


THE ROTUNDA HOSPITAL DUBLIN

bartholomew mosse lecture series

2000-2014

2014

ROTUNDA HOSPITAL CLINICAL REPORT

Dr. Ruth Barrington	**Health Care Reform and the Voluntary Hospital – the Case for Hastening Slowly**	2014
Professor Lisa Hornberger	**'The Evolution of Fetal & Neonatal Heart Function in Health & Disease'**	2013
Prof. Sir Arulkumaran	**'Fetal Surveillance - A Tragedy - It is Time to Act.'**	2012
Dr. Michael O'Dowd	**'Woman's Surgeon, the Controversy'**	2011
Senator David Norris	**'The Rotunda Hospital a Neighbour's View. Urbi et Orbi the City and the World'**	2010
Dr James Dornan	**Is MG3 Achievable ... Again?**	2009
Dr James Gardiner	**Blessed Vapours & Blessed Amides**	2008
Prof. Henry Halliday	**The History of Surfactant Therapy**	2007
Prof. Lord Robert Winston	**The Reproductive Industry**	2006
Prof. Robert Harrison	**The Governance of Infertility**	2005
Prof. David Hardwick	**Treatment in Ireland - Past, Present and Future**	2004
Prof. Knox Ritchie	**Pathology & Society**	2003
Prof. James Drife	**Maternal Fetal Medicine - A Growth Industry**	2002
Prof. Robert Shaw	**Mortality - Past, Present & Future**	2001
Prof. James Robert	**Endometriosis - How far have we advanced in its understanding?**	2000



CLINICAL REPORT 2014

CARING FOR GENERATIONS
SINCE 1745

THE ROTUNDA HOSPITAL
DUBLIN

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

Clinical Report

1st January - 31st December 2014

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 2014
Mothers who have delivered babies weighing >500 grams	8787
Mothers who have delivered babies weighing <500 grams {including miscarriages}	1805
Hydatidiform Moles *	35
Ectopic Pregnancies	87
Total Mothers Delivered	**10814**

*This figure includes complete & Partial Hydatidform Moles

2. MATERNAL DEATHS	Totals 2014
Maternal Deaths	2

3. BIRTHS		Totals 2014
Singletons		8598
Twins	(183 sets)*	365
Triplets	(3 sets)	9
Quadruplets	(2 sets)	8
Total Babies Delivered weighing> 500 grams		**8980**

* 1 less than 500g

4. OBSTETRIC OUTCOME		Totals 2014
Spontaneous Vaginal Delivery	51%	4515
Forceps	5%	471
Ventouse	12%	1048
Caesarean Section	31%	2753
Induction of Labour	30%	2631

Breech Deliveries included in spontaneaous vaginal delivery

5. PERINATAL DEATHS	Totals 2014
Antepartum Deaths	45
Intrapartum Deaths	0
Stillbirths	45
Early Neonatal Deaths	25
Late Neonatal Deaths	10
Congenital Anomalies	29

6. PERINATAL MORTALITY RATES

	Totals 2014
Overall Perinatal Mortality Rate per 1,000 Births	7.8
Perinatal Mortality Rate Corrected For Lethal Congenital Anomalies	4.5
Perinatal Mortality Rate Including Late Neonatal Deaths	8.9
Perinatal Mortality Rate Excluding Unbooked Cases	7.6
Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.3

7. AGE OF WOMEN

	Nullips	Multips	Total Mothers	Delivered>500g
<20 yrs	197	25	22	
20-24 yrs	549	339	888	
25-29 yrs	902	922	1824	
30-34 yrs	1306	1775	3081	
35-39 yrs	670	1533	2203	
40+ yrs	166	403	569	
Total	**3790**	**4997**	**8787**	

8. PARITY

	Totals 2014	% from Total Mothers	Delivered >500g
Para 0	3790		43.1%
Para 1	3015		34.3%
Para 2-4	1862		21.2%
Para 5+	120		1.4%
Total	**8787**		**100%**

9. COUNTRY OF BIRTH & NATIONALITY AT DELIVERY - 2014

	2013	%	2014	%
Irish	6,128	70.86%	5,451	62.03%
EU	1,535	17.75%	1,613	18.36%
NonEU	972	11.24%	1,106	12.59%
Unknown /Unrecorded	13	0.15%	617	7.02%
Total	**8,648**	**100.00%**	**8,787**	**100.00%**

10. SOCIO-ECONOMIC GROUP - 2014

Socio-Group		2013	%		2014	%
1	622	7.03%	559	6.46%	636	7.24%
2	2,018	22.81%	1,989	23.00%	1,891	21.52%
3	1,498	16.93%	1,384	16.00%	1,270	14.45%
4	506	5.72%	437	5.05%	400	4.55%
5	603	6.82%	528	6.11%	468	5.33%
6	344	3.89%	317	3.67%	314	3.57%
7	2,334	26.38%	2,476	28.63%	1,782	20.28%
8	1	0.01%	0	0.00%	0	0.00%
9	2	0.02%	0	0.00%	2	0.02%
10	918	10.38%	958	11.08%	2,024	23.03%
TOTAL	**8,846**	**100.00%**	**8,648**	**100.00%**	**8,787**	**100.00%**

11. BIRTH WEIGHT

Weights	Totals 2014
500 - 999 gms	57
1,000 - 1,499	75
1,500 - 1,999	139
2,000 - 2,499	337
2,500 - 2,999	1175
3,000 - 3,499	2997
3,500 - 3,999	2950
4,000 - 4,499	1080
4,500 - 4,999	159
>5,000	11
Total	**8980**

12. GESTATIONAL AGE

	Nullips	Multips	Totals 2014
<26 weeks	11	18	29
26 - 29 weeks + 6 days	31	21	52
30 - 33 weeks + 6 days	59	61	120
34 - 36 weeks + 6 days	204	227	431
37 - 41 weeks + 6 days	3478	4665	8143
42 + weeks	7	5	12
Total	**3790**	**4997**	**8787**

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

	Nullips	Multips	Totals 2014
Episiotomy & Extended Episiotomy	1245	319	1564
First Degree Laceration	177	502	679
Second Degree Laceration	655	1172	1827
Third Degree Anal Sphincter/Mucosa	118	41	159
Fourth Degree	4	1	5
Other { Lacerations/Grazes not requiring sutures}	198	516	714
Intact	122	964	1086
Totals	**2519**	**3515**	**6034**

CS Deliveries not included in the above.

14. THIRD DEGREE TEARS *

	Nullips	Multips	Totals 2014
Occurring Spontaneously	49	38	87
Associated with Episiotomy	2	1	3
Associated with Forceps	27	2	29
Associated with Ventouse	28	0	28
Associated with Ventouse & Forceps	18	2	20
Associated with O.P. position	6	0	6

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

15. PERINATAL MORTALITY IN ANTEPARTUM NORMALLY FORMED STILLBORN INFANTS

	Nullips	Multips	Totals
Placental	0	8	8
Cord Accident	2	4	6
Extreme Prematurity	0	5	5
Feto Maternal Haemorhage	1	0	1
Infection	1	1	2
Unexplained	3	4	7
Total	**7**	**22**	**29**

Autopsy Totals			
Autopsy Rate	21/29	72.4%	

16. PERINATAL MORTALITY IN CONGENITALLY MALFORMED INFANTS

	Nullips	Multips	Totals 2014
CNS Lesions	2	0	2
Cardiac	1	2	3
Renal	1	2	3
Chromosomal	3	12	15
Diaphragmatic Hernia	0	1	1
Other	0	5	5
Totals	**7**	**22**	**29**

17. EARLY NEONATAL DEATHS

	Nullips	Multips	Totals
Congenital	1	11	12
Prematurity / Infection	2	11	13
Placental	0	0	0
Unexpected	0	0	0
Totals	3	22	25
Full Autopsy	7/25		
Autopsy Rate (inc 2 limited)	28%		
Overall Full Autopsy total for all Perinatal Deaths			**27**
Overall Autopsy Rate			**38.6%**

18. HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Grades	Grade 1	Grade 2	Grade 3
	13	5	3

19. SEVERE MATERNAL MORBIDITY

	Nullips	Multips	Totals
Massive Obstetric Haemorrhage	4	3	7
Emergency Hysterectomy	1	0	1
Transfer To ICU/CCU	9	4	13
Uterine Rupture	0	0	0
Eclampsia	0	0	0
Pulmonary Embolus	1	6	7

20. BODY MASS INDEX

Body Mass Index	2011	2012	2013	2014
Underweight: <18.5	197 (2.2%)	224 (2.5%)	215 (2.5%)	168 (1.9%)
Healthy: 18.5 - 24.9	4402 (48.3%)	4661 (52.7%)	4619 (53.4%)	4762 (54.2%)
Overweight: 25 - 29.9	2204 (24.2%)	2259 (25.5%)	2283 (26.4%)	2342 (26.7%)
Obese class 1: 30 - 34.9	730 (8.0%)	790 (8.9%)	804 (9.3%)	890 (10.1%)
Obese class 2: 35 - 39.9	227 (2.5%)	261 (3.0%)	267 (3.1%)	288 (3.3%)
Obese class 3: >40	95 (1.0%)	84 (1.0%)	83 (1.0%)	117 (1.3%)
Unrecorded	1261 (13.8%)	567 (6.4%)	377 (4.4%)	220 (2.5%)
Total Deliveries	**9116**	**8846**	**8648**	**8787**

20. FINANCIAL INFORMATION: Non-capital income and expenditure account For the year ended 31 December 2014

	2014 €'000	2013 €'000
Cumulative non-capital deficit/(surplus) brought forward from previous year	**80**	1,035
Pay		
Salaries	**46,535**	46,691
Superannuation and gratuities	**3,394**	3,636
Total Pay	**49,929**	50,327
Non-Pay		
Direct patient care	**5,679**	5,126
Support services	**4,858**	4,977
Financial and administrative	**3,485**	3,430
Total Non Pay	**14,022**	13,533
Gross expenditure for the year	**64,031**	64,895
Income	**(18,862)**	(19,464)
Net expenditure for the year	**45,169**	45,431
HSE Funding notified for the year	**(44,987)**	(45,351)
Deficit for the year carried forward to following year	**182**	80

THE ROTUNDA HOSPITAL
DUBLIN

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Introduction
by the master

2014

CARING FOR GENERATIONS
SINCE 1745

Introduction

The Master

2014 was another difficult year for maternity services in Ireland, with ongoing concerns in relation to quality and safety of services and continued public and media interest in a small number of high profile cases from various units around the country. We have being pushing very hard at every opportunity to highlight issues around maternity services and the quality of care that we can provide for our patients in the hope that we can secure investment for improvements in infrastructure and to get the HSE and Department of Health to recognise that staffing levels for our hospital is way below acceptable international norms.

2014 saw a continuation in the recent trend of high activity levels and while obstetric activity levels in hospitals around the country seems to have fallen away, the Rotunda's position within the North East region where the population of young couples has increased over the last number of years has ensured that our activity levels remain high. There were 10,954 patients registered for antenatal care which was 1.5% less than in 2013. We delivered 8,787 women of 8,980 babies greater than or equal to 500 grams. The corrected perinatal mortality rate for the year was 4.4 per 1,000, in line with recent years. There were 2 maternal deaths in 2014, both due to indirect cause. Despite extreme activity levels, the hospital continues to provide a safe service for its patients.

The other ongoing significant issue we faced in 2014 was the demand for gynaecology out-patient clinic appointments. This demand far outstripped our ability to provide new appointments for these patients. This has again been caused by the increase in the population we serve but is also due to the fact that the general hospitals have been unable to process gynae patients due to activity levels within their own Emergency Departments and the associated competition for elective beds. Allied to this, the Mater Hospital, which in the past would have provided a significant amount of benign gynae services, now concentrates most of its activity on gynae oncology. A combination of all of these factors, in addition to the huge demand led obstetric workload, has meant that gynae services have been squeezed significantly. During 2014 the Board recognised the risk associate with a long wait to be seen in gynae out-patients for some patients and agreed to institute a waiting list initiative in conjunction with the Mater Private Hospital. Over the course of the year 476 patients were taken from the Rotunda public waiting list, seen by Rotunda consultants and investigated and 87 required day case treatment in the Mater Private Hospital. This initiative in addition to revalidation of the current gynae waiting list has successfully reduced the number of women waiting to be seen in gynae out-patients significantly. It is anticipated that this waiting list initiative will run into 2015, but should ultimately be replaced by expansion of gynae services within the group model. This will of course depend on additional consultant posts being appointed to allow us to expand the service to match the demand.

Introduction

There have been significant changes within the administration of Health Service in Ireland over the last year, both nationally and at regional level. We continue to work with the RCSI Hospital Group and with hospitals within our group, however there has been a frustrating lack of progress due to the fact that there has been so many changes in personnel at HSE level within the region. We are working with the Group and with the HSE to ensure that as a voluntary hospital we are able to maintain our own unique governance arrangements and to find a way in which this can fit within the current group model.

There were some welcome initiatives at regional level, with agreement on a regional perinatal pathology post and agreement from the HSE and the Group to expand post-mortem facilities on the Rotunda site to assist with regional post-mortem and perinatal pathology services. There was also a welcome development of a joint Fetal Medicine post between Our Lady of Lourdes Hospital Drogheda and the Rotunda. However unfortunately there were no applicants for this post. We are currently restructuring the job to try and make it more attractive.

The Bartholomew Mosse Charter Day lecture was delivered by Dr. Ruth Barrington. Her lecture entitled 'Health Care Reform and the Voluntary Hospital - the Case for Hastening Slowly' provided great insight into the evolution of the Irish Health Service and stressed the importance the voluntary hospital sector has played in the delivery of quality health care to the Irish system.

The Friends of the Rotunda continue to work extremely hard to support research within the hospital. The annual Rotunda Masters Golf Classic was held in Milltown and was a great success. Again my sincere thanks go to Sheila Thompson and the Friends for all of the work that they put in to support research within the hospital.

The Rotunda was delighted to partner up with the RCSI in the Institute of Leadership during 2014. Fifteen of our staff completed a leadership training programme with RCSI. They worked on three projects which were particularly relevant to our Strategic Plan. These included a project on the consent process, a project on progressing a thrombocalc risk assessment for thrombo-embolism in pregnancy and a project which looked at the flow of patients through our out-patients department. Each project team was multi-disciplinary in nature. The output of the process was extremely impressive with all three projects leading to significant quality initiatives. It is envisaged that the relationship with the Institute of Leadership Faculty in RCSI will continue, with further programmes to be held in the future.

The Clinical Audit Department continues to work extremely well, generating a regular stream of important audit information concentrating on high risk and high cost. The Research Department led by Dr. Joanna Griffin continues to go from

strength to strength with close links developed, not only with our principal academic partner the RCSI, but also with other third level institutions. This is a really valuable asset to the hospital and all of its staff.

2014 also saw the sale of the HARI Unit, the Hospital's infertility unit to Virtus, an Australian company with an international interest in fertility services. Virtus had recently acquired a majority ownership of the SIMS Clinic.

Over the course of 2014 we had been working towards the development of a plan to expand along the west side of Parnell Square to deal with our demand led activity. We had planned to have an application ready for submission to Dublin City Council in early 2015, however meetings in early 2015 indicated that there would be a Ministerial announcement in relation to relocation of the Rotunda and therefore this plan was put on hold pending the Minister's announcement. There is absolutely no doubt that the current level of activity within the Parnell Square site cannot be sustained. A re-developed and re-located Rotunda on the site of a suitable funded and equipped adult hospital site is urgently required.

As a country we have failed to recognise over the last couple of years that failure to invest in our Health Service, failure to invest in our Hospitals, our infrastructure and our staff has allowed a situation to arise where many of our young graduate doctors and nurses and midwives are leaving the country. This situation is generating large numbers of vacant posts, not only in our hospitals but also in our general practice and community service. This must be addressed urgently if further escalation of an already challenging situation is to be avoided.

I would like to take this opportunity to thank all of those who contribute to the support and provision of services to our patients. The hospital, despite submissions to the HSE and the Department of Health, remains understaffed from a medical, midwifery and administrative point of view. It is a tribute to the skill and dedication of our front line staff who continue to maintain the quality of services in increasingly difficult circumstances. To all of those who stay late, miss breaks and come in to do additional shifts when requested, I am eternally grateful.

The hospital administrative and management team led by Ms. Pauline Treanor our Secretary General Manager have worked incredibly hard to keep the hospital as lean as possible and bringing us in close to budget. Their efforts are hugely appreciated and they do a wonderful job.

To our midwifery colleagues ably led by Ms. Margaret Philbin, our Director of Midwifery, I would like to express my gratitude for the unparalleled commitment that they bring to their jobs in extremely difficult circumstances. Without their hard work and dedication the hospital could never deliver such high quality services.

I would also like to thank all of the Heads of Departments for the enormous work that they contribute to the life and the running of the hospital.

I am deeply indebted to all of my consultant colleagues for the extraordinary effort that everyone puts in to the delivery of a quality service in each of their areas. To all of the NCHDs who work extremely hard to keep the hospital as safe as they do and for all of the added value that they bring to the hospital and its social life I am extremely grateful.

Dr. Peter McKenna as Clinical Director has taken over a number roles to support the office of the Master and for this I am extremely grateful.

The Rotunda Hospital as a voluntary institution is overseen by a Board of Governors, ably led by the Chairman Ms. Hilary Prentice. The General Board and its various Sub-Committees provide their services free of charge and do an enormous amount of work in overseeing the governance system for the hospital. A great deal of credit goes to the governors for all of the hard work that they put in to ensure that the hospital is maintained and run as safely as possible and for this I would like to extend my thanks.

Dr. Sam Coulter-Smith.
Master.

THE ROTUNDA HOSPITAL
DUBLIN

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Statistical Tables & Summaries

CARING FOR GENERATIONS
SINCE 1745

Comparative Results for 10 years

YEARS	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Babies Born	6804	7325	8456	8799	8912	8792	9319	9041	8841	8980
Perinatal Deaths	61^{+10} *	50^{+13} *	66^{+10} *	64^{+7}*	56^{+5}*	69^{+5}*	59^{+2}*	66^{+2}*	63^{+6}*	68^{+2}*
Perinatal Mortality Rate	9.8	8.6	9.0	8.1	6.8	8.4	6.5	7.5	7.8	7.8
Mothers Attending	7,518	8,036	9,290	9,655	9,709	9,594	10,547	10,397	10,314	10,814
Maternal Deaths	0	0	0	1	2	3	3	2	3	2
Caesarean Section %	25.6	27.7	27.1	26.2	28.5	27.9	29	29	31	31
Forceps/ Ventouse %	15.3	16.8	17	20	19.8	20.5	19.4	18	17	17
Epidural %	46.7	47	47	49	49.2	46.6	46	48	47	47
Induction %	19	20	20	21	23.27	27	29	28	29	30

* Unbooked

Statistical Summaries

1. TOTAL MOTHERS ATTENDING	Totals 2014
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	Totals 2014
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Corrected Perinatal Mortality Rate Excluding Unbooked Cases	4.3

7. STATISTICAL ANALYSIS OF HOSPITAL POPULATION

AGE AT DELIVERY	2008	2009	2010	2011	2012	2013	2014
<20	4.7%	3.8%	3.5%	3.0%	2.8%	2.5%	2.5%
20-24	14.8%	14.6%	13.1%	12.4%	11.6%	11.0%	10.1%
25-29	25.7%	24.7%	24.6%	23.6%	23.2%	21.5%	20.8%
30-34	30.2%	31.6%	31.6%	33.6%	34.8%	34.8%	35.1%
35-39	20.5%	21.3%	22.2%	22.5%	22.0%	24.3%	25.1%
>=40	4.1%	4.0%	5.0%	4.9%	5.5%	5.9%	6.5%

PARITY	2008	2009	2010	2011	2012	2013	2014
0	48.9%	47.3%	45.5%	45.5%	44.4%	42.6%	43.1%
1	29.3%	31.2%	32.3%	32.8%	34.1%	34.1%	34.3%
2-4	20.8%	20.4%	21.1%	20.7%	20.3%	22.1%	21.2%
5+	1.0%	1.1%	1.1%	1.0%	1.2%	1.2%	1.4%

BIRTHWEIGHT (grams)	2008	2009	2010	2011	2012	2013	2014
500-999	0.6%	0.5%	0.6%	0.5%	0.7%	0.8%	0.6%
1000-1499	1.1%	0.9%	0.7%	0.8%	1.0%	0.9%	0.8%
1500-1999	1.6%	1.6%	1.4%	1.6%	1.5%	1.7%	1.5%
2000-2499	3.7%	3.4%	4.0%	3.8%	4.0%	4.1%	3.8%
2500-2999	13.4%	13.6%	13.1%	13.8%	12.9%	13.0%	13.1%
3000-3499	33.0%	33.5%	32.1%	32.4%	31.5%	32.6%	33.4%
3500-3999	32.3%	34.4%	32.9%	33.0%	34.1%	32.4%	32.9%
4000-4499	12.2%	10.0%	12.7%	11.8%	12.2%	12.2%	12.0%
4500-4999	2.0%	1.9%	2.3%	2.1%	2.0%	2.2%	1.8%
>5000	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%

GESTATION (Weeks)	2008	2009	2010	2011	2012	2013	2014
<26 weeks	0.3%	0.2%	0.3%	0.2%	0.3%	0.3%	0.3%
26 - 29 weeks + 6 days	0.6%	0.6%	0.6%	0.8%	0.7%	0.7%	0.6%
30 - 33 weeks + 6 days	1.5%	1.4%	1.4%	1.3%	1.5%	1.5%	1.4%
34 - 36 weeks + 6 days	4.1%	4.1%	4.3%	4.4%	4.4%	4.4%	4.9%
37 - 41 weeks + 6 days	90.9%	92.6%	92.8%	93.2%	93.0%	93.0%	92.6%
42 + weeks	2.5%	1.1%	0.6%	0.2%	0.2%	0.1%	0.1%

NOTES ON PERINATAL MORTALITY

- The overall rate applies to all babies weighing greater than or equal to 500g who were stillborn or died in the first seven days of life (70).
- The uncorrected perinatal mortality rate is calculated when unbooked or transferred in labour cases (2) are excluded. Late bookers are not excluded.
- The corrected perinatal mortality rate is the uncorrected perinatal deaths (68) less the number of congenital malformations (29) equals 39. This gives an uncorrected rate of 7.6 and a corrected rate of 4.3.

STILLBIRTHS

Stillbirths	**45**
Congenital Malformations	16
Placental	8
Cord	6
Extreme Prematurity & Infection	5
Infection	2
Feto Maternal Haemorrhage	1
Unexplained	7

Congenital (16)

1. **Age 37.** Para 1. Previous SVD at 38 weeks. Previous manual removal of placenta. Booked at 11 weeks. Anatomy scan at 20 weeks showed an abnormal four chamber view with suspected VSD. Amniocentesis performed. Reviewed by paediatric cardiology. Diagnosis Phelan McDermid syndrome. Review by Clinical Genetics. IUD in another jurisdiction at 28 weeks. Spontaneous vaginal delivery, female infant, 1.1 kilograms. No PM. Cause of death chromosomal abnormality Phelan McDermid syndrome deletion in the long arm of chromosome 22.

2. **Age 21.** Nulliparous. Booked at 12 weeks. BMI 22.4. Anatomy scan at 20 weeks negative for malformations. Regular attendance at antenatal clinic. Attended Emergency Room at 33 weeks with lower abdominal pain and reduced fetal movements. Scan confirmed FHND. Spontaneous labour. SVD male infant 2.19 kilograms. Post-mortem confirmed the presence of congenital anomaly, a dural AV fistula with secondary microcephaly and congestive cardiac failure. Placental examination was unremarkable.

3. **Age 32.** Para 1. Booked at 12 weeks. BMI 25.3. Previous obstetric history of forceps delivery at term. Uneventful antenatal care. Anatomy scan at 21 weeks negative for malformations. Presented in spontaneous labour at 38 weeks gestation. Fully dilated on admission to the Emergency Room. Twenty minutes later on admission to the labour ward the fetal heart not detected. Spontaneous vaginal delivery of a stillborn female infant weighing 3.3 kilos. Post-mortem examination confirmed a congenital malformation Trisomy 21. In addition there was a placental abnormality with extensive fetal thrombotic vasculopathy and the cord was tightly coiled with non-occlusive thrombus present.

4. **Age 29.** Booked at 19 weeks. BMI 22.5. Para 2. Previous ventouse and spontaneous vaginal delivery at term. Anatomy scan at 22 weeks revealed bilateral choroid plexus cysts and exomphalos. Amniocentesis revealed Trisomy 18. Intrauterine fetal demise diagnosed at 26 weeks. Assisted breech delivery. Stillborn male infant, 0.8 kilograms. Cause of death Trisomy 18 with associated multiple congenital malformations.

5. **Age 34.** Nulliparous. BMI 20.6. History of hypothyroidism. Booked at 12 weeks. Anatomy scan at 20 weeks showed sub-optimal views of the fetal heart. Scan repeated at 24 weeks revealed a small outlet VSD with a possibility of a overriding aorta. Cardiology review confirmed presence of VSD. Follow-up in Fetal Medicine Clinic. NIPT showed high risk for Trisomy 21. Confirmed following amnion PCR. Further follow-up in Fetal Medicine Department at 30 weeks, FHND. Induction of labour, stillborn male infant 1.76 kilograms. Placental histology hypercoiled cord with non-occlusive thrombus. Cause of death Trisomy 21 with cardiac abnormality.

6. **Age 43.** BMI 24.6. Nulliparous. Booked at 14 weeks. Anatomy scan at 20 weeks revealed normal anatomy but evidence of echogenic bowel. Amniocentesis performed at 24 weeks. Diagnosis confirmed Trisomy 21.

Further follow-up showed reduced growth velocity. IUD diagnosed at 27 weeks. Induction of labour. Stillborn male infant, assisted breech, 0.93 kilograms. No PM. Cause of death Trisomy 21. Placental histology revealed hypercoiled cord. Patients postnatal course complicated by a DVT.

7. **Age 22.** Para 1. Previous ventouse at term for a 2.5 kilo infant with known cardiac anomaly. Booked at 20 weeks. Fetal anatomy scan at 22 weeks revealed abnormal cardiac views. Fetal Medicine and Fetal Cardiology review revealed suspected congenital cardio-myopathy and reduced bi-ventricular function, similar to previous pregnancy. IUD diagnosed at 30 weeks. Induction of labour, stillborn male infant, 1.18 kilograms. Placental histology revealed a hyper-coiled cord. Post-mortem examination was negative for structural congenital malformations, but examination of the heart was consistent with congenital cardio-myopathy. Cause of death congenital cardio-myopathy.

8. **Age 25.** Nulliparous. Transferred from another hospital with a suspected significant fetal anomaly. Ultrasound confirmed presence of a large encephalocoele. FHND following visit abroad. Induction of labour at 24 weeks. Stillborn female infant, 0.82 kilograms. No PM.

9. **Age 28.** BMI 22.3. Para 1. Previous stillbirth at 28 weeks. Diagnosis congenital Arthrogryposis Multiplex. Booked at 8 weeks. Follow-up in Fetal Medicine Clinic. First trimester screening declined. Follow-up scan at 16 weeks showed evidence of scalp oedema. Further scans confirmed skin oedema plus bilateral pleural effusions suggestive of recurrence of diagnosis in first pregnancy. Amniocentesis performed at 17 weeks. Genetic counselling organised. Further scans confirmed worsening hydrops. FHND at 25 weeks. Induction of labour. Assisted breech delivery of stillborn female infant 0.96 kg. Fresh muscle biopsy taken at delivery. Karyotype 46 XX. Specific test for spinal muscular atrophy were negative. Placental histology revealed hydropic placenta with multifocal fetal thrombotic vasculopathy. Post-mortem examination confirmed recurrence of congenital myopathy.

10. **Age 38.** Para 1. Previous spontaneous vaginal delivery at term. History of primary infertility. ICCSI pregnancy. Booked at 13 weeks. Anatomy scan at 20 weeks, repeated because of poor cardiac views. Repeat scan at 24 weeks confirmed likely VSD with sub-optimal views of the aortic arch, subsequent review with paediatric cardiology confirmed aortic coarctation. Amniocentesis confirmed Trisomy 21. FHND following visit abroad. Induction of labour at 27 weeks. Male infant stillborn, 1.18 kilograms. Cause of death Trisomy 21 with complex cardiac abnormality. No PM.

11. **Age 37.** Nulliparous. History of primary infertility and asthma. Booked at 12 weeks. Anatomy scan at 21 weeks negative for malformations. Further scan at 26 weeks showed absent nasal bone. NIPT performed, suggestive of Trisomy 21. Amniocentesis at 28 weeks positive for Trisomy 21. FHND following visit abroad. Induction of labour at 29 weeks. Spontaneous vaginal delivery, stillborn male infant 1.53 kilograms. No PM. Placental examination – hypercoiled cord. Cause of death Trisomy 21 with cardiac abnormality.

12. **Age 39.** Para 2. Two previous vaginal deliveries at term. Booked at 12 weeks. Scan at 20 weeks negative for malformations, however patient concerned about fetal anomaly. Amniocentesis confirmed Trisomy 21. FHND following visit abroad. Induction of labour, assisted breech delivery, female infant, 0.59 kilograms. Cause of death Chromosomal Trisomy 21.

13. **Age 39.** BMI 30.23. Para 1. Previous emergency section at term. Previous LLETZ. Booked at 13 weeks. Anatomy screening scan at 20 weeks revealed short femur. Estimated fetal weight less than 5th centile. Follow-up in Fetal Medicine Clinic. Amniocentesis performed at 28 weeks, following suspected Trisomy 18 on NIPT. Diagnosis of Trisomy 18 confirmed. IUD confirmed at 30 weeks. Induction of labour. Spontaneous vaginal delivery, male stillborn, 1.19 kilograms. PM declined. Placental histology showed early acute chorioamniotis with some recent retro placental haemorrhage. Cause of death chromosomal Trisomy 18.

14. **Age 41.** BMI 30.54. Para 1. Previous elective section for poly-hydramnios complicated by PPH. Known fibroids. History of DVT. Booked at 14 weeks. Anatomy scan at 21 weeks revealed bilateral choriod plexus cysts, two vessel cord, estimated weight less than 10th centile. Follow-up in Fetal Medicine Department. Amniocentesis performed at 22 weeks. Confirmed Trisomy 18. Planned VBAC. Attended with spontaneous rupture of membranes at 42 weeks. Spontaneous labour. Assisted breech, stillborn female, 2.19 kilograms. No PM. Cause of death Trisomy 18. Placental histology evidence of ascending infection, two vessel cord, acute suppurative chorioamnionitis and accelerated villous maturation.

15. **Age 20.** Para 1. Late booker at 34 weeks. Past history of previous spontaneous vaginal delivery at term. Past history hypertension. Anatomy scan at booking visit confirmed 34 weeks, polyhydramnios, brain holoproscencephaly alobar spine thoracic hemi vertebra, long bones all less than the 5th centile. Amniocentesis performed. Prenatal MRI performed in Temple Street. Appearances suggestive of compete infarction of the hind brain. Fetal Medicine follow-up. Induction of labour at 39 weeks. Stillborn male infant 2.69 kg. Karyotyping from amniocentesis failed with no growth. Placental cytogenetics revealed abnormal male karyotype. Trisomy 8. Cause of death Trisomy 8 plus CNS congenital anomaly.

16. **Age 33.** Para 1. One previous vaginal delivery at term. Previous pregnancy associated with pre-eclampsia and PPH. Booked at 11 weeks. Anatomy scan at 21 weeks negative for malformations. Low lying placenta. Repeat ultrasound at 34 weeks for placental localisation identified possible cardiac anomaly. Fetal Medicine follow-up at 37 weeks showed oligohydramnios and FHND. Induction of labour. Spontaneous vaginal delivery of stillborn female infant weighing 3.08 kg. PM confirmed major congenital cardiac malformation with a VSD with preductal coarctation/tubular hyperplasia of the aorta. Facial features were suggestive of Trisomy 21, but cytogenetics failed to grow from both placenta and fetal skin samples. Cause of death major congenital cardiac malformation.

Placental (8)

1. **Age 29.** Para 1. Previous ventouse at 41 weeks. BMI 30.27. Booked at 15 weeks. Booking bloods normal. Anatomy scan negative for malformations. Irregular attender. Glucosuria at 35 weeks, poor follow-up and multiple DNAs. Scan at 35 weeks, normal growth and biophysical score. Attended Emergency Room at term +5 with reduced fetal movements. FHND. Induction of labour. Spontaneous vaginal delivery of a female infant weighing 3.16 kilograms. Mec III. Placental examination revealed normal coiling index. Placenta was below the 3rd centile for gestational age. Evidence of placental hypoplasia, but there was evidence of multi-focal moderate to severe chronic villitis with an increase in nucleated red blood cells. Post-mortem declined. Cause of death placental.

2. **Age 25.** Para 3. Three previous vaginal deliveries at 32, 36 and term. Multiple attendances at ultrasound unit for cervical length. Anatomy scan negative for malformations. Attended Emergency Room at 25 weeks with abdominal pain. FHND. Induction of labour. Spontaneous vaginal delivery, female infant, 1.1 kilograms. PM revealed no evidence of congenital malformation. There was a large retro-placental clot confirming a diagnosis of placental abruption.

3. **Age 36.** Para 3. BMI 31.23. Previous classical caesarean section at 25 weeks followed by emergency caesarean section at 25 and 26 weeks. Pre-eclampsia in all three pregnancies. Booked at 13 weeks. Regular attender. Anatomy scan at 20 weeks negative for malformation. Regular review in Fetal Assessment with serial growth and Doppler. Regular attender in the Day Care Unit for PET monitoring. Hypertension treated with Labetalol and Methyldopa. Required addition of Nifedipine to control blood pressure from 20 weeks. Admitted at 24 weeks for monitoring. At 25+3 no FH picked up on routine auscultation. Confirmed on scan. Stillborn male infant weighing 0.8 kilograms delivered by elective caesarean section. PM declined. Placental histology revealed significant retroplacental haemorrhage. Cause of death placental abruption, less than 5% infarction with evidence of nucleated red cells in the fetal circulation.

4. **Age 26.** Para 1. Previous SVD. BMI 31.6. Booked at 13 weeks. Anatomy scan at 20 weeks negative for malformations. Irregular attender at clinic Gestational diabetes diagnosed following GTT. Diet controlled. Attended Emergency Room by ambulance at 36 weeks with abdominal pain. FHND. Induction of labour. Female infant weighing 2.2 kilograms, stillborn. Placental histology revealed a hyper-coiled cord, coiling index 0.5. Placental histology revealed significant delayed villous maturation. Post-mortem examination was negative for malformations. Cause of death delay villous maturation/maturation defect.

5. **Age 33.** Para 1. Previous PPROM at 25 weeks and vaginal delivery of female infant 0.68 kilograms. Neonatal death at 16 days from prematurity and sepsis. Past history of depression, unexplained seizures as a child. Booked at 14 weeks. Early pregnancy scan at 16 weeks. Anatomy scan at 20 weeks negative for congenital malformations. Growth scan at 32 weeks showed

reduced growth velocity, Doppler and biophysical score normal. Estimated fetal weight on the 19th centile. Planned for induction of labour at term. However IUD diagnosed following attendance with reduced fetal movements at 38 weeks. Induction of labour, spontaneous vaginal delivery, female infant, stillborn, 2.24 kilograms. Post-mortem examination negative for congenital malformations. Growth restricted infant on the 3rd centile for gestational age. Small placenta, third centile. Increased peri-villous fibre and deposition affecting 40% of the placenta. Evidence of fetal thrombotic vasculopathy.

6. **Age 36.** Para 1. One previous emergency section at term. Booked at 14 weeks. Scan at 21 weeks negative for congenital malformations. Regular attender at clinic. Booked for planned elective repeat caesarean section in view of breech presentation at 39+5. On admission routine fetal heart check revealed fetal heart not detected. Induction of labour. Stillborn female infant, 2.49 kilograms. Post-mortem examination confirmed normal karyotype. No evidence of congenital malformation or ascending infection. Fetal demise was caused by delayed villious maturation leading to fetal hypoxia.

7. **Age 29.** BMI 33.7. Poor obstetric history. Para 2+2. Emergency caesarean section at 31 weeks in first pregnancy for HELLP syndrome; twenty week late miscarriage; followed by emergency section at 24 weeks; neonatal death followed by late miscarriage at 18 weeks in last pregnancy. Later booker at 22 weeks. Anatomy scan negative for congenital malformations at 22 weeks. Developed proteinuria and hypertension at 23 weeks. Admitted for observation and treatment of hypertension. Placental abruption at 24 weeks. Emergency caesarean section. Female infant, stillborn, 0.6 kg. Placental examination confirmed massive placental abruption, in addition evidence of chronic utero-placental insufficiency was noted. No PM. Cause of death massive placental abruption on a background of pre-eclampsia and previous HELLP syndrome.

8. **Age 39.** Para 0+1. BMI 27.6. Medical history – insulin dependent diabetes, hyperthyroid. Booked at 12 weeks. Anatomy scan at 20 weeks showed polyhydramnios. View of great vessels not completely reassuring. Fetal echo booked with subtle disproportion of the great artery. Fumur length was also short. Amniocentesis at 25 weeks. Fetal Medicine follow-up. Suspected pulmonary stenosis. Query Noonan Syndrome. Fetal cardiac echo normal. Scan at 31 weeks, FHND. Induction of labour. Spontaneous vaginal delivery, male infant, 1.71 kg, stillborn. Karyotype 46XY normal. PM examination revealed evidence of dual pathology, pleural effusions and enlarged liver consequent upon congestive cardiac failure leading to a widely patent foreamen ovale and may have accounted for the difference between widths or the aorta and pulmonary artery. This is likely to have developed as a result of placental pathology which suggested placenta chorangiomas. There was also partly occlusive thrombus within the umbilical vein with extensive fetal thrombotic vasculopathy. No definite evidence of congenital malformation. Cause of death placental chorangiomas leading to congestive cardiac failure.

1. **Age 18.** BMI 23.5. Para 1. Previous emergency caesarean section. Booked at 18 weeks. Negative anatomy scan at 22 weeks. Attended Emergency Room at 31 weeks with lower abdominal pain. FHND. Induction of labour, male infant, 1.57 kilograms, stillborn. PM declined. Placental histology revealed evidence of increased nucleated red blood cells in keeping with acute hypoxia. There was a partly occlusive thrombus in the cord. Cause of death probable cord accident.

2. **Age 25.** Nulliparous. BMI 28.7. Late booker at 19 weeks. Anatomy scan at 22 weeks negative for malformations. Regular attender at clinic. Attended Emergency Room at 38 weeks with back and lower abdominal pain. Assessment normal. Allowed home. Re-attended at 40 weeks with pains, query labour. FHND, scan confirmed IUD. Induction of labour. Stillborn male infant, 3.58 kilograms. PM negative for congenital malformations. Placental examination revealed a very long cord, 1.25 metres in length. Cord was wrapped around the neck, the body and the leg. There was a complete occlusive thrombus in the umbilical cord artery. Cause of death cord accident.

3. **Age 25.** Para 2+3. Two previous caesarean sections at term and 3 early miscarriages. BMI 29.4. Past history CIN II, irritable bowel, panic attacks, recurrent UTIs. Booked at 14 weeks. Anatomy scan performed late at 30 weeks due to multiple DNAs. Negative for malformations. Attended at 37 weeks with reduced fetal movements. Scan confirmed FHND. Delivered by caesarean section in view of two previous sections. Stillborn female infant, 2.65 kilograms. PM declined. Placental histology revealed a tight true knot in the umbilical cord. Cause of death cord accident.

4. **Age 28.** Para 2. Two previous spontaneous vaginal deliveries at term. BMI 34. Booked at 16 weeks. Regular attender. Anatomy scan negative for malformations at 20 weeks. GTT at 28 weeks. Attended Emergency Room at 39+5 weeks, query labour. FHND. Spontaneous onset of labour. SVD stillborn female infant, 4.02 kg. Post-mortem examination negative for congenital malformations. Placental examination revealed long umbilical cord 94.5 centimetres, hyper-coiled with true knot, mural fibrin thrombi in the chorionic plate vessels with downstream obstruction in the fetal circulation, indicating probably cord accident. Cause of death probably cord accident.

5. **Age 26.** Nulliparous. BMI 20. Past history of PCO. Booked at 13 weeks. Anatomy scan at 20 weeks negative for malformations. Regular attendance at clinic. Attended with reduced fetal movements at 36 weeks. Reassuring fetal wellbeing investigations. Attended emergency room at term with a SHOW, query early labour, FHND. Induction of labour, spontaneous vaginal delivery, female infant, stillborn, 2.71 kg. Coroners PM. Placental examination revealed partly compressed umbilical cord with a partly occlusive thrombus present in the umbilical vein. There was probable evidence of ascending infection with maternal inflammatory

response, but no fetal response. Chorionic villi showed diffuse delayed villous maturation and incidental chorioanginomas 1 per cent of the volume was noted.

6. **Age 40.** Para 1+2. Two late miscarriages at 19 weeks followed by a spontaneous vaginal delivery at term. History of gestation diabetes. BMI 37.6. Booked at 11 weeks. Anatomy scan at 20 weeks, incomplete. Planned re-scan at 24 weeks. Attended Emergency Room at 23+ weeks with reduced fetal movements. Scan – FHND. Induction of labour. Assisted breech delivery, stillborn male infant, 0.72 kg. True knots X 2 in cord. Umbilical cord 49 centimetres long. Two tight knots identified. The cord was noted to be hypocoiled, with a coiling index of 0.06, non-occlusive thrombus was noted in the umbilical vessels. There was some fresh retro-membranes haemorrhage. PM declined. Cause of death probable cord accident.

Extreme Prematurity & Infection (5)

1. **Age 36.** Para 0+1. BMI 37. Booked at 11 weeks. Past history of PCO. Primary infertility. Anatomy scan at 21 weeks negative for malformations. Attended Emergency Room at 22 weeks with PPROM and abdominal pain. Fetus BBA. Female stillborn infant, 0.58 kg. PM negative for congenital malformations. Congenital broncho pneumonia. Placental examination revealed evidence of ascending infection with maternal and fetal inflammatory response. Cause of death extreme prematurity, with evidence of ascending infection.

2. **Age 36.** Para 1+1. Previous Ventouse delivery at term. Third degree tear. Booked at 15 weeks. Known fibroid uterus. Anatomy scan at 20 weeks negative for malformations. Attended at 23+ weeks with PPROM and irregular pains, cervix 6 centimetres dilated, ultrasound, FHND. Assisted breech delivery, stillborn, male infant, 0.56 kilos. PM negative for congenital malformations. Diffuse congenital pneumonia. Placental examination showed evidence of ascending infection with maternal and fetal response. Cause of death extreme prematurity and infection.

3. **Age 32.** Para 2. BMI 24.4. Previous emergency caesarean section at term, followed by spontaneous vaginal delivery at term. Multiple early miscarriages. Previous CIN II and LLETZ. History of mental health issues, gestational diabetes and anaemia. Congenital renal anomaly diagnosis as a child. Smoker 10 per day. Mild asthma. Late booker at 25 weeks. Anatomy scan negative for malformations. Poor attender at clinic. Admitted at 34 weeks gestation with PPROM. Two days following admission routine CTG showed deep decelerations. Vaginal examination revealed cord prolapse. Emergency caesarean section, female infant, 2.05 kilograms, no sign of life at delivery. Coroners PM negative for congenital malformation. Placental examination showed acute supprative chorioamnionitis and vasculitis with mild accelerated villous maturation. Cause of death premature rupture of membranes leading to cord prolapse and ascending infection.

4. **Age 35.** Para 1. Previous emergency caesarean section at term for failure to advance in second stage. Transfer from another hospital at 24 weeks gestation with a dichorioniac diamniotic twins with bulging fore-waters. Admitted for observation, antibiotic and steroids. Two weeks later at 26+4 FHND twin I, decision taken to proceed to deliver twin II by classical caesarean section. Magnesium sulphate given. Twin I stillborn male infant, 1.1 kilograms. Twin II, male infant, live born 0.85 kilograms. Admitted to NICU. Placental culture pseudomonas. Twin II RIP at two days old secondary to pseudomonas infection and extreme prematurity. Placental histology confirmed DCDA twins. Evidence of ascending infection with maternal and fetal response in both twins. Membranes showed acute supprative chorioamnionitis with positive culture of pseudomonas aeruginosa. No PM. Cause of death, twin I stillborn secondary to infection and extreme prematurity. Twin II, neonatal death infection secondary to extremely prematurity.

5. **Age 39.** Para 1. BMI 22.6. Past history endometriosis. Booked at 11 weeks. Diagnosed MCDA twins. Followed up in Fetal Medicine twin clinic with regular scans. Screening for the TTTS. Attended with PPROM at 23+1 weeks. Scan confirmed diagnosis also suggestive of low lying placenta, possibly covering the cervix. 25 weeks and 5 days, FHND twin 1. During routine CTG, fetal bradycardia in twin II decision made perform emergency caesarean section. Delivery at 25+ weeks. Twin I stillborn male infant, 0.77 kilograms. Twin II live born male infant 0.68 kilograms. Poor Apgar scores, resuscitation discontinued. NND day 1. Placental examination confirmed evidence of significant ascending infection in both twins. No PM. Cause of death sepsis and extreme prematurity.

Infection (2)

1. **Age 29.** Para 1. Previous spontaneous vaginal delivery. BMI 22.2. Booked at 17 weeks. Normal booking bloods. Anatomy scan negative for malformations. Low lying placenta. Regular antenatal care. Repeat scan for localisation at 34 weeks showed polyhydramnios. GTT normal. Attended at 39 weeks with abdominal pain and antepartum haemorrhage. FHND. Spontaneous labour, SVD, female 3.29 kilograms. Velamentous cord insertion. Limited PM negative for external congenital malformations. Placental cytogenetic 46XX. Placental examination revealed evidence of ascending infection with maternal and fetal response and velamentous cord insertion. Likely cause of the fetal demise ascending infection. Subsequent maternal death by suicide just over six months later.

2. **Age 22.** Nulliparous. BMI 21.1. Booked at 12 weeks. Anatomy scan at 22 weeks negative for malformations. Presented with spontaneous PPROM at 30 weeks gestation. Antibiotics and steroids given routinely. On day two following admission patients temperature was noted to be increased, 38 degrees centigrade, white cell count was raised. Magnesium sulphate was given and a plan was made for delivery by caesarean section due to suspected to evolving chorioamnionitis. The patient was taken to theatre. An emergency caesarean section was carried out. A stillborn male infant weighing 1.62 kilograms was delivered. A Coroners post-mortem was

performed. PM negative for congenital malformations. Cause of death ascending infection secondary to acute suppurative chorioamnionitis with fetal and maternal response. Strep pneumonia isolated. Cause of death infection.

Feto Maternal Haemorrhage (1)

1. **Age 41.** Nulliparous. BMI 24. Booked 14 weeks. Past history of hypothyroid. Regular attender at antenatal clinic and endocrine clinic. Anatomy negative for malformations at 20 weeks. Repeat scan for placental localisation at 34 weeks. Normal biophysical score and growth. Seen at term +5, induction of labour planned. Attended at 41 weeks gestation with reduced fetal movements. FHND. Induction of labour. Spontaneous vaginal delivery of male infant, stillborn, 3.44 kilograms. Placental histology negative. PM examination negative for congenital malformations. Kleihauer test strongly positive indicating feto-maternal haemorrhage of 224 mls. Cause of death large feto-maternal haemorrhage.

Unexplained (7)

1. **Age 25.** Nulliparous. BMI 26.9. Past history PCO. Booked at 8 weeks. Regular attender. Anatomy scan at 22 weeks negative for malformations. GTT at 28 weeks negative. Attended Emergency Room at 34+ weeks with reduced fetal movements. FHND. Induction of labour. Spontaneous vaginal delivery, male infant 2.34 kilograms. PM declined. Placental examination revealed non occlusive thrombus in the umbilical cord but no downstream effect. Negative for ascending infection or retroplacental haemorrhage. Unexplained IUD.

2. **Age 35.** Para 2. Previous elective sections x 2 at 37 and 38 weeks. BMI 22.5. Booked at 10 weeks. Anatomy scan at 21 weeks negative for malformations. Presented to the Emergency Room at 24 weeks with no fetal movements. Scan - no fetal heart detected. Induction of labour. Assisted breech delivery, male infant, 0.72 kilograms. Placental examination negative for infection, negative for cord accident, cytogenetics normal. Post-mortem revealed evidence of mild hydrops but no evidence of congenital malformation. Cause of death unexplained.

3. **Age 24.** Nulliparous. BMI 26.8. Booked at 13 weeks. Anatomy scan at 21 weeks negative for malformations. Regular attender at clinic. Attended Emergency Room at 38 weeks with reduced fetal movements for three days. Fetal assessment normal. Re-attended at 39+4 with pains but not in labour. FHND. Induction of labour, spontaneous vaginal delivery, stillborn female infant, 2.78 kilograms. PM declined. Placental examination revealed a hypercoiled cord but no evidence of ascending infection. Cause of death unexplained.

4. **Age 38.** Para 2. BMI 33.5. One previous elective caesarean section at term, followed by a forceps delivery at term. Booked at 12 weeks. Anatomy scan at 21 weeks negative for malformations. Regular attender at clinic. Minor RTA at 28 weeks. Growth scan at 26 and 28 weeks normal. Scan at 38 weeks normal biophysical score, normal Dopplers. She also attended the

endocrine clinic and was on Eltroxin for hypothyroidism. Attended Emergency Room at 39 weeks with reduced fetal movements. Admitted for observation and monitoring over night. Allowed home but returned later that day with reduced fetal movements and FHND. Induction of labour, stillborn female infant, 2.97 kilos. Placental histology revealed a placenta with a weight on the 5th centile. There was some evidence of some mild delayed villous maturation. There was pseudo knot in the umbilical cord. No evidence of ascending infection, retroplacental haemorrhage or villitis. Karyotype normal. PM negative for congenital malformations. Cause of death unexplained.

5. **Age 30.** Nulliparous. BMI 22.4. Booked at 11 weeks. Anatomy scan at 20 weeks negative for malformation. Right sided 5 centimetre ovarian cyst seen. Placenta low lying. Attended Emergency Room at 24 weeks with reduced fetal movements. Ultrasound scan confirmed FHND. Induction of labour at 24+4. Spontaneous vaginal delivery stillborn male infant 0.7 kg. Placental examination revealed increased coiling index 0.49, no evidence of thrombosis in the cord. There was significant recent retro-placental haemorrhage with secondary inflammation, negative for fetal and maternal inflammatory response. Post-mortem examination limited to external examination. Placental cytogenetics normal. Cause of death unexplained.

6. **Age 33.** Para 1. One previous SVD at term. BMI 19.7. History of IBS, depression, asthma. Booked at 11 weeks. Anatomy scan 21 weeks negative for malformations. Attended the Emergency Room at 29 weeks having fainted. Assessment normal and allowed to go home. Attended Emergency Room at 34 weeks with reduced fetal movements, scan FHND. Induction of labour. Spontaneous vaginal delivery of male infant, stillborn, 2.12 kg. Placental histology negative. Post-mortem examination negative for congenital malformation. Cause of death unexplained.

7. **Age 17.** Para 0+2. BMI 29. Unsure of dates. Anatomy scan at 22 weeks, negative for malformations. Attended the hospital at 26 weeks with reduced movements. Scan confirmed FHND. Induction of labour. Spontaneous vaginal delivery stillborn female infant, 0.9 kg. PM declined. Placental histology revealed a hypercoiled cord but no evidence of thrombus within the cord vessels. Cause of death unexplained.

EARLY NEONATAL DEATH

Early Neonatal Deaths **25**(27 reported on, including 2 < 500g born alive)

Prematurity & Infection	12 (+2 less < 500g)
Congenital	13

Prematurity & Infection (14)

1. **Age 34.** Para 2+1. Previous twin delivery at 34 weeks and miscarriage at 17 weeks. Past history hypothyroid and anaemia. Booked at 15 weeks having had cervical cerclage inserted in another jurisdiction at 10 weeks gestation. Attended at PPROM at 24 weeks. Admitted for observation, antiobiotics, steroids. Cervical cerclage removed. Developed chorioamnionitis. Emergency caesarean section performed at 24 weeks 5 days, following fetal tachycardia and deterioration of maternal condition. Female infant 0.7 kg, live born. Apgars 1 at 1, 1 at 5 and 5 at 10. Cultures pseudomonas ? negative. Chorioamnionitis. Baby RIP day 4 post delivery. Mother discharged day 11 post delivery. PM declined. Placental histology ascending infection. Cause of death infection and extreme prematurity.

2. **Age 37.** Para 1+4. One forceps delivery at term followed by three early miscarriages and a late miscarriage at 19 weeks. Booked at 6 week. Regular follow-up in ultrasound. Cervical cerclage at 12 weeks. Regular follow-up in ultrasound to assess cervical length. Anatomy scan at 19 weeks negative for malformations. Scan at 22 weeks, picked up asymptomatic cervical funnelling. Admitted for observation. Laboured at 24 weeks. Suture removed. Assisted breech delivery. Female infant. 0.59 kilograms. Apgars 2 at 1, 0 at 5. Paediatric review. Not for resuscitation. No PM. Placental histology evidence of ascending infection. Cause of death infection and extreme prematurity.

3. **Age 22.** Para 1. Previous spontaneous vaginal delivery at term. BMI 22. Moderate smoker 10 to 20 per day. Booked at 13 weeks. Booking scan revealed anhydramnios. Followed up in Fetal Medicine Unit. History suggestive of PPROM. Anatomy scan at 22 weeks confirmed anhydramnios. Limited structural survey, due to poor view, but no congenital malformations identified. Regular weekly follow-up. Patient aware of poor prognosis. Attended Emergency Room at 24 weeks with heavy vaginal bleeding. Attended Emergency Room at 31 weeks with pains. CTG non- reassuring. Emergency caesarean section performed, live born female infant, 1.17 kilograms. Apgars 2 at 1, 2 at 5 and 2 at 10. RIP shortly after delivery. No PM. Placental histology revealed evidence of ascending infection, with maternal and fetal response. Cause of death pulmonary hypoplasia secondary to prolonged PPROM.

4. **Age 35.** Para 1. Previous emergency caesarean section at term for failure to advance in second stage. Transfer from another hospital at 24 weeks gestation with a dichorioniac diamniotic twins with bulging fore-waters. Admitted for observation, antibiotic and steroids. Two weeks later at 26+4 FHND twin I,

decision taken to proceed to deliver twin II by classical caesarean section. Magnesium sulphate given. Twin I stillborn male infant, 1.1 kilograms. Twin II, male infant, live born 0.85 kilograms. Admitted to NICU. Placental culture pseudomonas. Twin II RIP at two days old secondary to pseudomonas infection and extreme prematurity. Placental histology confirmed DCDA twins. Evidence of ascending infection with maternal and fetal response in both twins. Membranes showed acute supprative chorioamnionitis with positive culture of pseudomonas aeruginosa. No PM. Cause of death, twin I stillborn secondary to infection and extreme prematurity. Twin II, neonatal death infection secondary to extremely prematurity.

5. **Age 39.** Para 1. BMI 22.6. Past history endometriosis. Booked at 11 weeks. Diagnosed MCDA twins. Followed up in Fetal Medicine twin clinic with regular scans. Screening for the TTTS. Attended with PPROM at 23+1 weeks. Scan confirmed diagnosis also suggestive of low lying placenta, possibly covering the cervix. 25 weeks and 5 days, FHND twin 1. During routine CTG, fetal bradycardia in twin II decision made perform emergency caesarean section. Delivery at 25+ weeks. Twin I stillborn male infant, 0.77 kilograms. Twin II live born male infant 0.68 kilograms. Poor Apgar scores, resuscitation discontinued. NND day 1. Placental examination confirmed evidence of significant ascending infection in both twins. No PM. Cause of death sepsis and extreme prematurity.

6. **Age 32.** Para 2. Two previous emergency sections. Booked at 9 weeks. Past history of gestational diabetes. BMI 26.6. Attended Emergency Room at 19 weeks with vaginal bleeding. Spontaneously settled. Anatomy scan at 20 weeks negative for malformations. A further episode of vaginal bleeding at 22 weeks with associated lower abdominal pain. Laboured spontaneously at 22+ weeks gestation. Spontaneous vaginal delivery, female infant, 0.61 kilograms. Active resuscitation not performed. RIP one hour. PM negative for malformations. Cause of death extreme prematurity.

7. **Age 40.** Para 4. Unbooked. History of all vaginal deliveries, last baby born at 28 weeks. Brought in by ambulance at 23+ weeks gestation with PPROM. Admitted for steroids and antibiotics. Proceeded to spontaneously labour. Spontaneous vaginal delivery, live born female infant, 0.6 kilograms. Baby died shortly after delivery. Placental histology negative for ascending infection. Cause of death extreme prematurity.

8. **Age 30.** Para 0+1, previous late miscarriage at 20 weeks. BMI 32. Booked at 12 weeks. Cervical cerclage at 12 weeks. Regular cervical length assessments. Mild funnelling noted at 16 weeks. Rescue suture inserted. Previous histology on first pregnancy suggestive of infective aetiology. Further scan at 18 weeks; no change. Anatomy scan at 20 weeks incomplete structural survey. Planned for review in four weeks. Admitted at 22 weeks with bulging membranes. Cervical suture removed in theatre. Proceeded to spontaneous vaginal delivery of female infant, 0.53 kilograms. Resuscitation not indicated due to extreme premature gestation. No PM. Placental histology showed evidence of ascending infection with maternal inflammatory response noted. There was no evidence of fetal inflammatory response. Cause of death extreme prematurity secondary to incompetent cervix.

9. **Age 25.** BMI 20.6. Para 0+4. Two early and two late miscarriages at 16 and 17 weeks. Past medical history – factor XI deficiency. Booked at 13 weeks. Booked for cervical cerclage the following week. Regular follow-up with serial cervical lengths. Anatomy scan at 22 weeks negative for malformations. Presented at 23 weeks with PPROM. Cervical cerclage removed. Laboured at 23+4 weeks. Live born, male infant, 0.59 kg, Apgars 1 at 1 and 1 at 5. No resuscitation undertaken. No PM. Placental examination revealed evidence of extensive ascending infection with maternal and fetal response. Cause of death extreme prematurity and infection.

10. **Age 27.** Nulliparous. BMI 27.4. Booked at 13 weeks. Past history – non insulin dependent diabetes, primary infertility. IVF pregnancy. Triplet pregnancy with demise of twin 1 diagnosed at booking visit at 11 weeks. Followed up in Fetal Medicine Twin Clinic. Anatomy scan at 20 weeks negative for malformations. Attended Emergency Room at 22 weeks with PPROM. On examination twin I had progressed through the cervix into the vagina. Twin I spontaneous vaginal delivery, female infant 0.45 kilograms. Apgars 1 at 1, 0 at 5. Twin II spontaneous vaginal delivery of male infant, 0.5 kg, 3 at 1, 2 at 5. RIP day 1. PM declined. Placental examination showed evidence of ascending infection. There was some old retro-membranous haemorrhage. Cause of death extreme prematurity.

11. **Age 26.** Para 0+2. BMI 27. Booked at 13 weeks. Attended Emergency Room at 19 weeks with threatened miscarriage. Query UTI. Anatomy scan at 21 weeks negative for malformations. Attended Emergency Room at 23 weeks. Speculum examination, bulging forewaters. Proceeded to deliver spontaneously. Female infant, assisted breech, 0.59 kg at 23+ weeks gestation. Apgars 1 at 1 and 1 at 5. No active resuscitation. RIP at 1 hour. PM declined. Placental histology showed evidence of extensive ascending infection with maternal and fetal response. There was some fresh retroplacental haemorrhage. Cause of death extreme prematurity and infection.

12. **Age 32. Booked at another hospital.** Transferred at 26+2 weeks. Para 4+4. Four previous caesarean sections. On admission palpable abdominal contractions with abdominal tenderness. Suspected scar rupture. Emergency caesarean section performed. Male infant 1.06 kg, Apgars scores 5 at 1 and 8 at 5. Neonatal death day 1 post delivery. PM declined. No evidence of uterine rupture or abruption at delivery, cause of death iatrogenic prematurity. Placental histology negative.

13/14. **Age 38.** Nulliparous. BMI 22.3. Booked at 14 weeks. IVF pregnancy. Dichorionic diamniotic twins. Anatomy scan at 20 weeks, incomplete structural survey due to poor views. Attended the Emergency Room at 22 weeks gestation with increasing vaginal discharge. Speculum examination showed bulging membranes. Admitted for observation. Laboured spontaneously at 22 weeks gestation. Twin I assisted breech female 0.46 kg, Apgars 1 at 1 and 1 at 5. Twin II male infant assisted breech 0.47 kg, Apgars 3 at 1 and 1 at 5. Resuscitation discontinued. Placental histology evidence of ascending infection in both twins.

Congenital (12)

1. **Age 28.** Par 1+1. BMI 31.6. Previous Ventouse delivery at term. History of PCOS. Pregnancy induced hypertension in first pregnancy. IBS, group B strep in first pregnancy. History of dermoid cyst. Attended Early Pregnancy Unit with threatened miscarriage. Scan at 12 weeks revealed increased nuchal translucency. Anatomy scan at 20 weeks negative for malformations. Scan at 28 weeks revealed an-hydramnios with enlarged echogenic kidneys suggestive of polycystic kidney disease. Followed up in Fetal Medicine Clinic with serial ultrasound scans. Spontaneous labour at 37 weeks gestation. Male infant 3.19 kilograms. Apgars 3 at 1, 7 at 5 and 9 at 10. Transferred to NICU. Baby RIP day 5 postnatally. Post-mortem revealed auto-recessive polycystic kidney disease. Congenital hepathic fibrosis. Extensive pulmonary haemorrhage. Cause of death congenital renal anomaly.

2. **Age 32.** Para +1. Previous vaginal deliveries x 2 at term. Referred from another hospital at 23 weeks with suspected cardiac anomaly. Amniocentesis normal male karyotype. Admitted with PPROM at 36 weeks. Induction of labour for prolonged PPROM. Live born male infant 1.86 kilograms, Apgars 9 at 1, 9 at 5. Transferred to Crumlin Hospital for cardiac review. Additional anomaly tracheal oesophageal fistula and imperforated anus diagnosed. This additional features were suggestive of Vacteral Syndrome. Placental histology diffuse moderate accelerative villious maturation with retroplacental haemorrhage. Baby died day 3.

3. **Age 25.** Nulliparous. BMI 29.7. Booked at 11 weeks. Regular attender. Initial booking scan suggested abdominal wall herniation. Subsequent follow-up in Fetal Medicine Department revealed bladder outlet obstruction with bilateral dilated renal pelvis and marked megacystis. Amniocentesis normal karyotype 46XY. Two vessel cord noted. Gross polyhydramnios developed. At 36 weeks bilateral drainage of fetal kidneys performed in theatre under ultrasound guidance. Induction of labour arranged for following day. Ventouse delivery male infant, 3.52 kilograms. Baby transferred to NICU, then to Crumlin. RIP day 1. Post-mortem examination revealed multiple congenital malformations. Trachea oesophageal fistula, anal atresia, ambiguous external genitalia and marked bilateral renal dysplasia. Cause of death renal and GI congenital malformations.

4. **Age 29.** Para 1. Previous forceps delivery at term. Later booker at 29 week. Booking anatomy screening scan revealed an abnormal four chamber view, abnormal vessels. Hypoplasia of the left ventricle and echogenic bowel. Lumber and/sacral spinal bifida. Arnold Chiari malformation and banana shaped cerebellum. Amniocentesis performed at 29 weeks. Laboured spontaneously at 31 weeks. Spontaneous vaginal delivery female infant 1.33 kilograms. Primary PPH. Apgars 5 at 1, 8 at 5. Baby RIP day 2 post delivery. Cytogenetics returned 69XXX. Placental histology true knot in cord but no thrombosis. No PM. Cause of death. Chromosomal Triploidy with multiple congenital malformations.

5. **Age 36.** Para 0+1. Transferred from another hospital with suspected fetal anomaly at 22 weeks gestation. Ventricolomegaly and suspected absence of

corpus callosum noted on scan. Fetal Medicine follow-up. Antenatal MRI performed. Confirmed mild ventricular enlargement and absent septum pellucidum. Patient had incidental finding of large pelvic mass. Amniocentesis suggestive of single chromosome 13. Patient delivery by elective caesarean section at 30+1 weeks, male infant, 0.88 kilograms. Apgar score 3 at 1. Baby died shortly after delivery. Large righted ovarian mass removed at the time of caesarean section. Ovarian histology pseudo myxoma peritonei. No PM. Placental histology, placenta hypoplasia. No other pathology noted. Cause of death chromosomal anomaly absent chromosome 13.

6. **Age 27.** Nulliparous. Transferred from another hospital at 34 weeks gestation with suspected cardiac anomaly and polyhydramnios. Amniocentesis performed. Fetal medicine follow-up revealed abnormal four chamber view of the heart. Enlarged left atria and ventricle with mitral regurgitation. Out flow tracks were poorly visualised. Also possible abdominal wall defect. Follow-up in combined cardiac clinic between the Rotunda and the Coombe. Scan confirmed hypoplastic left heart variant with mitral stenosis and aortic atresia (Shone complex). Poor prognosis explained to patient. Spontaneous labour at 35 weeks. Ventouse delivery, male infant, 2.76 kilograms, Apgars 4 at 1 and 4 at 5. Comfort care given. Baby RIP at 1 hour. Karyotype 46XY. PM confirmed prenatal cardiac findings in keeping with Shone complex. Cause of death cardiac anomaly.

7. **Age 30.** Para 2. Two previous caesarean sections at term. BMI 26.3. Booked at 12 weeks. DCDA twins diagnosed. Anatomy scan at 22 weeks negative for malformations. Followed up in Twin Fetal Medicine Clinic. Discordant growth identified at 24 weeks. Twin I IUGR with associated polyhydramnios, VSD, fixed flexion deformities of both wrists. Further follow-up confirmed discordant growth with symmetrical growth retardation in twin I. Amniocentesis confirmed Trisomy 18 twin I. Elective caesarean section at 35+ weeks. Twin I male infant, 1.59 kilograms, Apgars 3 at 1, 6 at 5 and 6 at 10. Twin II male infant, 2.59 kilos, Apgars 8 at 1 and 10 at 5. Twin I transferred to NICU. Primary PPH. Twin I RIP day 3. No PM. Placental histology unremarkable. Cause of death. Trisomy 18.

8. **Age 28**. BMI 25. Para 0+1. Booked at 13 weeks. Anatomy scan at 21 weeks negative for malformations. Regular attender at clinic. Diagnosed breech and large for dates at 30 weeks. Scan confirmed polyhydramnios. Glucose tolerance test revealed gestational diabetes. Controlled with diet. Spontaneous labour at 37 weeks. Live born male infant weight 2.7 kg. Baby floppy and unresponsive with no FH at birth. Resuscitation discontinued. Coroners PM with input from neuropathology. Karyotype 46XY. Post-mortem was negative for structural congenital malformations. There was evidence of growth restriction. There was wide spread neo cortical and brain stem neuro necrosis with old long standing IVH. Muscle biopsies revealed evidence of mitochondrial respiratory chain defect, which explained the abnormal CNS findings. Placental examination showed a minor retroplacental haemorrhage which would not have been sufficient to cause fetal demise. Cause of death mitochondrial respiratory chain defect.

9. **Age 29.** Para 1. One previous spontaneous vaginal delivery at term. No past medical history of note. Transferred from another hospital for suspected fetal anomaly at 24 weeks. Short long bones, small thorax, suspected skeletal dysplasia. Fetal Medicine follow-up. Polyhydramnios identified at 29 weeks. Multiple rib fractures and long bone fractures noted. Amnio reduction at 33 weeks, uncomplicated. Induction of labour at 36 weeks. Female infant, 3.38 kg. Neonatal death at 1 hour. Post-mortem – lethal skeletal dysplasia.

10. **Age 31.** Para 2+1. Previous vaginal delivery of twins at 38 weeks. BMI 24. Past history of LLETZ for CIN, laser eye surgery, varicose veins, depression. Booked at 13 weeks. Anatomy scan at 21 weeks showed evidence of ventriculomegaly bilaterally. Absent nasal bone, possibility of septal cardiac defect. Fetal Medicine follow-up. IUGR, bilateral choroid plexus cysts, short femur and humerus. Amniocentesis performed. Confirmed Trisomy 18. Followed up in Fetal Medicine department. Induction of labour at 39 weeks. Spontaneous vaginal delivery, male infant 2.37 kg. Apgars 4 at 1, 7 at 5, 7 at 10. Comfort care provided. NND day 2. Placental histology showed placental hyoplasia otherwise unremarkable. No PM. Cause of death Trisomy 18.

11. **Age 34.** Para 1+1. BMI 27.7. Previous history Ventouse forceps delivery with third degree tear. Past medical history of PCO. Booked at 10 weeks. Anatomy scan at 20 weeks revealed short long bones, fractured humerus, IUGR. Referred to fetal medicine. Confirmed likely skeletal dysplasia. Fetal echo normal. Spontaneous onset of labour at 35 weeks. Assisted breech delivery, female, 2.1 kg, Apgars 2 at 1 and 1 at 5. RIP day 1. Genetics consistent with oestogenesis imperfecta. Placental histology showed placental omegaly, hypercoilded umbilical cord. Cause of death lethal skeletal dysplasia.

12. **Age 24.** Para 1. Previous vaginal delivery at term. BMI 25.9. Past history of hypothyroidism and depression. Booked at 13 weeks. Anatomy scan showed anhydramnios. Follow-up in Fetal Medicine Clinic confirmed anhydramnios, IUGR. History suggestive of PPROM. Poor prognosis outlined. Spontaneous labour at 32 weeks. SVD male infant. Live born 1.34 kg. Apars 5 at 1, 5 at 5. Comfort care provided. Baby RIP shortly after delivery. PM declined. Placental histology revealed evidence of early ascending infection. Negative for fetal inflammatory response. PPROM although suspected was never confirmed. Cause of death suspected renal agenesis. Congenital malformation not absolutely confirmed.

13. **Age 23.** Para 0+1. BMI 20.18. Smoker 10 per day. Booked at 24 weeks. Anatomy screening scan revealed a right sided cystic mass restricting cardiac views. Followed up in the Fetal Medicine Clinic. Diagnosed congenital diaphragmatic hernia. Amniocentesis performed. Induction of labour at 39 weeks. Spontaneous vaginal delivery, female infant, 3.05 kg. Apgars 6 at 1 and 7 at 5. Transferred to Crumlin. Developed invasive group B strep infection in PICU in Crumlin. PM performed. Karyotype 46XX normal. Placental examination showed evidence of early ascending infection.

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MATERNAL MORTALITY 2

There are two indirect maternal deaths reported on below. There were no direct maternal mortalities.

1. **Age 27**. para 0+1, previous early miscarriage, later booker at 30 weeks. BMI 26.9. Large for dates at booking. GTT one abnormal value at 2 hours, ultrasound scan – polyhydramnios, small for dates fetus, suspected multi-cystic kidneys. Spontaneous rupture of membranes at 35 weeks. Non-reassuring CTG. Emergency caesarean section. Female infant, 2.19 kg. Good Apgar scores. Transferred to NICU. Baby RIP – multi-cystic kidneys. Mother discharged day 4 post caesarean section. Re-attended day 16 feel unwell with headache, maternal collapse, transferred to the Mater, RIP. Coroners case. Cause of death a large astrocytoma.

2. **Age 30.** Para 1. The patient died by suicide just over six months following an intrauterine death at term.

The second is included in the maternal death section for the record. The case does not strictly fit the criteria of Maternal Death according to the WHO definition maternal death is with 42 days of delivery, however the Confidential Maternal Death Enquiry in Ireland has requested that deaths be recorded up to one year after delivery.

Maternal Mortality

Year	Total	Total Number of Mothers Attending
2005	0	7518
2006	0	8036
2007	0	9290
2008	1	9655
2009	2	9709
2010	3	9594
2011	3	10547
2012	2	10397
2013	3	10314
2014	2	10814
Total	**16**	**95874**

Maternal Mortality Rate **16.7/100,000**

WHO Definitions:

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

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

Severe Maternal Morbidity

Dr. Sharon Cooley

The Rotunda continued to prospectively monitor severe maternal morbidity during 2014.

In total there are 57 patients reported on with 70 events. The incidence of severe morbidity for 2014 was 0.6%. The incidence of severe maternal morbidity events was 0.79%.

The number of major morbidity events in the hospital has increased since 2013, reflecting the complexity of the cases attending the hospital.

Similar to 2013 there were no episodes of eclamptic seizure. Our number of cases with major obstetric haemorrhage remained the same at 25. There were one caesarean hysterectomy in 2014.

Our number of cases requiring transfer for intensive care or coronary care management or delivery increased to 16 in 2014 from 10 in 2013.

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 2013	Number of cases 2014
Major Obstetric Haemorrhage	25	25
Uterine rupture	1	0
Peripartum hysterectomy	3	1
Eclampsia	0	0
Renal or liver dysfunction	3	14
Acute respiratory dysfunction	3	4
Pulmonary embolism	4	1
Cardiac arrest	1	0
Coma	1	0
Cerebrovascular accident	0	0
Status epilepticus	1	1
Septicaemic shock	0	4
Anaesthetic issue	1	2
Transferred for ICU/CCU/ /Delivery in another unit	10	16
Maternal deaths	3	2*

*both indirect

Major Obstetric Haemorrhage (25)

1. **28 year old,** para 0+1, booked at 15 week gestation. Combined antenatal care, diet controlled gestational diabetic. Spontaneous vaginal delivery at term of a live born male infant weighing 3.33 kg, Apgars 9 at 1, 10 at 5. Placenta retained. Primary post partum haemorrhage, transfer to theatre for examination under anaesthetic. Manual removal of placenta followed by an atonic uterus. Third degree tear noted. In total 4 litres of blood loss requiring 4 units of packed red cells, 2 units of FFP and 2 Fibrinogen. Well postnatally and discharged home on day 3, 6 weeks later hospital postnatal check up with consultant input.

2. **35 year**, para 1, previous term delivery in another hospital, of an appropriate grown infant. Medical history of hyperthyroidism, booked for hospital led multidisciplinary antenatal care. Medications at booking: Neomercazole 20 mg 3 times a day and Propanolol 40mg daily. Dichorionic diamniotic pregnancy. Tachycardia in early pregnancy with associated tremor requiring medication adjustment, hyperemesis gravidarum. Antenatal anaemia, with poor response to oral iron. Haemoglobin 7 prior to delivery. Discordant growth noted at 35 weeks gestation with a 40% growth discrepancy and absent end diastolic flow in twin 2. Nonreassuring CTG. Emergency Caesarean section of a live born female infant weighing 2.37 kg and a liveborn female infant weighing 1.73 kg. Transfused 4 units packed red cells and 1 unit octoplas. High Dependency Unit admission for observation in the immediate postnatal period. Discharged home well on Day 5.

3. **39 year old**, primip. No significant medical history, booked at 13 weeks gestation with certain dates. Combined antenatal care; spontaneous onset of labour at 41 weeks gestation, forceps delivery with retained placenta and vaginal lacerations, 3.5 litre blood loss, 3 units of blood transfused. High dependency care for 48 hours postnatally. Discharged home well day 3.

4. **27 year old**, para 1 – previous Caesarean section for fetal distress. No significant medical history, non-smoker, booked at 13 weeks gestation, estimated date of delivery confirmed and consistent with dates. Requesting VBAC, combined antenatal care, spontaneous onset of labour at 40 weeks gestation. Emergency Caesarean section for fetal distress at 5 cm dilatation. Live born female infant delivered weighing 3.78 kg, Apgars 9 at 1 and 10 at 5. 1 litre blood loss inter-operatively, subsequent hypotension and tachycardia within the 24 hours post operatively, necessitating a return to theatre. Bleeding from the right ovarian pedicle identified necessitating right oophorectomy. Abdomen packed and patient transferred to the Mater Hospital. Transferred back for removal of the packs 48 hours later. In total 8.5 litre blood loss. Discharged home day 9 days post operatively. 18 units of blood transfused with 3 grams of Fibrinogen, 3 units of platelets and 8 units of octoplas. Subsequent postnatal review 6 weeks following delivery.

5. **33 year old**, para 4. Booked at 12 weeks gestation, non-Irish, limited English. Dates confirmed by ultrasound. 4 previous term deliveries, non-smoker, no significant medical history, Group B Streptococcus isolated antenatally. Combined antenatal care, went into spontaneous labour at 40

weeks gestation. Live born delivery of a female infant weighing 4.48 kg - Apgars 9 at 1 and 10 at 5. Massive post partum haemorrhage, 3.5 litre loss, retained placental tissue removed from the uterine cavity, Bakri balloon inserted for haemostasis. High Dependency care for 48 hours post delivery. Discharged home well day 4. Transfused in total 3 units of packed red cells.

6. **33 year old**, primip. Booked at 11 weeks gestation, estimated date of delivery confirmed by ultrasound, singleton pregnancy, no significant medical history, combined consultant led care. Presented in spontaneous labour at 40 weeks gestation. Non reassuring CTG at 4 cm, necessitating an emergency Caesarean section, placental abruption identified, live born male infant delivered weighing 3.35 kg, Apgars 8 at 1 and 9 at 5. Intraoperative blood loss 3 litres, necessitating transfusion of 1 unit of emergency O negative blood, cross matched with 5 units, 1 unit transfused and 1 pool of platelets. High dependency care for 48 hours post operatively. Discharged home well on day 5.

7. **34 year old**, primip. Booked at 12 weeks gestation, past medical history of hypertension, normotensive at booking. Shared antenatal care. Hypertension noted at 37 weeks gestation referred to the Day Care Unit, induction of labour at 40 weeks gestation for hypertension. Emergency Caesarean section at full dilatation for brow presentation, subsequent return to theatre with an atonic uterus. Examination under anaesthetic and a Bakri balloon insertion. Total blood loss 2.9 litres, transfused 2 units of cross matched blood. HDU care, 48 hours post operatively. Discharged home well day 5 post Caesarean section.

8. **40 year old**, primip. History of detached retina and Bipolar Disorder. Booked with spontaneous pregnancy at 11 weeks gestation and dichorionic diamniotic twins confirmed. Non-smoker, normal BMI. Hospital based care. Pre-eclampsia developed at 34 weeks gestation with selective intrauterine growth restriction of twin 2. Elective Caesarean section at 36 weeks gestation due to increased resistance in the blood flow of twin 2 and deterioration in the maternal condition. Live born male infant delivered weighing 2.97 kg, Apgars 9 and 10 and live born female infant weighing 1.98 kg, Apgars 9 and 10. Massive post partum haemorrhage, necessitating a return to theatre and insertion of Bakri balloon. 4 litres blood loss, 4 units of cross matched blood transfused, 2 grams of Fibrinogen, 1 pool of platelets and 4 units of octoplas. HDU care for 4 days post operatively. Discharged home well day 6 post operatively. On oral antihypertensive with arrangements made for a 6 week post natal check up. DNA for 6 week check up.

9. **30 year old**, primip. Booked for Consultant led care at 12 weeks gestation, certain dates, spontaneous labour at 40 weeks gestation, assisted vaginal delivery of a live born female infant weighing 3.59 kg, Apgars 8 at 1 and 10 at 5. Subsequent post partum haemorrhage 3.5 litres. Transferred to theatre for examination under anaesthetic. Cotyledons removed. 4 units of blood cross-matched and transfused, 2 units of octoplas transfused, transferred to HDU for 24 hours post natally. Transferred to the ward day 2 postnatally. Discharged home day 4. At 6 week follow up full recovery.

10. **38 year old**, para 1 – previous forceps delivery and PPH. No significant medical history, booked at 10 weeks gestation, ultrasound confirmed estimated date of delivery, combined antenatal care. Placenta noted to be low lying at the anatomy scan with arrangements for rescan at 34 weeks gestation. Placenta persistently posterior and low lying at 34 weeks gestation, admitted at 36 weeks gestation, sectioned at 38 weeks gestation. Live born female infant weighing 3.75 kg, 3.5 litre inter-operative loss. Bakri balloon inserted. 2 units of blood transfused and 2 grams of Fibrinogen, transferred to HDU unit for post operative care. Uneventful post natal period. Bakri balloon removed day 1 postnatally. Discharged home day 4 post section.

11. **33 year old**, para 5 – 5 previous Caesarean sections, 3 previous post partum haemorrhages. Booked at 13 weeks gestation. Estimated date of delivery assigned based on ultrasound. Previous echo for a heart murmur reported as normal. Booked for caesarean section at 39 weeks gestation and a bilateral tubal ligation. Patient declined tubal ligation on admission. Blood cross matched on admission in view of previous postpartum haemorrhage. Caesarean section undertaken by consultant in theatre. Limited access to the uterus with dense adhesions between the uterus and abdominal wall. J shaped incision undertaken and a difficult breech extraction. Live born male infant weighing 3.48 kilograms, Apgars 8 at 1 and 10 at 3. Three litre blood loss, necessitating 3 units of packed red cells, two grams of fibrinogen and two units of octoplas. High dependency admission. Bakri balloon inserted. Redivac drain. Transferred to the Mater for imaging day 3 postnatally due to increase in abdominal distension. CT showed intra abdominal fluid with normal bladder and urinary tract. Discharged home well day 5 post section following discussion of contraception. Reviewed six weeks postnatally.

12. **Emergency admission of a 37 year old lady**, para 3. Two previous term deliveries and one emergency caesarean section. Medical History of HIV. Attended at 7 weeks gestation with abdominal pain. Ultrasound showed free fluid in the pelvis and a right sided ectopic pregnancy. Laparoscopic salpingectomy undertaken. Extensive dense adhesions within pelvis requiring dissection to access the ectopic at the time of surgery. Total blood loss 2.5 litres. Four units of cross matched blood transfused, one gram of fibrinogen and two units of octoplas. High dependency care for 24 hours post operatively. Discharged home well on day 3 post laparoscopic right salpingectomy.

13. **30 year old**, para 0+1, booked at 14 weeks gestation. Combined antenatal care. No significant medical history. Non-smoker. Presented in spontaneous labour at 40 weeks gestation. Failure to advance in labour and emergency caesarean section undertaken. Atonic uterus at the time of surgery with 2.5 litre blood loss. Uterotonics administered. Two units of blood transfused and two grams of fibrinogen. Subsequent secondary postpartum haemorrhage necessitating return to theatre from the recovery room and a laparotomy. Persistent atony with clots removed from the uterus. B-Lynch suture and Bakri balloon inserted and transferred to the High Dependency Unit. Discharged home well day 5 postnatally.

14. **33 year old**, primip. BMI 31. Non-smoker. Family history of haemophilia. Booked at 13 weeks gestation. Dichorionic diamniotic twin pregnancy. Hospital based care with regular ultrasound. Antenatal review with haematologist. Plan for delivery recorded. Appropriately grown infants. Spontaneous rupture of membranes at 35 weeks gestation. Fetal tachycardia and assumed ascending chorioamnionitis necessitating emergency caesarean section. Two live born female infants were delivered weighing 3.14 and 2.79 kilograms. Both infants transferred to NICU for septic work up. Haematology input obtained at the offset of surgery, with urgent factor IX levels requested in view of the family history of haemophilia. Four litre intra-operative loss in total with a subsequent return to theatre for re-laparotomy B-Lynch suture and Bakri balloon in the immediate post-operative period due to ongoing postpartum haemorrhage. Transferred to HDU post-operatively. Discharged home well day 7 post caesarean section.

15. **39 year old**, para 0+3, booked at 11 weeks gestation. Ultrasound confirmed gestation. Consultant led antenatal care. Medical history of anaemia. Haemoglobin normal at booking. Non-national. History of back surgery. Non-smoker. Labour induced at 40 weeks gestation in view of maternal age. Spontaneous vaginal delivery of a liveborn female infant, weighing 3.54 kilograms. Post-partum haemorrhage necessitating transfer to the operating theatre for examination under anaesthetic. Placental cotyledons removed from the uterine cavity. In total 2.5 litre postpartum haemorrhage. Transfused 5 units of packed red cells. Four units of octoplas and two grams of fibrinogen. High dependency care postnatally. Transferred to the ward day 2 post delivery. Discharged home day 4 post delivery.

16. **29 year old**, para 2+2. Two previous second trimester losses and a previous caesarean section at 24 weeks for severe early onset pre-eclampsia, subsequent neonatal death; and another caesarean section at 31 weeks for severe early onset pre-eclampsia. Non-national, non smoker. History of essential hypertension. Booked at 22 weeks gestation. BMI 33. Hospital based care with weekly review. Admitted with hypertension two weeks following booking at 24+1 weeks gestation. Intrauterine fetal demise at 24 weeks. Progressive HELLP syndrome. Cause of intrauterine demise placental abruption. Caesarean section undertaken following correction of coagulopathy in the maternal interest, 850 ml blood loss. Two units of blood transfused, 7 grams of fibrinogen and 2 pools of platelets. High dependency care post operatively. Patient remained anuric 48 hours post operatively, necessitating transfer to the Mater Misericordiae Hospital for dialysis.

17. **33 year old**, para 1. One previous caesarean section at term. Rheumatoid arthritis. BMI 47. Booked at 12 weeks gestation with dichorionic diamniotic twins. Hospital led care. Admitted at 36 weeks gestation with a non-substantial antepartum haemorrhage and decision for caesarean section. Five litres intra-operative blood loss secondary to an atonic uterus post caesarean section. In total 2 units of uncrossed blood transfused, 7 units of cross matched blood, 4 units of fresh frozen plasma and 2 grams of octoplas. High dependence care post operatively for 6 days. Discharged home day 7, with arrangements for postnatal follow-up.

18. **34 year old**, para 2. Two previous term deliveries. First delivery complicated by pre-eclampsia at term, necessitating induction of labour. Second pregnancy uncomplicated. Booked at 15 weeks gestation for midwifery led care. Spontaneous onset of labour at 39 weeks gestation after an uncomplicated pregnancy. Keillands forceps delivery in theatre for failure to advance in the second stage. 4.01 kilogram, live born, female infant delivered. Apgars 9 at 1 and 10 at 5. Maternal collapse three hours following delivery with a massive postpartum haemorrhage, 2.5 litres blood loss. Transferred to theatre for examination under anaesthetic. Lateral wall vaginal tear sutured. Bakri balloon inserted. Postnatal care in the High Dependency unit. Discharged home day 4 post delivery. In total three units of cross matched blood transfused and two units of octoplas.

19. **20 year old**, primip. No medical history. Booked for midwifery led care at 18 weeks gestation. Non-smoker. BMI 24. Uncomplicated obstetric antenatal history. Spontaneous labour at 39 weeks gestation and spontaneous vaginal delivery of a male infant weighting 3.2 kilograms. Apgars 9 at 1 and 10 at 5. Vaginal wall laceration with a 2.9 litre blood loss. Transferred to theatre for suturing. Four units of blood transfused. Transferred to high dependency unit postnatally. Discharged home well day 2 post delivery.

20. **26 year old**, primip. IVF pregnancy. Booked at 14 weeks gestation. Singleton pregnancy. Uncomplicated antenatal care. Non-smoker. Pre-eclampsia at 40 weeks gestation necessitating magnesium sulphate and labetalol infusion, induction of labour. Forceps delivery of a male infant weighing 3.97 kilograms. Apgars 9 at 1 and 10 at 5. Subsequent secondary postpartum haemorrhage, 2.5 litre blood loss, necessitating examination under anaesthetic and uterine balloon insertion. Three units of cross matched blood transfused. Strict fluid input and output. Balloon removed day 1 postnatally. Discharged home well day 4 postnatally on labetalol 200 mg twice daily and arrangements for postnatal follow-up.

21. **23 year old**, para 1, previous term caesarean section for failure to advance. Booked at 12 weeks gestation. Estimated date of delivery confirmed. Medical history of anaemia and laryngeal malformation. Combined antenatal care. Non-smoker. Presented to the Emergency Room at 38 weeks gestation with bleeding. Revealed abruption diagnosed, Category 1 emergency caesarean section under general anaesthetic. Live born male infant delivered weighing 3.11 kilograms. Apgars 1 at 1 and 5 at 5. Stabilised and transferred to the Neonatal Intensive Care Unit. Estimated blood loss, 2000 mls. Two units of cross matched blood transfused and 5 grams of fibrinogen. HDU admission. Discharged from HDU day 2 postnatally. Discharged home well day 5 postnatally with arrangements for postnatal follow-up. Suspected cause of abruption pre-eclampsia. Labetalol commenced in the postnatal period. Did not attend for postnatal follow up.

22. **30 year old**, para 2. Two previous elective caesarean sections for oligohydramnios at term. Hepatitis B. Booked at 20 weeks gestation. Twin pregnancy. Hospital based antenatal care. Anomalies identified in twin 1 at 23 weeks gestation suggestive of aneuploidy. Non smoker, non-national. Elective caesarean section at 35 weeks gestation due to progressive polyhydramnios

for twin 1 and impending labour. Twin 1 1.59 kilograms, Apgars 3 at 1 and 6 at 5. Twin II 2.59 kilograms, Apgars 8 at 1 and 10 at 5. Subsequent atonic uterus. Twin I neonatal death at day 3 of age, suspected Trisomy 18. Primary postpartum haemorrhage necessitating return to theatre and examination under anaesthetic. Bakri balloon inserted. Balloon removed day 2 post-operatively. Endometritis day 7 postoperative necessitating IV antibiotics. Discharged home day 9 post-operatively well with arrangements for follow-up. In total 5 units of bloods transfused, two grams of fibrinogen and four units of octoplas.

23. **33 year old**, primip. Booked for consultant led care at 12 weeks gestation, medical history of polycystic ovaries, white coat hypertension and renal calculi. Uncomplicated pregnancy. Presented with spontaneous rupture of membranes at 39 weeks gestation. Augmentation of labour in view of a background history of Group B strep. Assisted vaginal delivery of live born male infant weighing 3.9 kilograms. Primary postpartum haemorrhage, secondary to uterine atony. Total blood loss six litres. Six units of cross matched blood transfused, 6 grams fibrinogen, 1 pool of platelets and six units of octoplas. Coagulopathy at the time of haemorrhage. Acute renal failure in the immediate postnatal period necessitating stabilisation and transfer to Beaumont Hospital for dialysis.

24. **26 year old**, primip. Booked at 20 weeks gestation. Non-smoker. Normal body mass index. Planned for midwifery led care. Elevated blood pressure and cholestasis at 40 weeks gestation. Induction of labour. Spontaneous vaginal delivery of a live born male infant weighing 4.02 kilograms. Apgars 9 at 1 and 10 at 5. Primary postpartum haemorrhage. Total estimated blood loss 5.8 litres. Transferred to theatre. Examination under anaesthetic Bakri balloon inserted. Subsequent midline laparotomy. Unicornuate was identified with the bleeding point on the posterior wall over sewn, modified B-Lynch suture inserted. Total 12 units of cross matched blood transfused, 4 grams of fibrinogen, two units of platelets and four units of octoplas. High dependency care for three days postnatally. Discharged home well day 7 postnatally. Subsequent six week follow-up with consultant review.

25. **30 year old**, primip. Evacuation of the retained products of conception was undertaken at 8 weeks gestation for a molar pregnancy. Discharged home well. Subsequent emergency admission, transferred from Connolly Hospital four weeks following surgery with heavy vaginal bleeding. Emergency laparotomy undertaken and uterine perforation identified and repaired. Total blood loss three litres. Four units of packed red cells and four units of fresh frozen plasma transfused. High dependency care post surgery. Discharged home well day 5 post-operatively.

Transferred for ICU/CCU/ Delivery in another unit (16)

1. **38 year old**, para 0. Known history of severe endometriosis. Assisted fertility. Developed gram negative septicaemia one week following embryo transfer. Drainage of a pelvic collection and systemic fungal infection identified. Subsequent miscarriage at 7 weeks gestation.

2. **30 year old,** primip. Booked at 11 weeks gestation. Past history of depression and urinary incontinence. Combined antenatal care. Presented at 38 weeks gestation with pre-eclampsia. Admitted for stabilisation. Ultrasound showed oligohydramnios and intrauterine growth restriction. Delivery by caesarean section in the maternal and fetal interest. Liveborn female infant weighing 2.25kgs. Apgars 9 at 1, 10 at 5. Maternal respiratory dysfunction in the recovery room, with associated maternal collapse. Suspected high spinal anaesthetic, possible anaphylaxis. Transferred to the Mater Hospital for intubation. Transferred back 24 hours postnatally, with arrangements for immunology follow up and cardiology follow up. Left ventricular dysfunction noted on echocardiogram. Suspected drug reaction precipitating maternal collapse. Normotensive in the postnatal period. Discharged home day 5 post caesarean section on oral antihypertensive. Arrangements for immunology, obstetric and cardiology follow up.

3. **30 year old**. Booked in the National Maternity Hospital. Transferred from the National Maternity Hospital to the Mater Hospital with Acute Cauda Equina Syndrome at 36 weeks gestation for emergency caesarean section. Transferred for postnatal care to the Rotunda Hospital. Liveborn female infant weighing 2.74kgs delivered. Maternal condition stabilised in the 24 hours post-delivery and discharged home well day 3 postnatally.

4. **36 year old,** para 2. One previous emergency and one previous elective caesarean section. Smoker. Booked at 14 weeks gestation. Shared antenatal care. Seizures secondary to benzodiazepine usage at 20 weeks gestation. Brought by ambulance to the hospital for assessment. Recurrent seizures on presentation to the hospital. History of substance abuse disclosed by the carer. Stabilised and transferred to the Mater Hospital for further management. Good recovery. Elective caesarean section with bilateral tubal ligation undertaken at term. Liveborn male infant delivered weighing 3.54kgs, Apgars 9 at 1, 10 at 5. Discharged home well postnatally.

5. **39 year old**, para 0+1. Booked at 15 weeks gestation for combined antenatal care. No significant medical history. Non-smoker. Attended for induction of labour at 41 weeks gestation. Maternal tachycardia noted. Induction deferred and maternal echocardiography undertaken. Peripartum cardiomyopathy identified. Elective caesarean section undertaken. Maternal care in the high dependency unit. Subsequent deterioration in maternal cardiac function necessitating stabilisation and transfer to the Coronary Care Unit in the Mater Hospital.

6. **35 year old**, para 1. Unbooked. Presented at the hospital at 36 weeks gestation with general malaise and fever. Emergency caesarean section undertaken and a live born male infant weighing 3.2 kilograms delivered. Maternal malaria diagnosed. Intensive care and ventilatory support required. Mother stabilised and transferred to the Mater Hospital for intensive care.

7. **23 year old.** Unbooked. Attended the emergency room at 22 weeks gestation with urosepsis and systemic shock. Admitted to HDU for further management and joint microbiology anaesthetic and obstetric care. Suspected pyelonephritis with associated renal failure. Transferred to the

Mater Hospital due to deterioration in maternal condition day one following admission. Transferred back from the Mater Hospital day 4 following initial review with a diagnosis of urosepsis, septic shock, acute renal injury and acute pulmonary oedema. E coli cultured from the urine, requiring 10 days of antibiotics. Discharged home ten days after initial review with arrangements for follow-up with her booking hospital.

8. **26 year old,** primip. Non-smoker. History of anxiety and depression. Booked at 15 weeks gestation. Mental health referral. Shared antenatal care. Emergency room attendance at 31 weeks gestation with hypertension and decreased fetal movements. Hospital admission. Emergency caesarean section for HELLP syndrome at 32 weeks gestation, and labile hypertension. Liveborn female infant delivered at 32 weeks gestation, weighing 1.22kgs. Apgars 8 at 1, 9 at 5. High dependency care. Deterioration in maternal hepatic function over the following 48 hours, necessitating transfer to intensive care in the Mater Hospital for plasmapheresis. Transferred back to the Rotunda day 7 postnatally. Discharged home well day 9 postnatally with arrangements for obstetric and haematology follow up.

9. **31 year old**, para 0. Care transferred from another hospital at 30 weeks gestation. Primary infertility. Medical history of complete heart block. Attending cardiology in the Mater Hospital. Hospital based antenatal care. Intermittent heart block during pregnancy. Persistent heart block developed at term. Spontaneous onset of labour at 38 weeks gestation. Assisted vaginal delivery of a live born female infant weighing 3.21 kilograms. Apgars 9 at 1 and 10 at 5. Complete heart block worsening postnatally. Transferred to the Mater Misericordiae Hospital for Cardiology Intensive Care. Transferred back to the Rotunda day 1 postnatally. Discharged home well day 3 post delivery.

10. **29 year old**, para 2. Two previous caesarean sections for growth restricted infants. Smoker. Booked at 13 weeks gestation. Combined antenatal care. Presented at 37 weeks in early labour. Emergency caesarean section undertaken and a liveborn male infant was delivered, weighing 2.6kgs. Apgars 9 at 1, 10 at 5. Central chest pain in the immediate hours postoperatively. High dependency care. Ileus on day 2/day 3 postoperatively. Transferred to the Mater Hospital for CT. CT abdomen and pelvis negative. CTPA showed multiple pulmonary emboli in the base of the lungs. Some free air under the diaphragm. Suspicion of visceral damage. Laparotomy undertaken to exclude the same. No damage identified. IVC filter inserted in the Mater. Combined anaesthetic, radiology and haematology care. Discharged day 18 following surgery. Arrangements for postnatal follow up and haematology follow up.

11. See Maternal Death section of report.
12. See No. 4 Major Obstetric Haemorrhage.
13. See No. 16 Major Obstetric Haemorrhage.
14. See No. 23 Major Obstetric Haemorrhage.

15. **31 year old**, para 0. Known history of an AVSD and a tracheo oesophageal fistula which was repaired. Vaters syndrome. Hospital based care. Booked at 13 weeks gestation. Planned for elective delivery in the Mater Hospital with cardiac input. Elective caesarean section at 35 weeks gestation. Live

born male infant delivered weighing 2.12 kilograms. Apgars 9 at 1 and 10 at 5. Coronary care in the Mater Hospital for the immediate post-operative period. Transferred to the Rotunda Hospital day 2 post delivery for high dependency care. Postnatal period complicated by pneumonia. Subsequent recovery and discharge from the hospital on day 12 following delivery.

16. **31 year old**, para 2. Two previous caesarean sections. One preterm with emergency admission with maternal bleeding and fetal demise and one term delivery. No other significant medical history. Booked at 14 weeks gestation. Central low lying placenta identified at 21 weeks gestation. Suspected placenta accreta. MRI requested and confirmed that suspicion of accreta. Admitted from 31 weeks gestation. Elective caesarean section in the Mater Hospital at 36 weeks gestation. Live born female infant delivered weighing 2.76 kilograms. Intra-operative blood loss 1.2 litres. Placenta accreta identified. Placenta left insitu. Transferred back to the Rotunda Hospital day 1 postnatally for obstetric follow-up. Discharged home well one week post caesarean with arrangements for ongoing follow-up to ensure dissolution of placental tissue.

Acute Renal or Liver Dysfunction (14)

1. See No. 23 Major Obs Haem.

2. **35 year old,** para 1. Known Gitelmans syndrome. Previous elective caesarean section at term for breech presentation. Booked at 12 weeks gestation for hospital led care. Obstetric and renal input. Elective caesarean section at 40 weeks gestation of a live born male infant weighing 3.29 kilograms. Maternal care in the high dependency unit for 48 hours postnatally. No postnatal complications and discharged home well on day 4 with arrangements for renal and obstetric follow-up.

3. **30 year old**, para 2+1. Two previous term deliveries. History of hypertension. Booked on antihypertensives at 17 weeks gestation. Hypertensive at booking. Referred to the medical clinic, diagnosed with essential hypertension. Anti-hypertensive medication adjusted. Presented to the emergency room at 30 weeks gestation with upper abdominal pain, hypertension and proteinuria identified. Admitted for stabilisation with suspected HELLP syndrome. Maternal condition stabilised on IV antihypertensives and induction of labour commenced in the maternal interest. Subsequent emergency caesarean section for a non-reassuring CTG. Live born female infant delivered weighing 1.13 kilograms, Apgars 9 at 1 and 10 at 5. High dependency maternal care postnatally. Labile hypertension postnatally. Discharged home well day 7 post caesarean section. Arrangements for day care and obstetric follow-up.

4. 20 year old, para 1. Previous assisted vaginal delivery of a liveborn male infant weighing 2.9kgs in 2009. Past medical history of anxiety and depression. Body mass index of 33. Booked at 13 weeks gestation for combined antenatal care. Hypertension noted at 27 weeks. No associated proteinuria. Pregnancy induced hypertension diagnosed. Regular day care review. Presentation to the emergency room at 35 weeks with proteinuria and blurred vision. Deterioration in the maternal condition at 36 weeks

gestation. Induction of labour. Liveborn male infant weighing 2.2kgs delivered, Apgars 9 at 1, 10 at 5. Maternal high dependency care postnatally. Blood pressure stabilised and discharged home well on day 4.

5. **34 year old**, para 1. Previous term uncomplicated normal delivery of a live born male infant weighing 3.71 kilograms. No significant medical history. Booked for combined antenatal care. Pre-eclampsia at 32 weeks and 4 days gestation necessitating maternal admission, stabilisation and emergency caesarean section of a live born male infant weighing 1.61 kilograms. Infant stabilised and transferred to the Neonatal Intensive Care Unit. Mother stabilised and transferred to the High Dependency Unit for two days postnatally. On labetalol and magnesium sulphate infusion. Changed to oral antihypertensives and discharged home well day 5 postnatally.

6. **37 year old**, para 0+1. No significant medical history. Booked at 12 weeks gestation for consultant led care. Presented to the Emergency Room at 37 weeks gestation with hypertension and headache. Diagnosis of HELLP syndrome made, maternal condition stabilised and emergency caesarean section undertaken. Live born male infant delivered weighing 3.58 kilograms. Apgars 9 at 1 and 10 at 5. High dependency maternal care for 48 hours following delivery. Gradual improvement in hepatic dysfunction. Discharged home well on antihypertensives with arrangements for obstetric follow-up.

7. **27 year old**, para 1. Previous intrauterine fetal demise of a female infant at 27 weeks gestation. Booked at 13 weeks gestation, for consultant-led hospital-based care. Emergency room admission at 32 weeks gestation. Presented with vomiting for 12 hours and epigastric pain, with associated hypertension and proteinuria. Retained in hospital. Commenced on antihypertensives. Transferred to the high dependency unit at 34 weeks gestation due to blood pressure refractory to oral medications. Emergency caesarean section undertaken once the maternal condition was stabilised at 34 weeks gestation. Liveborn male infant delivered weighing 2.05kgs. Apgars 9 at 1, 10 at 5. Continued high dependency care for 6 days postnatally. Discharged home day 6 with arrangements for follow up.

8. **32 year old**, primip. Booked at 11 weeks gestation for consultant-led care. Uncomplicated pregnancy. Presented with abdominal pain and nausea at 37 weeks gestation. Atypical HELLP syndrome diagnosed. Emergency caesarean section. Liveborn male infant weighing 3.04kgs delivered. Apgars 9 at 1, 10 at 5. High dependency maternal care for 48 hours postnatally. Blood pressure and bloods stabilised in 72 hours postnatally. Discharged home well day 5.

9. See No. 12. Transfer to Intensive Care.

10. See No. 21. Major Obstetric Haemorrhage.

11. **28 year old**, para 1+1. No significant medical history. Previous term delivery. Booked at 14 weeks gestation for combined antenatal care. Noted to be small for dates at 35 weeks gestation. Ultrasound required. Small baby with reduced growth interval identified. Admitted. Normotensive on admission.

Subsequent development of HELLP syndrome. Emergency caesarean section at 35 weeks gestation. Delivered of a live born female infant weighing 1.93 kilograms. Apgars 9 at 1 and 10 at 5. Admitted to the high dependency unit post-operatively. Discharged home well day 4.

12. See No. 16. Major Obstetric Haemorrhage.

13. **35 year old**, para 0+2. Previous ectopic, previous miscarriage. Booked at 13 weeks gestation for consultant-led care. Uneventful pregnancy. Admitted at 38 weeks gestation from the day care unit with HELLP syndrome. Emergency caesarean section. Liveborn male infant delivered weighing 3.1kgs, Apgars 9 at 1, 10 at 5. Admitted to HDU postnatally. Discharged to the ward 48 hours following delivery. Normotensive on Labetalol. Bloods stabilised and discharged home day 5 postnatally.

14. **39 year old**, primip. History of primary infertility. White coat hypertension. Booked at 12 weeks gestation for consultant led care. Admitted at 27 weeks gestation with severe pre-eclampsia and intrauterine growth restriction, stabilised. Emergency caesarean section at 27 weeks gestation. Live born female infant weighing 840 grams delivered. Maternal care in the high dependency unit following delivery. Discharged home well on day 8.

Acute Respiratory Dysfunction (4)

1. **40 year old** primip. IVF pregnancy. Dichorionic, diamniotic twins. Presented in labour at 28 weeks gestation. Emergency caesarean section for a non-reassuring CTG. Liveborn male infant weighing 1.25kgs, Apgars 6 at 1, 9 at 5, and female infant weighing 1.16kgs, Apgars 7 at 1, 9 at 5. Stabilised and transferred to the Neonatal Intensive Care Unit. Pulmonary oedema postoperatively, necessitating admission of patient to the high dependency unit. Gradual resolution of symptoms over the following 3 days, and good response to diuretics. Discharged well day 4 postnatally.

2. **37 year old**, primip. Booked for combined antenatal care at 13 weeks gestation. Uneventful pregnancy. No significant medical history. Presented with an antepartum haemorrhage at 37 weeks gestation, and non-reassuring CTG. Suspected abruption. Emergency caesarean section. Liveborn female infant delivered, weighing 3.15kgs. Apgars 9 at 1, 10 at 5. Persistent maternal hypoxia post-section. Asymptomatic in relation to the same. Subsequent diagnosis of low oxygen affinity haemoglobin, with familial history of the same identified. Discharged home day 10 post-operatively, with haematology follow up.

3. **21 year old**, primip. Background history of asthma, current smoker, normal body mass index. Booked at 18 weeks gestation for combined antenatal care. Induced at 39 weeks gestation for intrauterine growth restriction. Emergency caesarean section for fetal bradycardia in labour. Liveborn female infant weighing 2.5kgs, Apgars 8 at 1, 9 at 5. Patient hypothermic postoperatively, with dyspnoea. Suspected lower respiratory tract infection. Admitted to the high dependency unit for 48 hours. Discharged home well day 3 postoperatively.

4. **38 year old**, para 2. Two previous term deliveries. Medical history of anaemia and asthma. Booked in Cavan Hospital with monochorionic diamniotic twins. Referred to the Rotunda at 22 weeks gestation with suspected twin to twin transfusion syndrome. Transfer of care. Bacterial pneumonia at 22 weeks gestation complicating twin to twin transfusion syndrome. Fetoscopic laser ablation of placental vessels once maternal condition was stabilised. Fetal surveillance and follow-up over the duration of the pregnancy with plan for elective caesarean section in the referring hospital at 36 weeks gestation.

Pulmonary Embolism (1)

1. No. 14. Transfer to Intensive Care.

Septic Shock (4)

1. **33 year old**, para 1. Previous emergency caesarean section for failure to progress. Live born female infant. No significant medical history. Booked at 14 weeks gestation. Estimated date delivery confirmed. Serology negative. Combined antenatal care. Planned for VBAC. Presented in spontaneous labour, vaginal delivery of a live born female infant weighing 3.4 kilograms at 38 weeks gestation. Apgars 6 at 1 and 8 at 10. Uncomplicated postnatal care and discharged home well. Reattended the hospital Day 5 postnatally with abdominal distension. Suspected endometritis. Patient took self discharge 48 hours later and subsequently re-presented 13 days postnatally in septic shock. Triple antibiotics. Evacuation of retained tissue from the uterine cavity. High dependency care. Appropriate antibiotics with maternal response to same. Eight days high dependency care. Discharged home on antibiotics for a further five days and arrangements for follow-up in out-patients. Failed to attend for follow-up.

2. **36 year old**, para 0 +1. Known hypothyroidism and insulin dependent diabetes. Booked at 5 weeks gestation for combined endocrine obstetric care. History of recurrent urinary tract infections. Recurrent infections during the course of the pregnancy. Multiple admissions during the course of the pregnancy. Urosepsis at 30 weeks gestation necessitating three days in HDU. Subsequent prophylactic antibiotics for the duration of the pregnancy. Spontaneous rupture of membranes at 39 weeks gestation. Non-reassuring CTG, emergency caesarean section of a live born male infant weighing 2.62 kilograms. Mum and baby discharged home well 5 days postnatally with arrangements for urology, endocrine and obstetric follow-up.

3. See Transfer Out No. 6.

4. See Transfer Out No. 7

Pulmonary Embolism (1)

1. See Transferred Out No. 10.

Status Epilepticus (1)

1. **28 year old**, para 0+2. Known history of ectopic pregnancy. Pregnancy anxiety, obsessive compulsive disorder and epilepsy. Booked at 12 weeks gestation. Hospital led care. On anti-epileptic drugs at booking with regular review. Numerous attendances at the emergency room with PV bleeding and abdominal pain. Presented at 39 weeks gestation in early labour. Tonic clonic seizure on attendance. Short and self limiting. Labour induced and a spontaneous vaginal delivery of a live born female infant weighing 3.58 kilograms. Apgars 9 at 1 and 9 at 5. Uncomplicated postnatal care and discharged home well on day 2 with arrangements for obstetric and neurology follow-up.

Peripartum Hysterectomy (1)

1. **40 year old**, para 0. Medical history of Turner Mosaicism, hypertension and hypothyroidism. IVF pregnancy. Booked at 11 weeks gestation. Measurements consistent with dates. Hospital led antenatal care. Elevated blood pressure at booking. Cardiology review. Subsequent admission at 33 weeks gestation with uncontrolled blood pressure. Blood pressure stabilised. Elective caesarean at 36 weeks and 5 days in maternal interest. Streak gonads noted, morbidly adherent placenta, no evidence of separation. Uterine inversion on attempt to remove placenta. Decision made for caesarean hysterectomy. Well postnatally. Discharged home day 5.

Maternal Deaths (2)

See Maternal Deaths Section of report.

Complicated Postnatal Clinic

Dr Maeve Eogan

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

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

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

377 new patients were seen in the clinic in 2014 and the indications for their attendances are tabulated below:

Indication for Attendance	Number of Patients Seen
Postnatal Third Degree Tear	140
Postnatal Fourth Degree Tear	8
Postnatal Perineal Infection / Pain / Dyspareunia	64
Faecal Incontinence	7
Antenatal Assessment (next pregnancy)	134
Other (incl healing issues, history of FGM etc)	24
Total	**377**

The largest group of patients seen were those who attended after obstetric anal sphincter injury. 164 patients sustained anal sphincter injury in the year 2014, 159 of whom had third degree tear, while 5 patients sustained fourth degree tear (extending to involve anal mucosa).

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

Mode of Delivery	Third Degree Tear	Fourth Degree Tear
SVD	82	3
Ventouse	27	1
Ventouse & Forceps	20	0
Forceps	28	1
Born before arrival	2	0
Total	**159**	**5**

Clinic review after anal sphincter injury takes place at 6 weeks postnatal. However, all patients will have been offered physiotherapy follow-up prior to that and the clinic works closely with Cinny Cusack and team at the Department of Physiotherapy. A history is taken, including continence score if there are symptom

of faecal incontinence. Information regarding perineal healing and other postnatal symptoms is also obtained. Appropriate treatment or referral is initiated as required, and the clinic visit also provides an opportunity to answer questions regarding the index delivery as well as to the potential impact on future deliveries.

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

45 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)	2
Treatment of granulation tissue (OPD)	17
Fenton's procedure / perineal revision (day case)	13
Reversal of FGM	1
Perineal injection (day case)	6
Referral to colorectal service	6
Total	**45**

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

Publication:

Ali A, Glennon K, Kirkham C, Yousif S, Eogan M. Delivery outcomes and events in subsequent pregnancies after previous anal sphincter injury. European Journal of Obstetrics, Gynaecology and Reproductive Biology 2014; 174:51-53

Audit:

Doyle A, Horgan R, Eogan M. Re-Audit of compliance with current hospital guidelines on the management of 3rd degree tears

Hypertension with Proteinuria

The Master

YEARS	2013	2014
Total number of cases	**199**	**189**
Booked	198	187
Unbooked	1	2
Incidence against delivery	2.3%	2.2%
Eclampsia %	0.50%	0.00%
Stillbirths	1	2
Neonatal Deaths	3	0
Multiple pregnancy	21	13

Parity of Patients at Delivery

0	125	126
1	49	38
2	14	10
3	6	10
4 plus	5	5
Total	**199**	**189**

Gestation of Patients at Delivery

< 28 weeks	3	5
28 - 29 weeks	3	3
30 - 31 weeks	8	3
32 - 33 weeks	10	15
34 - 35 weeks	25	15
36 weeks plus	150	148
Total	**199**	**189**

Induction of Labour

The Master

In 2014, the induction rate was 30%. Of the 2631 inductions, the proportion of nulliparous patients was 55% versus 45% multiparous patients; this is broadly in keeping with previous years. The indications for induction were increased in the prolonged rupture of membranes category, and also in the diabetes category. Otherwise the indications for induction were similar to previous years.

INDUCTIONS OVER 5 YEARS

Year	Nullip	%	Multip	%	Total	%
2010	1326	57%	1008	43%	2334	27%
2011	1482	57%	1134	43%	2616	29%
2012	1414	57%	1064	43%	2478	28%
2013	1372	54%	1151	46%	2523	29%
2014	1436	55%	1195	45%	2631	30%

INDICATIONS FOR INDUCTIONS 2014

REASONS	TOTAL	%
Post Dates	858	32.6%
Prolonged SROM	499	19.0%
Reduced Fetal Movements	88	3.3%
Diabetes	137	5.2%
Hypertension	212	8.1%
Heart Disease	3	0.1%
IUD	30	1.1%
Anomaly	20	0.8%
Antibodies*	7	0.3%
Diminished Liquor	82	3.1%
IUGR	144	5.5%
Large Baby	48	1.8%
Medical/Social	232	8.8%
Multiple Births	27	1.0%
Other	192	7.3%
Poor Obstetric History	44	1.7%
Decreased Placental Function	1	0.03%
Poor Byphysical Score	7	0.3%
Total	**2631**	**100%**

* Anti D detected or Anti E

INDUCTION OF LABOUR

YEARS	2013	2014
Total No. of cases	2523	2631
Incidence against deliveries >500	29%	30%
No. of Caesarean sections for Inductions	537	614
Stillbirths	28	30
Neonatal Deaths	3	8

METHOD OF INDUCTION

YEARS	2013	2014
ARM	182	215
ARM + Synto	471	559
Prostin + ARM + Syntocinon	678	682
Prostin + ARM	410	375
Prostin	305	299
Cytotec	22	23
Prostin + Syntocinon	176	204
Syntocinon	279	274
Total	**2523**	**2631**

Caesarean Section

The Master

In 2014, the caesarean section rate was 31.3%, just over half of one percent higher than 2013. The primary caesarean section rate was slightly higher, at 62% versus 59%, while the repeat caesarean section rate was slightly lower at 37.8% versus 41.1%. There were an increased number of tubal ligations performed at caesarean section, 132 versus 91, and the caesarean hysterectomy rate was reduced from three cases in 2013 to one case in 2014. The total number of elective caesarean sections was slightly down, while there were 127 more emergency caesarean sections performed during the year. Looking at the Robson Criteria for 2014, the only significant change was an increased section rate in nulliparous patients induced at term, where the rate increased from 31.5% to 35.8%. Finding a more successful method of inducing nulliparous patients remains a challenge.

In looking at the indication for primary caesarean sections, a higher number of sections were performed for failure to progress in the first stage of labour. There was a reduction in the number performed for failure to progress in the second stage of labour, however there was a higher number of sections for failed instrumental delivery and a higher number performed for multiple pregnancies. Primary caesarean sections were reduced for patients with IUGR and increased where the indication was maternal request.

YEARS	2013	2014
Total number of cases	2650	2753
Incidence against total deliveries > 500g	30.6%	31.3%
Primary C.S.	58.9%	62.2%
Repeat C.S.	41.1%	37.8%
Classical C.S	2	2
Tubal Ligation at C.S.	91	132
C/S Hysterectomy	3	1

CAESAREAN SECTION ANALYSIS

All Deliveries for 2014	**8787**
All Caesarean Sections	2753
Section Rate	31.3%
Group 1 - Nullip Single Ceph Term Spont Lab	220/1686
Section Rate	13.0%
Group 2 - Nullip Single Ceph Term Induced	497/1389
Section Rate	35.8%
Group 2a - Nullip Single Ceph Term CS Before Labour	207
Group 3 - Multip Single Ceph Term Spont Labour	57/2136
Section Rate	2.7%
Group 4 - Multip Single Ceph Term Induced	65/1065
Section Rate	6.1%
Group 4a - Multip Single Ceph Term CS before Labour	156
Group 5 - Prev Section Single Ceph Term	873/1139
Section Rate	76.6%
Group 6 - All Nullip Breeches	190/197
Section Rate	96.4%
Group 7 - All Multip Breeches	167/181
Section Rate	92.3%
Group 8 - All Multiple Pregnancies	141/189
Section Rate	74.6%
Group 9 - All Abnormal Lies	13/13
Section Rate	100.0%
Group 10 - All Preterm Single Ceph	167/429
Section Rate	38.9%
Elective Caesarean Section Total	1319
Emergency Caesarean Section Total	1434
Total Multips	**5009**
Total Primips	**3748**

INDICATION FOR PRIMARY SECTIONS 2014

DELIVERY METHOD INDICATION	2013	2014
Fetal Distress {Antepartum & Intrapartum}	511	555
Failure to progress 1st stage	132	162
Failure to progress 2nd stage	46	31
Breech	218	267
Abruption/APH	23	18
P.E.T.	24	29
Transverse Lie/Oblique	16	17
Pyrexia	13	21
Placenta Praevia	30	28
Poor Obstetric History	27	16
Cord Prolapse/Presentation	6	7
Disproportion & Deep Transverse arrest	0	2
Failed Forceps/Ventouse	21	31
Face/Brow Presentation	5	4
Multiple Birth	39	60
Failed Induction	74	77
Prematurity	7	8
Hypertension	20	18
Emergency CS Scheduled for Elective CS	16	13
I.U.G.R.	25	14
Maternal Request	22	31
Medical Disorders	41	41
Poor Biophysical Profile	1	0
Other	174	181
Recurring indications	2	7
Rhesus Antibodies	0	0
Previous 3/4th degree tear	52	55
Malpresentaion in labour	15	20
Total	**1560**	**1713**

INDICATION FOR REPEAT SECTIONS 2014

DELIVERY METHOD INDICATION	Elective	Emergency
Failure to progress 1st stage	0	22
Failure to progress 2nd stage	0	0
Fetal distress	2	57
Disproportion(Malpresentation in Labour)	0	1
Breech	33	13
Hypertension	3	5
Placenta praevia	4	6
P.E.T.	1	6
Poor obstetric history	3	1
Cord Prolapse/Presentation	0	1
Previous LSCS	664	82
Previous classical CS	4	1
Multiple birth	7	1
Abruption / APH	0	7
Failed induction	0	4
Antepartum fetal distress	0	0
Emergency CS scheduled for elective CS	0	10
Failed forceps/ventouse	0	1
I.U.G.R.	7	2
Medical disorders	3	8
Transverse lie / Oblique lie	5	3
Other	36	19
Recurring Indications	0	3
Maternal request	6	1
Prematurity	0	5
Previous 3/4th Degree tear	1	0
Pyrexia	0	2
TOTAL	**779**	**261**

** These reasons are the First reason for Caesarean Section

Outpatient Activity Data 2014

CLINIC	New Attendances	Return Attendances	Total
Antenatal & Postnatal	11,678	37,887	49,565
Gynaecology	2,668	7,044	9,712
Paediatrics	5,466	3,283	8,749
Endocrinology	3,496	2,556	6,052
Gastroenterology	21	19	40
Haematology	304	397	701
Anaesthetics	477	22	499
Nephrology	239	660	899
Psychiatry	417	355	772
Dove Medical	115	136	251
Allied Health Clinics	3,101	3,410	6,511
Diagnostic Clinics	7,632	21,632	29,264
Total	**35,614**	**77,401**	**113,015**

*** Gynaecology includes Colposcopy & Smear Clinics

THE ROTUNDA HOSPITAL DUBLIN

3 Departmental Reports

Department of Gynaecology

OPERATION CATEGORIES

	2010	2011	2012	2013	2014
Obstetrical Majors	2469	2745	2604	2717	2821
Obstetrical Minors	1273	1287	1284	1259	1242
Vaginal Surgery	677	626	610	609	592
Abdominal:Uterus	113	110	125	93	88
Abdominal:Tubes & Ovaries	360	336	317	311	295
Other procedures	2760	2615	2365	2245	2369

THEATRE GYNAECOLOGIC WORKLOAD

VAGINAL SURGERY	2013	2014
Vaginal hysterectomy	13	10
Manchester repair	0	0
Pelvic Floor Repair	48	41
Vaginal Hysterectomy & AP Repair	35	31
Sacro Spinous Colpopexy	8	5
Removal of IUCD	134	146
Insertion of IUCD	357	344
Other	14	15
Total	**609**	**592**

ABDOMINAL OPERATIONS OF THE UTERUS	2013	2014
Total Abdominal Hysterectomy	33	14
Myomectomy	17	16
TAH & Bilateral Salpingo-oophorectomy	23	31
Sub Total Hysterectomy	20	27
Total	**93**	**88**

THEATRE GYNAECOLOGIC WORKLOAD

ABDOMINAL: TUBES AND OVARIES	2013	2014
Tubal Surgery	2	1
Laparoscopic Sterilisation	33	28
Tubal Ligation at Caesarean Section	91	92
Salpingectomy	73	68
Ovarian Cystectomy	73	69
Oophorectomy	17	9
Ovarian Biopsy	7	3
Salpingo-oophorectomy	15	25
Total	**311**	**295**

OTHER PROCEDURES	2013	2014
Laparoscopy	297	259
Laparoscopy and Dye	216	218
Hysteroscopy	199	153
D&C/H&C	853	846
UBT	46	54
EUA	46	65
Cystoscopy	18	15
Laparotomy	48	59
Excision Bartholins Cyst	36	24
Fentons	4	13
Diathermy Vulval Warts	1	0
Operative Hysteroscopy	4	6
Endometrial Ablation {Rollerball}	14	47
Laparoscopic division of Adhesions	47	29
Laparoscopic Ablation of Endometriosis/Argan	124	138
Polypectomy	71	72
TVT	10	1
Punch Biopsy of Cervix	12	4
LLETZ	21	23
Other Gynae Surgery	136	307
Other Surgery - fetal/anaesthetic	42	36
Total	**2245**	**2369**

GRAND TOTAL		
Gynae Grand Total Minors & Majors	**3258**	**3344**

THEATRE OBSTETRIC WORKLOAD 2014

MAJORS	2013	2014
Caesarean Hysterectomy	3	1
Classical Caesarean Section	2	2
Ectopic	67	68
Lower Segment Caesarean	2645	2750
Total	**2717**	**2821**

MINORS	2013	2014
SVD	7	2
Delivery Forceps	54	55
Delivery Vacuum	33	50
Episiotomy Resuturing	3	0
Episiotomy Repair	96	95
Evacuation of Uterus (AB)	571	544
Evacuation of Uterus (PPH)	11	8
Placenta Manual Removal	111	113
Insert Shirodkar suture	12	31
Remove Shirodkar suture	13	20
Suturing 1st/2nd degree Tear	68	62
Suturing 3rd degree Tear	211	159
Suturing 4th degree Tear	7	5
Suturing Vaginal Wall Tear	19	16
Miscellaneous	43	82
Total	**1259**	**1242**

GRAND TOTAL		
Grand Total Obstetrics (Majors & Minors)	**3976**	**4063**

Colposcopy Service

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

Service Overview

Our Service Level Agreement with the National Cancer Screening Service was to see 1500 new patients in 2014. During the year 1503 new patients were seen and there were 3424 return visits, giving a total of 4927 patient visits (Table 1). This representing a slight increase in throughput compared to the previous year. We believe that this is in part due to the new HPV "test of cure" which was introduced last year. Our DNA rate is 14% which is within the NCSS target of 15%. Every effort is made to accommodate patients who need to reschedule appointments.

Table 1. Clinic Attendances

	2010	2011	2012	2013	2014
New attendances	1664	1908	1563	1569	1503
Return visits	2568	2769	3159	3325	3424
Total	**4232**	**4677**	**4722**	**4776**	**4927**

Of the 1503 new referrals, 221 (15%) had smears showing HSIL (moderate or severe dyskaryosis) as shown in Table 2. However, 353 (23%) were referred with ASCUS (borderline) smears. This shows that women with borderline smears continue to represent a significant burden on the clinical workload despite the fact that these women have a very low risk of developing cervical cancer. It is hoped that the introduction of reflex HPV testing of ASCUS and LSIL smears in 2015 will reduce the number of referrals in this category.

In 2014, the NCSS introduced changes in the management of women with low-grade smears and biopsies (MUCH - Management of Uncertainty in Colposcopy with HPV Testing). Women with ASCUS and LSIL smears are colposcoped and when clinically indicated, a biopsy is taken. If a diagnosis of low-grade disease

is made, the woman is now brought back to one of our smear clinics 12 months later for a smear and HPV test. The aim of this strategy is to reduce the number of colposcopic examinations in women with low-grade disease and to reduce the risk of overtreatment.

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

	ASCUS	LSIL	HSIL	ASC-H	ASCUSG	Clinical	Other	Total
Number	353	380	221	112	66	213	158	1503
%	23	25	15	8	4	14	11	100

The number of LLETZ treatments increased in 2014 (Table 3). We were surprised by this as our aim is to avoid LLETZ treatment in women with CIN1 unless there are strong clinical indications for this. Our aim is to avoid treating women with low-grade lesions, but this requires the reassurance of a biopsy-proven diagnosis. It is apparent that many women with histologically proven CIN2 and CIN3 on biopsy were subsequently found to have no more than CIN1 on LLETZ. One possible explanation for this is that the high-grade disease was removed by the biopsy.

Table 3. Biopsies and treatments

	2010	2011	2012	2013	2014
Biopsies	732	991	1014	1013	1114
LLETZ	784	914	752	465	528
Total	**1516**	**1905**	**1966**	**1478**	**1642**

The histological diagnosis in LLETZ and biopsy specimens is shown in Table 4. There were 12 cases of unexpected invasive disease in women who had a LLETZ done for what was presumed to be pre-invasive disease.

Table 4. Histology of LLETZ and Colposcopic Biopsies

	CIN 1/HPV	CIN 2	CIN 3	CGIN/AIS	SCC Incl. Microinvasion	Negative
LLETZ	146	111	209	2	12	48
Biopsies	527	211	151	1	2	222

The provision of the colposcopy service in the Rotunda Hospital is based on the Quality Standards set out by the National Cervical Screening Programme (NCSS). These standards cover every aspect of the screening pathway. Some of the key administrative and clinical targets are shown in Tables 5 and 6. The fact that we have exceeded most of the targets in 2014 is a reflection of the hard work and dedication of all members of the Colposcopy Team. All of this is done in a facility that is far too small for the clinical workload. Our colposcopy clinic is currently located in what was once the neonatal unit. We have two small clinical rooms, with very limited office space. We need to increase our clinical space, both for patient comfort and so that we can increase our clinical workload. There was a minor improvement in 2014 in that the SATU was relocated to another building, having shared some of our clinical space for many years. Colposcopy patients no longer need to share a waiting room with women attending the SATU. We are looking forward to gaining another clinical room in 2015 as part of the redevelopment of the existing clinical area. Ultimately, we hope to be relocated to a larger clinical area in the hospital.

Table 5.

Administrative Standards	Rotunda	Target
Proportion referred with HSIL seen within 4 weeks	86%	>90%
Proportion referred with LSIL seen within 8 weeks	89%	>90%
Proportion of appointments that were unattended	14%	<10%

Table 6.

Clinical Standards	Rotunda	Target
Proportion of LLETZ as outpatients	98%	>80%
Proportion of women with CIN on histology		
LLETZ	96%	>85%
Biopsy	91%	>85%
Proportion of women treated at first visit with CIN on histology	95%	>90%
Proportion of women admitted as inpatients following LLETZ	0%	<2%

Quality Initiatives in 2014
The NCSS Guidelines for Quality Assurance in Cervical Screening (2nd Edition) lists over 200 Quality Requirements and Quality Standards. This covers every aspect of the service from the time a referral letter is received until the patient is discharged from the service. Our compliance with these guidelines is monitored in a variety of ways as outlined below.

1. Clinical Audit.
Several audits were completed in 2014 and certified by the Rotunda Hospital Clinical Audit Department.

1.The incidence of HPV in LLETZ Specimens.
2.Audit of the first 12 months of Nurse-led Colposcopy Clinics.

2. MDT meetings
Monthly Multidisciplinary Team (MDT) meetings are held.

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

4. Monthly Reports
A monthly report of key performance indicators is returned to the NCSS each month.

5. NCSS Report
In November 2014, The Performance Evaluation Unit of NCSS published the document "CervicalCheck Colposcopy Services 2008-2013 – a comparative analysis". Key performance indicators were evaluated and compared across the 15 colposcopy clinics in Ireland. The Rotunda Hospital Colposcopy clinic compared very favourably with the other clinics across a wide variety of standards.

6. Patient Safety Meetings
We continue to hold an annual multidisciplinary patient safety meeting.

SERVICE DEVELOPMENTS IN 2014

1. Cold Coagulation
The therapeutic modality of "Cold Coagulation" was introduced in September 2014. Prior to this, all women with CIN2 and CIN3 were treated using Large Loop Excision of the Transformation Zone (LLETZ). This treatment has been the gold standard for over 20 years. However, recent publications have indicated that there is an increased risk of miscarriage and preterm labour for some women who undergo this type of treatment. Cold Coagulation allows treatment of CIN without the risk of pregnancy complications. A recent meta-analysis has shown that Cold Coagulation is as effective as LLETZ in the treatment of all grades of CIN. We plan to review and audit the outcome of our first 100 cold coagulation treatments when the data becomes available in mid 2015.

2. Nurse-Led Clinics
Our nurse led colposcopy clinics have gathered momentum over the last year. Three of the nurses in the department are now trained to work independently as diagnostic colposcopists and run their own weekly clinics. This has had a significant beneficial effect on the throughput to clinics, as it allows more women with high-grade disease to be seen in the consultant clinics.

3. Management of Low Grade Disease
In 2014, the NCSS introduced changes in the management of women with low-grade smears and biopsies. Women with ASCUS and LSIL smears are colposcoped and when clinically indicated, a biopsy is taken. If a diagnosis of low-grade disease is made, the woman is now brought back to one of our smear clinics 12 months later for a smear and HPV test. The aim of this strategy is to reduce the number of colposcopic examinations in women with low-grade disease and to reduce the risk of overtreatment.

PRIORITIES FOR 2015.

1. Increased referrals
The introduction in 2015 of reflex HPV testing in Primary Care for women with low grade smears will result in an increase in the number of referrals to colposcopy clinics throughout Ireland. We plan to sign a new Service Level Agreement with the NCSS. This will increase the number of new patients to from 1500 to 2000 per year. This agreement will result in a significant increase in the funding we will receive from the NCSS. An extra weekly consultant clinic will be required to service this increase in referrals.

2. Cold Coagulation
We aim to increase the use of Cold Coagulation for women who are suitable for this type of treatment. As the numbers of treatments increase, an increase in the number of cold coagulation probes will be required.

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

4. Expand Nurse-led clinics
In 2015, we aim to progress the training of nurses who will run independent colposcopy clinics. At present, the nurse-led clinics focus on diagnosis. The nurses are currently being trained in the use of Cold Coagulation and LLETZ with a view to allowing them to run clinics that will include both diagnosis and treatment.

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, DR J. FRANTA (TRANSPORT)

ADMISSIONS TABLES (1.1-1.10)

2014 was an exceptionally busy year for the neonatal unit; overall our staff cared for 2,285 babies. The total number of admissions to the unit increased again for the third consecutive year (1,439 Vs 1,323) with an average occupancy rate of 81% peaking in December. We continued to provide Specialist paediatric input for over 800 babies on the post natal wards. Both occupancy and workload intensity affect unit staffing requirements and both have been an issue during 2014. At certain peaks, and with the support of the Executive Management, we had to escalate our "nurse to infant" staffing levels to the HSE, for example when we had 43 special and intensive care babies but only 11 nurses. Ideally a minimum of 13 nurses per shift are required to reach a minimum safe standard. At times close to 20 babies were being treated in the high dependency unit, which is designed to have a maximum capacity of 13 beds. It is a credit to all our staff, especially to our frontline nursing staff, that we managed to achieve such good outcomes overall, but we are aware that this is not sustainable. At a national level, the Clinical Lead for Neonatology is seeking significant increases in whole time equivalent nurses and consultants for neonatal units throughout the country, and we whole heartedly support this move.

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

***Vermont Oxford* NETWORK (SECTION 2 TABLES 2.1-2.5)**

This was our busiest year for admissions < 1500g with a total of 136 babies. Table 2.2 and 2.3 show our survival rates by gestation at delivery and birthweight. The survival rate for infants of 24 to 26 weeks gestation is 64%, however birth weight remains an important predictor of outcome, we have a 66% mortality rate for infants who weigh between 501 and 700g at birth.

Table 2.4 shows morbidities and interventions in infants < 1500g compared to the Network.

Our outcomes for key indicators are generally consistent with the network averages, though our interventions show some variation. We have a high rate of multiple births compared to the network (39 Vs 28%) and consistently higher rates of babies born with any major birth defect 18% Vs 5%. There is a trend towards less invasive respiratory support in preterm infants, and our rate of chronic lung disease is lower than the network average 16 vs. 24%.

We have a high availability of neonatal functional echocardiography in our unit and this increases our rate of diagnosis of patent ductus arteriosus and also our use of nitric oxide to treat pulmonary hypertension in preterm infants. Our nosocomial infection rates are similar to the network average.

Table 2.5 shows our most important outcomes for preterm babies which are adjusted for birth weight and gestation, and are compared to average outcomes of over 50000 infants for the Vermont Oxford Network of neonatal units, and are also compared to our outcomes over a 3 year period. A standardized rate of < 1 indicates a better than average outcome, if the upper confidence limit is also less than 1. This table shows our standardized mortality and severe intraventricular hemorrhage rates over the past 3 years are slightly worse than the network average. We are relatively under-resourced and understaffed compared to most North American units. Also the risk adjustment model does not include multiple gestations and may not compensate fully for the effect of congenital abnormalities which are over 3 times more frequent in our population than the network average. Nonetheless these data are a source of concern and we will be reviewing all aspects of care including antenatal, delivery and early NICU management to see if we can target areas for improvement

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

Congenital Malformations (3.2)

There were 18 neonatal deaths attributed to congenital anomalies or malformations. Their gestation at birth spanned from 27 to 36 weeks. Twelve (67%) were male. All were born in the Rotunda Hospital. The majority of those were identified antenatally with the exception of 2 preterm infants with transposition of the great arteries and total anomalous pulmonary venous drainage born at 28 and 27 weeks respectively. Those were identified on routine echocardiography scanning on day 1 of age. The majority of infants were delivered vaginally. Most deaths occurred within the first 3 days of life. There were 5 late neonatal deaths.

Deaths of Normally formed infants receiving intensive care (3.3)

Excluding those babies who died from HIE at term, there were 15 neonatal deaths of normally formed infants. All but 1 had a birth weight <1.25kg and all but 2 were 26 weeks or less gestation at delivery. Six were not offered any resuscitation and were handed to mum at delivery, these are not presented in our tables but were all <23 weeks and <700g. 2 were a set of 22 week twins who were both < 500g.Three didn't respond to resuscitation and didn't make it to NICU. There were 3 late neonatal deaths.

Neonatal Encephalopathy (Table 3.1)

In 2014, 40 babies (29 inborn) delivered at ≥35 weeks gestational age were admitted with signs of neonatal encephalopathy. Of these 30 were classified as having hypoxic ischaemic encephalopathy (HIE). HIE was graded as severe in 8 newborns (5 outborn), moderate in 9 (4 outborn) and mild in 13 (all inborn) newborns. 15 /17 cases with moderate or severe HIE received therapeutic hypothermia. The two cases (1 inborn) who did not receive therapeutic hypothermia both presented to the neonatal intensive care unit outside the 6 hour window for initiation of cooling. Both babies who did not receive cooling had clinical and/or electrographic seizures and both had abnormalities of the white matter on brain MR imaging. The remaining 15 babies with moderate or

severe encephalopathy started cooling within the 6 hour window. In general, babies treated with therapeutic hypothermia are showing improved outcomes especially in those with moderate encephalopathy. All 7 babies with moderate encephalopathy treated with therapeutic hypothermia had a normal brain MRI. One child is being followed locally and the remaining 6 babies have normal neurodevelopment to date. Of the eight babies with severe HIE, intensive care measures were withdrawn in two babies (both outborn) given severity of encephalopathy and no improvement in clinical exam and EEG at greater than 24 hours after delivery. Both babies died following extubation. One baby with severe encephalopathy and seizures developed refractory cardiac arrhythmias. This baby died day 5 after birth. Post-mortem confirmed pan cortical necrosis of virtually all areas of the neocortex , also affecting brainstem and cerebellum. In addition established periventricular leucomalacia was noted. The remaining five babies had evidence of hypoxic ischaemic injury on brain MRI . Of these two were showing signs of evolving cerebral palsy when last seen (5 months of age). The remaining 3 babies have normal development to date (last seen at 6, 8 and 13 months respectively).

A cause for encephalopathy was found in 8/10 babies who presented with encephalopathy at ≥ 35 weeks gestation without evidence of HIE. Congenital cytomegalovirus was diagnosed in three babies,1 was diagnosed with group B streptococcus and parechovirus sepsis with meningitis. A mitochondrial respiratory chain defect involving complex II was diagnosed on muscle biopsy in 1 child. Established periventricular leukomalacia was found in a 35 week gestation baby on brain MRI. In another child subsequently diagnosed with neonatal alloimmune thrombocytopenia, MRI brain confirmed extensive cerebral and cerebellar abnormalities with large areas of parenchymal haemorrhage and infarction and severe ventriculomegaly. Another baby with inutero polydrug exposure was found to have sinus venous thrombosis with extensive interventricular and parenchymal haemorrhage and associated hydrocephalus on brain MRI. In the remaining two babies with neonatal encephalopathy but no evidence of hypoxia ischemia no clear cause for encephalopathy was found.. Both children however had normal neurodevelopment when last seen (10.5 and 9 months respectively).

Follow-up of babies <1500g

There were 108 children <1500 gm eligible to be assessed in the year 2012. All were sent appointments and 78 (38F, 40 M) attended. Follow up rate of 72%.

Following assessment,17 had isolated speech delay, 8 were diagnosed with Global delay, 2 with Spastic CP (Hemiplegia, Diplegia), 2 with suspected Autism, 1 with sensory processing disorder (already attending CRC), 3 with suspected ADHD.

27 were referred for Speech therapy, 14 for audiology assessment, 8 for physiotherapy , 10 for occupational therapy and 14 for psychology assessment. (These are total numbers including those who were already referred to early intervention/enable Ireland because of delays).

Comments

Paediatric outpatients' attendances remained high at 9,595, which is a slight increase from 2013 but significantly lower than previous years (when over 12,000 attendances were recorded). This is the first year we have a very detailed breakdown of attendances and non attendances. Over 2575 babies were seen in our midwifery led clinics; 711 for hip harness, 1621 for newborn blood spots and 243 for post discharge checks. Much of this workload reflects the lack of local community-based clinics taking newborn blood spots at weekends, as is the norm outside Dublin. Such clinics could significantly reduce pressure on our busy nurse led out-of hours clinics. Another factor contributing to patient attendances at midwifery clinics is CDH follow-up. In the past we have considered sending babies for harness to the children's hospitals. Attendances have been reduced at consultant clinics. 2175 babies were seen in consultant led clinics, with a significant reduction in return visits since streamlining of NCHD working practices has increased the number of babies directly seen by their named consultant. 489 infants attended supervised SHO clinics for 6 week checks by our SHOs. While the numbers of "drop in" or emergency reviews have fallen, over 3396 babies were unplanned reviews. 431 babies attended our orthopedic specialist clinic, 84 our specialist neurology clinic and 87 our neurodevelopmental follow up clinic. 357 attended our rainbow clinic for specialist follow up of those infants at high risk for infectious diseases. The overall non-attendance (DNA) rate was low overall at 8%; lowest for new patients at 6.7% but higher for returns (14.5%).

The Dublin North East neonatal network (encompassing the Rotunda, Drogheda and Cavan) continues to evolve. There were 63 transfers from Drogheda and Cavan to the Rotunda either in (n=44) or ex utero (n=19), contributing to 162 maternal and 383 NICU bed days in the Rotunda respectively. Quarterly education meetings continued and a more formal approach to joint guidelines is envisaged.

Following support from Executive Management and the HSE, we were able to appoint a neonatal dietician towards the end of the year. Anna Claire Glynn has worked in a tertiary NICU at UCL London and hopes to take up her post April 2015. The continued evolution of allied health professionals in our NICU needs to evolve further. Now that we have social work, physiotherapy and dietetics streamlined we hope to expand with neonatal pharmacy, speech and language therapy and psychology.

The neonatal transport (NNTP) finally moved to 24/7 in December 2013. The appointment of Jan Franta as the consultant leading the service has had huge impact on training of NCHDs and nurses, allowing more formal training especially with respect to air retrieval. Dr Franta has travelled with the team for more complex babies and has become a welcome addition to our consultant body. The associated significant increase in numbers of babies transferred (549 Vs 300) had not been anticipated. Weekly average transport numbers since going 24/7 is 10.4 compared with 5.5 for the previous 5 years on the 9-5 service. The NNTP team from the Rotunda Hospital conducted 32% (174) of the total number of NNTP transports in 2014, 105 of which were outside the greater Dublin area. While this has led to an increase in work load and call outs between 5pm-8am, there is no doubt it has significantly improved the quality and timely delivery of tertiary services to babies from the country as a whole. Phase 2 will be the development of a return transfer service, ideally should be nurse led, which should further serve to streamline neonatal service delivery.

The neonatal unit continues its active role in research, and during 2014 there were a total of three higher degree candidates in the Department of Paediatrics: Drs Adam James, Elaine Neary and Raga Malika. While consultants were invited speakers and projects were presented at many local and national meetings, we have presented only publications and presentations at larger international meetings.

Two staff successfully completed the Postgraduate Diploma in Neonatal Nursing through the RCSI and a further three staff were sponsored to undertake the program, which commenced in September 2014. One nurse also completed the second year MSc program in neonatal intensive care nursing and three staff are undertaking their MSc in 2014. A total of six nurses were facilitated to undertake Foundation Programs in neonatal nursing in 2014.These programs are provided by the clinical skills facilitators in the three Dublin Maternity Hospitals and coordinated through the Centre of Midwifery Education. They focus on nursing care of babies requiring special care (Level 1) and on High Dependency and Intensive Care (Level 2). Mark Hollywood commenced the MSc Advanced Nurse Practice Neonatology program in 2014, which will expand the ANP role within the unit. Nursing staff were also supported to attend national and international neonatal nursing conferences throughout the year.

The neonatal unit continues to identify quality improvement plans to enhance our philosophy of a family centered care approach. The first parent satisfaction survey was completed in May and highlighted that space and support for expressing and overnight accommodation are badly needed. The need for a neonatal lactation specialist and developmental care (NIDCAP) specialist, have been highlighted. In 2014 approval was sought and given to support a nurse within the unit to undertake the lactation course. It is envisaged that this role/post will be provided in addition to our current whole time equivalent in the near future.

2014 saw the retirement of Dr Susan Keane who has been responsible for the formal follow up of all babies born with a birth weight <1.5kg. We wish Susan and her husband Terri every success as they embark on a new phase of their lives in Malaysia. We have had meetings with Dr Owen Hensey Prof King and the master to look at expanding this role to allow more formal follow up of our asphyxiated babies and those at high risk of disability. We are putting together a business case for this new role.

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

SECTION 1

TABLE 1.1
ADMISSION & DISCHARGE TO THE NEONATAL UNIT

ADMISSIONS	1,439
DISCHARGES	1,416
INFANTS > 1.5Kg	1,302
INFANTS TREATED ON WARD	846

**Including readmissions*

TABLE 1.2
ADMISSION WEIGHT TO THE NEONATAL UNIT

500 - 1000grms	37
1001 - 1500grms	77
1501 - 2000grms	141
2001 - 2500grms	194
Over 2500grms	967
TOTAL INFANTS DISCHARGED	**1,416**

** Based on Infants Discharged from NICU*

SECTION 2 - VLBW INFANTS

TABLE 2.1
NUMBER OF CASES REPORTED TO VON 2014

	All Cases	Excluding Congenital Anomalies
Infants 401-500g	8	8
Infants 501-1500g	128	103
Infants > 1500g but ≤29 wks gestation	0	0
Total	**136**	**111**

TABLE 2.2
GESTATIONAL AGE BREAKDOWN AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2014 (N=136)

Gestational Age (completed) weeks	Inborn Infants	Survival to Discharge	%	Outborn Infants	Survival to Discharge	%	Total Survival Discharge to	%
21	2	0	(0%)	0	0	(0%)	0	(0%)
22	7	0	(0%)	0	0	(0%)	0	(0%)
23	6	0	(0%)	0	0	(0%)	0	(0%)
24	6	2	(33%)	0	0	(0%)	2	(33%)
25	8	7	(88%)	1	1	(100%)	8	(89%)
26	5	3	(60%)	5	3	(60%)	6	(60%)
27	14	14	(100%)	0	0	(0%)	14	(100%)
28	21	18	(86%)	6	5	(83%)	23	(85%)
29	13	13	(100%)	0	0	(0%)	13	(100%)
30	13	12	(92%)	0	0	(0%)	12	(92%)
31	8	6	(75%)	0	0	(0%)	6	(75%)
32	9	8	(89%)	1	1	(100%)	9	(90%)
> 32	11	11	(100%)	0	0	(0%)	11	(100%)
Total	**123**	**94**	**(76%)**	**13**	**10**	**(77%)**	**104**	**(76%)**

TABLE 2.3
BIRTH WEIGHT AND SURVIVAL TO DISCHARGE OF ALL INFANTS REPORTED TO VON (INCLUDING THOSE WITH CONGENITAL ANOMALIES) 2014 (N=136)

Birth Weight (grams)	Inborn Infants	Survival to Discharge	%	Outborn Infants	Survival to Discharge	%	Total Survival Discharge to	%
<500	9	0	(0%)	0	0	(0%)	0	(0%)
501-600	7	1	(14%)	0	0	(0%)	1	(14%)
601-700	7	3	(43%)	1	1	(100%)	4	(50%)
701-800	5	3	(60%)	1	0	(0%)	3	(50%)
801-900	12	10	(83%)	0	0	(0%)	10	(83%)
901-1000	12	10	(83%)	5	5	(100%)	15	(88%)
1001-1100	7	6	(86%)	1	1	(100%)	7	(88%)
1101-1200	14	13	(93%)	1	0	(0%)	13	(87%)
1201-1300	20	20	(100%)	2	2	(100%)	22	(100%)
1301-1400	15	13	(87%)	1	1	(100%)	14	(88%)
>1400	15	15	(100%)	1	1	(100%)	16	(100%)
Total	**123**	**94**	**(76%)**	**13**	**11**	**(85%)**	**105**	**(77%)**

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

	N	Rotunda (n=)	VON n=
Inborn	136	123 (90.4%)	86.8%
Male	136	74 (54.4%)	50.5%
Antenatal Steroids (partial or complete)	127	101(79.5%)	81.6%
Caesarean section	134	90(67.2%)	72.6%
Antenatal Magnesium Sulphate	123	52(42.3%)	52.4%
Multiple Gestation	136	53(38.9%)	28.0%
Any major birth defect	135	25(18.5%)	4.8%
Small for gestational age	135	33(24.4%)	23.7%
Surfactant in DR	132	66(50%)	26.8%
Conventional Ventilation	118	59 (50%)	56.6%
High Frequency Ventilation	117	14(12%)	20.3%
Any Ventilation	118	59(50%)	58.8%
High Flow Nasal Cannula	118	19(16.1%)	53.7%
Nasal CPAP	118	95(80.5%)	76.1%
Nasal CPAP before or without ETT Ventilation	103	43(41.7%)	57.1%
Ventilation after Early CPAP	43	13(30.2%)	37.4%
Surfactant at any time	124	68(54.8%)	58.8%
Steroids for CLD	118	2(1.7%)	9.0%
Inhaled Nitric Oxide	118	13(11.0%)	4.6%
RDS	118	102(86.4%)	72.5%
Pneumothorax	118	8(6.8%)	4.3%
Chronic Lung Disease (at 36 wks)	93	15(16.1%)	24.8%
"Chronic Lung Disease, Infants <33 wks"	82	15(18.3%)	26.3%
Early Bacterial Infection	115	2 (1.7%)	2.3%
Late Bacterial Infection	111	4(3.6%)	8.3%
Coagulase Negative Staphylococcus Infection	111	11(9.9%)	5.3%
Nosocoial Bacterial Infection	111	13(11.7%)	11.8%
Fungal Infection	111	0	0.8%
Any Late Infection (Bacterial or Fungal)	111	13(11.7%)	12.2%
NEC Surgery	118	0	3.3%
PDA ligation	118	3 (2.5%)	4.5%
Surgery for ROP	118	5 (4.2%)	2.6%
Any Grade of IVH (Grade 1-4)	111	40(36.0%)	24.2%
Severe IVH (Grade3-4)	111	15(13.5%)	7.9%
Cystic PVL	112	1(0.9%)	"2,8%"
Retinopathy of Prematurity	93	10(10.8%)	31.1%
Severe ROP (Stage 3 or more)	93	3 (3.2%)	5.9%
Anti-VEGF Drug	118	0	1.1%
Focal GI perforation	118	0	1.8%
Indomethacin	118	0	14.5%
NEC	118	7(5.9%)	5.4%
PDA	118	41(34.7)	28.2%
Ibuprofen for PDA	118	10(8.5%)	6.8%
Probiotics	118	98(83.1%)	12.0%
Mortality	135	32 (23.7%)	11.9%
Mortality excluding Early Deaths	116	13(11.2%)	9.0%
Survival	135	103 (76.3%)	85.0%
Survival without Specified Morbidities	135	67(49.6%)	56.0%

TABLE 2.5

	SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2014				SHRUNKEN STANDARDISED MORTALITY AND MORBIDITY (SMR) RATES 2011- 2014 INCLUSIVE			
Measure	**N**	**SMR**	**SMR 95% Lower**	**SMR 95% Upper**	**N**	**SMR**	**SMR 95% Lower**	**SMR 95% Upper**
Mortality	127	1.3	0.9	1.8	387	1.3	1	1.7
Mortality Excl Early Deaths	117	1.2	0.7	1.9	370	1.4	1	1.8
Death or Morbidity	127	1.1	0.9	1.3	387	1	0.9	1.2
Chronic Lung Disease	93	0.9	0.6	1.3	309	1	0.8	1.2
CLD: Infants < 33 Weeks	82	0.9	0.6	1.3	284	1	0.8	1.2
NEC	118	1.1	0.5	1.8	375	1.6	1.2	2.2
Late Bacterial Infection	111	0.6	0.2	1.1	355	0.7	0.4	1
Coag Neg Staph infection	111	1.8	0.9	2.9	355	1.3	0.9	1.9
Nosocomial Infection	111	1	0.6	1.6	355	0.9	0.6	1.2
Fungal Infection	111	0.2	0	1.5	355	0.1	0	0.6
Any Late Infection	111	1	0.6	1.6	355	0.8	0.6	1.1
Any IVH:	111	1.5	1.1	1.9	359	1.4	1.2	1.7
Severe IVH	111	1.4	0.9	2	359	1.4	1	1.8
Pneumothorax	118	1.3	0.7	2	376	1.4	0.9	1.9
Cystic PVL	112	0.6	0.1	1.5	362	0.6	0.3	1.2
Any ROP	93	0.5	0.3	0.8	305	0.5	0.4	0.6
Severe ROP	93	0.9	0.4	1.8	305	0.8	0.5	1.3

SECTION 3 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY AND MORTALITY TABLES

TABLE 3.1 - HYPOXIC ISCHAEMIC ENCEPHALOPATHY (HIE)

	Inborn	Outborn
TOTAL	21	9
Mild HIE (Grade 1)	13	0
Moderate HIE (Grade 2)	5	4
Severe HIE (Grade 3)	3	5
Therapeutic Hypothermia	7	8

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

Grade HIE	Inborn/ outborn	Gestation	Mode of delivery	Arterial Cord Gas		Venous Cord Gas		1 Minute Apgar	5 Minute Apgar	Therapeutic Hypothermia	Seizures	Brain MRI	Follow up	
				pH	BE	pH	BE						Outcome	Age (months) Last Reviewed
2	Outborn	41+2	EMCS	nd		nd		5	6	No	Yes	Abnormal diffusion posterior right corpus callosum	Followed Locally	
2	Inborn	39	EMCS	7.33	-2.3	7.34	-2.6	2	0	Yes	Yes	Normal	Normal	11
2	Outborn	40+2	ELCS	6.8	-13	6.8	-16	3	5	Yes	No	Normal	Normal	4
2	Outborn	38	SVD	7.06	-12			2	4	Yes	Yes	Normal	normal	4
2	Inborn	38+3	EMCS	6.92	-15	6.97	-12	3	6	Yes	No	Normal	normal	4.5
2	Inborn	41+1	Ventouse	7.05	-12	7.21	-11	0	4	Yes	No	Normal	normal	6.5
2	Outborn	41+2	EMCS	7.01	-8.6	7.16	-12	2	6	Yes	No	Normal	Followed Locally	
2	Inborn	36+2	Ventouse & Forceps	nd		nd		9	10	No	Yes	Restricted diffusion deep white matter both cerebral hemispheres	Evolving Cerebral Palsy	6
2	Inborn	37	SVD	7.18	-5	7.22	-5	3	7	Yes	No	Normal	Normal	4
3	Inborn	39	Ventouse	7.16	-1.1	7.2	-11	1	2	Yes	Yes	Restricted diffusion PLIC and hippocampi bilaterally and possibly left thalamus	Normal	13

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

Grade HIE	Inborn/ outborn	Gestation	Mode of delivery	Arterial Cord Gas		Venous Cord Gas		1 Minute Apgar	5 Minute Apgar	Therapeutic Hypothermia	Seizures	Brain MRI	Follow up	
				pH	BE	pH	BE						Outcome	Age (months) Last Reviewed
3	Inborn	41+4	Ventouse	7.188	-7.7	7.22	-7.7	3	7	Yes	Yes	"Extensive areas of acute infarction cortical and whitematter left frontal lobe left parietal region left basal ganglia, corpus callosum, right frontal and parietal whitematter equivocal changes bilateral hippocampi"	Evolving Cerebral Palsy	5
3	Outborn	41+3	EMCS	7.22	-11	nd		1	3	Yes	Yes	No	RIP Day 2	-
3	Outborn	41+6	Induced Vaginal Delivery	6.79	-18	6.8	-17	2	3	Yes	Yes	Acute ischaemia splenium and periventricular white matter; posterior brainstem and ventroateral thalami bilaterally.	Normal	8
3	Outborn	41+5	EMCS	nd		nd		0	1	Yes	Yes	T2 hyperintensity posterior periventricular white matter	Normal	6
3	Inborn	35+5	EMCS	nd		nd		1	5	Yes	No	Significant ischaemia thalami and lentiform nuclei bilaterally; restricted diffusion high in left parietal region	Evolving Cerebral Palsy	5
3	Outborn	40+3	EMCS	6.9	-12	7.06	-12	1	1	Yes	Yes	No	RIP Day 5	-
3	Outborn	40+5	EMCS	nd		nd		0	4	Yes	Yes	No	RIP Day 2	-

EMCS= Emergency Caesarean Section; ELCS=Elective Caesarean Section; SVD= Spontaneous Vaginal Delivery; nd= Not Documented; PLIC= Posterior Limb of Internal Capsule

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

Gestation (weeks)	Age at Death (Days)	Birth weight (g)	Gender	Delivery	Apgars	Inborn Outborn	Congenital Anomaly / Malformation
36	2	3.52	Male	Vaginal	"5,8"	Inborn	TOF/Epispadias-Extrophy Complex /Anal Atresia/Pulmonary Hypoplasia
36	3	1.86	Male	Vaginal	"9,9"	Inborn	Truncus Arteriosus / TOF
37	4	1.59	Male	Elective CS	"3,6"	Inborn	Edwards Syndrome
34	1	2.76	Male	Vaginal	"4,4"	Inborn	Hypoplastic Left Heart Syndrome / Dysmorphic Features
31	3	1.33	Female	Vaginal	"5,8"	Inborn	Triploidy 69XXX
39	3	3.05	Female	Vaginal	"6,7"	Inborn	Left sided diaphragmatic hernia
30	1	0.88	Male	Elective CS	"3,3"	Inborn	Chromosome 13 Deletion
28	8	0.8	Male	Emergency CS	"3,6"	Inborn	Transposition of great arteries
36	1	3.38	Female	Vaginal	Unassigned	Inborn	Skeletal Dysplasia
39	1	3.85	Female	Vaginal	"9,10"	Inborn	Pulmonary atresia with intact ventricular septum
34	1	2.1	Female	Vaginal	"2,1"	Inborn	Severe Hydrops Fetalis
39	3	2.37	Male	Vaginal	"4,6"	Inborn	Edwards Syndrome
35	6	3.19	Male	Vaginal	"3,7"	Inborn	Autosomal Recessive Polycystic Kidney Disease
38	13	3	Male	Vaginal	"4,7"	Inborn	Hard Palate Teratoma / Spinabifida / Severe Arnold Chiari Malformation
31	14	2.26	Male	Elective CS	"6,9"	Inborn	Chromosome 8p deletion / Cystic-dysplastic Kidneys
35	24	2.19	Female	Emergency CS	"9,9"	Inborn	Polycystic Kidneys / Meconium cysts with necrotic bowel
32	1	1.34	Male	Vaginal	"5,5"	Inborn	Congenital Renal Agenesis
27	22	1.05	Male	Emergency CS	"2,6"	Inborn	Total Anomalous Pulmonary Venous Drainage

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

Birth Wt	Gestation	Sex	Delivery	Apgars	Age	Principle Cause of Death
700g estimated	25+5	male	EmLSCS	"0,4,0"	Day 1	"Hypoxic ischaemic encephalopathy, twin twin transfusion with demise in utero of co-twin, extreme prematurity at 25 weeks gestation"
590g	23+5	female	SVD	"1,0,0"	Day 1	Extreme prematurity
600g	24+1	female	SVD	"1,1,1"	Day 1	"Extreme prematurity, unresponsive to resuscitation including ventilation, CPR and adrenaline"
1060g	26+2	male	EmLSCS	"5,8"	Day 3	"Pulmonary haemorrhage, severe pulmonary hypertension, RDS, bilateral grade IV IVH, extreme prematurity"
855g	26+4	male	EmLSCS	"5,8"	Day 3	"Prematuriy, presumed sepsis (pseudomonas on placental swab), refractory hypotension and cardiac dysfunction despite multiple inotropes, mechanical ventilation, oliguria, bilateral severe intraventricular haemorrhage"
690g	24+1	male	SVD	"3,8"	Day 8	"Prematurity, right grade IV and left grade II IVH, RDS requiring HFOV,insulin for hyperglycaemia, PPHN, nitric oxide dependent."
1780g	30+4	male	SVD	"9,9"	Day 10	"Prematurity, severe intracranial haemorrhage, coagulopathy, family history factor VIII deficiency"
1.17kg	31+1	female	EmLSCS	" 1,1,2"	Day 2	"Anhydramnios, PPROm at 14 weeks, severe pulmonary hypoplasia, arthrogryphosis, respiratory failure refractory to HFOV and Nitric oxide."
2.27kg	37+0	male	SVD	"1,1,0"	Day 1	"Bradycardia, apnoea and hypotonia at delivery unresponsive to full resuscitation for 37 minutes. Complex I mitochondrial respiratory chain disorder confirmed on postmortem."
1.78kg	30+4	male	SVD	"9,9"	Day 9	"Coagulopathy requiring fibrinogen, fresh frozen plasma and factor VIII. Family history haemophilia. Catastrophic intracranial haemorrhage. Comfort care."

Department of Orthopaedic Surgery

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

The Department of Orthopaedic Surgery has primary responsibility for management of all orthopaedic anomalies in infants born in the Rotunda Hospital. The majority of cases concern Developmental Dysplasia of the Hip. The Department is responsible for compiling screening protocols, including screening criteria and review of all patients who require follow up for DDH.

Table 1. In-Patient and Outpatient activity

	2012	2013	2014
No of babies reviewed by Orthopaedic Service as in-patients	5172	5348	4440
No. of babies reviewed by DDH outpatient service	786	978	711
No. of babies reviewed at Orthopaedic outpatients	427	413	431
% of babies examined by Orthopaedic service with clinically unstable hips	1.0% (n=52)	1.0% (n=49)	1.1% (n=48)

The principal modes of screening for DDH are clinical examination in the first few days of life and radiological investigation of the hips. Clinical screening for hip instability , while a useful tool in experienced hands is fraught with pitfalls for less experienced practitioners. It also does not address the issue of stable dysplasia which is clinically silent. Stable dysplasia, without hip joint luxation, is detectable on hip US or X-ray only.

There has been a steady ideological move away from clinical screening toward radiological diagnosis. This is in keeping with the Department of Orthopaedic Surgery's objective to introduce Universal Hip Ultrasound Screening for DDH.

There has been an increase in the diagnosis of DDH on US and X-ray. See Table 2. There has been a concomitant increase in the number of babies treated for DDH in a Pavlik harness and abduction brace secondary to radiological diagnosis of DDH.

Table 2. Hip Instability and Subluxation. Clinical and radiological diagnoses.

No of Patients	2012	2013	2014
No. of neonates diagnosed with hip instability; clinical diagnosis (all depts.)	77	75*	66
No. of babies with hip instability; US Dx	13	13*	16
No. of babies with hip dysplasia and minor hip subluxation; US Dx	18	15	14
Total No. of babies Tx in Pavlik Harness	108	103	96

* 6 cases previously attributed to clinical Dx found in retrospect to have been diagnosed on hip US

Table 3. US and X-Ray diagnoses of Stable Dysplasia

	2012	2013	2014
No. of hip x-rays reviewed by Orthopaedic Service	1435	1281	1395
No. of cases of Hip Dysplasia detected on X-ray	11	15	33
No. of hip US conducted for the Orthopaedic Service	1733	1715	1847
No. of cases of dysplasia detected on hip US; Tx in Abduction Brace	0	7	24
Total No. of babies Tx in Abduction Brace	11	22	57

The use of Pavlik harness in an infant diagnosed with hip dislocation within the first few days of life is a highly successful form of treatment. It is associated with a >98% success rate. The success of Pavlik harness treatment is dependent on the expertise of the person applying the device. The best results are obtained when a small number of dedicated experts apply the harnesses only.

The commonest serious complications associated with Pavlik harness use are femoral nerve palsy and avascular necrosis of the femoral head. The probability of complications increases with an increased interval between harness refitting. In the Rotunda Hospital , the Pavlik harnesses are refitted weekly.

Pavlik harness treatment is deemed to have failed if the hip(s) remain persistently dislocated after 8 weeks of treatment. The baby is then referred for EUA, hip arthrogram, closed or open reduction of the affected hip and Spica plaster-casting. See Table 4.

Table 4.

	2012	2013	2014
No. of complications associated with Pavlik Harness Use	0	0	0 N/A
No. of cases of persistent dislocation /subluxation of the hip; Failure of Pavlik Harness Tx	1 (<1%)	1(1%)	2 (2%)
No. of cases of persistent dislocation or subluxation of the hip; Delayed Dx	2	1	4
No. of cases of late presenting DDH to CUH, Temple St. **	6 (0.66/1000)	2 (0.2/1000)	referred 7 (0.7/1000)
No. of cases of stable dysplasia, persisting despite Tx **	8	10	2
Total No. of cases of DDH referred for surgery to CUH, Temple St **	17	16	11

** More case will be added as they come to light.

Delayed diagnosis is taken to mean hip subluxation or dislocation diagnosed after 6 weeks of age (chronological) but before 4 months of age.

Late diagnosis is taken to mean diagnosis of hip subluxation or dislocation after 4 months of age.

Success rate for Pavlik Harness treatment is in excess of 98%.

Overall Late DDH rate for The Rotunda Hospital for the last 3 years averages 0.5/1000.

Rate of diagnosis of DDH (including clinical, hip US and X-ray diagnosis of hip dislocations, subluxations, and dysplasia) 15/1000 (1.5%)

The incidence of DDH in The Rotunda is 1.5%. This is higher than the incidence given in published works. This figure is consistent over the last 10 years and probably more accurately reflects the true incidence in Ireland.

Department of Anaesthesia

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

Dr. Conán McCaul resigned from his position as Clinical Tutor and Dr. Patrick Thornton has been appointed to this role. Dr. John Loughrey in his capacity as President of ISOA was involved in the organisation of a successful OAA Meeting which was held in the Conference Centre in Dublin this year.

Non-Consultant Hospital Doctors:

The Department continues to provide training in Obstetrical Anaesthesia and to avail of five trainees from the National training programme, two other NCHDs and one Fellow in Obstetrical Anaesthesia. We would like to congratulate Dr. Azza Kibeidi and Dr. Joseph Keaveney who both passed the Final FCA and received their Fellowship from the College of Anaesthetists and Dr. Rosemarie Kearsley who both passed her Part 1 examination.

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

DELIVERY SUITE ACTIVITY

DELIVERIES UNDER EPIDURAL

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

Labour Analgesia is also provided by Entonox, TENS and Remifentanil PCA.
A Remifentanil PCA is available to patients in whom epidurals are contraindicated or who want an alternative to epidural analgesia. 27 patients this year opted for Remifentanil PCA.

Mode of Delivery for Parturients who select Epidural Analgesia.
Epidural Workload 2014

Deliveries Under Epidural	2013	%	2014	%
Nulliparous {% of Primips less C/S before labour {2013-3247} {2014-3311}	2327	72%	2331	70%
Multiparous {% of Multips less C/S before labour {2013-3740} {2014-3800}	1697	45%	1696	45%
TOTAL {Multips & Primips excluding Emerg/Elec Onsets of labour {2013-6987} {2014-7111}	4024		4027	

Both Nulliparous & multiparous are less C/S onset

Mode of Delivery for Parturients who Select Epidural Analgesia

NULLIPAROUS

Mode of Delivery	2013	%	2014	%
Normal	778	33.4	711	30.5
Forceps	298	12.8	254	10.9
Vacuum (Vacuum & Vacuum/Forceps)	715	30.7	757	32.5
L.S.C.S	535	23.0	606	26.0
Breech	1	0.04	3	0.1
Total	**2327**		**2331**	

MULTIPAROUS

Mode of Delivery	2013	%	2014	%
Normal	1294	76.3	1281	75.5
Forceps	58	3.4	51	3.0
Vacuum (Vacuum & Vacuum/Forceps)	193	11.4	213	12.6
L.S.C.S	146	8.6	149	8.8
Breech	6	0.4	2	0.1
Total	**1697**		**1696**	

Epidural	%	CSE	%
2163	65.3	194	5.9
1517	39.9	197	5.2
3680		391	

Some patients had CSE + Epidural so combined totals different

The obstetrical outcomes for parturients receiving epidural analgesia remains consistent with low dose techniques with 33.5% of primiparous patients and 75.5% of mutiparous patients having normal unassisted deliveries.

CAESAREAN SECTION RATE 2013- 2014

2013

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

2014

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

OPERATING THEATRE ACTIVITY

GYNAECOLOGICAL REPORT

Operation Categories	2010	2011	2012	2013	2014
Obstetrical Majors	2469	2745	2604	2717	2821
Obstetrical Minors	1273	1287	1284	1259	1242
Vaginal Surgery	677	626	610	609	592
Abdominal:Uterus	113	110	125	93	88
Abdominal:Tubes & Ovaries	360	336	317	311	295
Other procedures	2760	2615	2365	2245	2369

ANAESTHESIA OUTPATIENT CLINIC

The pre-operative assessment clinic continues on a weekly basis with 467 attendees.

The Cardiac Anaesthetic Clinic runs on a monthly basis.

POST DURAL-PUNCTURE HEADACHE (PDPH)

There were 4027 epidurals performed and 1885 obstetric spinal anaesthetics and 614 combined spinal epidurals CSEs. 31 Post Dural Puncture Headaches (PDPH) following placement of an epidural and 12 PDPH following spinal anaesthesia were reported. 18 epidural blood patches were performed, 3 of these were to treat spinal induced headache and 1 for CSE induced headache. 4 patients required a second blood patch. The rate of PDPH was 0.6%.

High Dependency Unit

DR. MARY BOWEN CONSULTANT ANAESTHETIST

Total Admissions	**245**
Obstetrical	**232**
Gynaecological	**13**

Obstetric Category	Number	% Overall	% Obstetric Admissions
Haemorrhage (APH/PPH)	**86**	**35**	**35.1**
PET / Eclampsia/ HELLP	**40**	**16**	**17**
Sepsis	**33**	**13.4**	**14.2**
Cardiac	**15**	**6.1**	**6.4**
Miscellaneous	**47**	**19**	**20**

Transfers	**30**		
Mater Misericordiae	22	20	Transfers to MMUH
University Hospital (MMUH)		2	Transfers from MMUH
Beaumont Hospital (BH)	5	3	Transfers from BH
		2	Transfers to BH
JCMH	1	1	Transfer from JCMH
Cavan Hospital	2	2	Transfers from Cavan Hospital

Transfers To MMUH	20	1.	Hypotension post LSCS for CTPA / Inotropic support, LVF.
		2.	Elective LSCS for placenta accreta in MMUH, cell salvage, radiology
		3.	Transfer from Holles St. to MMUH acute Cauda Equina plus LSCS in MMUH, transferred to Rotunda post delivery.
		4.	Elective LSCS in MMUH. Patient with Kyphoscoliosis, restrictive lung disease, short stature, previous Tracheo-oesphageal fistula repair and ASD repair.
		5.	Patient with PET for plasmaphoresis.
		6.	Complete heart block post SVD.
		7.	Patient Massive PPH post delivery re-laparotomy, abdominal packs in situ.
		8.	Patient septic post LSCS under GA. ? Malaria. Unbooked pregnancy.
		9.	Maternal sepsis post SVD, pelvic abscess drained.

		10. Patient 5 days post SVD, severe headache. CT brain normal.
		11. Post partum, unbooked pregnancy, thrombocytopenic, urosepsis. ARDS, Acute renal failure.
		12. Patient with labial abscess, post operative stridor. ENT consultation.
		13. Peripartum Cardiomyopathy. Transferred to CCU.
		14. Patient developed Takotsubo Syndrome perioperatively.
		15. Patient 2 weeks post partum. Emergency LSCS 34/40. Intracranial bleed. RIP.
		16. Septic post caesarean section. Previous myomectomies x2, laparotomies x 2Tubo-ovarian abscess.
		17. Emergency caesarean section. Multiple P.E. post caesarean section. IVC filter + anticoagulation.
		18. Severe Thrombocytopenia post PET.
		19. Seizures at 19weeks gestation. Hx of Heroin/substance abuse. Developed Tonic Clonic Seizures.
		20. 6th caesarean section. PPH. Pink Serous fluid from abdominal drains. CT Abdomen.
Transfer from MMUH.	2	• Patient 27/40 pregnant post laparotomy for appendicectomy. • Ruptured Ectopic Pregnancy. Haemorrhagic Shock.
Transfer to Beaumont Hospital	2	• Acute renal impairment post delivery (Creatinine 773) • Urosepsis and renal calculi.
Transfer from Beaumont Hospital	3	• Gynaecological patient with presumptive diagnosis of haemorrhagic cyst. Tachycardic, acidotic transferred back to Beaumont hospital. Confirmed diagnosis of acute Thyrotoxicosis. • Ruptured Ectopic pregnancy, 2 litre blood loss. • Vaginal Hysterectomy @ Mater Private Hospital – Open Vault. Transfusion.

Transfer From Cavan Hospital	2	• 21 /40 Twin pregnancy with Mirror Syndrome. • DVT post SVD. Perineal haematoma. IVC filter in MMUH 3RCC transfused. Evacuation of haematoma.
Transfer from JCMH	1	• Previous LSCS. Involved in RTA- admitted to JCMH. Referred to Rotunda Hospital for assessment- not in labour at that time. Labour commenced, had emergency LSCS under general anaesthesia in Rotunda Hospital.

Cardiac Admissions: 5

1	Hypertrophic Obstructive Cardiomyopathy; ICD in situ LSCS.
2	Tetralogy of Fallot, emergency LSCS with pulmonary regurgitation awaiting valve replacement.
3	Transposition of Great Vessels. Thrombocytopenic: GA LSCS.
4	Peripartum Cardiomyopathy.
5	Patient with SVT post delivery.

Miscellaneous Admissions: 6

1	Patient with Gitelman Syndrome.
2	Patient with Bartter Syndrome.
3	Patient with Brugada Syndrome.
4	Patient with Lupus Nephritis.
5	6 Patients For Post Operatively Analgesia.
6	Pulmonary Embolism Post delivery.

Arterial Lines	68
CVP Lines	15

Dove Clinic

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

INTRODUCTION

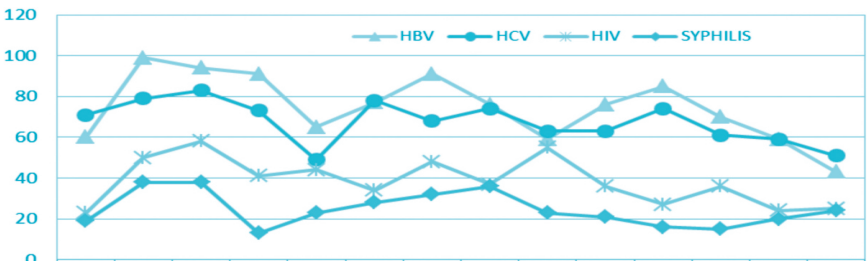
The DOVE clinic was set up to look after the specific needs of women who have or are at risk of blood and sexually transmitted bacterial and viral infections. This could be through drug use, unprotected sex, or any contact with infected blood or body fluid.

DOVE BOOKINGS IN 2014

During 2014,178 women booked into the DOVE clinic for their antenatal care. Of these,

- 43 (24.1% of bookings) women were positive for Hepatitis B surface antigen, representing a decrease of 27% compared to 2013 (Fig 1).
- 51 (28.6%) women were positive for Hepatitis C antibody, a decrease of 14% compared to 2013.
- 25 (14%) were positive for HIV infection an increase of 4% compared to 2013.
- 24 (13.4%) women had positive Treponemal serology, an increase of 10% compared to 2013.
- 52 (29.2%) women were known to be on prescribed methadone programs, an increase of 8% compared with 2013.
- 72 women attended for treatment for Chlamydia Trachomatis infection in 2014.

Fig 1: DOVE Bookings by Year



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

DOVE DELIVERIES 2014

Deliveries to HIV Positive Mothers 2014	
Total Mothers Delivered <500g (incl miscarriage)	0
Total Mothers Delivered >500g	18
Total Mothers Delivered	**18**
Live Infants	18
Miscarriage	0
Stillbirths	0
Infants <37 weeks gestation	1
Infants fl37 weeks gestation	17
Infants delivered by Caesarean Section	8
HIV Positive Infants	0
Maternal Data (n=18)	
Median Age	34
Newly Diagnosed at ANS	4

NND = neonatal death

Deliveries to HCV Positive Mothers 2014	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	43
Total Mothers Delivered	**44**
Live Infants	44*
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	6
Infants fl37 weeks gestation	36
Infants delivered by Caesarean Section	17
HCV Positive Infants	3**
Maternal Data (n=43)	
Median Age	33
Newly Diagnosed at ANS	4

** 2 delivered elsewhere/ 1 set of twins **Final serology not yet available for all infants.*

Deliveries to HBV Positive Mothers 2014	
Total Mothers Delivered <500g (incl miscarriage)	1
Total Mothers Delivered >500g	39
Total Mothers Delivered	**40**
Live Infants	41*
Miscarriage	1
Stillbirths	0
Infants <37 weeks gestation	3
Infants fl37 weeks gestation	38
Infants delivered by Caesarean Section	15
HBV Positive Infants	0**
Maternal Data (n=43)	
Median Age	31
Newly Diagnosed at ANS	5

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

Deliveries to Syphilis Positive Mothers 2014	
Total Mothers Delivered <500g (incl miscarriage)	2
Total Mothers Delivered >500g	20
Total Mothers Delivered	**22**
Live Infants	20
Miscarriage	2
Stillbirths	0
Infants <37 weeks gestation	0
Infants fl37 weeks gestation	20
Infants delivered by Caesarean Section	8
Syphilis Positive Infants	0
Maternal Data (n=20)	
Median Age	31.9
Newly Diagnosed at ANS	10

Deliveries to Mothers under DLM* service 2014	
Total Mothers Delivered <500g (incl miscarriage)	2
Total Mothers Delivered >500g	68
Total Mothers Delivered	**70**
Live Infants	69(2 sets of twins)
Miscarriage	2
Stillbirths	1 (cord prolapse)
Infants <37 weeks gestation	12
Infants fl37 weeks gestation	58
Infants delivered by Caesarean Section	24
NICU admissions for NAS	14

**DLM: Drug Liaison Midwife*

In 2014, 231 infants attended the Rotunda Paediatric Infectious disease clinic (The Rainbow clinic) for follow up. The clinic is delivered solely by a paediatric specialist (Dr Ferguson).

EDUCATION AND TRAINING

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

The British Association for Sexual Health and HIV (BASHH) accredited Sexually Transmitted Infection Foundation (STIF) Course continues to be held Dublin, with Dr Lambert acting as course director, and Dr Eogan providing teaching on management of rape and sexual assault. The course took place in June and November 2014 and provided multidisciplinary training in the attitudes, skills, and knowledge required for the prevention and management of STIs. Further courses are planned for 2015.

Dr Wendy Ferguson was a member of the writing committee for the revised national guidelines on Preventing Perinatal Transmission. This document gives a comprehensive and practical overview of care pathways for antenatal, perinatal and postnatal management of HIV, HBV, HCV, Syphilis and Herpes Simplex Virus. This document was presented, with feedback requested, at an interdisciplinary forum at the Annual JOGS meeting and Four Provinces Study day at the Institute of Obstetrics and Gynaecology in November 2014. It is anticipated that the peer reviewed Guidelines will be launched in mid 2015 and will be available at www.sstdi.com

Members of the DOVE team, particularly Dr Jack Lambert, were actively involved with multidisciplinary discussions and training on care of pregnant patients in the context of the largest known outbreak of Ebola Virus (EVD) in West Africa. While Ebola virus has never been diagnosed in this country, and indeed the risk of imported cases was low, it was not impossible that a case could arise and it was vital that infrastructure, staff and services were prepared to respond safely and appropriately.

RESEARCH ACTIVITIES OF THE DOVE CLINIC

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

STAFF CHANGES

In 2014 we welcomed Ruth Power (Medical Social Worker) to the DOVE team. In 2014 Dr Richard Drew also joined the Rotunda and Temple Street hospitals as Consultant Clinical Microbiologist. He has been a most welcome addition to the team and we acknowledge the significant work of all laboratory staff with regard to provision of a prompt and efficient service for our patients. We also welcome Brian Cleary, Chief Pharmacist, back to the Rotunda. Brian has collaborated with the team previously and we look forward to his ongoing support and further collaborative projects.

PUBLICATIONS AND PRESENTATIONS

1. Jackson V, Ferguson W, Kelleher TB, Lawless M, Eogan M, Nusgen U, Coughlan S, Connell J, Lambert JS. *Lamivudine treatment and outcome in pregnant women with high hepatitis B viral loads.* Eur J Clin Microbiol Infect Dis. 2014 34 (3) 619-23.

2. Bergin S, Ferguson W, Corcoran S, Varughese, Byrne D, Lawless M, Eogan M, Lambert J. *Symptomatic primary Cytomegalovirus infection in a HIV-positive pregnant woman. International Journal of STD & AIDS 2014.* Vol 25 (14) 1041-3.

3. Monteith C, Ní Ainle F, Cooley S, Lambert JS, Kelleher B, Jackson V, Eogan M. *Hepatitis C virus- associated thrombocytopenia in pregnancy: impact upon multidisciplinary care provision*. J Perinatal Med. 2014; 42(1):135-8

4. LJ Else, V Jackson, M Brennan, DJ Back, SH Khoo, S Coulter-Smith and JS Lambert. *Therapeutic drug monitoring of atazanavir/ritonavir in pregnancy.* HIV Medicine. 2014 Nov;15(10):604-10.

5. Lambert J, Jackson V, Else L, Lawless M, McDonald G, Le Blanc D, Patel A, Stephens K, Khoo S. *Darunavir pharmacokinetics throughout pregnancy and postpartum.* HIV Drug Therapy, 2-5 November 2014, Glasgow, UK

6. Lambert J. *HIV in Pregnancy.* Royal College of Obstetricians and Gynaecologists, Maternal Medicine: Medical Complications in Pregnancy. 5-6 March 2014, RCOG, London, UK.

7. Lambert J. The Ebola Virus Disease Outbreak-update and implications for Health Professionals. Faculty of Occupational Medicine, 2014 Autumn Conference, 3rd October 2014.

8. Lambert J. Ebola Conference. 12th November 2014. Catherine McAuley Education & Research Centre, 21 Nelson St, Dublin 7, Ireland.

9. JS Lambert. Incidence of gestational diabetes mellitus (GDM) in a cohort of HIV positive pregnant women.Third Joint Conference of the British HIV Association (BHIVA) with the British Association for Sexual Health and HIV (BASHH)1–4 April 2014, Arena and Conference Centre, Liverpool, UK.

Radiology/ Paediatric Ultrasound

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

The radiology department in the Rotunda Hospital performed 7,341 exams in 2014 representing no significant change in activity over 2013 figures. Our department images both adults and children. 94% of these were pediatric examinations and 6% were adult examinations.

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

ADULT RADIOLOGY
The adult radiology service in the Rotunda Hospital is provided by Dr. Neil Hickey. In 2014 a total of 440 adult radiological examinations were performed of which 151 (34%) were hysterosalpingograms, performed as part of the fertility clinic work up. Other examinations also include other fluoroscopic procedures such as cystograms, non-obstetrical ultrasound (general abdominal, renal, pelvic, head and neck, vascular and soft tissue) and plain films.

PAEDIATRIC RADIOLOGY
Pediatric imaging accounts for 94% of the workload in the Department of Radiology. In 2014, a total of 6,900 paediatric studies were performed. Of these, just over half (3,634) were paediatric ultrasound examinations.

Over half (1,819) of the ultrasounds performed are hip ultrasounds performed as part of the screening service for developmental dysplasia of the hip. As the hip screening service is well established now, there has been no significant change in the number of hip ultrasound scans performed since 2013. The number of hip x-rays performed was 1,001, a slight decrease when compared with the same period in 2013.

In addition, 59 fluoroscopic studies were performed predominantly for investigation of the upper GI tract (51), but also for evaluation of the lower GI tract (8), often as an emergency out of hours study. There continue to be modified feeding studies performed in Rotunda hospital but many of these still need to be referred to TSH where facilities for feeding the baby upright are available and where the advice of the Speech and Language therapists can be sought.

The MRI unit at the Children's University Hospital, Temple Street, which has state of the art neonatal monitoring equipment, scanned a total of 119 Rotunda babies from both NICU and POPD. This is particularly valuable in the evaluation of the newborn with neonatal encephalopathy and adds very useful additional information to the bedside cranial ultrasound examination. MRI scanning was also used for the

evaluation of babies with brain and spine malformations as well as metabolic and other diseases. 15 paediatric patients were referred to Temple Street for CT scanning. Fetal MR imaging was also done in Temple Street for 32 obstetric patients at the Rotunda. Many of these Rotunda babies are discussed at multidisciplinary meetings in Temple Street Children's University Hospital attended by Rotunda neonatologists and radiologists and where the input of paediatric neurology and paediatric neurosurgery teams is valuable.

Both Dr Ryan and Dr Tarrant are actively involved in training at several levels and in paediatric radiology research. Several audits have been performed. There were several publications from our department as well as presentations and lectures at national meetings. 2014 was the 3rd year of a cranial ultrasound course, organised by the pediatric MD registrar and the department of radiology. This course is a practical course for pediatric trainees designed to give participants an introduction to cranial ultrasound and provide practical hands on experience for neonatal/paediatric trainees. Again, this was well attended and it is foreseen that it will continue on an annual basis.

TABLE 1: STAFF COMPLIMENT 2014

	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 2014

TOTAL ACTIVITY	**7,341**
TOTAL ADULT EXAMS	440
HSG	151
TOTAL PAEDS (X-ray & US)	6,900
TOTAL PAEDS US	3,634
HIP US	1,819
NEONATAL FLUOROSCOPY	59

PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS 2014

1. J Perinatol. 2014 Dec 11. doi: 10.1038/jp.2014.219. [Epub ahead of print] Inclusion of extremes of prematurity in ventricular index centile charts. Boyle M1, Shim R2, Gnanasekaran R2, Tarrant A3, Ryan S3, Foran A4, McCallion N4.

2. Using lateral radiographs to determine umbilical venous catheter tip position in neonates.Butler GC, Al-Assaf N, Tarrant A, Ryan S, El-Khuffash A. Ir Med J. 2014 Sep;107(8):256-8. PMID: 25282975

PUBLICATIONS AND PRESENTATIONS STEPHANIE RYAN 2014

Book Chapter

1. S. Ryan - CD of Radiological case studies in Diagnosing and Treating Common Problems in Paediatrics - The Essential Evidence-Based Study Guide Michael O'Neill, Michelle McEvoy, Alf Nicholson. Radcliffe Publishing, London. 2014

Publications

1. Butler G, Assaf N, Tarrant A, Ryan S, EL-Khuffash A. Using Lateral Radiographs to Determine Umbilical Venous Catheter Tip Position in Neonates: A Comparison with Anteroposterior Films. IMJ (2014) 107(8): 256- 8

2. Boyle M, Shim R, Gnanasekaran R, Tarrant A, Ryan S, Foran A, and McCallion N. Inclusion of extremes of prematurity in ventricular centile charts. J Perinatology. Accepted for publication Oct 2014

Presentations

1. Botulinum Toxin Injections for Sialorrhoea: too hard to swallow? A. O'Riordan, C. Moore, K. Davies, S. Ryan, O. Hensey. Joint Irish Paediatric Association(IPA)/Irish & American Paediatric Society(IAPS) Annual Meeting, September 2014, Cork

2. Non Traumatic Low Back Pain in Children. G Prego, S Ryan et al. European Course Paed MSK Radiology, Sheffield, England Oct 2014.

3. Gastro-jejunal Feeding: Service evaluation in Temple Street University Hospital. M Walsh, A Sills, S Macken, E Laffan and S Ryan. Temple Street Hospital Audit Day, 12 Dec 2014

Invited Lectures

1. Imaging of feeding and swallowing disorders in Children at Introduction to Paed Videofluoroscopic Swallow Studies Study Day Crumlin 28 May 2014

2. Role of Neuroimaging in Medicolegal Birth Injury cases. Conference on Medico-Legal Issues in Obstetric and Neonatal Care, Dublin, 9 October 2014,

Department of Midwifery/Nursing

MS. MARGARET PHILBIN, DIRECTOR OF MIDWIFERY/NURSING

The hospital again experienced high levels of activity throughout 2014. Midwives and Nurses continued to meet the challenges posed by capacity and activity issues. The team worked with skill and dedication to provide high quality care for women, babies and families both within the hospital and in the community. The ongoing commitment of staff to the hospital and to those who attend for care is truly appreciated.

STAFFING

Ms. M. Philbin	Director of Midwifery/Nursing
Ms. P. Williamson	Assistant Director of Midwifery/Nursing
Ms. F. Hanrahan	Assistant Director of Midwifery/Nursing
Ms. M. Keane	Assistant Director of Midwifery/Nursing
Ms. C. Halloran	Assistant Director of Midwifery/Nursing (from 24/03/14)
Ms. M. O'Reilly	Practice Development Co-ordinator
Ms. A. O'Byrne	Practice Development Co-ordinator
Ms. M. Brennan	Assistant Director of Midwifery/Nursing-Infection Control
Ms. J. MacFarlane	Night Superintendent
Ms. Aideen Keenan	Acting Night Superintendent (from 02/07/14)
Ms. M. Whelan	Clinical Audit Facilitator

STAFF IN POST AT 31ST DECEMBER 2014

POST	WTE in Post
Director of Midwifery/Nursing	1
Midwifery/Nursing Administration	7.76
Practice Development Co-ordinators	1.60
Advanced Nurse Practitioner (Neonatology)	2
CMM/CNM 3	5.90
Clinical Skills Co-ordinator	1.80
Clinical Placement Co-ordinator (BSc Midwifery)	2.90
Allocations Officer (BSc Midwifery)	0.45
PGDM Clinical Co-ordinator	1
Neonatal Discharge Co-ordinator	1
Colposcopy Nurse Co-ordinators	2
CMM/CNM 2	33.11
CMS/CNS	10.80
CMM/CNM 1	21.46
Staff Midwives	145.98
Staff Nurses	75.45
Student Midwives	19.95
Maternity Care Assistants	28.60
Total	**362.76**

APPOINTMENTS WTE	
Midwives and Nurses	**Midwifery Students**
18.33	28.5
TOTAL: 46.83	

RESIGNATIONS/ RETIREMENTS	
Midwives and Nurses	**Midwifery Students**
27.90	17
TOTAL: 34.90	

RETIREMENTS/RESIGNATIONS

There were no retirements from the Midwifery and Nursing staff in 2014.

RECRUITMENT AND RETENTION

Recruitment and retention of appropriately trained and skilled Midwifery and Nursing staff continued to be a major focus for the hospital in 2014 as in previous years. We were extremely fortunate to have been in a position to offer a substantial number of midwifery positions to our Higher Diploma and Undergraduate Midwifery Students upon receipt of their NMBI registration. Despite this we continue to experience difficulty recruiting staff into specialised areas, in particular, the Neonatal Intensive Care Unit.

HOSPITAL BASED MIDWIFERY AND NURSING SERVICES

Staff in the Adult Outpatient Department led by CMM2 Chanelle Porter facilitated a total of 42,635 attendances of pregnant women during 2014 representing an increase of 600 on the previous year. An additional 9,243 attendances to specialist clinics were recorded, an increase of almost 3,000 from 2013. A further 4,005 women attended the Early Pregnancy Unit. This heightened workload is reflective of the increasing complexity faced by the Maternity services.

The Midwifery Inpatient Antenatal Service incorporating Day Care, Fetal Assessment, Ultrasound and Fetal Medicine is led by CMM 3 Mary Deering working with a team of dedicated Midwives and Sonographers. The service provided by the team is recognised as being critical to the successful management of patients. There were a total of 20,774 attendances at Ultrasound, Fetal Assessment and Prenatal Diagnosis clinics during the year, which represents an increase of approximately 700 in the last 12 months. The new Day Assessment Unit was officially opened on 2nd March 2014 following a multidisciplinary collaboration lead by the Clinical Director and CMM 3. The unit now provides a full 5 day service operating until 18.00hrs most days. Previously located in the Outpatients Department the unit was relocated to a designated ward in the General Prenatal Department to facilitate this service development. The new service facilitates the ongoing assessment and management of women with a variety of conditions. Women with Intrauterine Growth Retardation, Cholestasis, PPROM and Blood Sugar Series are now managed on an outpatient basis following diagnosis thus reducing inpatient stay. The total number of attendances in 2014 was 3,773 and the admission rate from the Day Care Unit was between 5 – 9%. Table 1 illustrates the reason for attendance to the unit and the numbers of attendees during 2014:

Table 1: Attendance at Day Care

Attendance Reason	Number
Antenatal and Postnatal Hypertension	1109
Cardiotcograph Monitoring	1101
Obstetric Cholestasis	212
Intrauterine Growth Retardation	199
Blood Sugar Series	189
Preterm Pre-labour Rupture of Membranes	128
Hyperemesis	49
IVIG	21
IV Antibiotic Administration	19
Prolutin Administration	326
Dexamethazone Administration	139
Insulin Education	70
Iron Infusion	19
Miscellaneous	192

I am extremely grateful to the many staff members who worked so hard to ensure the success of this new venture.

The Nurses and Midwives in the Neonatal Intensive Care Unit led by CMM 3 Orla O'Byrne faced an increase in activity with a total of 1,417 babies being admitted to the unit compared to a figure of 1,331 in 2013. Seventy-eight of these babies were transferred into the unit from other hospitals situated within and outside of the RCSI Hospitals Group. The Paediatric Outpatients Department facilitated 8,757 neonatal reviews which was similar to the figure for the previous 12 months. Ongoing education for all staff in the neonatal unit continued throughout 2014. Two staff successfully completed the Postgraduate Diploma in Neonatal Nursing with the RCSI and a further three staff members were sponsored to undertake the programme, which commenced in September 2014. A number of staff are also undertaking educational programmes at Master of Science level in Neonatal Intensive Care Nursing. In 2014, the Foundation Programme in Neonatal Nursing was well supported with four staff from the Rotunda in attendance. The feedback from staff participating in both Level 1 and Level 2 programmes has been very positive and it is envisaged that more staff will be supported to do this course in the future. CNM 1 Mark Hollywood commenced the MSc in Advanced Nurse Practice (Neonatology) Programme in 2014 with a view to facilitating an expansion of numbers of Advanced Practitioners within the unit. Throughout the year Nursing staff were also supported to attend National and International Neonatal Nursing Conferences.

2014 was another challenging year for the staff in the Delivery Suite with a rise in deliveries from the previous year. A total of 8,787 women delivered 8,980 babies in the unit. Despite this increase the staff led by Acting CMM 3 Geraldine Gannon, continued to provide individualised care to women and families in a competent professional manner. Approximately 27,000 women attended the Emergency and Assessment Unit (which falls under the remit of the Delivery Suite) in 2014, the majority of whom were attending with pregnancy related problems. The Manchester Triage system was introduced this year which resulted in a reduction in the average waiting time for a midwife assessment from 1 hour to 20 minutes

with urgent cases being seen immediately. Advanced Midwife Practitioner Candidate Bernadette Gregg joined the department late in 2014. Work is progressing to have this post fully accredited in the latter part of 2015. This will be the first midwifery post of this nature to be introduced in to the Rotunda Hospital and will enhance existing services in the Emergency and Assessment Unit.

We are constantly striving to improve the quality of care for women, and staff continued to enhance their professional development and skills in a variety of ways with an emphasis on Obstetric Emergency Skills, Basic Life Support and Neonatal Resuscitation Programmes. Five Midwives completed the advanced cardiac life support programme in 2014. Twenty-two Midwives completed the Perineal Suturing Programme and sixteen have completed competency assessments in this regard. All Midwives in the Delivery Suite have completed the K2 training programme (CTG) and over 90% are competent in IV cannulation. A number of staff have completed a programme of study in Hypnobirthing. This will enable the introduction of antenatal education in Hypnobirthing Techniques which use relaxation tools to support women and their birthing partners during labour and delivery.

The Theatre Nursing and Midwifery Team led by CMM 3 Jane Hickey continued to experience high levels of activity. The team assisted with a total of 1,707 Colposcopy, 1,174 day cases and 1,878 elective and non elective Gynaecological surgical operations in 2014. In addition, a total of 2,753 Caesarean Sections were performed. We were fortunate to be in a position to increase the Nursing /Midwifery staffing levels in Theatre during the year which had a positive impact on our ability to face the challenges posed by the level of activity.

Staff in the Gynaecological Department led by CNM 2 Helen Enyinnaya also faced a challenging year. Care was provided to a range of antenatal, postnatal and high dependency admissions coupled with elective and emergency gynaecological cases. Bereaved couples were also predominantly cared for in the Gynaecological Department. This diverse casemix results in a complex and hugely demanding work environment for the staff in this department.

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

COMMUNITY MIDWIFERY SERVICES

The Community Midwifery Team led by CMM 3 Sinead Heaney continued to enhance the services they provide throughout 2014. A new clinic in Darndale was opened which brings the total number of clinics provided in community settings to eight. This clinic is being run in conjunction with the 'Preparing for Life' and Northside Partnership. The clinic is run every Tuesday from 10.00hrs to 12.00hrs. As this is a new clinic the uptake has been slowly growing throughout the year with approx 10-15 women now attending each session.

In 2014, a total of 1,545 women booked for antenatal care with the Community Midwifery Team which represents a significant increase on the previous year. Women are booked directly (home booking visits with the Community Midwife) and indirectly (referrals from the Adult Outpatients Department). The team continue to provide all aspects of antenatal care including booking visits and

subsequent home visits where appropriate in addition to facilitating a number of clinics in local health centres.

A total of 264 women left the scheme at varying stages of their pregnancies. These women were deemed unsuitable to continue under the care of the Community Midwifery Team for varying medical reasons and were referred back to the hospital for Obstetric care by the attending Midwives at the outlying antenatal clinics as referenced in Table 2 below. Ten women moved out of our catchment area during their pregnancy and a total of 23 women were referred back to the AOPD as they had defaulted on appointments for 2 or more community visits.

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

Referrals	Numbers
Small for Dates/ Oligohydramnios	24
Large for Dates / Polyhydramnios	18
Breech Presentation	7
Positive Glucose Tolerance Test	26
Abnormal Glucose Tolerance Test	25
Ante Partum Haemorrhage / NSAPH	11
Hypertension	9

Outcomes for women attending the Community Midwifery Services remained roughly on a par with the 2013 figures. Out of a total of 1,281 deliveries, 63.5% (N=818) of women had a spontaneous vertex delivery. The emergency caesarean section rate within this cohort remained at 12% (N=154) and the elective caesarean rate was 3% (N=36). Two women suffered late miscarriages with babies delivered at 20+4 and 23 weeks gestation respectively representing 0.15% of the total delivered. These babies were diagnosed with a fetal anomaly on post mortem examination. There was one unexplained stillbirth recorded of a baby at 39 weeks gestation. This mother had no antenatal complications observed and no post-mortem was undertaken at the request of the parents. Our sincere sympathies are extended to these bereaved families. Further details of the outcome of care are reflected in Table 3 below:

Table 3: Outcomes of Care

Total Deliveries	1,281	100%
Spont Vertex	818	63.5%
Ventouse	181	14%
M/C Forceps	46	4%
Ventouse/Forceps	23	2%
Emergency Caesarean Section	154	2%
Elective Caesarean Section	36	3%
Born Before Arrival	6	0.5%
Face to Pubis	6	0.5%
Breech	3	0.2%
Late Miscarriage	2	0.15%
Stillborn	1	0.07%
Choice of Analgesia		
Pethidine	79	6.2%
Entonox	682	53%
Epidural	635	50%

LACTATION SERVICES

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

We are extremely grateful for the work of our Lactation Specialists, Maura Lavery and Aisling Breathnach, who assist the hospital to protect, promote and support breastfeeding as the optimal way for a mother to feed her baby. Acknowledging that breast milk offers important health benefits for both mother and child we strive to assist as many women as possible to initiate breastfeeding. The initiation rate remained high at 67 % in 2014.

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

- Breastfeeding information is given to the expectant mothers by midwives in the Antenatal Clinic. If mothers have a specific problem they may be referred to see the Lactation Specialist.
- Pregnant women and their partners who attend antenatal clinics and classes are informed of the benefits and management of breastfeeding.
- A breastfeeding workshop is provided by the Lactation Specialist every Tuesday and Thursday evening.
- Hospital policies include mother friendly labour and birthing practices.
- Skin to Skin contact is policy for all mothers and babies including those following a caesarean section.
- Skin to skin contact is encouraged for at least 60 minutes post delivery and babies are offered the first breastfeed at this time.
- Individual assistance and support with early breastfeeding problems is available from postnatal ward staff.
- The Lactation Specialist attends the ward when more specialised care and advice is necessary.
- Postnatal breastfeeding information sessions are held at ward level.
- An outpatient service is available for mothers with breastfeeding issues from Monday to Friday.
- A phone counselling and advice service is available Monday to Friday.
- A breastfeeding support group is held every Thursday between 11.30hrs and 12.30hrs.
- Community links with Public Health Nurses, General Practitioners and Voluntary Support Groups are an important resource outside of the hospital setting. Mothers are advised to link in with these services.

Breastfeeding Committee Meetings
This multi-disciplinary committee which also includes members from the voluntary breastfeeding support groups continued to meet during 2014. There were 4 meetings held during the year.

Breastfeeding Education
Joint breastfeeding training continued to be facilitated by the 3 Dublin Maternity Hospitals for Nurses and Midwives comprising of four 20 hour training sessions and three refresher courses. Breastfeeding lectures were included in orientation days for all new staff. Breastfeeding lectures were also provided for Medical Students and those attending the Higher Diploma in Neonatal Nursing programme. In service training for Midwives and Nursing staff was provided at ward level.

National Breastfeeding Week
To celebrate this important week a breastfeeding information stand was positioned in the main reception area for all staff, expectant and delivered mothers and their families. A coffee morning was organised in the Board Room on Thursday the 2nd of October which was attended by a large number of mothers and their babies. A breastfeeding quiz was held for staff which proved to be very popular.

PERINATAL MENTAL HEALTH SERVICE

The Midwifery Perinatal Mental Health Team comprising of CNM2 Kathleen O' Donohoe and CMM2 Ursula Nagle continued to play a very active role in the provision of this specialised service in 2014. A total of 1,432 women reported a mental health history at their booking visit during the year. All of these women were given the opportunity to contact the services antenatally following which individual meetings were organised to continue to support them during their pregnancy and to facilitate brief intervention following delivery.

The 1,432 women who reported a history a mental health illness represented 16% of the total number of women (8,787) who delivered in the Rotunda Hospital in 2014. The variety of mental health illnesses reported at booking are illustrated in Table 4 below:

Table 4: Mental Illness History Reported at Booking Visit

Depression No Treatment	169
Depression	16
Anxiety	427
BPAD	17
Depression Requiring Treatment	462
No Diagnosis	0
Manic Depression	1
Other	279
Post Natal Depression	220
Puerperal Depression Requiring Treatment	63
Schizophrenia	3

A total of 462 women gave a history of Depression requiring treatment. A further 427 gave a history of Anxiety with a number reporting co-morbidities. A small number of women reported a previous diagnosis of Schizophrenia and 18 reported a history of Bipolar Disorder/Manic Depression. An enquiry at booking regarding personal and family history of mental illness is recognised as best practise as a history of same is a predictor of perinatal mental illness.

The team saw 515 women in the Health Promotion Clinic. These women are seen individually for up to an hour each. The sessions include an individual assessment; talk therapy, support and relaxation techniques which are provided in both the antenatal and postnatal periods. Women can avail of this service for up to four months post delivery.

A further 1,406 women with a mental health history were reviewed at ward level for brief intervention, including health promotion, mental health management and follow up service advice. In addition, the Mental Health Support Midwives support the practice of offering every woman in the Rotunda the opportunity to complete the Edinburgh Postnatal Depression Score before discharge.

Staff in the department undertook a number of audits during the year:

- An Audit of the documentation of mental health care in the Obstetric Chart was conducted in March 2014. Documentation to support the two way flow of information between the Mental Health Team and Obstetric/Midwifery Teams in the hospital throughout the antenatal and postnatal period was introduced following a Coroner's recommendation in 2013. The results indicated a 95% compliance rate with the hospital protocol.

- An audit of completion of the Edinburgh Postnatal Depression Scale (EPDS) on discharge was undertaken during the year. The EPDS is a self reporting assessment tool to monitor mood. All women are offered the opportunity to complete the EPDS prior to discharge. The results showed that 66% of women discharged home from the Rotunda had completed the EPDS.

Completion of the EPDS prior to discharge is recommended best practice. There is a well established discharge summary with a mandatory section for EPDS scores that is distributed to all General Practitioners and Public Health Nurses. In order to increase the rate of compliance the Mental Health Support Midwives collaborated with colleagues on the postnatal wards, in Outpatients and on the Community Midwives Team to improve staff education regarding the importance and value of the EPDS and the recommendation of offering women the opportunity to complete the tool. A further EPDS Audit has been conducted the results of which will be available in early 2015.

The team organised a colourful poster and leaflet stand at the Rotunda Reception of the Rotunda to raise awareness of Mental Health for World Mental Health Week in October 2014. The promotion created much interest as evidenced by the numbers of leaflets taken and enquiries provoked.

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

The Rotunda Mental Health Support Midwives and Public Health Nurses from Dublin's North City have joined together to form a working group to develop and improve services in Perinatal Mental Health in the region. The team also work closely with Perinatal Mental Health colleagues in the National Maternity and Coombe Hospitals which culminated in a very successful Study Day for Midwives hosted by the Rotunda in March 2014.

BEREAVEMENT SUPPORT AND CHAPLAINCY SERVICES

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

The Bereavement Team, which includes the Bereavement Support Midwife Trish Butler, the Hospital Lay Chaplain Ann Charlton, a dedicated Medical Social Worker, Administrative Assistant, and Anatomical Pathology Technicians provided sensitive, compassionate and individualised care to the families of the 259 babies who died at all gestations in 2014.

Education sessions were provided by the Bereavement Team during the year, including full study days for BScM Midwifery Students, and Midwives and Nurses in conjunction with the Centre for Midwifery Education. Training sessions for Non Consultant Hospital Doctors and Non Medical Staff were also delivered.

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

ANNUAL SERVICE OF REMEMBRANCE

The Annual Service of Remembrance was held in the Pro-Cathedral in November 2014 with an attendance of approximately 1,100. We are again very grateful for the continued support of The Very Reverend, Cannon Damian O'Reilly in facilitating this extremely important event where we gather to remember and honour the precious short lives of babies who died during the year. Increasingly we see parents and families of babies who died long ago attend this service. The service was also attended by Chaplains from the main Churches, members of the Board of Governors, the Executive Management Team and many staff members. The occasion was enhanced by the music provided by soloist Mary Flynn and harpist Denise Kelly. We extend our gratitude to the numerous staff members who volunteered to assist on the day. Following the Service many families joined the Governors and staff in the Gresham Hotel for light refreshments.

BOOKS OF REMEMBRANCE

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

PARENT EDUCATION

The Parent Education Midwife, Margaret Merrigan Feenan working closely with the Physiotherapy Department continued to provide an extensive range of education sessions to both in-patients and outpatients during 2014. Demand for this service remained high and an additional first class was added to meet the requirements. Parent education sessions aim to convey positive messages to parents regarding their role in the development of healthy children and their lifestyles. This is achieved by woman focused sessions with the role of the father emphasised throughout. Education is provided to expectant women and their birth partners on issues relating to pregnancy, labour and the immediate postnatal period with feeding choices, baby care and the future demands of parenthood also discussed. Information is also provided to inform parents where to source support and resources when they go home with their new baby. Special education sessions were organised for groups with specific identified needs including:

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

MIDWIFERY EDUCATION / PRACTICE DEVELOPMENT UNIT

The role of Practice Development is tripartite in nature and includes:

- Student support through supervision and guidance
- Implementation of quality improvement measures
- Midwifery/Nursing practice development through staff development, education and support

Throughout 2014 the Practice Development Team led by Mary O'Reilly and Ann O'Byrne were actively involved in supporting 71 Undergraduate and 19 Postgraduate Midwifery Students in clinical placement from the University of Dublin, Trinity College. A total of 170 other students attended at various stages of their education programme, which included Public Health Students from University College Dublin, General Nursing Students from Dublin City University and Integrated Nursing Students from Temple Street University and Tallaght hospitals. In facilitating this clinical experience, the Practice Development Team are committed to enhancing the development of these students on their journey to become qualified, competent, reflective practitioners.

Monthly in-service education programmes were provided for qualified Midwifery and Nursing staff for ongoing professional development with the aim of continuous improvement in the quality of service provided to the patients, in addition to being responsive to the ever changing needs of the health service. A significant number of courses were facilitated in partnership with the Centre of Midwifery Education based in the Coombe Hospital.

The team was involved in a number of quality initiatives to advance improvements in patient outcomes, including a collaborate approach to reduce pressure sores to zero, working with the Health Service Executive and the Royal College of Physicians. The healthcare teams worked as a group utilising individual skills and talents to accomplish the goal. The initiative was run over a 9 month period in the Delivery

Suite and one of the Postnatal Wards and within this time, staff reached and sustained the goal of "zero pressure sores". The learning from this initiative has now been incorporated into routine practice throughout the hospital. A second initiative involved members of the team working as facilitators in the 'Leading in Uncertain Times' Programme, a National two day programme for Staff Nurses and Midwives and Clinical Midwife Managers 1 and 2. This programme offered an exciting opportunity to explore why leadership is important within the context of healthcare, providing staff with an opportunity to become more effective in the provision of safe, quality and person-centred care. Two training sessions were facilitated during 2014.

Staff continued to avail of the opportunity to progress their professional development through a variety of Education Programmes at Master's, Diploma and Degree level. Funding and study leave was provided by the hospital to enable staff to attend these courses in addition to staff attendance at National and International Conferences, the most notable of which was the 30th Triennial Congress Midwifery Conference which took place in Prague. This proved a unique experience for the staff who were supported to attend. At local level a total of 822 study days were provided for ongoing education, demonstrating the commitment of the hospital in ensuring the provision of care at the highest standard for all patients and a highly motivated workforce.

CLINICAL AUDIT

Ms Mary Whelan, Clinical Audit Facilitator, continued to promote and support all disciplines of staff to undertake clinical audit throughout the year. In 2014, Midwifery and Nursing staff registered 18 audits. Outcomes from all audits were presented at the Quality and Safety Committee Meetings and Patient Safety Meetings and at the Quarterly and Biannual Audit Results meetings.

HEALTH PROMOTING HOSPITALS

The Rotunda Hospital is a committed member of the Health Promoting Hospitals Network. The Smoking Cessation Service led by Staff Midwife Marion Gibbs continues to offer support to the patients and staff who wish to reduce and/or quit smoking. Motivational interviewing techniques are used to help individuals address the issues around their smoking with intensive follow up support offered to those who quit. Training in these interview skills is included in the 'Brief Intervention in Smoking Cessation' training (BISC) for staff, assisting them with the management and support of patients and colleagues who are trying to stop smoking.

On the 8th May this year, 11 individuals attended BISC training bringing to a total of 44, the number of staff across all disciplines trained since 2013. We anticipate that training will continue to be held bi-annually in 2015.

Patient referrals to the Smoking Cessation Service come primarily from the Midwives and Doctors in the Outpatient Department with the highest number of referrals following the first booking visit. Self referrals are invited from members of staff either through the Smoking Cessation Service or the Occupational Health Department. A total of 164 new clients availed of the service in 2014, an increase of 25 on the 2013 figure. The 'quit rate' has been found to be just below 10% highlighting the difficult challenges facing individuals trying to quit smoking. The Rotunda Hospital marked the first year of becoming a Tobacco Free Campus in November. By providing a smoke free environment, the hospital supports each

patient, member of staff and visitor who are trying to quit and protects everyone from the dangers of second hand smoke.

OCCUPATIONAL HEALTH DEPARTMENT

The Department of Occupational Medicine is run by Dr Dominick Natin, Consultant in Occupational Medicine and CNM2 Stephanie McCann. The Department endeavours to promote and maintain the highest degree of physical and mental health of all employees by preventing departures from good health, controlling risks and adapting work to people and people to their jobs as much as possible. The Department provides an independent and confidential service for all employees hosting a clinic for staff on one morning per week.

Occupational blood and body fluid exposures continue to be regularly monitored within the department. A hospital sub-committee which was established in advance of the introduction of the European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations 2014 continued to meet throughout the year. The landmark legislation was finally transposed into Irish law in March 2014. New sharps devices with safety technology continue to be researched and trialled. Induction training for all staff and in-service training continued with an emphasis on raising awareness of the prevention of blood and body fluid exposures.

In October 2014, the Department of Occupational Medicine began a rigorous campaign to promote and administer the flu vaccine to all staff. The annual vaccination clinic was held in the Front Hall over a 12 hour period to facilitate staff on duty. Thereafter, the Occupational Health Nurse Manager held regular vaccination clinics in the Department of Occupational Medicine and the NICU Department. The campaign will continue until the end of the flu season in April 2015.

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 2014. I would like to extend my sincere thanks to the Master, Dr. Sam Coulter Smith and Secretary/Group General Manager, Ms. Pauline Treanor for their support, and to extend my appreciation to Medical, Allied Health and Support staff colleagues for their continued assistance. I wish to acknowledge and thank all of the external agencies that have continued to support Midwifery and Nursing Education and Practice and the Hospital throughout the year especially Ms. Eithne Cusack, Director, Nursing and Midwifery Planning and Development Dublin North East, Ms. Kathryn Muldoon, Director of Midwifery Programmes, Trinity College and Ms. Triona Cowman, Director, Centre for Midwifery Education.

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

Ms Margaret Philbin
Director of Midwifery/Nursing
2014

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

1. DEPARTMENT STAFF

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

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

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

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

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

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

RESEARCH FELLOW PHD
Julia Unterscheider MRCOG (Jan-July)
Siglinde Muellers MRCPI (July – December)

MIDWIFE SONOGRAPHERS
Claire O'Rourke
Ann Fleming

RESEARCH NURSE
Grainne Mc Sorley

RESEARCH STAFF
Elizabeth Tully (Research Manager) PhD
Britta Stordal (Research Manager) PhD
Patrick Dicker (Epidemiologist/Statistician) PhD

ADMINISTRATION
Suzanne Kehoe
Michelle Creaven
Paula Carty
Sinead Buckley

1. PATIENT SERVICES

The RCSI Fetal Medicine Centre continues to provide advanced fetal medicine services for patients of the Rotunda Hospital, as well as those referred from throughout Ireland. During the current academic year a total of 3,749 fetal ultrasound examinations were performed at the Centre. This included a total of 710 first trimester assessments for fetal aneuploidy, based on combined nuchal translucency and serum screening, as well as 401 non-invasive prenatal testing (NIPT) cases using free fetal DNA. The RCSI Fetal Medicine Centre operates a one-stop clinic for assessment of risk of fetal aneuploidy, using the Brahms Kryptor biochemistry platform and also NIPT. Management of multiple gestations contributed a significant workload to the Centre, with 38 twin pregnancies and 3 triplet pregnancies managed through our unit.

2. TEACHING SERVICES

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

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

3. RESEARCH OUTPUT

a) Research Grants and Awards:

- Health Research Board, Ireland
  - HRB Ireland Perinatal Clinical Trials Network
  - F. Malone, MD Principal Investigator
  - Total support €2,500,000
  - 2014 – 2019

- Health Research Board, Ireland
  - Haemodynamic Assessment in Pregnancy and Neonatal Echocardiography
  - A. El-Khuffash, MD, Principal Investigator
  - F. Malone, MD, Co-Principal Investigator
  - Total support €188,126
  - 2014 – 2016

b) Perinatal Ireland

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

In addition to its clinical research activities, the Perinatal Ireland network is also active in other educational activities and methods of advancing clinical care including: annual teaching conferences for practitioners in critical areas of obstetric and paediatric health; development of national clinical guidelines to optimise the management of important obstetric conditions, and contribution to international guidelines; development of new information technology systems that underpin obstetric ultrasound equipment based on data developed from Perinatal Ireland research data.

In December 2014, the Perinatal Ireland Research consortium was joint recipient (together with the INFANT Centre at UCC) of a HRB Clinical Trials Network Grant of €2.5 million to fund a five year programme in Perinatal Clinical Trials. The HRB Ireland Perinatal Clinical Trials Network (HRB IP-CTN) is a new, exciting and unique partnership between the two most successful perinatal research entities currently operational in Ireland, INFANT and Perinatal Ireland. This CTN represents a critical mass of obstetricians, neonatologists, midwives and allied professionals from seven of the largest maternity hospitals on the island of Ireland, which deliver over 55,000 babies per annum (almost three quarters of the total births on this island). HRB IP-CTN has a balanced and extensive portfolio of both 'home-grown' and international clinical trials of novel interventions and diagnostics in pregnancy and neonates. The HRB IP-CTN will facilitate greater national collaboration in the arena of perinatal trials and will ensure that Ireland maintains our place at the international forefront of this area of clinical research.

4. RESEARCH PUBLICATIONS

A) Book Chapters:

Malone FD, D'Alton ME. "Multiple Gestation: Clinical Characteristics and Management" in *Maternal-Fetal Medicine*, edited by Robert Creasy, Robert Resnik and Jay Iams, 7th Edition, WB Saunders, Philadelphia, 2014, p 578-596.

B) Papers in Peer-Reviewed Journals:

- Anbazhagan A, Hunter A, Breathnach FM, McAuliffe FM, Geary MP, Daly S, Higgins JR, Morrison JJ, Burke G, Higgins S, Dicker P, Tully E, Carroll S, Malone FD. Comparison of Outcomes of Twins Conceived Spontaneously and by Artificial Reproductive Therapy. Journal of Maternal Fetal and Neonatal Medicine 27:458-462, 2014.

- Blumenfeld YJ, Momirova V, Rouse DJ, Caritis SN, Sciscione A, Peaceman AM, Reddy UM, Varner MW, Malone FD, Iams JD, Mercer BM, Thorp JM, Sorokin Y, Carpenter MW, Lo J, Ramin SM, Harper M. Accuracy of Sonographic Chorionicity Classification in Twin Gestations. Journal of Ultrasound in Medicine 33:2187-2192, 2014.

- Throughout All Trimesters of Pregnancy Compared with the Nonpregnant State: A Prospective Study. British Journal of Obstetrics and Gynaecology 121:1580, 2014.

- Corcoran S, Breathnach FM. The early bird catches the worm: Predicting the onset of gestational diabetes in the first trimester. Journal of Maternal Fetal and Neonatal Medicine 28:823-824, 2014.

- Flood K, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully EC, Malone FD. The Role of Brain-Sparing in the Prediction of Adverse Outcomes in Intrauterine Growth Restriction: Results of the Multicenter PORTO Study. American Journal of Obstetrics and Gynecology 211;288-290, 2014.

- Graves SW, Esplin MS, McGee P, Rouse DJ, Leveno KJ, Mercer BM, Iams JD, Wapner RJ, Sorokin Y, Thorp JM, Ramin SM, Malone FD, O'Sullivan MJ, Peaceman AM, Hankins GD,
- Dudley DJ, Caritis SN. Association of cord blood digitalis-like factor and necrotizing Enterocolitis. American Journal of Obstetrics and Gynecology 210:328e1-5, 2014.

- Haddow JE, Craig WY, Neveux LM, Haddow HR, Palomaki GE, Lambert-Messerlian G, Malone FD, D'Alton ME. Implications of high free thyroxine (FT4) concentrations in Euthyroid pregnancies: The FASTER Trial. Journal of Clinical Endocrinology and Metabolism 99:2038-2044, 2014.

- Hehir MP, Malone FD. The Dilemma of Vaginal Breech Delivery Worldwide. Lancet 384:1184, 2014.

- Khalifeh A, Breathnach F, Coulter Smith S, Robson M, Fitzpatrick C, Malone F. Changing trends in Diabetes Mellitus in pregnancy. Journal of Obstetrics and Gynecology 34:135-137, 2014.

- Khalifeh A, Grantham J, Byrne J, Murphy K, McAuliffe F, Byrne B. Tinzaparin safety and efficacy in pregnancy. Irish Journal of Medical Science 183:249-252, 2014.

- Malone FD. What is New in Obstetric Antecedents of Chronic Disease? Obstetrics and Gynecology 123:883-884, 2014.

- Mulcahy C, McAuliffe F, Breathnach FM, Geary M, Daly S, Higgins J, Hunter A, Morrison J, Burke G, Higgins S, Dicker P, Mahony P, Tully E, Malone FD. Blood Flow Velocity Waveforms of the Umbilical Artery and Middle Cerebral Artery in a Twin Population: Longitudinal Reference Ranges From 24 to 38 Weeks' Gestation. Ultrasound in Obstetrics and Gynecology, 44:461-467, 2014.

- O'Dwyer V, Burke G, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Dicker P, Tully EC, Malone FD. Defining the Residual Risk of Adverse Perinatal Outcome in Growth-Restricted Fetuses with Normal Umbilical Arterial Blood Flow. American Journal of Obstetrics and Gynecology, 211:420-422, 2014.

- Ryan HM, Morrison JJ, Breathnach FM, McAuliffe FM, Geary MP, Daly S, Higgins JR, Hunter A, Burke G, Higgins S, Mahony R, Dicker P, Manning F, Tully E, Malone FD. The influence of maternal body mass index on fetal weight estimation in twin pregnancy. American Journal of Obstetrics and Gynecology 210:350e1-6, 2014.

- Unterscheider J, Malone FD. American Journal of Obstetrics and Gynecology 2014 May 1. Pii: S0002-9378 (14) 00392-5.

- Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Definition and management of fetal growth restriction: a survey of contemporary attitudes. European Journal of Obstetrics Gynecology and Reproductive Biology 174:41-5, 2014.

- Unterscheider J, Daly S, O'Donoghue K, Malone FD. Critical umbilical artery Doppler abnormalities in early fetal growth restriction and the timing of delivery: An overestimated challenge in daily obstetric practice? Ultrasound in Obstetrics and Gynecology 43:236-237, 2014.

- Unterscheider J, O'Donoghue K, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Fetal Growth restriction and the risk of perinatal mortality. BMC Pregnancy and Childbirth. 14:63, 2014.

C) Abstracts in Peer-Reviewed Journals:

- Burke N, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Morrison JJ, O'Donoghue K, Hunter A, Burke G, Dicker P, Tully E, Malone FD. Influence of Maternal Risk Factors on Perinatal Outcomes in IUGR: Analysis of the National Multicenter Prospective PORTO Study. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S93.

- Cody F, Unterscheider J, Dicker P, Tully E, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Malone FD. Intrauterine Growth Restriction – Are you a Grower or a Shower? 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S63.

- Corcoran S, Unterscheider J, O'Donoghue K, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Does Infant Sex influence the Risk of Adverse Perinatal Outcome in Fetal Growth Restriction? – Results from a multicentre prospective study. Journal of Maternal Fetal and Neonatal Medicine 27(Suppl 1):126, 2014.

- Dicker P, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Antenatal Corticosteroids in IUGR – Are We Getting it Right? 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S65.

- Müllers S, Unterscheider J, O'Donoghue K, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Early and Late-onset Fetal Growth Restriction – A Comparison of Perinatal Outcomes in a Multicentre Prospective Study. Journal of Maternal Fetal and Neonatal Medicine 27(Suppl 1):127, 2014.

- Müllers S, Unterscheider J, Doyle E, Devaney D, Fitzgerald B, O'Donoghue K, Daly, S Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Placental Lesions in Pregnancies Complicated by Intrauterine Growth Restriction and Hypertension – Results of the National Multicenter Prospective PORTO Trial. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S174-175.

- Murray, A, Breathnach FM, McAuliffe FM, Geary MP, Daly S, Higgins JR, Morrison JJ, Burke G, Higgins S, Dicker P, Tully E, Carroll S, Malone FD – Prediction of Significant Birth Weight Discordance in Twin Pregnancies with Second and Third Trimester Ultrasound. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210 (1):S187

- O'Connor H, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Morrison JJ, O'Donoghue K, Hunter A, Burke G, Dicker P, Tully E, Malone FD. Induction of labor in nulliparous women with IUGR and abnormal umbilical artery blood flow: data from a large multi-center prospective study. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S98-99.

- O'Dwyer V, Burke G, Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Dicker P, Tully E, Malone FD. Defining the Residual Risk of Adverse Perinatal Outcome in Growth-restricted Fetuses with Normal Umbilical Arterial Blood Flow – Results of the National PORTO Trial. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):S62.

- Unterscheider J, O'Donoghue K, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Perinatal Morbidity and Mortality Outcome in Pregnancies affected by Fetal Growth Restriction – A multicentre prospective observational study. Journal of Maternal Fetal and Neonatal Medicine 27(Suppl 1):119-120, 2014.

- Unterscheider J, Daly S, Geary MP, Kennelly MM, McAuliffe FM, O'Donoghue K, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Clinical Factors informing Decision to Deliver the IUGR Fetus – Experience from the PORTO Study. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014; 210(1):S65-66.

- Unterscheider J, O'Donoghue K, Daly S, Geary MP, McAuliffe FM, Kennelly MM, Morrison JJ, Hunter A, Burke G, Dicker P, Tully E, Malone FD. Applying Customization of Fetal Growth to The PORTO Cohort – Can We Improve the Appropriate Identification of Infants at Risk? 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014; 210(1):S62-63.

- Unterscheider J, O'Donoghue K, Daly S, Geary MP, McAuliffe FM, Kennelly MM, Morrison JJ, Hunter A, Burke G, Dicker P, Tully E, Malone FD. Uterine Artery Doppler at IUGR Diagnosis – Can it Predict Adverse Perinatal Outcome? 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1):63-64.

- Unterscheider J, Doyle E, Devaney D, Fitzgerald B, O'Donoghue K, Daly S, Geary MP, Kennelly MM, McAuliffe FM, Hunter A, Morrison JJ, Burke G, Dicker P, Tully E, Malone FD. Clinical Significance of Placental Lesions in IUGR – Results from a National Prospective Study. 34th Annual SMFM Meeting, New Orleans, February 2014; American Journal of Obstetrics and Gynecology 2014;210(1): S64-65.

Prof. Fergal Malone

"Monochorionic Twin Gestations – Medical Management and Legal Implications" – Obstetric and Neonatal Dilemmas Conference, Dublin, Ireland, December 2014

"Prevention of cerebral palsy – The role of magnesium Sulphate" – Obstetric Anaesthesia Association, Annual Clinical Meeting, Dublin, Ireland, May 2014

"Strategies for preventing cerebral palsy" – Royal College of Paediatrics and Child Health – British Association of Perinatal Medicine, Annual Conference, Birmingham, April 2014

"Contemporary management of fetal growth restriction" – Institute of Obstetricians and Gynaecologists of Ireland, Spring International Meeting, Dublin, Ireland, March 2014

Dr. Paul Byrne

"The Surgical Management of Urinary Stress Incontinence". Grand Rounds. Perdana University-RCSI, Kuala Lumpur, Malaysia. September 2014

"Recent Advances in the Management of Detrusor Overactivity". Symposium on Women's Health, Penang Medical College, Malaysia. October 2014

Dr. Fionnuala Breathnach

"Current Challenges in Twins". Perinatal Ireland Study Day, Dublin, March 2014

Human Assisted Reproduction Ireland

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SpR in Obstetrics and Gynaecology Fellow (from July 2013)
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HOUSEKEEPING
Ann Mulligan
Ana Skorik Nurses Aide

1. SERVICES

During 2014, the HARI Unit provided Assisted Reproductive Technology services which included IVF, ICSI, frozen embryo transfers, natural cycles (IVF and ICSI), follicle tracking with or without ovarian stimulation (anti-oestrogens, FSH), donor egg monitoring, testicular biopsy, embryo freezing, oncology stimulation and subsequent gamete and embryo cryopreservation to couples referred from throughout Ireland. In 2014, the Unit had on average 50 staff delivering medical care.

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

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

2. ART DEMOGRAPHICS AND OUTCOMES

ART Activity

The female age among our IVF/ ICSI patients is a key determinant of the likelihood of conception. In 2014 the mean ages were 35.4 years for females and 37.0 years for males. The mean duration of infertility of those undergoing fresh cycles was 3.0 years. The main indications for IVF or ICSI therapy were male factor (30%), tubal and endometriosis (23%), unexplained (31%), ovarian (15%) and others (1%).

In these 12 months, 1,108 cycles were undertaken - 357 IVF, 346 ICSI and 405 frozen. Of the 703 fresh cycles commenced, 586 had oocytes collected (IVF 277, ICSI 309). Embryos were transferred in 844 cases (IVF 226, ICSI 234 and frozen 384). A total of 304 clinical pregnancies were achieved,191 after IVF/ ICSI cycles and 113 in frozen embryo transfer cycles.

TABLE 1. Overall IVF/ ICSI activity (2014)

	IVF	ICSI	FZT
Cycles started	357	346	405
Cycles not completed	80	37	-
Oocyte collections	277	309	-
Embryo transfers	226	234	384
Clinical pregnancies	100	91	113

PREGNANCY RATES

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

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

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

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

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

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

TABLE 2. Clinical pregnancy rates (2014)

	Overall (n = 304)	Overall (n=191)	IVF (n = 100)	ICSI (n = 91)	FZT (n=113)
Per cycle started	28%	27%	28%	26%	28%
Per oocyte recovery	N/A	33%	36%	29%	N/A
Per embryo transfer	36%	41%	44%	39%	29%

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

These figures are interpreted as follows: the overall likelihood to have a clinical pregnancy after IVF/ICSI was 27% per cycle started, 33% per oocyte recovery and 41% per embryo transfer. The clinical pregnancy rates for patients undergoing frozen cycle transfers were 28% per thaw and 29% per embryo transfer.

TABLE 3. CLINICAL (IVF AND ICSI) PREGNANCY RATES ACCORDING TO FEMALE AGE (2014)				
	Age	**Overall (n = 703)**	**IVF (n = 357)**	**ICSI (n = 346)**
Per Oocyte Recovery				
(n=586)	≤ 35 y	35%	38%	33%
	36-39y	27%	41%	32%
	≥ 39 y	17%	20%	14%
Per Embryo Transfer				
(n=460)	≤ 35 y	48%	50%	48%
	36-39 y	43%	48%	39%
	≥ 39 y	21%	24%	18%

A female of under the age of 35 years, undergoing fresh ART treatment had a 35% chance of a clinical pregnancy per oocyte recovery and 48% per embryo transfer.

Single blastocyst transfer programme

The HARI elective Single Blastocyst Transfer (eSBT) programme continued in 2014. Details of pregnancy rates after ICSI and IVF 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 elective single blastocyst transfer. (2014)				
ICSI eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 39**
hCG+ve/eSBT	59% 63/106	71% 40/56	49% 22/45	20% 1/5
CPR/eSBT	51% 54/106	61% 34/56	42% 19/45	20% 1/5
IVF eSBT	**All ages**	**≤ 35**	**36-39**	**≥ 39**
hCG+ve/eSBT	57% 70/123	52% 25/48	63% 40/63	42% 5/12
CPR/eSBT	50% 61/123	48% 23/48	56% 35/63	25% 3/12

TABLE 5. Frozen Embryo Transfers.	
Details	**TOTAL Rates %**
Thaws	405
Transfers (ET)	384 (94%)
Embryos thawed	569
Embryos survived	484 (85%)
Embryos transferred	442
Utilisation Rate	442/569 (78%)
Pos hCG/ ET	147 (38%)
CP (Sac)	113 (29%)
Twins	11 (7%)
Pregnancy loss	34 (23%)
eSET	326 (85%)

The introduction of the eSBT was driven by the desire to reduce multiple pregnancies while maintaining respectable pregnancy rates from one oocyte recovery. 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. See table 5 for the multiple pregnancy rates for 2014 in the general population and the elective single blastocyst transfers (eSBT).

TABLE 5. Multiple pregnancy rates (MPR).

MPR RATES	All ages	<35	35-39	>39
MPR /Pos hCG				
	9%	5%	12%	14%
All transfers	20/217	5/91	12/104	3/22
MPR / Pos hCG				
	1.5%	0%	3%	0%
eSBT	2/133	0/65	2/62	0/6

3. NATIONAL ONCOLOGY CRYOPRESERVATION SERVICES

The activity of the National Oncology Cryopreservation Centre includes emergency onco-fertility consultations, counselling and gamete/embryo preservation prior to gonadotoxic intervention, offered to all females and males diagnosed with cancer referred by a Consultant. In 2013, 177 male oncology patients attended HARI and 167 patients had sperm cryopreserved. The demand for female cryopreservation services continued, with 88 patients attending, 48 started therapy and 41 reaching either egg or embryo freezing. New clinical protocols ensure, in suitable cases, commencement of therapy at presentation, irrespective if the patient presents in the proliferative or the luteal phase of the cycle. This eliminates the need to delay lifesaving oncology treatments in order to pursue fertility cryopreservation.

TABLE 8. Oncology cryopreservation data

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Males attended	114	142	142	158	186	174	163	173	127	155	177
Males with samples frozen	102	127	132	141	170	155	149	157	111	140	167
Not suitable / No sample	12	15	10	17	16	19	14	16	16	15	10
Female attendances	**5**	**5**	**6**	**14**	**12**	**23**	**25**	**32**	**62**	**82**	**88**
Pursued cryopreservation	**4**	**0**	**1**	**10**	**4**	**7**	**19**	**22**	**32**	**52**	**48**
Oocyte/ embryo cryopreservation	**4**	**0**	**0**	**5**	**3**	**5**	**16**	**22**	**25**	**46**	**41**

4. RECOGNITION

Training in Reproductive Medicine (RM)

HARI continued as the main RM teaching centre in Ireland. In 2014, Dr Srwa Khalid finished training as a Fellow in Reproductive Medicine and Surgery (RMS) part of the SpR in Obstetrics and Gynaecology HARI Scheme recognised by the Institute of Obstetricians and Gynaecologists and RCPI.

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. Dr Nikhil Purandare continued his Subspecialty Training in Reproductive Medicine and Surgery, recognized by the RCOG.

The unit is similarly recognised for training purposes by the Association of Clinical Embryologists, UK. Ms Ciara Hughes is a certified embryology trainer. One embryologist is currently undergoing the ESHRE training scheme, an andrologist is undergoing the British Andrology Society training scheme and another trainee embryologist is completing an MSc in Human Reproduction and Embryology with IVI in Spain.

Staff recognition nationally and internationally

Ciara Hughes continued her commitment to Irish Clinical Embryology Society (ICE) and has represented ICE at the May 2014 consensus meeting of the Alpha Group in Turkey where she presented on the role and responsibilities of the clinical embryologist. This document has since been published with all countries being encouraged to adopt the PACER system developed by Ciara to standardise the roles and responsibilities of embryologists in their profession. Ciara is also a co-author for the ACE / BFS Update Guidelines for Elective Single embryo transfer which has been accepted for publication. Dr Karen Deignan successfully completed a post-graduate diploma in Statistics in Trinity College and Dr Rob Downer qualified as a senior clinical embryologist with the European Society for Human Reproduction and Embryology (ESHRE).

Joan Kelly from the nursing department was asked to represent the HARI Unit and join the steering committee for Insights, UK's leading conference which takes place annually.

Dr. Edgar Mocanu continued as member of Board of Directors of the International Federation of Fertility Societies (IFFS), Treasurer of the Federation, chair the EUTCD ESHRE Task Force, member of the Clinical Advisory Group of the Institute of Obstetricians and Gynaecologists and National Advisor Oncofertility to the National Cancer Control Programme (NCCP).

5. QUALITY AND SERVICE IMPROVEMENTS

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

Embryology

The embryology laboratory continues to be at the forefront of developments in Reproductive technology and the team were delighted to have Dr Lynne O'Shea a UCD graduate join them as a research assistant. Lynne was awarded a grant of over g90000 as part of the Irish Research council enterprise partner scheme to work with UCD to develop and optimise the methods for ovarian tissue freezing to provide an alternative form of fertility preservation for oncology patients.

Clinical

The role of the endometrial scratch has been the focus of our clinical team for the last 12 months. Based on published studies this procedure was offered to all couples that wished to avail of it. A retrospective audit was performed and its findings showed that the use of the endometrial scratch offered routinely does not improve pregnancy rates. The identification of a selective population that could obtain a marginal benefit from this procedure continues.

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. Ciara Hughes has acted as a referee for two journals in Reproductive Medicine and Dr Mocanu continued as Editorial Board member of Human Fertility, the official journal of the British Fertility Society and ad-hoc referee for five other journals in the Reproductive Medicine arena.

Scientific publications
Peer reviewed published abstracts

1. Hughes C, et al. The Alpha Consensus Meeting on the professional status of the clinical embryologist: proceedings of an expert meeting. RBM Online, 2014, Vol 30 (5): 451-461.

2. Coughlan C, Clarke H, Cutting R, Saxton J, Waite S, Ledger W, Li T, Pacey AA. Sperm DNA Fragmentation, Recurrent Implantation Failure and Recurrent Miscarriage. Asian J Androl. 2015 Mar 27. doi: 10.4103/1008-682X.144946.

3. Coughlan C, Ledger W, Wang Q, Liu F, Demirol A, Gurgan T, Cutting R, Ong K, Sallam H, Li TC. Recurrent implantation failure: definition and management. Reprod Biomed Online. 2014 Jan;28(1):14-38. doi: 10.1016/j.rbmo.2013.08.011.

4. Coughlan, C., Yuan X, Demirol, A, Ledger, W, Li TC. Factors affecting the outcome of "Endometrial Scratch" in women with recurrent implantation failure. J Reprod Med. 2014. Jan- Feb; 59 (1-2): 39 – 43.

5. Kupka, M. S., et al. "Assisted reproductive technology in Europe, 2010: results generated from European registers by ESHRE." Hum Reprod. 2014, Oct (10): 2099-113.

6. Bolster F, Mocanu E, Geoghegan T, Lawler L. Transvaginal oocyte retrieval complicated by life-threatening obturator artery haemorrhage and managed by a vessel-preserving technique. Ulster Med J. 2014; 83(3): 146-148.

7. Naasan MN, Harrity C, Pentony L, Mocanu E. Anti-Mullerian hormone normogram in an Irish subfertile population. Ir J Med Sci. 2014 Febr: (1-6).

8. S Detho, C Harrity, S Afridi, G Emerson, EV Mocanu. First birth following natural IVF/ICSI treatment in Ireland. Ir Med J. 2014 Jan;107(1):23-4.

Book chapters

1. Coughlan C. (2014) Reproductive Surgery in Assisted Conception. Local endometrial trauma: a Treatment Strategy to Improve Implantation Rates. Springer, New York. In press.

Invited lectures, chairs, media appearances

Chairs
Mocanu EV:

ASRM Annual Meeting, Scientific Program Prize Paper Abstract Session 2, October 2014, Honolulu, USA.

3rd International Conference, Bucharest Embryology Symposium, November 1-2nd, 2014.

Invited lectures:

Hughes C

Hughes C.	Preserving Fertility with Cancer- Post Graduate Course, School of Nursing , UCD, Dublin January 2014
Hughes C.	Fertility Preservation: Fertility and the Haematology Patient, Post Graduate Nursing in Oncology and Haematology, Beaumont Hospital Haematology Education Programme, St James Hospital Feb 2014
Hughes C.	Preserving Fertility for Breast Cancer Patients, Post Graduate school of Nursing , Advanced Breast Care Nursing UCD. Feb 2014
Hughes C.	Preserving Fertility for Cancer Patients, Educational Meeting, Beaumont Hospital, Dublin. December 2014
Hughes C	Sessional tutor for RCSI 4th yr Medical students – Introduction to Embryology 1

Mocanu EV

Mocanu EV	Oncofertility. National Medical Oncology and Haemato-oncology Meeting, 24th January 2014, Farmleigh House, Dublin.
Mocanu EV	Onco-cryopreservation in breast cancer patients. 5thSymptomatic Breast Disease Audit, Quality and Risk Forum, 10th October 2014 Limerick.
Mocanu EV	Cross-border reproduction-the EUTCD perspective. Assisted Reproduction in Europe: Social, Ethical and Legal Issues, Thessaloniki, 11-13 December 2014.

Conference Course Attendance

Brophy M	Sharing Best Practice Nursing Conference. Dublin 2014
Corcoran S	Embryoscope Workshop, organised by Parallabs, London Dec 2014
Deignan K	ESHRE Munich 2014
Downer R	ICE Annual General and Scientific Meeting, March 2014, Dublin
Downer R	ESHRE Munich June 2014
Lowry K	Sharing Best Practice Nursing Conference. Dublin 2014
Finnamore L.	ESHRE Munich 2014
Hughes C	ICE Annual General and Scientific Meeting, March 2014, Dublin
Hughes C	Alpha Conference , Antalya, Turkey May 2014
Hughes C	Irish Fertility Society Meeting , May Dublin
Hughes C	ICE Scientific Meeting, Galway November 2014
Hughes C	Ovarian Tissue Club Meeting, Paris December 2014
Johnston J	Irish Fertility Society Meeting, May 2014, Dublin
Kelly J	Senior Infertility Group conference. Aberdeen Feb 2014
Kelly J	Insights Nursing Conference. Manchester. Nov 2014
Larkin L	ICE Scientific Meeting, Galway November 2014
O'Reilly F	ICE Annual General and Scientific Meeting, March 2014, Dublin
O'Toole R	Insights conference Oct 2014
O'Toole R	Sharing Best Practice Nursing Conference. Dublin Nov 2014
Rebecca R	Post Graduate Certificate in Fertility Ultrasound. 2014
Sutton F	Post Graduate Certificate in Fertility Ultrasound. 2014
Woods T	Sharing Best Practice Nursing Conference Dublin Nov 2014

Acknowledgements

Within a very competitive environment, HARI continued to deliver a state of the art service to couples requiring medical intervention in order to fulfill their dreams for a family. I would especially like to thank all HARI and Rotunda staff for their dedication and continuous strive towards providing the best patient care. Last but not least I would like to thank all couples that attended the services and entrusted us with their care.

Edgar Mocanu, 2014

Department of Laboratory Medicine

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

INTRODUCTION

The Department of Laboratory Medicine is staffed by dedicated and highly educated professionals who are committed to providing a service of the highest quality that is pro-active and responsive to the needs of the users of the service. Quality is of paramount importance. These high standards are reflected in continuing accreditation to International Organisation for Standardisation (ISO):15189 requirements across all departments. Individual departments continuously seek opportunities to improve the care that we provide to our patients, responding to new challenges and developments particularly in high-risk areas. During 2014, the microbiology department led the acquisition of a state of the art piece of equipment, "GeneXpert", to enable rapid diagnosis of Influenza and other dangerous microorganisms. It is expected that this rapid testing will commence in early 2015. The Laboratory Annual Management Review, User Surveys and Users Committee meetings inform the laboratory management of any concerns regarding the services provided and also any changes in the requirements of service users. Quality objectives are in place to ensure that the needs and requirements of users are met; these quality objectives are reviewed annually.

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

TABLE 1: TESTS PERFORMED IN-HOUSE IN 2014

Department	Specimens / Cases*	% Change over 2013	Tests / Blocks*	% Change over 2013
Haematology	50,358	6.1	79,831	12.5
Blood Group Serology	24,983	5.8	24,983	5.8
Transfusion	9,172	8.3	9,172	8.3
Clinical Microbiology	43,844	-4	81,733	-8.0
Virology / Serology	13,729	3.7	33,150	8.9
Biochemistry	56,603	1.9	254,659	3
Histopathology	6,036	10	16,387	11

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

TABLE 2: TESTS REFERRED TO OUTSIDE LABORATORIES IN 2014

	Specimens	% Change over 2013	Tests	% Change over 2013
Haematology	1,589	-3.5	3,870	4.0
Biochemistry*	3,059	-21.6	3,386	-15.9
Microbiology	2,271	-9.8	7,835	7.4
Rubella/VZ/Syphilis	30,228	-9.8	30,515	-7.38

* Serology Confirmation and other specialized tests
VZ: Varicella Zoster

STAFFING

Consultant posts
Dr Richard Drew was appointed as Consultant Microbiologist

Medical Scientist posts
Grainne Kelleher was appointed as Chief Medical Scientist in Biochemistry replacing Ann Downey
Jane Halligan retired from her post as Point of Care and IT Coordinator
Mr Haydn Hammerton commenced as Senior Medical Scientist in Microbiology
Fiona Minogue and Lorna Thomas joined Histology team replacing Martin Fitzpatrick who took up the position of Anatomical Technician.
Miriam Robles replaced Damien Lally in Biochemistry Department
Tom Murphy joined the Microbiology team.

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*
POCT Co-ordinator	Ms Lorna Pentony*
LIMS Officer	Ms Jane Halligan

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

The department of laboratory medicine maintained accreditation across all disciplines ensuring all processes are compliant with the required standards and that these standards are continually maintained. The laboratory was assessed against the newly issued ISO 15189:2012 standard. Of note the Rotunda was the first public hospital to achieve accreditation against this 2012 standard. Point of Care Testing (POCT) was again assessed against ISO 22870. Accreditation was maintained, POCT is expanding across the hospital and while this is clinically beneficial it provides challenges to resources both within the laboratory and in the clinical areas. The INAB assessment process examined the processes within the laboratory and point of care testing across the clinical and laboratory environment. INAB assessed the ability of the laboratory to provide governance

and a service to facilitate evaluation of new or alternative POCT instruments /systems. The standard requires that the following must be addressed procedures and policies are available for purchase, installation, and validation and running of equipment, maintenance of consumables and reagents, provision of training and observational auditing of POCT operators. A documented procedure for quality control and quality assurance is in place. Ms Lorna Pentony replaced Ms Jane Halligan in January 2014 as POCT co-coordinator upon Ms Halligan's retirement. The individual departments are responsible for the technical validation, quality control and maintenance of POCT equipment.

The maintenance of the laboratory quality management system requires a continuous active program to ensure achievement and compliance with the required standards and quality of service the laboratory wishes to maintain. This is achieved through documented procedures both testing, managerial and day to day running of the laboratory being systematically reviewed. An audit calendar is drawn up at the beginning of each year. In 2014 the laboratory performed 96 audits these included audits against the following standards:

- **ISO 15189 2012 Medical Laboratories- Particular Requirements for Quality and Competence**
- **EU Directive 2002/98/EC Article 14 (Traceability) and Article 15(Notification of Serious Adverse Events and Reactions)**
- **RCPath Guidelines for the Retention and Storage of Pathological Records and Archives 2009**
- **ISO 22870 Point of Care Testing (POCT) – Requirements for Quality and Competence**
- **WHO Laboratory Manual for the Examination and Processing of Human Semen, 5th Edition**
- **INAB Guidance and Mandatory Documents**

The laboratory consults users through surveys and user group meetings. In 2014 external users of the Andrology services were surveyed in the final quarter on their satisfaction of the service provided and the patient experience. This proved to be a positive action with a number of minor quality improvements being implemented.

The laboratory met with a number of in house user groups in 2014 and these meetings allowed open and frank discussion from both sides. It was agreed that these user meetings and staff contacting the laboratory with difficulties or suggestions directly provide an improved means of gaining the views of the in house users of the service rather than by survey.

The laboratory submitted an Annual Report for Blood Transfusion to the Health protection Regulatory Agency (HPRA) formally the Irish Medicines Board (IMB). This report documents the activity for the previous year and reports blood usage and wastage, status of accreditation and informs of any planned future changes. The report has been submitted for 2014.

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

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

HISTOPATHOLOGY DEPARTMENT

STAFF

Consultants:	Dr. Deirdre Devaney, Dr Eibhlis O'Donovan, Dr Emma Doyle
Locum Consultant:	Dr Sean O'Briain
Registrars:	Dr Susan Aherne, Dr. Nairi Tchrakian
Chief Medical Scientist:	Colma Barnes
Senior Medical Scientist:	Ms Phil Bateson,
Medical scientists:	Ms Sarah Morris, Ms Aderanti Morenigbade, Mr Michael Smith, Ms Tokiko Kumasaka, Ms Miriam Hurley Lorna Thomas
Laboratory Aide	Fiona Minogue
Mortuary Manager	Bill O Neill

The following Tables indicate the number of autopsies (full, limited, and Coroner's) performed in 2014.

TABLE 3: AUTOPSY WORKLOAD >500GRAMS

	Full Postmortem	Limited Postmortem	Coroners case	Total
Stillbirths	20	3	3	26
Early Neonatal deaths	4	2	5	11
Late Neonatal deaths	1	0	0	1
Total	25	5	8	38
Outside cases*	2	0	4	6
% of Total PMs	25.8%	5.2%	8.2%	39.2%

This table includes 6 autopsies from infants born in another institution (one of which was also a LNND) which are not included in the Rotunda figures.

TABLE 4: AUTOPSY WORKLOAD <500GRAMS

	Full Postmortem	Limited Post mortem	Coroners case	Total
No. of PMs	51	8	0	59
% of Total PMs	52.6%	8.2%	0	60.8%

TABLE 5: ROTUNDA PERINATAL MORTALITY FIGURES: 2014 (0-7 DAYS)

	No examination	Limited examination	Full Post Mortem	Coroners Cases	Total
Stillbirths	20	3	19	3	45
Early Neonatal deaths	18	2	4	1	25
Total	38	5	23	4	70

PERINATAL PATHOLOGY

The perinatal autopsy service in 2014 was similar to the previous year (97 cases compared to 101 cases in 2013). Turnaround times (TATs) for these cases remained in line with previous years in that the majority of cases were reported within the recommended 8 weeks allowing the clinicians to interface with grieving parents in a timely fashion. In conjunction with this, there were no organs retained in 2014.

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

97 cases had some form of autopsy examination in 2014 (38 >500g and 59 <500g) leading to overall autopsy rate (AR) of 37.6% (38+59=97 / 258 cases through mortuary) in comparison to 47.2% in 2013 and 45.3% in 2012.The AR (Full, limited and coroners cases) for >500g was 46.9% (38/81) which is in line with last year (47.2%). However the AR for the <500g was 33.3% (full and limited – 59/177) reflecting a reduction in the number of autopsies in this group. However this is easily explained by the fact that 63/177 cases under 500g weighed 10g or less and were not suitable for autopsy examination. If we were to exclude cases less than 10g we would have an autopsy rate of 51.7% in the <500g category. Our overall autopsy ratetakes into account some external transfers and late neonatal deaths.

The AR for the Rotunda cases (perinatal mortality figures) is 45.7% (32/70 cases).This is less than last year (59.5%) and may reflect the continued improvements in antenatal diagnostic imaging with amniocentesis confirming congenital malformations (42.8%of congenital malformations had a post mortem this year in comparison to 45.8% last year).There were 13 limited examinations (5 in the >500g group and 8 in the <500g group).This is in comparison to 2 and 6 last year respectively. We performed 8 post mortems for the Coroner over the period, 4 of which were for outside cases (i.e. not included in the Rotunda figures). This is in comparison to 15 last year

As mentioned above, it is our policy to examine the placenta on all cases of perinatal deaths. There were 70> 500g,68 of these cases had placental examination.In the 2 cases with no placental examination both had known congenital anomalies.

Tulip Classification of Perinatal Mortality:
This is a Dutch Classification system that separates cause and mechanism of perinatal mortality for the purposes of counselling and prevention. The goal of the system was to identify an unambiguous single cause system aiming to identify the initial demonstrable pathophysiological entity initiating the chain of

events that irreversibly led to death based on a combination of clinical findings and diagnostic tests including pathological findings. The causes of death are stratified into 6 major categories:

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

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

Congenital Malformation		29	(41.4%)
Placental causes:		14	(20%)
Cord	8		
Parenchyma	6		
Prematurity / Immaturity		5	(7.2%)
Infection		14	(20%)
Other		1	(1.4%)
Unexplained		7	(10%)

The 29 congenital malformations included 14 babies with chromosomal abnormalities (6 babies had trisomy 21, 5 had trisomy 18, 1 had Trisomy 8, 1 had monosomy 13 and 1 baby had Triploidy). There were 2 babies with CNS malformations (1 baby with an encephalocoele and 1 with a duralarteriovenous malformation). 3 babies were born with congenital heart defects (1 with a cardiomyopathy, one with a complex malformation and 1 with a hypoplastic left heart variant). 2 babies were born with renal malformations (one with autosomal recessive polycystic kidneys and one with probable renal agenesis). 2 babies were born with skeletal dysplasias (1 with thanatophoric dysplasia and 1 baby with osteogenesisimperfecta). 1 baby was born with a diaphragmatic hernia with pulmonary hypoplasia. 2 babies were born with multiple congenital anomalies. 1 baby had a congenital myopathy, 1 baby had Phelan McDiarmaid Syndrome and 1 baby had a respiratory chain defect.

In the placental category, there were 14 death attributed to placental pathology. These included 6 cord accidents, 3 cases of placental abruption, 2 cases of villous maturation defect, 1 chronic villitis, 1 Fetal thrombotic vasculopathy and 1 chorangiomatosis leading to fetal hydrops.

14 deaths were attributed to infection. Of these cases, 7 were stillbirths and 7 were neonatal deaths. All 14 of these were due to ascending infection. In the stillbirths 5 cultured no organisms. One case cultured Streptococcus pneumoniae and one cultured Streptococcus viridans. In the Neonatal deaths 6 showed no growth at post mortem. 1 cultured Staphlococcus Coagulase. 11 babies therefore, 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 11 cases would be relegated to the unexplained category despite the fact there is histological evidence of infection.

There were 5 neonates who were assigned to the prematurity category.

The miscellaneous category included 1 case of a fetomaternal haemorrhage leading to fetal demise.

There were 7 cases that had no identifiable cause of death giving an unexplained rate of 10%(in comparison to 8.8 % last year).Significantly 3 of these 7 cases did not have any form of post mortem examination and 1 case had a limited post mortem examination only.

Cause of Death (<500g)

177 cases:	
Congenital Malformation:	14 (7.9%)
Placental:	34 (19.2%)
Infection:	33 (18.7%)
Prematurity	6 (3.4%)
Other:	5 (2.8%)
Unexplained:	85 (48.0%)

This cohort shows a much lower rate of congenital malformation with ascending infection and placental categories as the most prominent cause of death. The high unexplained rate reflects the fact that a significant number of these cases only had a placental examination (i.e. did not consent to a full post mortem examination and also reflects the small size of the foetuses (0.5 grams – 499grams) with 63 (35.6 %) 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 The Royal College of Pathologists Guidelines. A protocol detailing which placentas should be examined is available on the Labour ward and includes the examination of placentas from babies admitted to the NICU, from all mothers with pyrexia, PPROM, PET, gestational diabetes mellitus, multiple gestations and as alluded to earlier, all cases of stillbirths and neonatal deaths. These placentas are sent to the laboratory and are then stratified into two groups. Group One placentas are those that require both gross and histological examination. Whereas Group Two placentas are those cases that gross examination only is deemed as sufficient. Should the clinician specifically require a microscopic examination of these cases, it is available on request.1700 placentas were referred to the laboratory for examination in 2014.597 (35%) fulfilled the criteria for gross examination only. The remaining 1103 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:

TABLE 6: ANALYSIS OF THE SURGICAL PATHOLOGY WORKLOAD FROM 2009-2014

Surgical data 2012 (no. & % incr. from prev year	2009 No.	2010 No.	2010 % Incr. from 2009	2011 No.	2011 % Incr. from 2009	2011 % Incr. from 2010	2012 No.	2012 % Incr. from 2009	2012 % Incr. from 2010	2012 % Incr. from 2011	2013 No.	2013 % Incr. from 2009	2013 % Incr. from 2010	2013 % Incr. from 2011	2013 % Incr. from 2012	2014 No.	2014 % Incr. from 2009	2014 % Incr. from 2010	2014 % Incr. from 2011	2014 % Incr. from 2012	2014 Incr. from 2013
Surgicals (inc LLETZ & colcb)																					
Total no. of Cases:	3140	4030	28.3	4476	42.55	11.07	4420	40.76	9.68	-1.25	4333	37.99	7.52	-3.19	-1.97	4178	33.06	3.67	-6.66	-5.48	-3.58
Total no. of Specimens	4025	5454	35.5	5571	38.41	2.15	5467	35.83	0.24	-1.87	5364	33.27	-1.65	-3.72	-1.88	5177	28.62	-5.08	-7.07	-5.3	-3.49
Total no. of Tissue Blocks	8765	1161	33	13114	49.62	12.46	12464	42.2	6.89	-4.96	9567	9.15	-17.96	-27.05	-23.24	10322	17.76	-11.48	-21.29	-17.19	7.89
LLETZ																					
Total no. of Cases:	536	784	46.3	914	70.52	16.58	752	40.3	-4.08	-17.72	465	-13.25	-40.69	-49.12	-38.16	528	-1.49	- 32.65	-42.23	- 29.79	13.54
Total no. of Specimens	826	1160	40.4	1175	42.25	1.29	910	10.17	-21.55	-22.55	520	-37.05	-55.17	-55.74	-42.86	581	-29.66	- 49.91	-50.55	-36.15	11.73
Total no. of tissue Blocks	2954	4906	66.1	4045	104.64	23.22	4906	66.08	0	-18.84	2296	-22.27	-53.2	-62.02	-53.2	3256	10.22	- 33.63	-46.13	- 33.63	41.81
Colcb																					
Total no. of Cases	264	732	177.3	991	275.38	35.38	1014	284.09	38.52	2.32	1013	283.71	38.39	2.22	-0.1	1114	321.97	52.19	12.41	9.86	9.97
Total no. of Specimens	285	915	221.5	1214	325.96	32.68	1242	335.79	35.74	2.31	1366	379.3	49.29	12.52	9.98	1491	423.16	62.95	22.82	20.05	9.15
Total no. of Tissue Blocks	345	916	165.5	1216	252.75	32.75	1246	261.16	36.03	2.47	1374	298326	50	12.99	10.27	1521	340.58	66.05	25.08	22.07	10.7

TABLE 7: LLETZ & COLPOSCOPIC BIOPSY GRADING 2014

CASES	CIN 1	CIN 2	CIN 3	CGIN/AIS/A denoca	SCC incl microinvasion
LLETZ	146	111	209	2	12
COLCB	519	211	151	1	2

BIOCHEMISTRY:

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

1. General Overview, and developments during 2014

During 2014, the Biochemistry department continued to provide an extensive repertoire of investigations required for the care of women and infants, with participation in the relevant External Quality Assessment programmes.

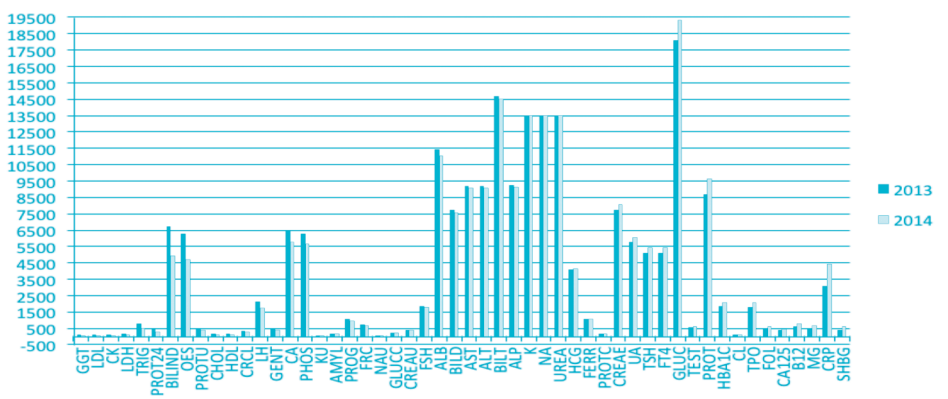
Gráinne Kelleher was appointed Chief Medical Scientist in March 2014 following the resignation of Ms Ann Downey. Miriam Blesa was appointed as a medical scientist in May 2014, following the resignation of Damian Lally.

2. In-house workload

The total number of Biochemistry tests requested during 2014 remained relatively stable. A review of the changes in the number of individual tests requested showed quite a variance with some increasing or decreasing significantly.

A decrease in the number of requests for fasting lipids was noted. There was a significant increase in the number of CRP's (43%) requested most likely due to the increase in the number of septic workups. There was also an increase in the number of requests for plasma magnesium and SHBG.

FIGURE 1 : Biochemistry In House Workload for 2014 compared with 2013



3. Referred workload

There was a 22% decrease in the number of samples referred to external laboratories. There was a large increase in the number of GGTs (138%). Due to this increase in GGT it was decided to repatriate this test in 2015. In addition in order to improve the turnaround time to result both LDH and CK were also repatriated. There was a significant increase in the number of tumour markers requested CA 19.9 (35%) and CEA (43%), but due to the constraints on the analyser it is not possible to repatriate these two tests and therefore they will be continued to be referred. With the availability of a new assay for AMH this will be evaluated in early 2015.

4. Point of Care

The Point of Care Testing (POCT) Committee met on a number of occasions during the year. In-house POC training was provided to clinical staff through-out the year. Additional glucose haemacues were purchased and validated for the hospital. The POCT committee reviewed methods for near patient testing for lactate and these will be assessed and validated in 2015

TABLE 8: Referral Workload in 2014 compared with 2013

Test	2014	2013	Difference	% Difference
17OH Progesterone (Adult)	10	12	-2	-17
25(OH)Vitamin D	76	92	-16	-17
Acylcarnitine	36	53	-17	-32
Alpha Feto-Protein (Adult)	21	18	3	17
Ammonia	53	90	-37	-41
Androstenedione	49	44	5	11
Anti-Mullerian Hormone	1093	1132	-39	-3
Blood amino acids	68	75	-7	-9
CA 19-9	60	25	35	140
CEA	64	21	43	205
Cortisol (Adult)	24	34	-10	-29
DHEAS	20	17	3	18
Free T3	14	21	-7	-33
GGT	38	16	22	138
Iron and UIBC	21	20	1	5
Lactate	94	87	7	8
Lamotrigine	24	30	-6	-20
Parathyroid Hormone (Adult)	33	41	-8	-20
Phenobarbitone (Paediatric)	44	39	5	13
Primark Test	17	40	-23	-58
PTH (Paediatric)	13	11	2	18
Thyroid Receptor Ab (TRAb)	172	173	-1	-1
Tissue TransglutaminaseAb	13	19	-6	-32
Total Bile Acids	426	414	12	3
Tri-iodoThyronine (T3)	27	17	10	59
Troponin-T	57	47	10	21
Urinary Organic Acids	87	103	-16	-16
Urine Drug Screen	167	153	14	9
Zopiclone (Urine)	27	17	10	59
Total	**3385**	**4318**	**-933**	**-22**

5. Accreditation

The Biochemistry laboratory experienced its third INAB inspection in May 2014 for compliance with ISO 15189. No non-conformances were reported by the INAB assessors. Point of Care Testing was also successfully assessed for compliance with ISO 22870 and again no non-conformances were reported by INAB assessors. All staff are to be congratulated on a successful outcome and thanked for their hard work throughout the year.

HAEMATOLOGY and BLOOD TRANSFUSION:

Consultant:	Dr Fionnuala Ni Ainle (Adult Haematology) Dr Melanie Cotter (Paediatric Haematology)
Chief Medical Scientist:	Ms. Deirdre Murphy
Senior Medical Scientists:	Mr Ciaran Mooney, Ms Deirdre O'Neill Ms Emily Forde
Medical Scientists:	Ms Liliana Rasidovic, Ms Edel Cussen (commenced a 3 year career break December 2013), Ms Noreen Brady (returned maternity leave in April 2014), Ms Deirdre Corcoran (returned from maternity leave November 2013), Ms Aileen Carr, Ms Michelle Burns, Ms Elaine O Leary (locum post; commenced May 2014)
Laboratory Aide:	Ms. Karen Fennelly

1. General Overview, and developments during 2014

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

2. Training and development initiatives

The department was approached by Dublin Institute of Technology, Kevin Street in Sept. 2012 to provide in service training for 2012/2013 Degree students. Provision of Blood Transfusion in service training was also provided in 2014.

Two staff members successfully completed a master's degree (MSc) in 2014.

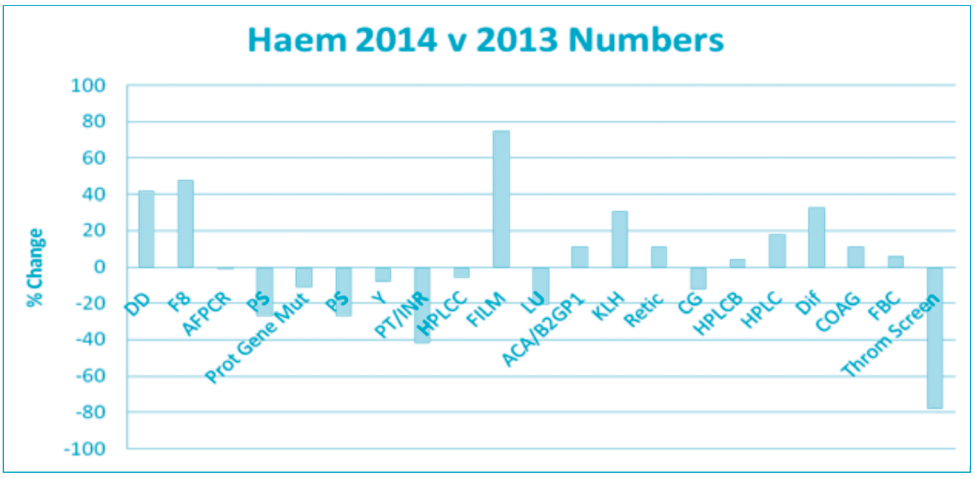
3. In-house workload (Table 9)

A recent review of RotundaHospital guidelines for investigation of acquired and inherited Thrombophilia has resulted in testing being performed in line with international guidelines and best practice.

Table 9: Haematology in-house workload

Test Name	2014	Change	2013
Full blood count	43,779	+4.8%	41,302
Manual differential	1,886	+33%	1,421
Manual Platelet count	12	-	8
Reticulocyte count	460	+11%	413
Coag Profile (PT, APTT, Fibrinogen)	3043	+11%	2,734
Lupus anticoagulant	164	-21%	207
Kleihauer[1]	477	+31	355
Haemoglobinopathy	2,847	+22%	2,558
Malaria	2	-0.0%	2
Thrombophilia	48	-38	78
Total tests	**72,689**	**-14.1%**	**84,621**

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



DD: D-Dimer; **F8:** Factor VIII; **APCR:** Activated Protein C Resistance; **PS**: Prothrombingene promoter region mutation G20210A; **Y:** Y deletions(fertility workup); **HPLC:**high performance liquid chromatography (haemoglobinopathy confirmation is sent to external laboratories); **Film:** blood films reviewed; **LU:** Lupus Anticoagulant screening; **ACA/B2GP1:** anticardiolipin and anti-β2GP1 serology; KLH: Kleihauer test (manual); **CG:** cytogenetics; **HPLCB:** newbornhaemoglobinopathy screen (in house); **HPLC:** adult haemoglobinopathyscreen (in house); **Diff:** manual differential; **COAG:** prothrombin time (PT), activated partial thromboplastin time (APTT), Fibrinogen;**Thromb Screen:** inherited thrombophilia screen (protein C, activated protein C resistance, antithrombin, factor VIII

4. Referred workload (Table 10)

TABLE 10: HAEMATOLOGY REFERRED WORKLOAD

TEST	TESTS	% CHANGE OVER 2013
Immunology	373	+22.3
Thrombophilia (referred component)	32	-11
Haemoglobinopathy confirmation	143	-6
Lymphocyte subsets	107	+2
Factor Assays	72	+48
Cytogenetics	495	-12
Molecular Genetics	141	-9
YDNA	48	-8
CG by PCR	495	-12
ESR	25	+56
D-Dimer	17	+42
Anti-Xa assay	10	-47
Homocysteine	2	N/A
Haptoglobin	5	N/A
Factor V Leiden	2	N/A
Anti-D quantitation	103	+24
Anti-C quantitation	6	-60
Total	**3870**	**-3.5%**

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

5. Blood Group Serology (Tables 11 and 12)

A 17.8% increase in Blood Grouping was observed as a full year consequence of a change in testing for neonatal blood grouping introduced during August 2013. The introduction of the two sample rule for issue of group specific blood products would not account for the significant increase in direct coombs tests and is more likely to reflect a change in Paediatric policy.

TABLE 11: BLOOD GROUP SEROLOGY WORKLOAD

Test Name	2014	Change	2013
ABO Group	26,630	18	22606
Rhesus (Rh) Group	26.630	21	21934
Antibody Screen	18218	0.3	18171
Direct Coomb's Test	4335	34	3231
Antibody Identification panel	532	-13	610
Genotype	487	-19	600
Rh D antibody screen	1545	87	830
Antibody Titre	103	21	85
Antibody Elution	61	-28	85
Weak/Partial RhD Typing	63	29	49
Flow Cytometry	784	-6.9	842
Total Specimens	**24983**	**5.8%**	**23616**

TABLE 12: DETAILS OF RED BLOOD CELL ALLOANTIBODIES DETECTED

Antibody	Number	Antibody	Number
D	17	c	3
E	12	Fya	3
C + D	4	M	28
Cw	6	N	1
c +/- E	10	Jka	3
D +C+E	2	Fya + Cw	1
E+ Jka	1	S	4
D+G +/-C	2	D+C+Jkb	1
e+/-C	3	C+D+E+Jka	1
K	7	Inb	1
Undefined specificity	58	Cr1 related antibody	1
Le a+b	2	Autoagglutinin	3
Lea	23	System Specific	2
Leb	3	Cold agglutinin	2
Cw +E	1	Jka	10
TOTAL	**212**		

6. Blood transfusion

There has been a modest decrease in the number of patients transfused overall. A continuing improvement in the cross-match to transfusion ratio was observed (Table 13), reflecting introduction of new clinical guidelines. Blood wastage remains low, particularly in 2014 for an uncommonly prescribed product, platelets. An increase in Anti-D use reflects the full year introduction of the routine antenatal Anti-D prophylaxis (RAADP) programme since July 2013.

TABLE 13: BLOOD TRANSFUSION WORKLOAD

Test		2014	2013
Group and save		7573	6974
Crossmatch		1599	1492
Patients crossmatched		565	705
Red Cell Units transfused		684	689
Patients Transfused		340	377
Crossmatch: transfusion ratio		1.7:1	2.1:1
IUT (red cell units)		15	12
Pedipack units transfused		119	104
Transfused Components		**2014**	**2013**
Plasma (adult)		66	78
Plasma (paediatric)		25	43
Platelets (adult)		18	11
Platelets (paediatric)		39	42
Fibrinogen (adult)		57	68
Fibrinogen (paediatric)		39	35
Novoseven		0	0
Anti-D		2729	2207
Wastage:		**2014**	**2013**
Red cell (concentrated)		2.6%	1.8%
Platelets		0%	15.9%
Plasma		18.5%	19.9%

IUT: intrauterine transfusion

7. Haemovigilance

The haemovigilance officer (HVO) continues to provide extensive education on the process of blood transfusion to clinical staff. During 2014, 175 Nurses, Midwives and Student Midwives and 65 non-consultant hospital doctors attended Haemovigilance Education.

Once again, a very high standard was maintained in haemovigilance, with 100% traceability of all blood components issued. The most common indication for blood transfusion in the obstetric setting remains post-partum haemorrhage. The RotundaHospitalhaemovigilance department maintains close links with the National Haemovigilance Office (NHO) with the continuing aim of maintaining quality of care through regular audit and education. The HVO reports serious adverse events (SAE) and Serious Adverse Reactions to the NHO. Two SAEs and Two SARs were reported to the NHO during 2014, there were no adverse outcomes for patients. Both SAE's pertained todelayed and inappropriate administration of Anti-D immunoglobulin. The recently revised clinical pathway managing patients who require Anti-D for prevention of RhD sensitization continues to be under review, and specific SAE numbers related to this process remain low as a consequence, compared with previous years.

As detailed above, implementation of a programme of RAADP administration to RhD negative women was launched in July 2013. Audit and evaluation of the system is ongoing through the RotundaHospital multidisciplinary RAADP committee. In 2014 a total of 1158patients received RAADP - average 22 patients are receiving Anti-D per week.

CLINICAL MICROBIOLOGY

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

TABLE 14: OVERALL MICROBIOLOGY WORKLOAD IN 2014 COMPARED WITH 2013

	2014		% Change	
	Tests	Specimens	Tests	Specimens
Testing in-house				
General Microbiology	81733	43844	-7.96	-4.16
Virology/Serology	33150	13729	8.95	3.72
Total tested in-house	114883	57573	-3.65	-2.39
Referred				
Rubella	10488	10488	-2.20	-2.20
VZG	9464	9464	-1.09	-1.09
Treponemal tests	10117	9765	-1.04	-1.72
Confirmation and other specialist tests referred externally	7835	2271	-25.24	-49.80
Total Referred	**39418**	**24390**	**-7.38**	**-9.78**

GENERAL MICROBIOLOGY WORKLOAD

The activity and complexity of the Microbiology workload and that of the Neonatal Unit, contributed significantly to continuing high workload (summarised in Table 15 and detailed in Table 18).

However, due to a number of money saving initiatives within the department, numbers are reduced slightly in a number of areas. Of note, activity was lower in the hospital in 2014. Swab numbers were reduced by 4.92% and screen numbers were reduced by a total of 23.22%. This can be attributed to the fact that significant changes were made in 2014 including screening for resistant Gram-negative bacilli and MRSA in the NICU. Urines for culture and sensitivity were slightly increased by 0.89% but urines for bacteraemia screening were reduced by 1.02%. Although pregnancy testing is generally carried out at the patient side, the numbers of samples sent to the laboratory for pregnancy testing were reduced by 20.39%. CSF numbers were increased by 1.29% compared to 2014. Bloodculture numbers continue to rise year on year with a 2.01% rise noted in 2014 compared with 2013. Specimens referred for Chlamydia trachomatis PCR were reduced (11.53%) which again reflects hospital activity. A new category of testing was introduced in 2012 termed IQA (Internal Quality Assurance), required for ISO: 15189 accreditation. This was reduced by 2.14% in 2013, mainly due to improved ordering of stock levels and less variation in stock types. Overall there was a 4.16% and 7.96% decrease in clinical Microbiology specimens and clinical tests respectively.

General Microbiology, Serology and Andrology were inspected by INAB in spring of 2014 and continue to enjoy ISO: 15189 Accreditation award in all areas examined.

SURVEILLANCE SCREENING

In line with best practice and in the interests of patient safety, screening for multi-drug resistant organisms (MDROs) including MRSA, VRE, ESBLs and CRE in identifiable 'at risk' groups in adults and neonates continued in 2014.

2014 saw continued surveillance screening for the entire hospital and improved reporting of figures to hospital committees. This included figures for adult & paediatric blood cultures and screening of the NICU for resistant Coliforms, VRE, pseudomonas and MRSA. All these figures are presented at the NICU and infection control meetings, which take place quarterly.

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).

The appointment of a new full time Consultant Microbiologist in 2014 greatly improved the presentation of the surveillance data to hospital committees.

TABLE 15: CLINICAL MICROBIOLOGY WORKLOAD IN 2014 COMPARED WITH 2013

Specimens	**2014**	**% Difference over 2013**
Urine	21064	0.13
Swabs	9395	-4.92
CSF	235	1.29
Blood Cultures	2974	3.70
GeneXpert MRSA/BA	22	100
Placenta	173	-20.28
Semen	1931	12.92
Pregnancy Tests	121	-20.39
Screening	4527	-23.22
Chlamydia trachomatis/ N. gonorrhoea PCR	2577	-11.53
IQA	825	-2.14
Total specimens	**43844**	**-4.16**
Tests		
Urines	34046	0.34
Swabs	18790	-4.92
CSF	756	0.67
Blood Cultures	2974	3.70
Placenta	173	-20.28
MRSA Screen	4214	-20.88
Rectal Screen	7260	-43.86
Semen	4664	10.29
Antimicrobial Cards	2713	33.78
Pregnancy Tests	121	-20.39
Chlamydia trachomatis	2577	-11.53
GC PCR	2576	-9.74
GeneXpert MRSA/BA	44	100
IQA	825	-2.14
Total Tests	**81733**	**-7.96**

VIROLOGY/SEROLOGY WORKLOAD

The virology/serology workload for the former 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 2014, and continues to enjoy ISO:15189 Accreditation. Antenatal booking samples were unchanged however overall in-house virology

testing was increased in 2014. There was an 8.95% and 3.72% increase in virology tests and samples respectively, mainly because the Serology department now performs virology tests for external laboratories, generating valuable revenue for the laboratory. The number of specimens and tests referred to external laboratories was reduced by 9.78% and 7.38% respectively.

Validation began in late 2014 for Rubella IgG testing on the Abbott Architect and is expected to be fully operational by January 2015. A tender went out in 2014 for an analyser to perform Varicella-Zoster IgG testing and the liaison was purchased as a result, allowing the department to perform in-house testing for VZ. Validation was performed in late 2014 and is expected to go live in January 2015. Both these tests will be assessed for ISO:15189 accreditation in April 2015. By performing these tests in-house the department has managed to reduce the number of blood bottles taken from 3 to 2 and turn around times have greatly improved. In addition, Biomerieux provided a free upgrade of the mini-vidas analyser in order to carry out confirmatory testing for Rubella IgG, VZ IgG and Hep B core. This allows the department to report all tests in a timely manner and prevents unnecessary and time-consuming dispatch of confirmatory testing. The addition of all these tests in-house is of great benefit to the Hospital and more importantly the patient. It is hoped that Syphilis testing would be added to the repertoire of testing in-house in 2015, thus reducing the workload further for unnecessary taking of blood and dispatch of samples.Virology/Serology testing is represented in Tables 16 &17.

ACCREDITATION WORKLOAD

Batch acceptance (Internal Quality Assurance) of all reagents, media, antibiotics and kits continues to be an important part of the weekly management of the department. This is an important part of providing a quality service and although IQA was down slightly in 2014 from 2013, this does not capture all the work involved. Accreditation also involves updating standard operating procedures (SOPs) on a continual basis, in line with international best practice. New media and/or reagents/kits require validation or verification before they can be employed.

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

TABLE 16: VIROLOGY/SEROLOGY WORKLOAD (TESTS), 2014

Tested in-house	2014	% Change over 2013
HIV	11996	6.49
HbsAg	11964	6.17
Hepatitis B Core	2577	34.08
HepC Antibody	5157	16.28
CMV IgG	1452	-4.28
Hep B core - vidas	1	-91.67
VZ IgG - vidas	3	-57.14
Total	**33150**	**8.95**

Tested in-house	2014	% Change over 2013
Specimens Referred		
Referral laboratory 1		
TPE	9765	-1.72
RPR	146	21.67
TPEM	59	22.92
TPPA	147	23.53
Total	**10117**	**-1.04**
Referral laboratory 2		
Rubella	**10488**	**-2.20**
VZ IgG - Liaison	9464	-1.09
Parvovirus B19	571	11.96
Confirmation and other specialist tests referred externally (MA)	943	-10.36
Other Referred tests (ME)	7835	-25.24
Total referred	**39418**	**-7.38**

ANDROLOGY WORKLOAD

Semen analysis for infertility testing and post vasectomy testing continued into 2014. Semen analysis for infertility is by appointment Monday-Wednesday from 9am to 1pm. A medical scientist is specifically assigned to testing. Because of accreditation, new forms were designed to facilitate improved reporting, which has resulted in longer times for analysing these samples. Also, international best practice would dictate that semen for infertility testing is performed in duplicate in order to confirm results. Sample numbers for infertility were down slightly in 2014 (2.71%), however overall numbers for semen analysis were up by 12.92%, reflecting a massive increase in samples for post vasectomy testing. These samples are less time consuming and do not require immediate testing and therefore can be batched together allowing better use of the scientist time. All andrology testing provides valuable income for the laboratory and it is hoped that in 2015 the repertoire of tests can be increased and the service expanded.

TABLE 17: SEROLOGY (DETAILED BREAKDOWN OF TESTS PERFORMED)

	2014	2013	Differential	% change
VZGL	9464	9568	-104	-1.09
VZVR	3	7	-4	-57.14
Total VZ	**9467**	**9575**	**-108**	**-1.13**
Rubella	**10488**	**10724**	**-236**	**-2.20**
B19PVG	287	256	31	12.11
B19PVM	284	254	30	11.81
Total Parvovirus (MA)	**571**	**510**	**61**	**11.96**
Confirmatory & misc tests	**943**	**1052**	**-109**	**-10.36**
Total NVRL tests (MA)	**21466**	**21854**	**-388**	**-1.78**

	2014	2013	Differential	% change
TPE	9765	9936	-171	-1.72
RPR	146	120	26	21.67
TPPA	147	119	28	23.53
TPEM	59	48	11	22.92
Total TP (SJH)	**10117**	**10223**	**-106**	**-1.04**
Tested In-House				
HIV	11996	11265	731	6.49
Hep B	11964	11269	695	6.17
Hep B core	2577	1922	655	34.08
Hep C	5157	4435	722	16.28
CMV	1452	1517	-65	-4.28
HBCVR	1	12	-11	-91.67
Total	**33147**	**30420**	**2727**	**8.96**
Total Serology In-House	**33150**	**30427**	**2723**	**8.95**
Total Samples In-House	**13729**	**13236**	**493**	**3.72**
Total Tests on MA samples	**64733**	**62504**	**2229**	**3.57**
Referred Tests (ME)	7835	10480	-2645	-25.24
Referred Specimens (ME)	2271	4524	-2253	-49.80
Total Referred Tests	**39418**	**42557**	**-3139**	**-7.38**
Total Referred Specimens	**24390**	**27033**	**-2643**	**-9.78**
Total Tests	72568	72984	-416	-0.57
Total Specimens	38119	40269	-2150	-5.34

CHANGES IN LABORATORY EQUIPMENT AND TESTING PROCEDURES

Changes in agar media

All agar in the department is now sourced from two independent companies. About 80% of the agar is sourced from LIP Galway, while the remainder is sourced from Syntec. If one provider fails to deliver, then media can be sourced from the other. In this way, media should never run out and ordering has greatly improved through the Exact electronic ordering system.

Mortuary samples

The number of mortuary samples placed into blood culture bottles for analysis dropped significantly in 2014, mainly due to a change in practice. This has eliminated unnecessary Identification of non-significant organisms and improved the reporting time on these precious samples.

Resistant GNB identification

A new algorithm was introduced in 2014 for Identification and reporting of RGNB in isolates from both adults and neonates. A new kit was sourced in helping identify resistant organisms and so improving TATs and eliminating the need to send isolates to reference laboratories for further work. This, together with improved management of patients and new guidelines on taking rectal swabs from the NICU has all helped to reduce the workload and have the added benefit of cost saving for the department.

Independent Internal Quality Control

Up to 2014 roughly 1% of all Serology samples were repeated as is recommended by the Health Protection Agency (HPA) as a means for quality assurance. This was a costly and time-consuming exercise and has now largely been replaced with independent internal controls on all analytes. These are now run weekly and provide valuable data on 'uncertainty of measurement' for each test, a requirement for ISO: 15189. 0.1% of Serology samples are now repeated. This change has reduced spending for the department while providing added quality to patient samples.

Blood Culture Reporting times

Blood cultures are now loaded onto the BacT Alert 3D analyser as soon as they reach the laboratory. It was always the case that blood cultures would be processed as soon as possible, however now a 4-hour window is 'ideally' regarded as best practice and this is currently been implemented within the department. Positive blood cultures are reported 24/7 and a gram result is usually reported within 2 hours to the relevant team. This has been made possible as the Blood Culture analyser is now linked to the Rees monitoring system, so that positive blood cultures will alert the scientist within 10 minutes of signalling positive. Our blood culture analysis enjoys full ISO: 15189 accreditation.

GeneXpert

In 2014 money was sought through the SARI scheme with the intention of purchasing a GeneXpert for performing Influenza PCR, C. difficile PCR and PCR on positive blood cultures with Staphylococcus spp. This application was successful and the analyser arrived in Q4 of 2014. Validation began almost immediately and it is expected to put these tests forward for ISO: 15189 accreditation in 2015. The introduction of these rapid tests will provide the hospital with faster turn around times, improve cost-efficiency and improve patient care.

Mini-Vidas

The mini-vidas was upgraded in 2014 and validated for testing Rubella IgG, Varicella Zoster IgG and Hepatitis B core. The analyser's main purpose is as confirmatory testing for these tests. This will prevent delay in sending out samples for confirmatory testing to the NVRL and so improve TATs and unnecessary packaging and dispatch. The analyser will be added to extension to scope for ISO: 15189 accreditation in 2015.

Liaison

In 2014 a tender was sought for an analyser to perform VZV IgG testing for Antenatal patients of the Rotunda Hospital. Up until the end of 2014 the NVRL were performing this test and agreement was sought and given by both the HSE and NVRL that these tests would form January 2015 be performed in-house by the Microbiology department. Money for analysing these tests would come from the HSE. Validation began on the Liaison in Q4 of 2014 and will be added to extension to scope for ISO: 15189 accreditation in 2015.

Medibridge Link with NVRL

In 2013 SARI (Strategy for the Control of Antimicrobial Resistance in Ireland) provided funding for an electronic link with the NVRL for the upload of requests and download of results. Work on this began in late 2013 and validation was completed in March 2014. This has greatly improved TATs for referred tests to the NVRL and reduces the time needed to report these results. Clerical errors have been eliminated as reports no longer need to be manually entered.

TABLE 18: MICROBIOLOGY TESTING

	2014		2013		Difference numbers		% Change	
	Tests	Specimens	Tests	Specimens	Tests	Specimens	Tests	Specimens
MSU Microscopy's	12749		12644		105		0.83	
MSU Culture	12793		12699		94		0.74	
MSU Dipstick	0		4		-4		-100.00	
Total MSU	25542	12793	25347	12680	195	113	0.77	0.89
First visit	8504	8271	8583	8356	-79	-85	-0.92	-1.02
Total Urine	**34046**	**21064**	**33930**	**21036**	**116**	**28**	**0.34**	**0.13**
Pregnancy Tests	**121**	**121**	**152**	**152**	**-31**	**-31**	**-20.39**	**-20.39**
Blood Culture (sets)	2974	2974	2868	2868	106	106	3.70	3.70
Placenta	173	173	217	217	-44	-44	-20.28	-20.28
Total Blood Culture	**3147**	**3147**	**3085**	**3085**	**62**	**62**	**2.01**	**2.01**
GeneXpert MRSA/SA	**44**	**22**	**0**	**0**	**44**	**22**	**100.00**	**100.00**
CSF Culture	235		232					
CSF Gram	230		232					
CSF Cell Count	233		225					
CSF Diff	58		62					
Total CSF	**756**	**235**	**751**	**232**	**5**	**3**	**0.67**	**1.29**
Semen Volume	1931		1710		221		12.92	
Semen Count	1928		1704		224		13.15	
Semen Motility	789		811		-22		-2.71	
Semen Morphology	16		4		12		100.00	
Total Semen	**4664**	**1931**	**4229**	**1710**	**435**	**221**	**10.29**	**12.92**
CT PCR	2577		2913		-336		-11.53	
NG PCR	2576		2854		-278		-9.74	
Total PCR	**5153**	**2577**	**5767**	**2913**	**-614**	**-336**	**-10.65**	**-11.53**
IQA	**825**	**825**	**843**	**843**	**-18**	**-18**	**-2.14**	**-2.14**
MRSA	4214	2107	5326	2663	-1112	-556	-20.88	-20.88
Rectal	7260	2420	12932	3233	-5672	-813	-43.86	-25.15
Total Screens	**11474**	**4527**	**18258**	**5896**	**-6784**	**-1369**	**-37.16**	**-23.22**
Swabs	**18790**	**9395**	**19762**	**9881**	**-972**	**-486**	**-4.92**	**-4.92**
Sensitivities	**2713**		**2028**		**685**		**33.78**	
Total	**81733**	**43844**	**88805**	**45748**	**-7072**	**-1904**	**-7.96**	**-4.16**

CLINICAL WORKLOAD

From March 2014, the department has kept a database of all consults seen by the consultant microbiologist, so that this activity could be captured. Over the 10 months, 327 consults were seen, 245 women and 82 neonates. The most common diagnosis was recorded and is shown below for the adult and neonatal patients

Consults- Adult	2014 (Mar-Dec)
No sepsis found	42
Pyelonephritis	34
C-section wound infection	24
Blood culture contaminant	21
Chorioamnionitis	19
Endometritis	19
Lower urinary tract infection	13
Lower respiratory tract infection	9
Mastitis	9
Intraabodominal collection	8
Pelvic inflammatory disease	7
Septic miscarriage	7
Wound infection	6
Cellulitis	4
Other	23
Total	**245**

Consults Neonates	2014 (Mar-Dec)
No sepsis found	20
GBS related	11
Blood culture contaminant	9
Infection control issue	7
Meningitis	6
Culture negative sepsis	5
Necrotising enterocolitis	5
Other	19
Total	**82**

Infection Prevention and Control

SUMMARY OF KEY ACHIEVEMENTS DURING 2014

There were no episodes of MRSA Bacteraemia

There were no episodes of Clostridium Difficile Infection in the hospital.

There was one outbreak of a resistant e coli in the NICU. Four infants were colonised with the same resistant organism but none were infected. There were no adverse events as a result.

The IPC Team have reviewed the HIQA standards for prevention and control of healthcare associated infections and incorporated quality improvement plans into their service plan to help achieve compliance.

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

The role of the IPC Link midwife/nurse has been reviewed with greater emphasis on their role as providers of local training and education and local auditors.

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

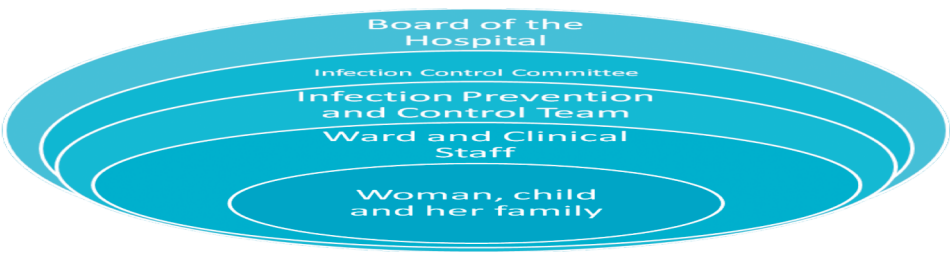
The IPC Team have significantly supported major capital developments that have improved patient experience.

The IPC team have incorporated new national guidance on IV Cannulation and MDRO Screening into IPC Policy.

SERVICE OVERVIEW

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

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



The Team

During 2014 the Infection prevention and Control Team (IPCT) has undergone further change as Dr Richard Drew Consultant Microbiologist took up position on 1st March. In December Ms Carol Gogan retired from the Hospital leaving vacant the 0.2 WTE position of Decontamination Coordinator.

The IPCT is represented at the following Hospital Committees

- Hygiene Committee
- Quality and Safety
- Procurement
- Neonatal Infection Prevention and Control Group
- All Departmental Patient Safety Meetings
- Clinical Midwife Managers
- Drugs and Therapeutics
- Building Planning

Role of the Infection Prevention and Control Team

The following roles are undertaken by the IPC Team:-

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

QUALITY INITIATIVES

HIQA Standards

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

The IPCT took part in the Hospital self assessment against Standard 1 of the HIQA National Standards for Safer Better Healthcare. The IPCT also contributed to the gap analysis against compliance with recommendations following the publication of the Patient Safety Investigation Report into the Services at University Hospital Galway.

In October 2014 an unannounced inspection by HIQA was undertaken on the Gynaecology Ward and Neonatal Unit. This focused on Standard 3 –Environment and Standard 6 Hand Hygiene. The IPC team assisted in developing the Quality Improvement Plan to address non conformances identified.

Education

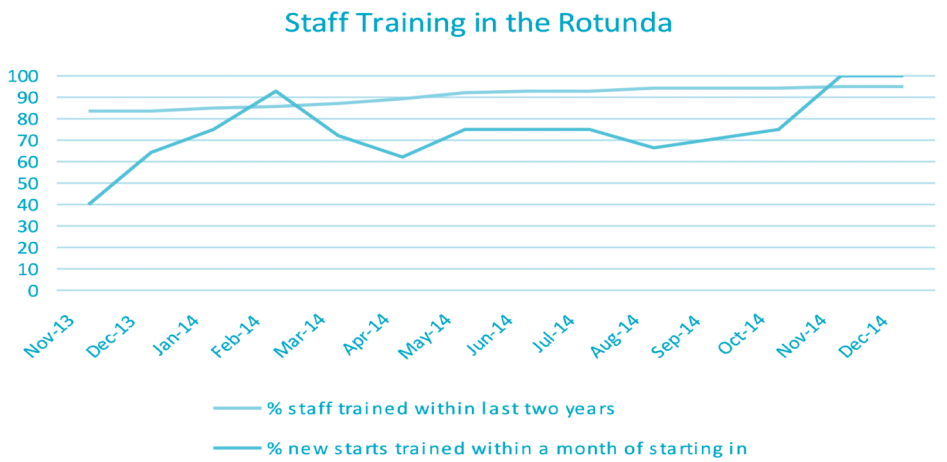
The IPCT has provided 34 general training sessions plus 3 hand hygiene awareness days with training for all staff. During the last quarter of 2014 there were 3 educational sessions regarding correct procedures for donning and doffing Personal Protective Equipment for Ebola cases.

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

The IPCT also give education to all staff at induction.

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

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

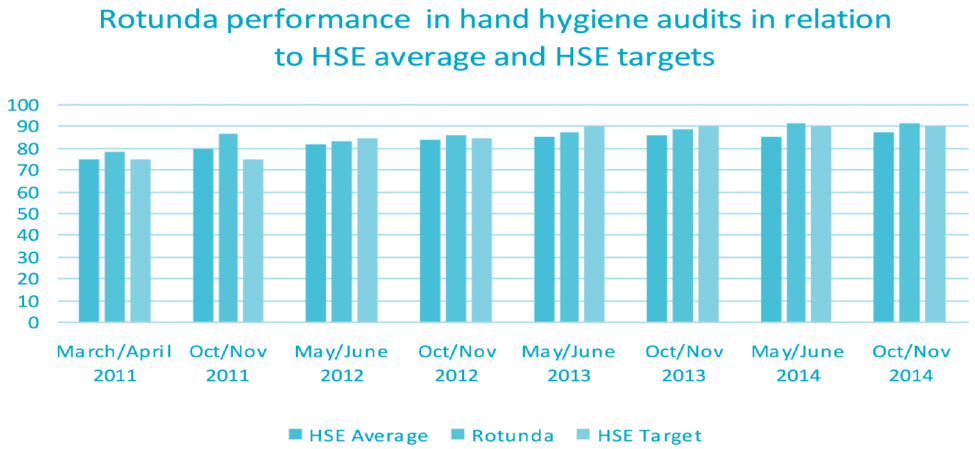


Guidelines

The IPCT team have incorporated new national guidance on IV Cannulation, MDRO Screening and Ebola management into IPC Policy. New clinical care pathways for pyelonephritis, intrapartum fever and breast abscess were introduced by the IPCT. Other policies and guidelines (8 in total) due for renewal were reviewed and updated by the Team

Environmental and Hand Hygiene Audits

The IPCT with the link midwife/nurses carried out 55 audits on the decontamination of medical equipment. The average score ranged from 84% to 98%. The target is 90%. Hand Hygiene audits were carried out in all areas. In total 30 audits were recorded. Audits done in May and October were returned to the HSE and published as part of the National Hand Hygiene Audit. The results of these audits continue to improve on previous years and achieved the HSE target.



SERVICE DEVELOPMENTS

Infection Prevention and Control Committee

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

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

- A procedure for performing root cause analyses into serious adverse events when they occur
  - Adults
    - Hospital acquired bacteraemia
    - Major outbreaks of disease
  - Neonates
    - Late-onset sepsis
    - Necrotising enterocolitis
    - Outbreaks of disease (Reported within 30 days of closure of outbreak)
- Progressions of the introducing of sharps free/needle safe devices in areas of the hospital where it is practicable to do so.
- Production of surveillance reports and identifying trends
- Review of patient information leaflets and making them available on hospital Intranet for staff to provide to patients in a timely manner.
- Production of a revised screening policy which incorporates national guidelines

PRIORITIES FOR 2015

- Revision of the water policy
- Production of antimicrobial consumption at a sufficient frequency to inform clinical practice
- Incorporate new national guidelines on hand hygiene into local policy

Ultrasound, Fetal Assessment & Prenatal Diagnosis Clinics

CONSULTANTS:

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

MATERNAL FETAL MEDICINE FELLOW:

DR. ETAOIN KENT	DR. JENNY WALSH

MIDWIFE SONOGRAPHERS:

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

HILDA O'KEEFFE (Perinatal Ireland Research Sonographer)

RADIOGRAPHERS:

MABEL BOGERABATYO
FIONA CODY (Perinatal Ireland Research Sonographer)

FETAL MEDICINE MIDWIVES:

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

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

MEDICAL SOCIAL WORKER:

DEIRDRE KEEGAN	SINEAD DEVITT

ADMINISTRATION

ANITA O'REILLY	SUZANNE LARKIN	MARY MAGUIRE

2014 was another busy year in the Ultrasound, Fetal Assessment (FAU) and Prenatal Diagnosis (PND) clinics.

The core ultrasound services in The Rotunda Hospital in 2014 were provided by midwife sonographers Irene Twomey, Deirdre Nolan, Gemma Owens, Allyson Lawless, Hilda O'Keeffe and radiographers Mabel Bogerabatyo, and Fiona Cody. S/M Laura McBride commenced additional training as a sonographer on a part-time basis. Once again their dedication, hard work and commitment are recognised and appreciated. All patients are offered a departmental fetal anatomic survey at 20 weeks. Serial scanning services were provided for patients attending the Diabetes, Twin and Medical Clinics. 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.

DEVELOPMENTS IN 2014

- CMS Irene Twomey and Radiographer Mabel Bogerabatyo completed their Masters in Ultrasound.
- Sonographer Allyson Lawless joined us from Castlebar.
- Non-Invasive Prenatal Testing was introduced for fetal screening.

NUMBER OF OBSTETRIC SCANS

20 Week Scan Fetal Anatomic Survey	8,838
Growth Scan	8,711
Echocardiogram	215
Others	1,433

NUMBER OF GYNAECOLOGICAL SCANS	**1,588**
Total	**20,785**

PRENATAL DIAGNOSIS CLINIC

In 2014 1,429 new patients attended for Prenatal Diagnosis. Drs. Barry, Breathnach, Cooley, Donnelly, Flood and Prof. Malone with CMS Jane Dalrymple, CMM2 Nollaig Kelliher, S/M Joan O'Beirnes and S/M Laura McBride operated 7 clinics per week.

There were 3,390 attendances as some patients were followed longitudinally. All patients had an ultrasound scan. In addition the following tests were performed:

Combined First Trimester Screening	547
Second Trimester Screening (Intmark)	15
Non Invasive Prenatal Testing (Cell Free Fetal DNA)	375
Amniocentesis	144
Chorionic Villus Sampling	80

Of the 224 diagnostic procedures performed, there were 77 abnormal results representing 34.5% of invasive tests. Notably since the introduction of NIPT the number of invasive procedures has fallen but the proportion of positive results has increased.

Abnormality	CVS	Amnio	Total
Trisomy 21	11	19	30
Trisomy 18	8	13	21
Trisomy 13	2	4	6
45X	3	1	4
Triploidy	2	2	4
Mosaic	1	0	1
Translocation	1	0	1
Deletion	0	2	2
Di George	0	1	1
Sickle Cell	1	1	2
Klinefelter	1	1	2
Roberts Syndrome	1	0	1
Inversion	1	1	2
Total	**32**	**45**	**77**
Failed Culture	0	2	2

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

Fetal Bladder Shunts	1
Cordocentesis	6
Intrauteine Transfusion	11
Laser Ablation (see Note Below)	15
Total	**33**

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 2014, a total of 15 cases of severe TTTS were managed by the Dublin Fetal Surgery Group by means of fetoscopic laser ablation of placental vessels. By the end of 2014, our group had completed 117 cases of laser surgery for severe TTTS, with at least one survivor occurring in 82% of cases (97 /117). These results are in line with international published experience for this complex condition and our results have been recently published (Outcome following selective fetoscopic laser ablation for twin to twin transfusion syndrome: an eight year national collaborative experience. Eur J Obstet Gynecol Reprod Biol. 2015 Aug;191:125-9).

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

Major Fetal Structural Abnormality:

Excluding soft markers and chromosomal abnormalities, 188 cases of major structural abnormalities were detected and followed. These include:-
Abnormalities detected based on RCOG/RCR Classification

CNS (excluding choroid plexus cyst)	30
Head & Neck (including hygromata)	22
Cardiovascular system (excluding echogenic foci and untreated arrhythmias)	36
Renal (excluding pelvic dilatation of<10mm)	49
Abdominal contents (Including anterior abdominal wall defects and excluding echogenic bowel)	7
Skeletal	15
Thoracic (excluding cardiac abnormalities)	8
Others	21
Total	**188**

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 215 targeted fetal echocardiograms were performed within the Department in 2014,

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 2014, the cases of fetal cardiac abnormality co-managed through this clinic were classified as follows: (For comparative purposes, 2013 data is also presented)

Lesion	**2013**	**2014**
HLHD	14	19
HRHD	6	14
cAVSD	15	12
VSD	23	21
Outlet Lesions AS	2	4
Isomeric Lesions (Single Ventricle)	5	3
Coarctation	5	5
Cardiac Tumours	1	1
Truncus Arteriosus	3	2
Tetralogy of Fallot	8	8
Cardiomyopathy	1	5
Ebsteins Anomaly	1	1
TGA	5	4
Bilateral SVC (Isolated)	1	1
Primum ASD	-	2
Interrrupted Aortic Arch	1	1
TOTAL	93	103

Arrhythmia	**2013**	**2014**
Congenital Complete Heart Block	2	0
SVT	3	3
Atrial Ectopics	6	8
TOTAL	**11**	**11**

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

Multiple Pregnancy:

Dr Ronan Gleeson runs the weekly twin clinic which is conducted as part of the Team D antenatal clinic. Both mono and dichorionic twins are managed in this antenatal clinic. Twins that are considered to be higher risk –eg. monochorionic twins that develop complications are usually referred for management to the Fetal Medicine Unit. There were 183 sets of twins (365 babies >500g) delivered in the hospital in 2014. Higher order multiples are usually managed in the FAU.

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

Multiple Pregnancy	
Monoamniotic Twins	**7**
MCDA Twins	**51**
TTTS	9/51
Discordant growth	17/51
Structural anomaly	1/51
Normal Outcome	24/51
Dichorionic Twins	
Discordant growth	9
Structural Anomaly	6
Normal Outcome	1
MCTA Triplets	**1**
DCTA Triplets	
Discordant Growth	2
Structural Abnormality	3
Normal Outcome	2
TCTA Triplets	
Structural Abnormality	1
Normal Outcome	1
Quads	**2**
Total	**86**

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

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

Additional Cases Followed in Prenatal Diagnosis Clinic:

PPROM 1st & 2nd Trimester	10
IUGR (Severe 2nd trimester)	46
Polyhydramnios	10
Oligohydramnios/Anhydramnios	2
Rhesus Sensitization	5
Antibodies	20
CMV	2
Toxoplasmosis	1
Parvovirus	2
Soft Marker Normal Outcome	27
High Risk Screen Normal Outcome	37
Total	**162**

Teenage Pregnancy Clinic

DR GERALDINE CONNOLLY
DEBORAH BROWN RM

Antenatal care is provided to all teenage pregnant mothers up to age 17 in the Rotunda hospital in the teenage pregnancy clinic. Girls who are older and deemed vulnerable, such as those with special needs, also attend the clinic as we feel they may benefit from continuity of care. Comparative figures for the past 8 years for the clinic are presented.

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

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

Two patients were expecting their third baby.

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

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

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

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

	Chlamydia positive (%)	Third degree tear (n)
2007	15	1
2008	6.4	1
2009	16	3
2010	12.2	3
2011	9.6	3
2012	14.1	2
2013	9.6	4.8

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

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

Comment

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

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

Mental Health Services

DR. JOHN SHEEHAN, Consultant in Perinatal Psychiatry
MS. KATHLEEN O'DONOHOE, Mental Health Support Midwife
MS. LOUISE RAFFERTY, Mental Health Support Midwife
MS. URSULA NAGLE, Mental Health Support Midwife

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

In 2014, 132 new patients were seen by Dr. Sheehan as well as 175 review/follow-up patients. The Support Midwives saw 310 new patients in the Health Promotion Clinic and 183 patients for follow-up. On the wards, the support midwives saw 1333 mothers and saw 213 for follow-up. In February, Ms. Louise Rafffery left the service to start a Masters in TCD. She contributed significantly to the mental health service during her four years as part of the team. She brought great enthusiasm, good humour, energy and intelligence to her job. Our loss was Trinity's gain.

In March, a Perinatal Mental Health Study day was held in the Rotunda. Organised by Ms. Kathleen O'Donohoe and Ms. Louise Rafferty, it was very successful with over 30 midwives attending. Dr. Sheehan was one of the speakers giving an overview of perinatal mental health and Dr. Anne Marie Waldron, Consultant Child Psychiatrist, gave an excellent lecture on Attachment in infants.

In May, Ms. Ursula Nagle commenced work as a support midwife. She is trained as both a general nurse and as a midwife. Having works as the CNM I in the Labour ward, she brings considerable expertise and experience to her role as a support midwife.

In July, Dr. Yvette Giblin, SpR in Psychiatry, started a special interest session with Dr. Sheehan in order to gain experience in perinatal psychiatry.

Regarding education, lectures were provided to UCD medical students and midwifery students and the weekly educational Continuing Professional Development meetings continued.

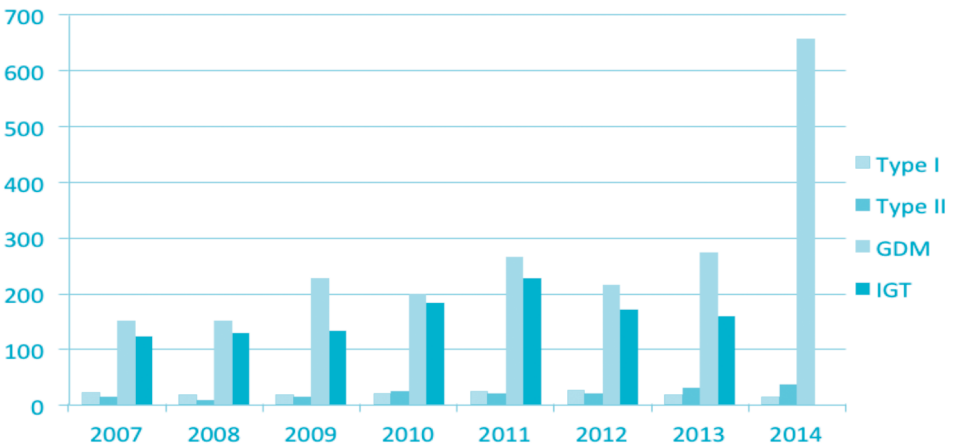
Combined Obstetric-endocrine Service for Diabetes Mellitus

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

INTRODUCTION:

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

FIGURE 1: Women with pregnancies complicated by Diabetes at the Rotunda 2007 - 2014



The most striking observation for 2014 is the exponential increase in our Gestational Diabetes population. This phenomenon is a reflection of the transition in February 2014 from the 100g 3-hour screening test to the IADPSG-endorsed 75g 2-hour Oral Glucose tolerance test with its accompanying lower thresholds for GDM diagnosis. The International Association of Diabetes in

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

Our model of care for women with GDM involves monitoring and surveillance for diet-controlled GDM in a midwifery-led service, with obstetric care for these women being provided through routine antenatal clinics. Attendance at the Combined Obstetric Endocrine clinic is only required for women with pregestational diabetes (type I or type II) or with gestational diabetes who require therapy beyond diet. Women with a history of gestational diabetes in a prior pregnancy attend the midwifery-led unit for regular surveillance from the first trimester of pregnancy; again with transfer to the Combined Obstetric Endocrine service only in the event that gestational diabetes is confirmed and is not adequately responding to dietary therapy.

TREATMENT FOR GESTATIONAL DIABETES:

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

TABLE 1: Pregestational Diabetes: Maternal Characteristics

	TYPE 1	TYPE II
N	16	37
Age	30.9 ± 6.5	34.1 ± 4.4
DM duration (yrs)	17.9 ± 10.0	4.8 ± 3.2
DM Complications: (Expressed in ongoing viable pregnancies)		
• Chronic hypertension	3/16 (19%)	1/35 (3%)
• Retinopathy	4/16 (25%)	0/35 (0%)
• Nephropathy	3/16 (19%)	0/35 (0%)
• Neuropathy	0/16 (0%)	0
Preeclampsia	2/16 (13%)	2/35 (6%)
Gestation at booking	6.1 ± 2.1	8.3 ± 5.7
HbA1c at booking/IFCC	67 ± 22	50 ± 17
HbA1c at delivery/IFCC	51 ± 20	40 ± 6
Fructosamine at booking	378 ± 73	266 ± 59
Fructosamine at delivery	260 ± 63	227 ± 24

TABLE 2: Pregestational Diabetes: Perinatal Outcome

	TYPE 1	TYPE II
N	16	37
Spontaneous Fetal Loss (<24 weeks)	0/16 (0%)	2/37 (5%)
Preterm delivery 24+0 – 36+6 weeks	6/16 (38%)	5/35 (14%)
Liveborn	16/16 (100%)	34/35 (97%)
Stillbirth	0	1#
Neonatal death	0	0
Delivered Elsewhere	0	0
Caesarean Delivery	12/16* (75%)	15/35* (43%)
Gestational age at delivery	36.0 ± 3.4	37.2 ± 3.7
Birthweight (g)	3900 ± 1000	3300 ± 1100
Macrosomia ffl99th centile for gestational age	1/16 (6%)	4/35 (11%)
Shoulder dystocia	1/16 (6%)	1/16 (6%)
Major congenital anomaly	0/16 (0%)	1/16 (6%) (Mar chromosome aberration; marked kyphoscoliosis)

**Ongoing viable pregnancies delivered at the Rotunda*

TABLE 3: Gestational Diabetes (GDM):

	Diet-controlled GDM	GDM ONINSULIN
N	495	149
Age	32.7 ± 5.4	33.2 ± 5.1
Gestational age at delivery	38.7 ± 1.9	38.6 ± 1.3
Birthweight (g)	2650 ± 1270	3400 ± 500
Caesarean delivery	196/495 (39.6%)	63/149 (42%)
Stillbirth	5/495 (1%) #	0
Spontaneous fetal loss <24 weeks	N/A	N/A
Delivered Elsewhere	0	1/149 (0.7%)
Preeclampsia	11/495 (2%)	0
Macrosomia ≥99th centile for gestation	0	7
Major congenital anomaly	1 (Trisomy 21)	2: (Trisomy 21; Diaphragmatic hernia)

#CASE STUDIES : ***Please refer to Perinatal Mortality section of this report for further detail***

RESEARCH:

In 2014 Dr Siobhan Corcoran commenced her MD thesis on Prediction of Gestational Diabetes in the First Trimester, under the supervision of Dr Fionnuala Breathnach. This study involves the prospective recruitment of women at risk for gestational diabetes, with first trimester analysis of a panel of biomarkers aimed at exploring the potential to refine the screening process for GDM. The thesis is on target for completion in late 2015, with anticipated presentation of results at the Society for Maternal Fetal Medicine Annual Congress in Atlanta in February 2016.

Citations from Obstetric Diabetes Service in 2014:

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

Khalifeh A, Breathnach FM, Coulter Smith S, Robson M, Fitzpatrick C, Malone F. Changing trends in Diabetes Mellitus in pregnancy. J Obstet Gynecol Feb 2014; 34:135-7. IF 0.6

Ryan H, Morrison JJ, Breathnach FM et al. The influence of maternal body mass index on fetal weight estimation in twin pregnancy. Am J Obstet Gynecol 2014 Apr;210(4):350e1-6. PMID:24215852. IF 3.973

Clinical Nutrition

LAURA HARRINGTON, RD, MINDI- SENIOR DIETITIAN

In 2014 the dietitian saw a total of 1056 new patients and 408 follow-up visits. This is a 35% increase in activity from 2013 and reflects the increase in the number of patients diagnosed with gestational diabetes (GDM). The types of patients cared for can be classified in the tables below:

Referring Service	New Patient (in- and outpatients)	Follow-up Patient visits (in-and outpatients)	Total Patient Encounters	Percentage of Total Patient Activity
Antenatal	182	67		17 %
Diabetes	833	280		76 %
Gynaecology	10	4		1 %
Paediatrics	24	51		5 %
Postnatal	7	6		1 %
TOTAL	**1056**	**408**	**1464**	

Group Patient Education Classes

Class	Patient Numbers Attending
Antenatal Parent Education Class	1426
Gestational Diabetes Lifestyle Intervention Class	533

The majority of dietetic referrals are for the following conditions:

- **Antenatal:** Overweight or obesity, underweight, poor weight gain, hyperemesis, multifoetal gestation, anaemia, eating disorders, Crohn's
- **Diabetes:** Gestational diabetes, type 1 and 2 diabetes in pregnancy
- **Gynaecology:** Polycystic ovary syndrome, poor wound healing/postoperative infection and infertility linked to overweight/obesity or underweight
- **Neonatology/Paeds:** Poor weight gain, faltering growth, food intolerances and allergy
- **Postnatal:** Poor wound healing, infection, underweight, constipation, IBS and incontinence

Diabetes referrals continue to dominate the dietetic service. There was an increase of over 86% in the number of new patients with diabetes, all types combined. To manage this increased demand, the majority of patients newly diagnosed with GDM or, with a history of GDM in a previous pregnancy, are seen in multi-disciplinary group education sessions. Over 66% of patients with GDM were seen in the class, with the remaining 34% seen by the dietitian individually. Services to gynaecology, postnatal and paediatric patients had to be limited in order to prioritise high risk diabetic patients. The current level of activity in the department does not reflect the true demand for dietetic services. However, the dietitian endeavours to provide a quality service within the confines of limited staffing resources.

The dietitian also gives presentations to midwifery and nursing staff in diabetes study days yearly. Links are maintained with the dietitians in maternity services nationwide to contribute to the National Clinical Guidelines, create and share cost of patient education materials and facilitate continuing professional education.

Epilepsy clinic

DR MARY HOLOHAN

At the Epilepsy Clinic in 2014 there were 119 patients seen. For all of the patients a delivery plan was determined and if on treatment, medication optimised in conjunction with the Clinical Nurse Specialist - Epilepsy. Monitoring of the therapeutic drug levels in each trimester has significantly assisted in patient care.

During 2014, 80 of these patients delivered in the Rotunda Hospital with 2 patients transferring care to other unit in late pregnancy. 34 had not required anti-convulsant treatment for some time before pregnancy and 32 patients needed anti-epilepsy drug treatment for the duration of the pregnancy. A patient on Sodium Valproate for mood enhancement discontinued the treatment in early pregnancy. 8 patients had discontinued treatment shortly before this index pregnancy. One of these women had a recurrence of myoclonic jerks and recommenced Lamotrigine. One patient had neurology review due to absence seizure after mid trimester pregnancy loss. Seizure activity in 5 patients were associated with use of Benzodiazepines in the context of substance abuse.

There was 8 complications in the group of 34 patients not on treatment. One patient had intra-uterine fetal death at term and a patient had mid - trimester pregnancy loss. There were 3 deliveries at 31 - 34 weeks. There was 1 case of significant fetal growth restriction. APH requiring emergency delivery at term occurred in two cases.

Of the 32 patients on anti-epilepsy treatment regimes throughout pregnancy - 25 were on mono-therapy, 5 required 2 medications, 1 needed 3 anti-epileptic drugs and 1 patient was on 4 medications. 2 of the patients had monotherapy with Sodium Valproate and one patient was on a combination of Valproate and Levetiracetam. 2 patients using Sodium Valproate changed to Levetiracetam.

There were 5 pregnancy complications in patients using anti-epilepsy medications

- Early pregnancy loss on Valproate
- Early pregnancy loss on Levetiracetam
- Intra-uterine growth restriction on Carbimazepine
- Intra-uterine growth restriction on Levetiracetam and Carbimazepine
- Placental Abruption at 33 weeks on Topiramate

The patient who required 4 medications for her epilepsy had not achieved complete seizure control before pregnancy and had a number of seizures in pregnancy, a single seizure in labour and seizures in the post natal period.

There were 3 pregnancy complications in the 5 patients whose seizures related to Benzodiazepine use - one early pregnancy loss and in 2 patients preterm delivery due to haemorrhage and intra-uterine growth restriction.

Provision of standardised care for Women with Epilepsy has been further enabled and enhanced with the development of the National Clinical Programme on Epilepsy under the direction of Dr. C. Doherty (National Clinical Lead). Throughout 2014, the national Standard Operating Procedure was developed such that integrated care pathways were improved for maternity patients with epilepsy. It is planned to finalise this initiative with Clinical Care Programme on Obstetrics and Gynaecology early in 2015.

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

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

Physiotherapy

MS CINNY CUSACK, PHYSIOTHERAPY MANAGER

The Physiotherapy Department's mission is to provide patient centred, innovative and evidenced based care in the management and treatment of obstetric (pre and post natal), gynaecology and Neonatal/ paediatric conditions.

STAFFING

Our current staff compliment is 4 WTE. This year we upgraded a basic grade post to senior grade. This has enabled one senior post to have responsibility for service development in paediatrics and the other senior post for service developments in women's health is currently job shared.

The current staff is: Cinny Cusack, Anna Hamill, Anne Duignan, Brona Fagan and Niamh Kenny

ANTENATAL CLASSES

Health promotion and ante natal education forms a key part of our women's health service. This empowers women to take an active role in their preparation for parenthood, management of pregnancy related musculoskeletal conditions, incontinence and promotes participation in a healthy exercise programme not just for during pregnancy but for motherhood and beyond. We continue to advise mothers about the role of exercises in managing gestational diabetes through multidisciplinary patient education sessions.

Preparation for parenthood classes are jointly run with the Parent education midwife. The physiotherapy department gives 3 of the 6 classes. Approximately 20% of first time mothers attend these classes. This year a total of 1,508 attended the first class and were given appointments for the subsequent 5 classes. We would like to see more mothers avail of these classes but numbers are limited by physical space and staff availability.

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 to 6.

INPATIENT PHYSIOTHERAPY

7,735 face to face contacts were made to 7,378 post natal mothers for advice, pelvic floor and abdominal exercises, treatment of pelvic girdle pain and mobility issues. Our focus is on the high risk mothers who have obstetric anal sphincter tears, , an instrumental delivery , caesarean section ,have a baby over 4kg or who have any incontinence. Mothers are encouraged to attend the postnatal class in the first 6-8 weeks post partum.

Pelvic girdle pain affects approximately 20% of mothers and during 2014, 92 prenatal in patients were treated for pain and difficulty mobilising.

183 Gynae In patients were seen following major surgery for advice, pelvic floor and abdominal exercises, management of reducing risk of future prolapse and how to safely return to exercise.

Patients requiring chest physiotherapy are also referred. There were 43 patients requiring 51 treatments.

Babies are referred as inpatients to physiotherapy for the following conditions, Torticollis, Talipes, Erbs and Plagiocephaly. 74 babies were reviewed requiring 93 treatments.

NICU: Since September 2014, the senior physiotherapist attends the NICU ward round and is involved in providing advice regarding the positioning and handling of babies and meeting the parents to give advice as part of the discharge planning. However, due to significant restraints on available time, there are only 2 hours per week available to provide this service. This is an area that the Physiotherapy department would like to see further resourced.

OUTPATIENT PHYSIOTHERAPY

In 2014, there were 2,074 new patients seen in the physiotherapy department requiring 4,381 attendances.

The post natal class runs weekly and is open to all postnatal patients up to 8 weeks postpartum. It is an opt in service and 281 patients plus babies attended the classes held during 2014. The aim of the class is to provide an opportunity for questions, support and advice. We review the pelvic floor exercises and assess for a diastasis rectus abdominus so that exercises can be progressed safely to enable the mother return to fitness and so reduce the risk of future back pain and incontinence.

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

Obstetric anal sphincter injuries. (OASI): 164 patients were who sustained an OASI were given a 2 week and 6 week postnatal physiotherapy follow up appointment in accordance with the HSE guideline on Management of OASI. 35 patients who had had previous tears were also followed up during their subsequent pregnancy for advice and sphincter exercises. The physiotherapy department works closely with the perineal clinic to provide an integrated care pathway for patients with ongoing issues.

Urinary incontinence:	279
Faecal incontinence:	19
Prolapse:	52
Carpal tunnel syndrome:	48

PELVIC GIRDLE PAIN (PGP)CLASS

1,206 patients suffering with pelvic girdle pain or low back pain were referred to physiotherapy. The referrals are triaged based on their gestation and pelvic girdle questionnaire score. Patients are then given an appointment for the pelvic girdle class (577 patients) or an individual appointment (629). The aim is to give an appointment within 2-3 weeks of referral. Significantly urgent patients may be seen sooner. The class provides advice on ergonomics, management of activities of daily living, pacing and specific stabilising abdominal and pelvic floor exercises. Patients who may require further treatment are triaged through this class and assessed for use of pelvic support s and walking aids.

PAEDIATRIC PATIENTS

370 babies were referred as outpatients requiring 853 attendances for the following conditions:

Plagiocephaly and Torticollis:	112
Brachial plexus injury and upper limb:	20
Talipes and lower limb:	82
Developmental delay:	156

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

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

Clinical audit Urinary retention
During 2014, there has been continued focus on improving the early recognition and management of urinary retention in the ante natal, post natal and gynaecological patients. In May 2014 a clinical education study day was organised by Mary O'Reilly, Practice Development and Cinny Cusack Physiotherapy Manager. Minor changes were made to the Urinary retention guideline which was republished in July 2014. A Urinary retention re audit was completed during 2014. This was presented at the Research meeting in January 2015 and won 3rd prize. The audit highlighted the importance of fluid balance documentation on the delivery transfer sheet and the first two voids post delivery. Staff has received training in the teaching of self intermittent catheterisation for patients with ongoing issues following urinary retention.

DEPARTMENT ACTIVITY

Physiotherapy students
This year, the Physiotherapy department has taken undergraduate students from RCSI School of Physiotherapy. 3 placements were offered for 2 final year students and one observational placement for a first year. The placements were successful with all key learning objectives from the placement achieved to a high standard.
A post graduate placement for the final practical assessment was also given to a student from Bradford University completing the Post graduate Physiotherapy Diploma in Continence.

Clinical research
The physiotherapy department with Deirdre Daly of the MAMMI (Maternal health and Maternal Morbidity in Ireland) are currently researching **Women's knowledge and practice of Pelvic Floor Muscle Exercises (PFME) and their opinions of PFME education at the Rotunda Hospital**. 570 questionnaires were completed and returned by ante and post natal patients.

Clinical audit: Poster presentation on Physiotherapy management of 3rd and 4th degree tears was presented at St James Hospital research seminar in May 2014 and at the ISCP conference in October 2014

Continuous professional development (CPD)
The department actively engages in regular CPD in the form of journal club and joint treatment sessions.

Post graduate short courses attended.

- Physiotherapy management of neonatal graduates in the community.
- Physiotherapy for babies with CP and developmental delay (5 day course in CRC)
- The Rotunda Physiotherapy Department also hosted a post graduate course 'Managing dysfunction in the pregnant and post partum pelvis.

The physiotherapy department have actively participated in the

- Rotunda and RCSI Leadership Development programme.
- Pressure to Zero collaborative which successfully maintained the incidences of pressure sores at zero.
- Epidural study days
- Manual handling training programme

I would like to acknowledge the hard work, enthusiasm and dedication that the Physiotherapy staff has put in over the past year. The smooth running of this extremely busy department could not happen without the significant contribution of the physiotherapy secretary Karen Chillingworth Filan.

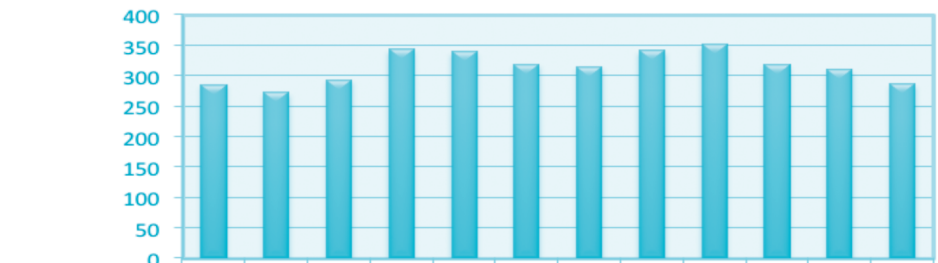
Sexual Assault Treatment Unit

DR MAEVE EOGAN

Introduction

The Rotunda SATU is one of 6 HSE supported SATUs around the country, with units established in Cork, Waterford, Mullingar, Galway and Letterkenny. Each unit provides responsive patient centred care underpinned by national interagency guidelines. This ensures that all men and women who seek care after sexual crime receive the same standard of care regardless of which SATU they present to. In 2014 the SATU at the Rotunda Hospital provided care for 286 men and women after rape or sexual assault, a decrease of 24 patients (7%) from 2013. While we hope that this reduction in attendances is due to a reduction in sexual crime, it may actually result from the increased awareness of and attendance at the SATU at Midlands Regional Hospital, Mullingar.

Fig. 1: Analysis of yearly attendances 2003 to 2014

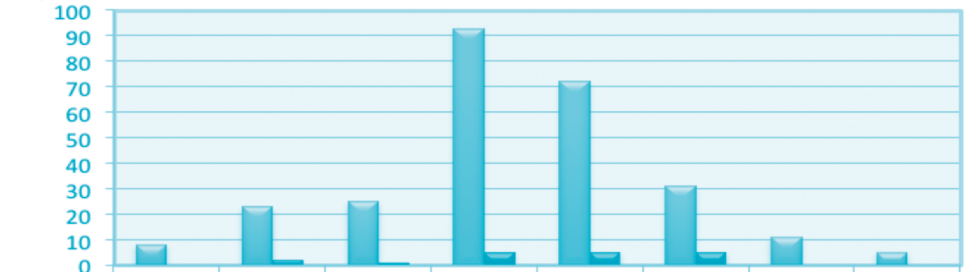


	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
No. Attendances	285	272	293	343	339	319	315	341	351	318	310	286

Most patients (80%) presented within 7 days of an incident of sexual assault, with 2 patients disclosing long-term abuse. Early presentation is optimal in terms of provision of appropriate care as well as collection of forensic evidence. In 13 cases, the incident had occurred outside of Ireland. Of the cases where the incident was reported to have taken place in the Republic of Ireland, 214 (80%) of these took place in Dublin city or county. 14 other counties were also represented in the figures. March and May were the busiest months and Tuesday was the busiest day for the unit. While 79% of attendees reported that the incident took place between 9pm and 9am, the majority of patients (183, 64%) actually attended for care within daytime hours (9am-9pm). Nevertheless a not inconsiderable proportion of patients, 36%, were seen between the hours of 9pm and 8.59am, which emphasises the continued need for a round-the-clock service.

The age and gender profiles of all patients is shown in Figure 2, the age range was from 12 to 94 years. Although the remit for the Adult SATU services is for patients over 14 years, in 2014 the unit provided care for 8 female patients less than 14 years. These were instances where acute care in a paediatric service could not be arranged. Considerable developments in paediatric services are anticipated which will mean that such patients can be appropriately accommodated in the future.

Fig. 2: Analysis of age profile of patients in relation to gender 2014



	<14	≥14-<16	≥16-<18	≥18-<25	≥25<35	≥35-<45	≥45-<55	≥55
Female	8	23	25	93	72	31	11	5
Male		2	1	5	5	5		

112 (39%) patients were students, 82 (29%) were in employment and 87 (30%) were unemployed. The majority of patients (253, 88%) were single. 221 (77%) patients reported a single assailant, and 107 (38%) patients reported that the assailant was a stranger. In 24 cases the alleged assailant was reported to be an intimate (or ex-intimate) partner, and in an additional 5 cases reported to be a family member. 204 patients (71%) disclosed that they had consumed alcohol in the 12 hours precedding the assault, 7.5 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. 38 patients were unsure if a sexual assault had taken place, in 33 of these patients this lack of recall was due to memory loss associated with alcohol ingestion.

Emergency contraception (EC) was given to 123 of 188 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. 256 men and women accepted this offer, and 180 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 2014 27 patients also received post-exposure prophylaxis for HIV.

Since 2009 we have been providing care for men and women who have experienced sexual violence but who preferred not to report the incident to An Garda Síochána. Of the 286 patients that attended the SATU, 75 (26%) 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. In 2015, all SATUs aim to begin to provide a facility for safe storage of forensic evidence. This will enable us to store forensic samples for a defined period for people who are uncertain as to whether or not they wish to report an incident to An Garda Síochána. Forensic evidence deteriorates quickly so appropriate and safe storage will preserve evidence and allow patients to consider reporting options.

A postgraduate certificate in Sexual Assault Forensic Examination was run by UCD for doctors aspiring to work in the adult and paediatric SATU services. This course provided training in care provision, and educational components were delivered by many Rotunda SATU staff. In the latter part of 2014 a higher diploma programme in Sexual Assault Forensic Examination for nursing and midwifery staff commenced at RCSI. All SATUs now depend greatly on clinical nurse/midwife specialists, and we look forward to all the trainee nurse/midwife specialists joining the SATU workforce on completion of the programme. We also welcome Noelle Farrell who has taken up the role of CMM at the Rotunda SATU, this role had been vacant for a period of time, and Noelle's arrival has already had a very positive impact on the service. We hope she will continue to enjoy her new role with all its inherent challenges and we look forward to working with her for many years to come.

SATU staff are actively involved in outreach education within Emergency Departments & General Practice, Mental Health Services, Prison Services, An Garda Síochána, and Dublin Rape Crisis Centre to raise awareness and increase understanding and recognition and to equip people better to respond to incidents of sexual violence. The strong Interagency Links that have traditionally existed, particularly with An Garda Síochána, Forensic Science Laboratory and Rape Crisis Centre were maintained over this year. The SATU Liaison group met quarterly during the year. These meetings are a valuable opportunity to discuss relevant issues pertaining to SATU facilities and care and ensure that all staff from the various agencies are aware of changes and developments, and indeed challenges, as they arise. SATU staff are also committed to education in a range of settings including schools and universities. At a national level, the 6 SATUs are a vibrant and motivated community of practitioners, who work with each other and our partner agencies to progress our services to provide the optimum response at a time when our patients are in crisis. 2014 saw the launch of the 3rd Edition of our National Interagency Guidelines. These guidelines ensure that all patients receive the highest level of responsive care regardless of where or to whom they disclose an incident of sexual violence.

A definite highlight of 2014 was the SATU's transition to a new physical space within the School of Midwifery. We now have a large bright unit, with appropriate waiting areas and clinical infrastructure as well as facilities for administrative support and document storage. We acknowledge all our 'neighbours' in that area, who put up with relocation as well as significant disruption as the unit was being developed. Furthermore, we acknowledge greatly the support of the hospital board and the executive management team in facilitating this development. Unfortunately in 2014 we began to experience challenges staffing our assisting nurse/midwife rota. This meant that there were occasions when we were unable to provide an out-of-hours service which is not ideal. A recruitment drive has been initiated and hopefully this imbalance will be reversed over the course of 2015.

At this time every year I acknowledge the assistance of all SATU staff, and this year is no different. Maintenance of a responsive service is only possible due to the dedication of the unit staff. All staff are extremely committed to providing

exemplary care at all times and but for them the SATU of the Rotunda Hospital would not be a centre of excellence. This report highlights the significant amount of work done by a small but highly committed team, and their continued availability to provide holistic care to patients at a time of crisis is acknowledged.

Publications:
Richardson D, Eogan M. Care for Male Victims of Sexual Assault. Modern Medicine 2014;44(1):27-28.

Audits:
An Audit of STI Prophylaxis, Screening and Follow-up in SATU. Dr Killian Bates.
Re-audit of attendance rates following referral from the Sexual Assault Treatment Unit to Infectious Diseases Clinic for HIV prophylactic treatment and completion of follow-up treatment from 2012 to 2014. Aideen Walsh

Media:
In October 2014 the Rotunda SATU was involved in a 'Doors Open' piece for the RTE programme Morning Edition with Keelin Shanley. The team were filmed in the unit, explaining a patient's pathway within the SATU and Aideen Walsh attended RTE for a formal interview and panel discussion. This was a worthwhile experience for all, and hopefully highlighted SATU services in a positive way.

Medical Social Work

INTRODUCTION

In 2014, the Rotunda's team of social workers continued to provide a comprehensive social work service to patients, their partners and their families. Those who used the service had a broad range of needs and issues of concern. These included: bereavement, domestic violence, addiction, relationship issues, mental health issues, underage pregnancy, the birth of a baby with special needs, child protection issues, concealed pregnancy, crisis pregnancy and intellectual disability.

The Rotunda's social work service is extremely proactive and broad in its remit. It operates from the rationale that addressing problems in a timely manner can prevent their escalation and can serve to minimise the distress experienced by patients. To exploit the potential of preventative interventions, there is a social worker attached to each of the hospital's four obstetric teams and to all the larger specialist clinics and units. Patients are typically met during pregnancy so that issues of concern can be identified and alleviated.

FINANCIAL ADVERSITY

Throughout 2014, the economic crisis continued to impact significantly on patients and their families. In 2014, the President of St Vincent de Paul (SVP), Geoff Meagher pointed out that, although economic recovery has begun and the numbers at work have risen, the gap is widening between those who are benefiting from the upturn and those who have yet to do so. One indication that austerity continues to impact the less well-off is the increase in SVP sending to provide help for people struggling financially in Ireland. Since 2008, the society's spending has risen by more than 50 per cent to 82 million euro annually.

In 2014, food banks were set up by charities across the country in an attempt to feed the estimated 600,000 people suffering from food poverty. It has been well documented that poverty is strongly associated with the risks of neglect and abuse, and the number of children at risk of poverty has been steadily increasing since the financial crisis hit.

HOUSING

In 2014, almost 20,000 applications for housing have been made to Dublin City Council, an increase of 3,000 from 2013. The actual number of people seeking accommodation is unclear as applications may be made by families containing a number of children as well as individuals. The Rotunda is located within the area of greatest need on the northside. Of the 133,005 local authority housing units across the State, 3,668 are empty. Of these, just 770, or 21 per cent are available for letting.

Every application on the housing list has been established by the county council as having a housing need. While applicants wait a number of years to be housed by the county council, the majority are dependent on the private rented sector and rent supplement.

Some 29,000 Dubliners are in receipt of rent supplement, which provides support to people in the private rented sector who can't pay full rent. Approximately 77,000 people nationwide benefit from this scheme, which cost the government 344 million euro in 2014. Unfortunately, rising rents, housing shortages and home repossessions have resulted in discrimination against social welfare tenants. There were fewer than 27,000 properties listed to rent in Dublin in the first 9 months of 2014, compared to more than 47,000 in the same period in 2011. Rents in Dublin have risen more than 11 per cent in the past 12 months. This is also concerning as it is estimated that Dublin's population is growing by 10,000 households a year.

Patients of the Rotunda have reported having to look for private rented accommodation far away from their communities, family and friends in an attempt avoid homelessness. If they are successful in securing accommodation in a different location, they can find themselves isolated from their familiar environment and supports, at a time when they need them the most. If someone is vulnerable to post-natal depression, this can have a negative impact on them at a very sensitive time.

Patients who do not find private rented accommodation before their baby is born are becoming homeless. The Dublin Simon Community reported that the crisis was spiralling out of control as the use of hostels, hotels and B&Bs to house people is becoming the long term solution.

In May 2014, it was estimated that there were 180 families with child dependents in emergency accommodation in Dublin. Since January 2014, according to Focus Ireland, 128 Dublin families with 321 children have moved into hotel rooms. This year the MSWs have worked with women who have been living with their children in hotels and B&Bs. These women are facing the difficulty of trying to get their children to school, feed a family in a hotel room and prepare for the birth of a new baby.

In 2014, Barnardos highlighted how children are the 'hidden victims' in the worsening housing crisis, which campaigner Fr Peter McVerry has described as a "tsunami of homelessness" and the worst crisis he has ever witnessed.

CHILDREN

The 1st of January 2014 was the first official day of the new Child and Family Agency. The agency absorbs the child-protection and welfare services previously carried out by the Health Service Executive (HSE). It comes in the wake of the passing of the Children's Rights amendment to the Constitution, which intends to make children's rights explicit and their voices heard. The ambitious aim of this agency is to improve the lot of children and families by focusing on prevention rather than crisis-driven intervention.

In April 2014, the Government published the Children First Bill which, if made into law, will make it mandatory for professionals to report possible incidents of abuse. The legislation was recommended in the 2009 Ryan Report Implementation Plan. Guidelines and policies in the Rotunda Hospital are already consistent with the principles of the Children First Guidelines, which were first published in 2009. The Bill also hopes to clarify the situation about reporting underage non-abusive sexual activity where young people between the ages of 15 and 17 years become pregnant.

In Ireland, the age of consent has been 17 years of age since the Criminal Law Amendment Act 1935. Ireland has one of the highest ages of consent in the EU. Sweden, Denmark, Poland, France and Greece have all set the age of consent at 15 – the most common in the Union. The Germans and Italians have opted for a year lower at 14 while the British, Dutch, Portuguese and Belgians have set the age at 16. While ministers have discussed lowering the age of consent from 17 to 16 in Ireland, in recognition that people are having sex at a younger age, it has been argued that the age of consent permits the State to continue to intervene in a way that is suitable for a teenage child.

The Growing Up in Ireland survey confirms that a significant proportion of children are growing up in diverse family types. The survey indicated that 14 per cent of the infants sampled are living with lone parents. Equally, the number of children living in cohabiting households is rapidly increasing, rising by 41 per cent between 2006 and 2011. In Ireland, births outside marriage account for approximately 35 per cent of all births. In 2014, 41 per cent of births in the Rotunda were to parent who weren't married. The Children and Family Relationships Bill 2014 is proposed as the legislative response to many of the issues raised by the changing composition of Irish families.

DOMESTIC VIOLENCE

In 2014, the staff in the Rotunda Hospital continued to routinely enquire about domestic violence in keeping with best national and international recommendations. Domestic violence in pregnancy is more common than gestational diabetes and hypertension and can actually begin or increase during pregnancy. It may lead to miscarriage, pre-term labour, low birth weight, fetal injury and can pose a significant health risk for both the woman and her baby.

Routinely asking all women during the ante-natal period if they are experiencing domestic violence is a model that supports women to disclose abuse and seek support. It also serves to reduce the stigma associated with domestic violence and has the value of highlighting the prevalence of this issue to women. Research shows that many women were asked about domestic violence 11-12 times before disclosing. Women are asked about domestic violence without their partner present to ensure their safety is not compromised.

The medical social work team prioritise all domestic violence referrals. It is important to explore with the woman where she is at in the domestic violence cycle. She could be only defining what is happening to her as an abuse or may be at the point of leaving a relationship. The medical social worker can assist a woman explore her options, such as, a referral to a refuge or Woman's Aid and a safety plan can be discussed. Not all domestic conflicts warrant the involvement of statutory child protection services. The level of risk to children is assessed by the medical social worker with the patient. A woman, in the majority of the cases, is the best judge of her family's safety. The medical social work team will audit the documentation of domestic violence enquiry in patient's charts in 2015 to ensure there is appropriate medical social work follow up.

The social, legal and economic changes which have taken place in Ireland over this year have given rise to many challenges for patients attending the hospital. This has led to an increase in the number of referrals to the social work department and has rendered the nature of our work more complex and varied.

The following reports of social work involvement in the hospital's specialist clinics and units during 2014 provide a summary of the services offered by the department.

TEENAGE PREGNANCY CLINIC

In 2014, there were 119 teenagers booked into the Teenage Clinic. There were 20 teenagers who were 16 years of age at booking and 11 who were 15 years of age. One teenager was 14 years of age at booking. In these cases, a referral is always sent by the medical social worker to the appropriate office of the Child and Family Agency (CFA). Underage consensual non-abusive sexual activity continues to be investigated by the CFA in conjunction with An Garda Siochana to satisfy relevant legal requirements. New measures contained in the Child First legislation should clarify this situation. Teenagers aged 18 and 19 years can also attend the teenage clinic if required and can be referred by the MSW and midwifery staff if they require the extra support the clinic provides young mothers.

For many young people, their pregnancy is unplanned and the medical social worker provides support and counselling to the young person to assist them to come to terms with the news and to provide ongoing support and assistance throughout the pregnancy. Becoming a mother at any age can be a daunting experience and young people, in particular, can feel overwhelmed about becoming parents. Attendance and participation in the antenatal classes is also encouraged. The Teen Parents' Support Programmes in the young person's local area offer continued support for the mother and baby following delivery.

The medical social worker attached to the Teenage Clinic works closely with the Clinic's specialist midwife in order to provide a holistic and consistent service.

BEREAVEMENT SOCIAL WORKER

In 2014 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. The number of babies for burial in 2014 was 259. The bereavement social worker met with 214 of these patients in the hospital and made written contact with the remaining 45 patients. A service was also provided to the Early Pregnancy Unit and the Recurrent Miscarriage Clinic.

Patients and their partners were offered emotional and practical support, counselling, advice on explaining the death of a baby to children, and follow-up care. They were also offered counselling and support during subsequent pregnancies and after the birth of their new baby. This follow-up care was offered both in the Rotunda Hospital and on home visits if requested. The bereavement social worker met with 119 patients for follow up care after their discharge from hospital and carried out 278 hours of face to face counselling sessions in 2014. She provided 28 hours of counselling over the phone. She continued to develop educational information for parents and staff regarding children and loss. She met with 8 children for bereavement counselling following the loss of a sibling.

FETAL ASSESSMENT AND PRENATAL DIAGNOSIS CLINICS

2014 was another very busy year for these Clinics, where care is provided for women with high-risk pregnancies, as well as the diagnosis of chromosomal and major structural abnormalities. Fetal Medicine Midwives, Nollaig Kelleher, Jane Dalrymple and Joan O'Beirnes work closely with the Medical Social Worker in identifying patients who have been given difficult news about their baby and may need additional emotional and practical support at the time of a diagnosis and in the weeks and months that follow.

There was an increase in the number of referrals to the medical social worker in 2014. Part of the reason for this may be attributed to the increase in the uptake of prenatal screening and prenatal diagnostic testing. This has meant that a greater number of anomalies are being detected during pregnancy than previously seen and consequently that women being given difficult news about their baby need more specialised counselling support around this time.

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 Fetal Assessment & Prenatal Diagnosis Clinics. Meeting with the Medical Social Worker allows patients to identify another source of support available to them when they are trying to come to terms with a diagnosis.

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

The role of the Medical Social Worker in providing practical support regarding financial assistance, continued to be very important in 2014, when so many families were experiencing financial difficulties. Patients, who have been given difficult news about their baby can feel embarrassed or guilty asking questions about financial assistance at this time. However, it can represent an additional significant burden for families, during what is already a very anxious and stressful time and it is important for patients to know that this support is available.

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

SUBSTANCE MISUSE

	2014	2013	2012	2011
Deliveries to Substance Using Women	68	73	81	71
Number of Referrals to CFA	52 (76%)	50 (68%)	64 (79%)	41 (57.7%)
Discharge Meeting	19	11	19	21
Child Protection Case Conferences	19	21	19	8
Voluntary Care	7	1	6	4
Care – Court Orders	4	12	4	1
Mothers returned home under supervision of a non-drug using relative	7	11	17	14

In 2014, the medical social worker attached to the DOVE team continued to provide emotional and practical support to all women attending this specialist clinic. From an addiction perspective, this included all women who were on a methadone maintenance programme, or using illicit substances during pregnancy.

Referrals can be received from external agencies, such as community social work departments, or any department within the hospital. The highest percentage of referrals received in 2014 was from the Drug Liaison Midwife (DLM). The DLM introduces the Social Work Department to the women attending - this in turn assists in reducing women's fears and anxiety about meeting a social worker.

The DOVE medical social worker carried out psycho-social assessments with women attending the clinic and their partners, focusing on the environmental, social, emotional and physical factors in their lives. A special emphasis is placed on drug use in pregnancy and the risk this carries for a newborn baby. There is a known increase in the potential risk for harm and neglect to children whose parents misuse substances. Therefore, the medical social worker endeavours to establish whether there is a need to refer pregnancies to the Child and Family Agency.

The Child and Family Agency (CFA) is the statutory body responsible for improving wellbeing and outcomes for children. In 2014 the medical social worker referred 52 pregnancies to the Child and Family Agency – in some cases families were already known to this agency and the medical social worker liaised with their social workers during and after the birth of the baby.

The social worker attached to the CFA may convene meetings prior to the birth or discharge of a baby from the hospital, which the medical social worker is obliged to attend. The drug liaison midwife and medical social worker attended 19 Child Protection Conferences during 2014 – this conference is an interagency meeting and involves facilitating the sharing and evaluation of information between professionals and parents. The medical social worker also attended 19 other professional meetings to discuss the care of the baby after birth.

11 babies did not return home with their biological parents immediately after discharge – 7 babies went into foster care under voluntary care orders, 3 babies went into care under interim care orders and 1 baby went into care under a private family arrangement. The number of babies going into voluntary care has risen by 70 per cent this year. However, the overall number of babies received into foster care has decreased by 2 compared with figures in 2013. This does not reflect the trend reported by the CFA, who saw a 23 per cent increase in children in the care of the state since 2007. The Rotunda Hospital is situated within the within an area which has the highest proportion of children in care in the country.

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 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 public health nurses and community-based support services to ensure continuity of care from the hospital to the home environment.

At a time when many families are experiencing financial difficulties, the social worker is involved in informing parents of their welfare entitlements and in enabling them to secure financial assistance with medical and other expenses. Grateful appreciation is expressed to community welfare officers for their support of parents and to the HSE Client Registration Office for their assistance in processing medical cards for babies who require equipment and medication on discharge.

During 2014, 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. For some parents, the transfer of their babies to Dublin means that they are unable to provide their babies with expressed breast milk or visit them on a regular basis because they can't afford the travel costs.

A positive development over the past year was the refurbishment of the Parents' Room attached to the Neonatal Unit. This room provides parents with the opportunity to spend some time away from the Unit in a comfortable environment. Another positive development was the publication of a new edition of A Parent's Guide to the Neonatal Unit. This booklet aims to support parents of babies who have been admitted into neonatal care.

TRAINING - STAFF

Professional Development

S. Devitt, Leadership and Development Programme - 2014, RCSI

S. Devitt attended Children First: National Guidance for the Protection and Welfare of Children 2011 HSE Training – 1 day

D. Kirk, Bereavement Social Worker attended The Complicated Greif Treatment Advanced Training Day, Irish Hospice Foundation, 11/01/14

D. Kirk, Bereavement Social Worker attended The Annual Conference of the Childhood Bereavement Network, 4/10/14

D. Kirk, Bereavement Social Worker, continued to attend quarterly meetings of the Irish Association of Paediatric Palliative Care in 2014

D. Kirk, Bereavement Social Worker attended The Maternity and Neonatal Hospice Friendly Hospital Network meetings in 2014

TRAINING

Domestic Violence Routine Enquiry Training – private clinic – 05/03/14
S.Devitt

Specialist Midwifery services sessions for PHN students – MSW role/ Children First – 05/06/14
S. Devitt

Midwifery Journal Club – Children First – 29/05/14
S.Devitt

Training for Midwifery Students on Miscarriage, Stillbirth and Neonatal Loss – 08/04/14
D. Kirk

Infectious Disease & Substance Misuse in Pregnancy Study Day – Child protection in a Maternity Setting – 15/05/14
H.Lydon

Training Day on Stillbirth and Neonatal Loss, Centre of Midwifery Education – 04/06/14
D. Kirk

Training for Student Public Health Nurses on Medical social Work Services – 09/10/2014
H. Lydon

In-service Training for Midwifery Staff on Miscarriage, Stillbirth and Neonatal Loss – 28/11/14
D. Kirk

Presented at National Clinical Programme for Obstetrics and Gynaecology Early Pregnancy Loss Forum, Early Pregnancy Loss and Social Support, RCPI, 03/12/14
D. Kirk

ACKNOWLEDGEMENTS

The Medical Social Work team would like to acknowledge their grateful appreciation of the following:

- The Friends of the Rotunda and the Samaritan Fund for their financial support;
- The various charitable organisations which respond so generously to our requests for assistance for families in need;
- All the voluntary community-based agencies which provide invaluable services and expertise;
- The lab staff in the Rotunda who generously donate hampers for families every Christmas;
- All our co-workers throughout the hospital, especially the midwives in Bereavement Liaison, DOVE, Drugs Liaison, Teenage Clinic, FAU and the staff of NICU and POPD

Early Pregnancy Assessment Unit

CONSULTANTS:	Dr Sam Coulter-Smith Dr. Karen Flood
ADMINISTRATIVE SUPPORT:	Ms Olivia Boylan
MIDWIFERY:	Ms Suzanne Gillen
REGISTRARS:	January to December 2014
Dr Srwa Khalid	Dr Vicky O'Dwyer
Dr Mark Hehir	Dr Hala Abu
Dr Hugh O'Connor	Dr Siobhan Corcoran
Dr Cathy Monteith	Dr Adeola Adewole
Dr Mashour Nasan	Dr Reem Magzoub
Dr Yulia Shahbuddin	Dr Nada Warreth
Dr Brendan Mc Donnell	Dr Niamh Joyce

The Early Pregnancy Assessment Unit (EPAU) is an essential component of the Rotunda with the provision of specialized care to women in early pregnancy. In 2014, this compromised 4,446 new, return and reassurance appointments in the EPAU. Continued improvements including a streamlined referral pathway, efficient appointment scheduling and staff training allow the delivery of a dedicated service that manages patients in a safe, timely and supportive manner. Further achievements in 2014 include:

- Development of a separate reassurance scan list dedicated to patients with a history of previous miscarriages, ectopic pregnancy or gestational trophoblastic disease. The main benefit of this new sub-clinic is the increased availability of emergency appointments for symptomatic patients. It also serves as a focussed ultrasound list for training of junior NCHDs under direct supervision.

- Development of a system to identify and provide early antenatal booking appointments for patients with previous poor obstetric history (491 patients).

- Provision of support documentation for patients (also available on hospital intranet).

- Continued provision of Registrar training in Viewpoint® and early pregnancy undertaken by Dr Karen Flood and Dr. Jennifer Donnelly.

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

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

Clinical activity:

	2014	(%)	2013	(%)	2012	(%)	2011	(%)
Total number of patients seen	4106		4191		3106		3116	
Repeat EPAU reviews	3067	(75)	2587	(62)	2315	(80)	2214	(71)
Failure to attend for first appointments	63	(6)	145	(4)	200	(7)	114	(4)
Failure to attend for follow-up appointment	277	(9)	270	(10)	144	(6)	178	(8)
Miscarriages	1260		1661		1551		605	
Surgical management of miscarriage	545	(43)	531	(32)	590	(38)	247	(41)
Expectant or medical management	715	(57)	1130	(68)	961	(62)	358	(59)
Ectopic pregnancy or pregnancy of unknown location	187		192		123		51	

Recurrent pregnancy loss service

CONSULTANTS: Dr Karen Flood

MIDWIFE: Patricia Fletcher

The recurrent pregnancy loss clinic was initially developed to provide thorough investigation and follow-up of couples with three or more consecutive miscarriage. As continuity of care is very important in this setting, this service has undergone significant expansion over the last number of years with the provision of dedicated early pregnancy support with frequent ultrasound monitoring and counselling. Patients are then followed from their booking appointment until delivery. Also, all patients with histological confirmation of gestational trophoblastic disease following a miscarriage attend this clinic for counselling and close serum βhCG monitoring with rapid access for review if complications arise.

	2014	%	2013	(%)	2012	(%)
Total number of patient visits	667		499		376	
Return visits	510	(83)	390	(78)	292	(78)
Failure to attend for first appointments	21	(19)	26	(24)	18	(21)
Failure to attend for follow-up appointment	47	(8)	45	(12)	39	(13)
Total number of pregnant women seen	65		62		55	
Livebirth rate	44	(67)	39	(63)	43	(78)

Clinical Risk Management & Claims Department Activity

MS CLAIRE O'MAHONY, CLINICAL RISK & CLAIMS MANAGER

NATIONAL INCIDENT MANAGEMENT SYSTEM

The Rotunda, as the selected pilot site for the National Incident Management System, commenced as early adopters of the live system in September 2014. 14 staff members were trained on the inputting of incidents into the new system, six existing from the Clinical Risk/Health & Safety Teams. Eight additional piloters came on board to representing various departments within the Rotunda with a view to consideration of roll out of the electronic system to local areas and give feedback on the user friendliness of the system and the suitability of the incident categories.

Representatives from the Delivery Suite, NICU, Haemovigilance, Private Clinic, Bereavement Services, Laboratory Quality and Patient services participated in the early adoption of the electronic NIMS system. Feedback was provided to the Clinical Indemnity Scheme with mixed reviews in respect of the user friendliness of the system and with recommendations for improvement in respect of the incident categories and highlighted the need for further consultation with multidisciplinary groups in order to ensure that the categories fit the local needs of healthcare organisations. IT challenges also presented relating to the IT network in place and these were reported to the IT department for investigation and resolution.

INCIDENT REPORTING

Intense efforts were put into the investigation of incidents and sharing of reports with families through 2014 with an objective of ensuring that existing outstanding reviews were completed as well as new reviews.

There are two types of system analysis investigations in use in the Rotunda. The first is the comprehensive style of investigation called a Full Adverse Incident Review (FAIR). The second is a follow up analysis or concise systems analysis investigation. Continued work was put into examining external documents to try to improve the quality of our incident investigations during the year. This included consideration of the Portlaoise Report and also the National Safety Incident Management Policy which was introduced in May 2014. A continual gap analysis was monitored at the Clinical Risk Committee every two months to ensure progress in aligning the Rotunda's incident investigation practices with those outlined in the National Policy and significant changes were made in this regard.

Investigations completed in 2014 are outlined below.

FAIR INVESTIGATIONS

Four FAIR investigations were completed during the year and shared with the patient/family; a maternal death, a case of massive obstetric haemorrhage and two cases of neonatal death.

12 Follow Up (concise) investigations were completed in 2014 and the findings were shared with the patient/family in each case:

Follow up reviews (12)

Late diagnosis of ectopic	
Neonatal Death	x 2
Misdiagnosis of miscarriage	x 2
Partial salpingectomy for ectopic with late follow up of results	x 1
Patient identification & feeding issue	x 2
Retained wick	x 1
Medication incident	x 2

RECOMMENDATIONS

The following actions were recommended and implemented out of FAIR and concise investigations in 2014:

- Education update to NCHDs in respect of best practice ultrasound diagnostics.
- Addendum to RHOET training in respect of importance of carrying bleeps
- Continued education in respect of the Early Warning Score
- Introduction of Neonatal Resuscitation form for improved documentation in emergency resuscitation
- All ectopic samples for processing to be flagged as urgent.
- Ectopic related histology results are now sent to the Gynaecology ward for daily medical review.
- Additional drills on use of bleep system and daily check of the bleep system.
- Continued education in respect of compliance with Management of Early Pregnancy Guidelines
- Education re the importance of documentation and accurate transcription
- Introduction of ready mixed Magnesium Sulphate bags for safety purposes
- Ongoing education on use of the SBAR communication tool
- Further education and drills on the Categorisation of Caesarean Section
- Introduction of a repeat back for verification of patient id by telephone
- Review of process to ensure timely communication process with patient/families in respect of a Serious Incident.

The following recommendations were in progress or outstanding in December 2014:

- Introduction of the named obstetric consultant system has been recommended and adopted as part of the Hospital Strategic Plan
- Introduction of electronic laboratory result reporting has been recommended
- Written Patient Identification Policy
- Written transfer policy

- It was noted that midwifery Staffing ratios are being looked at nationally and that there is a distinct need for this review given the issue of staffing and resources as a contributory factor to some serious incidents.
- The review of allocation of babies for septic work up in the NICU
- A medication self assessment is in process which incorporates plans for review of the process for prescribing and medication administration.
- Multidisciplinary prelabour rupture of membranes guideline to be made available & audit to be undertaken.

TRAINING ON INCIDENT REPORTING AND RISK MANAGEMENT

Over 156 staff members were trained in risk management and documentation in 2014, along with additional attendances at specific training or feedback sessions. A training day was facilitated by the CIS for high grade staff on incident investigation methodology in May 2014 which was well attended by senior clinicians. The joint risk/legal study day at CME continued in 2014 with good attendance and favourable feedback from staff.

The high volume of activity and associated staffing levels continued to feature as a concern in incident trends in 2014. Information was gathered from the incident reporting process and was shared on regular occasions with the HSE highlighting the hospital's evidenced concerns in this regard. Activity along with other risks continued to be a priority risk on departmental risk registers across the hospital and on the corporate risk register during the year.

Ms Claire O'Mahony,
Clinical Risk & Claims Manager

Department of Research

DR. JOANNA GRIFFIN	Director of Research and Academic Affairs
COLIN KIRKHAM	Research Officer
DR. JONATHAN COWMAN	Postdoctoral Researcher
LUCY SHIRREN	Research Assistant
ROBIN GEORGE	Research Assistant

The Rotunda strongly embraces the concept of conducting high quality fundamental and translational research with a view to improving patient care. The establishment of a dedicated department is testament to the commitment of the Rotunda to research.

The Rotunda research community has grown considerably in 2014 with the appointment of a six month postdoctoral fellow and two research assistants. Although we face an increasingly difficult clinical and research environment, the productivity from many of the Rotunda staff continued to grow in 2014, both in quality and volume, reflecting the commitment, determination and expertise of our staff. A total of 37 applications were reviewed by the hospitals Research Ethics Committee and the Research Advisory group reviewed 13 applications.

RESEARCH STRATEGY AND INFRASTRUCTURE

In 2013, the Irish Government announced a major re-structuring of public hospitals into regions with a view to enhancing the delivery of health services. The Rotunda is affiliated with the newly formed hospital group, RCSI Hospitals, and includes Beaumont Hospital, Connolly Hospital, Our Lady of Lourdes Hospital (Drogheda), Louth County Hospital (Dundalk), and Cavan/Monaghan General Hospital with RCSI as an academic partner. Research is a key priority and will be incorporated within the group's strategic aims and objectives.

It is imperative that The Rotunda's research strategy is aligned to the research strategy of the hospital group as well as the shifting funding landscape in Ireland. It must identify ways to promote and support new and existing research projects that can attract industry interest and support. In particular, considerable opportunity exists for the Hospital to enhance links with industry, academia and other hospitals

Research infrastructure is of paramount importance in order to grow the department. Designated research space within the school of midwifery has been identified to house the department offices and a small research laboratory.

STRATEGIC COLLABORATIONS

An important function of the Research Department is forming key strategic collaborations with academic centres, other hospitals and industry. 2014 saw the signing of a Morandum of Understanding (MOU) with RCSI with regard to research. This allows for the appointment of Rotunda staff to Honorary Research

positions at RCSI. Together RCSI and The Rotunda have developed an agreed framework for the provision of support and conditions associated with the administration and management of research funding. We also aim to co-operate in establishing closer research and clinical links.

Research projects have been initiated with DIT and the development of a MOU with DIT is underway in the area of analytical research. On an international scale, a team from the Rotunda visited Alder Hey hospital in Liverpool with a view to develop a partnership fostering collaborative research projects.

CURRENT PROJECTS

An increasingly large volume of high impact research is being undertaken at the Rotunda. In 2014 we saw greater initiation of research projects by Rotunda clinicians (HANDLE, IRELAND, MINT) and recuitment of the hospital to large-scale, multicentre clinical studies (GENESIS, HiP, ANSeR). These studies include both clinical trials of medicinal products (TEST, IRELAND, HiP, MINT) and research on medical devices(ANSeR, HANDLE). Our infectious disease research group saw the initiation of it's first Group B Streptococcus project: Pilot Study assessing Feasibility and Impact of Maternal Group B Streptococcus Screening at Onset of Labour. In addition, as the home of the Perinatal Ireland research consortium, the Rotunda has been involved in many high profile studies such as PORTO and ESPRIT. This range of research engagement at the Rotunda is helping to build a reputation for excellence in conducting clinical trials with great potential for further growth. Key to our current success is our proven ability to recruit patients to clinical studies (eg GENESIS 650 patients, HANDLE 80 patients, TEST 50 patients to end of 2014),as well as effectively communicating with other centres as part of multicentre trials.

STATISTICAL SUPPORT

Colin Kirkham, research officer continues to provide statistical support to hospital staff. For seven consecutive weeks from September 30th to November 11th, a course titled "An Introduction to Research Methodology" was presented and was open to both Rotunda staff and interested individuals from outside institutions. External participants paid a small fee that went to the 'Friends of the Rotunda' Charity and thanks must go the Sheila Thompson for her assistance in organising the course. Jointly presented by Colin Kirkham and Dr. Afif El-Khuffash, the topics covered during the 90 minute sessions were:

- 'The concept of causality and Experimental Design'
- 'Non-Experimental study design and data sampling methods'
- 'Quantitative data types'
- 'Bias and Confounding'
- 'Measurement, Correlation & Regression'
- 'Introduction to Biostatistics'

On the final evening, a tutorial covering many useful features of MS Excel was held. The event was approved for 12 external CPD credits by the RCPI.The intention is to run the course again in 2015.

FUNDING

The level of existing funding remains reasonable and the output continues to exceed expectations in terms of peer-reviewed publications in high quality medical and scientific journals. New research funding from the EU, The Wellcome Trust and partners inthe Pharmaceutical Industry will be targeted to further drive growth in clinical and translational research.

FUTURE DIRECTION

In a research environment where major amounts of funding go towards the development and support of large-scale research centres, The Rotunda must promote the establishment of large multidisciplinary research networks and programmes that are innovative, sustainable and aligned to national and European research funding opportunities.

THE FRIENDS OF THE ROTUNDA

The Friends of the Rotunda are generous supporters of research and researchers in the Rotunda. They continue to provide financial and other supports to researchers whose projects fit within the hospital's research ambition. The Friends of The Rotunda are committed to providing seed funding for projects with a view to funding start-ups that may then progress to applications for larger grants from outside agencies.

THE ROTUNDA HOSPITAL
DUBLIN

4
Friends of the Rotunda

CARING FOR GENERATIONS
SINCE 1745

THE FRIENDS OF THE ROTUNDA is the official fundraising arm of the Rotunda Hospital and a Registered Charity (CHY20091). It was formed in 1971 and incorporated as a Limited Company by Guarantee and Not Having a Share Capital.

The Charity has a firm commitment to transparency, accountability and an adherence to best practice and performance. It publishes annual audited accounts that have been approved by KSi Faulkner Orr Auditors and submitted to the Revenue Commissioners. It is registered with the Charities Regulatory Authority (CRA), and was granted Tax Exemption effective from 4th October 2014, for the purpose of the Charitable Donation Scheme.

The Main Objective of the Charity is to provide a sustainable funding base for:-

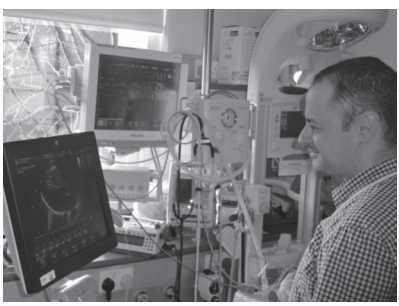
- **Research** into aspects of Maternal and Child Health;
- **Additional and vital equipment** and support services for the Hospital's Specialist Units, Services and Clinics; and
- **Improved amenities** for patients, their families and hospital staff.

The Friends' of the Rotunda awarded €300,000 in grant awards during the year to provide seed funding in support of Rotunda Research.

- HRB / Medical Research Charities Group (MRCG) - Joint Funding Scheme The HANDLE Study: Hemodynamic Assessment in Pregnancy and Neonatal Echocardiography Assessment. RCSI Rotunda Hospital, Principal Investigator: Professor Fergal Malone.

A study identifying abnormal hemodynamic profiles in pregnancy as a predictor of adverse obstetric outcome and characterisation of neonatal myocardial performance in infants.

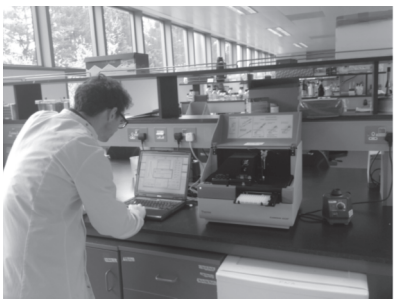
- **Additional Funding for a 1 YR Registrar Post to assist with all enrolment aspects of the HANDLE Trial.**
- **The Use of Targeted Neonatal Echocardiography to Predict Short Term Clinical Sequelae Associated with a Patient Ductus Arteriosus.**



Dr. Afif EL-Khuffash, Consultant Neonatologist & Paediatrician, Rotunda Hospital and Children's University Hospital, Temple Street

- **The MAMMI Study: Maternal Health and Maternal Morbidity in Ireland – Mental Health Strand**, 2 year period, under supervision of Professor Agnes Higgins, Professor Cecily Begley and Deirdre Daly, Trinity College Dublin.

➢ **Thrombinoscope Machine** funded by the Friends has been used to study in great detail how blood clots in tiny babies. The CRISP Research Study is led by Dr. Fionnuala Ní Áinle and her team and is providing critical information that has the potential to change neonatology practice worldwide. This equipment is also being used in other associated research collaborations with the Mater Misericordiae Hospital. Dr. Ní Áinle reported that "patients with liver disease (Cirrhosis) have complicated abnormalities in their blood clotting systems. We have demonstrated, using a state of the art blood coagulation assay (funded by the Friends of the Rotunda) that subtle abnormalities in blood clotting evolve well before standard laboratory tests become abnormal. These findings may act as a marker of future decompensation or serve as a future therapeutic target."



Karl Egan, Postdoctoral Scientist.

➢ **PREDICT Study: Prenatal Diagnosis of Complicated Twins**
Principal Investigators: Dr. Karen Flood, Consultant in Obstetrics/Gynaecology, Rotunda Hospital and Dr. Niamh Murphy, Registrar in Obstetrics/Gynaecology, Rotunda Hospital.

➢ **A Six Week Course on the Introduction to Research Methodology** was organised by Dr. Afif El-Khuffash, Colin Kirkham and the Friends, free of charge to Rotunda Staff. (Awarded 12 CPD Credits).

➢ **Cranial Ultrasound Course** – A one day programme designed to give participants introduction to cranial ultrasound and provide practical hands-on experience for neonatal / paediatric trainees. (Awarded 6 CPD Credits).

The Friends' Board ('The Council') is committed to adopt the Principles of Good Governance as outlined in The Governance Code - A Code of Practice for Good Governance of Community, Voluntary and Charitable Organisations in Ireland.

- Directors: Marie Malone (Secretary), Sylvia Graham, Andrew Wortley.

The Management Executive is run by Sheila Thompson who is responsible for the administration, marketing and development of the organisation.

The Friends of the Rotunda Charity is a member of *The Medical Research Charities Group (MRCG), Fundraising Ireland, Philanthropy Ireland, MyCharity.ie, ICTR and the Wheel*. In January 2014, the Charity was accepted as a Host Institution by the Health Research Board.

FUNDRAISING & EVENTS:

The Charity does not receive any State funding and generates revenue each year by actively encouraging Rotunda staff, patients, their families and friends, to participate in fundraising activity:-

- Rotunda Golf Classic – The Masters' Cup
- The River Erne Kayaking Challenge
- Supermarket Bag Packing
- Christening Party Fundraisers
- Coffee Morning Fundraisers
- Birthday Party Fundraisers
- Sponsored Charity Walks/Runs/Cycles
- Vhi Women's Mini Marathon to Fundraise for Rotunda Neonatal Unit
- Dublin City Marathon
- NY City Marathon
- Sale of Easter Eggs
- Coin Box Collections and Raffles
- Sale of Publications gifted to Rotunda Hospital by Artists / Authors
- Sale of Football Shirts in aid of Rotunda Research Fund
- Sale of Christmas Cards
- Sale of Art illustrating the Rotunda Hospital
- Sale of Designer Silver Jewellery Collection
- Sale of Memorabilia of the Rotunda Hospital
- Tango Fiesta Charity Fundraiser
- Young European Strings Chamber Orchestra Performance in the Pillar Room
- Christmas Swim Fundraiser
- Sky Dive Fundraisers
- Raffles
- Friends of the Rotunda Annual Membership Subscriptions
- Charity Collaboration with 'Ride out for Prems' – Irish Premature Babies Organisation
- Charity Collaboration with Feileacain
- Charity Collaboration with Park Rite Parnell Street Car Park
- Charity Collaboration with local businesses

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

DONOR GIVING:

Provides designated funding for additional vital equipment for the Neonatal Intensive Care Unit and provides funding that would otherwise not be provided for by the State to improve amenities throughout the Hospital.

How we used some of your donations:

➢ The Rotunda's refurbished Neonatal Unit's Parent's Room – a tranquil space for our NICU parents to relax in.

Tea & Coffee Facilities. Five Leather Armchairs. Wall-paper Furnishings.

➢ TCM Combi Monitor for NICU

The condition of an infant or child can take a turn for the worse in a matter of minutes. By continuously monitoring ventilation and oxygenation, the NICU team can detect and quickly react to these changes, avoiding adverse patient outcomes. The TCM Combi monitor gives a valuable trending tool in monitoring tcpCO2 and tcpO2 levels in the incubator or at the bedside. Parents, who wish to remain anonymous, provided funding to purchase this state of the art new equipment for NICU together with a year's supply of consumables to support 40+ babies.

➢ **'Ride Out For Prems Committee' supporting Premature Babies** presented the Friends of the Rotunda with a donation of €20,000 towards the purchase of a new state of the art Echocardiography Machine for the Rotunda's Neonatal Intensive Care Unit.

➢ **Parnell Street Community Fund** awarded the Friends of the Charity with a donation of €350 in aid of the Rotunda Research Programme.

➢ **Planting for the Rotunda's Mortuary Chapel** is provided for from donations received to the Bereavement Support Services Fund.

➢ **Ten Recliner Armchairs** were purchased from the Bereavement Support Services Fund to improve amenities and to provide additional comfort to distressed parents and family members.

➢ **Donations of Cuddle Cots to the Rotunda and the Feileacain Charity** from families that have suffered the loss of a baby. Their generous donation gifts are their way of helping other families who also have had to endure the difficult journey of losing a child.

➢ **Lasting Memories** - These bags were commissioned following feedback from bereaved parents and paid for from donations received to the Bereavement Support Services Fund. They are given to bereaved parents so that they can carefully transport baby's precious possessions and belongings home when leaving hospital.

Donors can give directly to their designated fund which is managed by the Friends of the Rotunda Charity, by using our On-line payments facility for Donations on (www.friendsoftherotunda.ie). Revenue has since been collected to support each of the following areas:

- Neonatal Intensive Care Unit
- Bereavement Support Services
- The Delivery Suite
- The Early Pregnancy Unit
- Rotunda Families in Need
- Fetal Assessment Unit
- Maternity Day Care Unit
- Physiotherapy Department
- Rotunda Research Programme
- Sexual Assault Treatment Unit
- Additional Essential Equipment
- Lactation Unit

The Rotunda Knitters continue to supply the Friends of the Rotunda Charity with their amazing hand crafted knitwear for newborn and premature babies born at the Rotunda. Complimentary Gift Packs are frequently distributed to new parents in celebration of memorable events such as World Prematurity Day, National Breastfeeding Week, St Patricks Day, Spring Awakening, Summer Joy, Winter Warmth and Merry Christmas!

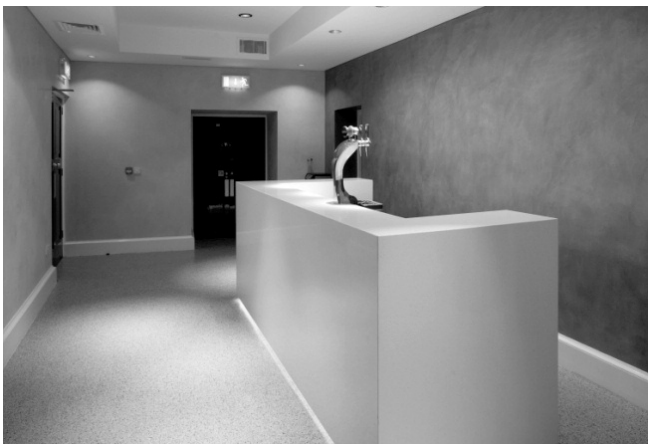
Donations Appeal for Mothers & Baby – supports the Rotunda's Medical Social Work Team who each year, need to provide support to pregnant Mothers who find themselves in a crisis situation with little or no money to care for their new born infants. The Friends of the Rotunda Donations Appeal asks for new or nearly new items of clothing and/or general overnight toiletries for both Mother and baby.

CAFÉ ROTUNDA

The Hospital Shop is located within the main reception of the Hospital and provides a café and retail service to all in the Hospital. Annual rental income from the Shop provides extra revenue to the Friends' Charity to run its administration costs.

THE HIRE OF THE PILLAR ROOM

Another substantial source of revenue in aid of Rotunda Research is generated each year through the hire of The Pillar Room Complex as a facility for private and corporate functions. It is also used by the Hospital as a teaching & examinations / conference centre. Bookings are managed by the Friends of the Rotunda office on 01 872 2377 or email friends@rotunda.ie.



Pictured above is the striking contemporary bar facility within the Pillar Room Complex. The Venue offers Conferencing and Catering facilities and is equipped with a modern PA Sound System and Wi-Fi.

The Council of the Friends of the Rotunda wishes to extend its gratitude to all those who organised and supported fundraising activities during 2014.

Sheila Thompson
Friends of the Rotunda
www.friendsoftherotunda.ie

THE ROTUNDA HOSPITAL
DUBLIN

5
Clinical Audit Department

CARING FOR GENERATIONS
SINCE 1745

CLINICAL AUDIT DEPARTMENT

Clinical Audit Team:

DR SHARON COOLEY	Clinical Audit Lead
MARY WHELAN	Clinical Audit Facilitator
VALERIE JACKSON	Surveillance Scientist
COLIN KIRKHAM	Statistician

The Rotunda Hospital Clinical Audit Department was established in June 2011 under the quality and safety initiative of the Rotunda's Strategic Plan 2011-2013. Clinical audit offers a structured approach to evaluating our care against local, national and international standards.

The Clinical Audit Department functions include:

- Education and support at all stages of the clinical audit pathway. This includes topic selection, researching standards, the application process, audit tool design, data analysis and report writing.
- Assistance in maintaining clinical audit experience which is an essential element of professional competence.
- Monitor all clinical audit activity within the hospital and routinely report on same.
- Monitor local and national audit standards and appraise hospital performance against these standards where appropriate.
- Promote a high standard of practice amongst clinical staff and all healthcare workers undertaking clinical audit.
- Provide a forum for the sharing and dissemination of clinical audit work in the Rotunda, which is facilitated by the use of the clinical audit database, the Biannual Rotunda Audit and Research Day and quarterly audit results meetings.
- Encourage presentation of audit results at inter-hospital meetings e.g. JOGS, SJH Annual Audit Day and TSH Biannual Audit Day.
- Forge professional links with other clinical audit units nationally.

Clinical Audit Group Weekly Meeting

The core group within the Clinical Audit Department meet weekly to discuss and approve audit applications.

Clinical Audit Steering Group

The Clinical Audit Steering Group meets quarterly. Membership of the steering group includes the executive management team, clinical risk department, departmental patient safety representatives, heads of departments and allied health professionals.

Other Internal Meetings

Clinical audit activity reports are submitted to the Quarterly meeting of the Board of Governors, the Patient Safety Meetings and the Monthly Quality and Safety Committee meeting. These reports include details of new audits, completed audits and any immediate actions arising from audits. In addition, any clinical audit with a plan that requires immediate action is highlighted to the Executive Management Team.

Clinical Audit Database
The database of clinical audit activity in the hospital facilitates the production of weekly and quarterly reports on topics audited; departments and clinicians involved, action plans and dates for re-audit. All clinical audits conducted in the hospital are registered on the database. All health professionals who participate in completed clinical audits that have been registered with the hospital receive a certificate of participation in conjunction with their supervisors.

In total 70 clinical audits were registered in 2014 (39 first audits, 24 re-audits and 7 continuous audits).

Clinical Audit Training
The clinical audit team regularly delivers educational sessions in-house on the clinical audit cycle across all disciplines. In 2014 there were 8 information sessions held and a total of 53 staff members attended with representatives from all clinical areas. In addition, external sessions are delivered to midwifery students at Trinity College Dublin.

Clinical Audit Intranet Page
The department has developed a designated page on the hospital intranet where the application forms, excel tool template, guide to clinical audit, key steps to audit success, draft action plan and report template are available to download. Annual and Monthly clinical audit reports are also available to download.

Audit and Research Day
Two successful audit and research days were held within the hospital during the year and kindly sponsored by AbbVie. The Rotunda Medals were awarded to Professor Brain Cleary for his research on the association between methadone use and Pierre Robin sequence and Dr Catherine Finnegan for her audit into the use of methotrexate in the management of ectopic pregnancy. Congratulations also to all our other winners and to all who took presented and took part.

Presentations at External Meetings

- "Audit of Blood Group and Crossmatch" was present by Dr Kim Caulfield on behalf of the anaesthetics and laboratory departments at the International meeting of the Obstetrics Anaesthetist Association.
- "Audit Of Early Pregnancy Attendances And Referrals" was presented by Dr. Jennifer Hogan (moderated poster) at St James's Hospital 7th Annual Multi Disciplinary Research, Clinical Audit & Quality Improvement Seminar 15th May 2014
- "Review of physiotherapy management of 3rd and 4th degree tears" was presented by Cinny Cusack (poster) at St James's Hospital 7th Annual Multi Disciplinary Research, Clinical Audit & Quality Improvement Seminar 15th May 2014
- "An audit of inotrope administration in hypotensive babies of less than 1500 grams" was presented by Dr Attia Kalim (poster) at the Irish Perinatal Society Meeting 2014

- "An Audit of Risk Status of Teenagers at the Booking Visit and throughout Pregnancy" was presented by Debbie Brown at the Nursing & Midwifery Clinical Research Conference in Dublin City University on 12th June 2014 as part of the Nursing & Midwifery REACH (Research Excellence Across Clinical Healthcare) Project

- "An Audit of Risk Status of Teenagers at the Booking Visit and throughout Pregnancy" was presented by Debbie Brown at the at Royal College of Surgeons Symposium of Nursing Initiatives RCSI North Dublin Hospitals Group on 26th November 2014

- " Creation of a Clinical Audit department and Database" was presented by Clinical Audit Department staff at the at Royal College of Surgeons Symposium of Nursing Initiatives RCSI North Dublin Hospitals Group on 26th November 2014

- "Audit of LLETZ Procedures. Are we meeting NCSS Audit Standards?" was presented by Rebecca Horgan at the Royal College of Surgeons in Ireland Undergraduate Research Meeting

- Clinical Audit Department Staff also attended Clinical Audit Study days in the Adelaide and Meath Hospital, St James Hospital and St Vincent's Hospital over the course of the year. We look forward to developing links with other Clinical Audit Departments with hospitals in our group and nationwide.

New Initiatives in 2014

- We effected a change in Clinical Audit Policy to facilitate timely completion of audits. All audits given grace period of 3 months beyond the proposed completion date to complete, after which the audit was marked as abandoned unless an extension request was received

- Audits undertaken by the Health and Safety Department and the Support Services Department are now recorded on the Clinical Audit database to enable a complete repository of audit activity within the hospital.

TABLE OF CLINICAL AUDITS REGISTERED IN 2014

Speciality	Title of Audit	Audit Type
Administration	Audit of iPMS Healthcare Record locations V Physical location	Continuous
Administration	Internal Audit Support Services - Various	Continuous
Administration	Prospective Audit of quality of general Gynaecology OPD referral letters	Re-audit
Anaesthetics	Obstetric Anaesthesia Workforce: A quality improvement audit	First Audit
Anaesthetics	Auditing Theatre nursing/midwifery practice in relation to setting up an arterial / CVP line transducer giving set.	First Audit
Anaesthetics	Audit of Uterine Ablation Therapy Day Case Discharges at Rotunda Hospital	First Audit
Anaesthetics	Timing of administration of post-partum thromboprophylaxis in relation to neuraxial blockade	First Audit
Clinical nutrition and Diabetes in pregnancy	Patients diagnosed with GDM attending group diet and lifestyle education sessions and clinical postnatal outcomes.	First Audit
Gynaecology	To assess the accuracy of colposcopy-directed punch biopsy and small low voltage loop biopsy in the detection of cervical intraepithelial neoplasia (CIN).	First Audit
Gynaecology	Use of methotrexate (MTX) in the management if ectopic pregnancy	Re-audit
Health & Safety	Health & Safety Audits	Continuous
Infection Control	C-section wound infection surveillance	Continuous
Infection Control	Audit to determine if empirical antimicrobial treatment regimen for chorioamnionitis is adequate	First Audit
Laboratory Medicine	Observational audits for obtaining venous blood samples	Continuous
Laboratory Medicine	Audit of Chorionic Villous Sampling and procedure related outcomes (2013)	First Audit
Laboratory Medicine	Turnaround time for provision of red cells during a major haemorrhage	First Audit
Laboratory Medicine	Re-audit of completeness of laboratory request forms	Re-audit
Mental Health	Audit of the process and documentation in healthcare records for referral, review and follow up for patients attending the Mental Health Support team	First Audit
Mental Health	Re Audit of the completion of the Edinburgh Postnatal Depression Scale (EPDS) on discharge	Re-audit
Mental Health	Re audit of the completion of Edinburgh Postnatal Depression EPDS scale on discharge	Re-audit
Neonatology - Medical	Do newborn infants receiving septic screen and IV antibiotics in rotunda meet internationally recognised risk stratification standards for early onset sepsis?	First Audit
Neonatology - Medical	Neonatal respiratory morbidity associated with early term and term deliveries	First Audit
Neonatology - Medical	Audit of Documentation - Stick It, Write It, Sign It, Stamp It	First Audit
Neonatology - Medical	National Comparative Audit of the use of Red Cells in Neonates in 2011 across 3 Tertiary Maternity Units in Dublin.	First Audit
Neonatology - Medical	Documentation in the NICU – is it adequate?	First Audit
Neonatology - Medical	Admission rates to NICU after delivery at gestations (34 – 36+6 weeks)	First Audit
Neonatology - Medical	Prolonged neonatal jaundice: what are we doing and are we complying with standards?	First Audit
Neonatology - Medical	Audit of nursing and medical staff attitudes towards physiotherapy guided positioning of premature infants	First Audit
Neonatology - Medical	Assessment of the number of extubation attempts in ventilated neonates <1500g weight.	Re-audit
Neonatology - Medical	Re-Audit of Attendances to the Paediatric Out-Patient Department – Are babies under 6 weeks old presenting to the appropriate services.	Re-audit
Neonatology - Medical	Audit of practices of breastfeeding in neonates on postnatal wards	Re-audit
Neonatology - Medical	Evaluation of compliance with neonatal septic screening guidelines	Re-audit
Neonatology - Medical	A 2 year Audit of Maintaining Target Temperatures with Therapeutic Hypothermia	Re-audit
Neonatology - Medical	Clinical indication and diagnostic outcomes of Newcastle workups in neonates	Re-audit
Neonatology - Medical	Documentation: Stick it, Write it, Sign it, Stamp it	Re-audit
Neonatology - Nursing	Vermont Oxford Network (VON) Quality Audits - Neonatal Abstinence Syndrome 2014	Continuous

Speciality	Title of Audit	Audit Type
Neonatology - Nursing	Neonatal Golden Hour	First Audit
Nursing/Midwifery	Adherence to NICE guideline "peri operative prevention of hypothermia"	First Audit
Nursing/Midwifery	Audit of CMT Community Midwifery postnatal discharges	First Audit
Nursing/Midwifery	Inadvertent Intraoperative Hypothermia (IPH) Audit	First Audit
Nursing/Midwifery	Audit of compliance with Day Assessment Unit Care Pathways	First Audit
Nursing/Midwifery	Audit of "Add-On" Ultrasound requests to FAU	First Audit
Nursing/Midwifery	Audit of nurse led colposcopy clinic - HPV testing in the management of women with low grade abnormalities at colposcopy	First Audit
Nursing/Midwifery	Audit of staff compliance on the use of LacSure.	First Audit
Nursing/Midwifery	Premature Rupture of Membranes and its management	Re-audit
Nursing/Midwifery	Audit of use of SBAR communication tool in midwifery kardex or maternity chart documentation	Re-audit
Nursing/Midwifery	Early skin to skin contact in delivery suite	Re-audit
Obstetrics	Audit of Inpatient Medical Follow-up of Patients with Intrapartum Complications	First Audit
Obstetrics	Prenatal Diagnosis of Duct Dependant Congenital Heart Lesions	First Audit
Obstetrics	Magnesium Sulphate administration for Fetal Neuroprotection	First Audit
Obstetrics	To assess the completeness of documentation regarding shoulder dystocia in the maternity chart	First Audit
Obstetrics	To assess adherence to guidelines on oxytocinon use on the labour ward	First Audit
Obstetrics	Corticosteroids in Elective Caesarean Section before 38+6/40	First Audit
Obstetrics	How effective are we at managing post operative pain in our hospital?	First Audit
Obstetrics	Audit of Gestational Diabetes Service	First Audit
Obstetrics	Indications for MRI requests from the Rotunda hospital to Mater Radiology unit	First Audit
Obstetrics	Review of postpartum haemorrhage associated with caesarean section at full dilatation	First Audit
Obstetrics	Audit of decision to delivery time for cord prolapsed cases	First Audit
Obstetrics	The diagnosis of missed miscarriage in the Early Pregnancy Assessment Unit in the Rotunda Hospital between 1/11/2013-30/11/20113	Re-audit
Obstetrics	Re-audit of compliance with Guidelines for Management of Third Degree Perineal Tears	Re-audit
Obstetrics	Pyrexia in labour: management & outcome	Re-audit
Obstetrics	An audit of compliance at first Antenatal booking visit with national obesity in pregnancy guideline, Rotunda Obesity guideline and antenatal booking visit guideline.	Re-audit
Obstetrics	Re-Audit of early pregnancy unit (EPAU) referrals	Re-audit
Obstetrics	The diagnosis of missed miscarriage in Early Pregnancy Assessment Unit in the Rotunda Hospital between 01/09/2014-30/09/2014	Re-audit
Obstetrics	Clinical management of Stillbirth >= 24 weeks	Re-audit
Pharmacy	Postnatal pain relief	First Audit
Physiotherapy	Re audit of urinary retention January 2014 to July 2014	Re-audit
Radiology	Radiation issues	Continuous
SATU	STI Screening uptake in SATU patients	First Audit
SATU	Re-audit of attendance rates following referral from SATU to Infectious Diseases Clinic for HIV prophylactic treatment, and completion of follow-up treatment.	Re-audit

THE ROTUNDA HOSPITAL
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6
Staff Publications

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Staff Publications 2014

AJMAL, M. & THORNTON, P. 2014. Cerebral oximetry for cesarean delivery in a Moyamoya case. J Anesth, 28, 799.

ALI, A., GLENNON, K., KIRKHAM, C., YOUSIF, S. & EOGAN, M. 2014. Delivery outcomes and events in subsequent pregnancies after previous anal sphincter injury. Eur J Obstet Gynecol Reprod Biol, 174, 51-3.

ANBAZHAGAN, A., HUNTER, A., BREATHNACH, F. M., MCAULIFFE, F. M., GEARY, M. P., DALY, S., HIGGINS, J. R., MORRISON, J. J., BURKE, G., HIGGINS, S., DICKER, P., TULLY, E., CARROLL, S. & MALONE, F. D. 2014. Comparison of outcomes of twins conceived spontaneously and by artificial reproductive therapy. J Matern Fetal Neonatal Med, 27, 458-62.

BERGIN, S., FERGUSON, W., CORCORAN, S., VARUGHESE, A., BYRNE, D., LAWLESS, M., EOGAN, M. & LAMBERT, J. S. 2014. Symptomatic primary Cytomegalovirus infection in a HIV-positive pregnant woman. Int J STD AIDS, 25, 1041-3.

BLUMENFELD, Y. J., MOMIROVA, V., ROUSE, D. J., CARITIS, S. N., SCISCIONE, A., PEACEMAN, A. M., REDDY, U. M., VARNER, M. W., MALONE, F. D., IAMS, J. D., MERCER, B. M., THORP, J. M., JR., SOROKIN, Y., CARPENTER, M. W., LO, J., RAMIN, S. M., HARPER, M., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2014. Accuracy of sonographic chorionicity classification in twin gestations. J Ultrasound Med, 33, 2187-92.

BOLSTER, F., MOCANU, E., GEOGHEGAN, T. & LAWLER, L. 2014. Transvaginal oocyte retrieval complicated by life-threatening obturator artery haemorrhage and managed by a vessel-preserving technique. Ulster Med J, 83, 146-8.

BUTLER, G. C., AL-ASSAF, N., TARRANT, A., RYAN, S. & EL-KHUFFASH, A. 2014. Using lateral radiographs to determine umbilical venous catheter tip position in neonates. Ir Med J, 107, 256-8.

CAMPBELL, M., SHANAHAN, H., ASH, S., ROYDS, J., HUSAROVA, V. & MCCAUL, C. 2014. The accuracy of locating the cricothyroid membrane by palpation - an intergender study. BMC Anesthesiol, 14, 108.

CATALANO, P. M., MELE, L., LANDON, M. B., RAMIN, S. M., REDDY, U. M., CASEY, B., WAPNER, R. J., VARNER, M. W., ROUSE, D. J., THORP, J. M., JR., SAADE, G., SOROKIN, Y., PEACEMAN, A. M., TOLOSA, J. E., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2014. Inadequate weight gain in overweight and obese pregnant women: what is the effect on fetal growth? Am J Obstet Gynecol, 211, 137 e1-7.

CLEARY, B. J., RICE, U., EOGAN, M., METWALLY, N. & MCAULIFFE, F. 2014. 2009 A/H1N1 influenza vaccination in pregnancy: uptake and pregnancy outcomes - a historical cohort study. Eur J Obstet Gynecol Reprod Biol, 178, 163-8.

CLYMAN, R. I., WICKREMASINGHE, A., MERRITT, T. A., SOLOMON, T., MCNAMARA, P., JAIN, A., SINGH, J., CHU, A., NOORI, S., SEKAR, K., LAVOIE, P. M., ATTRIDGE, J. T., SWANSON, J. R., GILLAM-KRAKAUER, M., REESE, J., DEMAURO, S., POINDEXTER, B., AUCOTT, S., SATPUTE, M., FERNANDEZ, E., AUCHUS, R. J. & PATENT DUCTUS ARTERIOSUS LIGATION/HYPOTENSION TRIAL, I. 2014. Hypotension following patent ductus arteriosus ligation: the role of adrenal hormones. J Pediatr, 164, 1449-55 e1.

CORCORAN, D., MURPHY, D., DONNELLY, J. C. & AINLE, F. N. 2014. The prevalence of maternal F cells in a pregnant population and potential overestimation of foeto-maternal haemorrhage as a consequence. Blood Transfus, 12, 570-4.

DEMPSEY, E. M., BARRINGTON, K. J., MARLOW, N., O'DONNELL, C. P., MILETIN, J., NAULAERS, G., CHEUNG, P. Y., CORCORAN, D., PONS, G., STRANAK, Z., VAN LAERE, D. & CONSORTIUM, H. I. P. 2014. Management of hypotension in preterm infants (The HIP Trial): a randomised controlled trial of hypotension management in extremely low gestational age newborns. Neonatology, 105, 275-81.

DETHO, S., HARRITY, C., AFRIDI, S., EMERSON, G. & MOCANU, E. V. 2014. First birth following natural IVF/ICSI treatment in Ireland. Ir Med J, 107, 23-4.

DOHERTY, A., CARVALHO, J. C., DREWLO, S., EL-KHUFFASH, A., DOWNEY, K., DODDS, M. & KINGDOM, J. 2014. Altered hemodynamics and hyperuricemia accompany an elevated sFlt-1/PlGF ratio before the onset of early severe preeclampsia. J Obstet Gynaecol Can, 36, 692-700.

DONNELLAN, E., KEVANE, B., BIRD, B. R. & AINLE, F. N. 2014. Cancer and venous thromboembolic disease: from molecular mechanisms to clinical management. Curr Oncol, 21, 134-43.

DONNELLY, J. C., COOLEY, S. M., DOYLE, A., MURPHY, D., CORCORAN, D., KUMPEL, B. & NI AINLE, F. 2014. False positive Kleihauer-Betke (acid elution) test caused by elevated maternal fetal haemoglobin F cells. Eur J Obstet Gynecol Reprod Biol, 172, 136-7.

DONNELLY, J. C., PLATT, L. D., REBARBER, A., ZACHARY, J., GROBMAN, W. A. & WAPNER, R. J. 2014. Association of copy number variants with specific ultrasonographically detected fetal anomalies. Obstet Gynecol, 124, 83-90.

DONNELLY, J. C., RAGLAN, G. B., BONANNO, C., SCHULKIN, J. & D'ALTON, M. E. 2014. Practice patterns and preferences of obstetricians and gynecologists regarding thromboprophylaxis at the time of Cesarean section. J Matern Fetal Neonatal Med, 27, 1870-3.

EL-KHUFFASH, A., JAIN, A., CORCORAN, D., SHAH, P. S., HOOPER, C. W., BROWN, N., POOLE, S. D., SHELTON, E. L., MILNE, G. L., REESE, J. & MCNAMARA, P. J. 2014. Efficacy of paracetamol on patent ductus arteriosus closure may be dose dependent: evidence from human and murine studies. Pediatr Res, 76, 238-44.

EL-KHUFFASH, A. F., JAIN, A., WEISZ, D., MERTENS, L. & MCNAMARA, P. J. 2014. Assessment and treatment of post patent ductus arteriosus ligation syndrome. J Pediatr, 165, 46-52 e1.

ELSE, L. J., JACKSON, V., BRENNAN, M., BACK, D. J., KHOO, S. H., COULTER-SMITH, S. & LAMBERT, J. S. 2014. Therapeutic drug monitoring of atazanavir/ritonavir in pregnancy. HIV Med, 15, 604-10.

FINAN, E., SEHGAL, A., KHUFFASH, A. E. & MCNAMARA, P. J. 2014. Targeted neonatal echocardiography services: need for standardized training and quality assurance. J Ultrasound Med, 33, 1833-41.

FLOOD, K., UNTERSCHEIDER, J., DALY, S., GEARY, M. P., KENNELLY, M. M., MCAULIFFE, F. M., O'DONOGHUE, K., HUNTER, A., MORRISON, J. J., BURKE, G., DICKER, P., TULLY, E. C. & MALONE, F. D. 2014. The role of brain sparing in the prediction of adverse outcomes in intrauterine growth restriction: results of the multicenter PORTO Study. Am J Obstet Gynecol, 211, 288 e1-5.

GLEESON, E. M., O'DONNELL, J. S., HAMS, E., NI AINLE, F., KENNY, B. A., FALLON, P. G. & PRESTON, R. J. 2014. Activated factor X signaling via protease-activated receptor 2 suppresses pro-inflammatory cytokine production from lipopolysaccharide-stimulated myeloid cells. Haematologica, 99, 185-93.

GRAVES, S. W., ESPLIN, M. S., MCGEE, P., ROUSE, D. J., LEVENO, K. J., MERCER, B. M., IAMS, J. D., WAPNER, R. J., SOROKIN, Y., THORP, J. M., RAMIN, S. M., MALONE, F. D., O'SULLIVAN, M. J., PEACEMAN, A. M., HANKINS, G. D., DUDLEY, D. J., CARITIS, S. N., EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD, H. & HUMAN DEVELOPMENT MATERNAL-FETAL MEDICINE UNITS, N. 2014. Association of cord blood digitalis-like factor and necrotizing enterocolitis. Am J Obstet Gynecol, 210, 328 e1-5.

HADDOW, J. E., CRAIG, W. Y., NEVEUX, L. M., HADDOW, H. R., PALOMAKI, G. E., LAMBERT-MESSERLIAN, G., MALONE, F. D., D'ALTON, M. E., FIRST & SECOND TRIMESTER RISK OF ANEUPLOIDY RESEARCH, C. 2014. Implications of High Free Thyroxine (FT4) concentrations in euthyroid pregnancies: the FaSTER trial. J Clin Endocrinol Metab, 99, 2038-44.

HEHIR, M. P. & MALONE, F. D. 2014. The dilemma of vaginal breech delivery worldwide. Lancet, 384, 1184.

HONEY, C. P. & BAKER, J. A. 2011. Exploring the impact of journal clubs: a systematic review. Nurse Educ Today, 31, 825-31.

JAIN, A., MOHAMED, A., EL-KHUFFASH, A., CONNELLY, K. A., DALLAIRE, F., JANKOV, R. P., MCNAMARA, P. J. & MERTENS, L. 2014. A Comprehensive Echocardiographic Protocol for Assessing Neonatal Right Ventricular Dimensions and Function in the Transitional Period: Normative Data and Z Scores. J Am Soc Echocardiogr, 27, 1293-1304.

KEVANE, B., DONNELLY, J., D'ALTON, M., COOLEY, S., PRESTON, R. J. & NI AINLE, F. 2014. Risk factors for pregnancy-associated venous thromboembolism: a review. J Perinat Med, 42, 417-25.

KHALIFEH, A., BREATHNACH, F., COULTER-SMITH, S., ROBSON, M., FITZPATRICK, C. & MALONE, F. 2014. Changing trends in diabetes mellitus in pregnancy. J Obstet Gynaecol, 34, 135-7.

LAMBERT, J., JACKSON, V., ELSE, L., LAWLESS, M., MCDONALD, G., LE BLANC, D., PATEL, A., STEPHENS, K. & KHOO, S. 2014. Darunavir pharmacokinetics throughout pregnancy and postpartum. J Int AIDS Soc, 17, 19485.

LAMBERT, J. S., AVRAMOVIC, G., JACKSON, V., SAMMON, N., LALLY, S. & CAMPBELL, F. J. 2014. Investigation into the reasons for maternal default from HIV care postpartum: a 3-year retrospective review. AIDS Patient Care STDS, 28, 1-3.

LANGABEER, S. E., HASLAM, K., LINDERS, J., PERCY, M. J., CONNEALLY, E., HAYAT, A., HENNESSY, B., LEAHY, M., MURPHY, K., MURRAY, M., NI AINLE, F., THORNTON, P. & SARGENT, J. 2014. Molecular heterogeneity of familial myeloproliferative neoplasms revealed by analysis of the commonly acquired JAK2, CALR and MPL mutations. Fam Cancer, 13, 659-63.

LONG, N., NG, S., DONNELLY, G., OWENS, M., MCNICHOLAS, M., MCCARTHY, K. & MCCAUL, C. 2014. Anatomical characterisation of the cricothyroid membrane in females of childbearing age using computed tomography. Int J Obstet Anesth, 23, 29-34.

LOUDEN, K. A. 2014. Platelet reactivity changes significantly throughout all trimesters of pregnancy compared with the nonpregnant state: a prospective study. BJOG, 121, 1580.

MA'AYEH, M., PURANDARE, N., HARRISON, M. & GEARY, M. P. 2014. A rapidly enlarging cutaneous hemangioma in pregnancy. Clin Pract, 4, 644.

MALONE, F. D. 2014. What is new in obstetric antecedents of chronic disease? Best articles from the past year. Obstet Gynecol, 123, 883-4.

MONTEITH, C., NI AINLE, F., COOLEY, S., LAMBERT, J. S., KELLEHER, B., JACKSON, V. & EOGAN, M. 2014. Hepatitis C virus-associated thrombocytopenia in pregnancy: impact upon multidisciplinary care provision. J Perinat Med, 42, 135-8.

MULCAHY, C., MCAULIFFE, F. M., BREATHNACH, F., GEARY, M., DALY, S., HIGGINS, J., HUNTER, A., MORRISON, J., BURKE, G., HIGGINS, S., DICKER, P., MAHONY, R., TULLY, E. & MALONE, F. 2014. Umbilical and fetal middle cerebral artery Doppler reference ranges in a twin population followed longitudinally from 24 to 38 weeks' gestation. Ultrasound Obstet Gynecol, 44, 461-7.

MURPHY, N. C., HAYES, N. E., AINLE, F. B. & FLOOD, K. M. 2014. Jehovah's Witness patients presenting with ruptured ectopic pregnancies: two case reports. J Med Case Rep, 8, 312.

NAASAN, M. N., HARRITY, C., PENTONY, L. & MOCANU, E. 2014. Anti-Mullerian hormone normogram in an Irish subfertile population. Ir J Med Sci.
NEARY, E., NI AINLE, F., COTTER, M. & MCCALLION, N. 2014. Coagulation values in extreme premature infants. Transfusion, 54, 2134.

NOORI, S., MCNAMARA, P., JAIN, A., LAVOIE, P. M., WICKREMASINGHE, A., MERRITT, T. A., SOLOMON, T., SEKAR, K., ATTRIDGE, J. T., SWANSON, J. R., GILLAM-KRAKAUER, M., REESE, J., POINDEXTER, B. B., BROOK, M., AUCHUS, R. J., CLYMAN, R. I., INVESTIGATORS, P. D. A. L. H. T. & INVESTIGATORS, P. D. A. L. H. T. 2014. Catecholamine-resistant hypotension and myocardial performance following patent ductus arteriosus ligation. J Perinatol.

O'DWYER, V., BURKE, G., UNTERSCHEIDER, J., DALY, S., GEARY, M. P., KENNELLY, M. M., MCAULIFFE, F. M., O'DONOGHUE, K., HUNTER, A., MORRISON, J. J., DICKER, P., TULLY, E. C. & MALONE, F. D. 2014. Defining the residual risk of adverse perinatal outcome in growth-restricted fetuses with normal umbilical artery blood flow. Am J Obstet Gynecol, 211, 420 e1-5.

RICHARDSON D, E. M. 2014. Care for Male victims of Sexual Assault. Modern Medicine, 44, 27-28.

RYAN, H. M., MORRISON, J. J., BREATHNACH, F. M., MCAULIFFE, F. M., GEARY, M. P., DALY, S., HIGGINS, J. R., HUNTER, A., BURKE, G., HIGGINS, S., MAHONY, R., DICKER, P., MANNING, F., TULLY, E. & MALONE, F. D. 2014. The influence of maternal body mass index on fetal weight estimation in twin pregnancy. Am J Obstet Gynecol, 210, 350 e1-6.

SALEEMI, M. S., EL-KHUFFASH, A., FRANKLIN, O. & CORCORAN, J. D. 2014. Serial changes in myocardial function in preterm infants over a four week period: the effect of gestational age at birth. Early Hum Dev, 90, 349-52.

SCULLY, M., THOMAS, M., UNDERWOOD, M., WATSON, H., LANGLEY, K., CAMILLERI, R. S., CLARK, A., CREAGH, D., RAYMENT, R., MCDONALD, V., ROY, A., EVANS, G., MCGUCKIN, S., NI AINLE, F., MACLEAN, R., LESTER, W., NASH, M., SCOTT, R., P, O. B. & COLLABORATORS OF THE, U. K. T. T. P. R. 2014. Thrombotic thrombocytopenic purpura and pregnancy: presentation, management, and subsequent pregnancy outcomes. Blood, 124, 211-9.

STRAUB, B. D., ASLANI, A., ENOHUMAH, K., RAHORE, R., CONRICK-MARTIN, I., KUMAR, D., CAMPBELL, M., DICKER, P., MOCANU, E., LOUGHREY, J. P., HAYES, N. E. & MCCAUL, C. L. 2014. Evaluation of the effect of intra-operative intravenous fluid on post-operative pain and pulmonary function: a randomized trial comparing 10 and 30 ml kg(-1) of crystalloid. Ir J Med Sci, 183, 549-56.

TALUKDAR, S., EOGAN, M., CONNOLLY, G. & COULTER-SMITH, S. 2014. The emergency room at the Rotunda Hospital: evidence of an improving service over the past 3 years. Ir J Med Sci, 183, 681-3.

UNTERSCHEIDER, J., DALY, S., GEARY, M. P., KENNELLY, M. M., MCAULIFFE, F. M., O'DONOGHUE, K., HUNTER, A., MORRISON, J. J., BURKE, G., DICKER, P., TULLY, E. C. & MALONE, F. D. 2014. Definition and management of fetal growth restriction: a survey of contemporary attitudes. Eur J Obstet Gynecol Reprod Biol, 174, 41-5.

UNTERSCHEIDER, J., DALY, S., O'DONOGHUE, K., MALONE, F. D. & PERINATAL IRELAND RESEARCH, C. 2014. Critical umbilical artery Doppler abnormalities in early fetal growth restriction and the timing of delivery: an overestimated clinical challenge in daily obstetric practice? Ultrasound Obstet Gynecol, 43, 236-7.

UNTERSCHEIDER, J., O'DONOGHUE, K., DALY, S., GEARY, M. P., KENNELLY, M. M., MCAULIFFE, F. M., HUNTER, A., MORRISON, J. J., BURKE, G., DICKER, P., TULLY, E. C. & MALONE, F. D. 2014. Fetal growth restriction and the risk of perinatal mortality-case studies from the multicentre PORTO study. BMC Pregnancy Childbirth, 14, 63.

VAUGHAN, D. A., CLEARY, B. J. & MURPHY, D. J. 2014. Delivery outcomes for nulliparous women at the extremes of maternal age - a cohort study. BJOG, 121, 261-8.

VILINSKY, A. S., A. 2014. Hpothermia in the newborn: an exploration of its cause, effect and prevention. British Journal of Midwifery, 22, 557-562.

WEISZ, D. E., JAIN, A., TING, J., MCNAMARA, P. J. & EL-KHUFFASH, A. 2014. Non-invasive cardiac output monitoring in preterm infants undergoing patent ductus arteriosus ligation: a comparison with echocardiography. Neonatology, 106, 330-6.

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