3 with November and December yielding 5 in total. All the isolates were sent out to the HPA Colindale for typing and results revealed that all strains were genetically distinct. The laboratory remains vigilant to identify any isolates in clinical specimens from the NICU, and the situation is being kept under review.

INFLUENZA & NOROVIRUS

Influenza and Norovirus continue to be a challenge for hospital staff and patients throughout the country. Fortunately there were no major clusters of either within the Rotunda. There were a total of 2 positive Norovirus results for the whole of 2012, both in October and unrelated. There was a total of 18 Positive Influenza A and 5 Influenza B in 2012. 16 of the Influenza A positive results were in the months of January and February, when national numbers are at their peak. Influenza B numbers peaked in December 2012 with the Rotunda reporting 4 cases.

TABLE 19: SEROLOGY TESTING

	2012 tests	2011 tests	Diff nos	% change
VZGL	9568	4144	5424	130.89
VZDR	0	6203	-6203	-100.00
VZVR	93	590	-497	-84.24
Total VZ	9661	10937	-1276	-11.67
TPE	9921	10502	-581	-5.53
RPR	144	128	16	12.50
TPPA	144	127	17	13.39
TPEM	64	50	14	28.00
Total TP	10273	10807	-534	-4.94
Rubella	10871	11481	-610	-5.31
Rubella & VZ total (VRL)	20439	15625	4814	30.81
Tested In-House				
HIV	11738	14098	-2360	-16.74
Hep B	11736	14120	-2384	-16.88
Hep B core	2527	4153	-1626	-39.15
Hep C	4849	6061	-1212	-20.00
CMV	2067	3742	-1675	-44.76
HBCVR	81	107	-26	-24.30
Total	32998	42281	-9283	-21.96
NVRL (confirmatry tests)	1398	985	413	41.93
Total Serology In-House	33091	49074	-15983	-32.57
Total Samples In-House	13676	16059	-2383	-14.84
Referred Tests (others)	9788	7760	2028	26.13
Referred Specimens (others)	4533	3656	877	23.99
Total Reffered Tests	41898	35177	6721	19.11
Total Referred Specimens	27075	26929	146	0.54
Total Tests	74989	84251	-9262	-10.99
Total Specimens	40751	42988	-2237	-5.20

TABLE 20 MICROBIOLOGY TESTING

	2012		2011		Difference numbers		% Change	
	Tests	Specimens	Tests	Specimens	Tests	Specimens	Tests	Specimens
MSU	27674	13761	28490	14129	-816	-368	-2.86	-2.60
First visit	8252	8031	6944	6740	1308	1291	18.84	19.15
Total Urine	35926	21792	35434	20869	492	923	1.39	4.42
Pregnancy Tests	126	126	132	132	-6	-6	-4.55	-4.55
Blood Cultures	2509	2509	2253	2253	256	256	11.36	11.36
Placenta	375	375	1070	1070	-695	-695	-64.95	-64.95
Total Blood culture	2884	2884	3323	3323	-439	-439	-13.21	-13.21
CSF	643	296	490	234	153	62	31.22	26.50
Semen	4600	1912	4825	1992	-225	-80	-4.66	-4.02
CT PCR	3109		1566		1543		98.53	
NG PCR	3094		475		2619		551.37	
Total PCR	6203	3109	2041	1566	4162	1543	203.92	98.53
IQA	926	926	9	9	917	917	10188.89	10188.89
MRSA	5720	2860	6758	3379	-1038	-519	-15.36	-15.36
Rectal	7358	3679	2762	1381	4596	2298	166.40	166.40
Total Screens	13078	6539	9520	4760	3558	1779	37.37	37.37
Swabs	20412	10206	23042	11521	-2630	-1315	-11.41	-11.41
Antimicrobial Sensitivities cards	2254		2065		189		9.15	
Total	87052	47790	80881	44406	6171	3384	7.63	7.62

PUBLICATIONS:

1. Retinal vasculopathy in autosomal dominant dyskeratosis congenita due to TINF2 mutation.

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Br J Haematol. 2012 Dec;159(5):498. doi: 10.1111/bjh.12088. Epub 2012 Oct 24. No abstract available.

PMID: 23094712 [PubMed - indexed for MEDLINE]
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2. Tinzaparin is safe and effective in the management of hemodialysis catheter thrombosis.

Quinlan C, Bates M, Cotter M, Riordan M, Waldron M, Awan A.

ASAIO J. 2012 May-Jun;58(3):288-90. doi: 10.1097/MAT.0b013e31824c38c8

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Arch Dis Child. 2012, Aug 97(8): 692 – 7

5. Hickey L, Murphy A, Devaney D, Gillan J, Clarke T. The Value of Neonatal Autopsy. Neonatology 2012. 101: 68-73

PRESENTATIONS AND POSTERS

An Audit of the Quality of Autopsy reporting in the Rotunda Hospital – A J McCarthy, D Devaney, E Doyle.
Poster presentation at the 2nd Irish Congress of Obstetrics and Gynaecology 30th November 2013

Acute Megakaryoblastic Leukaemia in association with Down Syndrome: A series of three cases – K O Connor, D M Devaney, E M Doyle – Poster presentation at 2nd Irish Congress of Obstetrics and Gynaecology 30th November 2013.

Classification of Stillbirth – Invited Speaker at 'Stillbirth – Causes, Prevention and Management'
22nd November 2012 Lagan Valley Island, Lisburn.

Testing for fetomaternal haemorrhage by acid elution can yield false positive results in the presence of elevated maternal fetal haemoglobin. Junior Obstetrician and Gynaecology Society conference 2012 (Poster)

Hughes R, Devaney D, Ichthyosis Prematurity Syndrome. Poster Presentation Nov 2012. 2nd Irish Congress of Obstetrics, Gynaecology and Perinatal Medicine (ICOGPM) Wicklow, Ireland

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. Irish Perinatal Society conference December 2012 (Oral) Doyle A, Donnelly J, Cooley S, Campbell S, Murphy D, Corcoran D, Kumpel B, Ní Áinle F.

Donnelly G, Gartska M, Ní F, Áinle Hayes NE, Mc Caul C. Acceptance of blood products and haematological support in pregnant Jehovah's Witnesses in an obstetric tertiary referral centre: A retrospective review. Haematology Association of Ireland conference 2012 (poster)

Ryan-Enright S, Murphy D, Ní Áinle F. A survey of blood crossmatching practice in patients admitted with placenta praevia to the Rotunda Hospital from Jan 2011-June 2012. Haematology Association of Ireland conference 2012 (poster)

Kevane B, Cullen M, Donnelly J, Bowen M, Loughrey J, Savage R, Doran E, Walsh K, McKenna P, Ní Áinle F. Haematological issues in Obstetric patients with Cardiac Disease. Haematology Association of Ireland conference 2012 (poster)

Ní Áinle F, Johnson J, Gleeson EM, Kenny BA, O'Donnell JS, Preston RJS. High-density lipoprotein enhances activated protein C cytoprotective signaling on endothelial cells. North Dublin Research Group conference 2012 (poster)

Glennon K, Cooley S, Ní Áinle F. Multidisciplinary management of bleeding disorders in the Rotunda Hospital. Junior Obstetrician and Gynaecology Society conference 2012 (Poster)

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Cyto-Histological correlation. Irish Society of Surgical Pathology, September 2012.

Infection Prevention and Control

INTRODUCTION

Infection control is about 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. The core Infection Prevention and Control and Team (IPCT) comprises a temporary 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. This IPCT liaise 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. Much additional work relating to Infection Prevention and Control was progressed through the Property Committee, the Quality Committee, the Hygiene Services Committee the Neonatal Infection Prevention and Control working group and the Decontamination Committee.

INFECTION PREVENTION AND CONTROL PROGRAMME FOR 2012

The Infection Prevention and Control programme for 2012 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 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

A similar study day for maternity care assistants was undertaken by the IPCMs in conjunction with the Decontamination manager.

Attendance is recorded, however due to staffing level difficulties the numbers of people who attended these study days remained suboptimal.

Hand hygiene Education
The importance of hand as the most important contributor to preventing healthcare associated infections is well documented. The IPCMs continued their efforts to impress this fact upon all staff.

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. On three occasions (in February, May and September) open days were held for all. Here staff was 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 ultra violet "glo germ box".

Records of staff attending hand hygiene education are maintained with the support of the HR department. Non attendees can be identified and targeted. The number of staff who had hand hygiene education in 2012 increased to 71% from 43.6% the previous year.

Since June 2012 attendance at hand hygiene education is reported to the Hygiene Committee per discipline per quarter.

Hand Hygiene Audits
Hand hygiene audits are carried out throughout the Hospital on a regular basis in all departments, with twice monthly audits in the NICU.

During the months of June and October 2012, the IPCMs were required for the National Hygiene Audit, to measure healthcare worker compliance against 30 hand hygiene opportunities for each of the 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 >85 % compliance in 2012.

Compliance rate in June was 83.3% and in October 86.1%.

Auditing of decontamination of medical equipment
During the first half of 2012 the decontamination and infection control teams developed an electronic database which facilitates the auditing of all pieces of medical equipment in each department. Auditing commenced in the September 2012. Ward managers, infection control link midwives and care assistants are involved with the IPC/decontamination team when carrying out the audits.

Audits are carried out in high risk areas monthly: NICU, Delivery Suite, ER, Theatre and CSSD.

All other areas are considered low risk areas and are audited at 3-monthly intervals.

Results are available on a traffic light system and can be downloaded on the intranet. These results are presented at CMM 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, ESBLs and CRE 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 2012, MRSA was detected in 5 babies. All instances of infection and/or carriage with MRSA were documented, reviewed at meetings of the IPCT and the Neonatal IPC bimonthly team meetings, and reported to the IPCC. Review of the cases did not find an epidemiological link, i.e. there was no evidence of cross infection.

There were 7 babies with gentamicin resistant and 4 babies with extended spectrum B-lactamase producing Gram negative bacilli isolated on rectal screening.

The incidence of colonization with Pseudomonas aeruginosa increased significantly during 2012. There were 12 cases in 2012, compared with 2 cases in 2011 and 3 cases in 2010. Results from the specialist laboratory in Colindale, UK found that all strains from either clinical or environmental samples were genetically distinct i.e. there was no evidence of an outbreak.

In early 2012, in light of recent P. aeruginosa outbreaks in the North of Ireland and an alert from the HSE to all neonatal units in the Republic, to remain vigilant and investigate any potential clusters of infection with this organism, the IPC team undertook an investigation to look for any potential environmental source including water samples, disinfectants etc. with negative results. All practices surrounding the use of sinks, respiratory ventilation and humidification were reviewed and are in accordance with best practice. Surveillance of all ventilated infants' secretions was reintroduced on a weekly basis in the unit. Staff awareness was increased. In addition, a waterless system milk thawing/ heating was introduced.

REVIEW OF THE HIQA NATIONAL STANDARDS ON PREVENTION OF HCAIS

The IPC team in conjunction with the Quality and Safety committee carried out a full review of the HIQA National Standards on the prevention of healthcare associated infections. This was a lengthy project which involved the development of appropriate self assessment teams for each standard. For each criterion, the self assessment team considered:

- Structures and processes currently in place
- How well the current system and processes are operating i.e. are the desired outcomes being achieved through the monitoring of national performance indicators as outlined in the National Service Plan

- Any unique or innovative practice which would be of benefit to share as good practice
- Any inadequacies / inefficiencies within the current system / processes and any outcomes which are not being achieved.
- The overall gaps, deficits or barriers which are impeding progress and improvements being made in a particular area

A quality improvement plan required to improve compliance with the standard was developed.

The report created included a score for each criterion. The overall score was 92%.

This report was presented to the Hospital Executive Management Team at the IPC Committee meeting. It was also returned to the HSE DNE.

Work continues on the quality improvement plans to increase compliance with the standards.

National Point Prevalence Study

In May 2012, The Rotunda Hospital was one of 50 acute Irish hospitals (42 public and eight private) that participated in the voluntary European Centre for Disease Prevention and Control (ECDC) point prevalence survey (PPS) of hospital-acquired infections (HAI) and antimicrobial use (AMU).
The survey was coordinated in Ireland by the Health Protection Surveillance Centre (HPSC). The HPSC is the national centre for the surveillance of infections in Ireland. The survey has been carried out across the European Union.

During April 2012, staff members went to a training day, where they were taught how to perform the survey.

The survey was done for the following reasons:

1. To count the number of patients with an infection, which may have occurred as a result of being admitted to hospital, i.e. a 'hospital-acquired infection' (HAI).

2. To count the number of patients in the hospitals who were prescribed antibiotics.

At the Rotunda Hospital the prevalence of HAIs was 4.59%, which is slightly below the national average of 5.17%. However, the rate was higher than in the other two maternity hospitals (see table below)

The prevalence of patients receiving antimicrobials was 18.88% which compared favourably to a 34.42% rate at national level and was similar to results from the other maternity hospitals.

Performance targets were developed and are being worked on by the IPC team.

Table 1: National Point Prevalence Study

	Total patients surveyed	Number/Prevalence of patients with HAI	Number/Prevalence of patients receiving antimicrobials
National (all hospitals surveyed)	9030 (100%)	497 (5.2%)	3108(34.4%)
Rotunda Hosptial	196 (100%)	9 (4.6%)	37 (18.9%)
Coombe			
Women's	195(100%)	8 (4.1%)	43 (21.8%)
Hospital			
National Maternity Hospital	920 (100%)	4 (2.3%)	31 (18.1%)

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. There is a Pharmacist present on all rounds who is also responsible for collecting data for antimicrobial audit purposes. In 2012 the team reviewed approximately 1138 patients receiving antibiotic treatment and approximately 160 interventions were made. About 60% of interventions related to issues with the choice of antibiotic or deviations from the hospital guideline. The remainder of interventions related to a combination of issues involving antimicrobial frequency, dose, and route as well as poor recording of indications and duration of treatment. The Pharmacy department contributes antimicrobial consumption data to a national surveillance system coordinated by the Health Protection and Surveillance Centre.

Ultrasound, Fetal Assessment & Prenatal Diagnosis Clinics

CONSULTANTS:

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

MATERNAL FETAL MEDICINE FELLOW:

DR. KAREN FLOOD

MIDWIFE SONOGRAPHERS:

IRENE TWOMEY CMS
GEMMA OWENS S/M
DEIRDRE NOLAN S/M
HILDA O'KEEFFE (PERINATAL IRELAND RESEARCH SONOGRAPHER)

RADIOGRAPHERS:

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

FETAL MEDICINE MIDWIVES:

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

MEDICAL SOCIAL WORKER:

DEIRDRE KEEGAN

ADMINISTRATION

ANITA O'REILLY
SUZANNE LARKIN
MARY MAGUIRE

2012 was another busy year in the Ultrasound, Fetal Assessment (FAU) and Prenatal Diagnosis (PND) clinics.

The core ultrasound services in The Rotunda Hospital in 2012 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. The PORTO Trial ended in May and the Genesis Study commenced in October.
A total of 1,103 serial scans were performed.

DEVELOPMENTS IN 2012

- Sonographer Gemma Owens completed her Masters in Obstetric & Gynae Ultrasound.
- Dr. Karen Flood completed her Fellowship.

NUMBER OF OBSTETRIC SCANS

20 Week Scan	8,821
Growth Scan	7,435
Echocardiogram	139
Others	1,238

NUMBER OF GYNAECOLOGICAL SCANS	**1,306**
Total	18,939

FETAL ASSESSMENT UNIT

Drs. Holohan, Gleeson, and Gaughan with CMM2 Nollaig Kelliher and S/M Joan O'Beirnes provided longitudinal follow up for women with high risk pregnancies in the Fetal Assessment Unit. These were a diverse group of patients including women with obstetric cholestasis (34), preterm pre-labour rupture of membranes (36), IUGR (26), multiple pregnancies (113) and breech presentation (53). Fetal biometry, biophysical score (674), CTG (534) and serial laboratory evaluation facilitated outpatient management. Altogether there were 1,520 attendances.

PRENATAL DIAGNOSIS CLINIC

In 2012 1,212 new patients attended for Prenatal Diagnosis. Drs. Geary, Barry, Breathnach, Cooley and Prof. Malone with CMS Jane Dalrymple, CMM2 Nollaig Kelliher and S/M Joan O'Beirnes operated 7 clinics per week.

There were 2712 attendances as some patients were followed longitudinally. All patients had an ultrasound scan. In addition the following tests were performed:

Combined First Trimester Screening	1,113
Second Trimester Screening (Intmark)	72
Amniocentesis	163
Chorionic Villus Sampling	120

Of the 283 diagnostic procedures performed, there were 56 abnormal results representing 19.8 % of invasive tests.

Abnormality	CVS	Amnio	Total
Trisomy 21	14	14	28
Trisomy 18	8	5	13
Trisomy 13	2	2	4
45X	3	1	4
Triploidy	1	-	1
Klinefelters	-	1	1
Zellweggers	-	1	1
Pallister Killian	-	1	1
Myotonic Dystrophy	1	-	1
Sickle Cell	-	1	1
Osteopathia Striata	1	-	1
Total	**30**	**26**	**56**
Failed Culture	-	2	
	-	.7%	

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

Fetal Bladder Shunts	4
Cordocentesis	16
Intrauteine Transfusion	12
Laser Ablation (see Note Below)	16
Total	**48**

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 2012, a total of sixteen cases of severe TTTS were managed by the Dublin Fetal Surgery Group by means of fetoscopic laser ablation of placental vessels. In nine of the sixteen cases (56%), both fetuses survived with normal paediatric outcome. In five of the sixteen cases (31%), both fetuses died shortly after the procedure or before reaching viability. In two of the sixteen cases (13%), the donor fetus died shortly after the procedure and the recipient fetus survived with normal paediatric outcome. In total therefore, overall neonatal survival was 63%. 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, 154 cases of major structural abnormalities were detected and followed. These include:-

Cardiac	20
CNS	28
Renal	37
Abdominal	7
Skeletal	15
Multiple	17
Head / Neck incl. Cystic Hygroma	10
Thoracic	17
Other	3
Total	**154**

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 139 targeted fetal echocardiograms were performed within the Department in 2012.

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 2012, 297 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 2012 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**
Atrioventricular septal defects	20	28
Hypoplastic left heart syndrome	12	7
Hypoplastic right heart syndrome	2	9
Outflow Tract Abnormalities	28	11
Isometric Heart Lesions	3	2
Others	4	8
Total	**69**	**65**

There were also 11 cases of fetal cardiac arrhythmia identified and followed through this clinic.

Multiple Pregnancy:

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

Multiple Pregnancy	
Monoamnionicity	2
MCDA with Normal Ultrasound	21
Twin to Twin Transfusion	18
MCDA with Discordant Growth	10
MCDA Discordant for Structural Abnormality.	1
DCDA with Discordant Growth	4
DCDA Discordant for Structural Abnormality	7
MCTA Triplets with Normal Ultrasound	1
DCTA Triplets with Normal Ultrasound	3
DCTA Triplets Discordant for Structural Abnormality	3
TCTA Triplets with Normal Ultrasound	1
Total	**71**

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

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

Additional Cases Followed in Prenatal Diagnosis Clinic:

PPROM 1st & 2nd Trimester	9
IUGR (Severe 2nd trimester)	23
Polyhydramnios	4
Rhesus	5
Antibodies	20
CMV	2
Toxoplasmosis	2
Parvovirus	12
Soft Marker Normal Outcome	33
High Risk Screen Normal Outcome	69
Total	**179**

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 6 years for the clinic are presented.

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

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

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

	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

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

	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

	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

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

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

Comment

The caesarean section rate in the teenage population is 17.4%. All of the emergency caesarean sections were performed in those being induced and the figure is a reflection of the increased induction rate this year. On reviewing the inductions 13 were performed for post dates, 5 for PET, 3 for IUGR, 3 for oligohydramnios, 6 for prelabour SROM and 2 for reduced fetal movements.

Attendance at the postnatal clinic increased and we inserted a mirena IUS into 28% of those who attended. Chlamydia positive rate was 14.1% which is high in this young population.

There was 1 neonatal death due to anencephaly. Three babies weighed above 4.5Kg and 3 babies had IUGR at term.

Mental Health Services

DR JOHN SHEEHAN
MARGARET SHERIDAN RM
KATHLEEN O'DONOHOE RM
LOUISE RAFFERTY RM

In 2012, a number of significant changes occurred in the mental health service. Ms. Margaret Sheridan retired at the end of February after working for over 25 years in the Rotunda, 11 of which were as a Support Midwife in Mental Health. She was a pioneer in developing the Support Midwife service, the first of its kind in Ireland. Along with Dr. Sheehan, she oversaw the introduction of postnatal screening in the Rotunda using the Edinburgh Postnatal Depression Scale (EPDS) and she established the Health Promotion Clinic. She promoted awareness of mental health through the education of trainee midwives. She had a positive effect on the lives of many mothers and their babies attending the Rotunda and was held in high esteem by all.

Ms. Sheridan was replaced by Ms. Kathleen O'Donohoe who commenced work as a Support Midwife in the Rotunda in August 2012. Previously, Ms. O'Donohoe trained as a general nurse, midwife and public heath nurse. She has a degree in Counselling and Psychotherapy and brings considerable skills and experience to the mental health service.

An audit was conducted by Ms. Louise Rafferty on the use of the EPDS on the Postnatal and Lillie wards. The audit highlighted areas for improvement which have been implemented. Ms. Rafferty also presented at the Royal College of Midwives and INMO international conference in Armagh.

In March, a woman in late pregnancy with twins and depression died tragically. At the Inquest, the Coroner delivered an open verdict.

During the year, all team members were involved in the education and training of medical students, midwifery students, midwifery interns and public health nurses.

Finally, in 2012, Dr. Sheehan saw 97 new patients and 208 review patients in the OPD. The midwives saw 579 patients in the Health Promotion Clinic and 1305 patients on the wards. The number of patients seen is very large and reflects the need for mental health services in the patient group attending the Rotunda.

Combined Service for Diabetes Mellitus

DR MARIA BYRN,	Consultant Endocrinologist
DR SHARON COOLEY	Consultant Obstetrician
DR FIONNUALA BREATHNACH	Consultant Obstetrician
JACKIE EDWARDS	Diabetes Midwife Specialist
AILEEN FLEMING	Diabetes Midwife specialist
CLARE KEARNEY	Diabetes Midwife
LAURA HARRINGTON	Registered Dietitian
AILBHE MC CARTHY	CNM1 Research

PREGESTATIONAL DIABETES MELLITUS
Rotunda Hospital 2012

Type 1 Diabetes	***(n=27)***		
Pregnancies	27		
Spontaneous Abortions	4		
Preterm deliveries	10		
Term deliveries	11		
Live Infants	23	2 sets twins	
IUD	1		*Case Study 1
PND	0		
Delivered Elsewhere	1		

Maternal Data (Type 1) (n=27)

Age	31.4	±	5.9	
DM Duration	14.9	±	9.0	
DM Complications				
Retinopathy	3			
Nephropathy	0			
Neuropathy	1			
Hypertension	5			
PET	3			
Gestation at OPD Booking	7.8	±	4.3	*Footnote 1
Booking HbA1c	7.8	±	2.0	
Delivery HbA1c	6.4	±	0.5	
Booking Fructosamine	351	±	67	
Delivery Fructosamine	256	±	26	
Caesarean Section	15	i.e.	68%	

Infant Data (Type 1) (n=23 live births)				
Gestation at Delivery	37.1	±	1.9	
Birth Weight	3.3	±	0.7	
<4kg	18		Note -1 pt t/fd, 1 not pregnant = 21).	
Macrosomia (4.0-4.449kg)	3			
Macrosomia (4.5-4.99kg)	0			
Macrosomia (>5kg)	0			
Shoulder Dystocia	0			
IUD	1		*Case Study 1	
Congenital Abnormalities	0			

Type 2 n=22				
Pregnancies	22			
Spontaneous Abortions	5			
Preterm deliveries	10			
Term deliveries	8			
Live Infants	18			
IUD	0			
PND	0			
Delivered Elsewhere	0			

Maternal Data (Type 2) **n=22**				
Spontaneous Abortions	5			
Age	35.7	±	6.1	
DM Duration	5.2	±	3.6	
DM Complications				
Retinopathy	0			
Nephropathy	0			
Neuropathy	0			
Hypertension	5			
PET	2			
Gestation at OPD Booking	7.6	±	3.9	*Footnote 2
Booking HbA1c	6.7	±	1.4	
Delivery HbA1c	6.4	±	0.8	
Booking Fructosamine	266	±	43	
Delivery Fructosamine	239	±	29	
Caesarean Section	15	i.e.	83.3%	

Infant data (Type 2) n = 18 live births		**1 set twins**		
Gestation at Delivery	37.4	±	1.7	
Birth Weight	3.2	±	0.7	
<4kg	15			
Macrosomia (4.0-4.449kg)	3			
Macrosomia (4.5 - 4.99kg)	0			
Macrosomia (>5kg)	0			
Congenital Abnormalities	0			

GESTATIONAL DIABETES MELLITUS	Pregnancies n = 216
Rx with Insulin	107
Rx with Diet	109

GDM Total Group Rotunda Births	216		
Live Births	221	8 sets twins	
Age	33.0	±	5.6
Gestation at delivery	38.2	±	1.9
Birth Weight	3.37	±	0.7
Caesarean Section	83	i.e.	38%
IUD	0		
Spontaneous Abortion	2		
Delivered Elsewhere	1		
Congenital Abnormalities	0		

Rx with insulin n = 107			
Rotunda Live Births	109	4 sets twins	
IUD	0		
Delivered Elsewhere	0		
To Insulin	26.6	±	7.6
Gestation at delivery	38.4	±	1.7
Birth weight	3.38	±	0.6
Caesarean Section	45	i.e.	41%
Spontaneous Abortion	2		
PET	0		
Hypertension	0		

Birth weights	
<4kg	90
4-4.499kg	14
4.5-4.999kg	5
>5kg	0

Rx with Diet n= 109			
Rotunda Live Births	112	4 sets twins	
Age	33.0	±	5.5
Gestation at delivery	38.0	±	2.0
Birth Weight	3.33	±	0.7
Caesarean Section	38	i.e.	34%
Spontaneous Abortion	0		
IUD/PND	0		
Delivered Elsewhere	1		
Congenital Abnormalities	0		

Birth weights	
<4kg	95
4-4.499kg	14
4.5-4.999kg	4
>5kg	0

One abnormal value on OGTT n=172	
Rx with Insulin	8
Rx with Diet	164

Total Group				
Birth Weight	3.44	±	0.6	
Caesarean Section	69	i.e.	40%	

Diet Group				
Gestation at Delivery	38.7	±	1.6	
Birth Weight	3.43	±	0.6	
Caesarean Section	65	i.e.	39%	
IUD	2			*Case Study 2&3
Delivered elsewhere	1			
Spontaneous Abortion	1			
Congenital Abnormalities	0			

Birth weights (Diet Group)	
<4kg	139
4-4.499kg	25
4.5-4.999kg	3
>5kg	

Insulin Group			
Age	33.9	±	3.4
To Insulin	33.3	±	2.3
Gestation at Delivery	39.1	±	0.7
Birth Weight	3.7	±	0.5
Caesarean Section	4	i.e.	50.0%

Birth weights (Insulin Group)	
<4kg	6
4-4.499kg	1
4.5-4.999kg	1
>5kg	0

***Case Study 1**
35 year old lady with Type 1 DM x 24 years. Booked at 8 weeks gestation with Hba1c 9.7% and fructosamine 420. Delivery HbA1c 7.1% and fructosamine276. Unanticipated IUD. Examination showed fetal scalp oedema with overlapping skull bones. PM declined. See perinatal mortality report for further details. Pathologist raised possibility that inflammation of uncertain significance was identified and possibly related to an intercurrent maternal infection.

***Case Study 2**
42 year old lady with IGT diagnosed at 18 weeks and controlled by diet. Presented at 34 weeks with flu-like illness and decreased fetal movement. PM declined. See perinatal mortality report for further details.

***Case Study 3**
32 year old lady diagnosed with IGT at 28/40 controlled on diet. HTN prior to delivery. PM says retroplacental haemorrhage with early organisation and secondary inflammation as well as early ascending infection focal acute chorioamnionitis. Any congenital malformations were excluded at autopsy.

***Footnote 1**
2 x late bookers i.e. >12 weeks gestation. If removed would read 6.9 +/- 2.7.

***Footnote 2**
1 late booker @ 17 +2 weeks gestation. If removed would read 7.0 +/- 3.1.

Clinical Nutrition

LAURA HARRINGTON, RD, MINDI- SENIOR DIETITIAN

In 2012 the dietitian held a total of 1177 patient visits, 667 new patients and 510 reviews. This is a decrease of 8.6% from 2011. The types of patients cared for can be classified in the table below:

Referring Service	Number of Patient Visits (Combined in- and outpatients)	Percentage of Total Patient Visits
Antenatal	221	18.8 %
Diabetes	740	62.9 %
Gynaecology	41	3.5 %
Neonatology/Paeds	158	13.4 %
Postnatal	17	1.4 %

The number of diabetic patient follow-up visits decreased over the last year, due to redistribution of patients into the midwifery-lead breakfast club. The number of gynaecology referrals declined as well. However, there was a rise in the number of antenatal, postnatal and paediatric patient referrals.

The majority of dietetic referrals are for the following conditions:

- **Antenatal:** Overweight or obesity, maternal underweight, poor weight gain, hyperemesis, multiple 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:** Gestational diabetes, type 1 and 2 diabetes in pregnancy and impaired glucose tolerance
- **Neonatology/Paeds:** Poor weight gain, faltering growth, food intolerances and allergy

The dietitian gives presentations in the antenatal classes every week and in study days on diabetes for midwifery yearly.

Service expansion is planned based on the balance between resources and local needs assessment.

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.

Epilepsy clinic

DR MARY HOLOHAN

At the Epilepsy Clinic in 2012 there were 166 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 of Lamotrigine and Carbamazepine significantly assisted in patient care.

During 2012, 125 of these patients delivered in the Rotunda Hospital. 57 had not required anti-convulsant treatment for some time before pregnancy and 48 patients needed anti-epilepsy drug treatment for the duration of the pregnancy. 8 patients had discontinued treatment shortly before this index pregnancy. In late pregnancy symptoms suggestive of subtle seizure activity were determined in 3 of these. All declined to re commence treatment. 2 patients had first seizure during this index pregnancy with 1 starting treatment (Levetiracetam). Seizure activity in 10 patients were associated with use of Benzodiazepines.

There was 8 complications in the group of 57 patients not on treatment. There were 3 deliveries at 26 - 27 weeks. Two term babies were admitted to NICU. Shoulder dystocia with PPH occurred in one case and placenta percreta occurred in a further case. One baby had Trisomy 21. One mother had some jerking movements after delivery but recommencement of treatment was not deemed necessary.

Of the 48 patients on anti-epilepsy treatment regimes, 38 were on mono-therapy and 9 required 2 medications. One patient was on 3 medications. 2 of the patients had monotherapy with Sodium Valproate (not Irish born). There were 4 pregnancy complications in patients using anti-epilepsy medications. In 3 patients on Levetiracetam pregnancy was complicated with hypertension and intra-uterine growth restriction, fetal arrhythmia and a case of PPH. One patient on Topirimate had mid trimester pregnancy loss. One patient in this group had a marked increase in seizure frequency after delivery as medication regime was not continued.

There were 6 pregnancy complications in the 10 patients whose seizures related to Benzodiazepine use. Intrauterine growth retardation occurred in 2 cases and placenta praevia occurred in 1 case. One infant was delivered at 26 weeks and placental abruption complicated one case in a setting of pre-eclampsia. Extremely high levels of Anti-D led to one fetal loss in mid trimester.

The Irish Epilepsy Association (Brainwave) 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 and advice offered by Sinéad and her close liaison on behalf of these patients with their neurologist is hugely beneficial and is reflected in the very low number of problems for patients attending the Epilepsy Clinic. This model of care for pregnant women with epilepsy has become the national standard operating procedure template.

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 Dr. 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 practice in the management and treatment of obstetric, gynaecology and paediatric conditions.

In September 2012, Cinny Cusack was appointed as Physiotherapy manager and a department plan was drawn up to implement the Rotunda's strategic plan within the physiotherapy department. A review of the clinical services was commenced, which included:

- New adult and paediatric referral forms were introduced to facilitate improved triaging of referrals.
- Bleeps for all physiotherapists to improve communication with inpatient services.
- Reducing waiting times from referral to outpatient appointment of 0-2 weeks for urgent, 2-6 weeks for soon and 6-8 weeks for routine.
- To reduce the amount of hospital based cancellation of appointments by appropriate management of annual leave and diary scheduling. To reduce the DNA rate by implementing a DNA policy
- To review all patient information leaflets and these have been sent for printing.
    - Post natal leaflets (immediately post natal, return to exercise)
    - Information following 3rd and 4th degree tears
    - Pelvic girdle pain
    - Paediatric information leaflets and assessment form

OBSTETRIC PHYSIOTHERAPY - ANTENATAL

Preparation for parenthood classes are currently run jointly with the parent education midwives.

There are day time and private evenings/Saturday classes.

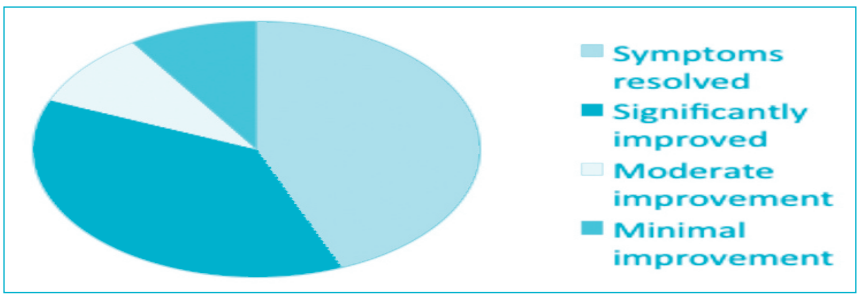
- The physiotherapy classes
    - (Class 1) includes advice and education to alleviate the musculoskeletal problems in pregnancy e.g. Pelvic girdle pain (PGP) carpel tunnel, low back pain.
    - (Classes 2 and 6) Coping skills for labour, baby handling and development, Post natal advice and exercises.
- The classes promote a healthy life style, recommended exercising regimes 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.
    - Mothers attending : Class one- 1,663, Class two- 1,218, Class six- 1,037
    - For the evening classes, Class one -143, Class two- 91,Class six- 91
    - For the Saturday classes a total of 289 attended.
    - Refresher classes: 130 attended.

POSTNATAL PHYSIOTHERAPY

- 6,397 Mothers were seen as Inpatients for post natal advice and exercises, Pelvic girdle pain, mobility issues. Our focus is on the high risk mothers who have anal sphincter tears, an operative delivery or have a baby over 4kg.
    - The post natal class time has been changed to the morning to accommodate mothers with school going children. This has improved the attendance and 249 patients plus babies attended the classes held during 2012

GYNAECOLOGY PATIENTS

- The Continence promotion Clinic is led by Dr. Mary Holohan and Cinny Cusack. 207 new patients were given appointments in 2012 and 142 attended. A review of the clinic was carried out in 2012 to ascertain the patient profile, primary diagnosis and treatment outcomes.74% of patients were referred for physiotherapy. Of those who completed the treatment, the outcomes were very positive.



- A poster presentation on "The profile of assessment and treatment outcomes in a multidisciplinary clinic in the Rotunda Hospital" was accepted as a poster at the IUGA conference to be held in Dublin 2013.
- Gynaecological patients are also referred from outpatient clinics. However, we are no longer accepting Gynae referrals from GP's due to an increase in overall referrals from within the hospital and a reduction in physiotherapy hours.
- In patients are seen following all major surgery for advice, exercises and chest physiotherapy if required.
    - A total of 126 patients were treated.

PELVIC GIRDLE CLASS

- Over 600 referrals were received in 2012 for pelvic girdle pain. A pelvic girdle class is held to provide advice on ergonomics, management of activities of daily living, pacing and specific stabilising abdominal and pelvic floor exercises. Patients who may require further treatment triaged through this class and assessed for use of support garments and walking aids.
- The new referral form has a validated pelvic girdle questionnaire on the reverse. When the patient fills out the form, the functional disability can be calculated in order to triage the urgency of the referral. Those with severe pain/disability can then be offered an individual appointment. Unfortunately many forms are incomplete and all patients are not being given the questionnaire.

- Physiotherapy assessment and treatment follow the HSE guidelines published in August 2012. Management of pelvic girdle pain in pregnancy and post partum.

INCONTINENCE AND OBSTETRIC ANAL SPHINCTER INJURIES

- Ante and post natal patients are treated for urinary and faecal incontinence. Post partum mothers may self refer for incontinence up to six months post natal but are encouraged to come to the post natal class.

- All third and fourth degree tears are seen as an Inpatient (unless discharged at a weekend) and a follow up appointment is made for physiotherapy for 2 weeks post partum. A further appointment is made for 6-8 weeks and ongoing appointments given as necessary. This follows the HSE guidelines into the Management of OASI published in April 2012.

PAEDIATRIC PATIENTS

- Babies are referred to physiotherapy as inpatients for the following conditions
    - Torticollis, Talipes, Erbs and Plagiocephaly.
- 73 babies were reviewed as inpatients requiring 104 attendances. Currently there is no routine physiotherapy input into babies in NICU.

- A further 620 babies were referred as outpatients for the above conditions and for developmental delay requiring 1,139 attendances

- A Talipes referral pathway was been written in conjunction with Dr. Adrienne Foran and Dr. Hilary Lane. This has reduced the number of inappropriate referral to physiotherapy and has ensured the correct pathway of care is provided.

DEPARTMENT ACTIVITY

In 2012 there were 4,557 outpatient attendances to the physiotherapy department NOT including the preparation for parenthood classes or the inpatients seen on the wards. This represents an increase in attendances of 37% from 2011. I would like to acknowledge the hard work and dedication that the Physiotherapy staff has put in over the past year in increasingly difficult circumstances. The smooth running of this extremely busy department could not happen without the significant contribution of the physiotherapy secretary.

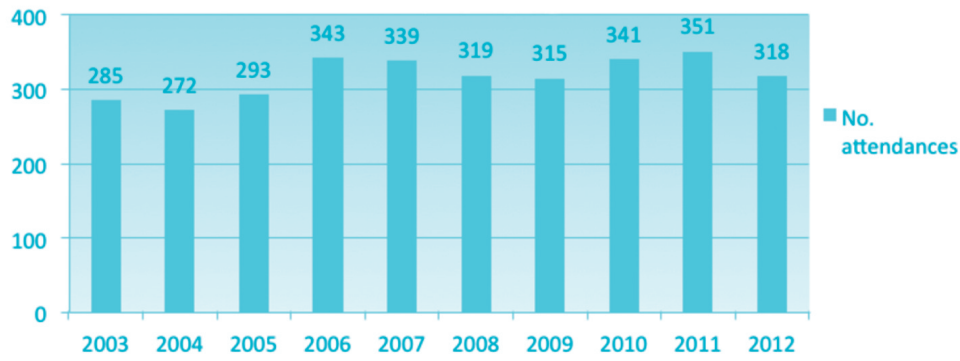
Sexual Assault Treatment Unit

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 2012 the SATU at the Rotunda Hospital provided care for 318 men and women after rape or sexual assault, a decrease of 33 patients (9%) from 2011..

Fig. 1: Analysis of yearly attendances from 2003 to 2012

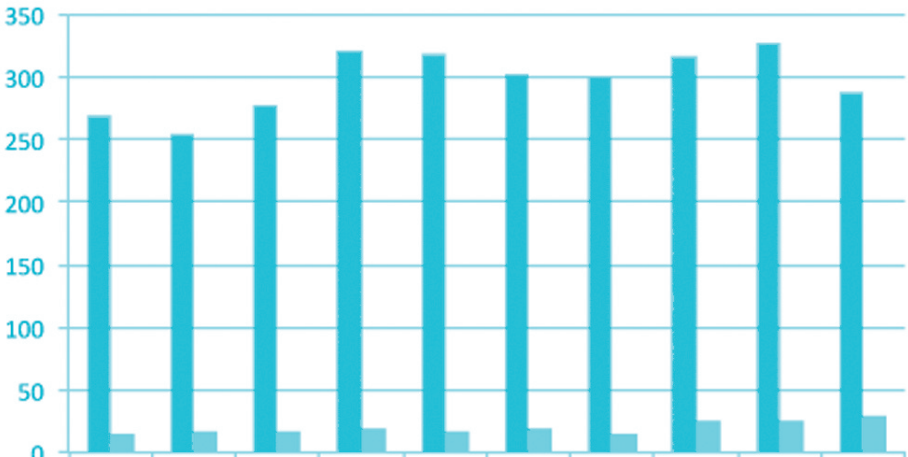


Most patients (84%) presented within 7 days of an incident of sexual assault, with 4 patients disclosing long-term abuse. Early presentation is optimal in terms of provision of appropriate care as well as collection of forensic evidence. In 10 cases, the incident had occurred outside of Ireland. Of the 308 cases where the incident was reported to have taken place in the Republic of Ireland, 258 of these took place in Dublin city or county. 11 other counties were also represented in the figures. December was the busiest month and Tuesday was the busiest day. 199 (63%) 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 13 to 78 years. Although the remit for the Adult SATU services is for patients over 14 years, in 2012 the unit provided care for 5 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 which will mean that such patients can be appropriately accommodated in the future.

103 (32%) patients were students, 97 (31%) were in employment and 113 (36%) were unemployed. The majority of patients (267, 84%) were single. 255 (80%) patients reported a single assailant, and 116 (36%) patients reported that the assailant was a stranger. In 29 cases the alleged assailant was reported to be an intimate (or ex-intimate) partner, and in an additional 12 cases reported to be a family member. 235 patients (74%) 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. 59 patients were unsure if a sexual assault had taken place, due to memory loss associated with alcohol ingestion.

Fig. 2: Gender breakdown 2003 - 2012



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	269	255	277	320	318	301	300	317	327	288
Male	14	17	16	19	17	18	15	24	24	30

Emergency contraception (EC) was given to 143 of 209 women seen with 72 hours of 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. 282 men and women accepted this offer, but only 212 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. Since 2009 we have also been in a position to offer HIV prophylaxis on-site if required. In 2012 44 patients received post-exposure prophylaxis for HIV, no patients tested positive for HIV for the first time after their SATU attendance.

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 Siochana. Of the 318 patients that attended the SATU, 63 (20%) 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.

The SATU Liaison group (which includes Dublin Rape Crisis Centre, Garda Liaison Officer, Medical Director, Sexual Assault Forensic Examiners, Nurses and Administration Support Staff and a member of the team from the Forensic Science Laboratory) 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 as they arise.

The Royal College of Physicians in Ireland established a Sexual Health Policy Group, which worked on position statements in various aspects of sexual health. Members of the SATU team were involved with the prevention subcommittee, and the work of this group was launched in 2012. It is hoped, with the support of the Minister for Health, that these position statements will provide a framework for a national Sexual Health Policy.

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 staff were all very involved in the Sexual Health Awareness Week at the RCPI in May 2012 and 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 Annual Interagency Study Day for all those involved in delivering the service took place in the Pillar Room of the Rotunda in October 2012. This was attended by delegates from a range of agencies involved in taking care of men and women after sexual violence. 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 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 are proud of our heritage and are 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 face these challenging times, 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 very committed team, and their availability to provide holistic care to patients at a time of crisis is acknowledged. The commitment of staff to ongoing service development despite so many pressures is also very much appreciated.

Medical Social Work

SINEAD DEVITT (ACTING HEAD MEDICAL SOCIAL WORKER)

INTRODUCTION

During 2012, 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.

CHILDREN'S REFERENDUM

In November 2012, the Irish people voted to amend the Constitution to strengthen the rights of children. This potentially provides the state with the necessary tools to develop more effective adoption and child protection legislation. Unfortunately, in Ireland a minority of children are not safe in their own home or the child's family is unable to care for the child. There are currently over 6,000 children in care and 91 per cent are in foster care, often with relatives. Only in exceptional cases do children not return home with their parents following discharge from the Rotunda Hospital. The hope is that the changes to the constitution will provide a platform to increase protection for all vulnerable children in the future.

HOUSING CRISIS

In 2012 the number on the housing waiting lists in Ireland reached a high of 98,000 households. Given the continuing economic difficulties and the rising number of people in mortgage arrears, the numbers are likely to grow. Simultaneously, there has been an increase in demand for private rented accommodation, which has led to a lack of availability and an increase in rents. 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 and inappropriate housing conditions.

ASYLUM SEEKERS

The number of asylum seekers accommodated by the Reception and Integration Agency (RIA) since the introduction of Direct Provision in 1999 exceeded 51,000 people by 2012. Asylum seekers in the direct provision system spend on average of three years and eight months accommodated in conditions that are often overcrowded and bleak.

While waiting for their application to be processed, people exist on food and clothing provided for them directly by the State and an allowance of €19.10 per adult and €9.60 per child. At the end of December 2012, 4,841 people – including more than 1,000 children – lived under such circumstances in 34 accommodation centres run by private contractors spread across 17 counties. The medical social workers continue to provide support to families undergoing such difficult experiences.

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 2012 provide a summary of the services offered by the department.

TEENAGE PREGNANCY CLINIC

In 2012, 110 teenagers booked into the Teenage Clinic. This figure was 124 in 2011. This reflects an overall drop in the number of births to teenagers in Ireland. In 2012, the Rotunda's Teenage Clinic 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 medical social worker offers psychosocial support to the young person and their family and completes referrals to community services if necessary. 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.

FETAL ASSESSMENT AND PRENATAL DIAGNOSIS CLINICS

2012 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 and Joan O'Beirnes - 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.

The range of supports available to parents includes:

Crisis Counselling and Support during the Pregnancy: Crisis counselling is made available to parents around the time that they are being given bad news or trying to make a decision about the pregnancy. This early intervention can help parents to begin to come to terms with a diagnosis, adjust to their new reality and prepare for the emotional impact of their baby's birth.

Continued emotional support is provided by the whole multidisciplinary team during the remainder of the pregnancy - patients often report how comforting it is for them to meet with the same midwives and doctors at each visit, as well as it being invaluable to have a quiet space to meet with the medical social worker and explore their feelings in confidence.

Advocacy and Liaison: The medical social worker ensures that parents have up-to-date and relevant information about supports available in their local community and makes direct links for parents with organisations where appropriate, e.g. Down Syndrome Ireland, Spina Bifida & Hydrocephalus Ireland, A Little Lifetime Foundation.

Practical Supports: The medical social worker can give information and advice in relation to financial assistance where appropriate, e.g. Maternity Benefit, Illness Benefit, Bereavement Grant. They can also directly link with a local Community Welfare Officer or the Department of Social Protection on behalf of parents when necessary.

Follow-up Support and Counselling: The medical social worker meets with FAU patients following their baby's birth and continues to be available as a support to them, e.g. where a baby is in our neonatal Unit.

When a baby sadly dies, bereavement counselling and follow-up support is offered to all parents. All bereaved parents are invited to attend the Hospital Bereavement Support Programme that takes place annually yearly and is organised by the Social Work Department.

Grateful appreciation is expressed to Midwives Nollaig Kelleher, Jane Dalrymple and Joan O'Beirnes for their invaluable support and assistance during the year.

BEREAVEMENT SOCIAL WORKER

In 2012, 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 represented the hospital at remembrance services organised by A Little Lifetime Foundation and the Miscarriage Association. During 2012 we also welcomed a newly established organisation for bereaved parents, Felieacain, (Stillbirth and Neonatal Death Association of Ireland). These support groups offer invaluable assistance to our bereaved patients and we aim to continue to build strong links to them in the community.

SUBSTANCE MISUSE

The medical social worker attached to the DOVE team met with all women who misused substances. The main emphasis was on opiates and cocaine but also includes other drugs.

81 women in 2012 who delivered the babies in the Rotunda Hospital were on a methadone maintenance programme. Methadone maintenance is the most common treatment for opiate dependent pregnant women. It is used to help people stabilise their drug intake and associated lifestyle. 17 women were commenced on methadone treatment secondary to their pregnancy.

The medical social worker liaises with the Drug Liaison Midwife throughout the woman's pregnancy, sharing relevant information. The Drug Liaison Midwife introduces the role and availability of the medical social worker to all women and this normalises the referral and decreases anxiety and apprehension for the women.

It is important for the medical social worker to meet with the patients as early as possible to begin the psychosocial assessment. Assessment is an ongoing process and includes identifying both risk factors and strengths. 64 women in 2012 were referred (79%) to HSE Child and Family Social Workers. This is an increase in comparison to the previous year when 57.7% of women were referred to the community social work services.

Drug-related child protection concerns were reviewed and shared with other professionals involved with the family at 19 discharge meetings and 19 case conferences. 9 babies did not return home with their parents as a result of concerns in relation to their on-going drug use. 17 babies returned home with their parents as an agreement was reached whereby a non drug using relative would live with them, and be the primary carer for the baby.

Relapse prevention work is a hugely important part of the child protection plan for families. This is part of the support provided by the medical social worker.

INFECTIOUS DISEASES

In 2012, 341 people were newly diagnosed with HIV in Ireland (Health Protection Surveillance Centre, Annual Report, 2012). The annual number of newly diagnosed HIV infections had been decreasing since 2008. However in 2012, there was a slight increase of 7% as compared with 2011.

7 women in the Rotunda Hospital were newly diagnosed with HIV at antenatal screening. 31 women overall with HIV delivered babies in the Rotunda Hospital in 2012.

The medical social worker on the DOVE team offers pre- and post-test counselling to women who receive a new diagnosis. Women express fears and anxieties regarding their health, their baby's health and partner disclosure. Counselling is provided to the women to begin to process these concerns and worries, and to deal with the psychological consequences of their new diagnosis.

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. A welcome development in 2012 was the centralisation of the medical card application process. This has rendered the application process more efficient, thereby ensuring that parents have access to the equipment and medication which is required by their babies on discharge.

During 2012, 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 very positive development over the past year was the introduction of a monthly parents' support group which is facilitated by the medical social worker in conjunction with representatives from the Irish Premature Babies Support Organisation. 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.

TRAINING - STAFF

Training Day on Stillbirth and Neonatal Loss, Centre of Midwifery Education – 26.01.2012
D. Kirk

In-service training for administration, household and catering staff on Miscarraige,Stillbirth and Neonatal Loss - 27.06.2012
D.Kirk

In-service Training for Midwifery Staff on Miscarriage – 03.08.2012
D. Kirk

'Mental Health and Homelessness' College of Psychiatry - Oct 2012
N.Rodgers and H.Lydon

'Progressing the New Model for Disability Services: Social Work – Managing the Change' – Irish Association of Social Workers (09.03.2012)
P. Forster

PROFESSIONAL DEVELOPMENT

D.Kirk, Bereavement Social Worker attended training on The Impact of Caring for Infants and Children who Die-Helping Staff to Cope and Build Resilience, Irish Hospice Foundation- 18.04.2012

D.Kirk, Attendance at Stillbirth, Causes, Prevention and Management Conference, Public Health Agency, Belfast- 22.11.12

D. Kirk, Bereavement Social Worker, continued to attend quarterly meetings of the Irish Association of Paediatric Palliative Care in 2012

N. Rodgers - Social Work Student Placement, Trinity College - Sept- Dec 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)
ADMINISTRATOR: Ms Anne Hession; 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 2012

Dr John Kennedy
Dr Feras Abu Saadeh
Dr Nikhil Purandare
Dr Tom O Gorman
Dr Tasneem Ramhendar
Dr Nedaa Obeidi
Dr Sanchila Talukdar
Dr Allan Varghese
Dr Denis Vaughan
Dr Pooja Sibartie
Dr Nadia Ibrahim
Dr Sarah Campbell
Dr Noha Bozreiba
Dr Majda Almshwt

Since its establishment in 2008 the Early Pregnancy Assessment Unit (EPAU) has provided individualised medical care to patients experiencing pain or bleeding in early pregnancy. Patients are referred primarily from the emergency room or their general practitioners. In cases where there was a prior pregnancy loss or an ectopic pregnancy a direct referral is made.

Communication and explanation of scan findings, arrangements for repeat ultrasound scans, explanations of tests and treatment options available are provided to patients so they can make an informed decision regarding the best treatment option for them. Care and support is provided to all women and their families by staff in the unit, the bereavement services and social work. 2012 saw the retirement of Staff Midwife Brigid Bourke who provided invaluable support and care for our patients. She is greatly missed by staff and patients alike and we wish her well in her retirement.

ACHIEVEMENTS

In 2012, 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 the following changes were instigated:

- Provision of a new Volusson E8 in the EPAU with transabdominal and transvaginal ultrasound capabilities to aid accurate assessment of early pregnancy complications.
- Provision of Registrar training in Viewpoint® and early pregnancy undertaken by Dr Sharon Cooley.
- Standardisation of diagnosis and reporting of early pregnancy findings.
- Development of local counselling and support documentation.

- Provision of Senior House Officer training in basic ultrasound in conjunction with the Royal College of Physicians Basic Specialist Training by Dr Fionnuala Breathnach.

- Provision of training for University College Dublin Graduate Certificate in Obstetric Ultrasound Module 1 for Dr Noha Bozreiba and Dr Nadia Ibrahim by Dr Sharon Cooley.

- Participation in regular clinical auditing of early pregnancy key performance indicators.

Clinical activity:

	2011	(%)	2012	(%)
Total number of appointments in 2012	5709		5221	
Total number of patients seen	3116		3106	
Repeat EPAU reviews	2214	(71%)	2315	(80%)
Failure to attend for first appointments	114	(4%)	200	(7%)
Failure to attend for follow-up appointment	178	(8%)	144	(6%)
Miscarriages	605	(19%)	1551	(30%)
Surgical management of miscarriage	247	(41%)	590	(38%)
Expectant or medical management	358	(59%)	961	(62%)
Ectopic pregnancy or pregnancy of unknown location	51	(2%)	123	(4%)

Recurrent pregnancy loss service

CONSULTANTS: Dr Edgar Mocanu
Dr Sharon Cooley
MIDWIFE: Patricia Fletcher

The recurrent pregnancy loss service allows for investigation and follow-up of couples with recurrent miscarriage. It links closely with the counselling service, radiology and other clinics in the hospital and provides a support for couples in future pregnancies. It also provides rapid access to review and ultrasound for women from early pregnancy until their booking appointment.

	2012	(%)
Total number of patient visits	376	
Return visits	292	(78%)
Failure to attend for first appointments	18	(21%)
Failure to attend for follow-up appointment	39	(13%)
Total number of pregnant women seen	55	
Livebirth rate	43	(78%)

Clinical Risk Management & Claims Department Activity

MS CLAIRE O'MAHONY, CLINICAL RISK MANAGER

INTRODUCTION

2012 was another busy year for the Clinical Risk & Claims Department who participated in 19 different internal and external Committee meetings during 2012.

During 2012 there was a change to the structure of the Clinical Risk Committee with the introduction of a written Risk Report. The Risk Report tracks the progress on Incident Reviews and the implementation of actions arising out of reviews. It also records incident trends noted from the STARS web system and risks escalated from the Departmental Patient Safety Groups. The escalation of risks or incidents to the HSE is also recorded. In recognition of the risks associated with ongoing high activity in the hospital, an Activity Report was introduced at the request of the Master and is tabled at the Clinical Risk Committee for ongoing monitoring.

RISK MANAGEMENT TRAINING

155 staff members were trained in Risk Management & Documentation in 2012. The Risk & Claims Managers also participated in a joint initiative "Legal Study Day" organised by the Centre for Midwifery Educuation. The team gave lectures and provided materials contributing to the overall success of this one day course. A lecture was also provided on the clinician's perspective on medico-legal claims at a Medical Negligence Litigation Conference in September.

INCIDENT REPORTING

Statistics on incident reporting continue to be shared with the Clinical Managers in an annual report and prior to each Departmental Patient Safety Meeting.

Risk Management Policy

A Checklist for Communication with Patient/Family following a Serious Adverse Event was introduced in order to streamline communication between the Risk Department and the Master's Office in respect of the progress on incident reviews and communication with patients/NOK involved in an adverse event.

The Rotunda provided representation on an external incident review team commencing late in 2012. This experience, along with the introduction of the HSE's National Incident Management Policy, provided us with feedback for use in updating and informing our own current review processes. Learning from 2012 will be carried into our improved risk review processes for 2013.

"ACTIVATE"

The Department introduced the "ACTIVATE" Consent Tool as part of the hospital's Consent Policy. ACTIVATE is a training tool introduced in a drive to assist clinicians to recognise and meet their responsibilities in respect of the Informed Consent Process.

STAFF PATIENT SAFETY AWARENESS CARDS

The Department welcomed and supported the introduction of cards for all staff, led by Teresa McCluskey, ADOMN, promoting awareness of the WHO International Patient Safety goals:

- Improving the accuracy of patient identification
- Making communication more effective
- Improving the safety of using high-alert medications
- Ensuring correct-site, correct-procedure, correct-person surgery
- Reducing the risk of health care-associated infections
- Reducing the risk of patient harm resulting from falls.

PATIENT SAFETY INITIATIVES

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:

- Training on the Identification and Management of Hypoglycaemia in Infants led.
- Standard Operating Procedure for the Counting of Swabs.
- Formal Triage System introduced in Emergency & Assessment Department.
- Incorporation of multi-disciplinary note-keeping in the Obstetric and Gynaecology charts.
- Education to highlight awareness of Sudden Unexpected Neonatal Death Syndrome.
- Introduction of the Rotunda Escalation Policy

FAIR REVIEWS/FOLLOW UP REVIEWS:

15 recommendations were made in 2012 out of reviews into clinical incidents. Of these, 11 actions are complete and 4 are ongoing with regular monitoring through the Clinical Risk Committee.

Recommendation Made:	Number complete	Actions ongoing	Actions
Promotion/Training of Existing Guidelines	1	1	complete
SBAR/Communication	1	1	complete
MEWS	1	1	complete
Update to existing guideline required	3	2	In consultation
New guideline/SOP required	3	2	In consultation
Amended process	2	2	complete
Clinical Audits	1	1	complete
Documentation	2	1	National Guidance introduced and to be followed.
IT improvement	1	0	Awaiting new IT system before progressing
Totals	15	11	4 in progress

CLAIMS/LEGAL:

Significant work has been achieved in the use of a newly introduced Discovery Template to support us in managing Discovery Requests which can be lengthy and time-consuming. The Discovery Template has assisted in offering a standardised structure to these requests.

The department adopted the Voluntary Hospital Group's "Updated Guidance preparing staff for attending Inquests" and this guidance is available for staff on the intranet site and also in hard-copy as routine practice where a statement is requested from the Coroner. A DVD is also available for use from the Clinical Risk & Claims Department and is offered to all staff involved in attending an inquest as a means of support and information.

Legal claims continued to be managed through the Clinical Risk Department, and a Claims Database was introduced with the objective of improving internal management of claims data in 2013. A survey was conducted in August 2012 to gather information and feedback in respect of clinicians' experience of the claims process and the information is used on a regular basis to provide us with heightened awareness particularly of the need for support for staff involved in the legal process.

STAFF MEMBERS

The complement of the department is 3.6 whole time equivalents. I would like to thank the team for their ongoing commitment to Patient Safety initiatives, claims Management and incident reporting.

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 Staff.

The Friends of the Rotunda actively encourages participation in fundraising activity by Rotunda Staff, Patients and their families and friends. Donor Giving provides funds for additional vital equipment, services and amenities within the Hospital that are otherwise, not paid for by the State.

Since its formation in 1971, the organisation has become highly focused and strategic in its approach and now contains over 1,700 registered Subscribing Members. The Charity is managed by Sheila Thompson who is responsible for administration and overall marketing & development.

The Friends' Council is the Charity's governing body and meets quarterly to discuss matters relating to policy, finance and governance of the organisation. The Council is Chaired by Dr. Frances Gardiner. Directors: Marie Malone (Honorary Secretary), Dr James Gardiner and Professor Alan Johnson. Officers: Josephine Black, Dara Walsh, Sylvia Graham, Joan Dillon, Judith Woodworth and Dr. Michael Geary. Representation from the Rotunda Hospital's Management Team includes the Master, Dr. Sam Coulter-Smith, Pauline Treanor, General Manager/Hospital Secretary and Margaret Philbin, Head of Midwifery.

The F.O.R Research Sub-Committee reports to the Friends' Council and meets regularly each year to consider applications for F.O.R funding. During 2012, over €44,570 was awarded to fund the following projects and research submissions:

1. Extension of a Part-time Research Psychologist Post for Rotunda Neonatal Research.
2. RCSI / Rotunda Study entitled 'Platelet Reactivity and Pregnancy Loss. Follow on series of further research studies. Funding also supported the establishment of an advanced platelet research laboratory at the RCSI Unit within the Rotunda Hospital in collaboration with Professor Kenny of the RCSI.
3. Bereavement Support for Rotunda Families.
4. Continuation of the National Volunteering Initiative (Knit-a-thon Project).
5. Continuation of the Hospital's 'Reach Out and Read' Project.
6. Christmas Appeal for Rotunda Families in Need.
7. Additional training and teaching aids in support of the Hospital's Lactation Service.

FUNDRAISING EVENTS TAKING 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 Intensive Care

- 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
- FUNdraising Awareness – The *Rotunda Masters Bake Off* Competition
- Arts & Craft Christmas Fair
- The ROS Tapestry and Fine Art Presentations in the Pillar Room
- Young European Strings Chamber Orchestra Performance in the Pillar Room
- The *Bartholomew Mosse* - 300th Anniversary Ball – Raffle
- Christmas Swim Fundraiser
- Sky Dive Fundraisers
- Friends of the Rotunda Annual Membership Subscriptions

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 Neonatal Intensive Care Unit and included electric and manual breast pumps.

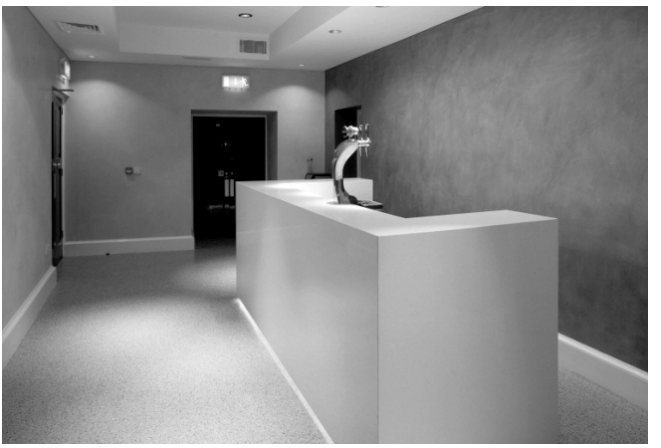
www.MyCharity.ie now hosts the Friends of the Rotunda Charity registration on its website. Fundraisers can set up a Fundraising Page with links to mobile and social media connections.

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' Administration. The Friends of the Rotunda Charity Merchandising including Christmas Cards and Sterling Silver Designer Jewellery Collection are also on sale.

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 & 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 facility now offers a new range of Conferencing Suites that are equipped with IT and Broadband services and audio sound.

The Council of the Friends of the Rotunda wishes to extend its gratitude to all those who organised and supported fundraising activities during 2012.

Sheila Thompson
Marketing Manager
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 national and international standards.

The Clinical Audit Department functions include:

- Hospital database of clinical audit activity.
- 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, report writing and formation of action plans.
- Assistance in maintaining clinical audit experience which is an essential element of professional competence.
- Creation and maintenance of the clinical audit strategy within the hospital.
- Monitor all clinical audit activity within the hospital to include the implementation of action plans.
- 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 and the Biannual Rotunda Audit and Research Day and the quarterly audit results meeting.
- Encourage clinical areas to prospectively plan their clinical audit activity on a clinical audit calendar which is disseminated to all departments.
- Link with other clinical audit units nationally and address key areas in clinical audit.

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.

Clinical Audit Database

Valerie Jackson, our Surveillance Scientist maintains a hospital database of clinical audit activity in the hospital and produce weekly and quarterly reports on topics audited; departments and clinicians involved, action plans and dates for re-audit.

The database also facilitates storage of electronic copies of audit applications and audit tools. 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 60 clinical audits were undertaken in 2012. This included 38 new clinical audits in eight clinical areas which were completed within the hospital in 2012, in conjunction with 10 ongoing clinical audits and five re-audits.

Clinical Audit Training
In 2012 there were 11 information sessions held and two Rotunda Audit and Research Days. This is an increase of eight teaching and training sessions since 2011. In total 120 staff members have attended our training sessions to date with representatives from all clinical areas attending.

The department also encourages clinicians to complete the HSE e-learning programme on clinical audit available at www.hseland.ie before embarking on a clinical audit.

Clinical Audit Intranet Page
The department has developed a designated page on the hospital intranet where the application forms, guide to clinical audit, key steps to audit success, draft action plan and report template are available to download. Monthly and quarterly reports on clinical audit activity within the hospital are forwarded to relevant staff members.

New Initiatives in 2012
The vital role of the supervisors in the success of clinical audit was highlighted by the introduction of supervisor reports and quarterly reports and the stratification of elements of the individual audit reports into areas requiring immediate, medium and long-term actions.

There were fourteen immediate actions identified in 2012, and in only one case was the action not met. In this individual case the action was partially met due to constraints on resources and the same was highlighted to the Executive Management Team.

Another new initiative in 2012 was the introduction of a quarterly hospital wide meeting on clinical audit activity in each area of the hospital. This has increased awareness of the importance of clinical audit in provision of care and acknowledged the hard work of the Rotunda staff involved.

It has led to a change in practice in many instances, for example the use of the Hemocue© system for neonatal bloods and the provision of a midwifery-led low-risk adolescent antenatal clinic.

Current plans for 2013 include a further expansion in activity, involvement with Clinical Audit Departments in other hospitals (as has already happened with St. James's Hospital and Temple Street Hospital) and a focus on health equity in the months to follow.

Conclusion
In 2012, Professor Tom Clarke stepped down as Clinical Audit Lead and Dr Sharon Cooley took up the post. We wish to acknowledge the vital work of Professor Clarke in formalising clinical audit in the Rotunda. 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 2013.

TABLE 1 LIST OF AUDITS APPLIED FOR/REGISTERED IN 2012				
Speciality	**Title of Audit**	**Audit Type**	**Department(s)**	**Status**
Administration	Prospective Audit of Quality of general gynaecology OPD referral letters	First Audit	AOPD	Awaiting Final Report
Administration	Medical records chart audit	Continuous	Medical Records	Progressing to Regular Schedule
Anaesthetics	Post operative pain relief following elective LSCS	First Audit	Lillie, PSNT	Completed
Anaesthetics	Prophylactic epidural to obese high risk women anaesthetic high risk clinic	First Audit	Theatre	Application Withdrawn
Anaesthetics	Audit to assess the conversion rate of regional to general anaesthesia for LSCS	First Audit	Theatre	Completed
Anaesthetics	National Audit Project 5 - Accidental awareness under General Anaesthesia	First Audit	Theatre	Completed
Gynaecology	Retrospective Audit of Benign Gynaecology Out-patient Waiting Times and DNA rates	First Audit	AOPD	Awaiting Final Report
Infection Control	Hand Hygiene Audits	Continuous	All clinical areas	Progressing to Regular Schedule
Laboratory Medicine	An audit of Haematological management of Obstetric patients with Cardiac disease	First Audit	Laboratory	Application Approved
Laboratory Medicine	An audit of requests for thrombophilia testing in the Rotunda Hospital	First Audit	Laboratory	Completed
Laboratory Medicine	Audit of Sample Errors received in the laboratory	Continuous	Laboratory	Progressing to Regular Schedule
Laboratory Medicine	Preventing Gram negative bloodstream infection in a maternity hospital.	First Audit	Laboratory	Completed
Lactation	Baby Friendly Hospital Initiative(BFHI) Breastfeeding audits	Continuous	All clinical areas	Progressing to Regular Schedule
Neonatology - Medical	Prospective audit on antenatal detection rate of congenital anomalies in Rotunda Hospital .	Continuous	FAU, POPD	Progressing to Regular Schedule
Neonatology - Medical	Gauging Compliance with Oxygen Saturation Targets in Preterm Infants in NICU	First Audit	NICU	Completed
Neonatology - Medical	Assessment and prevention of >10% weight loss in term neonates on postnatal wards in first few days of life	First Audit	Lillie, PSNT	Completed
Neonatology - Medical	Compliance of Blood transfusion practice in neonatal unit with the hospital guideline - BSCH transfusion guidelines.	First Audit	NICU	Completed
Neonatology - Medical	Pre and post discharge weight gain in low birth weight infants admitted to the NICU	First Audit	NICU	Completed
Neonatology - Medical	Use of CPR in VLBW neonates prior and post T-Piece introduction	First Audit	NICU	Completed
Neonatology - Medical	Identification of the adherence to the policy of following up jaundiced babies in the rotunda hospital in November-December2012	First Audit	POPD	Data Collection in Progress
Neonatology - Medical	Babies <33weeks gestation at birth who are not receiving any of their own mother's milk at discharge from the neonatal unit	First Audit	NICU	Completed

Neonatology - Medical	Routine TFTs – when are doing them and how often?	First Audit	POPD	Completed
Neonatology - Medical	Use of Emergency Blood in NICU over a 5 year period (2007-2011)	First Audit	NICU	Completed
Neonatology - Medical	Congenital CMV and torch screen done in Intra uterine growth restricted term (IUGR)term infants born in Rotunda from July2012-September 2012	First Audit	PSNT	Application Withdrawn
Neonatology - Medical	Postnatal Follow up of Fetal Ventriculomegaly >/= 12mm	First Audit	FAU, POPD	Awaiting Final Report
Neonatology - Medical	To determine if the introduction of a Hemocue 201 DM system reduces the number of FBC samples in the NICU	First Audit	NICU	Completed
Neonatology - Medical	Evaluating indications and number of infants from PNST & Lillie who had bloods taken for urea and electrolytes (U/E)	First Audit	PSNT	Completed
Neonatology - Medical	Documentation of neurological status in the first 6 hours after birth in newborns treated with therapeutic hypothermia.	First Audit	NICU	Completed
Neonatology - Medical	Audit of cases of persistent pulmonary hypertension on newborn during a 6 month period in NICU of Rotunda Maternity, Hospital	First Audit	NICU	Completed
Neonatology - Medical	Assessment of the newborn in the setting of maternal selective serotonin re-uptake inhibitors (SSRI) use	First Audit	NICU, Prenatal	Abandoned
Neonatology - Nursing	Ideal ambient temperature in postnatal ward	Re-audit	Delivery suite, Lillie, PSNT, Theatre	Awaiting Final Report
Neonatology - Nursing	Neonatal IV Infusions	First Audit	NICU	Completed
Neonatology - Nursing	Neonatal Patient Identification Audit	Continuous	NICU	Progressing to Regular Schedule
Nursing/Midwifery	Supplementation of Breastfed Babies	First Audit	Lillie, Prenatal, PSNT	Completed
Nursing/Midwifery	Efficiency of Equipment Tracking System	First Audit	Delivery suite	Completed
Nursing/Midwifery	An Audit of Risk Status of Teenagers at the Booking Visit and throughout Pregnancy	First Audit	AOPD	Completed
Nursing/Midwifery	Management of PPH in Delivery Suite	First Audit	Delivery suite	Completed
Nursing/Midwifery	Audit of Postnatal Care pathway	First Audit	Lillie, PSNT	Awaiting Final Report
Nursing/Midwifery	Audit of Placenta Praevia In-Patients Rotunda Hospital 2011-June 2012	Re-audit	Prenatal	Completed
Nursing/Midwifery	Efficiency of Equipment Tracking System	Re-audit	Delivery suite	Completed
Nursing/Midwifery	Audit of Time Out Process in Main Operating Theatres	First Audit	Theatre	Completed
Nursing/Midwifery	Review of ultrasound recall indications	First Audit	FAU	Completed
Nursing/Midwifery	An audit of compliance with national obesity in pregnancy guideline and Rotunda guideline at first Antenatal booking visit.	First Audit	AOPD	Completed

Nursing/Midwifery	Inductions of Labour for the low risk pregnancy on General Prenatal.	First Audit	Prenatal	Awaiting Final Report
Nursing/Midwifery	Decontamination of Reusable Invasive Medical Devices RIMDs	Continuous	All clinical areas	Progressing to Regular Schedule
Nursing/Midwifery	Audit of Midwifery Documentation in SPC Antenatal Clinic charts	First Audit	SPC	Completed
Obstetrics	Audit of Management of Urinary Retention in the Postnatal Period	First Audit	Gynae, Prenatal, PSNT	Completed
Obstetrics	Obs & Gynae trainee attendance at post graduate education sessions	First Audit	Not applicable	Completed
Obstetrics	Audit of Prevention of early onset neonatal Group B Streptococcal Disease	Re-audit	Delivery suite	Completed
Obstetrics	Pregnancy in Women with Cystic Fibrosis	First Audit	All clinical areas	Completed
Obstetrics	Audit of Compliance with current hospital guideline on the management of 3rd degree tears.	First Audit	Delivery suite, PSNT	Completed
Obstetrics	Compliance with completing physiological observations on the EWS chart	First Audit	All clinical areas	Completed
Obstetrics	Decision making process to induce labour.	First Audit	Delivery suite, Prenatal	Completed
Obstetrics	Completeness of Lab request form filling	First Audit	Laboratory	Awaiting Final Report
Obstetrics	Management of Borderline Glandular Smears	First Audit	Colposcopy	Completed
Obstetrics	To ensure ultrasound scans are meeting the criteria to make a diagnosis of miscarriage.	First Audit	Emergency Room, EPU	Completed
Obstetrics	Pyrexia in Labour: management and outcome	First Audit	Delivery suite	Completed
SATU	The Classification and Documentation of Wounds / Injuries by CN/MSs (Sexual Assault Forensic Examination (SAFE)) during Forensic Clinical Examinations carried out in the Sexual Assault Treatment Unit (SATU)	First Audit	SATU	Completed
SATU	Audit of attendance rates following referral from SATU to Infectious Diseases Clinic for HIV prophylactic treatment and completion of follow-up treatment - a retrospective study.	First Audit	SATU	Completed
SATU	The Classification and Documentation of Wounds / Injuries by CN/MSs (Sexual Assault Forensic Examination (SAFE)) during Forensic Clinical Examinations car	Re-audit	SATU	Completed

Definition of terms: ***Re-audit:*** *The repetition of an audit in order to measure whether practice has improved since the initial audit;* ***Continuous audit:*** *The continuous collection of data in order to measure practice e.g. hand hygiene audits.*

THE ROTUNDA HOSPITAL
DUBLIN

6
Staff Publications

CARING FOR GENERATIONS
SINCE 1745

Staff Publications 2012

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Cleary, BJ, Eogan, M, O Connell, MP, Fahey, T, Gallagher, P J, Clarke, T, White, MJ, McDermott, C, O Sullivan, A, Carmody, D, Gleeson, J and Murphy, DJ. Methadone and Perinatal outcomes: a prospective cohort study.
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Journal of Perinatal Medicine E Pub , 2012.

Donnelly, JC, and Malone, FD. Early Fetal Anatomical Sonography.
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