MATERNITY SERVICES ANNUAL REPORT 2016

South/South West Hospital Group

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

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Foreword

In welcoming our third consolidated annual report (2016) on maternity services in the South/South West Hospital Group. I wish to acknowledge the growing cooperation within the group. This year, we include additional information on our neonatology services as they continue to develop a group-wide neonatology service across Waterford, South Tipperary, Cork and Kerry. The Report sets out service and performance data for 2016 and places before the public a wide array of numeric information on the maternity and neonatology services of the South/South West Hospital Group. As we move into our third year, we can begin to identify trends that in future years will enable us to discern our direction of development and measure it against similar national and international comparators.

Towards the end of the year, the South/South West Hospital Group established a group clinical directorate for maternity services embracing neonatology and gynaecology. This fulfils the expectation expressed in our last report and represents a major initiative in clinician management that will strengthen what the National Maternity Strategy* describes as "the sharing of expertise within (maternity) networks" and "the operational resilience of smaller units". Work is ongoing on codifying governance and management structures and setting down protocols and procedures for the new Directorate.

It is my pleasure to acknowledge the continuing work and dedication of our staff who deliver services for women and their newborn infants in our four units in Waterford, Clonmel, Cork and Tralee, of the managers who support them and the primary care practices who refer to us. I offer sincere thanks to you all.

Professor Geraldine McCarthy
Chairperson of the South/South West Hospital Group
and Professor Emeritus, University College Cork.

*Creating a Better Future Together: National Maternity Strategy 2016-2026


South Tipperary
General Hospital
University Hospital
Kerry
University Hospital
Waterford
Cork University
Maternity Hospital

Introduction

The South/South West Hospital Group serves a population of over 800,000 people and every day more than 8,800 staff contribute to our results in care, cure, research and education.

2016 was the year that saw the continued development of the South/South West Hospital group as the corporate management entity over the nine hospitals in the group and the growth of a more integrated approach to the delivery of acute services. It is of course a work in progress but each year brings the reality of a unified hospital trust that much closer. There are four maternity units in our group, namely Cork University Maternity Hospital, University Hospital Waterford, University Hospital Kerry and South Tipperary General Hospital. In 2016 there were 11,745 mothers who delivered 12,011 babies in SSWHG maternity units which translates to an average of 33 births per day across the group. This represents approximately 19% of all births in the Republic of Ireland. This figure is similar to 2015 and slightly higher than the national drop in births of 3% from to 65,909 (2015) to 63,897 (2016).

Admissions to our neonatal units include many of the most demanding cases we care for. The new national standards requiring the transfer of neonates at 28 weeks or less to the regional centre are working satisfactorily. This is only possible if the referring units accept back responsibility for the neonates once they are old enough and healthy enough and this is indeed what is happening. In this report we are able to include data on Very Low Birthweight Infants as defined by the Neonatal Intensive Care Outcome and Research Evaluation (NICORE) Ireland groups; that definition is "any infant who is born alive at your hospital/in your hospital group and whose birth weight is between 401 and 1500 grammes *or* whose gestational age is between 22 weeks 0 days and 29 weeks 6 days (inclusive)."

Data on perinatal mortality is included again this year. Next year's report will be able to report significant progress on gynaecology waiting list management. As of 2016 however, it continues to be our biggest clinical risk.

Sincere gratitude is offered to the staff of our four Maternity Units in providing the data for this report. Their commitment and time to this process is ever appreciated.

Cork University Maternity Hospital

South Tipperary General Hospital

University Hospital Kerry

University Hospital Waterford

Our Hospitals

Cork University Maternity Hospital

Cork University Maternity (CUMH) Hospital opened in 2007 and involved the amalgamation of maternity services from Erinville Hospital, St. Finbarr's Maternity Hospital, Bon Secours Maternity Unit and gynaecology services from Cork University Hospital. In 2016 CUMH delivered 7,629 babies and over 16,000 patient contacts were recorded in gynaecology and colposcopy clinics.

CUMH maternity services comprises of:

- 12 bedded delivery suite
- 87 bedded postnatal ward
- 31 bedded antenatal ward
- 24 bedded gynaecology ward (16 gynaecology and 8 other)
- Stand alone outpatients department for antenatal, gynaecology, urodynamics, colposcopy & midwifery led scanning department.

Maternity Services at CUMH support the education of undergraduate Nursing & Midwifery Students from University College Cork (UCC).

Medical students from UCC also gain clinical experience as part of their placement and this lends to an interdisciplinary teaching environment. Facilities in the Department of Obstetrics and Gynaecology at CUMH allow students to participate in lectures with study space and video conferencing facilities to link with their colleagues at other sites.

The educational team of the Centre for Midwifery Education, CUMH is committed to the development and provision of programmes of education and training for registered Midwives and Nurses, to support service delivery. All programmes support the on-going maintenance of clinical competence and promote evidence based care.

South Tipperary General Hospital

South Tipperary General Hospital (STGH) opened in 2008. This hospital provides acute hospital services for the population of County Tipperary. In 2016, STGH delivered 1,032 babies and provided gynaecology and colposcopy clinics.

STGH Maternity Services comprises of:
- 2 bedded delivery suite and obstetric theatre
- 28 bedded maternity ward
- 10 bedded gynaecology ward
- Stand-alone outpatients department for antenatal, gynaecology, urodynamics, colposcopy & midwifery led scanning department.

Maternity Services at STHG support the education of undergraduate Medical students from University College Cork and University of Limerick and undergraduate Nursing & Midwifery students from University College Cork.

Facilities allow students to participate in lectures with study space and video conferencing facilities to link with their colleagues at other sites.

University Hospital Kerry

University Hospital Kerry (UHK) opened in 1984. The hospital provides acute general hospital services to the population of Co. Kerry. In 2016, UHK delivered 1,410 babies and 1,326 patients contacts were recorded in gynaecology clinics.

UHK maternity services comprises of:
- 4 bedded delivery suite
- 24 bedded postnatal/gynaecology ward
- 9 bedded antenatal ward
- Stand-alone outpatients department for antenatal, gynaecology, urodynamics, & midwifery led scanning department.

Maternity Services support the education of undergraduate Nursing Students from the Institute of Technology Tralee (ITT).

Medical students from UCC also gain clinical experience as part of their placement and this lends to an interdisciplinary teaching environment. Facilities at UHK allow students to participate in lectures with study space and video conferencing facilities to link with their colleagues at other sites.

University Hospital Waterford

University Hospital Waterford (UHW) opened in 1952 (Ardkeen Hospital) and is one of the busiest regional hospitals in the Country. In 2016, UHW delivered 1,940 babies and over 10,041 patient contacts were recorded in gynaecology and colposcopy clinics.

UHW Maternity Services comprises of:
- 4 bedded delivery suite with a 3 bedded 1 stage room
- Obstetric theatre on delivery suite with a recovery room
- 24 bedded postnatal ward
- 32 bedded antenatal gynaecology ward that houses the early pregnancy unit and a specifically nominated bereavement room
- Stand-alone outpatients department for antenatal, gynaecology, urodynamics, colposcopy & midwifery led scanning department.

Maternity Services at UHW support the education of undergraduate Midwifery Students from the University of Limerick (UL) and undergraduate Nursing Students from Waterford Institute of Technology (WIT) as well as elective placements of Postgraduate Midwifery Students from Cork (UCC) & Dublin to the Integrated Hospital and Community Midwifery Service (IHCMS) to complete the midwifery and nursing education programme in Waterford.

Medical students from University College Cork (UCC) and Royal College of Surgeons Ireland (RCSI) also gain clinical experience as part of their placement and this lends to an interdisciplinary teaching environment. Facilities allow students to participate in lectures with study space and video conferencing facilities to link with their colleagues at other sites.

Obstetric Report

Maternal and Delivery Characteristics

Table 1.0: Frequency (N) of maternities and births 2014 - 2016					
	SSWHG	CUMH	STGH	UHK	UHW
Mothers delivered 2016	**11,745**	**7,442**	**1,017**	**1,389**	**1,897**
Mothers delivered 2015	*12,343*	*7,903*	*1,054*	*1,389*	*1,997*
Mothers delivered 2014	*12,473*	*7,878*	*1,434*	*1,087*	*2,074*
Babies born >500g 2016	**12,011**	**7,629**	**1,032**	**1,410**	**1,940**
Babies born >500g 2015	*12,620*	*8,113*	*1,062*	*1,406*	*2,039*
Babies born >500g 2014	*12,746*	*8,071*	*1,454*	*1,102*	*2,119*

Figure 1.1: Distribution of maternal and delivery characteristics 2016 - Nationality

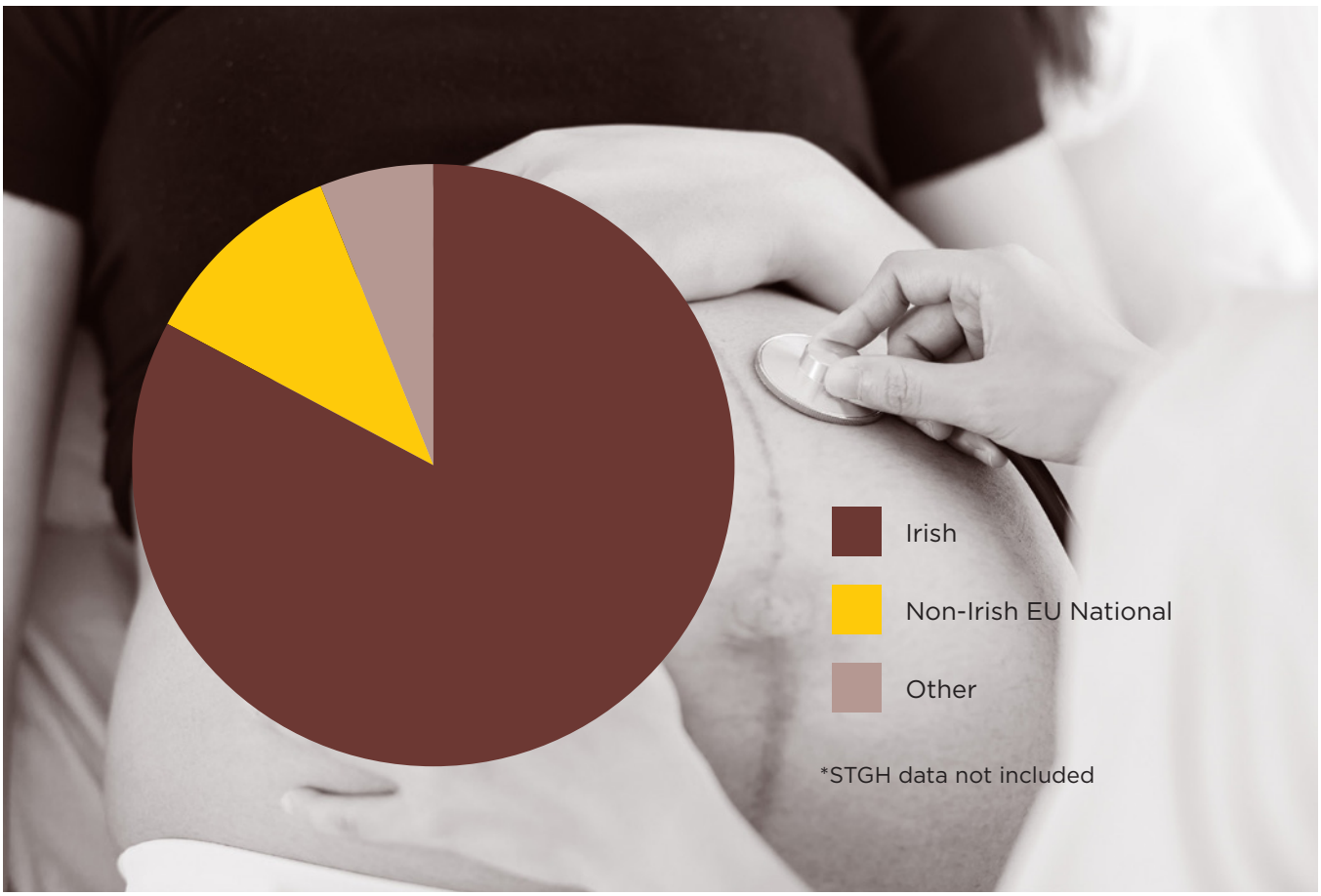

Table 1.1a: Distribution of maternal and delivery characteristics 2016					
Gestations	**SSWHG Frequency N (%) (N=11,745)**	**CUMH Frequency N (%) (N=7,442)**	**STGH Frequency N (%) (N=1,017)**	**UHK Frequency N (%) (N=1,389)**	**UHW Frequency N (%) (N=1,897)**
Singleton	**11,481 (97.7)**	7,256 (97.5)	1,002 (98.5)	1,368 (98.5)	1855 (97.7)
Twin	**262 (2.2)**	185 (2.4)	15 (1.5)	21 (1.5)	41 (2.2)
Triplet	**2 (0.1)**	1 (0.1)	–	–	1 (0.1)

Table 1.1b: Distribution of maternal and delivery characteristics					
	SSWHG Frequency N (%) (N=11,745)	**CUMH Frequency N (%) (N=7,442)**	**STGH Frequency N (%) (N=1,017)**	**UHK Frequency N (%) (N=1,389)**	**UHW Frequency N (%) (N=1,897)**
Nulliparous	**4,324 (36.8)**	2,830 (38.0)	336 (33.0)	452 (32.5)	706 (37.2)
Multiparous	**7,421 (63.2)**	4,612 (62.0)	681 (67.0)	937 (67.5)	1,191 (62.8)

Table 1.2: Distribution of spontaneous and instrumental vaginal births for all infants, 2016					
	SSWHG N (%) (N=12,011)	CUMH N (%) (N=7,629)	STGH N (%) (N=1,032)	UHK N (%) (N=1,410)	UHW N (%) (N=1,940)
Vaginal delivery (Total)	**8,100 (67.4)**	**5,090 (66.7)**	**646 (62.6)**	**921 (65.3)**	**1,443 (74.4)**
Spontaneous vaginal	**6,096 (75.3)**	3,740 (73.5)	512 (79.3)	689 (74.8)	1,155 (80.0)
Ventouse	**1,563 (19.3)**	1057 (20.8)	108 (16.7)	172 (18.7)	226 (15.7)
Forceps	**333 (4.1)**	196 (3.9)	23 (3.5)	59 (6.4)	55 (3.8)
Combined instrumental	**57 (0.7)**	57 (1.1)	-	-	-
Vaginal breech	**51 (0.6)**	40 (0.7)	3 (0.5)	1 (0.1)	7 (0.5)

Table 1.3: Incidence of caesarean delivery for all maternities, 2016					
	SSWHG N (%) (N=11,745)	CUMH N (%) (N=7,442)	STGH N (%) (N=1,017)	UHK N (%) (N=1,389)	UHW N (%) (N=1,897)
Caesarean delivery	**3,753 (31.9)**	**2,420 (32.5)**	**376 (36.97)**	**489 (35.2)**	**468 (24.7)**
Elective	**1,819 (48.5)**	1,165 (48.1)	189 (50.3)	24 (45.8)	241 (51.5%)
Emergency	**1,934 (51.5)**	1,255 (51.9)	187 (49.7)	265 (54.2)	227 (48.5)

Elective and emergency figures are calculated on the total number of caesarean deliveries

Table 1.4: Incidence of maternal high dependency unit admission and hospital readmission					
Admission Status	SSWHG N (%) (N=11,745)	CUMH N (%) (N=7,442)	STGH N (%) (N=1,017)	UHK N (%) (N=1,389)	UHW N (%) (N=1,897)
Admission to HDU	**508 (4.3)**	487 (6.5)	0	13 (0.9)	8 (0.4)
Readmission after delivery	**309 (2.6)**	258 (3.5)	0	0	51 (2.7)

No HDU unit in STGH

Maternal Mortality

There was one maternal mortality recorded in 2016.

Mortality A was the case of a patient who died secondary to a Road Traffic Accident (Classification: Coincidental)

Perinatal Mortality

Table 2.0: Perinatal deaths

Perinatal deaths	SSWHG (N=12,011)	CUMH (N=7,629)	STGH (N=1,032)	UHK (N=1,410)	UHW (N=1,940)
Antepartum deaths	38	21	2	6	9
Intrapartum deaths	2	2	0	0	0
Stillbirths	40	23	2	6	9
Early neonatal deaths	20	12	3	1	4
Late neonatal deaths	6	2	0	0	4
Infant deaths	3	2	0	0	1

** **Stillbirth:** Baby delivered without signs of life from 24 weeks gestation or with a birthweight ≥500g.[1]
Early neonatal death: Death of a live born baby occurring within 7 completed days of birth.
Late neonatal death: Death of a live born baby occurring after the 7th day and within 28 completed days of birth.

[1] Stillbirths Registration Act, 1994.
**As used by the National Perinatal Epidemiology Centre

Table 2.1: Perinatal mortality rates					
	SSWHG (N=12,011)	CUMH (N=7,629)	STGH (N=1,032)	UHK (N=1,410)	UHW (N=1,940)
Overall perinatal mortality rate per 1000 births	**5.0**	4.6	4.8	5.0	6.7
Perinatal mortality rate corrected for congenital anomalies	**3.0**	2.6	2.9	2.8	4.6
Stillbirth rate per 1000 births	**3.3**	3.0	1.9	4.3	4.6
Stillbirth rate corrected for congenital anomalies	**2.0**	1.6	1.9	2.8	3.1
Early neonatal death rate per 1000 births	**1.7**	1.6	2.9	0.7	2.1
Early neonatal death rate corrected for congenital anomalies	**1.0**	1.1	1.0	0.0	1.6

All infants weighing 500g and/or over 24 weeks' gestation are reported.
All mothers who booked and delivered are included

CUMH Case Reviews

Table 2.2: CUMH Stillbirths (n=23)	
Cause	Totals
Congenital anomalies	11
Placental abruption	2
Placental (all causes)	7
Fetal	3

Table 2.3: CUMH case review – Intrapartum deaths (n=2)				
Parity	Gestation (Wks.)	Mode of delivery	BW (g)	Conclusion
0	37+6	SVD	2100	Trisomy 18
0	39+4	Instrumental	3410	Meconium induced myonecrosis

Table 2.4: CUMH case review – Antepartum deaths (n=21)				
Parity	**Gestation (Wks.)**	**Mode of delivery**	**BW (g)**	**Conclusion**
2	24+3	SVD	540	Placental insufficiency Hypercolied umbilical cord with fetal vascular malperfusion
1	37+6	SVD	2860	IUFD due to feto-maternal haemorrhage occurring on a background of pregnancy vulnerability due to the presence of placental distal villous immaturity
2+3	37	Elective C/S	1980	Trisomy 18
1+1	36+6	SVD	1680	Trisomy 13
1+2	39+4	SVD	2680	Placental insufficiency caused by a combination of placental hypoplasia, delayed villous maturation and fetal vascular malperfusion
0+1	33+4	SVD	2100	Placental insufficiency caused by a combination of hypercoiled umbilical cord, fetal vascular malperfusion and delayed villous maturation
2	26+4	SVD	740	Trisomy 18
2+1	35/40	Elective C/S	1300	Trisomy 18
1	37	SVD	210	Trisomy 18
2+1	36+5	SVD	2980	Placental abruption, clinical and placental evidence
3+1	26+5	C/S	360	Twin-twin transfusion syndrome
2+1	35+4	SVD	2960	Single dysplastic kidney, pulmonary hypoplasia, HLHS, thymic hypoplasia
2	31+1	SVD	1500	IUD due to fetal vascular malperfusion as a result of acute thrombosis of an umbilical artery
1	36+6	SVD	2840	Placental abruption
1	24+2	SVD	540	Abnormal- Trisomy 21
3+4	29+6	Breech	1260	Renal agenesis
2	26+4	SVD	1040	Non-immune hydrops with anaemia and heart failure secondary to suspected fetomaternal haemorrhage
0	26	Breech	480	Placental insufficiency due to maternal vascular malperfusion, fetal vascular malperfusion and retroplacental haemorrhage
0	26	SVD	600	Multiple congenital abnomalies with placental insufficiency
0	28+1	SVD	690	Abnormal-Trisomy 18
2	37+4	SVD	2440	Diffuse severe delayed villous maturation, fetal vascular malperfusion with a hypercoiled cord

Table 2.5: CUMH Early neonatal deaths (n=12)	
Cause	**Totals**
Congenital anomalies	4
NEC/Perf	1
Prematurity	3
Pulmonary hypoplasia	1
Non Immune Hydrops	1
Hypovolemic shock 2nd to Vasa Previa	1
Potters Sequence	1

Table 2.6: CUMH case review – Early neonatal deaths (n=12)				
GA	**BW (g)**	**Age (days)**	**Cause of Death**	**Place**
24	660	36 (mins)	Extreme Prematurity	CUMH
34	–	3	NEC/Perf	CUMH
38	2120	100 (mins)	Trisomy 18	CUMH
22+4	620	1	Extreme Prematurity	CUMH
35+5	3003	40 (mins)	Non Immune Hydrops	CUMH
37+2	1880	1	Trisomy 18	CUMH
38	1740	10 (mins)	Anencephaly	CUMH
25	800	1	Prematurity	CUMH
26+2	700	1	Potters Sequence	CUMH
37	1800	4	Encephalocele	CUMH
36+2	2730	1	Hypovolemic shock 2nd to Vasa Previa	CUMH
29+4	1420	2	Pulmonary hypoplasia	CUMH

Table 2.7: CUMH case review – Late neonatal deaths (n=1)				
GA	**BW (g)**	**Age (days)**	**Cause of Death**	**Place**
23	620	10	Extreme Prematurity	CUMH

Table 2.8: CUMH case review – Infant deaths (n=2)				
GA	**BW (g)**	**Age (days)**	**Cause of Death**	**Place or Transferred to**
24+6	–	38	Extreme Prematurity	CUMH
41+4	3560	110	Lissencephaly	CUMH

STGH Case Reviews

Table 2.9: STGH Stillbirths (n=2)	
Cause	**Totals**
Cord	2

Table 2.10: STGH case review – Stillbirths (n=2)				
Parity	**Gestation (Wks.)**	**Mode of delivery**	**BW (g)**	**Conclusion**
1+0	33+2	Emergency C/S	Twin 1=1980	Cord entanglement in mono-amniotic
1+0	33+2	Emergency C/S	Twin 2=2340	Cord entanglement in mono-amniotic

Table 2.11: STGH – Early neonatal deaths (n=3)	
Cause	**Totals**
Congenital anomalies	2
APH	1

Table 2.12: STGH case review – Early neonatal deaths (n=3)				
GA	**BW (g)**	**Age (days)**	**Cause of Death**	**Place of death**
38+6	2440	2hrs + 15 mins old	Transposition of the great arteries	STGH
32+3	1680	9hrs old	Thanatophoric Dysplasia + APH	STGH
30+4	1470	1 day + 5 hrs old	APH + Velementous Cord Insertion @ 30+4 Wks	NMH

UHK Case Reviews

Table 2.13: UHK – Stillbirths (n=6)	
Cause	**Totals**
Congenital anomalies	2
Query IUGR	1
Placental Abruption	1
Fetal	1
Unexplained	1

Table 2.14: UHK case review – Antepartum deaths (n=6)			
Gestation (Wks.)	**Mode of delivery**	**BW (g)**	**Conclusion**
37+5	SVD	–	No Fetal Heart on admission. PM normal. Histology retroplacental haematoma. Cytogenetics normal
35+5	SVD	2930	Poorly controlled diabetic. No FH on routine a/n visit.2.93kg. histology single uterine artery in cord. GBS isolated. Cytogenetics Trisomy 21.
Term+3	SVD	–	Admitted with pains and ↓FM's. No FH on admission. Normal histology, cytogenetics, placental swabs. Unexplained
35+1	SVD	–	Presented with PPROM and pains. No FH. Hx ↓FM's reported. Declined PM. Normal male infant. Severe acute Chorioamnionitis.
24	SVD	–	Poor obs hx. PM done. Cytogenetics = abnormal chromosome 20
37+6	SVD	2640	Presented with no FM's and no Fh present. Diet controlled gest diabetic. PM, Cytogenetics histology swabs done. Result Normal Female fetus, normal Karyotype. Normal histology. Query IUGR

Table 2.15: UHK – Early neonatal deaths (n=1)	
Cause	**Totals**
Congenital anomalies	1

Table 2.16: UHK case review – Early neonatal deaths (n=1)				
GA	**BW (g)**	**Age (days)**	**Cause of Death**	**Place of death**
36+4	–	6	PPROM 30hrs: Hypoplastic left Heart – not suitable for surgery	Crumlin

UHW Case Reviews

Table 2.17: UHW – Stillbirths (n=9)	
Cause	**Totals**
Congenital anomalies	3
Placental abruption	1
Placental (all causes)	1 APH
Fetal	2
Infection (GBS)	1
Unexplained / Unclassified	1

Table 2.18: UHW case review – Antepartum deaths (n=9)				
Parity	**Gestation (Wks.)**	**Mode of delivery**	**BW (g)**	**Conclusion**
2+0	37+3	Caesarean Section	2750	Abruption
3+0	34+5	Caesarean Section	1030	Congenital diaphragmatic hernia
1+0	39+3	SVD	2753	Unexplained
0+1	35+3	SVD	665	CNS Anomoly
2+0	35+2	SVD	2090	Antepartum haemorrhage
1+0	28+3	SVD	310	LBW unknown
1+0	40+4	SVD	3630	Fetal Vasculitis
2+0	25+6	SVD	610	LBW unknown
1+0	27+6	Vaginal Breech	310	Trisomy 18

Neonatal deaths

Table 2.19: UHW – Early neonatal deaths (n=4)	
Cause	**Totals**
Congenital anomaly	1
Prematurity	3

Table 2.20: UHW case review – Early neonatal deaths (n=4)				
GA	BW (g)	Age (days)	Cause of Death	Place of death
22+6 weeks	630	1 hr	Prematurity	UHW
32 weeks	1820	1 Hr	Congenital anomalies	UHW
22+6 weeks	520	30 mins	Prematurity	UHW
26+5 weeks	910	1 day	Prematurity with IVH	NMH

Table 2.21: UHW case review – Late neonatal deaths (n=4)				
GA	BW (g)	Age (days)	Cause of Death	Place of death
39+1	3000	9	Fetal Maternal Haemorrhage	NMH
39	3450	17	Spinal Muscular Atrophy (SMA)	CUMH
42	3500	13	HIE Maternal Sepsis	CUMH
40+4	3980	10	Metabolic Disorder	Temple Street

Table 2.22: UHW case review – Infant death (n=1)				
GA	BW (g)	Age (days)	Cause of Death	Place of death
25+3	825	33	Prematurity	Temple street

Perinatal pathology

Table 2.23: Autopsy Rate					
	SSWHG Frequency N(%)	CUMH Frequency N(%)	STGH Frequency N(%)	UHK Frequency N(%)	UHW Frequency N(%)
Stillbirths	24 (60.0)	18 (78.3)	0 (0)	4 (66.7)	2 (22.2)
Early Neonatal Deaths	8 (40.0)	7 (58.3)	1 (33.3)	0 (0)	0 (0)

Overall autopsy rate for Stillbirths and Early Neonatal Deaths is 53.3%

Neonatal Report

Table 3.0: Number of admissions to the Neonatal Unit by year					
2016	**SSWHG N(%) (N=12,011)**	**CUMH N(%) (N=7,629)**	**STGH N(%) (N=1,032)**	**UHK N(%) (N=1,410)**	**UHW N(%) (N=1,940)**
	2,170 (18.1)	1,187 (15.6)	241 (23.4)	295 (20.9)	447 (23.0)
2015	**SSWHG N(%) (N=12,620)**	**CUMH N(%) (N=8,113)**	**STGH N(%) (N=1,062)**	**UHK N(%) (N=1,406)**	**UHW N(%) (N=2,039)**
	2,340 (18.5)	1,363 (16.8)	305 (28.7)	247 (17.6)	425 (20.8)
2014	**SSWHG N(%) (N=12,746)**	**CUMH N(%) (N=8,071)**	**STGH N(%) (N=1,454)**	**UHK N(%) (N=1,102)**	**UHW N(%) (N=2,119)**
	2,252 (17.7)	1,328 (16.5)	271 (18.6)	234 (21.2)	419 (19.8)

Very Low Birthweight Infants (VLBW)

As per the Neonatal Intensive Care Outcome and Research Evaluation (NICORE) Ireland groups, the definition of VLBW is any infant who is born alive at your hospital/in your hospital group and whose birth weight is between 401 and 1500 grams *or* whose gestational age is between 22 weeks 0 days and 29 weeks 6 days (inclusive).

Table 3.1: VLBW Infants born to the Neonatal Unit					
	SSWHG (N=356)	**CUMH (N=259)**	**STGH (N=9)**	**UHK (N=23)**	**UHW (N=65)**
2016	112	90	2	8	12
2015	131	95	4	8	24
2014	113	74	3	7	29

Table 3.2: Number of VBLW infants 2014 – 2016					
	SSWHG N(%) (N=6,762)	**CUMH N(%) (N=3,878)**	**STGH N(%) (N=817)**	**UHK N(%) (N=776)**	**UHW N(%) (N=1,291)**
	356 (5.3)	259 (6.7)	9 (1.1)	23 (3.0)	65 (5.03)

Table 3.3: Gestational age of VLBW infants admitted to NNU 2014 – 2016					
	SSWHG* N(%) (N=353)	CUMH N(%) (N=259)	STGH** N(%) (N=9)	UHK N(%) (N=23)	UHW N(%) (N=65)
22 – 23 + 6	13 (3.7)	12 (4.6)	1 (11.1)	0 (0)	0 (0)
24 – 26 + 6	79 (22.4)	63 (24.3)	2 (22.2)	3 (13.0)	11 (16.9)
27 – 29 + 6	130 (36.8)	96 (37.1)	0 (0)	9 (39.1)	25 (38.5)
30 – 31 + 6	100 (28.3)	68 (26.3)	2 (22.2)	4 (17.4)	26 (40.0)
>32	31 (8.8)	20 (7.7)	1 (11.1)	7 (30.4)	3 (4.6)

*Note 3 cases missing for 2014 Data **2014 Data unavailable for STGH

Table 3.4: Birthweight of VLBW infants admitted to NNU 2014 – 2016					
	SSWHG* N(%) (N=353)	CUMH N(%) (N=259)	STGH** N(%) (N=9)	UHK N(%) (N=23)	UHW N(%) (N=65)
<501	6 (1.7)	6 (2.3)	0 (0)	0 (0)	0 (0)
501 – 750	57 (16.1)	49 (18.9)	3 (33.3)	1 (4.3)	4 (6.2)
751 – 1000	67 (19.0)	53 (20.5)	0 (0)	4 (17.4)	10 (15.4)
1001 – 1250	85 (24.1)	56 (21.6)	1 (11.1)	9 (39.1)	19 (29.2)
1251 – 1500	138 (39.1)	95 (36.7)	2 (22.2)	9 (39.1)	32 (49.2)

*Note 3 cases missing for 2014 Data **2014 Data unavailable for STGH

Table 3.5: Additional clinical demographics of VLBW infants 2014 – 2016					
Measure	SSWHG (356)*	CUMH (259)	STGH (9)**	UHK (23)	UHW (65)
Inborn	325	243	6	18	58
Male	192	142	4	12	34
Prenatal Care	180	88	6	23	63
Chorioamnionitis	9	8	0	0	1
Maternal Hypertension	52	27	1	3	21
Antenatal Steroids	298	214	4	19	61
C-Section	191	127	5	16	43
Antenatal Magnesium Sulphate	143	101	2	6	34
Multiple Gestation	58	36	2	3	17
Congenital Malformation	6	1	0	4	1
Small for Gestational Age	41	17	2	10	12

*Note 3 cases missing for 2014 Data **2014 Data unavailable for STGH

Table 3.6: Summarises respiratory support for VLBW infants 2014 – 2016					
Intervention	**SSWHG (356)***	**CUMH (259)**	**STGH (9)****	**UHK (23)**	**UHW (65)**
Intubation in delivery suite	141	100	5	9	27
Surfactant (in delivery suite)	132	90	5	7	30
Surfactant (at any time)	213	154	6	11	42
Mechanical Ventilation	197	146	6	10	35
High Frequency Ventilation	56	53	0	0	3
CPAP (at any time)	275	221	3	12	39
Initial CPAP and subsequent intubation	81	54	0	9	18
Nitric Oxide	31	31	0	0	0

*Note 3 cases missing for 2014 Data **2014 Data unavailable for STGH

Table 3.7: Major morbidities amongst VBLW infants admitted 2014 – 2016					
Survival Morbidity	**SSWHG (356)***	**CUMH (259)**	**STGH (9)****	**UHK (23)**	**UHW (65)**
Admission temperature < 36°C	53	27	2	9	15
Pneumothorax	17	16	1	0	0
Oxygen at 28 days	153	127	1	5	20
Oxygen at 36 weeks CGA	96	85	0	3	8
Postnatal steroid therapy	30	24	0	0	6
Home oxygen	18	14	0	2	2
Ibuprofen for PDA	29	21	0	1	7
PDA ligation	5	5	0	0	0
NEC	21	18	0	0	3
NEC surgery	8	7	0	0	1
Coagulase negative Staph. in blood culture	22	10	0	1	11
Fungal infection	1	1	0	0	0
Grade 3 or 4 IVH	23	19	0	1	3
Cystic PVL	4	2	0	1	1
Neurosurgery	1	0	0	0	1
Retinopathy of prematurity (any stage)	48	34	2	0	12
Retinopathy Surgery	16	11	1	0	4

*Note 3 cases missing for 2014 Data **2014 Data unavailable for STGH

Gynaecology Outpatient Activity

General and specialist Gynaecology care is provided throughout the SSWHG. Clinics are run at the four main hospital units as well as outreach clinics in different areas. The following clinics/services are provided in the SSWHG region;

- General Gynaecology & Telephone Follow Up
- Urogynaecology
- Gynaecological Oncology
- Colposcopy
- Paediatric/Adolescent Gynaecology
- Infertility
- Ambulatory Gynaecology
- Postmenopausal Bleeding
- Hereditary Gynaecological Cancers
- Perineal
- Pre-Operative Assessment
- Endometriosis
- Hysteroscopy
- Postmenopausal Bleeding Clinic
- Continence Advice
- Smear Clinics

Table 4.0: Gynaecology Outpatient Activity

Clinics	SSWHG	CUMH*	STGH*	UHK	UHW
Total Outpatient activity incl. Colposcopy figures	27,710	16,343	–	1,326	10,041

*CUMH figures include CUMH/SIVUH/Outreach **data was unavailable for STGH

Staff

Table 5.0: Overall SSWHG Staff Numbers

Overall SSWHG	Total number	CUMH	STGH	UHK	UHW
Consultants*	26.5	16.5	3	3	4
Midwives	587.12	390	42.62	52	102.50
NCHDs	67	26	12	16	13

*includes Cons Ob/Gyn 12.5 WTE (17), Cons Neonatologists 4

Research and Innovation

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Department of Obstetrics and Gynaecology, UCC

The department is located on the fifth floor of Cork University Maternity Hospital. It provides formal undergraduate teaching to UCC medical students. The department also provides a unique postgraduate programme namely the MSc in Obstetrics and Gynaecology programme aimed at clinical trainees in the specialty. The aim of the department is to lead the development of teaching and research in obstetrics and gynaecology in Ireland and to become a centre of excellence internationally. This academic agenda is fully integrated with the delivery of clinical care in Cork University Maternity Hospital, thus providing a high quality academic service across a broad range of clinical, educational and research activities.

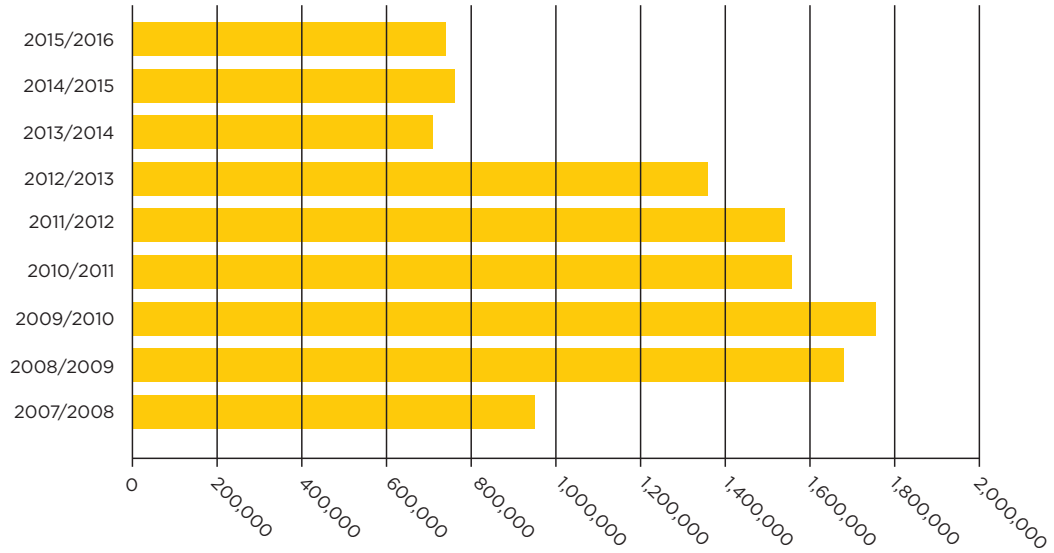

Figure 1.2: Research Income in the Department of Obstetrics and Gynaecology, 2007-2016

*Does not include income from INFANT

The National Perinatal Epidemiology Centre (NPEC)

The National Perinatal Epidemiology Centre (NPEC) collaborates with Ireland's maternity services to translate clinical audit data and epidemiological evidence into improved maternity care for families in Ireland.

The NPEC has a national focus, working in collaboration with all 19 of Irelands' maternity and neonatal units: it reviews their practices in order to derive learning and make recommendations for improvements in care based on that learning.

The NPEC has been collecting, analyzing and reporting on perinatal data since 2008.

Publications

- Corcoran P, Manning E, O'Farrell IB, McKernan J, Meaney S, Drummond L, de Foubert P, Greene RA, on behalf of the Perinatal Mortality Group. Perinatal Mortality in Ireland Annual Report 2014. Cork: National Perinatal Epidemiology Centre, 2016.
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University College Cork School of Nursing & Midwifery

Located in the Brookfield Health Sciences Complex, the School offers two registerable midwifery programmes in partnership with the Cork University Maternity Hospital; a 4-year BSc in Midwifery and an 18 month post registration Higher Diploma in Midwifery. The BSc in Midwifery has 20 students in each year of the programme and the Higher Diploma in Midwifery has 32 students in each intake. There are currently 76 undergraduate and 21 postgraduate student midwives in the service. Student midwives are supported in practice by the Midwifery Practice Development Officer, Clinical placement Co-ordinators, Postgraduate Clinical Co-ordinator, Allocations Liaison Officer and Link Lecturers. Midwives provide preceptor support to students to ensure that their midwifery competencies are achieved. Midwifery lecturers support students in practice settings and contribute to the PROMPT and NRP multidisciplinary training sessions.

The School offers continuing education for midwives including an MSc Midwifery and two Continuing Professional Development (CPD) modules in conjunction with the Cork University Maternity Hospital.

Department of Neonatology

The Neonatal Research Centre was opened in 2009 and this facility is located directly adjacent to the neonatal unit and provides office and desk space for seven research staff. In collaboration with the Neonatal Brain Research Group (NBRG) UCC and the INFANT Centre, the development of the research centre remains a major advance for the research activities of the Department of Neonatology, bringing science and technology closer to the cot side. The INFANT Centre at University College Cork is hosted by the UCC Department of Obstetrics and Gynaecology at Cork University Maternity Hospital and consists of multidisciplinary researchers with outstanding academic, clinical and research track records. These researchers collectively aim to deliver novel screening and diagnostic tests and innovative therapeutic strategies for adverse pregnancy and neonatal outcomes.

INFANT

INFANT (Irish Centre for Fetal and Neonatal Translational Research) is Ireland's first and only perinatal research centre and seeks to address the largely unmet global clinical need for innovation in the perinatal domain. Based in Cork University Maternity Hospital, INFANT is founded upon over a decade of world class collaborative research and a diverse array of national and international academic and industry partnerships.

In its fourth year, INFANT has undergone a period of exponential growth. By aligning with national research priorities and by nurturing an industry-facing ethos reflecting relevant roadmaps, we have developed an active grant portfolio of almost €29 million. During this phase of rapid growth, research commenced in new thematic research areas, including pregnancy loss research. INFANT provides a platform for perinatal clinical trials and has a proven track record in global trial co-ordination, protocol development, study monitoring, secure data management, regulatory compliant data banking and biobanking processes, electronic database design and bioinformatics. The Centre operates to the highest ethical, quality and regulatory standards and is in partnership with the HRB-funded Clinical Research Facility in Cork.

As we move forward into our fifth year, we will be focusing on consolidation and in supporting the established and new themes within INFANT. Overall, 2016 was a year of exceptional success and growth. INFANT secured very significant competitively awarded funding during 2016 from SFI, HRB, Wellcome Trust, National Institutes of Health, City of Dublin Skin and Cancer Charity Hospital, Grand Challenges Canada, EU Horizon 2020, Esther Ireland, among others. INFANT also secured very significant philanthropic funding during 2016.

The support that INFANT leveraged from UCC in 2015 to secure significant SFI infrastructural funding, was used over 2016 to enhance its capacity in biobanking, and long-term neurodevelopmental follow-up (the "Baby Lab") which is located in the new Paediatrics build at the CUH, and integrated Data Hub. These will deliver a sound foundation for progress. Other exciting initiatives from 2016 include the development of our Global Health Research programme and our partnership with Kilimanjaro Christian Medical Centre/Kilimanjaro Clinical Research Institute, which involved two visits to Moshi in Northern Tanzania. Also in 2016, Dr Keelin O'Donoghue, Professor Jonathan Hourihane and Professor Declan Devane joined the INFANT centre as SFI-funded PIs.

In 2015, INFANT hosted the Brain Monitoring & Neuroprotection in the Newborn Conference. The conference was so successful that INFANT was invited to host it again in 2017. In 2016, the European Science TV and News Media Festival in Lisbon awarded the producers of the Science Squad an award for Women in Science specifically for their episode of the Science Squad which featured Prof Louise Kenny discussing INFANT's preeclampsia research. Prof Kenny was the lead author on the 2016 HSE National Guideline on the Management of Hypertension in Pregnancy. INFANT, led by Dr Keelin O'Donoghue was successful in its bid in 2016 to host the International Stillbirth Alliance Conference in September 2017.

The INFANT strategy is to strive for scientific excellence and disruptive innovation in our quest to become the world's leading centre for translational perinatal research. We have a clear vision of how we will achieve this and it is perfectly aligned with national research priorities, continuously informed by industry roadmaps. This work will enable us to deliver scientific excellence, innovation and societal and economic impact now and for the next generation.

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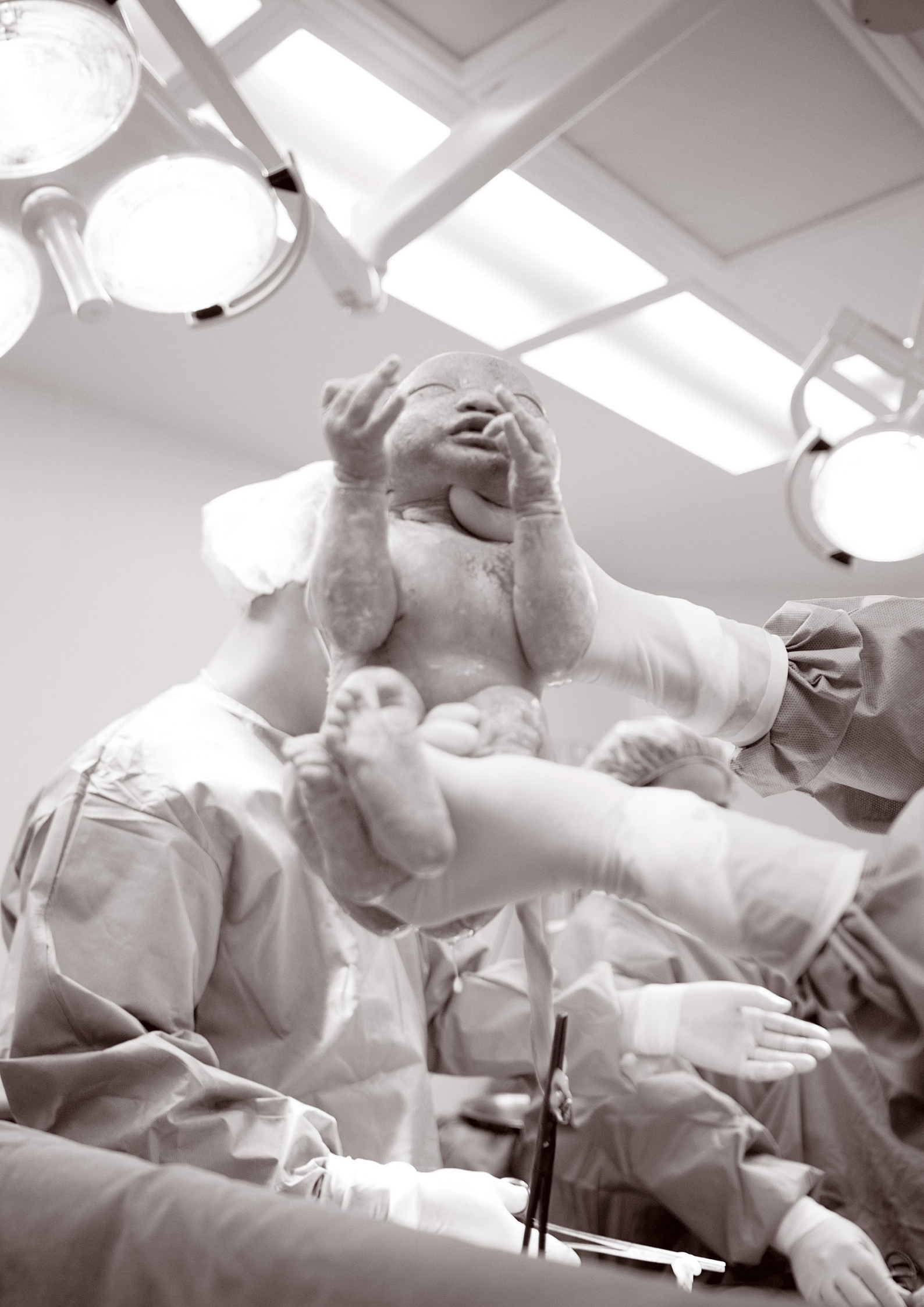

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University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive