



City Hospitals Sunderland **NHS**
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SUNDERLAND NEONATAL UNIT

ANNUAL REPORT

2018

FOREWORD

This is our sixth annual report for the calendar year 2018 in the new format. We continue to demonstrate our unit performance in relation to both regional and national standards.

We are very pleased to welcome new members in the medical and nursing teams this year.

I would like to thank Dr Majd Abu-Harb for giving me this opportunity and his ongoing support in presenting this report in the new layout.

Special thanks to -

Neonatal colleagues and Obstetric team for their contribution and support

Particular thanks to Dr Lawrence Gnanaraj consultant ophthalmologist for the ROP data.

Dr Imran Ahmed

Neonatal Consultant

STAFF

Richard Allsop	Matron
Kristina Simmons	Neonatal Unit Manager

Consultant Neonatologists:

Dr Majd Abu-Harb	Clinical Lead
Dr Imran Ahmed	
Dr Ruppa Geethanath	
Dr Lorna Gillespie	
Dr Chike Onwuneme	

Ophthalmologist:

Mr. Lawrence Consultant Ophthalmologist (Sunderland Eye Infirmary)

Advanced Neonatal Nurse Practitioners (ANNP):

Lesley Atkinson, Eileen Cornell, Susan Forth, Amie Luke, Gillian Reay, Ann Smith, Bernadette Taylor, Katherine Marshall, Cheryl Burgess and Beverley McMann
Trainee ANNP's – Carmel Forster & Elisa De Santis

Other Medical Staff

There are 4 Level 1 specialist Paediatric trainees (ST1-3) and 1 Level 2 (ST4-8) trainee.

Specialist Nurses:

Sue Hindle	Lead for Breast Feeding
Tracey Gleghorn	Lead for Developmental Care
Emily Cameron	Lead for Nurse Education
Natalie Talbot	Research Nurse
Helen Nesbit	Lead Practice development nurse

Community Nurse Team

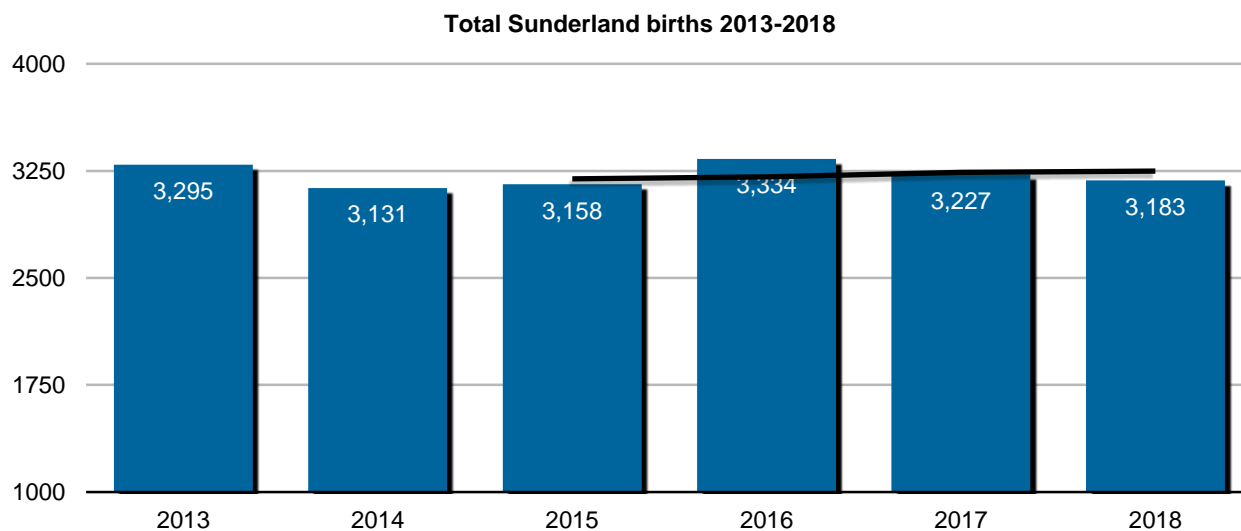
This consists of 3 Paediatric community liaison nurses who meet with the families prior to discharge and continue with specialist nursing input as required once home.

Specialist Therapies

There is input from Paediatric Speech and Language Therapists and Paediatric Physiotherapists as required. These teams are also part of the developmental care group.

Maternity Statistics

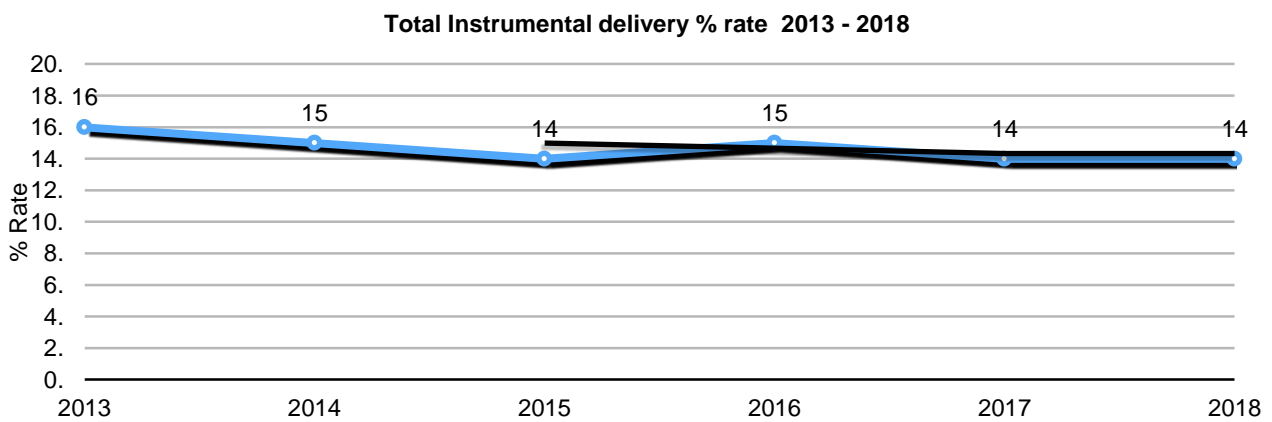
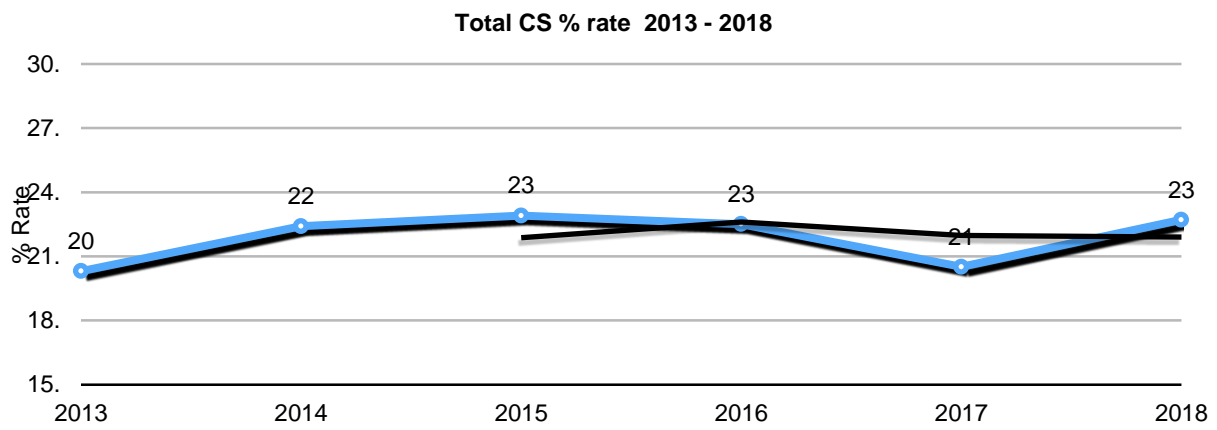
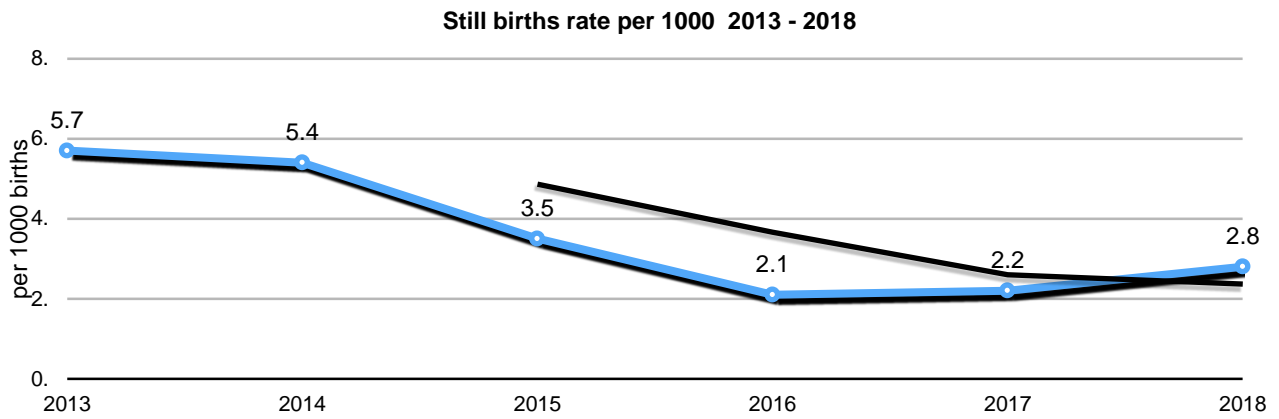
Data was gathered from the maternity services data collection tool and covers the last 6 years. The line shows 3 year rolling averages. Total includes all viable and non-viable births born at SRH.



2018	Total	%
Live Births	3183	
Born Before Arrival to Hosp	18	
Twins	45	1.3%
Triplets	1	
Preterm GA (23 weeks - <37 weeks)	255	8.3%
Breast Feeding initiation rate (Postnatal ward)		46.2%
Mothers intended to breast feed & discharge on breast milk (NNU)		59.46%
Smoking at time of delivery		17%

Maternity Statistics

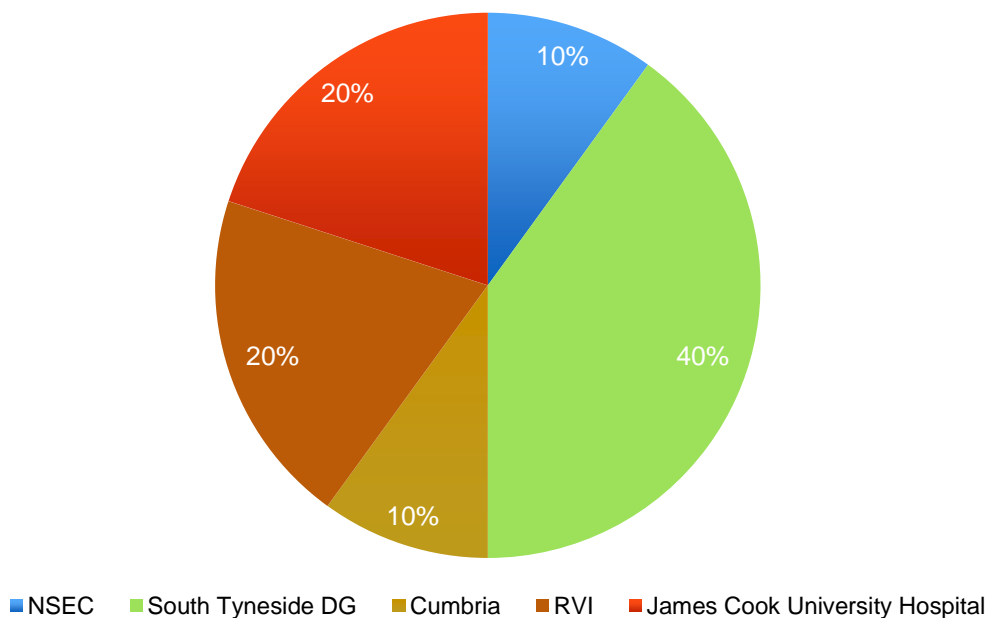
Data is shown below with 3 year rolling averages indicated by the trend line.



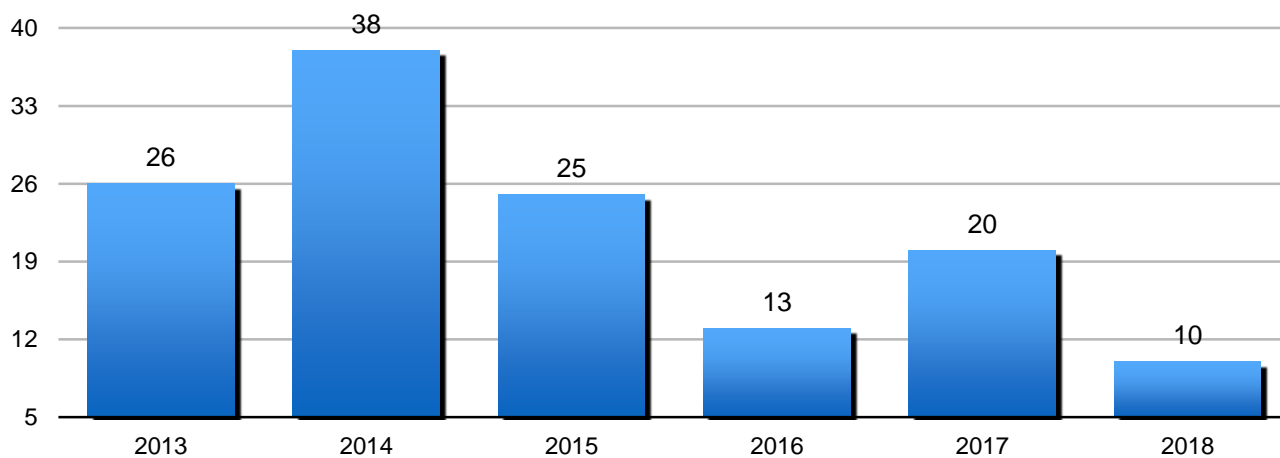
In Utero Transfers

This data was collected using Badgernet and so contains details of only those babies who were transferred in utero and subsequently admitted to the neonatal unit at SRH.

All in-utero transfers that delivered & were admitted by referral hospital in 2018



All in-utero transfers that delivered & were admitted to neonatal unit between 2013 - 2018

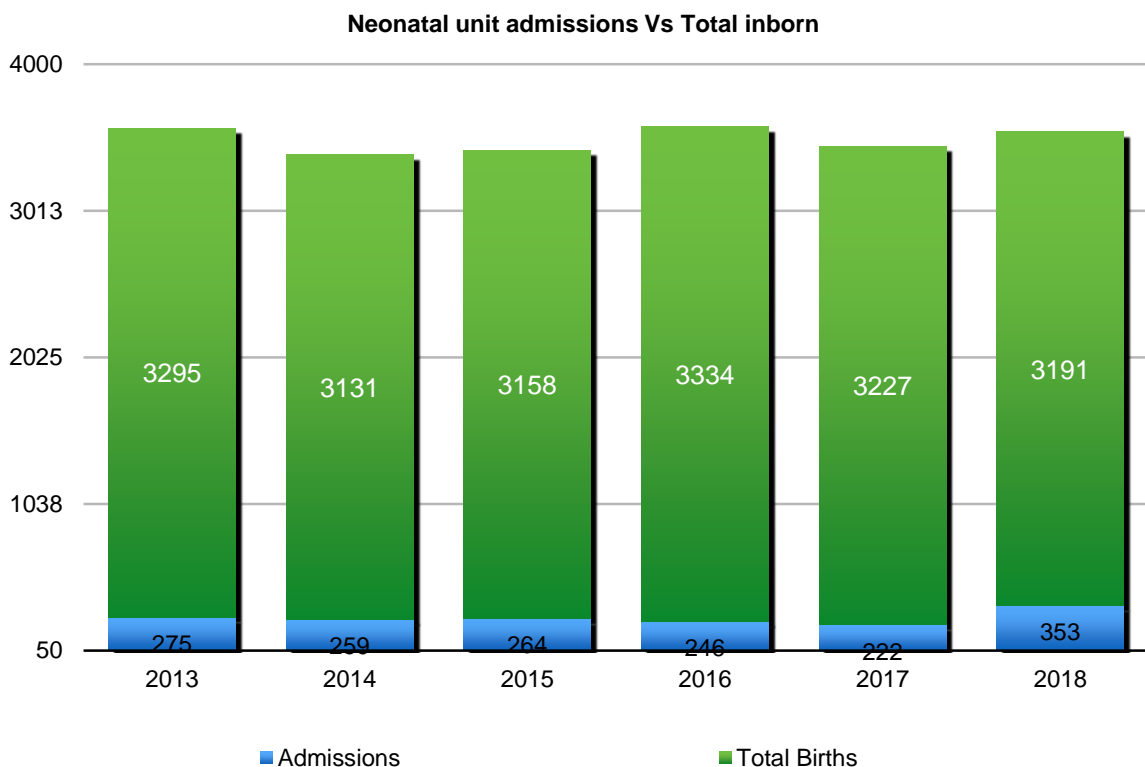
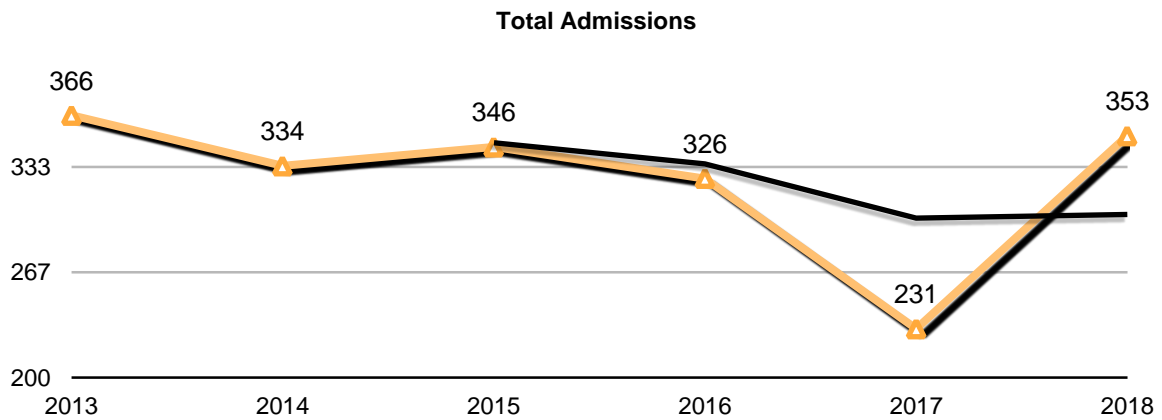


Neonatal Activity

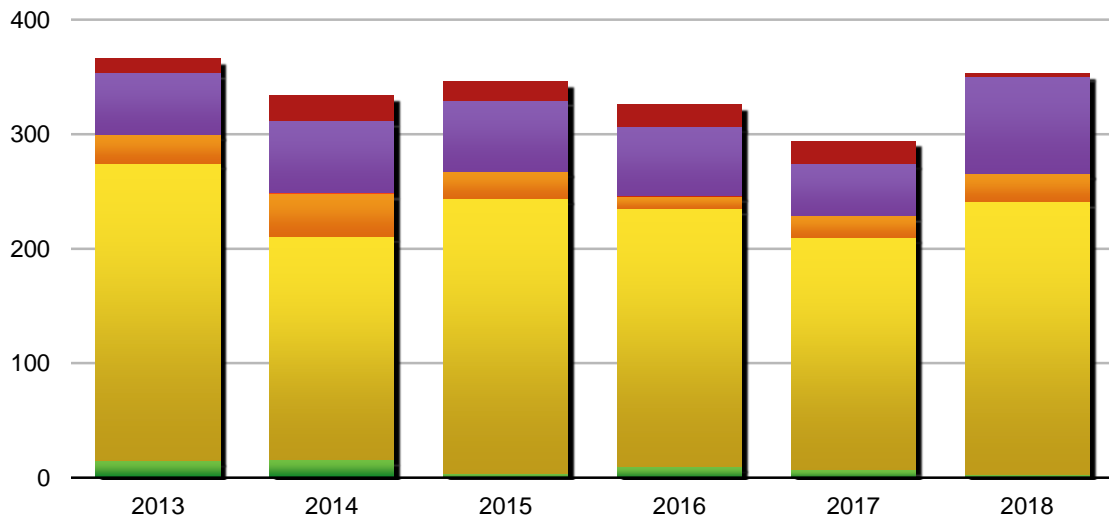
Admissions to NICU, Sunderland Royal Hospital

Badgernet was used to collect the data presented in the following section. All admissions to the NICU at Sunderland Royal Hospital are included (both booked as well as in utero transfers). Readmission data includes babies who were readmitted to the unit following transfer to other sites for specialist care e.g. surgery.

The 1st graph below shows total admissions with a 3 year moving average. The second graph shows proportion of inborn babies admitted to NICU (6.8%).



Admissions by referral type

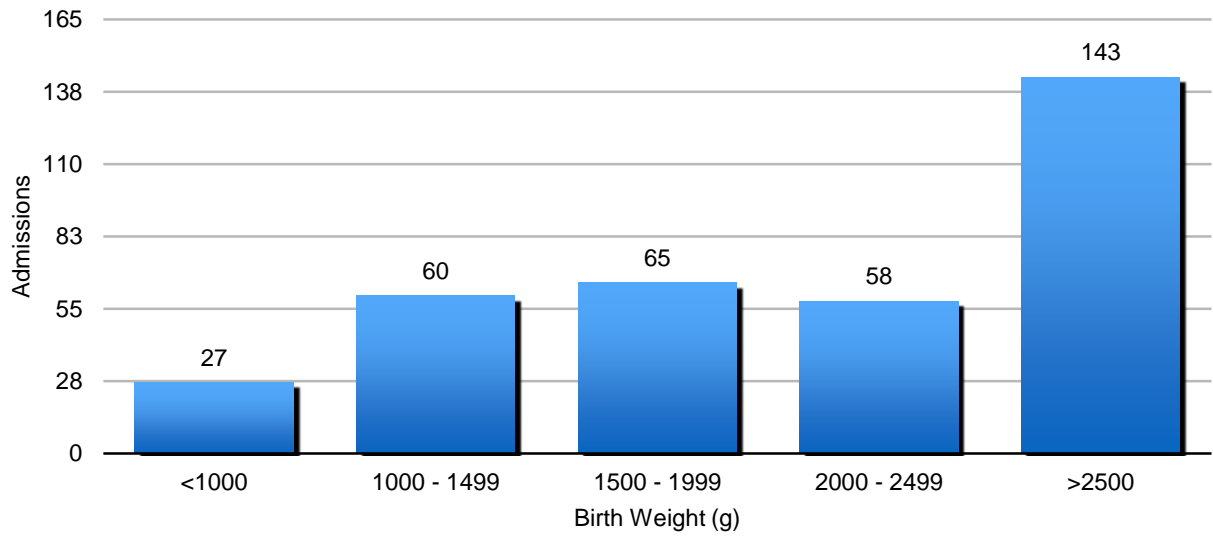


Unknown Home Inborn - Booked Inborn - Booked elsewhere Inborn - Unbooked Postnatal Transfer In Readmission

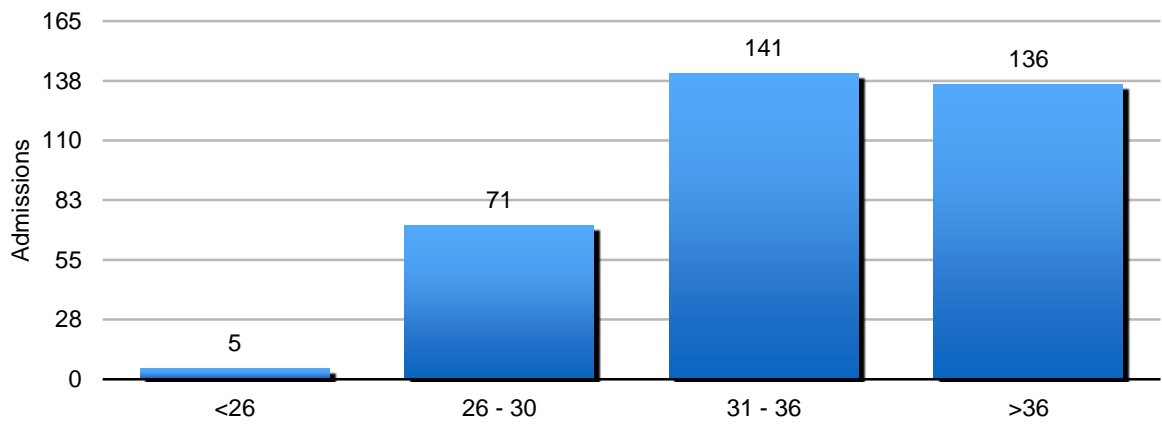
Both graphs show the distribution of NICU admissions by referral source and booked place of birth

	2013	2014	2015	2016	2017	2018
Home	14	15	4	10	7	12
Inborn - Booked	260	195	240	225	209	226
Inborn - Booked elsewhere	25	37	24	11	19	10
Inborn - Unbooked	0	1	0	1	0	1
Postnatal Transfer	54	63	62	60	46	88
Readmission	12	22	16	19	19	13
Unknown	1	1	0	0	2	3

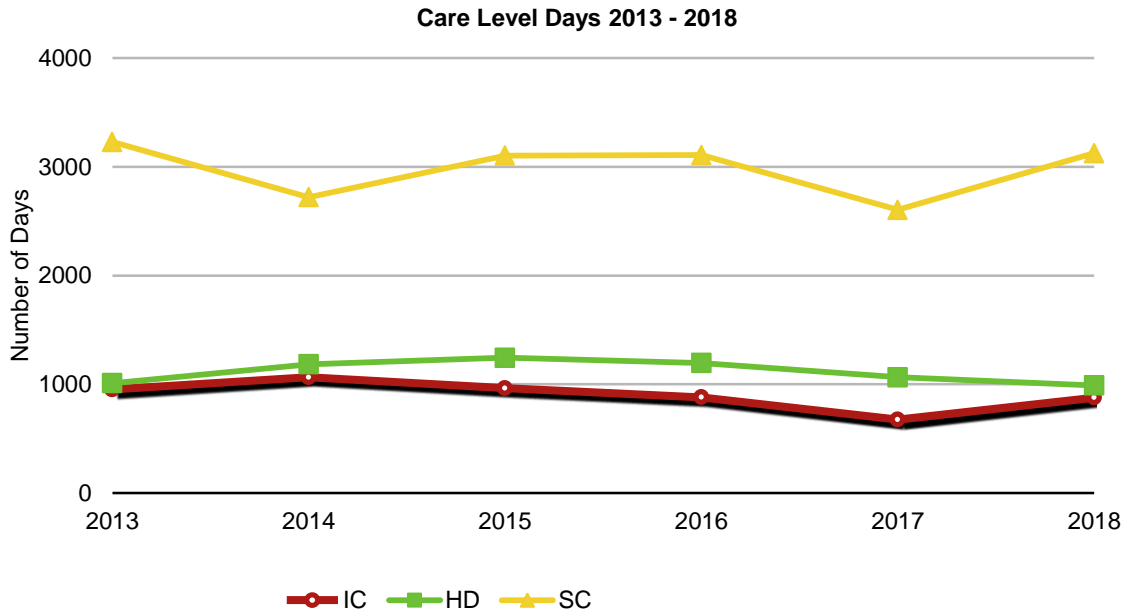
All admissions by Birth Weight (g) 2018



All admissions by Gestational Age (weeks) 2018



Care Level Days and Cot Occupancy



From 2013 IC/HD data is based on BAPM 2011 standards

Care Level in Days 2013 - 2018

Year	IC	HD	IC & HD
2013	952	1010	1962
2014	1065	1184	2249
2015	965	1244	2209
2016	881	1196	2077
2017	676	1064	1740
2018	878	990	3125

Outcomes

National Neonatal Audit Project (NNAP) data 2018 Outcome

NNAP audit question	National (average)	National NICU (average)	Northern Network Average	Sunderland NNU
What proportion of babies <33+0 weeks gestation at birth are receiving any of their mother's milk when discharged home from a neonatal unit?	60%	57%	47%	52%
What is the proportion of babies born <32 weeks who develop Bronchopulmonary Dysplasia? (year of final discharge 2016-2018)	30%	38%	39%	42%
What proportions of eligible babies have received FU at 2 years corrected age?	70%	71%	66%	81%
Proportion of mothers who received magnesium sulphate in the 24 hours before delivery at less than 30 weeks gestational age.	72%	77%	73%	76%
Do all babies <32 weeks gestations have their temperature taken within the first hour after birth?	97%	97	99%	100%
What proportion of babies <32 weeks gestation had an admission temperature between 36.5-37.5?	67%	69%	64%	60%
Proportion of women who delivered a baby at 23 to 33 weeks gestation given any dose of antenatal steroids?	90%	92%	86%	93%
Are all babies with a gestational age of <32+0 weeks or <1501g at birth undergoing 1st Retinopathy of Prematurity (ROP) screening in accordance with the current national guideline recommendations?	95%	96%	86%	98%
Is there a documented consultation with parents by a senior member of the neonatal team within 24 hours of admission?	96%	96%	97%	99%
Proportion of babies admitted who had a parent present on one or more consultant ward round	79%	75%	79%	84%
Proportion of babies admitted born at less than 32 weeks and survived to 48 hours with NEC	94%	93%	96%	96%

Outcomes

We have additionally provided information for 3 key morbidities: Hypoxic Ischaemic encephalopathy (Grade 2 - 3 and requiring therapeutic hypothermia), Necrotising enterocolitis (suspected and transferred to surgical unit), and retinopathy of prematurity (eligible and screened and those that required treatment).

It is difficult to provide meaningful interpretation for each of the key morbidities due to small numbers as well as problems with accurate denominator data. It will be more useful to report these key morbidities at a network level. This data was extracted from Badgernet using “discharge diagnosis” of suspected or confirmed NEC. All neonatal notes are reviewed on discharge by one assessor to ensure accuracy.

Hypoxic Ischaemic Encephalopathy (HIE) requiring therapeutic hypothermia

	No of Babies	Discharged	Died
2014	4	4	0
2015	2	1	1
2016	4	4	0
2017	6	6	0
2018	11	11	0

Necrotising enterocolitis (NEC)

	Suspected & transferred to Surgical Unit	Outcome at Surgical Centre	
		Conservative management	Confirmed (Surgery/Post Mortem)
2014	2	1 survived	1 died
2015	6	4 survived	2 died
2016	5	3 survived	No deaths
2017	3		2 died
2018	6		3 died

ROP for responsible unit, screened and treated 2012 - 2017

	2012	2013	2014	2015	2016	2017	2018	%
Eligible & Screened	65	58	53	63	56	46	60	100
Threshold ROP Treated	2	0	2	3	4	3	4	

Mortality

Mortality in the next few tables is reported against unique babies at specific GA and Birth Weight. All deaths are for babies cared for at Sunderland and occurred in Sunderland NNU. Deaths elsewhere have been captured within the MBRRACE data. The data has to be interpreted with caution due to small numbers in both the extremely premature and small for gestation babies.

Survival by GA 2018 (unique babies)

Gestation	Total Admissions	Total Deaths	<7 Days	7 - 28 Days	>28 Days	Survival to Discharge %	Mortality %
< 26	3	0	0	0	0	100	0
26 - 29	29	0	0	0	0	100	0
30 - 36	106	1	1	0	0	99	1
> 36	113	0	0	1	0	99	1
Total	251	2	1	1	0	99	1

Mortality rate /1000 births (All Births 2012 – 2018)

Year	Total Births	Deaths				Mortality rate/1000 births			
		Still Births	<7 Days	7 - 28 Days	>28 Days	Perinatal	Early Neonatal	Late Neonatal	Post Neonatal
2012	3384	12	2	0	1	4.1	0.6	0	0.3
2013	3295	19	7	3	1	7.8	2.1	0.9	0.3
2014	3131	17	7	1	0	7.6	2.2	0.3	0
2015	3158	11	3	1	2	4.4	0.9	0.3	0.6
2016	3334	7	2	1	1	2.7	0.6	0.3	0.3
2017	3227	7	1	1	0	2.5	0.3	0.3	0
2018	3191	9	1	1	0	3.1	0.3	0.3	0

Mortality

Survival stratified by admission 2018 (unique babies)

Referral Type	Total Admissions	Total Deaths	<7 days	7 - 28 Days	>28 Days	Survival to Discharge %	Mortality %
Inborn - Booked	238	2	1	1	0	99	1
Inborn - Booked elsewhere	11	0	0	0	0	100	0
Postnatal Transfer In	3	0	0	0	0	100	0
Other		0	0	0	0	100	0
Total	252	2	1	1	0	99	1

Survival by Birth Weight 2017 (unique babies)

Birth Weight	Total Admissions	Total Deaths	<7 Days	7 - 28 Days	>28 Days	Survival to Discharge %	Mortality %
<499	0	0	0	0	0		
500 - 999	25	2	1	1	0	84	16
1000 - 1499	44	0	0	0	0	100	0
1500 - 1999	49	0	0	0	0	100	0
2000 - 2499	51	0	0	0	0	100	0
2500 - 2999	47	0	0	0	0	100	0
>3000	90	0	0	0	0	100	0
Total		2	1	1	0	99	1

Mortality – MBRRACE 2018 report on 2016 data

MBRRACE - UK : Mothers and Babies Reducing Risk through Audits and Confidential Enquiries across the UK

ENND: Early neonatal deaths,
LNND: Late neonatal deaths

MBRRACE - 2016

GA	Booked	Type	Cause (Place)
24	South Tyneside	ENND	APH/Extreme Prem (NNU)
25	RVI	ENND	Sepsis (NNU)
23	UHND	LNND	Sepsis (NNU)

NNU: Neonatal Unit, Sunderland

Small number change makes a significant difference to our stabilised and adjusted mortality rates. Moreover our unit has a smaller birth population and is also a designated unit for intensive care from a wider catchment area. This is an area of concern to us and needs to be closely monitored. MBRRACE includes deaths irrespective of whether they received neonatal unit care or not.

Stabilised & adjusted mortality rates for babies born at 24 weeks gestational age or later by year of birth

