Neonatal Intensive Care Outcomes Research & Evaluation (NICORE)

Neonatal Care in Northern Ireland, 2014

DATA TABLES

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Published July 2016, NICORE

NNNI DATA REPORT SCOPE

This report provides information and analyses for all infants who were born between 1st January 2014 (00:01) and 31st December 2014 (23:59) and admitted to a neonatal unit (NNU) in Northern Ireland (NI) for intensive care (IC), high dependency care (HDC) or special care (SC). This report excludes neonatal unit (NNU) admissions during 2014 where the infant was born in 2013 and includes NNU admissions during 2015 for those infants born in 2014.

NNU Abbreviations: Altnagelvin Area Hospital (ALT), Antrim Area Hospital (ANT), Craigavon Area Hospital (CAH), Daisy Hill Hospital (DH), Royal Maternity Hospital (RMH), South West Acute Hospital (SWAH), Ulster Hospital (ULST) and Neonatal Network Northern Ireland (NNNI).

This report should be read in conjunction with the Vermont Oxford Network (VON) report for your NNU, particularly for nosocomial sepsis rates, cranial ultrasounds on or before 28 days of life and screening for retinopathy of prematurity (ROP). For data definitions you should refer to BadgerNet Neonatal System (BNNS) data dictionary which is available via the BadgerNet™ platform.

DATA QUALITY SUMMARY

- Regionally, 96.9% of admissions were registered on BNNS. This ranged from 78.1% to 100% across NNUs. Care must be taken to avoid duplicate entries.
- Overall, 97.9% of admissions registered were also discharged on BNNS.
- In total, 96.5% of infants had a complete infant journey (i.e. all episodes of care/admissions) recorded on BNNS.
- Health & Care Numbers were not entered for 57 admissions. This created problems with data linkage. Checking H&C Numbers prior to data download is of paramount importance at NNU level.
- There has been a decrease in the number of coding errors for 'Normal Care' from 1364 days (2013) to 1171 days (2014). Improvements in coding should be more evident in subsequent data reports.
- Discharge destinations after first admission to neonatal care were missing for 39 (2.2%) cases.

- **NNNI Quality Dashboard**: In order, in future, to submit data to the National Neonatal Audit Programme (NNAP), NNNI will need to improve data collection in a number of areas. Presently, the proportion of missing data was greater than 10% for antenatal steroid administration (24 to 34 weeks' gestation); antenatal magnesium (< 30 weeks' gestation); retinopathy of prematurity (ROP) screening (< 32 weeks' gestation or ≤ 1500g birthweight); feeding on discharge home from single admission (< 33 weeks' gestation) and consultation with parents within 24 hours of admission with senior member of neonatal team.
- **Morbidity:** areas highlighted previously at NNNI level include the recording of cranial ultrasonography; blood culture sampling; and blood culture results. Due to poor quality data, sepsis and brain injury rates have not been presented in this report. Improved data quality should facilitate these analyses in subsequent reports.

DATA QUALITY ASSURANCE

Table 1 Admissions (episodes of care) registered on the BadgerNet Neonatal System (BNNS) compared to counts from NNU manual admission books.

NNU	Episodes Admission book	Episodes BNNS	Episodes BNNS excluding duplicate entries
ALT	295	295 (100%)	295 (100%)
ANT	333	332 (99.7%)	332 (99.7%)
CAH	352	334 (94.9%)	334 (94.9%)
DH	178	145 (81.5%)	139 (78.1%)
RMH	551	541 (98.2%)	541 (98.2%)
SWAH	117	116 (99.2%)	116 (99.2%)
ULST	307	#317	#310
NNNI	**2133**	**2080 (97.5%)**	**2067 (96.9%)**

#Duplicates

Table 2 Complete infant journey registered on BNNS.

Episodes of care (admissions) Registered on BNNS.	2067
Infants Registered on BNNS	1790
Episodes (admissions) Registered and Discharged on BNNS.	2023 (97.9%)
Completed infant journey i.e. all episodes of care (admissions) for that infant registered on BNNS.	Complete 1728 (96.5%) Incomplete 15 (0.8%) Unsure 47 (2.6%)

Health & Care Numbers: 57 Admissions had a 'Temporary Number' i.e. no Health & Care Number. This means that where the infant had multiple admissions there was no unique key to link admissions to that infant. This resulted in manual linking of episodes where possible, based on gestation, birthweight and transfer pattern.

NEONATAL ACTIVITY

Table 3 Live born infants in NI & number of infants admitted to neonatal care by gestation (completed weeks).

Gestation	*Live born infants NI	Infants receiving neonatal care
<22	8	0
22	9	1
23	16	7
24	10	~12
25	13	12
26	18	~19
27	22	20
Sub-total EPT	**96**	**71 (74.0%)**
28	30	29
29	43	41
30	48	45
31	57	58
Sub-total VPT	**178**	**173 (97.2%)**
32	79	80
33	128	127
Sub-total MPT	**207**	**207 (100%)**
34	225	169
35	406	156
36	723	151
Sub-total LPT	**1354**	**476 (35.2%)**
# ≥ 37 T	**22775**	**862 (3.8%)**
NK	**0**	**1**
Total	**24610**	**1790 (7.3%)**

**NIMATS via Business Objects (PHA, Health Intelligence), January 2016, ~ Discrepancies across data sources*

Gestational age categories[1]

	Extremely preterm (less than 28 weeks' gestation) EPT
	Very preterm (28 to 31 weeks' gestation) VPT
	Moderately preterm (32 to 33 weeks' gestation) MPT
	Late preterm (34 to 36 weeks' gestation) LPT
	Term (greater than or equal to 37 weeks' gestation) T

[1] March of Dimes, PMNCH, Save the Children, WHO. (2012) *Born too soon: the global action report on preterm birth. World Health Organization.* Geneva. [Online]. Available at: http://www.who.int/pmnch/media/news/2012/preterm_birth_report/en/index.html (Accessed: 12 March 2016).

Table 4 **NNNI admission type (category of care at the time of start of episode): first admissions, subsequent admissions and all admissions to NC.**

	First Admissions	Subsequent Admissions	All Admissions
Medical IC	747 (41.7%)	58 (20.9%)	805 (38.9%)
Medical HDC	575 (32.1%)	99 (35.7%)	674 (32.6%)
Medical SC	430 (24.0%)	96 (34.7%)	526 (25.4%)
Surgical care	3 (0.2%)	3 (1.1%)	6 (0.3%)
Cardiac care	15 (0.8%)	3 (1.1%)	18 (0.9%)
Tertiary specialist investigation	2 (0.1%)	0	2 (0.1%)
Social care	7 (0.4%)	0	7 (0.3%)
Back transfer continuing medical IC	0	1 (0.4%)	1 (0.1%)
Back transfer continuing medical HDC	0	5 (1.8%)	5 (0.2%)
Back transfer for continuing medical SC	0	9 (3.2%)	9 (0.4%)
Transitional Care	1 (0.1%)	3 (1.1%)	4 (0.2%)
Other	10 (0.6%)	0	10 (0.5%)
NNNI	**1790**	**277**	**2067**

Table 5 **NNNI NC admissions (episodes) & activity (Levels of care days BAPM 2011) by neonatal unit (NNU) – all admissions to neonatal care.**

NNU	Infants	Episodes	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days	Total LOC days
ALT	291	295	449	1105	2123	0	3677
ANT	322	332	430	610	3102	199	4341
CAH	323	334	362	784	3285	196	4627
DH	134	139	19	326	245	69	659
RMH	531	541	2810	2531	3279	155	8775
SWA	115	116	4	108	1096	0	1208
ULST	301	310	358	1095	2298	552	4303
NNNI	***1790**	**2067**	**4432**	**6559**	**15428**	**1171**	**27590**

*****Multiple admissions across NNUs.* * Babies awaiting bacteriological screening results have been coded level 2 in ULST.*

Table 6 **NNNI NC admissions & activity (Levels of care days BAPM 2011) by neonatal unit (NNU) – first admissions to neonatal care.**

NNU	Infants	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
ALT	275	405	849	1829	0
ANT	278	400	453	2065	143
CAH	288	294	440	2336	158
DH	102	11	142	146	49
RMH	498	2537	2337	3166	151
SWA	99	4	36	815	0
ULST	250	288	626	1520	418
NNNI	**1790**	**3939**	**4883**	**11877**	**919**

* *Babies awaiting bacteriological screening results have been coded level 2 in ULST.*

Table 7 **NNNI admissions (episodes) & activity (Levels of care days BAPM 2011) by gestational age group (completed weeks).**

Gestational age group	Infants	Episodes	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days	Tot LOC days
< 28	71	122	1703	2100	1470	55	5238
≥ 28 & ≤ 31	173	257	1229	1873	4731	209	8042
≥ 32 & ≤ 33	207	255	319	630	2751	203	3903
≥ 34 & ≤ 36	476	518	529	944	3485	317	5275
≥ 37	862	914	652	1012	2991	387	5042
NK	**~1**	**1**	**0**	**0**	**0**	**0**	**0**
NNNI	**1790**	**2067**	**4432**	**6559**	**15428**	**1171**	**27590**

*~ Length of stay 3 days no LOC recorded. * Babies awaiting bacteriological screening results have been coded level 2 in ULST.*

Table 8 **NNNI activity by gestation group (completed weeks) – first admissions to neonatal care.**

Gestational age group	Episodes	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	71	1459	1397	547	3
≥ 28 & ≤ 31	173	1118	1387	3189	117
≥ 32 & ≤ 33	207	315	507	2286	168
≥ 34 & ≤ 36	476	492	764	3133	290
≥ 37	862	555	828	2722	341
NK	1	0	0	0	0
Total	**1790**	**3939**	**4883**	**11877**	**919**

** Babies awaiting bacteriological screening results have been coded level 2 in ULST.*

Table 9 **Birthweight group – NNNI first admissions to neonatal care.**

Birth weight Group (g)	*Live Born Infants NI	ALT	ANT	CAH	DH	SWA	RMH	ULST	NNNI
≤ 999	94	12	7	3	0	0	50	0	72
1000 to 1499	128	18	12	26	2	2	44	19	123
1500 to 2499	1257	83	100	109	35	32	156	80	595
≥ 2500	23102	162	159	150	65	65	248	151	1000
NK	29	0	0	0	0	0	0	0	0
Total	**24610**	**275**	**278**	**288**	**102**	**99**	**498**	**250**	**1790**

**NIMATS via Business Objects (PHA, Health Intelligence), January 2016.*

NEONATAL UNIT ACTIVITY

Altnagelvin Neonatal Unit (ALT)

Table 10 **Neonatal activity by gestational age group (completed weeks) - all admissions ALT.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	14	15	157	350	151	0
≥ 28 & ≤ 31	26	27	206	608	603	0
≥ 32 & ≤ 33	32	32	25	39	387	0
≥ 34 & ≤ 36	73	74	20	63	510	0
≥ 37	146	147	41	45	472	0
Total	**291**	**295**	**449**	**1105**	**2123**	**0**

Table 11 **Neonatal activity by gestational age group (completed weeks) – first admissions ALT.**

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	11	124	275	95	0
≥ 28 & ≤ 31	19	199	443	397	0
≥ 32 & ≤ 33	29	23	33	370	0
≥ 34 & ≤ 36	71	18	53	500	0
≥ 37	145	41	45	467	0
Total	**275**	**405**	**849**	**1829**	**0**

Antrim Neonatal Unit (ANT)

Table 12 **Neonatal activity by gestational age group (completed weeks) - all admissions ANT.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	13	17	36	132	332	12
≥ 28 & ≤ 31	37	38	133	205	990	34
≥ 32 & ≤ 33	30	30	53	46	449	18
≥ 34 & ≤ 36	101	102	108	135	791	81
≥ 37	140	144	100	92	540	54
NK	1	1	0	0	0	0
Total	**322**	**332**	**430**	**610**	**3102**	**199**

Table 13 **Neonatal activity by gestational age group (completed weeks) – first admissions ANT.**

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	8	32	45	94	0
≥ 28 & ≤ 31	16	119	150	434	11
≥ 32 & ≤ 33	24	53	46	359	14
≥ 34 & ≤ 36	95	103	129	736	70
≥ 37	134	93	83	442	48
NK	1	0	0	0	0
Total	**278**	**400**	**453**	**2065**	**143**

Craigavon Neonatal Unit (CAH)

Table 14 **Neonatal activity by gestational age group (completed weeks) - all admissions CAH.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	15	18	55	289	427	20
≥ 28 & ≤ 31	58	61	137	217	1390	58
≥ 32 & ≤ 33	47	47	28	78	467	35
≥ 34 & ≤ 36	98	102	53	131	629	55
≥ 37	105	106	89	69	372	28
Total	**323**	**334**	**362**	**784**	**3285**	**196**

Table 15 **Neonatal activity by gestational age group (completed weeks) – first admissions CAH.**

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	4	27	27	45	1
≥ 28 & ≤ 31	47	116	156	1061	45
≥ 32 & ≤ 33	45	27	75	446	35
≥ 34 & ≤ 36	92	46	117	439	51
≥ 37	100	78	65	345	26
Total	**288**	**294**	**440**	**2336**	**158**

Daisy Hill Special Care Baby Unit (DH)

Table 16 **Neonatal activity by gestational age group (completed weeks) - all admissions DH.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	0	0	0	0	0	0
≥ 28 & ≤ 31	15	16	6	126	40	12
≥ 32 & ≤ 33	19	19	3	53	87	9
≥ 34 & ≤ 36	32	33	6	83	56	15
≥ 37	69	71	4	64	62	33
Total	**134**	**139**	**19**	**326**	**245**	**69**

Table 17 **Neonatal activity by gestational age group (completed weeks) – first admissions DH.**

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	0	0	0	0	0
≥ 28 & ≤ 31	2	0	0	0	2
≥ 32 & ≤ 33	9	2	22	42	4
≥ 34 & ≤ 36	29	6	67	53	13
≥ 37	62	3	53	51	30
Total	**102**	**11**	**142**	**146**	**49**

Royal Maternity Neonatal Unit (RMH)

Table 18 **Neonatal activity by gestational age group (completed weeks) - all admissions RMH.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	54	55	1420	1174	352	3
≥ 28 & ≤ 31	71	73	589	491	933	16
≥ 32 & ≤ 33	61	61	169	217	548	16
≥ 34 & ≤ 36	99	102	305	287	672	47
≥ 37	246	250	327	362	774	73
Total	**531**	**541**	**2810**	**2531**	**3279**	**155**

Table 19 **Neonatal activity by gestational age group (completed weeks) – first admissions RMH.**

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	43	1269	1050	313	2
≥ 28 & ≤ 31	68	538	466	923	15
≥ 32 & ≤ 33	60	169	217	539	16
≥ 34 & ≤ 36	94	286	249	639	47
≥ 37	233	275	355	752	71
Total	**498**	**2537**	**2337**	**3166**	**151**

South West Acute Special Care Baby Unit (SWA)

Table 20 Neonatal activity by gestational age group (completed weeks) - all admissions SWA.

Gestational age group	Infants	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	4	4	2	8	36	0
≥ 28 & ≤ 31	3	3	0	9	52	0
≥ 32 & ≤ 33	14	15	0	49	277	0
≥ 34 & ≤ 36	36	36	1	30	468	0
≥ 37	58	58	1	12	263	0
Total	**115**	**116**	**4**	**108**	**1096**	**0**

Table 21 Neonatal activity by gestational age group (completed weeks) – first admissions SWA.

Gestational age group	Episodes	Level 1 (IC) days	Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	2	2	0	0	0
≥ 28 & ≤ 31	1	0	1	0	0
≥ 32 & ≤ 33	5	0	8	113	0
≥ 34 & ≤ 36	34	1	20	440	0
≥ 37	57	1	7	262	0
Total	**99**	**4**	**36**	**815**	**0**

Ulster Neonatal Unit (ULST)

Table 22 **Neonatal activity by gestational age group (completed weeks) - all admissions ULST.**

Gestational age group	Infants	Episodes	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	9	13	33	147	172	20
≥ 28 & ≤ 31	35	39	158	217	723	89
≥ 32 & ≤ 33	50	51	41	148	536	125
≥ 34 & ≤ 36	69	69	36	215	359	119
≥ 37	138	138	90	368	508	199
Total	**301**	**310**	**358**	**1095**	**2298**	**552**

Table 23 **Neonatal activity by gestational age group (completed weeks) – first admissions ULST.**

Gestational age group	Episodes	Level 1 (IC) days	*Level 2 (HDC) days	Level 3 (SC) days	Normal Care days
< 28	3	5	0	0	0
≥ 28 & ≤ 31	20	146	171	374	44
≥ 32 & ≤ 33	35	41	106	417	99
≥ 34 & ≤ 36	61	32	129	326	109
≥ 37	131	64	220	403	166
Total	**250**	**288**	**626**	**1520**	**418**

***** ***Babies awaiting bacteriological screening results have been coded level 2 for two days.***

Table 24 Location of birth by gestational age group (completed weeks).

Gestational age group	ALT	ANT	CAH	DH	SW	RMH	RVH	ULST	MT	CW	LV	H/ER	Other	NK	NNNI
< 28	10	6	4	0	2	42	0	3	0	1	0	1	0	2	**71**
≥ 28 & ≤ 31	19	16	45	4	1	66	2	20	0	0	0	0	0	0	**173**
≥ 32 & ≤ 33	27	23	45	9	5	58	2	35	0	3	0	0	0	0	**207**
≥ 34 & ≤ 36	71	89	88	30	33	92	2	61	0	5	0	0	1	4	**476**
≥ 37	140	118	94	64	55	226	2	131	2	23	2	2	0	3	**862**
NK	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total	**267**	**253**	**276**	**107**	**96**	**484**	**8**	**250**	**2**	**32**	**2**	**3**	**1**	**9**	**1790**

H/ER: at home/en-route, MT: Mater, CW: Causeway, LV: Lagan Valley.

Table 25 Location of birth by birthweight group, BWG (g).

BWG (g)	ALT	ANT	CAH	DH	SW	RMH	RVH	ULST	MT	CW	LV	H/ER	Other	NK	NNNI
≤ 999	11	5	3	0	0	49	0	0	0	1	0	1	0	2	**72**
1000 to 1499	18	12	24	3	2	42	2	19	0	0	0	0	0	1	**123**
1500 to 2499	81	93	108	34	32	153	3	80	0	7	0	0	1	3	**595**
≥ 2500	157	143	141	70	62	240	3	151	2	24	2	2	0	3	**1000**
Total	**267**	**253**	**276**	**107**	**96**	**484**	**8**	**250**	**2**	**32**	**2**	**3**	**1**	**9**	**1790**

H/ER: at home/en-route, MT: Mater, CW: Causeway, LV: Lagan Valley.

Table 26 Discharge destination after first admission to neonatal care.

Discharge destination First admission to NC)	**Infants**
Home	877 (50.1%)
Foster care	10 (0.6%)
Ward	487 (27.8%)
Died	42 (2.4%)
Transfer to another hospital for continuing care	255 (14.6%)
Transfer to another hospital for specialist care	16 (0.9%)
Transfer to another hospital for surgical care	40 (2.3%)
Transfer to another hospital for cardiac care	24 (1.4%)
Total	**1751**
NK	**39**
Total	**1790**

NNNI QUALITY DASHBOARD

Benchmarking Key Audit Question (KAQ)	NNNI	NNAP
How many infants, live born at ≥ 37 weeks' (term) gestation, receive care on NI NNUs?	862/ 22775 (3.8%)	-
How many infants < 27 weeks' gestation are born outside the regional centre (Royal Maternity)?	13/49 (26.5%), **[#]2 NK**	
How many infants < 27 weeks' gestation are born and receive their first neonatal care outside the regional centre (Royal Maternity)?	12/49 (24.5%), **[#]2 NK**	-
Are all mothers who deliver between 24 and 34 weeks' gestation given any dose antenatal steroid?	501/551 (90.9%), **61 NK**	**85%**
*How many live born babies at < 30 weeks' gestation admitted to a neonatal unit who were exposed to antenatal magnesium within 24 hours of birth	57/108 (52.8%), **33 NK**	-
Do all babies ≤ 28 weeks' gestation have temperature taken within one hour of birth?	84/98 (85.7%), **2 NK**	**94%**
Temperature on admission < 36^{0}C or unrecordable Temperature on admission 36 to 36.4^{0}C Temperature on admission 36.5 to 37.5^{0}C Temperature on admission > 37.5^{0}C	**17/84 (20.2%)** 15/84 (17.9%) 47/84 (56.0%) 5/84 (6.0%)	**12.4%**
Do all babies <1501g or gestational age < 32 weeks' gestation at birth undergo 1st ROP screening as per the current guideline recommendations (survivors to screen due date).	**222/252 (88.1%) at least one screen.**	**97% at least one screen** **93% "on-time"**
At least one blood culture (BC) per infant (all) At least one blood culture (BC) or CSF culture per infant (all) At least one blood culture (BC) per infant (< 32 week's gestation) At least one blood culture (BC) or CSF culture per infant (< 32 weeks' gestation)	724/1790 (40.4%) <1BC/ infant 745/1790 (41.6%) <1BC or CSF/ infant **147/244 (60.2%) <1BC/ infant** 147/244 (60.2%) <1BC or CSF/ infant	**< 1 BC per baby**
What proportion of infants < 33 weeks' gestation at birth, are receiving their own mother's milk when discharged home from neonatal care? (Note: single admission to NC)	48/145 (33.1%) **18 NK**	**60%**
Consultation with parents: Is there a documented consultation with parents by a senior member of the neonatal team within 24 hours of admission (first episodes of care)?	**Documented within 24 hours: 919/1388 (66.2%)** Not with 24 hours: 11 (0.8%) Inaccurate time data: 458 (33.0%) **402 NK**	**89%**

[3]*NNAP – National Neonatal Audit Programme; *Proxy – Mother received Magnesium Sulphate; # Place of birth NK but received NC in ANT NNU, +Full analyses not available.*

Table 27 Number of infants admitted to NC & VLBW infants by gestation (completed weeks) & gestational age category.[1]

Gestation	2014 Infants receiving NC	2014 Infants receiving NC Survivors	2014 VLBW (< 1500g)	2014 VLBW (< 1500g) Survivors
22	1	0	1	0
23	7	1 (1NK)	7	1 (1NK)
24	12	7 (1NK)	12	7 (1NK)
25	12	10	12	10
26	19	17	19	17
27	20	15	20	15
Sub-total EPT	**71**	**50/69 (72.5%) 2NK**		
28	29	24 (1NK)	29	24 (1NK)
29	41	40 (1NK)	31	31
30	45	42 (1NK)	18	16 (1NK)
31	58	57 (1NK)	18	18
Sub-total VPT	**173**	**163/169 (96.5%) 4 NK**		
32	80	79 (1NK)	13	12 (1NK)
33	127	123(1NK)	4	3
Sub-total MPT	**207**	**202/205 (98.5%) 2 NK**		
34	169	161 (3 NK)	6	5
35	156	151 (4 NK)	3	2 (1NK)
36	151	147 (4 NK)	2	2
Sub-total LPT	**476**	**459/465 (98.7) 11 NK**		
≥ 37 T	862	**824/836 (98.6%) (26 NK)**	0	0
Not known	**1**	1	0	0
Total	**1790**	**1699/1745 (97.4%) 45NK**	**195**	**163/189 (86.2%), 6 NK**

Extremely preterm (less than 28 weeks' gestation) EPT, Very preterm (28 to 31 weeks' gestation) VPT, Moderately preterm (32 to 33 weeks' gestation) MPT, Late preterm (34 to 36 weeks' gestation) LPT, Term (greater than or equal to 37 weeks' gestation) T

[1] March of Dimes, PMNCH, Save the Children, WHO. (2012) *Born too soon: the global action report on preterm birth. World Health Organization.* Geneva. [Online]. Available at: http://www.who.int/pmnch/media/news/2012/preterm_birth_report/en/index.html (Accessed: 12 March 2016).

Table 28 Cause of death.

During 2014, there were 46 reported deaths prior to discharge from neonatal care. This excludes delivery room deaths.

Cause of death – contributing factors	Infants
Other neonatal reason	16
Congenital abnormality	11
Prematurity	10
Other fetal reason	8
Infection	7
Intraventricular haemorrhage	7
Necrotising enterocolitis	5
Birth asphyxia	5
Re-orientation of care	2
Antepartum haemorrhage	1
Other maternal reason	1
Not recorded (infants)	6
Total deaths	***46**

* Multiple causes per infant.

Table 29 Neonatal morbidity outcomes.

Respiratory System	Infant (%)
Supplemental Oxygen at 36 weeks' corrected gestational age for infants ≤ 32 weeks' gestation.	53/324 (16.4%)
~Supplemental Oxygen on discharge from neonatal care (home).	7/998 (0.7%) **1075 NK**
Gastrointestinal System	
Necrotizing Enterocolitis (NEC) - confirmed (Infants ≤ 34 weeks' gestation or < 1500g birth weight)	17/619 (2.8%) **6 NK**
NEC Treatment for suspected or confirmed (Infants ≤ 34 weeks' gestation or < 1500g birth weight)	5 infants
Central Nervous System	
Infants undergoing cranial imaging (CI) on or before day 28 of life (< 32 weeks' gestation) * USS recorded in procedures	120/244 (49.2%)
Head Scan first Result first episode recorded (< 32 weeks' gestation)	Abnormal 49 Normal 98 **NK 98**
Periventricular-intraventricular haemorrhage (P-IVH) present (< 32 weeks' gestation)	
Worst grade (P-IVH) (< 32 weeks' gestation)	
Cystic-periventricular leukomalacia (CPVL) (<32 weeks' gestation)	
Hypoxic ischaemic encephalopathy (HIE), for infants ≥ 36 weeks'	69/1013 (6.8%)
Hypoxic ischaemic encephalopathy (HIE), for infants ≥ 35 weeks'	71/1169 (6.1%)
Therapeutic hypothermia ≥ 35 weeks' gestation	42/1169 (3.6%)
Seizures (all infants)	44/1790 (2.5%)
Retinopathy of prematurity (ROP)	
Infants Eligible for ROP screening	273/1789 (15.3%), 1NK
Survivors to Screen Due date	252/273 (92.3%)
Screened (before or after discharge)	222/252(88.1%)
ROP present	46/222 (20.7%)
Worst grade ROP	Stage 1: 16 Stage 2: 13 Stage 3: 10 Stage 5: 1 Stage not specified: 6
ROP Treatment (cryosurgery and/or laser)	9/222(4.1%)
Anti – VEGF therapy (Not collated an individual variable 2014 download)	Not Available 2014
Surgery	
# Major Surgery as defined by VON	18/1772 (1.0%)
Discharges – other information on surgical cases. 50 infants transferred other hospital for surgical care. 27 infants transferred other hospital for cardiac care.	67 RBHSC 7 Birmingham Children's Hospital Cardiac 6 Guy's and St Thomas 1 Great Ormond Street.

~ Requiring intermittent or continuing supplementation with oxygen on the day of discharge and to be continued following discharge.

Table 30 Categories of congenital malformations.

Category of congenital malformation	Infants
Recognised trisomy/chromosomal syndromes	16
Respiratory system (e.g. pulmonary hypoplasia, diaphragmatic hernia, other respiratory)	10
Cardiovascular system	31
Central nervous system (e.g. neural tube defect, other)	22
Gastrointestinal (e.g. gastroschisis, exompholos, other)	20
Recognised malformation syndromes (e.g. vater, CAA, potter's sequence)	1
Genito-urinary	8
Musculo-skeletal	2
Undiagnosed dysmorphic syndromes	1
Hydrops fetalis (non-immune, iso-immunisation)	0
Endocrine	0
Uncategorised	11
Total number of malformations	**122**
Total number of infants with at least one of the above congenital malformations NI.	**105/1790 (5.9%)**

Note: *Congenital Malformations were categorised manually by the NNNI Clinical Information Lead.*