# The Canadian Neonatal Network™
# 2024 Annual Report

# Le Réseau Néonatal Canadien™
# 2024 Rapport Annuel

# Acknowledgements

This report is based upon data collected from 33 Health Care Organizations that were members of the Canadian Neonatal Network™ during the year 2024. In addition to all the investigators and the funding agency, we would like to recognize the invaluable support of the Neonatal Intensive Care Units (NICUs) that collected this information, the support of all the participating sites and most importantly, the dedication and hard work of the Site Investigators, NICU Medical Directors and Data Abstractors.

## Structure of the CNN

The Canadian Neonatal Network™ (CNN) is a group of researchers who collaborate on research issues relating to neonatal care. The CNN was founded in 1995 by Dr. Shoo Lee. The CNN maintains a standardized neonatal database and provides unique opportunities for researchers to participate in collaborative projects on a national and international scale. Health care professionals, health services researchers, and health care administrators participate actively in clinical, epidemiologic, outcomes, health services, health policy and informatics research aimed at improving quality, effectiveness and efficiency of neonatal care. Research results are published in Network reports and in peer-reviewed journals.

## Funding

The CNN infrastructure is funded by the Canadian Institutes of Health Research. Individual participating sites provided additional funding, support for data collection and other related resources. The coordinating center, Maternal-Infant Care Research Centre, is supported by Mount Sinai Hospital, Toronto, Ontario.

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**Participating CNN Sites and Site Investigators, Year 2024**

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| Jewish General Hospital, Montréal, Québec | Dr. Victoria Bizgu & Dr. Nina Nouraeyan |
| Jim Pattison Children's Hospital, Saskatoon, Saskatchewan (Formerly Royal University Hospital) | Dr. Lannae Strueby |
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| London Health Sciences Centre, London, Ontario | Dr. Kevin Coughlin |
| Montreal Children's Hospital – McGill University Health Centre, Montréal, Québec | Dr. Marc Beltempo & Dr. Marco Zeid |
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| Regina General Hospital, Regina, Saskatchewan | Dr. Andrei Harabor |
| Royal Alexandra Hospital, Edmonton, Alberta & University of Alberta Hospital – Stollery Children's, Edmonton, Alberta | Dr. Jennifer Toye & Dr. Joseph Ting |

| | |
|---|---|
| Royal Columbian Hospital, New Westminster, British Columbia | Dr. Miroslav Stavel |
| St. Boniface General Hospital, Winnipeg, Manitoba | Dr. Ann Yi & Dr. Chelsea Ruth |
| Saint John Regional Hospital, Saint John, New Brunswick | Dr. Gabriela Nunes & Dr. Wissam Alburaki |
| Sunnybrook Health Sciences Centre, Toronto, Ontario | Dr. Eugene Ng |
| Surrey Memorial Hospital, Surrey, British Columbia | Dr. Rebecca Sherlock |
| The Moncton Hospital, Moncton, New Brunswick | Dr. Paloma Costa |
| The Ottawa Hospital, Ottawa, Ontario | Dr. Brigitte Lemyre |
| Victoria General Hospital, Victoria, British Columbia | Dr. Thevanisha Pillay |
| Windsor Regional Hospital, Windsor, Ontario | Dr. Sajit Augustine |
| University of Utah Hospital, Salt Lake City, Utah | Dr. Catherine Chang |

**Written & Prepared By:**

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Cover page photo by Dr. Prakesh Shah, Mount Sinai Hospital

# Table of Contents

# A. Executive Summary

**Inclusion summary:**

This report from the Canadian Neonatal Network™ (CNN) is based on data from 33 tertiary NICU sites that contributed data in the year 2024. Admissions between January 1, 2024 and December 31, 2024 who were discharged by March 31, 2025 are included. Fourteen (14) infants who were admitted in 2023 but discharged after March 31, 2024 are also included in the 2024 report. Delivery room deaths, moribund neonates, and readmissions from 2023 were excluded.

| | |
|---|---|
| Total number of eligible admissions to participating sites<br>(See section D.1 for analyses) | 16 844 |
| Total number of eligible individual neonates<br>(See section D.2. for analyses) | 15 493 |
| Total number of eligible very preterm (GA <33 weeks) neonates | 4 405 |
| Total number of eligible extremely preterm (GA <29 weeks) neonates<br>(See section D.3. for analyses) | 1 720 |
| Total number of eligible very low birth weight (BW <1500 g) neonates<br>(See section D.3. for analyses) | 3 035 |

**Important information for data interpretations:**

a. Neonates who were transferred to a "normal newborn care area" (level I nursery) or discharged home within 24 hours of their admission to the site were excluded.
b. In 2024, five (5) sites were only able to contribute data from a subset of eligible neonates admitted to their NICUs due to resource limitations. See pages 4-5 for data collection criteria of all participating sites.
c. Characteristics of participating sites are highlighted at the outset of the presentations.
d. 'Missing' data on outcome variables varied for each presentation. Caution should be used when interpreting the information. When possible, both the total number of neonates and the number of neonates with available data are provided.
e. The denominators for all percentages in this report include neonates whose data for that particular item were available.
f. This report includes data from neonates who were admitted into the NICUs, except for Presentations #4, #6a and #6b, which included delivery room deaths.

**Noteworthy findings:**

1. This report consists of data from 16 844 admissions (representing 15 493 individual neonates) from 33 participating tertiary NICUs.
    a. Of the above, 4 405 (28.4%) neonates were very preterm <33 weeks' GA, and 1 720 (11.1%) neonates were extremely preterm <29 weeks' GA.
    b. Of all admissions across CNN, 25.3% were outborn.
2. The proportions of neonates who were provided active resuscitation and survived until discharge were 41%, 55%, and 78% at 22-, 23-, and 24-weeks' GA, respectively.
    a. Palliative care in the delivery room was the primary treatment for 41/91 (45%), 34/175 (19%), and 19/220 (9%) of neonates at 22-, 23-, and 24-weeks' GA, respectively.
    b. Across the CNN, 41, 136, and 201 neonates were admitted to the NICU at 22-, 23-, and 24-weeks' GA, respectively.
3. A complete course (2-doses) of antenatal steroids was administered in 57.1% of neonates <26-weeks' GA, 62.4% of neonates 26-28 weeks' GA, and 63% of neonates 29-32 weeks' GA.
4. Deferred cord clamping ≥60 seconds was administered in 24.6% of neonates <26-weeks' GA, 42.3% of 26-28 weeks' GA, and 54.8% of neonates 29-32 weeks' GA.
5. Among patients who received surfactant, Minimally Invasive Surfactant Therapy (MIST) was used in 8.9% of neonates <26-weeks' GA, 30.9% at 26-28 weeks' GA, 40.8% at 29-30 weeks' GA, and 36.1% at 31-32 weeks' GA.
6. Among neonates <33 weeks' GA with a PDA, 53% were conservatively (no treatment) managed, while 4% received either surgical ligation or device closure.
7. Incidence of mortality among neonates without major congenital abnormalities admitted to the NICU was 271/4 230 (6.4%) for neonates <33-weeks' GA, and 243/1 720 (14.1%) for neonates <29-weeks' GA.
8. Early onset sepsis (EOS) was noted in 43/1 720 (2.5%) of neonates <29 weeks' GA; the most common organism was *E. Coli*. Late onset sepsis (LOS) was noted in 386/1 678 (23%) of neonates <29 weeks' GA who survived at least 2 days; the most common organism was *Coagulase-Negative Staphylococcus species* (*CONS)*.
9. Among neonates <29-weeks' GA without major congenital abnormality, Severe Neurological Injury was noted in 15.1%, Severe ROP in 11.9%, Any CLD in 51.6%, moderate-severe CLD in 43.8%, and NEC stage ≥2 in 7.9%. The proportion of neonates <29 week's GA with mortality or major morbidity was 67.2%.
10. Among ALL neonates <33 weeks' GA admitted to NICUs, 6.8% died, 45.5% were transferred to a community hospital or another in-patient unit in the same hospital, 1.8% were transferred to another tertiary hospital or transferred out of country; 37.6% were discharged directly home.
11. Across the CNN, 720 neonates were admitted with HIE. Of them, 540 received therapeutic hypothermia, of whom 49/540 (9%) died, 10/540 (2%) were discharged with palliation, and 147/476 (31%) had brain injury on MRI.

**What's new and updated for the 2024 Annual Report:**

1. There are now 28 out of 33 sites that report data on ALL eligible neonates (up from 25 sites in 2023).
2. Moderate-severe Chronic Lung Disease (CLD) has been added in Presentation #26, Presentation #47, while new adjusted standardized ratios for the same have been added (presentation #49a, Presentation #49b, Presentation #49c, and Presentation #49d).
3. PVL has been added as a new category of morbidities in Presentation #34 and Presentation #35.
4. Site-based comparisons of rate of PDA treatment now focuses on neonates <29 weeks (changed from neonates <33 weeks) – Presentation #42 and Presentation #43.
5. Presentation #56 on HIE and Therapeutic Hypothermia has new GA-based stratifications.

# B. CNN Site Characteristics

| SITE | CNN data collection criteria | Level II / Step-down nursery | Level II / Step-down data included in CNN | Delivery room deaths included in CNN | ROP treatment service? | PDA surgical service? | Therapeutic hypothermia treatment? | General pediatric surgical Services? |
|---|---|---|---|---|---|---|---|---|
| Alberta Children's Hospital, Calgary, AB | All eligible admissions | n | n/a | n/a | y | y | y | y |
| BC Women's Hospital, Vancouver, BC | All eligible admissions | y | n | y | y | y | y | y |
| Cape Breton Regional Hospital, Sydney, NS | All eligible admissions | n | n/a | y | n | n | n | n |
| Centre Hospitalier Universitaire de Quebec, Quebec City, QC | < 33 weeks GA, CDH & gastroschisis, and other selected admissions | y | n | y | y | y | y | y |
| Centre Hospitalier Universitaire de Sherbrooke, Sherbrooke, QC | < 33 weeks GA, HIE babies who were cooled at any GA | y | n | y | n | n | y | y |
| Children's Hospital of Eastern Ontario, Ottawa, ON | < 36 weeks GA, HIE babies who were cooled | n | n | n | y | y | y | y |
| Dr. Everett Chalmers Hospital, Fredericton, NB | All eligible admissions | n | n/a | y | n | n | y | y |
| Foothills Medical Centre, Calgary, AB | All eligible admissions | n | n/a | y | y | y | y | n |
| Hamilton Health Sciences Centre, Hamilton, ON | All eligible admissions | y | n | y | y | y | y | y |
| Health Sciences Centre Winnipeg, MB | ≤33 weeks GA, DRD, HIE babies who were cooled, CDH & gastroschisis, and other selected admissions | y | y | y | y | y | y | y |
| Hôpital Maisonneuve-Rosemont, Montréal, QC | < 33 weeks GA | n | n/a | y | n | n | n | n |
| Hôpital Sainte-Justine, Montreal, QC | All eligible admissions | y | n | y | y | y | y | y |
| Hospital for Sick Children, Toronto, ON | All eligible admissions | n | n/a | n/a | y | y | y | y |
| IWK Health Centre, Halifax, NS | < 33 weeks GA, all HIE, all CAPSNet, and transfers to/from other CNN centres | y | y | y | y | y | y | y |
| Janeway Children's Health & Rehab Centre, Saint John , NL | All eligible admissions | y | y | y | y | y | y | y |
| Jewish General Hospital, Montreal, QC | All eligible admissions | y | y | y | y | n | n | n |
| Jim Pattison Children's Hospital, Saskatoon, SK (Formerly Royal University Hospital) | All eligible admissions | n | n/a | n | y | y | y | y |
| Kingston General Hospital, Kingston, ON | All eligible admissions | y | y | y | y | n | y | y |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| London Health Sciences Centre, London, ON | All eligible admissions | y | y | y | y | y | y | y |
| Montreal Children's Hospital – MUHC, Montreal, QC | All eligible admissions | n | n/a | y | y | y | y | y |
| Mount Sinai Hospital, Toronto, ON | All eligible admissions | n | n/a | y | n | n | y | n |
| Regina General Hospital, Regina, SK | All eligible admissions | y | y | y | y | n | y | y |
| Royal Alexandra Hospital, Edmonton, AB* | < 33 weeks GA, HIE babies who were cooled, DRD | y | y | y | y | n | y | n |
| Royal Columbian Hospital, New Westminster, BC | All eligible admissions | y | y | y | y | n | y | y |
| St. Boniface General Hospital, Winnipeg, MB | All eligible admissions | n | n/a | Incomplete | y | y | y | y |
| Saint John Regional Hospital, Saint John, NB | All eligible admissions | n | n | y | n | n | y | y |
| Sunnybrook Health Sciences Centre, Toronto, ON | All eligible admissions | n | n/a | y | y | n | y | n |
| Surrey Memorial Hospital, Surrey, BC | All eligible admissions | y | y | y | y | n | y | n |
| The Moncton Hospital, Moncton, NB | All eligible admissions | n | n/a | y | y | n | y | n |
| The Ottawa Hospital, Ottawa, ON | < 33 weeks GA | y | partial | y | y | n | n | n |
| University of Alberta Hospital - Stollery, Edmonton, AB* | < 33 weeks GA, HIE babies who were cooled, CAPSNet | n | n/a | n/a | n | y | y | y |
| Victoria General Hospital, Victoria, BC | All eligible admissions | y | y | y | y | y | y | y |
| Windsor Regional Hospital, Windsor, ON | All eligible admissions | n | n/a | y | y | n | n | n |
| University of Utah Hospital, Utah, US | All eligible admissions | y | n | y | y | n | y | n |
| * Royal Alexandra Hospital & University of Alberta Hospital transmit data as one site | | | | | | | | |

# C. Information Systems

Neonates included in this report are those who were admitted to a CNN participating site between January 1, 2024 and December 31, 2024, and were discharged by March 31, 2025. The neonates must have had a length of stay at one of the CNN participating sites for greater than or equal to 24 hours, or died or were transferred to another level 2 or 3 facility within 24 hours. Fourteen (14) infants who were admitted in 2023 but discharged after March 31, 2024 are also included in this 2024 report. Delivery room deaths, moribund neonates, and readmissions from 2023 have been excluded. A total of 15 493 patients accounted for 16 844 admissions as some neonates were admitted on more than one occasion.

Patient information was retrospectively abstracted from patient charts by trained personnel using standard definitions and protocols contained in a standard manual of operations. Data were entered into a computer using a customized data entry program with built-in error checking and subsequently sent electronically to the Canadian Neonatal Network™ Coordinating Centre located at the Maternal-Infant Care Research Centre (MiCare) in Toronto, Ontario. Patient data at each participating site are available to the respective site investigator and data abstractor only. Patient identifiers were stripped prior to data transfer to the Coordinating Centre. Patient confidentiality was strictly observed. A unique identifier was generated for each entry of neonate into the system and that identifier was followed throughout one or more hospital stays. Individual-level data are used for analyses, but only aggregate data are reported. The results presented in this report will not identify participating sites by name; each site is anonymous using a randomly assigned number. Whenever a small cell size (1 to 4 individuals) was observed in the data output, the data were grouped to maintain anonymity.

At each participating site, data are stored in a secured database at the site or in an alternate secured site used to store patient information (e.g. health records department, computer services department). At the Coordinating Centre, the central database is stored in a secured computer database located on a server and an off-site back-up that is maintained and secured by the Mount Sinai Hospital Information Technology Department. At the Coordinating Centre, information was verified for completeness and was reviewed for accuracy by looking for "unusual" and missing values on individual data items and by comparison with other information that might be related (e.g. gestational age [GA] and birth weight [BW]). However, the principal accuracy rests upon the diligence and capabilities of the individual sites. Each site has one or more dedicated person(s) responsible for data acquisition and transmission.

At the Coordinating Centre, analyses were conducted using univariate, bivariate, and multivariate analyses for the total cohort, and for individual sites. Multivariable regression analyses were used to identify risk factors associated with mortality and major morbidities. Grouped data enabled development of outcome graphs by GA and BW for mortality and selected major morbidities. Similar systems have been used to assist in quality assurance and predict resource utilization.

# D. Descriptive Analyses

This section is divided into three sub-sections.

### Section D.1. Analyses based on the number of eligible admissions to participating sites

These include data from 16 844 eligible admissions (including readmissions) to 33 sites. 28 of these sites submitted complete data (n=16 072) on all admissions and 5 sites submitted data on a selected admission cohort (n=772).

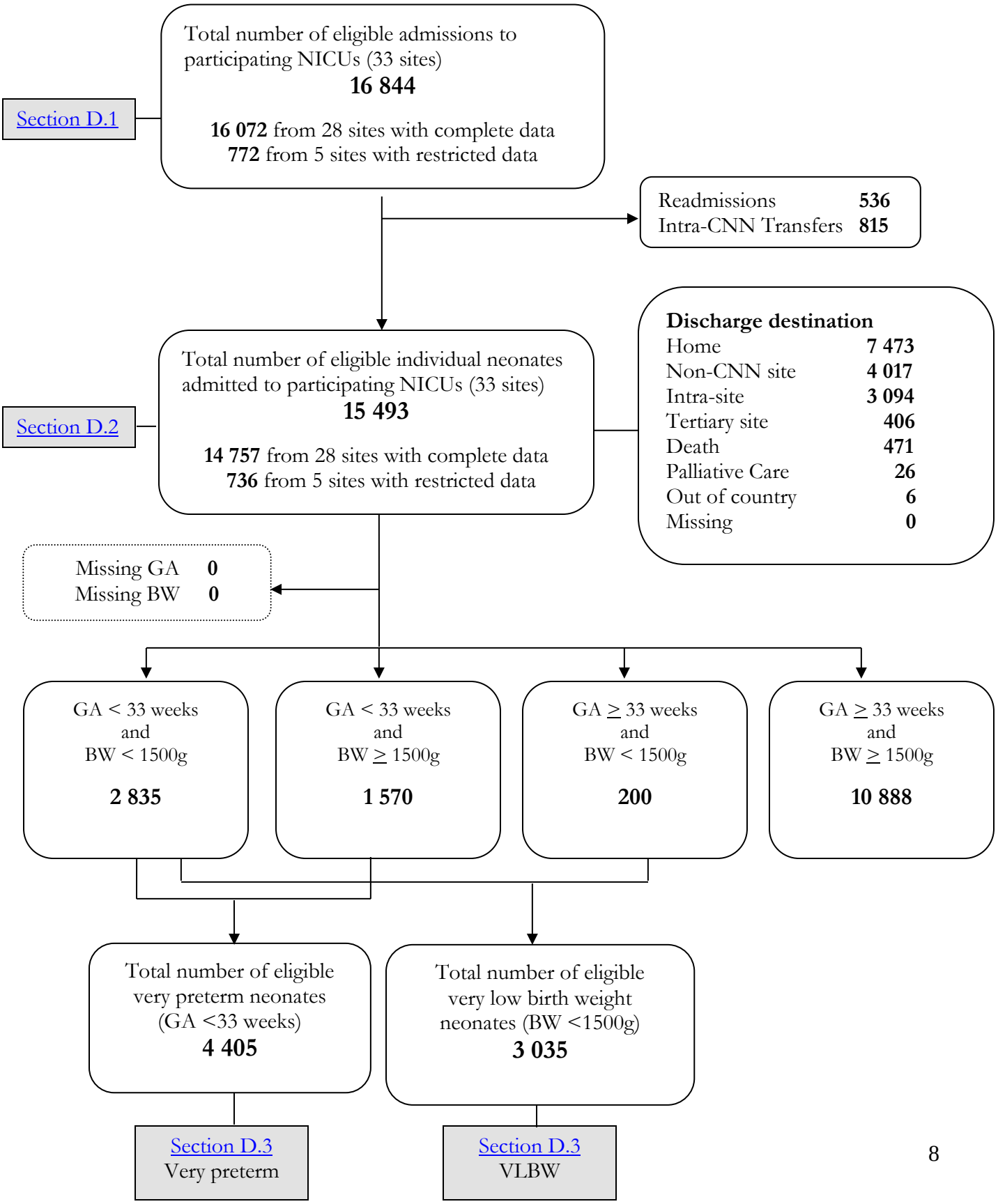
### Section D.2. Analyses based on the number of eligible neonates admitted to participating sites

These include data from 15 493 eligible neonates admitted to 33 sites. 28 of these sites submitted complete data (n=14 757) on all eligible admitted neonates and 5 sites submitted data on selected eligible admitted neonates (n=736).

### Section D.3. Analyses based on the number of eligible very preterm (GA <33 weeks) or very low birth weight (BW <1500g) neonates

These include data from 4 405 eligible very preterm neonates and 3 035 eligible very low birth weight (VLBW) neonates.

Canadian Neonatal Network™ Database: Admissions between January 1, 2024 and December 31, 2024 who were discharged by March 31, 2025. Fourteen (14) infants who were admitted in 2023 but discharged after March 31, 2024 were also included in the 2024 report. Delivery room deaths, moribund neonates, and readmissions from 2023 were excluded.

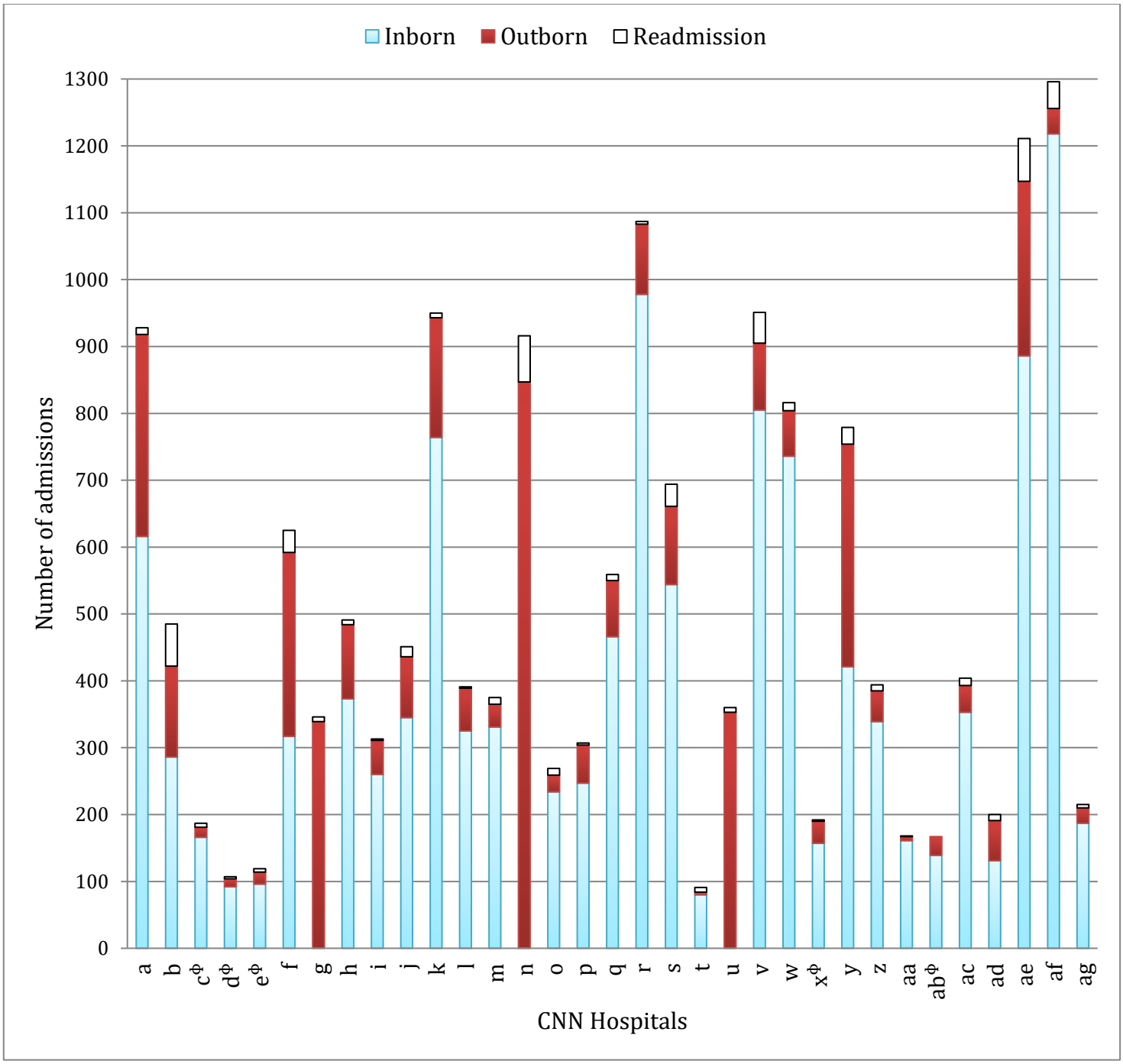


## Section D.1

**Analyses based on the number of eligible admissions to participating sites**

These include data from 16 844 eligible admissions (including readmissions) to 33 sites. 28 of these sites submitted complete data (n=16 072) on all admissions and 5 sites submitted data on a selected admission cohort (n=772).

**Presentation #1**
**All admissions: Type of admissions: All Sites**




Φ Data collected on selected cohort of eligible admissions only.

**Presentation #1** (continued)
**All admissions: Type of admissions: All Sites**

| Sites | | Admission Status | | | Total |
|---|---|---|---|---|---|
| | | Inborn | Outborn | Readmission | |
| a | Count | 616 | 302 | 10 | 928 |
| | % | 66.4 | 32.5 | 1.1 | (100.0) |
| b | Count | 286 | 136 | 63 | 485 |
| | % | 59.0 | 28.0 | 13.0 | (100.0) |
| c$^{\phi}$ | Count | 166 | 15 | 6 | 187 |
| | % | 88.8 | 8.0 | 3.2 | (100.0) |
| d$^{\phi}$ | Count | 92 | 12 | 3 | 107 |
| | % | 86.0 | 11.2 | 2.8 | (100.0) |
| e$^{\phi}$ | Count | 96 | 18 | 5 | 119 |
| | % | 80.7 | 15.1 | 4.2 | (100.0) |
| f | Count | 317 | 275 | 33 | 625 |
| | % | 50.7 | 44.0 | 5.3 | (100.0) |
| g | Count | 0 | 339 | 7 | 346 |
| | % | 0.0 | 98.0 | 2.0 | (100.0) |
| h | Count | 373 | 111 | 7 | 491 |
| | % | 76.0 | 22.6 | 1.4 | (100.0) |
| i | Count | 260 | 51 | 2 | 313 |
| | % | 83.1 | 16.3 | 0.6 | (100.0) |
| j | Count | 345 | 91 | 15 | 451 |
| | % | 76.5 | 20.2 | 3.3 | (100.0) |
| k | Count | 764 | 179 | 7 | 950 |
| | % | 80.4 | 18.8 | 0.7 | (100.0) |
| l | Count | 325 | 64 | 2 | 391 |
| | % | 83.1 | 16.4 | 0.5 | (100.0) |
| m | Count | 331 | 34 | 10 | 375 |
| | % | 88.3 | 9.1 | 2.7 | (100.0) |
| n | Count | 0 | 847 | 69 | 916 |
| | % | 0.0 | 92.5 | 7.5 | (100.0) |
| o | Count | 234 | 25 | 10 | 269 |
| | % | 87.0 | 9.3 | 3.7 | (100.0) |
| p | Count | 247 | 57 | 3 | 307 |
| | % | 80.5 | 18.6 | 1.0 | (100.0) |
| q | Count | 466 | 84 | 9 | 559 |
| | % | 83.4 | 15.0 | 1.6 | (100.0) |

| Sites | | Admission status | | | Total |
|---|---|---|---|---|---|
| | | Inborn | Outborn | Readmission | |
| r | Count | 978 | 105 | 4 | 1087 |
| | % | 90.0 | 9.7 | 0.4 | (100.0) |
| s | Count | 544 | 117 | 33 | 694 |
| | % | 78.4 | 16.9 | 4.8 | (100.0) |
| t | Count | 80 | 4 | 7 | 91 |
| | % | 87.9 | 4.4 | 7.7 | (100.0) |
| u | Count | 0 | 353 | 7 | 360 |
| | % | 0.0 | 98.1 | 1.9 | (100.0) |
| v | Count | 805 | 100 | 46 | 951 |
| | % | 84.7 | 10.5 | 4.8 | (100.0) |
| w | Count | 736 | 68 | 12 | 816 |
| | % | 90.2 | 8.3 | 1.5 | (100.0) |
| x$^{\phi}$ | Count | 157 | 33 | 2 | 192 |
| | % | 81.8 | 17.2 | 1.0 | (100.0) |
| y | Count | 421 | 333 | 25 | 779 |
| | % | 54.0 | 42.8 | 3.2 | (100.0) |
| z | Count | 339 | 46 | 9 | 394 |
| | % | 86.0 | 11.7 | 2.3 | (100.0) |
| aa | Count | 161 | 6 | 1 | 168 |
| | % | 95.8 | 3.6 | 0.6 | (100.0) |
| ab$^{\phi}$ | Count | 139 | 28 | 0 | 167 |
| | % | 83.2 | 16.8 | 0.0 | (100.0) |
| ac | Count | 353 | 40 | 11 | 404 |
| | % | 87.4 | 9.9 | 2.7 | (100.0) |
| ad | Count | 131 | 60 | 9 | 200 |
| | % | 65.5 | 30.0 | 4.5 | (100.0) |
| ae | Count | 886 | 261 | 64 | 1211 |
| | % | 73.2 | 21.6 | 5.3 | (100.0) |
| af | Count | 1218 | 38 | 40 | 1296 |
| | % | 94.0 | 2.9 | 3.1 | (100.0) |
| ag | Count | 187 | 23 | 5 | 215 |
| | % | 87.0 | 10.7 | 2.3 | (100.0) |
| Total | Count | 12053 | 4255 | 536 | 16844 |
| | % | 71.6 | 25.3 | 3.2 | (100.0) |

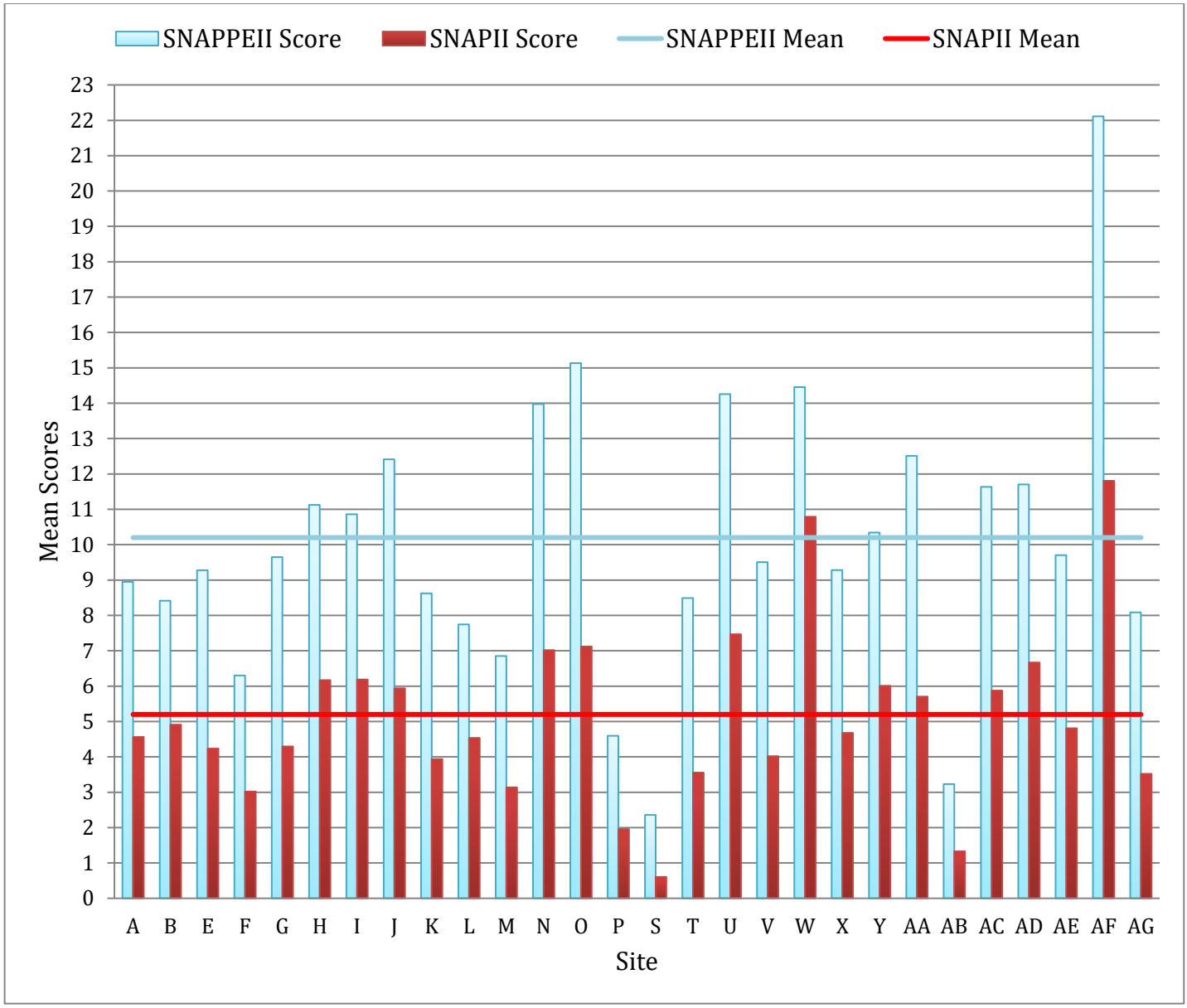
**COMMENTS:** These analyses include 16 844 admissions to participating sites across the CNN during the period of January 1, 2024 to December 31, 2024. After adjusting for readmission, 15 493 neonates are represented. **Twenty-eight sites collected data on all eligible admissions whereas five sites (marked by $^{\phi}$) collected data on selected cohort of eligible admissions only.** See pages 4-5 for data collection criteria of all participating sites.

## Section D.2

**Analyses based on the number of eligible neonates admitted to participating sites**

These include data from 15 493 eligible neonates admitted to 33 sites. 28 of these sites submitted complete data (n=14 757) on all eligible admitted neonates and 5 sites submitted data on a selected cohort of eligible admitted neonates (n=736).

**Presentation #2**
**First admissions: Admission illness severity scores (SNAP-II and SNAP-IIPE): Sites with complete data**
**(n=28 sites, 14 275 neonates, 0 with missing data on SNAP-II scores and 482 not applicable due to death or transfer within 12 hours)**




| Data collection status | Number of sites | Score | Mean | Std Error | Q1 | Median | Q3 |
|---|---|---|---|---|---|---|---|
| **Complete** | **28** | **SNAPIIPE** | 10.2 | 0.1 | 0 | 0 | 18 |
| | | **SNAPII** | 5.2 | 0.1 | 0 | 0 | 7 |
| **Restricted** | **5** | **SNAPIIPE** | 17.4 | 0.7 | 0 | 10 | 27 |
| | | **SNAPII** | 8.3 | 0.4 | 0 | 5 | 12 |

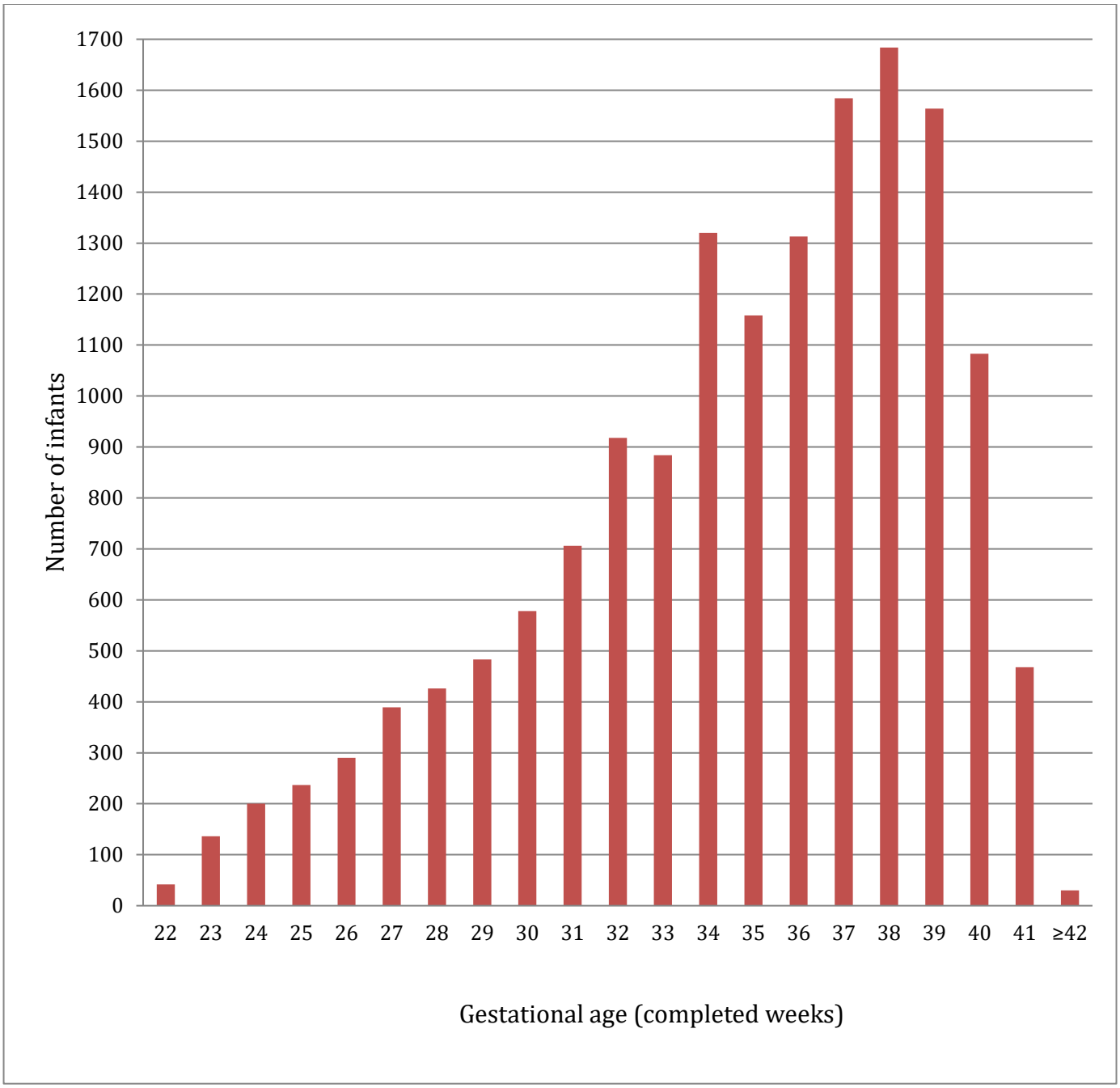
**Presentation #2 (**continued)

**First admissions: Admission illness severity scores (SNAP-II & SNAP-IIPE): All sites**

| Site | | SNAP-IIPE | SNAP-II | Site | | SNAP-IIPE | SNAP-II |
|---|---|---|---|---|---|---|---|
| **A** | Mean | 8.9 | 4.6 | **Q**ϕ | Mean | 18.5 | 8.9 |
| | SEM | 0.7 | 0.4 | | SEM | 1.6 | 1.0 |
| **B** | Mean | 8.4 | 4.9 | **R**ϕ | Mean | 18.9 | 10.4 |
| | SEM | 0.5 | 0.3 | | SEM | 2.0 | 1.3 |
| **C**ϕ | Mean | 14.3 | 7.8 | **S** | Mean | 2.4 | 0.6 |
| | SEM | 1.4 | 1.0 | | SEM | 0.8 | 0.3 |
| **D**ϕ | Mean | 21.5 | 8.4 | **T** | Mean | 8.5 | 3.6 |
| | SEM | 1.5 | 0.8 | | SEM | 0.5 | 0.3 |
| **E** | Mean | 9.3 | 4.2 | **U** | Mean | 14.3 | 7.5 |
| | SEM | 0.9 | 0.5 | | SEM | 0.8 | 0.6 |
| **F** | Mean | 6.3 | 3.0 | **V** | Mean | 9.5 | 4.0 |
| | SEM | 0.7 | 0.4 | | SEM | 0.6 | 0.3 |
| **G** | Mean | 9.6 | 4.3 | **W** | Mean | 14.5 | 10.8 |
| | SEM | 0.8 | 0.5 | | SEM | 0.9 | 0.7 |
| **H** | Mean | 11.1 | 6.2 | **X** | Mean | 9.3 | 4.7 |
| | SEM | 1.2 | 0.8 | | SEM | 0.7 | 0.5 |
| **I** | Mean | 10.9 | 6.2 | **Y** | Mean | 10.3 | 6.0 |
| | SEM | 0.4 | 0.2 | | SEM | 0.5 | 0.3 |
| **J** | Mean | 12.4 | 5.9 | **Z**ϕ | Mean | 12.5 | 5.9 |
| | SEM | 0.6 | 0.4 | | SEM | 1.3 | 0.7 |
| **K** | Mean | 8.6 | 3.9 | **AA** | Mean | 12.5 | 5.7 |
| | SEM | 0.9 | 0.5 | | SEM | 0.5 | 0.3 |
| **L** | Mean | 7.7 | 4.5 | **AB** | Mean | 3.2 | 1.3 |
| | SEM | 0.4 | 0.2 | | SEM | 0.4 | 0.2 |
| **M** | Mean | 6.9 | 3.1 | **AC** | Mean | 11.6 | 5.9 |
| | SEM | 0.6 | 0.4 | | SEM | 0.9 | 0.7 |
| **N** | Mean | 14.0 | 7.0 | **AD** | Mean | 11.7 | 6.7 |
| | SEM | 0.8 | 0.5 | | SEM | 0.6 | 0.4 |
| **O** | Mean | 15.1 | 7.1 | **AE** | Mean | 9.7 | 4.8 |
| | SEM | 1.5 | 0.9 | | SEM | 1.2 | 0.7 |
| **P** | Mean | 4.6 | 2.0 | **AF** | Mean | 22.1 | 11.8 |
| | SEM | 0.5 | 0.3 | | SEM | 1.1 | 0.7 |
| | | | | **AG** | Mean | 8.1 | 3.5 |
| | | | | | SEM | 0.6 | 0.3 |

**COMMENTS:** These analyses include 15 010 neonates (first admissions only, 0 had missing data on SNAP scores and 483 not applicable due to death or transfer within 15 hours) to participating all sites during the year 2024. **Twenty-eight sites collected data on all eligible admissions whereas five sites (marked by ϕ) collected data on a selected cohort of eligible admissions only.** These five sites were not included in the Presentation #2 bar graph but were included in the Presentation #2 Table.
ϕ Please note that the criteria for entering neonates in the CNN dataset are not the same for these five sites and thus, the scores are not comparable with each other or with centers contributing complete data. These five sites may have included neonates at lower GAs and/or lower BWs; thus, their severity of illness scores may be different.

**Presentation #3**
**Gestational age distribution: All sites and all admitted neonates**

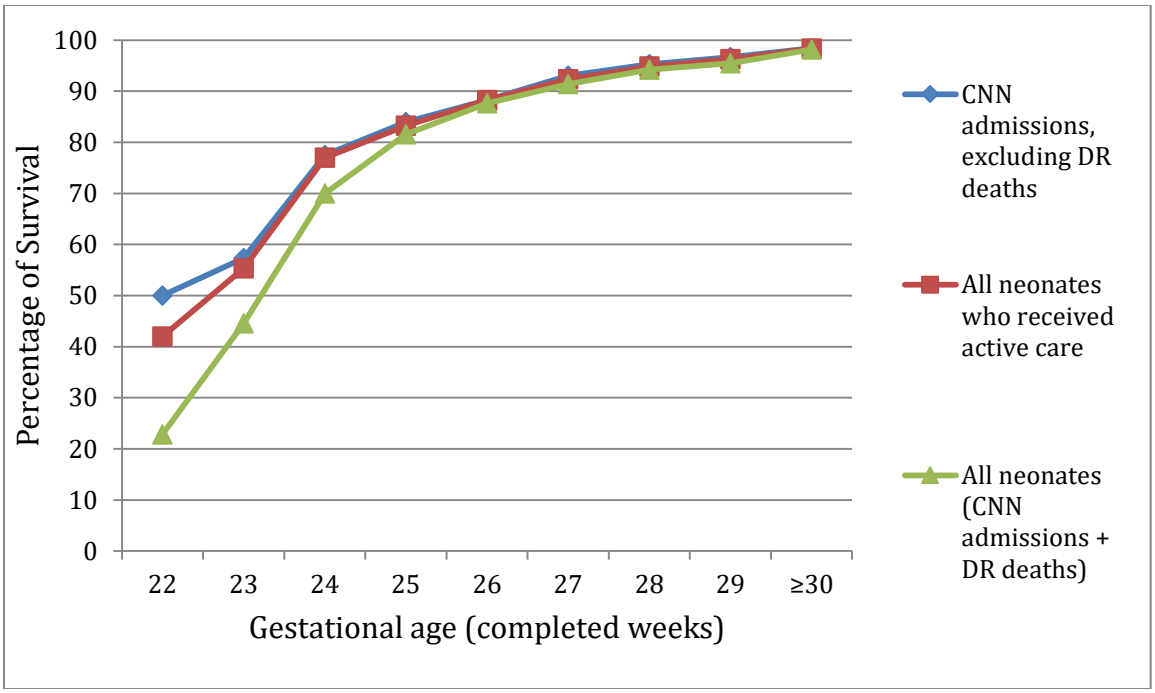


**Presentation #3** (continued)
**Gestational age distribution: All sites and all admitted neonates**

| GA in completed weeks at birth | Frequency | Percent | Cumulative percent |
|---|---|---|---|
| **22** | 41 | 0.3 | 0.3 |
| **23** | 136 | 0.9 | 1.2 |
| **24** | 201 | 1.3 | 2.4 |
| **25** | 237 | 1.5 | 4.0 |
| **26** | 290 | 1.9 | 5.8 |
| **27** | 389 | 2.5 | 8.4 |
| **28** | 426 | 2.8 | 11.1 |
| **29** | 483 | 3.1 | 14.2 |
| **30** | 578 | 3.7 | 18.0 |
| **31** | 706 | 4.6 | 22.5 |
| **32** | 918 | 5.9 | 28.4 |
| **33** | 884 | 5.7 | 34.1 |
| **34** | 1 320 | 8.5 | 42.7 |
| **35** | 1 158 | 7.5 | 50.1 |
| **36** | 1 313 | 8.5 | 58.6 |
| **37** | 1 584 | 10.2 | 68.8 |
| **38** | 1 684 | 10.9 | 79.7 |
| **39** | 1 564 | 10.1 | 89.8 |
| **40** | 1 083 | 7.0 | 96.8 |
| **41** | 468 | 3.0 | 99.8 |
| **≥42** | 30 | 0.2 | 100.0 |
| **Total included** | 15 493 | 100.0 | |
| **Total # of missing GA** | 0 | | |
| **Total # of neonates** | 15 493 | | |

**COMMENTS:** The GA distribution of neonates is shown here. Early-Term (37-38 weeks) and Term babies (≥39 weeks) represent 41.4% of the total number of neonates. Twenty-eight sites collected data on all eligible admissions whereas five sites collected data on a selected cohort of eligible admissions.

**Presentation #4**
**Survival to discharge by GA: All admissions + delivery room (DR) deaths**

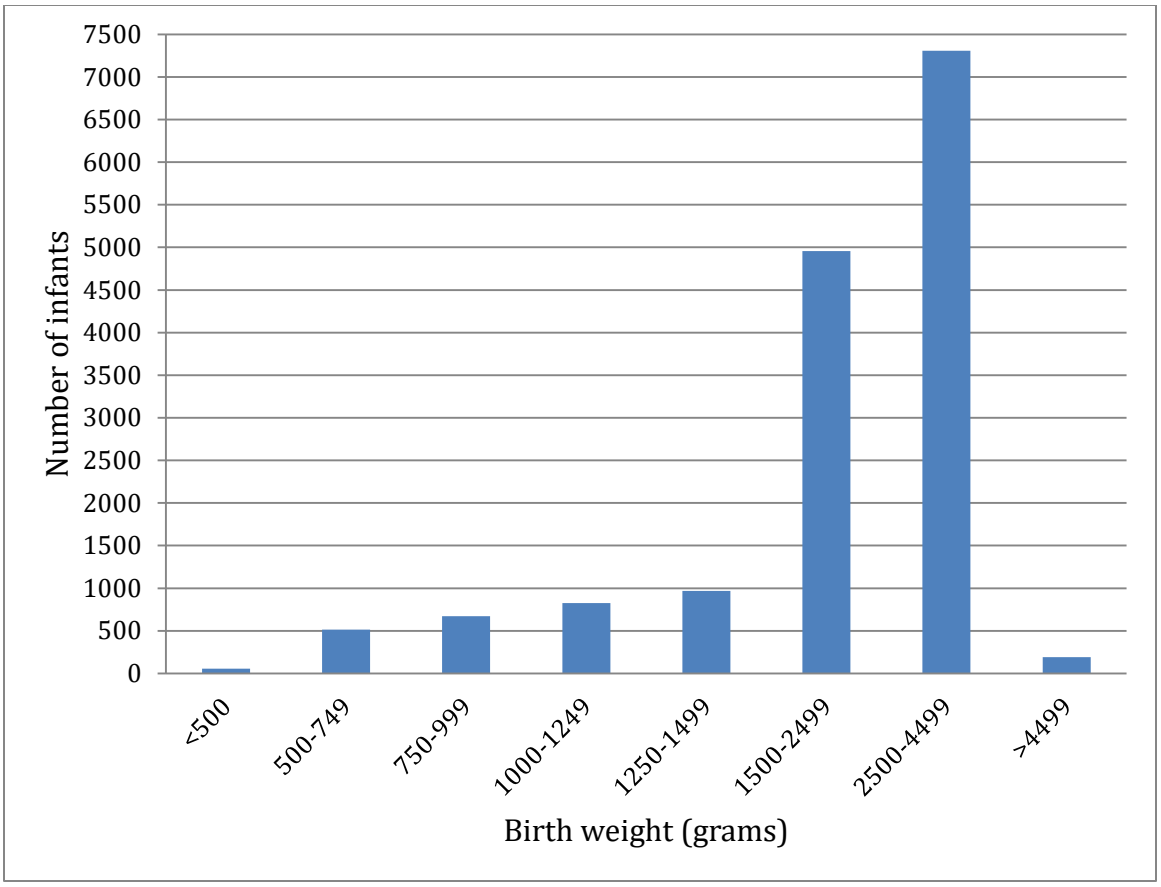



| CNN admissions (this excludes delivery room deaths) | | | | | Delivery room deaths* | | Total CNN admissions + delivery room deaths* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **GA (completed weeks)** | **#of neonates** | **#of survivors** | **Percent survival among CNN admissions, excluding DR deaths** | **#of neonates who received comfort care** | **Palliative care** | **Active care **** | **Total** | **#of neonates who received comfort care** | **# of neonates who received active care**** | **Percent survival among those who received active care** | **Percent survival among all neonates (CNN admissions + DR deaths)** |
| | *a* | *b* | *b/a* | *c* | *d* | *e* | *a+d+e* | *c+d* | *(a-c) +e* | *b/ (a-c)+e* | *b/(a+d+e)* |
| **22** | 41 | 21 | 50 | 0 | 41 | 9 | 91 | 41 | 50 | 42 | 23 |
| **23** | 136 | 78 | 57 | 0 | 34 | 5 | 175 | 34 | 141 | 55 | 45 |
| **24** | 201 | 155 | 78 | 0 | 19 | 0 | 220 | 19 | 201 | 77 | 70 |
| **25** | 237 | 199 | 84 | 0 | 5 | 2 | 244 | 5 | 239 | 83 | 82 |
| **26** | 290 | 256 | 88 | 0 | 2 | 0 | 292 | 2 | 290 | 88 | 88 |
| **27** | 389 | 362 | 93 | 0 | 4 | 3 | 396 | 4 | 392 | 92 | 91 |
| **28** | 426 | 406 | 95 | 0 | 3 | 2 | 431 | 3 | 428 | 95 | 94 |
| **29** | 483 | 467 | 97 | 0 | 4 | 2 | 489 | 4 | 485 | 96 | 96 |
| **≥30** | 13 290 | 13 078 | 98 | 2 | 22 | 11 | 13 323 | 24 | 13 299 | 98 | 98 |
| **Total included** | 15 493 | 15 022 | 97 | 2 | 134 | 34 | 15 661 | 136 | 15 525 | 97 | 96 |
| **Missing GA** | 0 | | | | 2 | 0 | 2 | 2 | 0 | | |
| **Total** | **15 493** | | | **2** | **136** | **34** | **15 663** | **138** | **15 525** | | |

***Please note that delivery room deaths are *only included in Presentations #4, #6a, and #6b* in this report. **Active care refers to infants who received cardiopulmonary resuscitation at birth.**

**Note: The results should be used cautiously for antenatal counseling.** The survival rates are based upon the final discharge from the participating neonatal site. Note that these rates include only neonates admitted to the sites or dying in the delivery rooms of participating sites and thus are not reflective of the entire Canadian population. Only one CNN site did not contribute delivery room death data.

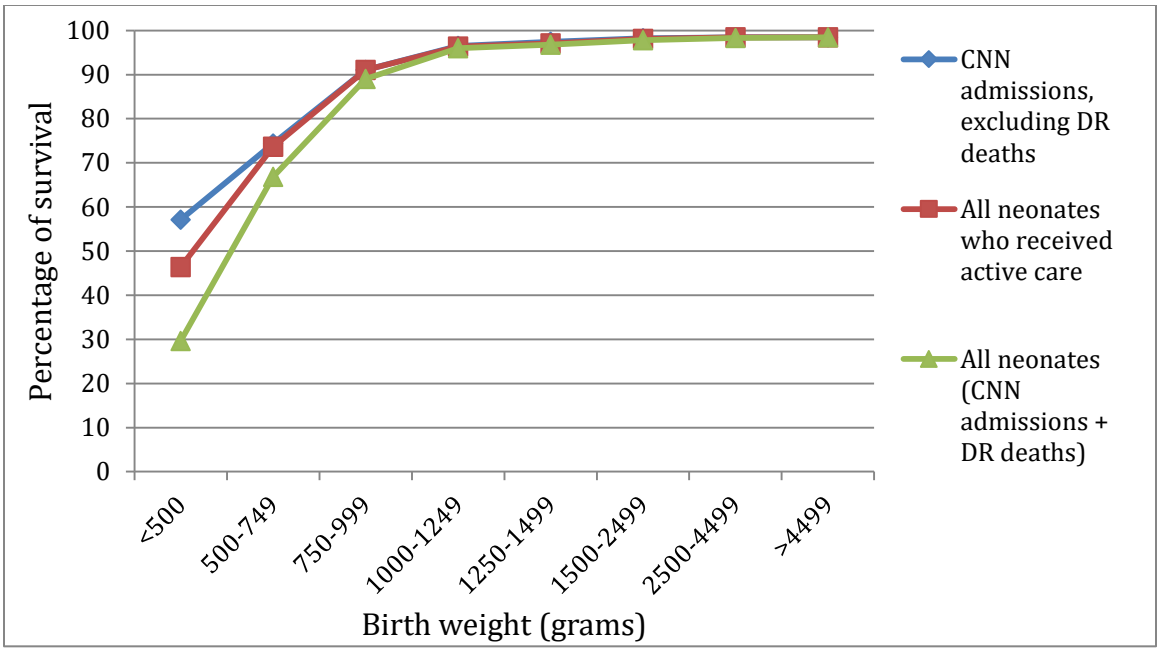
**Presentation #5**
**Birth weight distribution: All sites and all admitted neonates**




| BW (grams) | Frequency | Percent from total number of neonates | Cumulative percent |
|---|---|---|---|
| **<500** | 56 | 0.4 | 0.4 |
| **500-749** | 515 | 3.3 | 3.7 |
| **750-999** | 670 | 4.3 | 8.0 |
| **1000-1249** | 826 | 5.3 | 13.3 |
| **1250-1499** | 968 | 6.3 | 19.6 |
| **1500-2499** | 4 957 | 32.0 | 51.6 |
| **2500-4499** | 7 309 | 47.2 | 98.8 |
| **>4499** | 192 | 1.2 | 100.0 |
| **Total included** | 15 493 | 100.0 | 100.0 |
| **Missing BW** | 0 | | |
| **Total # of neonates** | 15 493 | | |

**COMMENTS:** The BW distribution of neonates admitted to the CNN sites. Eighty percent weighed more than 1 500g at birth and 48.4% weighed more than 2 500g. Twenty-eight sites collected data on all admissions whereas five sites collected data on a selected cohort of eligible admissions only.

**Presentation #6a**
**Survival to discharge by BW: All admissions, including delivery room (DR) deaths**

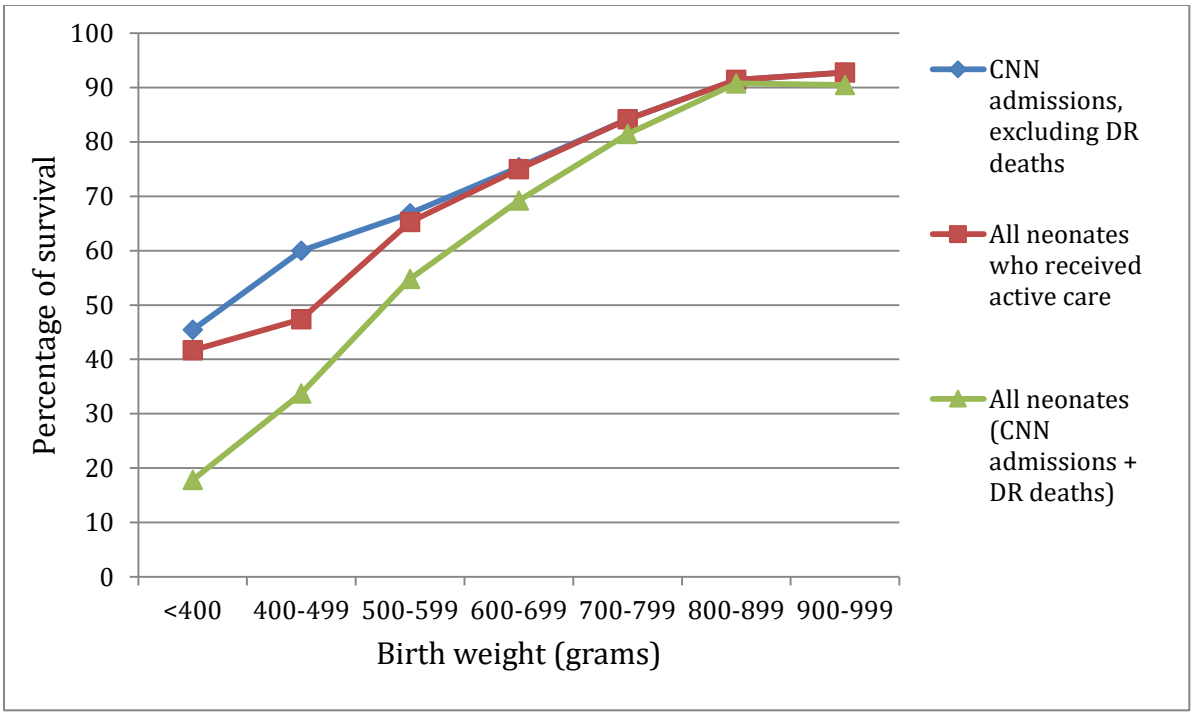



| CNN Admissions, excluding delivery room deaths | | | | | Delivery room deaths* | | Total CNN admissions + Delivery room deaths* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BW (grams)** | **#of neonates** | **# of survivors** | **Percent survival of CNN admissions, excluding DR deaths** | **# of neonates who received palliative care** | **Palliative care** | **Active care **** | **Total** | **# of neonates who received palliative care** | **# of neonates who received active care**** | **Percent survival of neonates who received active care** | **Percent survival of all neonates (CNN admissions + DR deaths)** |
| | *a* | *b* | *b/a* | *c* | *d* | *e* | *a+d+e* | *c+d* | *(a-c) +e* | *b/ (a-c)+e* | *b/(a+d+e)* |
| **<500** | 56 | 32 | 57 | 0 | 39 | 13 | 108 | 39 | 69 | 46 | 30 |
| **500-749** | 515 | 383 | 74 | 0 | 53 | 5 | 573 | 53 | 520 | 74 | 67 |
| **750-999** | 670 | 610 | 91 | 1 | 14 | 1 | 685 | 15 | 670 | 91 | 89 |
| **1000-1249** | 826 | 797 | 96 | 0 | 3 | 1 | 830 | 3 | 827 | 96 | 96 |
| **1250-1499** | 968 | 943 | 97 | 0 | 3 | 3 | 974 | 3 | 971 | 97 | 97 |
| **1500-2499** | 4 957 | 4 870 | 98 | 0 | 15 | 7 | 4 979 | 15 | 4 964 | 98 | 98 |
| **2500-4499** | 7 309 | 7 198 | 98 | 1 | 7 | 4 | 7 320 | 8 | 7 312 | 98 | 98 |
| **>4499** | 192 | 189 | 98 | 0 | 0 | 0 | 192 | 0 | 192 | 98 | 98 |
| **Total neonates included** | 15 493 | 15 022 | 97 | 2 | 134 | 34 | 15 661 | 136 | 15525 | 97 | 96 |
| **Missing BW** | 0 | | | | 2 | 0 | 2 | 2 | 0 | | |
| **Total # of neonates** | **15 493** | | | | **136** | **34** | **15 663** | **138** | **15 525** | | |

***Please note that delivery room deaths are *only included in Presentations #4, #6a and #6b* in this report. **Active care refers to infants who received cardiopulmonary resuscitation at birth.**

**Note: The results should be used cautiously for antenatal counseling.** The survival rates are based upon the final discharge from the participating neonatal site. Note that these rates include only neonates admitted to the sites or dying in the delivery rooms of participating sites and thus are not reflective of the entire Canadian population. Only one CNN site did not contribute delivery room death data.

**Presentation #6b**
**Survival to discharge by BW: BW <1000g including delivery room (DR) deaths**




| CNN Admissions, excluding delivery room deaths | | | | | Delivery room deaths* | | Total CNN admissions + Delivery room deaths* | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **BW (grams)** | **Number of neonates** | **Number of survivors** | **Percent survival of CNN admissions,** excluding DR deaths | **Number of neonates who received palliative care** | **Palliative care** | **Active care **** | **Total** | **Number of neonates who received palliative care** | **Number of neonates who received active care**** | **Percent survival of neonates who received active care** | **Percent survival of all neonates (CNN admissions + DR deaths)** |
| | *a* | *b* | *b/a* | *c* | *d* | *e* | *a+d+e* | *c+d* | *(a-c) +e* | *b/ (a-c)+e* | *b/(a+d+e)* |
| **<400** | 11 | 5 | 45 | 0 | 16 | 1 | 28 | 16 | 12 | 42 | 18 |
| **400-499** | 45 | 27 | 60 | 0 | 23 | 12 | 80 | 23 | 57 | 47 | 34 |
| **500-599** | 163 | 109 | 67 | 0 | 32 | 4 | 199 | 32 | 167 | 65 | 55 |
| **600-699** | 227 | 171 | 75 | 0 | 19 | 1 | 247 | 19 | 228 | 75 | 69 |
| **700-799** | 240 | 202 | 84 | 0 | 8 | 0 | 248 | 8 | 240 | 84 | 81 |
| **800-899** | 279 | 255 | 91 | 0 | 2 | 0 | 281 | 2 | 279 | 91 | 91 |
| **900-999** | 276 | 256 | 93 | 1 | 6 | 1 | 283 | 7 | 276 | 93 | 90 |
| **Total included** | **1 241** | **1 025** | **83** | **1** | **106** | **19** | **1 366** | **107** | **1 259** | **81** | **75** |

***Please note that delivery room deaths are *only included in Presentations #4, #6a and #6b* in this report. **Active care refers to infants who received cardiopulmonary resuscitation at birth.**

**Note: The results should be used cautiously for antenatal counseling.** The survival rates are based upon the final discharge from the participating neonatal site. Note that these rates include only neonates admitted to the sites or died in delivery room of participating sites and thus are not reflective of the entire Canadian population. Only one CNN site did not contribute delivery room death data.

**Presentation #7a**
**Maternal and peripartum characteristics: All neonates**

| **Characteristics** | | | | **GA at birth (completed weeks)** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Missing/ Unknown** | | **<26** | **26-28** | **29-32** | **33-36** | **≥37** | **Total** |
| **Total** | | | | **615** | **1105** | **2685** | **4675** | **6413** | **15493** |
| No prenatal care | | 196 | N | 10 | 21 | 45 | 90 | 98 | 264 |
| | | | % | 1.6 | 1.9 | 1.7 | 2.0 | 1.6 | 1.7 |
| Marijuana/cannabis | | 150 | N | 40 | 73 | 185 | 321 | 353 | 972 |
| | | | % | 6.5 | 6.7 | 7.0 | 7.0 | 5.6 | 6.3 |
| Smoking | | 123 | N | 48 | 105 | 300 | 458 | 540 | 1451 |
| | | | % | 7.8 | 9.6 | 11.3 | 9.9 | 8.5 | 9.4 |
| Maternal hypertension | | 763 | N | 71 | 245 | 725 | 1243 | 819 | 3103 |
| | | | % | 11.8 | 22.9 | 28.0 | 27.6 | 13.7 | 21.1 |
| Maternal diabetes | | 905 | N | 54 | 180 | 544 | 1135 | 1155 | 3068 |
| | | | % | 9.5 | 17.3 | 21.3 | 25.4 | 19.4 | 21.0 |
| Assisted pregnancy (ART) | | 0 | N | 91 | 124 | 296 | 484 | 298 | 1293 |
| | | | % | 14.8 | 11.2 | 11.0 | 10.4 | 4.7 | 8.3 |
| Multiples | | 0 | N | 146 | 290 | 771 | 1236 | 125 | 2568 |
| | | | % | 23.7 | 26.2 | 28.7 | 26.4 | 2.0 | 16.6 |
| $MgSO_4$ for neuroprotection | | 833 | N | 504 | 905 | 1983 | 791 | 47 | 4230 |
| | | | % | 83.0 | 84.4 | 77.2 | 17.8 | 0.8 | 28.9 |
| Antenatal steroids | None | 314 | N | 54 | 99 | 270 | 2953 | 6294 | 9670 |
| | | | % | 8.9 | 9.2 | 10.4 | 64.9 | 99.2 | 63.7 |
| | Partial | | N | 207 | 307 | 692 | 380 | 10 | 1596 |
| | | | % | 34.1 | 28.4 | 26.6 | 8.4 | 0.2 | 10.5 |
| | Complete | | N | 347 | 674 | 1636 | 1218 | 38 | 3913 |
| | | | % | 57.1 | 62.4 | 63.0 | 26.8 | 0.6 | 25.8 |
| Mode of birth | Vaginal | 29 | N | 263 | 346 | 801 | 1722 | 3464 | 6596 |
| | | | % | 42.8 | 31.3 | 29.9 | 36.9 | 54.1 | 42.7 |
| | C/S | | N | 352 | 759 | 1881 | 2941 | 2935 | 8868 |
| | | | % | 57.2 | 68.7 | 70.1 | 63.1 | 45.9 | 57.3 |
| Presentation | Vertex | 1316 | N | 311 | 582 | 1700 | 3407 | 5202 | 11202 |
| | | | % | 52.3 | 55.3 | 67.4 | 78.7 | 91.7 | 79.0 |
| | Breech | | N | 239 | 413 | 727 | 813 | 402 | 2594 |
| | | | % | 40.2 | 39.2 | 28.8 | 18.8 | 7.1 | 18.3 |
| | Other | | N | 45 | 58 | 97 | 111 | 70 | 381 |
| | | | % | 7.6 | 5.5 | 3.8 | 2.6 | 1.2 | 2.7 |
| Rupture of membranes | <24 h | 1457 | N | 423 | 744 | 1850 | 3629 | 5257 | 11903 |
| | | | % | 72.3 | 73.5 | 75.7 | 85.0 | 91.8 | 84.8 |
| | 24h to 1wk | | N | 87 | 141 | 276 | 398 | 430 | 1332 |
| | | | % | 14.9 | 13.9 | 11.3 | 9.3 | 7.5 | 9.5 |
| | >1 wk | | N | 75 | 127 | 319 | 243 | 37 | 801 |
| | | | % | 12.8 | 12.6 | 13.1 | 5.7 | 0.7 | 5.7 |

**Presentation #7a** (continued)
**Maternal and peripartum characteristics: All neonates**

| **Characteristics** | | | | **GA at birth (completed weeks)** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Missing/ Unknown** | | **<26** | **26-28** | **29-32** | **33-36** | **≥37** | **Total** |
| **Total** | | | | **615** | **1105** | **2685** | **4675** | **6413** | **15493** |
| Chorioamnionitis* | | 1192 | N | 252 | 304 | 416 | 357 | 572 | 1901 |
| | | | % | 41.9 | 28.7 | 16.4 | 8.1 | 10.0 | 13.3 |
| Deferred cord clamping | ≤ 29 sec | 1918 | N | 45 | 66 | 132 | 152 | 157 | 552 |
| | | | % | 7.5 | 6.2 | 5.3 | 3.6 | 3.0 | 4.1 |
| | 30-59 sec | | N | 129 | 181 | 354 | 496 | 670 | 1830 |
| | | | % | 21.6 | 17.1 | 14.1 | 11.7 | 12.9 | 13.5 |
| | ≥60 sec | | N | 147 | 448 | 1372 | 2674 | 3038 | 7679 |
| | | | % | 24.6 | 42.3 | 54.8 | 63.3 | 58.6 | 56.6 |
| | Yes, but timing unknown | | N | 4 | 9 | 31 | 67 | 153 | 264 |
| | | | % | 0.7 | 0.9 | 1.2 | 1.6 | 3.0 | 1.9 |
| | No | | N | 272 | 354 | 615 | 839 | 1170 | 3250 |
| | | | % | 45.6 | 33.5 | 24.6 | 19.8 | 22.6 | 23.9 |

*Chorioamnionitis is defined as documented histological chorioamnionitis on placenta pathology **or** "suspected or confirmed clinical chorioamnionitis" in chart **or** presence of maternal fever and *either* leukocytosis *or* purulent discharge *or* fetal tachycardia.

**Presentation #7b**
**Maternal and peripartum characteristics:**
**Timing of single course of Antenatal Corticosteroids (ANCS): GA <33 weeks**

| | Weeks | | Total number of neonates | No ANCS | Complete course within last week prior to birth * | Complete course more than 1 week before birth ** | Complete course but timing unknown *** | Partial course within last 24 hours **** |
|---|---|---|---|---|---|---|---|---|
| Inborn | 22-28 | N | 1491 | 69 | 622 | 380 | 7 | 370 |
| | | % | 100.0 | 4.6 | 41.7 | 25.5 | 0.5 | 24.8 |
| | 29-32 | N | 2323 | 138 | 810 | 756 | 22 | 550 |
| | | % | 100.0 | 5.9 | 34.9 | 32.5 | 1.0 | 23.7 |
| Outborn | 22-28 | N | 229 | 84 | 9 | <5 | <5 | 114 |
| | | % | 100.0 | 36.7 | 3.9 | <1% | <1% | 49.8 |
| | 29-32 | N | 362 | 132 | 27 | 18 | <5 | 108 |
| | | % | 100.0 | 36.5 | 7.5 | 5.0 | <1% | 29.8 |

*****Complete course within last week prior to birth – defined as receipt of at least two doses of corticosteroids 24 hours or more but within one week of birth.

******Complete course before 1 week of birth – defined as receipt of at least two doses of corticosteroids initiated more than one week prior to birth.

*******Complete course but timing unknown – defined as receipt of at least two doses of corticosteroids or if "complete course" was documented, but the dates of administration were not available.

********Partial course within last 24 hours – defined as any dose given less than 24 hours prior to birth.

**Note:** Data on "Partial course >24 hours ago" and "Partial course but timing unknown" are collected in the database but they are not reported in this table. If multiple courses of steroids received, only the last prior to delivery was used for this table.

**Presentation #7c**
**Maternal and peripartum characteristics:**
**Timing of deferred cord clamping: GA <33 weeks**

**Singleton**

| | | | Deferred Cord clamping timing | | | | | | Any Deferred Cord clamping | Immediate Cord clamping | DCC Unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weeks | | 0-15 seconds | 16-30 seconds | 31-60 seconds | 61-75 seconds | >75 seconds | Duration unknown | | | |
| Inborn | 22-28 | N | 46 | 153 | 445 | 29 | 14 | 6 | 693 | 402 | 7 |
| | | % | 4.2 | 13.9 | 40.4 | 2.6 | 1.3 | 0.5 | 62.9 | 36.5 | 0.6 |
| | 29-32 | N | 38 | 166 | 904 | 67 | 55 | 21 | 1251 | 327 | 21 |
| | | % | 2.4 | 10.4 | 56.5 | 4.2 | 3.4 | 1.3 | 78.2 | 20.5 | 1.3 |
| Outborn | 22-28 | N | 2 | 17 | 41 | 0 | 3 | 5 | 68 | 72 | 42 |
| | | % | 1.1 | 9.3 | 22.5 | 0.0 | 1.7 | 2.8 | 37.4 | 39.6 | 23.1 |
| | 29-32 | N | 3 | 25 | 60 | 0 | 10 | 5 | 103 | 82 | 130 |
| | | % | 1.0 | 7.9 | 19.1 | 0.0 | 3.2 | 1.6 | 32.7 | 26.0 | 41.3 |

**First twin**

| | | | Deferred Cord clamping timing | | | | | | Any Deferred Cord clamping | Immediate Cord clamping | DCC Unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weeks | | 0-15 seconds | 16-30 seconds | 31-60 seconds | 61-75 seconds | >75 seconds | Duration unknown | | | |
| Inborn | 22-28 | N | 5 | 35 | 68 | 3 | 1 | 0 | 112 | 65 | 1 |
| | | % | 2.8 | 19.7 | 38.2 | 1.7 | 0.6 | 0.0 | 62.9 | 36.5 | 0.6 |
| | 29-32 | N | 8 | 34 | 167 | 12 | 9 | 3 | 233 | 94 | 1 |
| | | % | 2.4 | 10.4 | 50.9 | 3.7 | 2.7 | 0.9 | 71.0 | 28.7 | 0.3 |
| Outborn | 22-28 | N | 1 | 1 | 4 | 0 | 0 | 0 | 6 | 10 | 8 |
| | | % | 4.2 | 4.2 | 16.7 | 0.0 | 0.0 | 0.0 | 25.0 | 41.7 | 33.3 |
| | 29-32 | N | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 6 | 11 |
| | | % | 0.0 | 0.0 | 19.1 | 0.0 | 0.0 | 0.0 | 19.1 | 28.6 | 52.4 |

**Second twin**

| | | | Deferred Cord clamping timing | | | | | | Any Deferred Cord clamping | Immediate Cord clamping | DCC Unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weeks | | 0-15 seconds | 16-30 seconds | 31-60 seconds | 61-75 seconds | >75 seconds | Duration unknown | | | |
| Inborn | 22-28 | N | 3 | 19 | 81 | 2 | 2 | 2 | 109 | 60 | 2 |
| | | % | 1.8 | 11.1 | 47.4 | 1.2 | 1.2 | 1.2 | 63.7 | 35.1 | 1.2 |
| | 29-32 | N | 7 | 34 | 173 | 12 | 11 | 0 | 237 | 78 | 7 |
| | | % | 2.2 | 10.6 | 53.7 | 3.7 | 3.4 | 0.0 | 73.6 | 24.2 | 2.2 |
| Outborn | 22-28 | N | 2 | 1 | 7 | 0 | 0 | 0 | 10 | 8 | 5 |
| | | % | 8.7 | 4.4 | 30.4 | 0.0 | 0.0 | 0.0 | 43.5 | 34.8 | 21.7 |
| | 29-32 | N | 0 | 0 | 7 | 0 | 0 | 1 | 8 | 8 | 10 |
| | | % | 0.0 | 0.0 | 26.9 | 0.0 | 0.0 | 3.9 | 30.8 | 30.8 | 38.5 |

**Presentation #8a**
**Resuscitation details: GA <31 weeks**

| **Action taken** | | | **GA at birth (completed weeks)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **≤23** | **24** | **25** | **26** | **27** | **28** | **29** | **30** | **Total** |
| **Total** | | | **177** | **201** | **237** | **290** | **389** | **426** | **483** | **578** | **2781** |
| No resus/stabilization needed/provided | | N | 0 | 1 | 0 | 0 | 1 | 1 | 3 | 6 | 12 |
| | | % | 0.0 | 0.5 | 0.0 | 0.0 | 0.3 | 0.2 | 0.6 | 1.0 | 0.4 |
| CPAP | | N | 35 | 75 | 140 | 182 | 316 | 351 | 427 | 510 | 2036 |
| | | % | 19.8 | 37.3 | 59.1 | 62.8 | 81.2 | 82.4 | 88.4 | 88.2 | 73.2 |
| PPV via mask | | N | 168 | 181 | 206 | 252 | 295 | 306 | 306 | 355 | 2069 |
| | | % | 94.9 | 90.1 | 86.9 | 86.9 | 75.8 | 71.8 | 63.4 | 61.4 | 74.4 |
| PPV via ETT | | N | 156 | 125 | 111 | 115 | 83 | 72 | 72 | 55 | 789 |
| | | % | 88.1 | 62.2 | 46.8 | 39.7 | 21.3 | 16.9 | 14.9 | 9.5 | 28.4 |
| Chest compression | | N | 12 | 9 | 9 | 8 | 14 | 7 | 8 | 9 | 76 |
| | | % | 6.8 | 4.5 | 3.8 | 2.8 | 3.6 | 1.6 | 1.7 | 1.6 | 2.7 |
| Epinephrine | | N | 7 | 5 | 5 | 3 | 9 | 2 | 5 | 2 | 38 |
| | | % | 4.0 | 2.5 | 2.1 | 1.0 | 2.3 | 0.5 | 1.0 | 0.4 | 1.4 |
| Unknown | | N | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 4 |
| | | % | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.2 | 0.0 | 0.2 | 0.1 |
| Any resus/stabilization provided* | | N | 177 | 200 | 235 | 290 | 387 | 422 | 479 | 563 | 2753 |
| | | % | 100.0 | 99.5 | 99.2 | 100.0 | 99.5 | 99.1 | 99.2 | 97.4 | 99.0 |
| Initial gas | Air | N | 22 | 39 | 31 | 33 | 61 | 79 | 123 | 194 | 582 |
| | | % | 12.4 | 19.4 | 13.1 | 11.4 | 15.7 | 18.5 | 25.5 | 33.6 | 20.9 |
| | 22-40% $O_2$ | N | 98 | 117 | 135 | 187 | 249 | 247 | 271 | 281 | 1585 |
| | | % | 55.4 | 58.2 | 57.0 | 64.5 | 64.0 | 58.0 | 56.1 | 48.6 | 57.0 |
| | 41-70% $O_2$ | N | 8 | 21 | 22 | 27 | 29 | 40 | 17 | 24 | 188 |
| | | % | 4.5 | 10.5 | 9.3 | 9.3 | 7.5 | 9.4 | 3.5 | 4.2 | 6.8 |
| | 71-99% $O_2$ | N | 1 | 0 | 5 | 3 | 3 | 3 | 3 | 1 | 19 |
| | | % | 0.6 | 0.0 | 2.1 | 1.0 | 0.8 | 0.7 | 0.6 | 0.2 | 0.7 |
| | 100% $O_2$ | N | 32 | 15 | 22 | 14 | 18 | 27 | 24 | 20 | 172 |
| | | % | 18.1 | 7.5 | 9.3 | 4.8 | 4.6 | 6.3 | 5.0 | 3.5 | 6.2 |
| | Unknown/ Missing | N | 16 | 9 | 22 | 26 | 29 | 30 | 45 | 58 | 235 |
| | | % | 9.0 | 4.5 | 9.3 | 9.0 | 7.5 | 7.0 | 9.3 | 10.0 | 8.5 |
| Maximum $O_2$ conc. during resus. | 21% | N | 0 | 0 | 2 | 0 | 3 | 1 | 4 | 16 | 26 |
| | | % | 0.0 | 0.0 | 0.8 | 0.0 | 0.8 | 0.2 | 0.8 | 2.8 | 0.9 |
| | 22-40% | N | 2 | 11 | 25 | 23 | 90 | 87 | 140 | 190 | 568 |
| | | % | 1.1 | 5.5 | 10.6 | 7.9 | 23.1 | 20.4 | 29.0 | 32.9 | 20.4 |
| | 41-70% | N | 7 | 18 | 39 | 55 | 83 | 125 | 119 | 128 | 574 |
| | | % | 4.0 | 9.0 | 16.5 | 19.0 | 21.3 | 29.3 | 24.6 | 22.2 | 20.6 |
| | >70% | N | 165 | 169 | 166 | 200 | 197 | 199 | 203 | 200 | 1499 |
| | | % | 93.3 | 84.1 | 70.0 | 69.0 | 50.6 | 46.7 | 42.0 | 34.6 | 53.9 |
| | Missing | N | 3 | 3 | 5 | 12 | 16 | 14 | 17 | 44 | 114 |
| | | % | 1.7 | 1.5 | 2.1 | 4.1 | 4.1 | 3.3 | 3.5 | 7.6 | 4.1 |

* Number of neonates who received any resuscitation includes those who received CPAP, PPV, chest compression or epinephrine

**NOTE**: Please use caution when interpreting these data. Resuscitation time was defined as the first 30 minutes after birth. Note that delivery room deaths are not included in the denominator.

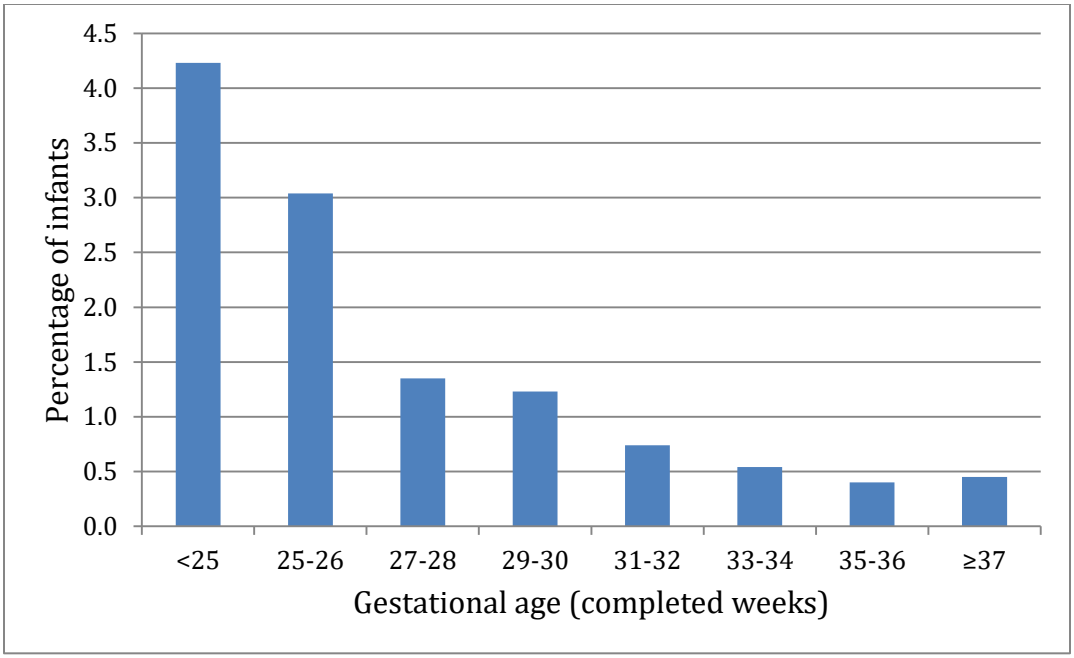
**Presentation #8b**
**Resuscitation details: GA ≥ 31 weeks**

| **Action taken** | | | **GA at birth (completed weeks)** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **31** | **32** | **33** | **34** | **35** | **36** | **≥37** | **Total** |
| **Total** | | | **706** | **918** | **884** | **1320** | **1158** | **1313** | **6413** | **12712** |
| No resus/stabilization needed / provided | | N | 20 | 68 | 139 | 321 | 309 | 339 | 1852 | 3048 |
| | | % | 2.8 | 7.4 | 15.7 | 24.3 | 26.7 | 25.8 | 28.9 | 24.0 |
| CPAP | | N | 619 | 706 | 543 | 638 | 551 | 595 | 2679 | 6331 |
| | | % | 87.7 | 76.9 | 61.4 | 48.3 | 47.6 | 45.3 | 41.8 | 49.8 |
| PPV via mask | | N | 353 | 430 | 301 | 347 | 301 | 345 | 1853 | 3930 |
| | | % | 50.0 | 46.8 | 34.1 | 26.3 | 26.0 | 26.3 | 28.9 | 30.9 |
| PPV via ETT | | N | 44 | 69 | 28 | 37 | 51 | 71 | 420 | 720 |
| | | % | 6.2 | 7.5 | 3.2 | 2.8 | 4.4 | 5.4 | 6.6 | 5.7 |
| Chest compression | | N | 9 | 13 | 5 | 8 | 12 | 16 | 142 | 205 |
| | | % | 1.3 | 1.4 | 0.6 | 0.6 | 1.0 | 1.2 | 2.2 | 1.6 |
| Epinephrine | | N | 5 | 7 | 2 | 4 | 7 | 7 | 51 | 83 |
| | | % | 0.7 | 0.8 | 0.2 | 0.3 | 0.6 | 0.5 | 0.8 | 0.7 |
| Unknown | | N | 3 | 4 | 2 | 4 | 5 | 6 | 51 | 75 |
| | | % | 0.4 | 0.4 | 0.2 | 0.3 | 0.4 | 0.5 | 0.8 | 0.6 |
| Any resus/stabilization provided* | | N | 661 | 763 | 581 | 693 | 621 | 683 | 3228 | 7230 |
| | | % | 93.6 | 83.1 | 65.7 | 52.5 | 53.6 | 52.0 | 50.3 | 56.9 |
| Initial gas | Air | N | 246 | 334 | 255 | 315 | 323 | 383 | 1661 | 3517 |
| | | % | 34.8 | 36.4 | 28.9 | 23.9 | 27.9 | 29.2 | 25.9 | 27.7 |
| | 22-40% $O_2$ | N | 304 | 298 | 208 | 246 | 170 | 152 | 575 | 1953 |
| | | % | 43.1 | 32.5 | 23.5 | 18.6 | 14.7 | 11.6 | 9.0 | 15.4 |
| | 41-70% $O_2$ | N | 24 | 21 | 22 | 31 | 21 | 21 | 137 | 277 |
| | | % | 3.4 | 2.3 | 2.5 | 2.4 | 1.8 | 1.6 | 2.1 | 2.2 |
| | 71-99% $O_2$ | N | 2 | 3 | 1 | 1 | 3 | 4 | 22 | 36 |
| | | % | 0.3 | 0.3 | 0.1 | 0.1 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 100% $O_2$ | N | 22 | 34 | 37 | 49 | 52 | 56 | 317 | 567 |
| | | % | 3.1 | 3.7 | 4.2 | 3.7 | 4.5 | 4.3 | 4.9 | 4.5 |
| | Unknown/ Missing | N | 108 | 228 | 361 | 678 | 589 | 697 | 3701 | 6362 |
| | | % | 15.3 | 24.8 | 40.8 | 51.4 | 50.9 | 53.1 | 57.7 | 50.0 |
| Maximum $O_2$ conc. during resus | 21% | N | 25 | 22 | 40 | 50 | 55 | 61 | 255 | 508 |
| | | % | 3.5 | 2.4 | 4.5 | 3.8 | 4.8 | 4.7 | 4.0 | 4.0 |
| | 22-40% | N | 263 | 279 | 223 | 282 | 241 | 215 | 867 | 2370 |
| | | % | 37.3 | 30.4 | 25.2 | 21.4 | 20.8 | 16.4 | 13.5 | 18.6 |
| | 41-70% | N | 153 | 174 | 134 | 149 | 93 | 137 | 474 | 1314 |
| | | % | 21.7 | 19.0 | 15.2 | 11.3 | 8.0 | 10.4 | 7.4 | 10.3 |
| | >70% | N | 182 | 235 | 154 | 198 | 197 | 218 | 1223 | 2407 |
| | | % | 25.8 | 25.6 | 17.4 | 15.0 | 17.0 | 16.6 | 19.1 | 18.9 |
| | Missing | N | 83 | 208 | 333 | 641 | 572 | 682 | 3594 | 6113 |
| | | % | 11.8 | 22.7 | 37.7 | 48.6 | 49.4 | 51.9 | 56.0 | 48.1 |

* Number of neonates who received any resuscitation includes those who received CPAP, PPV, Chest compression or epinephrine

**NOTE**: Please use caution while interpreting these data. Resuscitation time was defined as the first 30 minutes after birth. Note that delivery room deaths are not included in the denominator.

**Presentation #9**
**Early onset sepsis rates: All GA**

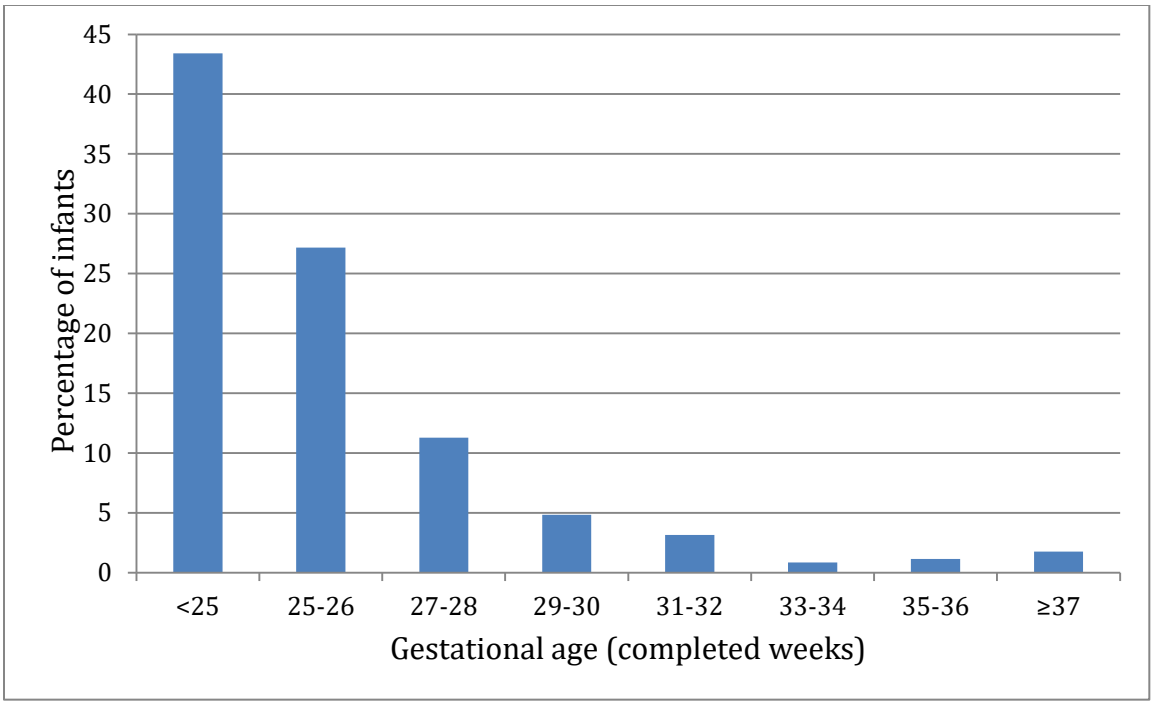



| GA at birth (completed weeks) | Total number of neonates | No. of neonates with infection | % of neonates with infection | Total number of organisms | Organism | | |
|---|---|---|---|---|---|---|---|
| | | | | | E. Coli | GBS | Others |
| **<25** | 378 | 16 | 4.2 | 16 | 6 | 5 | 5 |
| **25-26** | 527 | 16 | 3.0 | 16 | 10 | 3 | 3 |
| **27-28** | 815 | 11 | 1.4 | 12 | 6 | 2 | 4 |
| **29-30** | 1 061 | 13 | 1.2 | 13 | 5 | 2 | 6 |
| **31-32** | 1 624 | 12 | 0.7 | 12 | 3 | 3 | 6 |
| **33-34** | 2 204 | 12 | 0.5 | 12 | 7 | 3 | 2 |
| **35-36** | 2 471 | 10 | 0.4 | 10 | 5 | 1 | 4 |
| **≥37** | 6 413 | 29 | 0.5 | 31 | 9 | 7 | 15 |
| **Total neonates included** | **15 493** | **119** | **0.8** | **122** | **51** | **26** | **45** |
| **Missing** | 0 | | | | | | |
| **Total # of neonates** | **15 493** | | | | | | |

**COMMENTS:** Early onset sepsis is defined as positive bacterial, viral or fungal culture in blood and/or cerebrospinal fluid, in the first two calendar days after birth. In "Others" category, top five organisms were: Enterococcus (n=6), Haemophilus (n=5), Klebsiella (n=5), Streptococcus (n=5), Viridans Streptococcus (n=4). In contrast to CNN reports in the past, CONS was *not* included as an organism causing early onset sepsis in this report based on consultation with microbiologists.

Syphilis was not counted as an early onset sepsis in this presentation. Fourteen (14) incidents of Syphilis were observed in 2024.

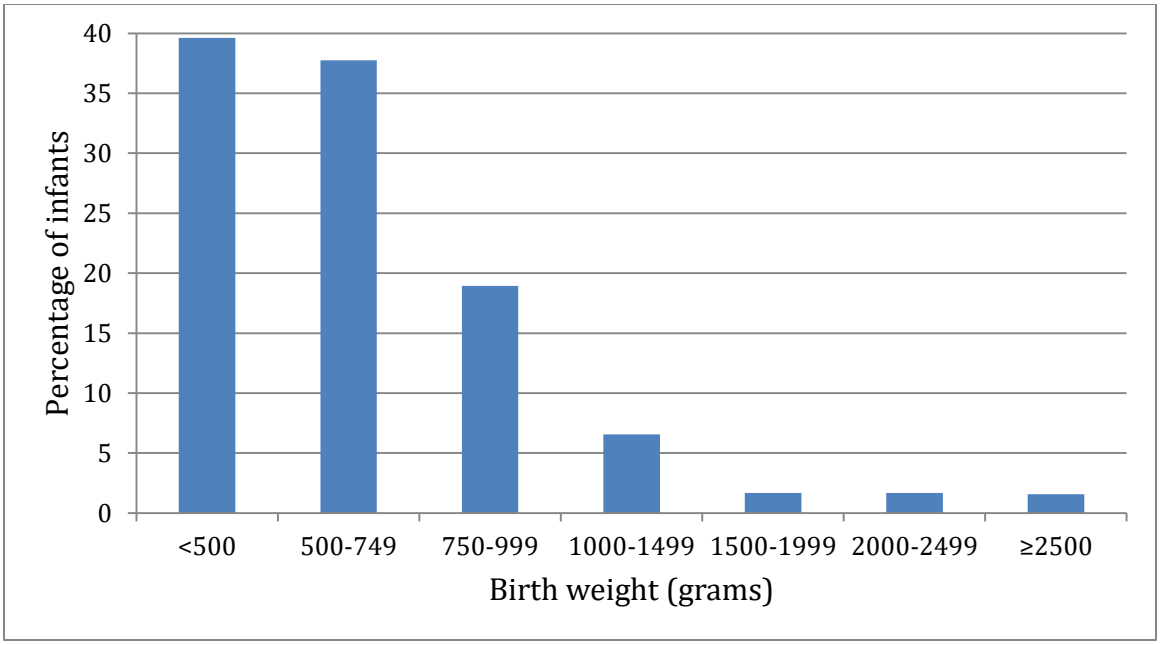
**Presentation #10**
**Late onset sepsis rates: All GA**




| GA at birth (completed weeks) | Total number | Number of deaths in the first 2 days after birth | Number of neonates survived beyond day 2 after birth | Number of neonates with at least one infection | Number of neonates with more than one infection | Among neonates who survived day 2, percentage with at least one infection | Total number of organisms | Organisms | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CONS | E. Coli | Staph aureus | Fungal | Viral | Other |
| **<25** | 378 | 21 | 357 | 155 | 56 | 43 | 235 | 108 | 16 | 32 | 6 | 4 | 69 |
| **25-26** | 527 | 12 | 515 | 140 | 27 | 27 | 177 | 85 | 14 | 33 | 7 | 2 | 36 |
| **27-28** | 815 | 9 | 806 | 91 | 18 | 11 | 114 | 47 | 9 | 23 | 5 | 4 | 26 |
| **29-30** | 1 061 | 7 | 1 054 | 51 | 7 | 5 | 62 | 22 | 11 | 5 | 3 | 2 | 19 |
| **31-32** | 1 624 | 4 | 1 620 | 51 | 11 | 3 | 71 | 26 | 8 | 9 | 0 | 6 | 21 |
| **33-34** | 2 204 | 6 | 2 198 | 19 | 2 | 1 | 22 | 11 | 3 | 5 | 0 | 1 | 2 |
| **35-36** | 2 471 | 12 | 2 459 | 28 | 3 | 1 | 32 | 14 | 2 | 5 | 0 | 3 | 8 |
| **≥37** | 6 413 | 31 | 6 382 | 112 | 17 | 2 | 133 | 64 | 13 | 14 | 1 | 11 | 30 |
| **Total included** | **15 493** | **102** | **15 391** | **647** | **141** | **4** | **845** | **377** | **76** | **126** | **22** | **33** | **211** |
| **Missing** | 0 | | | | | | | | | | | | |
| **Total # of neonates** | **15 493** | | | | | | | | | | | | |

**COMMENTS:** Late onset sepsis is defined as any positive blood and/or cerebrospinal fluid culture for bacteria, viral or fungi after 2 calendar days of age (analysis is neonate-based). The numbers are adjusted for readmission. In "Others" category, top 5 organisms were: Klebsiella (n=48), Enterococci (n=41), GBS (n=29), Bacillus (n=19) Enterobacter (n=15). Virus category includes Cytomegalovirus (n=13), Enterovirus (n=11), Herpes simplex virus (n=4), Human herpesvirus 6 (n=2), Parvovirus (n=2), Coronavirus (n=1).
**Note:** In 2020, the coding for CONS and Staph Aureus were revised which has led to a change in proportion of each.

**Presentation #11**
**Late onset sepsis rates: All BW**




| BW (grams) | Total number | Number of deaths in the first 2 days after birth | Number of neonates survived beyond day 2 after birth | Number of neonates with at least one infection | Number of neonates with more than one infection | Among neonates who survived day 2, percentage with at least one infection | Total number of organisms | Organisms | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CONS | E. Coli | Staph aureus | Fungal | Virus | Other |
| **<500** | 56 | 3 | 53 | 21 | 9 | 40 | 36 | 22 | 0 | 6 | 0 | 0 | 8 |
| **500-749** | 515 | 25 | 490 | 185 | 55 | 38 | 264 | 111 | 17 | 50 | 10 | 7 | 69 |
| **750-999** | 670 | 10 | 660 | 125 | 30 | 19 | 162 | 74 | 14 | 26 | 6 | 1 | 41 |
| **1000-1499** | 1 794 | 8 | 1 786 | 117 | 19 | 7 | 143 | 64 | 17 | 15 | 5 | 6 | 36 |
| **1500-1999** | 2 420 | 13 | 2 407 | 40 | 6 | 2 | 49 | 12 | 9 | 9 | 0 | 5 | 14 |
| **2000-2499** | 2 537 | 8 | 2 529 | 42 | 7 | 2 | 55 | 29 | 4 | 6 | 0 | 3 | 13 |
| **≥2500** | 7 501 | 35 | 7 466 | 117 | 15 | 2 | 136 | 65 | 15 | 14 | 1 | 11 | 30 |
| **Total included** | **15 493** | **102** | **15 391** | **647** | **141** | **4** | **845** | **377** | **76** | **126** | **22** | **33** | **211** |
| **Missing (BW)** | 0 | | | | | | | | | | | | |
| **Total # of neonates** | **15 493** | | | | | | | | | | | | |

**COMMENTS:** Late onset sepsis is defined as any positive blood and/or cerebrospinal fluid culture for bacteria, viral or fungi after 2 days of age (analysis is neonate-based). The numbers are adjusted for readmission. In "Others" category, top 5 organisms were: Klebsiella (n=48), Enterococci (n=41), GBS (n=29), Bacillus (n=19) Enterobacter (n=15). Virus category includes Cytomegalovirus (n=13), Enterovirus (n=11), Herpes simplex virus (n=4), Human herpesvirus 6 (n=2), Parvovirus (n=2), Coronavirus (n=1).
**Note:** In 2020, the coding for CONS and Staph Aureus were revised which has led to a change in proportion of each.

**Presentation #12**

**Septic Shock and Mortality within 7 days in patients with Sepsis (both EOS & LOS)**

| | **CONS** | | | | **Non-CONS organisms** | | | |
|---|---|---|---|---|---|---|---|---|
| | Total # of sepsis events *N* | Death within 7 days of sepsis event *N (%*)* | Septic Shock *N (%*)* | Death within 7 days of septic shock event *N (%†)* | Total # of sepsis events *N* | Death within 7 days of sepsis event *N (%*)* | Septic Shock *N (%*)* | Death within 7 days of septic shock event *N (%†)* |
| **</=25 weeks** | 162 | 5 (3%) | 15 (9%) | 3 (20%) | 202 | 28 (14%) | 51 (25%) | 19 (37%) |
| **26-28 weeks** | 78 | 1 (1%) | 7 (9%) | 1 (14%) | 132 | 19 (14%) | 34 (26%) | 16 (47%) |
| **29-32 weeks** | 48 | 0 | 1 (2%) | 0 | 115 | 7 (6%) | 17 (15%) | 5 (29%) |

* % of Total # of Sepsis events (e.g., 1 neonate with 2 distinct sepsis episodes = 2 sepsis events)
† % of Total # of Septic shock events

Definitions:

- Septic Shock defined as use of inotropes/pressors within 3 days after onset of sepsis (onset defined as the day the positive blood/CSF culture was sent)

**Presentation #13**
**Other diagnoses / interventions / procedures: All GA**

| Characteristics | | Missing | | GA at birth (completed weeks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **≤25** | **26 - 28** | **29 - 30** | **31 - 32** | **33 - 36** | **≥37** | **Total** |
| **Total** | | | | 615 | 1105 | 1061 | 1624 | 4675 | 6413 | 15493 |
| **Prophylactic** | Indomethacin | | N | 74 | 49 | 1 | 0 | 1 | 0 | 125 |
| | | | % | 12.0 | 4.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.8 |
| | Probiotics | | N | 357 | 665 | 540 | 687 | 318 | 100 | 2667 |
| | | | % | 58.1 | 60.2 | 50.9 | 42.3 | 6.8 | 1.6 | 17.2 |
| **RDS** | Unknown /Uncertain | | N | 2 | 11 | 33 | 64 | 105 | 101 | 316 |
| | | | % | 0.3 | 1.0 | 3.1 | 3.9 | 2.3 | 1.6 | 2.0 |
| | None | | N | 3 | 83 | 196 | 645 | 3668 | 5943 | 10538 |
| | | | % | 0.5 | 7.5 | 18.5 | 39.7 | 78.5 | 92.7 | 68.0 |
| | Definite | | N | 610 | 1011 | 832 | 915 | 902 | 369 | 4639 |
| | | | % | 99.2 | 91.5 | 78.4 | 56.3 | 19.3 | 5.8 | 29.9 |
| **Surfactant in first 30 min** | | | N | 141 | 99 | 28 | 10 | 2 | 0 | 280 |
| | | | % | 22.9 | 9.0 | 2.6 | 0.6 | 0.0 | 0.0 | 1.8 |
| **Surfactant in first 60 min** | | | N | 289 | 222 | 87 | 46 | 22 | 5 | 671 |
| | | | % | 47.0 | 20.1 | 8.2 | 2.8 | 0.5 | 0.1 | 4.3 |
| **Surfactant in first 120 min** | | | N | 420 | 389 | 195 | 97 | 50 | 19 | 1170 |
| | | | % | 68.3 | 35.2 | 18.4 | 6.0 | 1.1 | 0.3 | 7.6 |
| **Surfactant after 120 minutes** | | | N | 153 | 391 | 293 | 271 | 344 | 189 | 1641 |
| | | | % | 24.9 | 35.4 | 27.6 | 16.7 | 7.4 | 3.0 | 10.6 |
| **Surfactant at any time** | | | N | 573 | 780 | 488 | 368 | 394 | 208 | 2811 |
| | | | % | 93.2 | 70.6 | 46.0 | 22.7 | 8.4 | 3.2 | 18.1 |
| **Surfactant dose > 1** | % out of surfactant at any time | | N | 316 | 241 | 87 | 39 | 54 | 37 | 774 |
| | | | % | 55.2 | 30.9 | 17.8 | 10.6 | 13.7 | 17.8 | 27.6 |
| **Method of surfactant (first dose only among the neonates who received surfactant)*** | Endotracheal | | N | 488 | 513 | 280 | 222 | 275 | 173 | 1951 |
| | | | % | 85.2 | 65.8 | 57.4 | 60.3 | 69.8 | 83.2 | 69.4 |
| | LISA/MIST | | N | 51 | 241 | 199 | 133 | 95 | 29 | 748 |
| | | | % | 8.9 | 30.9 | 40.8 | 36.1 | 24.1 | 13.9 | 26.6 |
| | Other* | | N | 34 | 26 | 9 | 13 | 24 | 6 | 112 |
| | | | % | 5.9 | 3.3 | 1.8 | 3.5 | 6.1 | 2.9 | 4.0 |
| **Pneumothorax diagnosis** | | | N | 65 | 48 | 40 | 49 | 160 | 401 | 763 |
| | | | % | 10.6 | 4.3 | 3.8 | 3.0 | 3.4 | 6.3 | 4.9 |
| **Pneumothorax treatment**** | No intervention | | N | 7 | 9 | 13 | 12 | 72 | 253 | 366 |
| | | | % | 10.8 | 18.8 | 32.5 | 24.5 | 45.0 | 63.1 | 48.0 |
| | Needle drainage | | N | 32 | 24 | 16 | 19 | 61 | 87 | 239 |
| | | | % | 49.2 | 50.0 | 40.0 | 38.8 | 38.1 | 21.7 | 31.3 |
| | Chest tube | | N | 41 | 36 | 20 | 25 | 55 | 80 | 257 |
| | | | % | 63.1 | 75.0 | 50.0 | 51.0 | 34.4 | 20.0 | 33.7 |

* "Other" includes other method of surfactant, surfactant method unknown (i.e. "unknown" checked) and method missing (i.e. "method" left blank).
** One neonate can have multiple treatments. Denominators for treatment were based on the number of neonates who had pneumothorax.

**Presentation #13** (continued)
**Other diagnoses / interventions / procedures: All GA**

| Characteristics | | Missing | | GA at birth (completed weeks) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ≤25 | 26 - 28 | 29 - 30 | 31 - 32 | 33 - 36 | ≥37 | Total |
| **Total** | | | | 615 | 1105 | 1061 | 1624 | 4675 | 6413 | 15493 |
| **Seizures** | Definite /suspected | 8 | N | 35 | 28 | 19 | 22 | 89 | 428 | 621 |
| | | | % | 5.7 | 2.5 | 1.8 | 1.4 | 1.9 | 6.7 | 4.0 |
| **Operations** | Thoracotomy | | N | 6 | 3 | 5 | 7 | 18 | 46 | 85 |
| | | | % | 1.0 | 0.3 | 0.5 | 0.4 | 0.4 | 0.7 | 0.5 |
| | Laparotomy | | N | 52 | 42 | 24 | 37 | 67 | 113 | 335 |
| | | | % | 8.5 | 3.8 | 2.3 | 2.3 | 1.4 | 1.8 | 2.2 |
| | Ostomy | | N | 1 | 3 | 1 | 3 | 6 | 14 | 28 |
| | | | % | 0.2 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 |
| | Reservoir/Drain | | N | 20 | 18 | 5 | 4 | 6 | 4 | 57 |
| | | | % | 3.3 | 1.6 | 0.5 | 0.3 | 0.1 | 0.1 | 0.4 |
| | VP shunt | | N | 13 | 11 | 4 | 1 | 9 | 15 | 53 |
| | | | % | 2.1 | 1.0 | 0.4 | 0.1 | 0.2 | 0.2 | 0.3 |
| **Gastro-intestinal perforation** | Spontaneous | | N | 37 | 18 | 12 | 10 | 15 | 17 | 109 |
| | | | % | 6.0 | 1.6 | 1.1 | 0.6 | 0.3 | 0.3 | 0.7 |
| | NEC related | | N | 21 | 19 | 5 | 8 | 4 | 4 | 61 |
| | | | % | 3.4 | 1.7 | 0.5 | 0.5 | 0.1 | 0.1 | 0.4 |
| **Acquired stricture** | | | N | 4 | 4 | 4 | 4 | 2 | 2 | 20 |
| | | | % | 0.7 | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.1 |
| **Exchange transfusion** | | | N | 1 | 1 | 0 | 2 | 2 | 10 | 16 |
| | | | % | 0.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.2 | 0.1 |
| **Congenital anomaly*** | None | | N | 382 | 757 | 808 | 1354 | 3816 | 4632 | 11749 |
| | | | % | 62.1 | 68.5 | 76.2 | 83.4 | 81.6 | 72.2 | 75.8 |
| | Minor | | N | 204 | 311 | 206 | 208 | 534 | 1006 | 2469 |
| | | | % | 33.2 | 28.1 | 19.4 | 12.8 | 11.4 | 15.7 | 15.9 |
| | Major | | N | 29 | 37 | 47 | 62 | 325 | 775 | 1275 |
| | | | % | 4.7 | 3.4 | 4.4 | 3.8 | 7.0 | 12.1 | 8.2 |

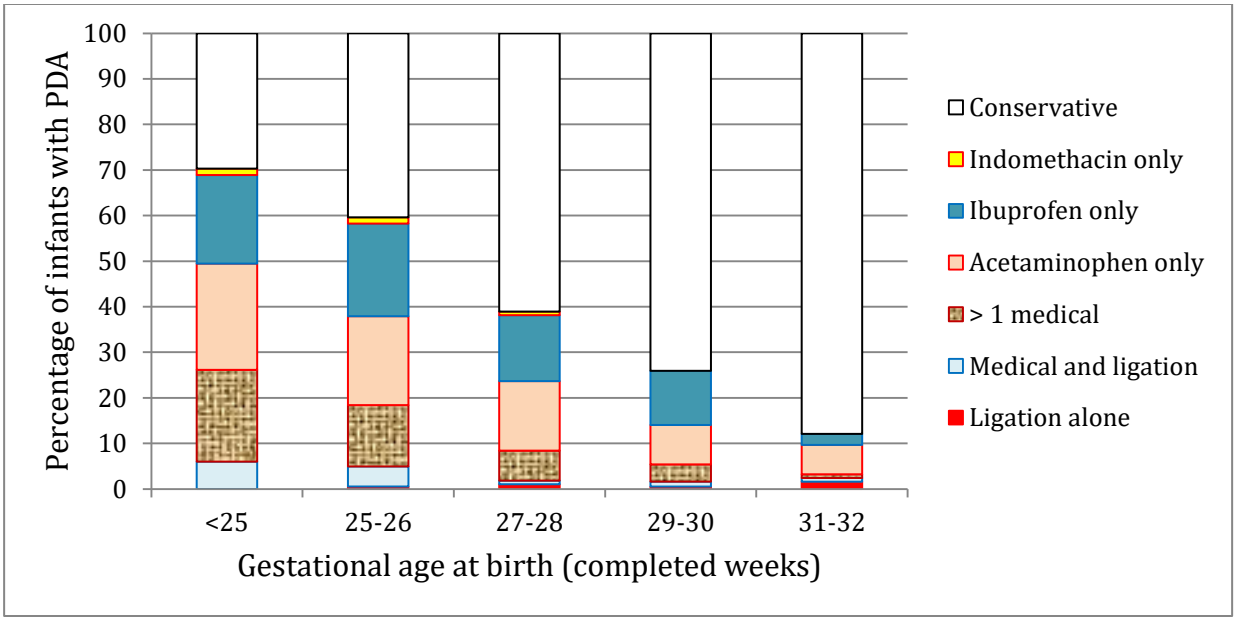
*A list of major anomalies can be found in the 2013 annual report, pages 124-127. It is available via the following link:
http://www.canadianneonatalnetwork.org/Portal/LinkClick.aspx?fileticket=lreR0871sjA%3d&tabid=39

## Section D.3

### Analyses based on the number of eligible very preterm (GA <33 weeks) or very low birth weight (BW <1 500g) neonates

These included data from 4 405 eligible very preterm neonates and 3 035 eligible VLBW neonates.

**Presentation #14**
**Patent ductus arteriosus (PDA) treatments: GA <33 weeks**



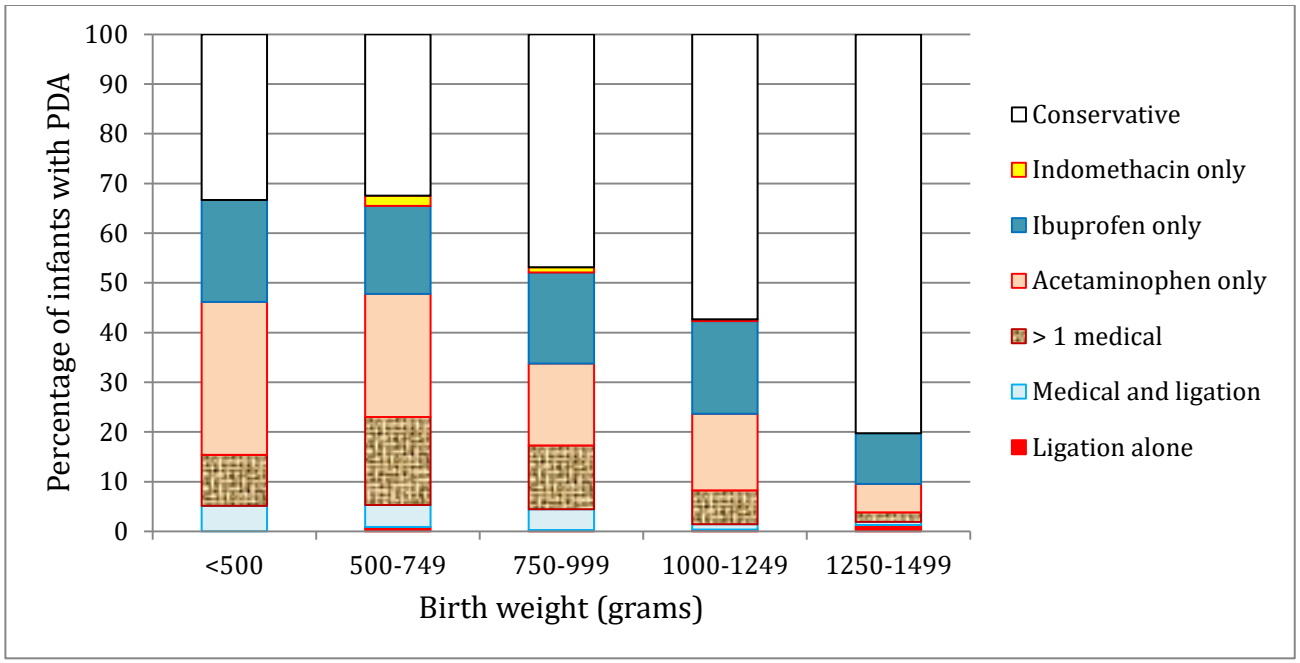

| Birth GA (completed weeks) | | Total | Missing data on PDA | PDA unknown | No PDA | Neonates with PDA | Treatment† | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Conservative | Indo | Ibu | Acetaminophen | > 1 medical* | Medical and ligation# | Ligation alone |
| **<25** | **N** | 378 | 0 | 9 | 86 | 283 | 84 | 4 | 55 | 66 | 57 | 17 | 0 |
| | **%** | | | | | | 30% | 1% | 19% | 23% | 20% | 6% | 0% |
| **25-26** | **N** | 527 | 0 | 10 | 153 | 364 | 147 | 5 | 74 | 71 | 49 | 16 | 2 |
| | **%** | | | | | | 40% | 1% | 20% | 20% | 13% | 4% | 1% |
| **27-28** | **N** | 815 | 0 | 5 | 430 | 380 | 232 | 3 | 55 | 58 | 25 | 3 | 4 |
| | **%** | | | | | | 61% | 1% | 14% | 15% | 7% | 1% | 1% |
| **29-30** | **N** | 1061 | 0 | 19 | 857 | 185 | 137 | 0 | 22 | 16 | 7 | 2 | 1 |
| | **%** | | | | | | 74% | 0% | 12% | 9% | 4% | 1% | 1% |
| **31-32** | **N** | 1624 | 0 | 28 | 1472 | 124 | 109 | 0 | 3 | 8 | 1 | 1 | 2 |
| | **%** | | | | | | 88% | 0% | 2% | 6% | 1% | 1% | 2% |
| **Total neonates included** | **N** | 4405 | 0 | 71 | 2998 | 1336 | 709 | 12 | 209 | 219 | 139 | 39 | 9 |
| | **%** | | | | | | 53% | 1% | 16% | 16% | 10% | 3% | 1% |

†The percentage of neonates receiving each PDA treatment was calculated using the total number of neonates diagnosed with PDA as the denominator.
*>1 medical = 2 or 3 of (Indomethacin or Ibuprofen or Acetaminophen)
#Medical and ligation = Ligation + at least one of the drugs (Indomethacin or Ibuprofen or Acetaminophen)

Out of 39 Medical and ligation = surgical (12), device close (27)
Out of 9 Ligation alone = surgical (3), device closure (6)

**COMMENTS:** Specific reasons for treatment with indomethacin and frequency of repeat course of medical treatment (when same drug was used) were not recorded. Excludes indomethacin prophylaxis started on the first day of age. Neonates were identified as without PDA if there was no clinical suspicion of PDA.

**Presentation #15**
**Patent ductus arteriosus (PDA) treatments: BW <1500g**



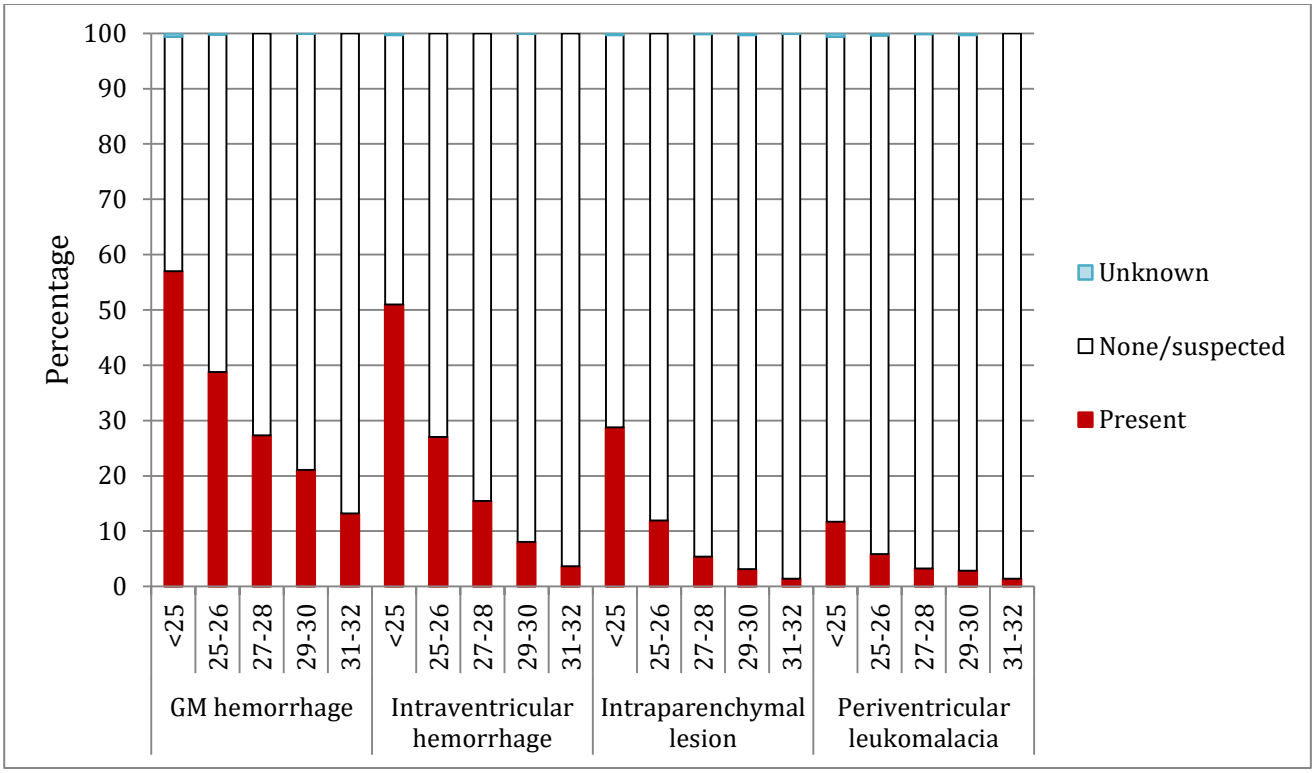

| BW (grams) | | Total | PDA information unknown | No PDA | Neonates with PDA | Treatment† | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Conservative | Indo | Ibu | Acetaminophen | > 1 medical* | Medical and ligation# | Ligation alone |
| **<500** | **N** | 56 | 1 | 16 | 39 | 13 | 0 | 8 | 12 | 4 | 2 | 0 |
| | **%** | | | | | 33% | 0% | 21% | 31% | 10% | 5% | 0% |
| **500-749** | **N** | 515 | 16 | 160 | 339 | 110 | 7 | 60 | 84 | 60 | 15 | 3 |
| | **%** | | | | | 32% | 2% | 18% | 25% | 18% | 4% | 1% |
| **750-999** | **N** | 670 | 5 | 283 | 382 | 179 | 4 | 70 | 63 | 49 | 16 | 1 |
| | **%** | | | | | 47% | 1% | 18% | 16% | 13% | 4% | 0% |
| **1000-1249** | **N** | 826 | 11 | 536 | 279 | 160 | 1 | 52 | 43 | 19 | 3 | 1 |
| | **%** | | | | | 57% | 0% | 19% | 15% | 7% | 1% | 0% |
| **1250-1499** | **N** | 968 | 10 | 801 | 157 | 126 | 0 | 16 | 9 | 3 | 1 | 2 |
| | **%** | | | | | 80% | 0% | 10% | 6% | 2% | 1% | 1 |
| **Total neonates included** | **N** | 3035 | 43 | 1796 | 1196 | 588 | 12 | 206 | 211 | 135 | 37 | 7 |
| | **%** | | | | | 49% | 1% | 17% | 18% | 11% | 3% | 1% |

† The percentage of neonates receiving each PDA treatment was calculated using the total number of neonates diagnosed with PDA as the denominator.
*>1 medical = 2 or 3 of (Indomethacin or Ibuprofen or Acetaminophen)
#Medical and ligation = Ligation + at least one of the drugs (Indomethacin or Ibuprofen or Acetaminophen)

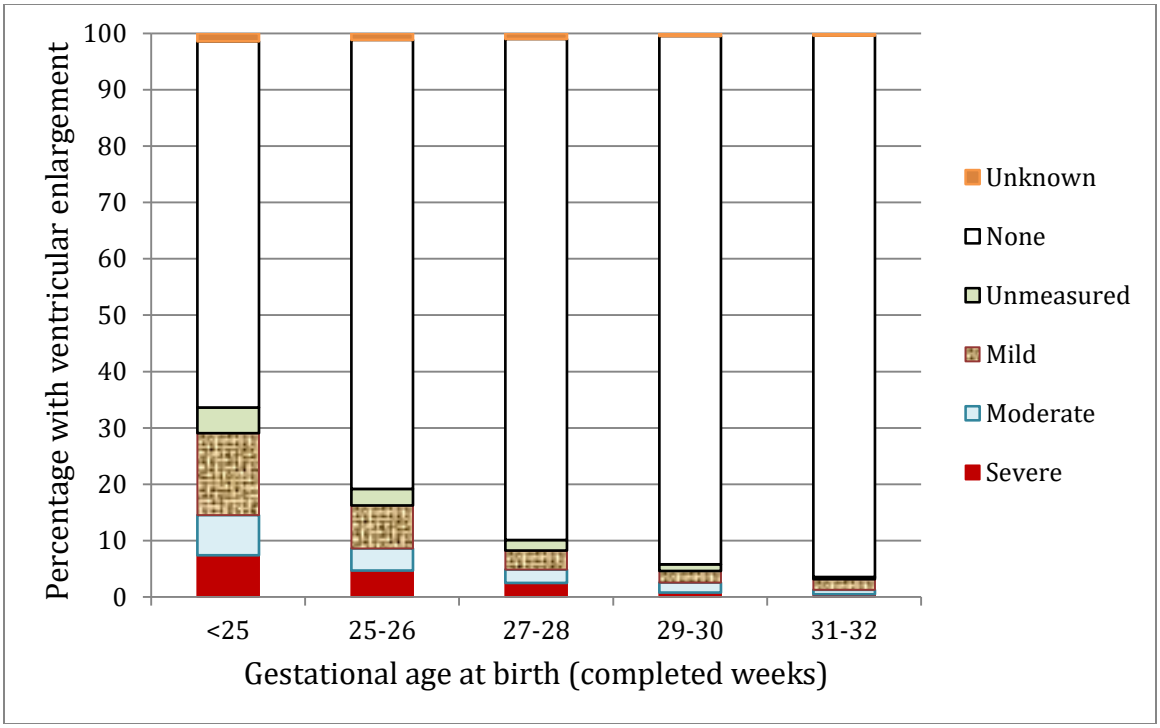
Out of 37 Medical and ligation = surgical (11), device close (26)
Out of 7 Ligation alone = surgical (2), device closure (5)

**COMMENTS:** Specific reasons for treatment with indomethacin and frequency of a repeat course of medical treatment (when same drug was used) were not recorded. Data excludes indomethacin prophylaxis started on the first day of age. Neonates were identified as without PDA if there was no clinical suspicion of PDA.

**Presentation #16**
**Neuroimaging findings: GA <33 weeks**




**Ventricular enlargement**



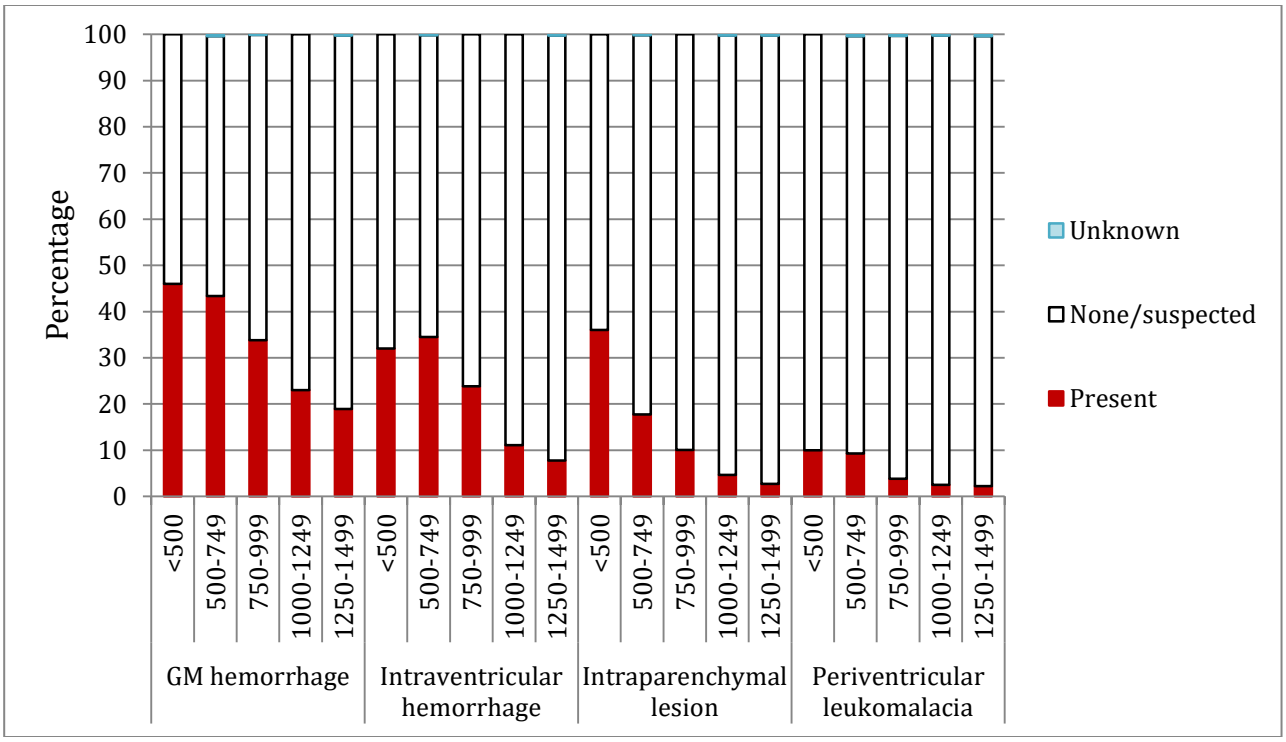

See page 146 for classifications of ventricular enlargement.

**Presentation #16** (continued)
**Neuroimaging findings: GA <33 weeks**

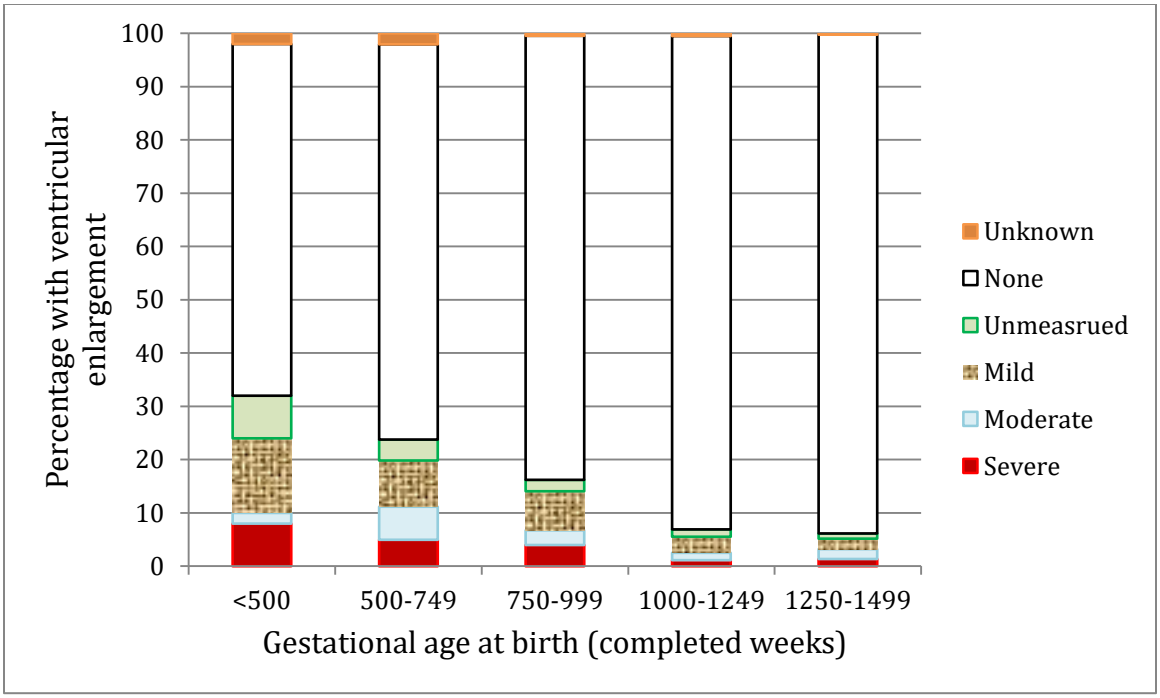
| GA at birth (completed weeks) | | Total | Neuro-imaging available | Neuroimaging findings | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | GM hemorrhage | | | Intraventricular hemorrhage | | | Ventricular enlargement | | | | | | Intraparenchymal lesion | | | Periventricular leukomalacia | | |
| | | | | Present | None/suspected | Unknown | Present | None/suspected | Unknown | Mild | Moderate | Severe | Unmeasured | None | Unknown | Present | None/suspected | Unknown | Present | None/suspected | Unknown |
| **<25** | N | 378 | 351 | 200 | 149 | 2 | 179 | 171 | 1 | 51 | 25 | 26 | 16 | 228 | 5 | 101 | 249 | 1 | 41 | 308 | 2 |
| | % | | | 57% | 42% | 1% | 51% | 49% | 0% | 15% | 7% | 7% | 5% | 65% | 1% | 29% | 71% | 0% | 12% | 88% | 1% |
| **25-26** | N | 527 | 511 | 198 | 312 | 1 | 138 | 373 | 0 | 39 | 20 | 24 | 15 | 407 | 6 | 61 | 450 | 0 | 30 | 479 | 2 |
| | % | | | 39% | 61% | 0% | 27% | 73% | 0% | 8% | 4% | 5% | 3% | 80% | 1% | 12% | 88% | 0% | 6% | 94% | 0% |
| **27-28** | N | 815 | 801 | 219 | 582 | 0 | 124 | 677 | 0 | 27 | 19 | 20 | 15 | 712 | 8 | 43 | 757 | 1 | 26 | 774 | 1 |
| | % | | | 27% | 73% | 0% | 15% | 85% | 0% | 3% | 2% | 3% | 2% | 89% | 1% | 5% | 95% | 0% | 3% | 97% | 0% |
| **29-30** | N | 1061 | 1019 | 215 | 803 | 1 | 82 | 936 | 1 | 21 | 18 | 8 | 12 | 955 | 5 | 32 | 984 | 3 | 29 | 987 | 3 |
| | % | | | 21% | 79% | 0% | 8% | 92% | 0% | 2% | 2% | 1% | 1% | 94% | 0% | 3% | 97% | 0% | 3% | 97% | 0% |
| **31-32** | N | 1624 | 1013 | 134 | 879 | 0 | 37 | 976 | 0 | 19 | 8 | 5 | 4 | 973 | 4 | 14 | 998 | 1 | 14 | 999 | 0 |
| | % | | | 13% | 87% | 0% | 4% | 96% | 0% | 2% | 1% | 0% | 0% | 96% | 0% | 1% | 99% | 0% | 1% | 99% | 0% |
| **Total number of neonates** | N | 4405 | 3695 | 966 | 2725 | 4 | 560 | 3133 | 2 | 157 | 90 | 83 | 62 | 3275 | 28 | 251 | 3438 | 6 | 140 | 3547 | 8 |
| | **%** | | | 26% | 74% | 0% | 15% | 85% | 0% | 4% | 2% | 2% | 2% | 89% | 1% | 7% | 93% | 0% | 4% | 96% | 0% |

**Note:** Neuroimaging findings were not mutually exclusive, i.e. one neonate may have had more than one finding.
See page 146 for classifications of ventricular enlargement.

**Presentation #17**
**Neuroimaging findings: BW <1500g**




**Ventricular enlargement**



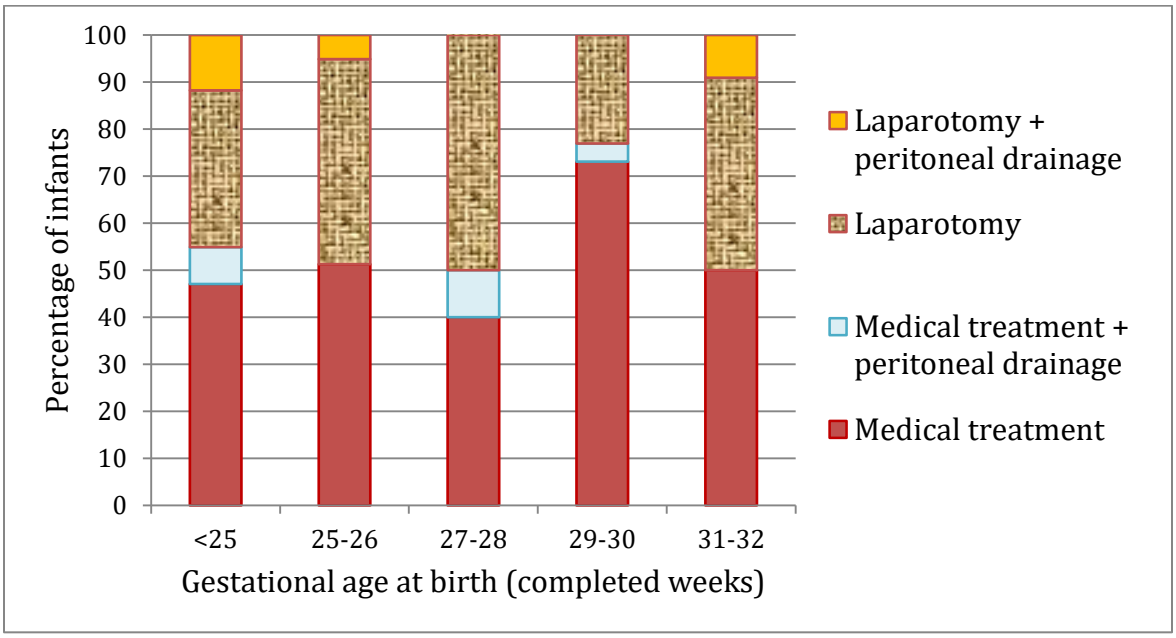

See page 146 for classifications of ventricular enlargement.

**Presentation #17** (continued)
**Neuroimaging findings: BW <1500g**

| BW (grams) | | Total | Neuro-imaging available | Neuroimaging findings | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | GM hemorrhage | | | Intraventricular hemorrhage | | | Ventricular enlargement | | | | | | Intraparenchymal lesion | | | Periventricular leukomalacia | | |
| | | | | Present | None/suspected | Unknown | Present | None/suspected | Unknown | Mild | Moderate | Severe | Unmeasured | None | Unknown | Present | None/suspected | Unknown | Present | None/suspected | Unknown |
| **<500** | N | 56 | 50 | 23 | 27 | 0 | 16 | 34 | 0 | 7 | 1 | 4 | 4 | 33 | 1 | 18 | 32 | 0 | 5 | 45 | 0 |
| | % | | | 46% | 54% | 0% | 32% | 68% | 0% | 14% | 2% | 8% | 8% | 66% | 2% | 36% | 64% | 0% | 10% | 90% | 0% |
| **500-749** | N | 515 | 484 | 210 | 272 | 2 | 167 | 316 | 1 | 42 | 30 | 24 | 19 | 359 | 10 | 86 | 397 | 1 | 45 | 437 | 2 |
| | % | | | 43% | 56% | 0% | 35% | 65% | 0% | 9% | 6% | 5% | 4% | 74% | 2% | 18% | 82% | 0% | 9% | 90% | 0% |
| **750-999** | N | 670 | 654 | 221 | 432 | 1 | 156 | 498 | 0 | 48 | 18 | 26 | 14 | 545 | 3 | 66 | 588 | 0 | 25 | 627 | 2 |
| | % | | | 34% | 66% | 0% | 24% | 76% | 0% | 7% | 3% | 4% | 2% | 83% | 0% | 10% | 90% | 0% | 4% | 96% | 0% |
| **1000-1249** | N | 826 | 795 | 183 | 612 | 0 | 88 | 707 | 0 | 24 | 11 | 9 | 11 | 736 | 4 | 37 | 756 | 2 | 20 | 773 | 2 |
| | % | | | 23% | 77% | 0% | 11% | 89% | 0% | 3% | 1% | 1% | 1% | 93% | 1% | 5% | 95% | 0% | 3% | 97% | 0% |
| **1250-1499** | N | 968 | 813 | 154 | 657 | 2 | 63 | 748 | 2 | 16 | 15 | 11 | 8 | 761 | 2 | 22 | 789 | 2 | 18 | 792 | 3 |
| | % | | | 19% | 81% | 0% | 8% | 92% | 0% | 2% | 2% | 1% | 1% | 94% | 0% | 3% | 97% | 0% | 2% | 97% | 0% |
| **Total neonates** | N | 3035 | 2796 | 791 | 2000 | 5 | 490 | 2303 | 3 | 137 | 75 | 74 | 56 | 2434 | 20 | 229 | 2562 | 5 | 113 | 2674 | 9 |
| | **%** | | | 28% | 72% | 0% | 18% | 82% | 0% | 5% | 3% | 3% | 2% | 87% | 1% | 8% | 92% | 0% | 4% | 96% | 0% |

**Note:** Neuroimaging findings were not mutually exclusive, i.e. one neonate may have more than one finding.
See page 146 for classifications of ventricular enlargement.

**Presentation #18**
**Necrotizing enterocolitis (NEC) treatments: GA <33weeks**



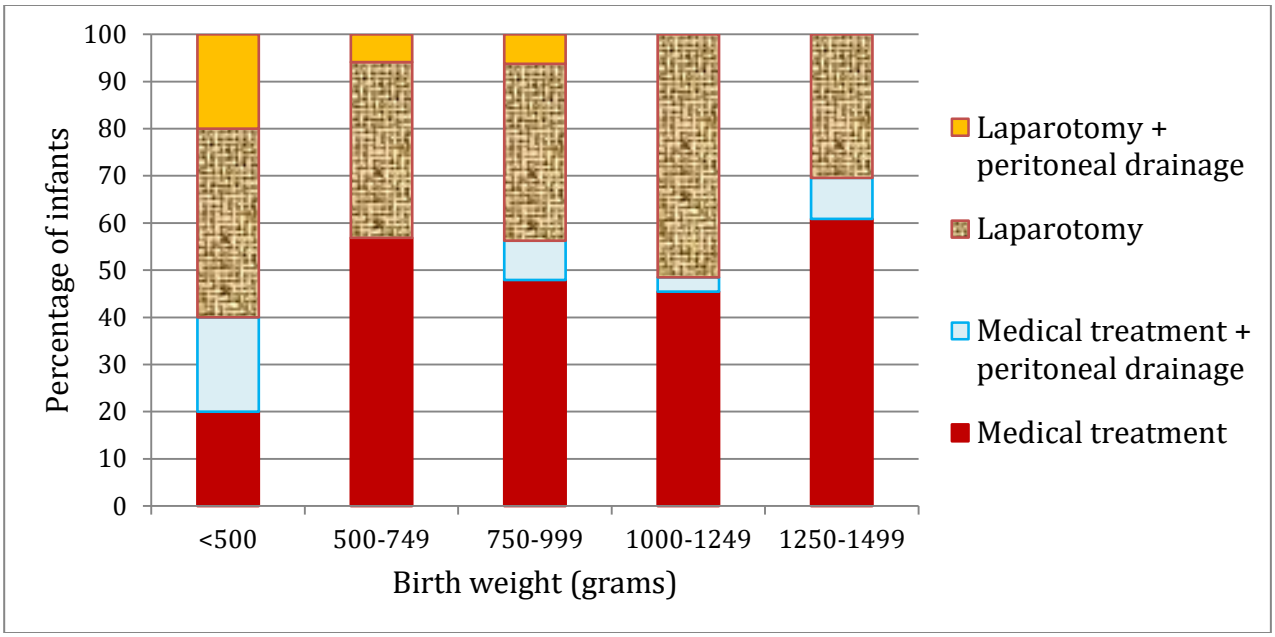

| GA at birth (completed weeks) | | Total number of neonates | Missing data on NEC | No NEC | NEC* | Neonates with necrotizing enterocolitis** | | | | Death among infants with NEC** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Medical treatment only | Medical + peritoneal drainage | Laparotomy | Peritoneal drainage + Laparotomy | |
| **<25** | N | 378 | 0 | 327 | 51 | 24 | 4 | 17 | 6 | 17 |
| | % | | | 87% | 13% | 47% | 8% | 33% | 12% | 33% |
| **25-26** | N | 527 | 0 | 488 | 39 | 20 | 0 | 17 | 2 | 10 |
| | % | | | 93% | 7% | 51% | 0% | 44% | 5% | 26% |
| **27-28** | N | 815 | 0 | 775 | 40 | 16 | 4 | 20 | 0 | 11 |
| | % | | | 95% | 5% | 40% | 10% | 50% | 0% | 28% |
| **29-30** | N | 1061 | 0 | 1035 | 26 | 19 | 1 | 6 | 0 | 2 |
| | % | | | 98% | 2% | 73% | 4% | 23% | 0% | 8% |
| **31-32** | N | 1624 | 0 | 1602 | 22 | 11 | 0 | 9 | 2 | 5 |
| | % | | | 99% | 1% | 50% | 0% | 41% | 9% | 23% |
| **Total number of neonates** | N | 4405 | 0 | 4227 | 178 | 90 | 9 | 69 | 10 | 45 |
| | % | | | 96% | 4% | 51% | 5% | 39% | 6% | 25% |

*The percentage of neonates with NEC was calculated using the total number of neonates in the same GA category with data available on NEC as the denominator.
**The percentages were calculated using the total number of neonates in the same GA category that had NEC as the denominator.

**COMMENTS:** NEC is identified according to the following criteria: a) definite pneumatosis (air within the bowel wall) or portal/hepatic gas as diagnosed by x-ray or ultrasound, or b) if there is a surgical or autopsy diagnosis of NEC. Diagnoses of 'suspected NEC' or x-rays showing pneumoperitoneum without pneumatosis are not classified as NEC.

**Number (%) of neonates with NEC and GA > 33 weeks:**
**GA 33 - 36 weeks: 34 neonates (0.7%)**
**GA ≥ 37 weeks: 25 neonates (0.4%)**

**Presentation #19**
**Necrotizing enterocolitis (NEC) treatments: BW <1500 g**



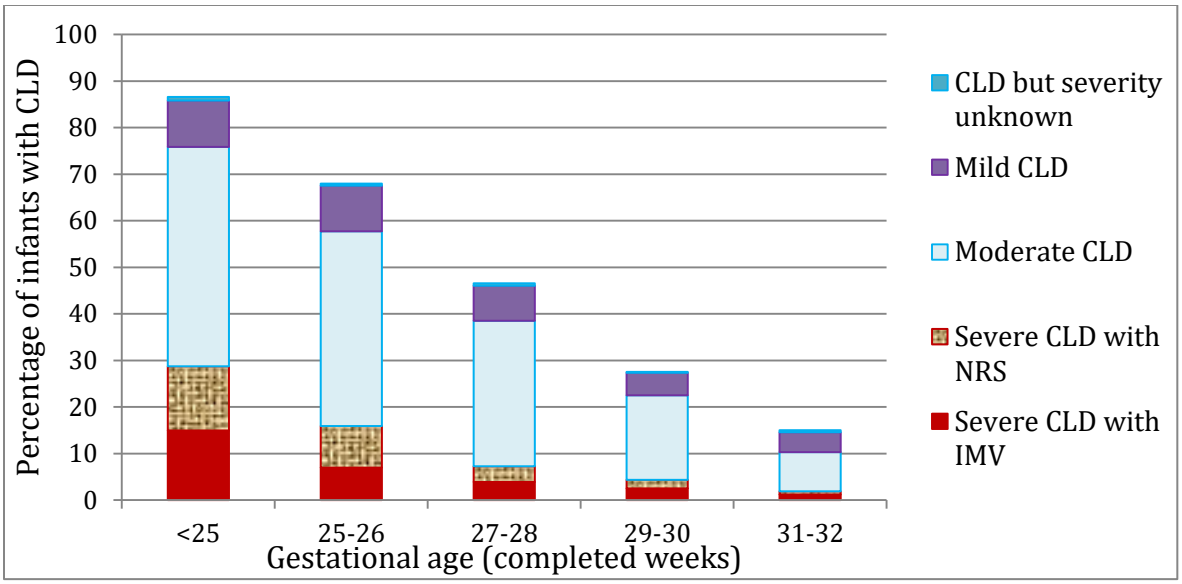

| Birth weight (grams) | | Total number of neonates | Missing data on NEC | No NEC | NEC* | Neonates with necrotizing enterocolitis** | | | | Death among infants with NEC** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Medical treatment only | Medical + peritoneal drainage | Laparotomy | Peritoneal drainage + laparotomy | |
| **<500** | N | 56 | 0 | 46 | 10 | 2 | 2 | 4 | 2 | 4 |
| | % | | | 82% | 18% | 20% | 20% | 40% | 20% | 40% |
| **500-749** | N | 515 | 0 | 464 | 51 | 29 | 0 | 19 | 3 | 16 |
| | % | | | 90% | 10% | 57% | 0% | 37% | 6% | 31% |
| **750-999** | N | 670 | 0 | 622 | 48 | 23 | 4 | 18 | 3 | 9 |
| | % | | | 93% | 7% | 48% | 8% | 38% | 6% | 19% |
| **1000-1249** | N | 826 | 0 | 793 | 33 | 15 | 1 | 17 | 0 | 10 |
| | % | | | 96% | 4% | 45% | 3% | 52% | 0% | 30% |
| **1250-1499** | N | 968 | 0 | 945 | 23 | 14 | 2 | 7 | 0 | 7 |
| | % | | | 98% | 2% | 61% | 9% | 30% | 0% | 30% |
| **Total number of neonates** | N | 3035 | 0 | 2870 | 165 | 83 | 9 | 65 | 8 | 46 |
| | % | | | 95% | 5% | 50% | 5% | 39% | 5% | 28% |

*The percentage of neonates with NEC was calculated using the total number of neonates in the same GA category with data available on NEC as the denominator.
** The percentages were calculated using the total number of neonates in the same GA category that had NEC as the denominator.

**COMMENTS:** NEC is identified according to the following criteria: a) definite pneumatosis (air within the bowel wall) or portal/hepatic gas as diagnosed by x-ray or ultrasound, or b) if there is a surgical or autopsy diagnosis of NEC. Diagnoses of 'suspected NEC' or x-rays showing pneumoperitoneum without pneumatosis are not classified as NEC.

**Number (%) of neonates with NEC and BW > 1500g:**
**BW 1500 - 2499g: 48 neonates (1.0%)**
**BW ≥ 2500g: 24 neonates (0.3%)**

**Presentation #20**
**Chronic lung disease (CLD) at 36 weeks post menstrual age (PMA) or discharge: GA <33 weeks**



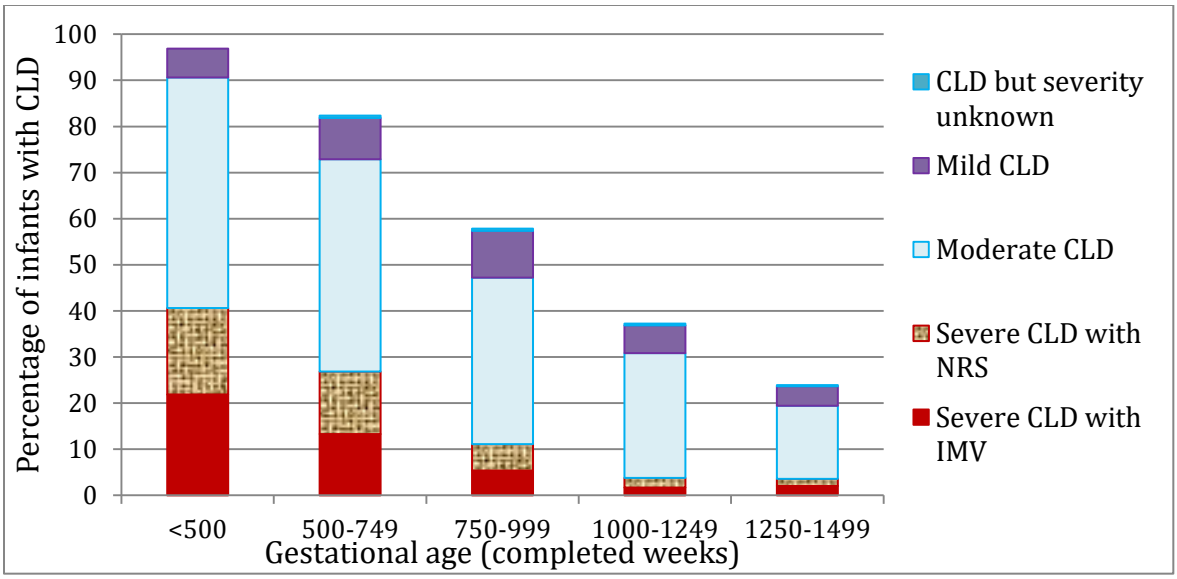

| GA | Total number of neonates N | Number who died before 36 weeks' PMA N | Surviving neonates whose respiratory support is unknown* N | CLD from† | Neonates with known results N | Neonates with severe CLD on IMV‡, N (%) | Neonates with severe CLD on NRS¥, N (%) | Neonates with moderate CLD, N (%) | Neonates with mild CLD, N (%) | Neonates with unknown severity of CLD, N (%) | Neonates without CLD, N (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **<25** | 378 | 117 | 0 | 36w | 231 | 37 (16) | 35 (15) | 108 (47) | 24 (10) | 1 (0) | 26 (11) |
| | | | | Disch | 30 | 2 (7) | 1 (3) | 15 (50) | 2 (7) | 1 (3) | 9 (30) |
| **25-26** | 527 | 68 | 0 | 36w | 329 | 31 (10) | 39 (12) | 153 (47) | 34 (10) | 2 (1) | 70 (21) |
| | | | | Disch | 130 | 1 (1) | 2 (2) | 39 (30) | 11 (8) | 0 | 77 (59) |
| **27-28** | 815 | 44 | 0 | 36w | 443 | 28 (6) | 22 (5) | 144 (33) | 45 (10) | 2 (0) | 202 (46) |
| | | | | Disch | 328 | 2 (1) | 4 (1) | 97 (30) | 13 (4) | 2 (1) | 210 (64) |
| **29-30** | 1 061 | 22 | 4 | 36w | 472 | 25 (5) | 18 (4) | 93 (20) | 34 (7) | 2 (0) | 300 (64) |
| | | | | Disch | 563 | 1 (0) | 1 (0) | 95 (17) | 16 (3) | 0 | 450 (80) |
| **31-32** | 1 624 | 25 | 7 | 36w | 584 | 19 (3) | 9 (2) | 79 (14) | 60 (10) | 5 (1) | 412 (71) |
| | | | | Disch | 1008 | 0 | 2 (0) | 55 (5) | 8 (1) | 2 (0) | 941 (93) |
| **Total** | 4 405 | 276 | 11 | 36w | 2059 | 140 (7) | 123 (6) | 577 (28) | 197 (10) | 12 (1) | 1010 (49) |
| | | | | Disch | 2059 | 6 (0) | 10 (0) | 301 (15) | 50 (2) | 5 (0) | 1687 (82) |

**COMMENTS: See page 147 for the definition of severity of CLD.**

**COMMENTS: See page 147 for the definition of severity of CLD.**
*unknown = first admission was after 36 weeks' PMA
** w = weeks' PMA, Disch = Status based on discharge status prior to 36 weeks' PMA
‡IMV = Invasive Mechanical Ventilation
¥NRS = Non-invasive Respiratory Support

**Note:** Percentages of neonates with CLD were calculated based on the total number of neonates in the same GA category with known CLD results.

**Presentation #21**
**Chronic lung disease (CLD) at 36 weeks post menstrual age (PMA) or discharge: BW < 1500g**

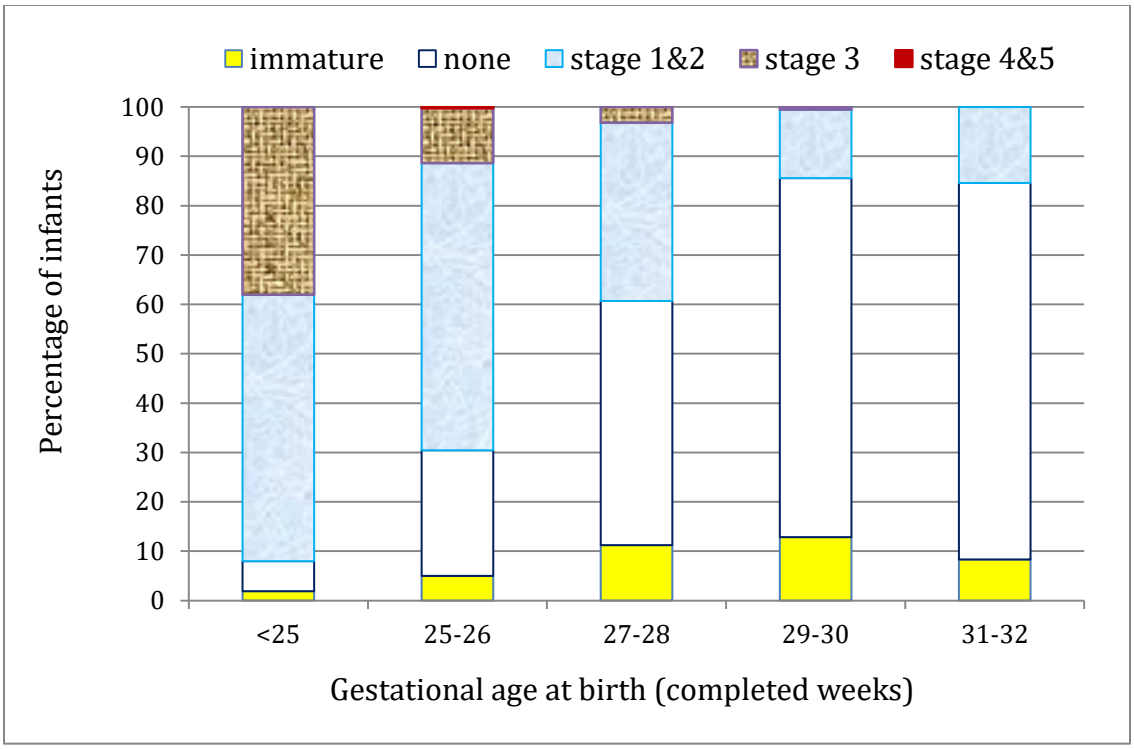



| BW | Total number of neonates N | Number who died before 36 weeks' PMA N | Surviving neonates whose respiratory support is unknown* N | CLD from† | Neonates with known results N | Neonates with severe CLD on IMV‡, N (%) | Neonates with severe CLD on NRS¥, N (%) | Neonates with moderate CLD, N (%) | Neonates with mild CLD, N (%) | Neonates with unknown severity of CLD, N (%) | Neonates without CLD, N (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **<500** | 56 | 24 | 0 | 36w | 29 | 6 (21) | 6 (21) | 14 (48) | 2 (7) | 0 | 1 (3) |
| | | | | Disch | 3 | 1 (33) | 0 | 2 (67) | 0 | 0 | 0 |
| **500-749** | 515 | 124 | 0 | 36w | 326 | 51 (16) | 51 (16) | 153 (47) | 27 (8) | 1 (0) | 43 (13) |
| | | | | Disch | 65 | 1 (2) | 2 (3) | 27 (42) | 8 (12) | 1 (2) | 26 (40) |
| **750-999** | 670 | 58 | 0 | 36w | 408 | 31 (8) | 33 (8) | 165 (40) | 50 (12) | 1 (0) | 128 (31) |
| | | | | Disch | 204 | 2 (1) | 2 (1) | 56 (27) | 12 (6) | 2 (1) | 130 (64) |
| **1000-1249** | 826 | 57 | 4 | 36w | 413 | 11 (3) | 14 (3) | 121 (29) | 39 (9) | 3 (1) | 225 (54) |
| | | | | Disch | 352 | 2 (1) | 2 (1) | 86 (24) | 7 (2) | 0 | 255 (72) |
| **1250-1499** | 968 | 184 | 2 | 36w | 329 | 16 (5) | 10 (3) | 59 (18) | 24 (7) | 1 (0) | 219 (67) |
| | | | | Disch | 453 | 0 | 2 (0) | 65 (14) | 9 (2) | 1 (0) | 376 (83) |
| **Total** | 3 035 | 447 | 6 | 36w | 1505 | 115 (8) | 114 (8) | 512 (34) | 142 (9) | 6 (0) | 616 (41) |
| | | | | Disch | 1077 | 6 (1) | 8 (1) | 236 (22) | 36 (3) | 4 (0) | 787 (73) |

**COMMENTS: See** page 147 **for the definition of severity of CLD.**
*unknown = first admission was after 36 weeks' PMA
** w = weeks' PMA, Disch = Discharge prior to 36 weeks' PMA
‡IMV = Invasive Mechanical Ventilation
¥NRS = Non-invasive Respiratory Support

**Note:** Percentages of neonates with CLD were calculated based on the total number of neonates in the same GA category with known CLD results.

**Presentation #22**
**Retinopathy of prematurity (ROP) staging: GA <33 weeks**

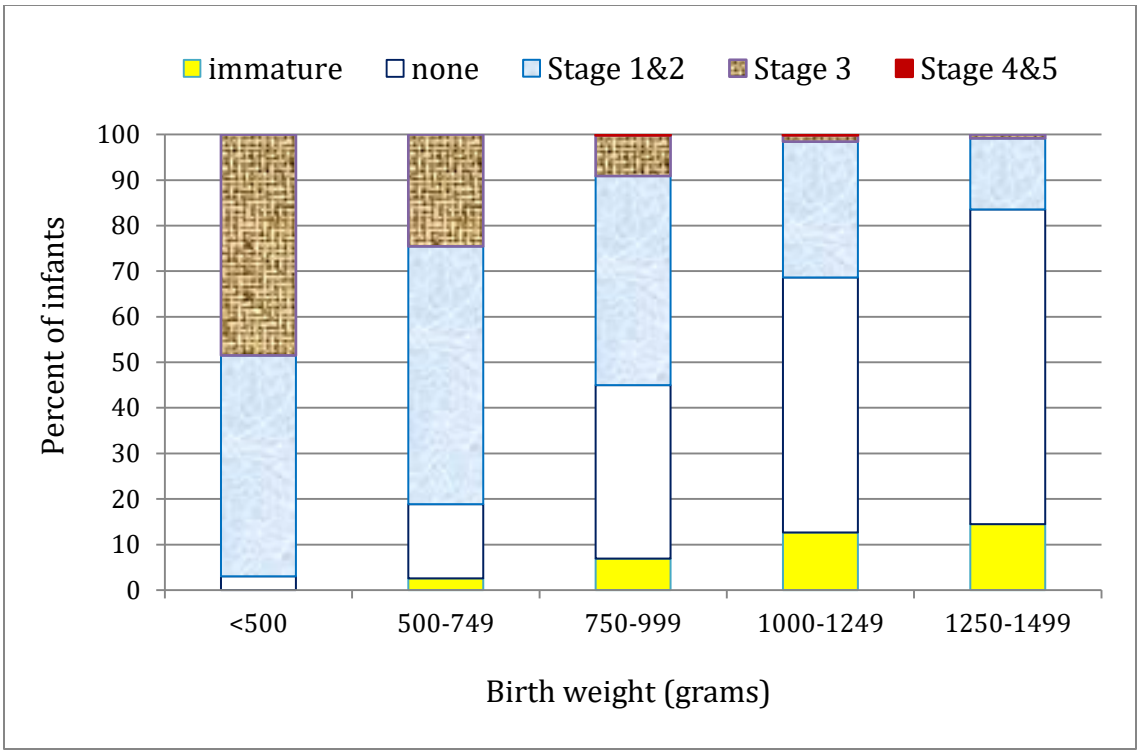



| GA (completed weeks) | | Total number of neonates | Number of neonates alive at 6 weeks of age | Number of neonates with known eye examination results | Retinopathy of prematurity* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Immature | None | Stages 1 & 2 | Stage 3 | Stages 4 & 5 |
| **<25** | N | 378 | 270 | 263 | 5 | 16 | 142 | 100 | 0 |
| | % | | | | 2% | 6% | 54% | 38% | 0% |
| **25-26** | N | 527 | 462 | 440 | 22 | 112 | 256 | 49 | 1 |
| | % | | | | 5% | 25% | 58% | 11% | 0% |
| **27-28** | N | 815 | 773 | 659 | 74 | 326 | 238 | 21 | 0 |
| | % | | | | 11% | 49% | 36% | 3% | 0% |
| **29-30** | N | 1061 | 1039 | 576 | 74 | 419 | 80 | 3 | 0 |
| | % | | | | 13% | 73% | 14% | 1% | 0% |
| **31-32** | N | 1624 | 1596 | 156 | 13 | 119 | 24 | 0 | 0 |
| | % | | | | 8% | 76% | 15% | 0% | 0% |
| **Total neonates included** | N | 4405 | 4140 | 2094 | 188 | 992 | 740 | 173 | 1 |
| | % | | | | 9% | 47% | 35% | 8% | 0% |

***The percentage of neonates diagnosed with each stage of ROP was calculated using the total number of neonates in the same GA category with known eye examination results as the denominator.**

**COMMENTS:** ROP is defined according to the International Classification of Retinopathy of Prematurity (ICROP) and includes the highest level of ROP in either eye. More advanced stages may have been detected in neonates transferred from network sites to level II sites or units. **Caution should be used when interpreting these data.**

**Presentation #23**
**Retinopathy of prematurity (ROP) staging: BW< 1500 g**

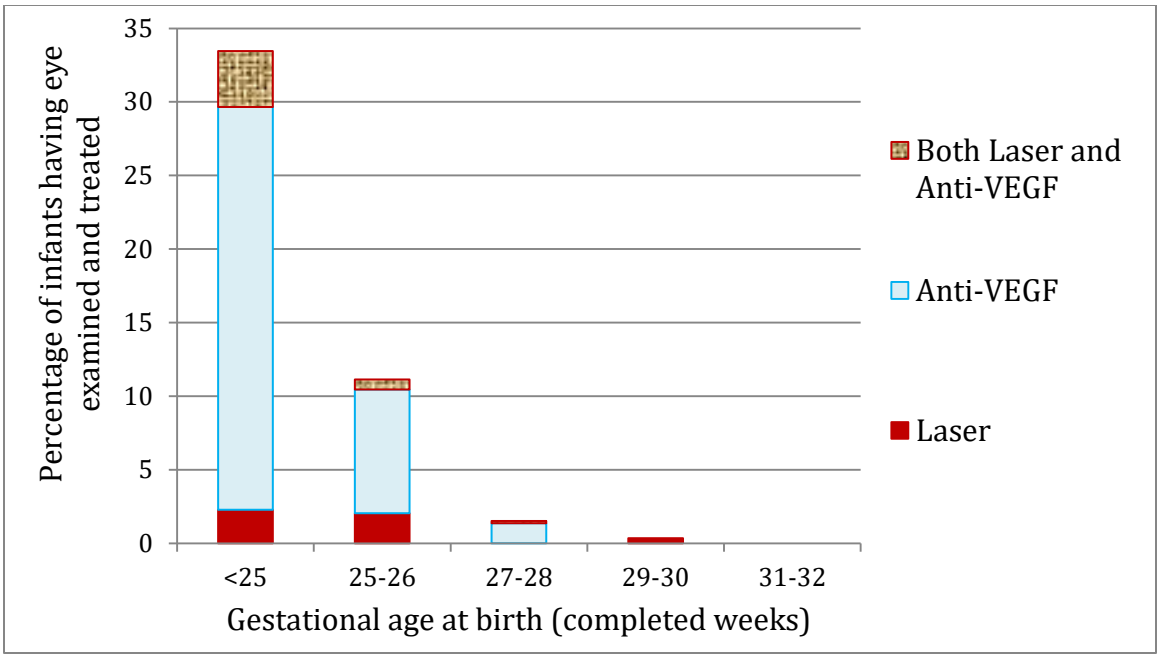



| BW (grams) | | Total number of neonates | Number of neonates alive at 6 weeks of age | Number of neonates with known eye examination results | Retinopathy of prematurity* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Immature | None | Stages 1 & 2 | Stage 3 | Stages 4 & 5 |
| **<500** | N | 56 | 22 | 33 | 0 | 1 | 16 | 16 | 0 |
| | % | | | | 0% | 3% | 48% | 48% | 0% |
| **500-749** | N | 515 | 115 | 387 | 10 | 63 | 219 | 95 | 0 |
| | % | | | | 3% | 16% | 57% | 25% | 0% |
| **750-999** | N | 670 | 54 | 549 | 38 | 209 | 252 | 49 | 1 |
| | % | | | | 7% | 38% | 46% | 9% | 0% |
| **1000-1249** | N | 826 | 26 | 577 | 73 | 323 | 172 | 8 | 1 |
| | % | | | | 13% | 56% | 30% | 1% | 0% |
| **1250-1499** | N | 968 | 18 | 359 | 52 | 248 | 56 | 3 | 0 |
| | % | | | | 14% | 69% | 16% | 1% | 0% |
| **Total neonates included** | N | 3035 | 235 | 1905 | 173 | 844 | 715 | 171 | 2 |
| | % | | | | 9% | 44% | 38% | 9% | 0% |

***The percentage of neonates diagnosed with each stage of ROP was calculated using the total number of neonates in the same GA category with known eye examination results as the denominator.**

**COMMENTS:** ROP is defined according to the International Classification of Retinopathy of Prematurity (ICROP) and includes the highest level of ROP in either eye. More advanced stages may have been detected in neonates transferred from network sites to level II sites or units. **Caution should be used when interpreting these data.**

**Presentation #24**
**Retinopathy of prematurity (ROP) treatments: GA <33 weeks**

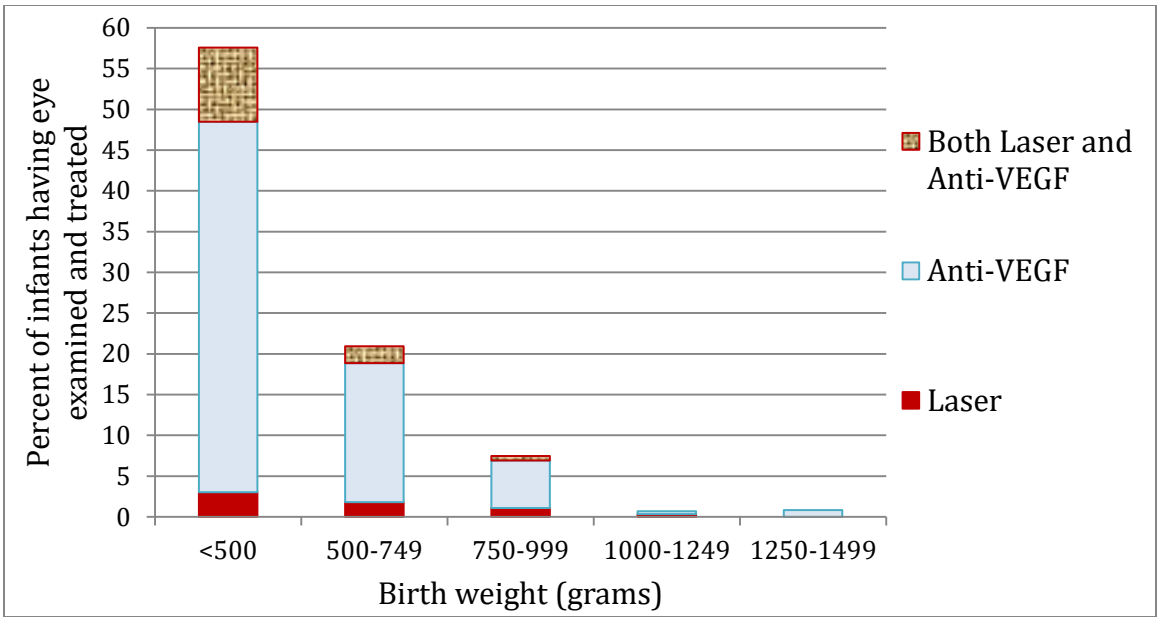



| Birth GA (completed weeks) | | Total number of neonates | Number of neonates with known eye examination results | Therapy for retinopathy of prematurity (ROP)* | Therapy for ROP | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Laser | Anti-VEGF | Both Laser and Anti-VEGF | Other surgery** |
| **<25** | N | 378 | 263 | 88 | 6 | 72 | 10 | 0 |
| | % | | | 34% | | | | |
| **25-26** | N | 527 | 440 | 49 | 9 | 37 | 3 | 0 |
| | % | | | 11% | | | | |
| **27-28** | N | 815 | 659 | 10 | 0 | 9 | 1 | 0 |
| | % | | | 2% | | | | |
| **29-30** | N | 1061 | 576 | 2 | 2 | 0 | 0 | 0 |
| | % | | | 0% | | | | |
| **31-32** | N | 1624 | 156 | 0 | 0 | 0 | 0 | 0 |
| | % | | | 0% | | | | |
| **Total neonates included** | N | 4405 | 2094 | 149 | 17 | 118 | 14 | 0 |
| | % | | | 7% | | | | |

***The percentage of neonates who received ROP therapy was calculated using the total number of neonates in the same GA category with known eye examination results as the denominator.**
****Infants who had other surgery may have one or both of Laser and Anti-VEGF treatments.**

**COMMENTS:** ROP is defined according to the International Classification of Retinopathy of Prematurity (ICROP) and includes the highest level of ROP in either eye. More advanced stages may have been detected in neonates transferred from network sites to level II sites or units. **Caution should be used when interpreting these data as some neonates did not have eye examination data.**

**Presentation #25**
**Retinopathy of prematurity (ROP) treatments: BW <1500 g**




| BW (grams) | | Total number of neonates | Number of neonates with known eye examination results | Therapy for retinopathy of prematurity (ROP)* | Therapy for ROP | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Laser | Anti-VEGF | Both Laser and Anti-VEGF | Other surgery |
| **<500** | N | 56 | 33 | 19 | 1 | 15 | 3 | 0 |
| | % | | | 58% | | | | |
| **500-749** | N | 515 | 387 | 81 | 7 | 66 | 8 | 0 |
| | % | | | 21% | | | | |
| **750-999** | N | 670 | 549 | 41 | 6 | 32 | 3 | 0 |
| | % | | | 8% | | | | |
| **1000-1249** | N | 826 | 577 | 4 | 2 | 2 | 0 | 0 |
| | % | | | 1% | | | | |
| **1250-1499** | N | 968 | 359 | 3 | 0 | 3 | 0 | 0 |
| | % | | | 1% | | | | |
| **Total neonates included** | N | 3035 | 1905 | 148 | 16 | 118 | 14 | 0 |
| | % | | | 8% | | | | |

***The percentage of neonates who received ROP therapy was calculated using the total number of neonates in the same GA category with known eye examination results as the denominator.**
****Infants who had other surgery may have one or both of Laser and Anti-VEGF treatments.**

**COMMENTS:** ROP is defined according to the International Classification of Retinopathy of Prematurity (ICROP) and includes the highest level of ROP in either eye. More advanced stages may have been detected in neonates transferred from network sites to level II sites or units. **Caution should be used when interpreting these data as some neonates did not have eye examination data.**

**Presentation #26**
**Select major morbidity: GA <33 weeks**

| GA | Number of neonates | Number survived until discharge / transfer (%) | Major morbidity including any CLD[a] (%) | Major morbidity including only mod-severe CLD[a] (%) | Any CLD[b] (%) | Mod-severe CLD[b] (%) | Severe ROP[c] (%) | Severe neurological injury[d] (%) | NEC[e] (%) | Late onset sepsis [f] |
|---|---|---|---|---|---|---|---|---|---|---|
| **<24** | 169 | 96 (57) | 140 (83) | 138 (82) | 94 (92) | 82 (81) | 61 (61) | 63 (43) | 24 (14) | 72 (43) |
| **24** | 194 | 149 (77) | 170 (88) | 167 (86) | 124 (83) | 108 (72) | 56 (37) | 49 (26) | 25 (13) | 77 (40) |
| **25** | 223 | 187 (84) | 177 (79) | 169 (76) | 142 (75) | 124 (66) | 40 (22) | 43 (20) | 21 (9) | 71 (32) |
| **26** | 285 | 251 (88) | 197 (69) | 180 (63) | 153 (61) | 127 (51) | 17 (8) | 37 (13) | 19 (7) | 61 (21) |
| **27** | 373 | 352 (94) | 219 (59) | 194 (52) | 175 (50) | 145 (41) | 15 (5) | 29 (8) | 21 (6) | 40 (11) |
| **28** | 410 | 392 (96) | 209 (51) | 187 (46) | 167 (42) | 139 (36) | 7 (3) | 28 (7) | 19 (5) | 42 (10) |
| **29** | 464 | 450 (97) | 175 (38) | 150 (32) | 139 (31) | 113 (25) | 0 | 25 (5) | 11 (2) | 29 (6) |
| **30** | 550 | 542 (99) | 146 (27) | 124 (23) | 121 (22) | 97 (18) | 1 (0) | 23 (4) | 12 (2) | 16 (3) |
| **31** | 680 | 669 (98) | 121 (18) | 96 (14) | 93 (14) | 67 (10) | 0 | 11 (2) | 11 (2) | 24 (4) |
| **32** | 882 | 871 (99) | 141 (16) | 103 (12) | 118 (14) | 75 (9) | 0 | 10 (3) | 8 (1) | 24 (3) |
| **Total neonates** | 4 230 | 3 959 (94) | 1 695 (40) | 1 508 (36) | 1 326 (33) | 1 077 (27) | 197 (11) | 319 (9) | 172 (4) | 457 (11) |

**Inclusion criteria for these analyses:**

1. Neonate born at <33 weeks GA without major congenital anomaly
2. Denominators were based on the number of neonates with available data and those without major congenital anomaly (see below for details)

**Definitions:**

[a] Major morbidity was counted as any one of the following

1. CLD (any grade *or* mod-severe only)
2. Severe ROP
3. Severe neurological injury (IVH ≥ grade 3 and/or PVL)
4. Stage 2 or 3 NEC
5. Late onset sepsis

[b] Chronic lung disease was defined as any grade *or* mod-severe per presentation #19

[c] Severe ROP was defined as ROP stage 3,4,5 and/or those with ROP treatment (laser or intraocular injection).

[d] Severe neurological injury was defined as IVH ≥ grade 3 and/or PVL

[e] NEC defined as stage 2 or 3

[f] Late onset sepsis was defined as any positive blood and/or cerebrospinal fluid culture after 2 days of age. Analysis was neonate-based.

**Denominator used in percentage calculation for each morbidity**

Survivor until discharge: All neonates
Major morbidities: All neonates
CLD (Any or Mod-Severe): First admission before 36 weeks PMA and (survived beyond 36 weeks PMA or transferred before 36 weeks)
ROP: Eye exam done and results available
NEC: All neonates
Late onset sepsis: All neon

# E. Site Comparisons

# E.1. Site Comparisons – Care Practices

**Presentation #27**
**Prenatal characteristics and delivery room care practices: GA<29 weeks:**
**Site specific crude rates* (inborn only)**

| Site | Number of neonates | Antenatal $MgSO_4$[a] | Antenatal steroids[b] | | | Timing of cord clamping | | Admission temperature | | | Apgar <5 at 5 minutes | Maternal hypertension |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Yes | Completed course within last week prior to birth[a] | Completed course prior to 1 week before birth | Partial | 30 – 59 sec | ≥60 sec | <36.5 | 36.5 - 37.2 | >37.2 | | |
| **xxx** | < 15 | 87.5 | 75.0 | 25.0 | 0.0 | 37.5 | 50.0 | 16.7 | 83.3 | 0.0 | 25.0 | 12.5 |
| **xvi** | | 87.5 | 50.0 | 37.5 | 12.5 | 25.0 | 62.5 | 25.0 | 62.5 | 12.5 | 0.0 | 50.0 |
| **i** | | 100.0 | 33.3 | 33.3 | 33.3 | 0.0 | 22.2 | 55.6 | 11.1 | 33.3 | 33.3 | 25.0 |
| **xxxii** | | 81.8 | 60.0 | 20.0 | 10.0 | 9.1 | 63.6 | 44.4 | 55.6 | 0.0 | 0.0 | 36.4 |
| **xxiii** | | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 |
| **xx** | | 66.7 | 16.7 | 16.7 | 50.0 | 16.7 | 33.3 | 50.0 | 33.3 | 16.7 | 50.0 | 33.3 |
| **ii** | | 83.3 | 50.0 | 8.3 | 41.7 | 16.7 | 33.3 | 18.2 | 63.6 | 18.2 | 33.3 | 9.1 |
| **xxxi** | 15 – 30 | 94.1 | 17.7 | 41.2 | 35.3 | 5.9 | 58.8 | 31.3 | 43.8 | 25.0 | 11.8 | 29.4 |
| **vii** | | 77.8 | 27.8 | 27.8 | 44.4 | 22.2 | 27.8 | 47.1 | 47.1 | 5.9 | 33.3 | 29.4 |
| **viii** | | 68.4 | 73.7 | 21.1 | 0.0 | 26.3 | 21.1 | 5.3 | 68.4 | 26.3 | 26.3 | 15.8 |
| **v** | | 100.0 | 36.4 | 31.8 | 22.7 | 9.1 | 72.7 | 31.8 | 54.6 | 13.6 | 4.6 | 27.3 |
| **xxii** | | 91.7 | 30.4 | 26.1 | 39.1 | 29.2 | 50.0 | 8.3 | 54.2 | 37.5 | 20.8 | 4.4 |
| **xxviii** | | 96.3 | 59.3 | 7.4 | 33.3 | 25.9 | 40.7 | 37.0 | 55.6 | 7.4 | 14.8 | 20.0 |
| **xiv** | | 100.0 | 46.4 | 7.1 | 21.4 | 46.4 | 21.4 | 11.5 | 65.4 | 23.1 | 7.1 | 17.9 |
| **iii** | 31 – 70 | 68.8 | 46.9 | 15.6 | 31.3 | 12.5 | 46.9 | 18.8 | 56.3 | 25.0 | 12.5 | 21.9 |
| **xv** | | 91.9 | 59.5 | 18.9 | 18.9 | 5.4 | 18.9 | 43.2 | 54.1 | 2.7 | 8.1 | 13.9 |
| **xiii** | | 92.1 | 36.8 | 29.0 | 34.2 | 36.8 | 15.8 | 68.4 | 15.8 | 15.8 | 5.3 | 19.4 |
| **xii** | | 92.7 | 29.3 | 29.3 | 29.3 | 12.2 | 43.9 | 66.7 | 30.8 | 2.6 | 14.6 | 19.5 |
| **xxxiii** | | 89.8 | 49.0 | 30.6 | 18.4 | 14.3 | 40.8 | 37.5 | 47.9 | 14.6 | 16.3 | 8.2 |
| **xxvii** | | 92.5 | 41.5 | 37.7 | 13.2 | 17.0 | 22.6 | 54.7 | 35.9 | 9.4 | 17.0 | 26.4 |
| **ix** | | 81.5 | 48.2 | 24.1 | 20.4 | 14.8 | 48.2 | 37.7 | 47.2 | 15.1 | 24.1 | 16.7 |
| **vi** | | 96.4 | 34.6 | 27.3 | 32.7 | 38.2 | 34.6 | 23.6 | 52.7 | 23.6 | 9.1 | 27.3 |
| **xi** | | 87.1 | 29.0 | 16.1 | 41.9 | 58.1 | 12.9 | 31.2 | 49.2 | 19.7 | 10.3 | 18.0 |
| **x** | > 70 | 76.4 | 30.6 | 47.2 | 13.9 | 16.7 | 27.8 | 53.5 | 45.1 | 1.4 | 26.8 | 18.1 |
| **xxi** | | 85.5 | 46.1 | 27.6 | 22.4 | 17.1 | 25.0 | 8.0 | 64.0 | 28.0 | 38.2 | 25.7 |
| **xviii** | | 96.9 | 42.9 | 18.7 | 33.0 | 15.3 | 44.9 | 21.3 | 55.3 | 23.4 | 11.8 | 18.4 |
| **xxv** | | 79.4 | 41.1 | 17.8 | 35.5 | 16.8 | 43.9 | 20.2 | 65.4 | 14.4 | 15.0 | 22.6 |
| **xvii** | | 66.1 | 46.4 | 27.7 | 24.1 | 9.8 | 51.8 | 21.4 | 56.3 | 22.3 | 7.2 | 25.9 |
| **iv** | | 89.4 | 44.7 | 22.0 | 29.6 | 17.5 | 38.1 | 52.5 | 41.1 | 6.3 | 5.0 | 18.9 |
| **xxvi** | | 98.9 | 37.3 | 32.2 | 28.3 | 9.0 | 34.5 | 24.3 | 61.6 | 14.1 | 17.0 | 17.5 |
| **Total CNN** | | 87.4 | 41.7 | 25.8 | 27.3 | 18.7 | 36.9 | 32.8 | 51.8 | 15.4 | 15.1 | 20.4 |

*Denominators were based on **inborn** neonates <29 weeks' GA admitted without major congenital anomaly.

[a]Antenatal MgSO4 data were missing for 0.4% across CNN.

[b] Completed course of antenatal steroids within the last week prior to birth = received at least two doses of corticosteroids for a period of 24 hours or more, but within one week of birth

**These are unadjusted rates.**

**Presentation #28**
**Postnatal characteristics and care practices: GA <29 weeks:**
**Site specific crude rates* (inborn only)**

| Site | Number of neonates | No invasive mechanical ventilation in first 3 days[a] | Never received invasive mechanical ventilation[a] | Fed at any time in first 2 days of admission | Never received antimic-robials[b] | Exclusive mother's own milk feeding at discharge[c] | Exclusive formula feeding at discharge [c] | SGA (<10%) |
|---|---|---|---|---|---|---|---|---|
| | N | % | % | % | % | % | % | % |
| **xxx** | < 15 | 25.0 | 25.0 | 87.5 | 37.5 | 75.0 | 0.0 | 12.5 |
| **xvi** | | 25.0 | 25.0 | 100.0 | 12.5 | 12.5 | 37.5 | 12.5 |
| **i** | | 11.1 | 0.0 | 88.9 | 0.0 | 44.4 | 22.2 | 11.1 |
| **xxxii** | | 36.4 | 27.3 | 81.8 | 36.4 | 18.2 | 27.3 | 9.1 |
| **xxiii** | | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 |
| **xx** | | 33.3 | 16.7 | 100.0 | 50.0 | 33.3 | 33.3 | 0.0 |
| **ii** | | 25.0 | 8.3 | 58.3 | 8.3 | 58.3 | 0.0 | 8.3 |
| **xxxi** | 15 – 30 | 11.8 | 11.8 | 35.3 | 35.3 | 47.1 | 29.4 | 17.7 |
| **vii** | | 22.2 | 16.7 | 83.3 | 0.0 | 55.6 | 22.2 | 5.6 |
| **viii** | | 42.1 | 26.3 | 79.0 | 10.5 | 36.8 | 26.3 | 5.3 |
| **v** | | 59.1 | 50.0 | 90.9 | 36.4 | 31.8 | 27.3 | 13.6 |
| **xxii** | | 62.5 | 54.2 | 66.7 | 8.3 | 37.5 | 16.7 | 8.3 |
| **xxviii** | | 14.8 | 11.1 | 92.6 | 3.7 | 33.3 | 29.6 | 11.1 |
| **xiv** | | 17.9 | 14.3 | 92.9 | 3.6 | 46.4 | 21.4 | 7.1 |
| **iii** | 31 – 70 | 28.1 | 25.0 | 96.9 | 3.1 | 34.4 | 50.0 | 6.3 |
| **xv** | | 24.3 | 24.3 | 81.1 | 18.9 | 46.0 | 21.6 | 8.1 |
| **xiii** | | 2.6 | 0.0 | 79.0 | 13.2 | 15.8 | 47.4 | 13.2 |
| **xii** | | 36.6 | 29.3 | 46.3 | 9.8 | 31.7 | 46.3 | 9.8 |
| **xxxiii** | | 40.8 | 32.7 | 95.9 | 6.1 | 40.8 | 49.0 | 0.0 |
| **xxvii** | | 30.2 | 22.6 | 49.1 | 5.7 | 26.4 | 26.4 | 22.6 |
| **ix** | | 44.4 | 35.2 | 96.3 | 9.3 | 38.9 | 14.8 | 18.5 |
| **vi** | | 36.4 | 27.3 | 87.3 | 1.8 | 36.4 | 32.7 | 25.5 |
| **xi** | | 46.8 | 37.1 | 93.6 | 6.5 | 25.8 | 25.8 | 11.5 |
| **x** | > 70 | 37.5 | 30.6 | 81.9 | 4.2 | 40.3 | 36.1 | 9.7 |
| **xxi** | | 36.8 | 26.3 | 86.8 | 50.0 | 57.9 | 7.9 | 7.9 |
| **xviii** | | 20.4 | 20.4 | 64.3 | 3.1 | 46.9 | 11.2 | 14.3 |
| **xxv** | | 29.0 | 20.6 | 92.5 | 0.9 | 49.5 | 18.7 | 14.0 |
| **xvii** | | 46.4 | 37.5 | 81.3 | 6.3 | 57.1 | 11.6 | 14.3 |
| **iv** | | 46.9 | 36.3 | 88.1 | 8.8 | 56.9 | 6.9 | 12.5 |
| **xxvi** | | 59.9 | 44.1 | 81.9 | 2.8 | 45.2 | 11.9 | 9.6 |
| **Total CNN** | | 38.2 | 29.7 | 81.9 | 9.6 | 44.0 | 20.7 | 12.0 |

*Denominators were based on **inborn** neonates <29 weeks' GA admitted without major congenital anomaly.

[a] Neonates either received high frequency ventilation or intermittent positive pressure ventilation.

[b] Neonates never received any antimicrobials. Prophylactic administration of trimethoprim or amoxicillin for the prevention of urinary tract infections with a suspected renal anomaly was not included as antimicrobials.

[c] Information obtained from *Discharge* screen/table of CNN database, includes discharge and transfer.

**These are unadjusted rates.**

## Presentation #29

**Proportion of babies on Invasive Mechanical Ventilation (IMV) among babies ALIVE at the specified post-natal ages (INBORN AND OUTBORN included)**

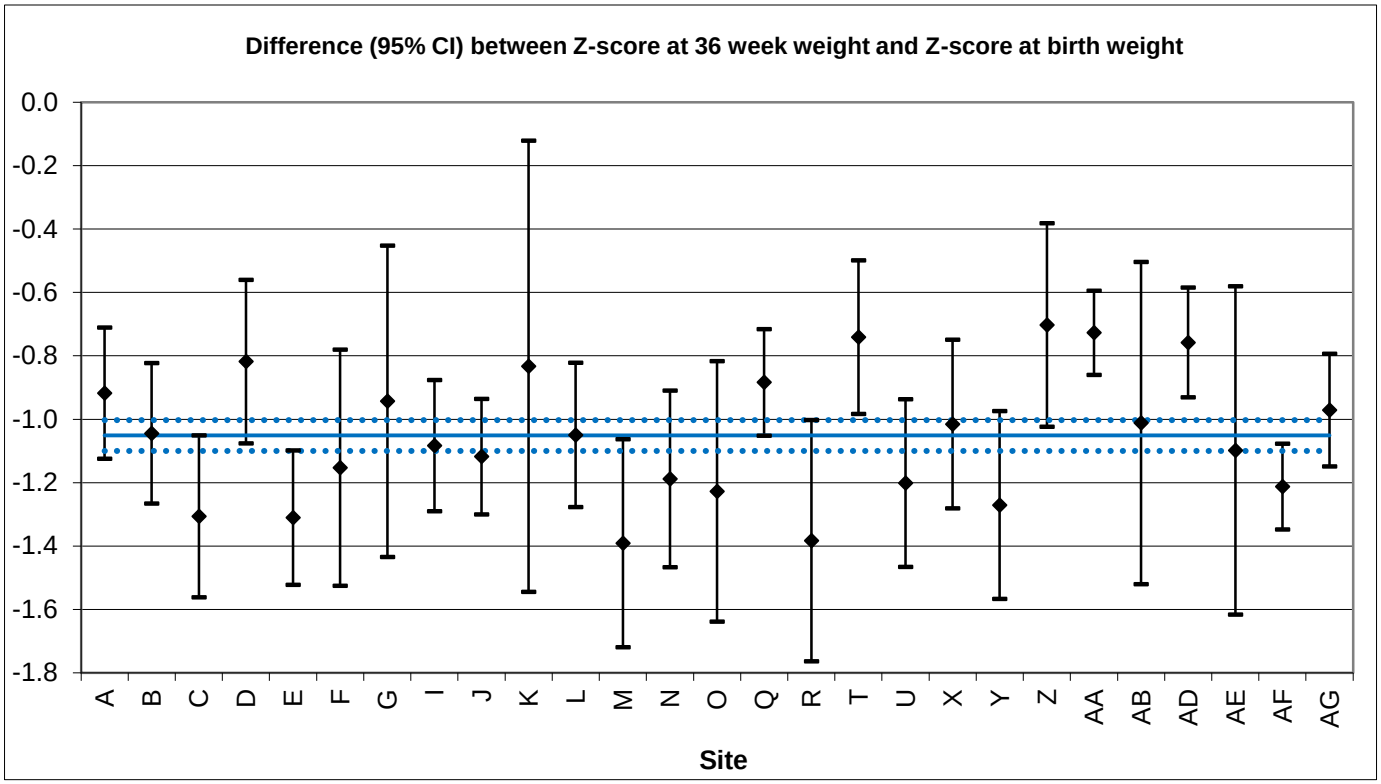
- Invasive mechanical ventilation (IMV) includes any of conventional ventilation (IPPV), High Frequency Oscillatory Ventilation (HFOV) and High Frequency Jet Ventilation (HFJV)
- Denominator for each cell is the number of babies in the GA range *who are still alive at the specified post-natal age (and in the NICU)*
- The proportion in each cell represents babies in the GA range who are on IMV on that day *regardless of previous respiratory status* (i.e. this is ***not*** continuous days of IMV)

| **GA groups** | | **22-25 weeks' GA (N = 599)** | | | | **26-28 weeks' GA (N = 987)** | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Postnatal age** | **Number of neonates based on GA 22-25** | **3 days** | **7 days** | **28 days** | **32 weeks CGA** | **3 days** | **7 days** | **28 days** | **32 weeks CGA** |
| CNN overall | Number alive | 572 | 543 | 491 | 460 | 1081 | 1066 | 960 | 937 |
| | Number on MV | 485 | 432 | 270 | 105 | 382 | 271 | 108 | 73 |
| | Proportion | 84.8 | 79.6 | 55.0 | 22.8 | 35.3 | 25.4 | 11.3 | 7.8 |
| Sites | | | | | | | | | |
| **xx** | 1 – 3 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0 | 25.0 |
| **xxii** | | NA | NA | NA | NA | 18.5 | 14.8 | 4.0 | 0.0 |
| **xxix** | | 100.0 | NA | NA | NA | 0.0 | 0.0 | 0.0 | 0.0 |
| **xix** | | 100.0 | 100.0 | NA | NA | 41.7 | 16.7 | 10.0 | 0.0 |
| **xvi** | | 100.0 | 100.0 | 100.0 | 0.0 | 57.1 | 57.1 | 0.0 | 0.0 |
| **xxx** | 4 – 9 | 100.0 | 100.0 | NA | NA | 66.7 | 0.0 | 0.0 | 0.0 |
| **i** | | 100.0 | 100.0 | 100.0 | 100.0 | 50.0 | 16.7 | 16.7 | 0.0 |
| **ii** | | 85.7 | 85.7 | 50.0 | 33.3 | 66.7 | 50.0 | 20.0 | 0.0 |
| **xxxii** | | 60.0 | 60.0 | 25.0 | 25.0 | 54.5 | 27.3 | 0.0 | 0.0 |
| **vii** | | 60.0 | 40.0 | 80.0 | 0.0 | 40.0 | 26.7 | 15.4 | 14.3 |
| **xxxi** | | 100.0 | NA | NA | NA | 55.0 | 47.4 | 5.9 | 11.8 |
| **v** | | 55.6 | 62.5 | 25.0 | 12.5 | 42.9 | 30.0 | 5.0 | 5.0 |
| **xxviii** | | 88.9 | 88.9 | 77.8 | 37.5 | 52.4 | 33.3 | 20.0 | 15.0 |
| **viii** | 10 – 19 | 50.0 | 37.5 | 75.0 | 28.6 | 25.0 | 25.0 | 0.0 | 9.1 |
| **xii** | | 100.0 | 90.9 | 40.0 | 0.0 | 44.1 | 35.3 | 6.1 | 3.0 |
| **vi** | | 85.7 | 92.9 | 66.7 | 30.0 | 28.6 | 23.8 | 7.3 | 4.9 |
| **xv** | | 100.0 | 80.0 | 10.0 | 0.0 | 53.6 | 21.4 | 0.0 | 0.0 |
| **xiv** | | 85.7 | 78.6 | 57.1 | 28.6 | 23.8 | 28.6 | 20.0 | 20.0 |
| **xxvii** | | 80.0 | 84.6 | 63.6 | 66.7 | 53.5 | 39.0 | 23.7 | 15.8 |
| **xiii** | 20 – 29 | 100.0 | 100.0 | 81.8 | 54.5 | 96.2 | 80.8 | 42.3 | 34.6 |
| **iii** | | 100.0 | 100.0 | 93.8 | 64.3 | 33.3 | 28.6 | 23.8 | 19.0 |
| **xxxiii** | | 68.4 | 63.2 | 61.1 | 11.1 | 36.1 | 16.7 | 8.8 | 3.0 |
| **ix** | | 96.2 | 92.0 | 66.7 | 33.3 | 17.5 | 27.5 | 15.4 | 5.1 |
| **x** | | 92.0 | 80.0 | 38.9 | 17.6 | 37.3 | 24.5 | 4.3 | 4.3 |
| **xi** | | 68.6 | 58.8 | 48.4 | 13.8 | 20.6 | 11.8 | 10.0 | 7.1 |
| **xxi** | > 30 | 85.7 | 85.3 | 64.5 | 36.7 | 30.2 | 28.6 | 25.0 | 25.0 |
| **xvii** | | 87.5 | 77.5 | 54.1 | 20.0 | 25.6 | 20.0 | 4.1 | 0.0 |
| **xxv** | | 95.6 | 86.4 | 76.9 | 21.6 | 41.3 | 30.4 | 22.4 | 9.5 |
| **xviii** | | 100.0 | 94.7 | 89.3 | 46.2 | 57.1 | 33.3 | 15.5 | 24.1 |
| **xxvi** | | 62.2 | 62.3 | 40.3 | 13.3 | 12.0 | 12.2 | 3.8 | 0.9 |
| **iv** | | 93.9 | 86.1 | 32.9 | 8.6 | 30.1 | 18.7 | 5.2 | 1.1 |

Sites xxii and xxiii did not have any infants in GA 22-25.
NA = No infants in the denominator
Note that grouping of sites per number of neonates was based on the number of neonates in GA 22-25 category; and the number of corresponding neonates was not the same for GA 26-28 group.

**Presentation #30**

**Difference in Weight Z-scores at 36 weeks' PMA vs. Birth: Neonates <29 weeks' GA**




| Site | A | B | C | D | E | F | G | I | J | |
|---|---|---|---|---|---|---|---|---|---|---|
| Mean Diff | -0.92 | -1.04 | -1.31 | -0.82 | -1.31 | -1.15 | -0.94 | -1.08 | -1.12 | |
| Lower limit | -1.12 | -1.27 | -1.56 | -1.08 | -1.52 | -1.53 | -1.43 | -1.29 | -1.30 | |
| Upper limit | -0.71 | -0.82 | -1.05 | -0.56 | -1.10 | -0.78 | -0.45 | -0.88 | -0.94 | |
| **Site** | **K** | **L** | **M** | **N** | **O** | **Q** | **R** | **T** | **U** | |
| Mean Diff | -0.83 | -1.05 | -1.39 | -1.19 | -1.23 | -0.88 | -1.38 | -0.74 | -1.20 | |
| Lower limit | -1.54 | -1.28 | -1.72 | -1.47 | -1.64 | -1.05 | -1.76 | -0.98 | -1.47 | |
| Upper limit | -0.12 | -0.82 | -1.06 | -0.91 | -0.82 | -0.72 | -1.00 | -0.50 | -0.94 | |
| **Site** | **X** | **Y** | **Z** | **AA** | **AB** | **AD** | **AE** | **AF** | **AG** | **CNN** |
| Mean Diff | -1.02 | -1.27 | -0.70 | -0.73 | -1.01 | -0.76 | -1.10 | -1.21 | -0.97 | -1.05 |
| Lower limit | -1.28 | -1.57 | -1.02 | -0.86 | -1.52 | -0.93 | -1.62 | -1.35 | -1.15 | -1.10 |
| Upper limit | -0.75 | -0.97 | -0.38 | -0.59 | -0.50 | -0.58 | -0.58 | -1.08 | -0.79 | -1.00 |

Notes:

- Sites H, S, AC had no eligible neonates. Sites P, V, W were not included due to small numbers of eligible neonates.
- Only neonates for whom data at 36 weeks' PMA were available were included.

# E.2. Site Comparisons – Survival / Mortality

## Presentation #31
## Survival rates by site: All GA

| Site | Percentage survival for each GA (completed weeks) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | <25 | 25-26 | 27-28 | 29-30 | 31-32 | 33-34 | 35-36 | ≥37 | Overall survival rate for sites* |
| **A** | 75.0 | 81.3 | 94.1 | 100.0 | 96.6 | 100.0 | 100.0 | 98.4 | 97.7 |
| **B** | 55.6 | 86.7 | 100.0 | 96.2 | 100.0 | 100.0 | 100.0 | 99.4 | 98.9 |
| **C**$^{\phi}$ | 66.7 | 86.7 | 94.1 | 100.0 | 98.6 | 90.0 | 66.7 | 55.6 | 92.6 |
| **D**$^{\phi}$ | 64.3 | 82.6 | 93.5 | 95.2 | 94.2 | 100.0 | NA | NA | 88.1 |
| **E** | 66.7 | 85.7 | 100.0 | 96.7 | 100.0 | 100.0 | 98.1 | 99.0 | 98.0 |
| **F** | 75.0 | 83.3 | 75.0 | 100.0 | 91.3 | 100.0 | 100.0 | 100.0 | 98.4 |
| **G** | 83.3 | 85.7 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.3 | 98.9 |
| **H** | NA | NA | NA | 100.0 | 100.0 | 100.0 | 96.8 | 98.1 | 98.0 |
| **I** | 73.1 | 94.9 | 95.6 | 98.7 | 98.1 | 98.8 | 98.1 | 99.0 | 97.2 |
| **J** | 100.0 | 83.3 | 96.4 | 100.0 | 98.0 | 98.8 | 95.5 | 97.4 | 97.1 |
| **K** | 0.0 | 50.0 | 100.0 | 100.0 | 92.9 | 100.0 | 100.0 | 100.0 | 98.4 |
| **L** | 63.6 | 97.5 | 90.8 | 98.9 | 99.1 | 98.1 | 98.6 | 99.7 | 97.8 |
| **M** | 71.4 | 69.2 | 100.0 | 95.0 | 100.0 | 100.0 | 100.0 | 98.9 | 98.1 |
| **N** | 77.4 | 86.7 | 100.0 | 100.0 | 100.0 | 97.5 | 100.0 | 99.2 | 96.2 |
| **O** | 66.7 | 90.9 | 88.9 | 92.0 | 97.4 | 95.1 | 100.0 | 80.0 | 92.4 |
| **P** | 100.0 | 85.7 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.4 | 99.5 |
| **Q**$^{\phi}$ | 88.9 | 100.0 | 96.0 | 93.9 | 100.0 | NA | 50.0 | 100.0 | 97.0 |
| **R**$^{\phi}$ | 100.0 | 100.0 | 90.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.0 |
| **S** | NA | NA | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 98.8 |
| **T** | 70.6 | 66.7 | 94.6 | 96.2 | 100.0 | 100.0 | 98.9 | 97.5 | 97.2 |
| **U** | 69.2 | 95.2 | 96.2 | 94.6 | 98.4 | 96.0 | 98.6 | 97.5 | 95.8 |
| **V** | 0.0 | 85.7 | 83.3 | 94.7 | 97.5 | 100.0 | 93.8 | 97.3 | 96.5 |
| **W** | 0.0 | 100.0 | 100.0 | 100.0 | 83.3 | 100.0 | 100.0 | 98.2 | 98.1 |
| **X** | 0.0 | 100.0 | 80.0 | 95.8 | 100.0 | 100.0 | 97.8 | 99.3 | 97.4 |
| **Y** | 44.7 | 75.0 | 89.1 | 94.0 | 98.4 | 98.5 | 99.0 | 98.8 | 95.6 |
| **Z**$^{\phi}$ | NA | 71.4 | 95.2 | 97.4 | 100.0 | 100.0 | NA | NA | 96.5 |
| **AA** | 52.6 | 79.2 | 94.6 | 96.7 | 95.4 | 98.0 | 96.8 | 97.2 | 95.6 |
| **AB** | NA | 100.0 | 100.0 | 100.0 | 91.7 | 100.0 | 100.0 | 100.0 | 99.7 |
| **AC** | NA | 0.0 | 100.0 | 100.0 | 87.5 | 94.3 | 100.0 | 98.1 | 97.1 |
| **AD** | 54.5 | 71.4 | 83.3 | 100.0 | 93.2 | 98.1 | 96.8 | 96.7 | 95.3 |
| **AE** | 0.0 | 0.0 | 83.3 | 100.0 | 100.0 | 100.0 | 100.0 | 97.5 | 96.3 |
| **AF** | 75.0 | 95.7 | 94.7 | 97.1 | 99.2 | 100.0 | 100.0 | 86.8 | 94.8 |
| **AG** | 75.0 | 81.3 | 100.0 | 96.8 | 100.0 | 100.0 | 98.4 | 98.8 | 98.2 |
| **Overall survival rate for GA**** | 67.2 | 86.3 | 94.2 | 97.5 | 98.2 | 99.0 | 98.5 | 98.3 | 97.0 |

These analyses included 15 493 neonates from 33 sites. **Twenty-eight sites collected data on all eligible admissions whereas five sites (marked by$^{\phi}$) collected data on selected eligible admissions only.** $^{\phi}$ Please note the data collection criteria were not the same for these five sites, and thus their rates may not be comparable with other sites.
Overall* = (number of neonates who survived per site / total number of neonates for that site)*100
Overall** = (number of neonates who survived for each GA category / total number of neonates in each GA category)*100
NA = no data available, 0 = no neonates survived, Delivery room deaths were not included

## Presentation #32
## Survival rates by site: All BW

| Site | Percentage survival for each BW (g) category | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **<500** | **500-749** | **750-999** | **1000-1249** | **1250-1499** | **1500-2499** | **≥2500** | **Overall survival rate for sites*** |
| **A** | 60.0 | 77.8 | 100.0 | 94.9 | 100.0 | 99.0 | 99.1 | 97.7 |
| **B** | 100.0 | 61.5 | 94.4 | 100.0 | 100.0 | 99.2 | 99.6 | 98.9 |
| **C**$^{\phi}$ | NA | 85.7 | 76.5 | 96.4 | 100.0 | 95.8 | 77.8 | 92.6 |
| **D**$^{\phi}$ | 50.0 | 72.7 | 89.2 | 92.9 | 92.0 | 96.0 | 50.0 | 88.1 |
| **E** | 100.0 | 83.3 | 87.5 | 100.0 | 100.0 | 99.2 | 98.3 | 98.0 |
| **F** | NA | 75.0 | 100.0 | 90.9 | 85.7 | 99.1 | 100.0 | 98.4 |
| **G** | NA | 80.0 | 88.9 | 100.0 | 100.0 | 100.0 | 99.5 | 98.9 |
| **H** | NA | NA | NA | 100.0 | 100.0 | 96.6 | 98.2 | 98.0 |
| **I** | 77.8 | 83.6 | 94.0 | 96.1 | 96.6 | 98.2 | 99.2 | 97.2 |
| **J** | NA | 100.0 | 86.4 | 95.5 | 100.0 | 96.9 | 97.5 | 97.1 |
| **K** | 0.0 | 50.0 | NA | 100.0 | 100.0 | 98.3 | 100.0 | 98.4 |
| **L** | 60.0 | 81.0 | 95.3 | 96.4 | 97.8 | 99.0 | 99.1 | 97.8 |
| **M** | NA | 44.4 | 93.3 | 100.0 | 95.0 | 100.0 | 99.1 | 98.1 |
| **N** | 30.0 | 86.5 | 94.6 | 98.9 | 98.6 | 98.8 | 100.0 | 96.2 |
| **O** | NA | 75.0 | 91.7 | 93.8 | 95.8 | 95.9 | 83.3 | 92.4 |
| **P** | NA | 50.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| **Q**$^{\phi}$ | NA | 81.8 | 100.0 | 96.6 | 96.3 | 100.0 | 94.4 | 97.0 |
| **R**$^{\phi}$ | NA | 100.0 | 100.0 | 93.8 | 100.0 | 100.0 | 100.0 | 99.0 |
| **S** | NA | NA | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 98.8 |
| **T** | 100.0 | 68.0 | 87.0 | 96.4 | 97.4 | 98.9 | 98.0 | 97.2 |
| **U** | 66.7 | 78.3 | 83.9 | 96.4 | 100.0 | 97.1 | 97.8 | 95.8 |
| **V** | 0.0 | 0.0 | 85.7 | 100.0 | 95.2 | 96.1 | 97.2 | 96.5 |
| **W** | NA | 50.0 | 100.0 | 100.0 | 90.9 | 98.0 | 99.3 | 98.1 |
| **X** | 0.0 | 60.0 | 100.0 | 91.3 | 95.2 | 97.6 | 99.5 | 97.4 |
| **Y** | 80.0 | 44.7 | 86.5 | 92.6 | 97.2 | 98.9 | 98.6 | 95.6 |
| **Z**$^{\phi}$ | NA | 0.0 | 93.8 | 100.0 | 95.2 | 98.2 | 100.0 | 96.5 |
| **AA** | 100.0 | 60.9 | 83.8 | 94.1 | 98.2 | 95.7 | 97.8 | 95.6 |
| **AB** | NA | 100.0 | 100.0 | 100.0 | 100.0 | 99.2 | 100.0 | 99.7 |
| **AC** | NA | 0.0 | NA | 66.7 | 100.0 | 96.6 | 98.3 | 97.1 |
| **AD** | 20.0 | 66.7 | 85.0 | 96.3 | 94.6 | 95.8 | 97.2 | 95.3 |
| **AE** | NA | 33.3 | 50.0 | 100.0 | 83.3 | 98.0 | 99.0 | 96.3 |
| **AF** | 75.0 | 92.6 | 91.8 | 98.1 | 95.7 | 97.7 | 88.4 | 94.8 |
| **AG** | 100.0 | 70.0 | 93.8 | 100.0 | 100.0 | 99.4 | 98.5 | 98.2 |
| **Overall survival rate for BW**** | 57.1 | 74.4 | 91.0 | 96.5 | 97.4 | 98.2 | 98.5 | 97.0 |

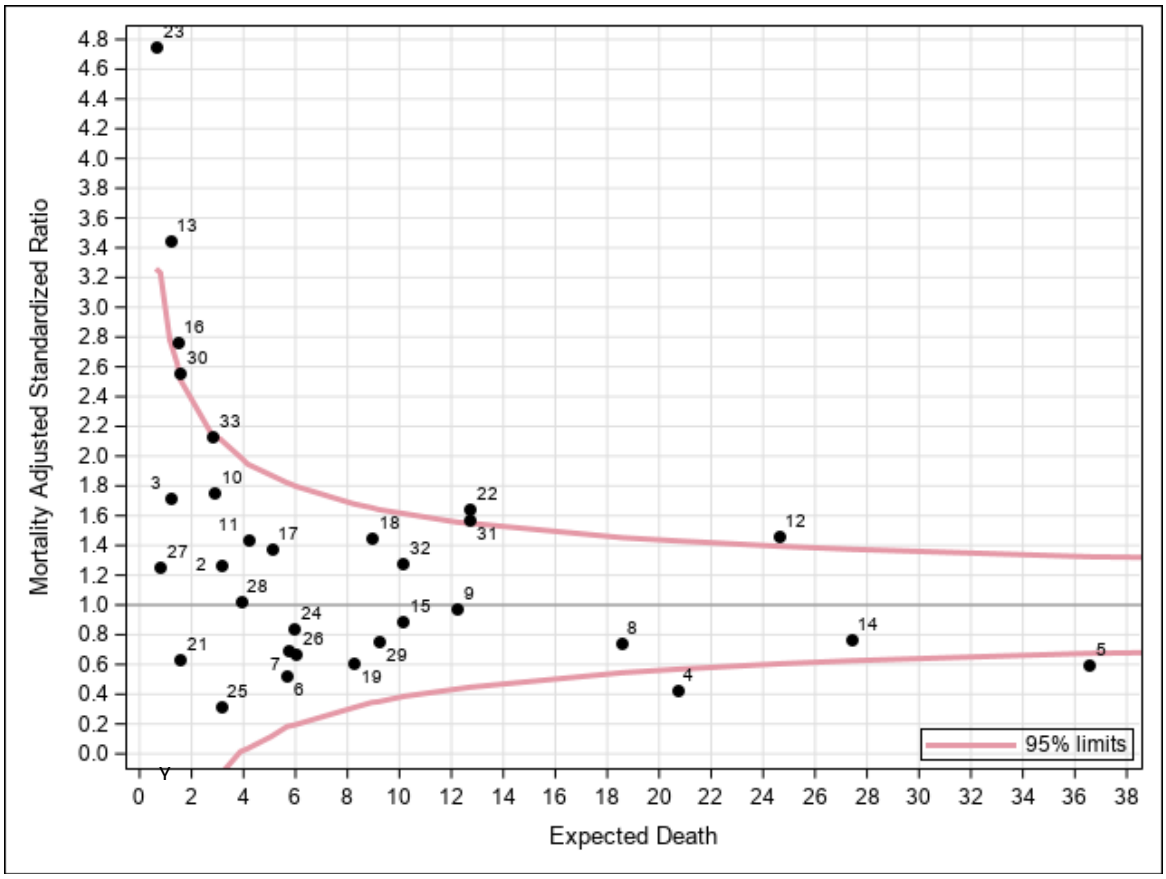
These analyses included 15 493 neonates from 33 sites. **Twenty-eight sites collected data on all eligible admissions whereas five sites (marked by$^{\phi}$) collected data on selected eligible admissions only.** $^{\phi}$ Please note the data collection criteria were not the same for these five sites, and thus their rates may not be comparable with other sites.
Overall* = (number of neonates who survived per site / total number of neonates for site)*100
Overall** = (number of neonates who survived for each BW category / total number of neonates in each BW category)*100
NA = no data available, 0 = no neonates survived, Delivery room deaths were not included

**Presentation #33a**
**Mortality: GA<33 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of deaths | Adjusted# expected number of deaths | Adjusted# standardized ratio | 95% confidence interval (CI) for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 110 | 4 | 3.1 | 1.3 | 0.3 | 3.3 |
| **3** | 19 | 2 | 1.2 | 1.7 | 0.2 | 6.2 |
| **4** | 301 | 9 | 20.7 | 0.4 | 0.2 | 0.8 |
| **5** | 365 | 22 | 36.6 | 0.6 | 0.4 | 0.9 |
| **6** | 83 | 3 | 5.7 | 0.5 | 0.1 | 1.5 |
| **7** | 147 | 4 | 5.7 | 0.7 | 0.2 | 1.8 |
| **8** | 318 | 14 | 18.6 | 0.8 | 0.4 | 1.3 |
| **9** | 161 | 12 | 12.2 | 1.0 | 0.5 | 1.7 |
| **10** | 50 | 5 | 2.9 | 1.7 | 0.6 | 4.1 |
| **11** | 85 | 6 | 4.2 | 1.4 | 0.5 | 3.1 |
| **12** | 298 | 36 | 24.6 | 1.5 | 1.0 | 2.0 |
| **13** | 25 | 4 | 1.2 | 3.5 | 0.9 | 8.8 |
| **14** | 362 | 21 | 27.4 | 0.8 | 0.5 | 1.2 |
| **15** | 158 | 9 | 10.1 | 0.9 | 0.4 | 1.7 |
| **16** | 65 | 4 | 1.5 | 2.8 | 0.7 | 7.1 |
| **17** | 102 | 7 | 5.1 | 1.4 | 0.6 | 2.8 |
| **18** | 142 | 13 | 8.9 | 1.5 | 0.8 | 2.5 |
| **19** | 134 | 5 | 8.2 | 0.6 | 0.2 | 1.4 |
| **21** | 47 | 1 | 1.6 | 0.6 | 0.0 | 3.5 |
| **22** | 172 | 21 | 12.7 | 1.7 | 1.0 | 2.5 |
| **23** | 18 | 3 | 0.6 | 4.8 | 1.0 | 13.9 |
| **24** | 120 | 5 | 6.0 | 0.8 | 0.3 | 2.0 |
| **25** | 76 | 1 | 3.1 | 0.3 | 0.0 | 1.8 |
| **26** | 143 | 4 | 6.0 | 0.7 | 0.2 | 1.7 |
| **27** | 30 | 1 | 0.8 | 1.3 | 0.0 | 7.0 |
| **28** | 84 | 4 | 3.9 | 1.0 | 0.3 | 2.6 |
| **29** | 120 | 7 | 9.2 | 0.8 | 0.3 | 1.6 |
| **30** | 28 | 4 | 1.6 | 2.6 | 0.7 | 6.6 |
| **31** | 188 | 20 | 12.7 | 1.6 | 1.0 | 2.4 |
| **32** | 182 | 13 | 10.1 | 1.3 | 0.7 | 2.2 |
| **33** | 87 | 6 | 2.8 | 2.1 | 0.8 | 4.6 |

**Numeric site codes were used in Presentations 33a-f and they may not correspond to other presentations in this report. Neonates with major congenital anomalies were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentations #33b**
**Mortality: GA<33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 33a**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of neonates with the outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed deaths/expected deaths
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

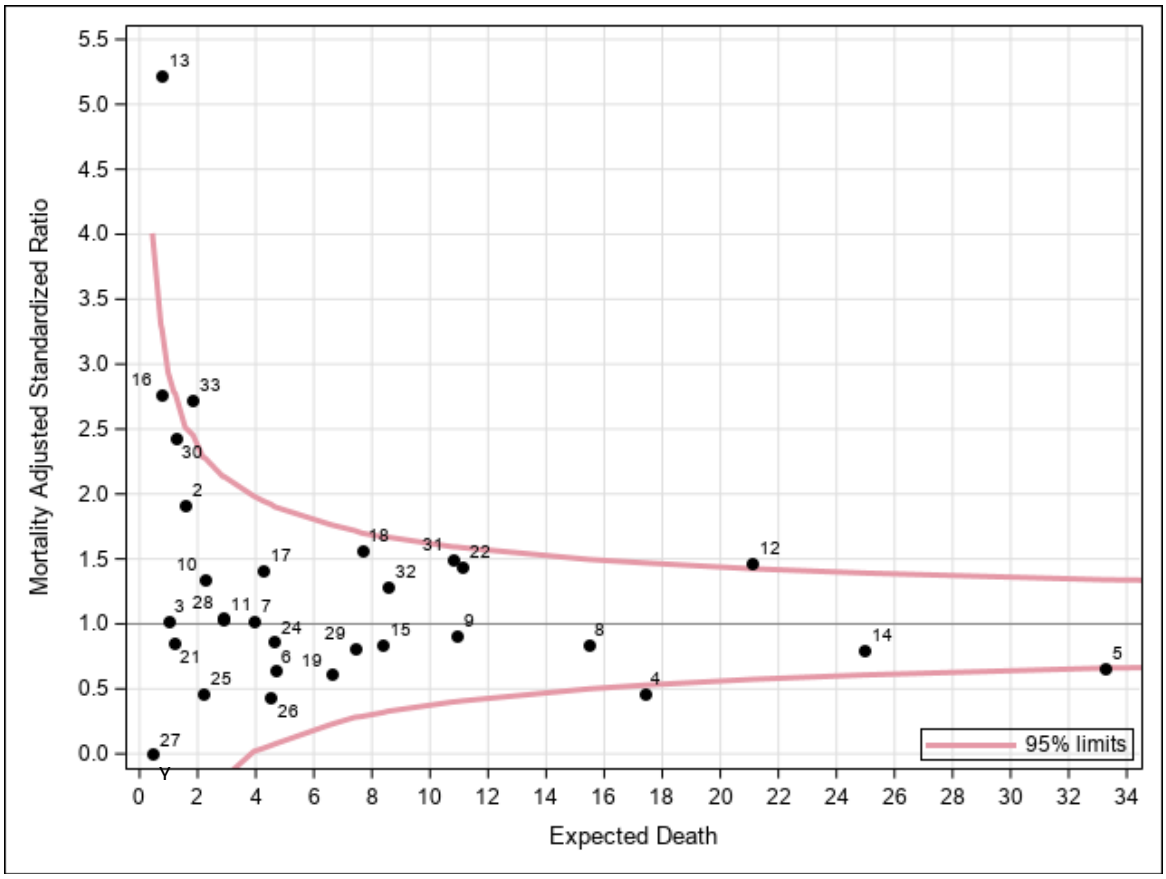
**Explanation for Presentation 33b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #33c**
**Mortality: GA<29 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of deaths | Adjusted# expected number of deaths | Adjusted# standardized ratio | 95% confidence interval (CI) for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 27 | 3 | 1.6 | 1.9 | 0.4 | 5.6 |
| **3** | 8 | 1 | 1.0 | 1.0 | 0.0 | 5.7 |
| **4** | 122 | 8 | 17.4 | 0.5 | 0.2 | 0.9 |
| **5** | 214 | 22 | 33.3 | 0.7 | 0.4 | 1.0 |
| **6** | 34 | 3 | 4.7 | 0.6 | 0.1 | 1.9 |
| **7** | 37 | 4 | 3.9 | 1.0 | 0.3 | 2.6 |
| **8** | 122 | 13 | 15.5 | 0.8 | 0.4 | 1.4 |
| **9** | 71 | 10 | 10.9 | 0.9 | 0.4 | 1.7 |
| **10** | 13 | 3 | 2.2 | 1.3 | 0.3 | 3.9 |
| **11** | 23 | 3 | 2.9 | 1.0 | 0.2 | 3.0 |
| **12** | 115 | 31 | 21.1 | 1.5 | 1.0 | 2.1 |
| **13** | 9 | 4 | 0.8 | 5.2 | 1.4 | 13.4 |
| **14** | 191 | 20 | 25.0 | 0.8 | 0.5 | 1.2 |
| **15** | 58 | 7 | 8.4 | 0.8 | 0.3 | 1.7 |
| **16** | 12 | 2 | 0.7 | 2.8 | 0.3 | 10.0 |
| **17** | 32 | 6 | 4.3 | 1.4 | 0.5 | 3.1 |
| **18** | 55 | 12 | 7.7 | 1.6 | 0.8 | 2.7 |
| **19** | 55 | 4 | 6.6 | 0.6 | 0.2 | 1.6 |
| **21** | 16 | 1 | 1.2 | 0.8 | 0.0 | 4.7 |
| **22** | 81 | 16 | 11.1 | 1.4 | 0.8 | 2.3 |
| **24** | 41 | 4 | 4.6 | 0.9 | 0.2 | 2.2 |
| **25** | 18 | 1 | 2.2 | 0.5 | 0.0 | 2.6 |
| **26** | 43 | 2 | 4.5 | 0.4 | 0.0 | 1.6 |
| **27** | 6 | 0 | 0.4 | 0.0 | . | 8.3 |
| **28** | 29 | 3 | 2.9 | 1.0 | 0.2 | 3.1 |
| **29** | 43 | 6 | 7.4 | 0.8 | 0.3 | 1.8 |
| **30** | 9 | 3 | 1.2 | 2.4 | 0.5 | 7.1 |
| **31** | 79 | 16 | 10.8 | 1.5 | 0.8 | 2.4 |
| **32** | 66 | 11 | 8.6 | 1.3 | 0.6 | 2.3 |
| **33** | 21 | 5 | 1.8 | 2.7 | 0.9 | 6.4 |

**Numeric site codes were used in Presentations 33a-f and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentations #33d**
**Mortality: GA<29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 33c**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of neonates with the outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed deaths/expected deaths
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

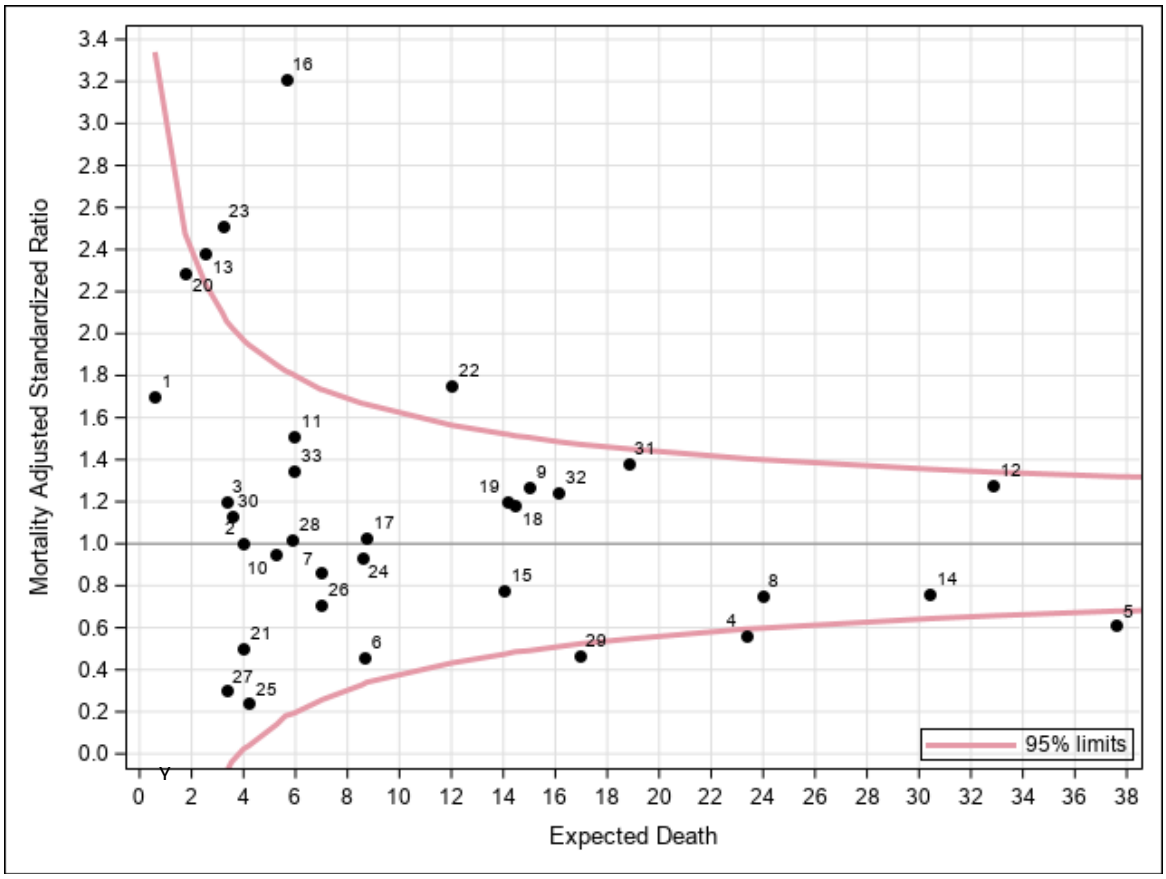
**Explanation for Presentation 33d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #33e**
**Mortality: All neonates: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of deaths | Adjusted# expected number of deaths | Adjusted# standardized ratio | 95% confidence interval (CI) for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **1** | 80 | 1 | 0.6 | 1.7 | 0.0 | 9.5 |
| **2** | 112 | 4 | 4.0 | 1.0 | 0.3 | 2.6 |
| **3** | 202 | 4 | 3.3 | 1.2 | 0.3 | 3.1 |
| **4** | 341 | 13 | 23.4 | 0.6 | 0.3 | 1.0 |
| **5** | 638 | 23 | 37.6 | 0.6 | 0.4 | 0.9 |
| **6** | 366 | 4 | 8.7 | 0.5 | 0.1 | 1.2 |
| **7** | 165 | 6 | 7.0 | 0.9 | 0.3 | 1.9 |
| **8** | 1017 | 18 | 24.0 | 0.7 | 0.4 | 1.2 |
| **9** | 463 | 19 | 15.0 | 1.3 | 0.8 | 2.0 |
| **10** | 300 | 5 | 5.3 | 0.9 | 0.3 | 2.2 |
| **11** | 141 | 9 | 5.9 | 1.5 | 0.7 | 2.9 |
| **12** | 1061 | 42 | 32.9 | 1.3 | 0.9 | 1.7 |
| **13** | 160 | 6 | 2.5 | 2.4 | 0.9 | 5.2 |
| **14** | 1037 | 23 | 30.4 | 0.8 | 0.5 | 1.1 |
| **15** | 525 | 11 | 14.1 | 0.8 | 0.4 | 1.4 |
| **16** | 498 | 18 | 5.6 | 3.2 | 1.9 | 5.1 |
| **17** | 468 | 9 | 8.7 | 1.0 | 0.5 | 2.0 |
| **18** | 629 | 17 | 14.5 | 1.2 | 0.7 | 1.9 |
| **19** | 652 | 17 | 14.2 | 1.2 | 0.7 | 1.9 |
| **20** | 178 | 4 | 1.8 | 2.3 | 0.6 | 5.9 |
| **21** | 380 | 2 | 4.0 | 0.5 | 0.1 | 1.8 |
| **22** | 173 | 21 | 12.0 | 1.7 | 1.1 | 2.7 |
| **23** | 270 | 8 | 3.2 | 2.5 | 1.1 | 4.9 |
| **24** | 430 | 8 | 8.6 | 0.9 | 0.4 | 1.8 |
| **25** | 95 | 1 | 4.2 | 0.2 | 0.0 | 1.3 |
| **26** | 162 | 5 | 7.0 | 0.7 | 0.2 | 1.7 |
| **27** | 336 | 1 | 3.3 | 0.3 | 0.0 | 1.7 |
| **28** | 282 | 6 | 5.9 | 1.0 | 0.4 | 2.2 |
| **29** | 839 | 8 | 17.0 | 0.5 | 0.2 | 0.9 |
| **30** | 251 | 4 | 3.5 | 1.1 | 0.3 | 2.9 |
| **31** | 742 | 26 | 18.9 | 1.4 | 0.9 | 2.0 |
| **32** | 870 | 20 | 16.1 | 1.2 | 0.8 | 1.9 |
| **33** | 355 | 8 | 5.9 | 1.3 | 0.6 | 2.7 |

**Numeric site codes were used in Presentations 33a-f and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.

**Presentations #33f**
**Mortality: All neonates: Adjusted standardized ratios by site**




**Explanation for Presentation 33e**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (no major anomaly)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with the outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed deaths/expected deaths
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 33f**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

# E.3. Site Comparisons –

# Mortality / Morbidities

**Presentation #34**
**Mortality/morbidities: GA<33 weeks: Site specific crude rates**

| Site | Number of neonates | Mortality | Severe neurological injury (incl. PVL) | PVL | Severe ROP | CLD at 36 weeks PMA or discharge* | NEC stage 2 or 3 | Late onset sepsis | Mortality or severe morbidity |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | % | % | % | % | % | % | % |
| S | < 40 | 16.7 | 66.7 | 33.3 | 0.0 | 20.0 | 16.7 | 0.0 | 50.0 |
| AC | | 16.7 | 15.4 | 7.7 | 0.0 | 13.3 | 0.0 | 11.1 | 33.3 |
| W | | 10.0 | 0.0 | 0.0 | 0.0 | 11.1 | 10.0 | 20.0 | 35.0 |
| AE | | 16.0 | 9.5 | 0.0 | 0.0 | 4.8 | 0.0 | 4.0 | 24.0 |
| K | | 13.8 | 16.0 | 4.0 | 5.9 | 24.0 | 0.0 | 0.0 | 37.9 |
| H | | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 20.0 | 0.0 | 40.0 |
| AB | | 3.3 | 8.0 | 8.0 | 5.6 | 20.7 | 3.3 | 0.0 | 26.7 |
| P | 41 – 100 | 2.1 | 0.0 | 0.0 | 7.7 | 27.7 | 0.0 | 6.3 | 35.4 |
| F | | 9.4 | 2.2 | 2.2 | 3.6 | 22.9 | 9.4 | 3.8 | 32.1 |
| V | | 6.9 | 11.5 | 4.9 | 7.7 | 47.7 | 9.6 | 4.1 | 56.2 |
| R | | 1.2 | 3.1 | 1.6 | 18.2 | 26.3 | 2.5 | 13.6 | 30.9 |
| G | | 3.5 | 4.8 | 2.4 | 10.5 | 27.4 | 1.2 | 14.1 | 35.3 |
| O | | 7.0 | 6.9 | 0.0 | 7.9 | 25.0 | 0.0 | 5.8 | 36.1 |
| E | | 4.5 | 2.7 | 1.4 | 15.6 | 22.1 | 0.0 | 10.1 | 28.1 |
| X | | 7.6 | 8.8 | 2.5 | 0.0 | 35.3 | 0.0 | 4.4 | 41.3 |
| M | 101 – 150 | 6.7 | 11.5 | 3.9 | 12.0 | 32.3 | 2.9 | 12.4 | 41.9 |
| Z | | 3.6 | 4.7 | 0.9 | 1.9 | 30.6 | 4.5 | 7.1 | 37.5 |
| AG | | 4.1 | 8.9 | 5.0 | 7.9 | 20.5 | 1.6 | 4.1 | 27.1 |
| B | | 5.7 | 11.4 | 5.7 | 12.7 | 37.4 | 2.5 | 8.2 | 44.3 |
| J | | 3.7 | 9.8 | 6.3 | 5.9 | 26.5 | 5.1 | 16.8 | 40.2 |
| Q | | 2.7 | 9.0 | 6.0 | 7.6 | 38.2 | 2.0 | 10.8 | 47.3 |
| C | 151 – 300 | 4.0 | 8.7 | 0.8 | 10.9 | 23.0 | 4.6 | 12.6 | 32.5 |
| A | | 5.7 | 6.7 | 3.0 | 12.8 | 25.8 | 1.9 | 12.6 | 35.2 |
| AD | | 11.9 | 9.4 | 3.1 | 18.0 | 81.6 | 5.6 | 11.9 | 84.4 |
| U | | 7.6 | 8.5 | 6.3 | 21.6 | 28.7 | 5.9 | 17.0 | 43.9 |
| D | | 11.9 | 11.3 | 2.8 | 10.7 | 40.3 | 8.0 | 15.3 | 48.3 |
| T | | 7.4 | 7.0 | 3.8 | 10.5 | 27.3 | 1.1 | 9.0 | 33.9 |
| AA | | 10.7 | 8.9 | 3.3 | 9.3 | 34.5 | 10.2 | 10.7 | 43.7 |
| Y | > 300 | 12.8 | 11.2 | 6.6 | 18.0 | 32.0 | 4.2 | 13.1 | 41.7 |
| AF | | 4.4 | 17.0 | 5.2 | 8.8 | 37.5 | 3.1 | 11.0 | 46.4 |
| L | | 5.2 | 4.4 | 2.7 | 8.8 | 43.9 | 1.2 | 7.3 | 48.2 |
| N | | 5.9 | 10.0 | 3.3 | 15.2 | 33.0 | 6.2 | 12.3 | 46.5 |
| I | | 6.3 | 9.7 | 4.1 | 13.6 | 41.8 | 5.2 | 15.4 | 51.7 |
| Total CNN | | 6.8 | 8.9 | 3.8 | 10.8 | 34.5 | 4.0 | 11.1 | 43.7 |

Mortality or severe morbidity = Mortality prior to discharge or any of the morbidities
*PMA: Post-menstrual age
NA = no data available
**These are unadjusted rates.**

**Presentation #35**
**Mortality/morbidities: GA<29 weeks: Site specific crude rates**

| Site | Number of neonates | Mortality | Severe neurological injury (incl PVL) | PVL | Severe ROP | CLD at 36 weeks PMA or discharge* | NEC stage 2 or 3 | Late onset sepsis | Mortality or severe morbidity |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | % | % | % | % | % | % | % |
| AB | ≤ 10 | 0.0 | 16.7 | 16.7 | 16.7 | 50.0 | 16.7 | 0.0 | 50.0 |
| AC | | 66.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 66.7 |
| AE | | 44.4 | 28.6 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 55.6 |
| W | | 11.1 | 0.0 | 0.0 | 0.0 | 25.0 | 11.1 | 33.3 | 55.6 |
| S | | 100.0 | . | . | . | . | 0.0 | 0.0 | 100.0 |
| K | | 30.0 | 22.2 | 0.0 | 14.3 | 71.4 | 0.0 | 0.0 | 80.0 |
| F | 11 – 30 | 21.4 | 0.0 | 0.0 | 9.1 | 45.5 | 28.6 | 14.3 | 64.3 |
| V | | 21.4 | 14.3 | 0.0 | 0.0 | 81.8 | 14.3 | 0.0 | 92.9 |
| P | | 6.3 | 0.0 | 0.0 | 14.3 | 53.3 | 0.0 | 6.3 | 62.5 |
| R | | 5.0 | 10.0 | 5.0 | 33.3 | 68.4 | 10.0 | 30.0 | 70.0 |
| O | | 13.0 | 13.6 | 0.0 | 16.7 | 65.0 | 0.0 | 8.7 | 78.3 |
| X | | 26.1 | 26.1 | 8.7 | 0.0 | 70.6 | 0.0 | 8.7 | 78.3 |
| Z | | 10.7 | 14.3 | 0.0 | 4.0 | 72.0 | 10.7 | 7.1 | 78.6 |
| E | 31 – 50 | 9.7 | 6.5 | 3.2 | 22.2 | 53.6 | 0.0 | 25.8 | 61.3 |
| M | | 18.2 | 16.7 | 3.3 | 21.4 | 75.0 | 0.0 | 30.3 | 84.9 |
| G | | 8.6 | 8.6 | 2.9 | 18.2 | 55.9 | 2.9 | 31.4 | 68.6 |
| C | | 13.2 | 23.7 | 2.6 | 25.7 | 60.0 | 2.6 | 31.6 | 73.7 |
| AG | | 9.8 | 15.0 | 10.0 | 16.7 | 46.0 | 4.9 | 7.3 | 53.7 |
| B | | 14.0 | 26.2 | 11.9 | 24.3 | 75.7 | 7.0 | 23.3 | 86.1 |
| Q | | 4.4 | 15.6 | 8.9 | 20.0 | 65.1 | 6.7 | 22.2 | 75.6 |
| J | 51 – 100 | 7.3 | 11.3 | 5.7 | 8.0 | 56.9 | 7.3 | 32.7 | 72.7 |
| A | | 12.1 | 14.3 | 5.4 | 16.2 | 53.9 | 3.5 | 32.8 | 70.7 |
| AD | | 24.6 | 16.1 | 3.6 | 28.0 | 91.3 | 8.2 | 24.6 | 95.1 |
| T | | 17.4 | 15.2 | 7.6 | 17.5 | 59.7 | 2.9 | 24.6 | 71.0 |
| U | | 13.7 | 11.6 | 8.7 | 29.0 | 54.0 | 9.6 | 30.1 | 69.9 |
| AA | | 20.0 | 18.0 | 6.4 | 13.8 | 67.2 | 20.0 | 17.5 | 76.3 |
| D | | 19.5 | 15.2 | 3.8 | 12.5 | 71.0 | 14.6 | 29.3 | 79.3 |
| Y | > 100 | 28.1 | 22.5 | 14.4 | 21.3 | 62.6 | 9.9 | 25.6 | 75.2 |
| AF | | 8.7 | 25.4 | 4.8 | 12.0 | 62.1 | 5.5 | 23.6 | 77.2 |
| L | | 11.8 | 8.3 | 5.0 | 10.1 | 78.8 | 2.4 | 15.8 | 83.5 |
| I | | 10.4 | 12.5 | 5.5 | 17.0 | 50.3 | 7.9 | 25.3 | 62.9 |
| N | | 9.9 | 13.8 | 4.6 | 16.5 | 45.3 | 9.4 | 18.8 | 64.1 |
| Total CNN | | 14.1 | 15.3 | 5.8 | 16.1 | 60.2 | 7.6 | 22.4 | 72.7 |

Mortality or severe morbidity = Mortality prior to discharge or any of the five morbidities
*PMA: Post-menstrual age
Note: Site H had no neonates with GA<29.
**These are unadjusted rates.**

# E.3.1. Site Comparisons – Late Onset Sepsis and Antimicrobial Use

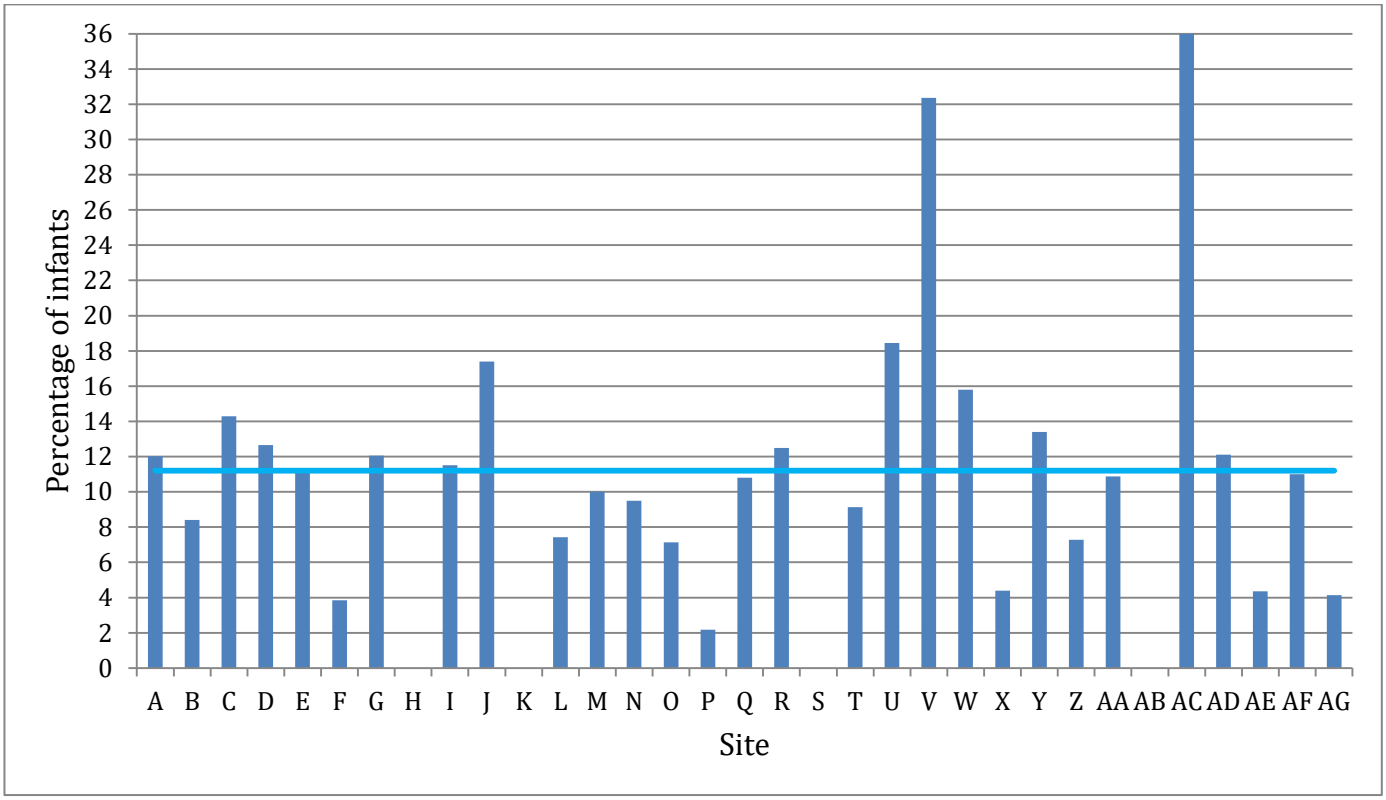
**In presentations #36 and #37**, late onset sepsis was attributed to the hospital where the first episode of sepsis was acquired. Each neonate was counted only once even if there were multiple episodes of infections.

**In presentations #38 and #39,** assignment of infection was based on location where the infection happened and not assigned to the hospital where the first episode of sepsis was acquired. Each episode of infection was counted (the total number of episodes exceeds the total number of neonates).

**In all other presentations of this report**, all morbidities including late onset sepsis were attributed to the hospital where the neonate was first admitted.

**Presentation #36**

**Late onset sepsis: GA<33 weeks: Site specific crude rates**
(n=4 352 neonates, 53 excluded due to death before 3 days of age)




| Site | A | B | C | D | E | F | G | H | I | J | K | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % | 12.0 | 8.4 | 14.3 | 12.7 | 11.1 | 3.8 | 12.0 | 0.0 | 11.5 | 17.4 | 0.0 | |
| | | | | | | | | | | | | |
| **Site** | **L** | **M** | **N** | **O** | **P** | **Q** | **R** | **S** | **T** | **U** | **V** | |
| % | 7.4 | 10.0 | 9.5 | 7.1 | 2.2 | 10.8 | 12.5 | 0.0 | 9.1 | 18.5 | 32.4 | |
| | | | | | | | | | | | | |
| **Site** | **W** | **X** | **Y** | **Z** | **AA** | **AB** | **AC** | **AD** | **AE** | **AF** | **AG** | **CNN** |
| % | 15.8 | 4.4 | 13.4 | 7.3 | 10.9 | 0.0 | 36.0 | 12.1 | 4.3 | 11.0 | 4.1 | 11.2 |

**COMMENTS:** Late onset sepsis is defined as any positive blood and/or cerebrospinal fluid culture after 2 days of age (analysis is neonate-based and deaths before 3 days of age are excluded).

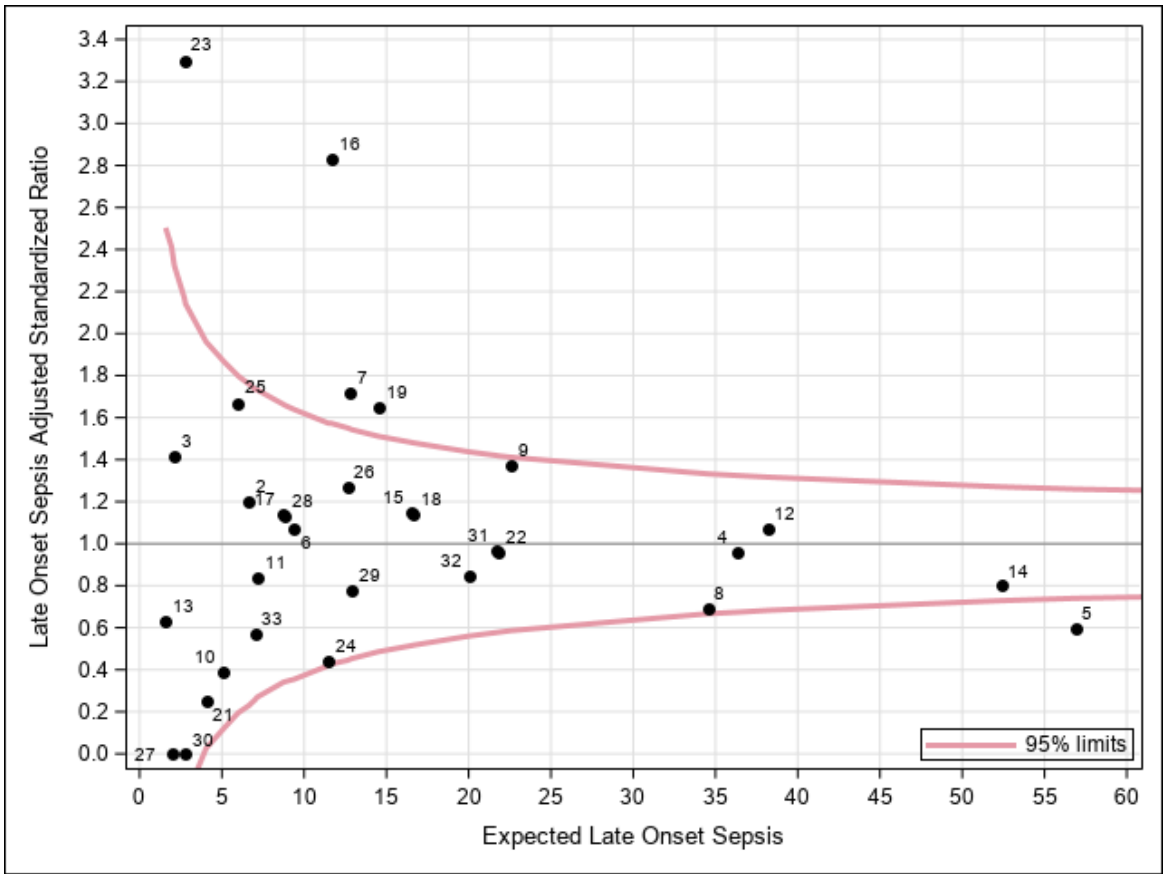
**In presentations #36 and #37**, late onset sepsis was attributed to the hospital where the first episode of sepsis was acquired. Each neonate was counted only once even if there were multiple episodes of infections.

**Presentation #37a**
**Late onset sepsis: GA<33 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of NI | Adjusted# expected number of NI | Adjusted# standardized ratio | 95% confidence interval (CI) for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 110 | 8 | 6.7 | 1.2 | 0.5 | 2.4 |
| **3** | 19 | 3 | 2.1 | 1.4 | 0.3 | 4.1 |
| **4** | 318 | 35 | 36.4 | 1.0 | 0.7 | 1.3 |
| **5** | 358 | 34 | 56.9 | 0.6 | 0.4 | 0.8 |
| **6** | 83 | 10 | 9.4 | 1.1 | 0.5 | 2.0 |
| **7** | 154 | 22 | 12.8 | 1.7 | 1.1 | 2.6 |
| **8** | 323 | 24 | 34.6 | 0.7 | 0.4 | 1.0 |
| **9** | 168 | 31 | 22.6 | 1.4 | 0.9 | 2.0 |
| **10** | 52 | 2 | 5.1 | 0.4 | 0.0 | 1.4 |
| **11** | 84 | 6 | 7.1 | 0.8 | 0.3 | 1.8 |
| **12** | 306 | 41 | 38.2 | 1.1 | 0.8 | 1.5 |
| **13** | 23 | 1 | 1.6 | 0.6 | 0.0 | 3.5 |
| **14** | 365 | 42 | 52.4 | 0.8 | 0.6 | 1.1 |
| **15** | 158 | 19 | 16.5 | 1.1 | 0.7 | 1.8 |
| **16** | 102 | 33 | 11.7 | 2.8 | 1.9 | 4.0 |
| **17** | 100 | 10 | 8.8 | 1.1 | 0.5 | 2.1 |
| **18** | 157 | 19 | 16.7 | 1.1 | 0.7 | 1.8 |
| **19** | 138 | 24 | 14.5 | 1.7 | 1.1 | 2.5 |
| **21** | 46 | 1 | 4.0 | 0.2 | 0.0 | 1.4 |
| **22** | 166 | 21 | 21.8 | 1.0 | 0.6 | 1.5 |
| **23** | 25 | 9 | 2.7 | 3.3 | 1.5 | 6.3 |
| **24** | 121 | 5 | 11.5 | 0.4 | 0.1 | 1.0 |
| **25** | 80 | 10 | 6.0 | 1.7 | 0.8 | 3.1 |
| **26** | 148 | 16 | 12.6 | 1.3 | 0.7 | 2.1 |
| **27** | 30 | 0 | 1.9 | 0.0 | . | 1.9 |
| **28** | 90 | 10 | 8.9 | 1.1 | 0.5 | 2.1 |
| **29** | 119 | 10 | 12.9 | 0.8 | 0.4 | 1.4 |
| **30** | 29 | 0 | 2.8 | 0.0 | . | 1.3 |
| **31** | 193 | 21 | 21.7 | 1.0 | 0.6 | 1.5 |
| **32** | 186 | 17 | 20.0 | 0.8 | 0.5 | 1.4 |
| **33** | 91 | 4 | 7.0 | 0.6 | 0.2 | 1.5 |

**Numeric site codes were used in Presentations 37a-d and they may not correspond to other presentations in this report.** *Late onset sepsis was attributed to the hospital where the first episode of sepsis was acquired. *Neonates who died before 3 days of age were excluded.
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation # 37b**
**Late onset sepsis: GA<33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 37a**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<33 weeks GA)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed late onset sepsis/expected late onset sepsis
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

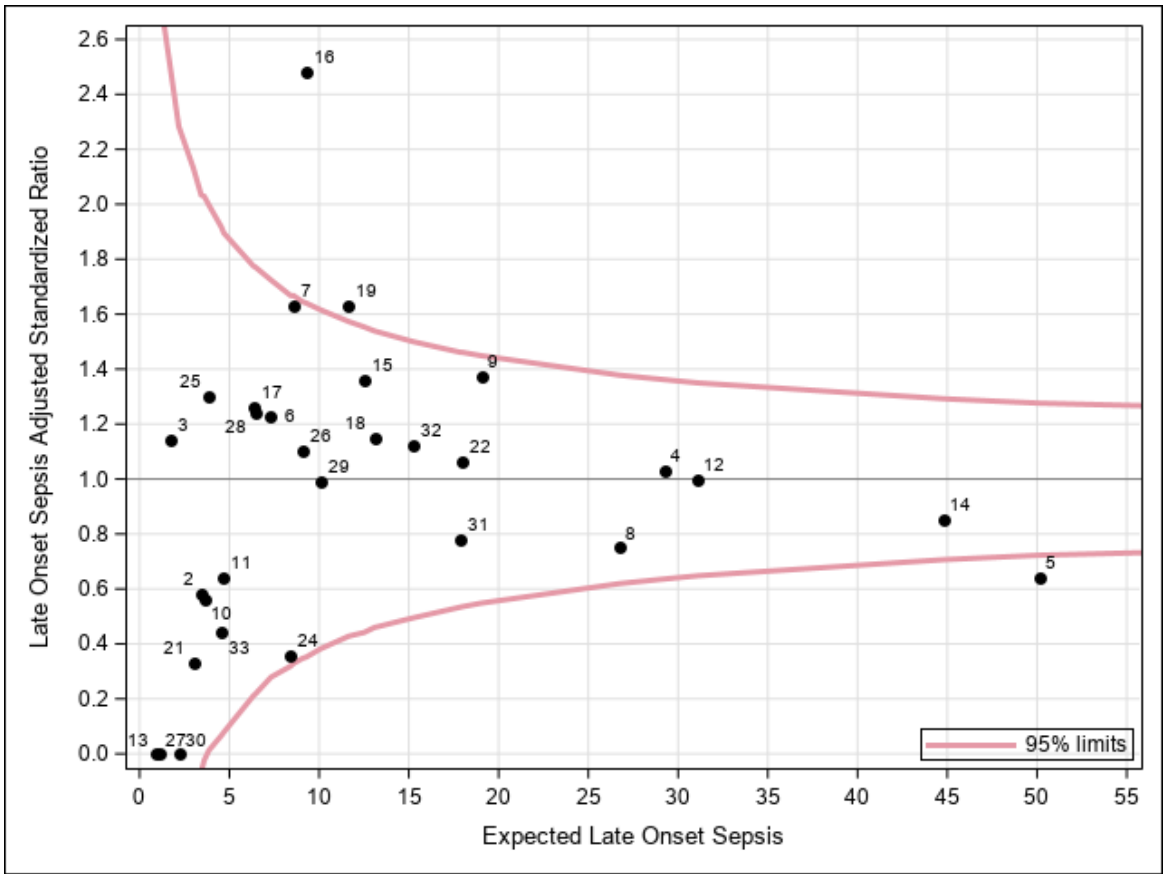
**Explanation for Presentation 37b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #37c**
**Late onset sepsis: GA<29 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of NI | Adjusted# expected number of NI | Adjusted# standardized ratio | 95% confidence interval (CI) for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 27 | 2 | 3.4 | 0.6 | 0.1 | 2.1 |
| **3** | 8 | 2 | 1.8 | 1.1 | 0.1 | 4.1 |
| **4** | 126 | 30 | 29.2 | 1.0 | 0.7 | 1.5 |
| **5** | 209 | 32 | 50.1 | 0.6 | 0.4 | 0.9 |
| **6** | 33 | 9 | 7.3 | 1.2 | 0.6 | 2.3 |
| **7** | 40 | 14 | 8.6 | 1.6 | 0.9 | 2.7 |
| **8** | 122 | 20 | 26.7 | 0.7 | 0.5 | 1.2 |
| **9** | 73 | 26 | 19.0 | 1.4 | 0.9 | 2.0 |
| **10** | 13 | 2 | 3.6 | 0.6 | 0.1 | 2.0 |
| **11** | 22 | 3 | 4.7 | 0.6 | 0.1 | 1.9 |
| **12** | 116 | 31 | 31.1 | 1.0 | 0.7 | 1.4 |
| **13** | 7 | 0 | 0.9 | 0.0 | . | 4.0 |
| **14** | 188 | 38 | 44.8 | 0.8 | 0.6 | 1.2 |
| **15** | 56 | 17 | 12.5 | 1.4 | 0.8 | 2.2 |
| **16** | 37 | 23 | 9.3 | 2.5 | 1.6 | 3.7 |
| **17** | 29 | 8 | 6.3 | 1.3 | 0.5 | 2.5 |
| **18** | 59 | 15 | 13.1 | 1.1 | 0.6 | 1.9 |
| **19** | 56 | 19 | 11.7 | 1.6 | 1.0 | 2.5 |
| **21** | 16 | 1 | 3.0 | 0.3 | 0.0 | 1.9 |
| **22** | 73 | 19 | 18.0 | 1.1 | 0.6 | 1.7 |
| **24** | 40 | 3 | 8.4 | 0.4 | 0.1 | 1.0 |
| **25** | 19 | 5 | 3.9 | 1.3 | 0.4 | 3.0 |
| **26** | 45 | 10 | 9.1 | 1.1 | 0.5 | 2.0 |
| **27** | 6 | 0 | 1.1 | 0.0 | . | 3.4 |
| **28** | 31 | 8 | 6.4 | 1.2 | 0.5 | 2.4 |
| **29** | 41 | 10 | 10.1 | 1.0 | 0.5 | 1.8 |
| **30** | 10 | 0 | 2.2 | 0.0 | . | 1.7 |
| **31** | 78 | 14 | 17.9 | 0.8 | 0.4 | 1.3 |
| **32** | 67 | 17 | 15.2 | 1.1 | 0.6 | 1.8 |
| **33** | 23 | 2 | 4.6 | 0.4 | 0.0 | 1.6 |

**Numeric site codes were used in Presentations 37a-d and they may not correspond to other presentations in this report.**
*Late onset sepsis was attributed to the hospital where the first episode of sepsis was acquired.
*Neonates who died before 3 days of age are excluded.
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

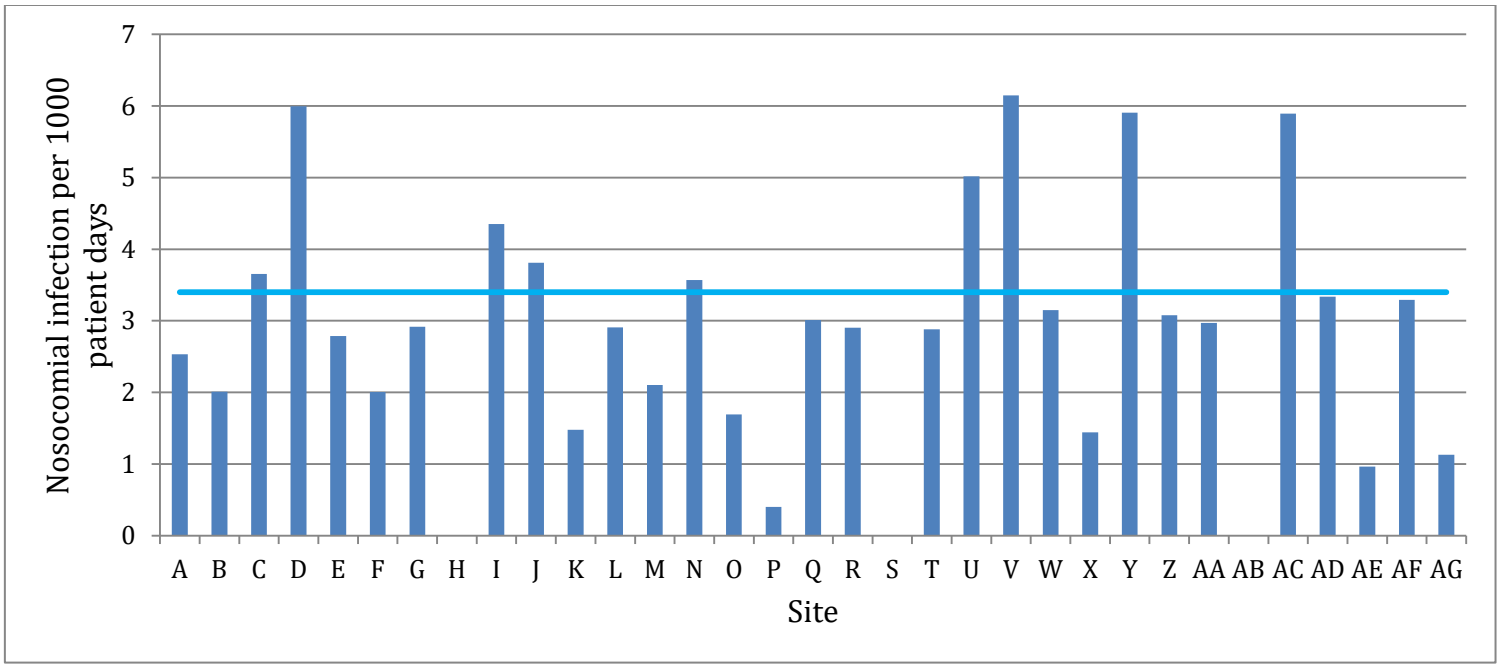
**Presentation # 37d**
**Late onset sepsis: GA<29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 37c**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<29 weeks GA)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed late onset sepsis/expected late onset sepsis
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 37d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #38**
**Late onset sepsis per 1000 patient days: GA<33 weeks: Site specific crude rates**



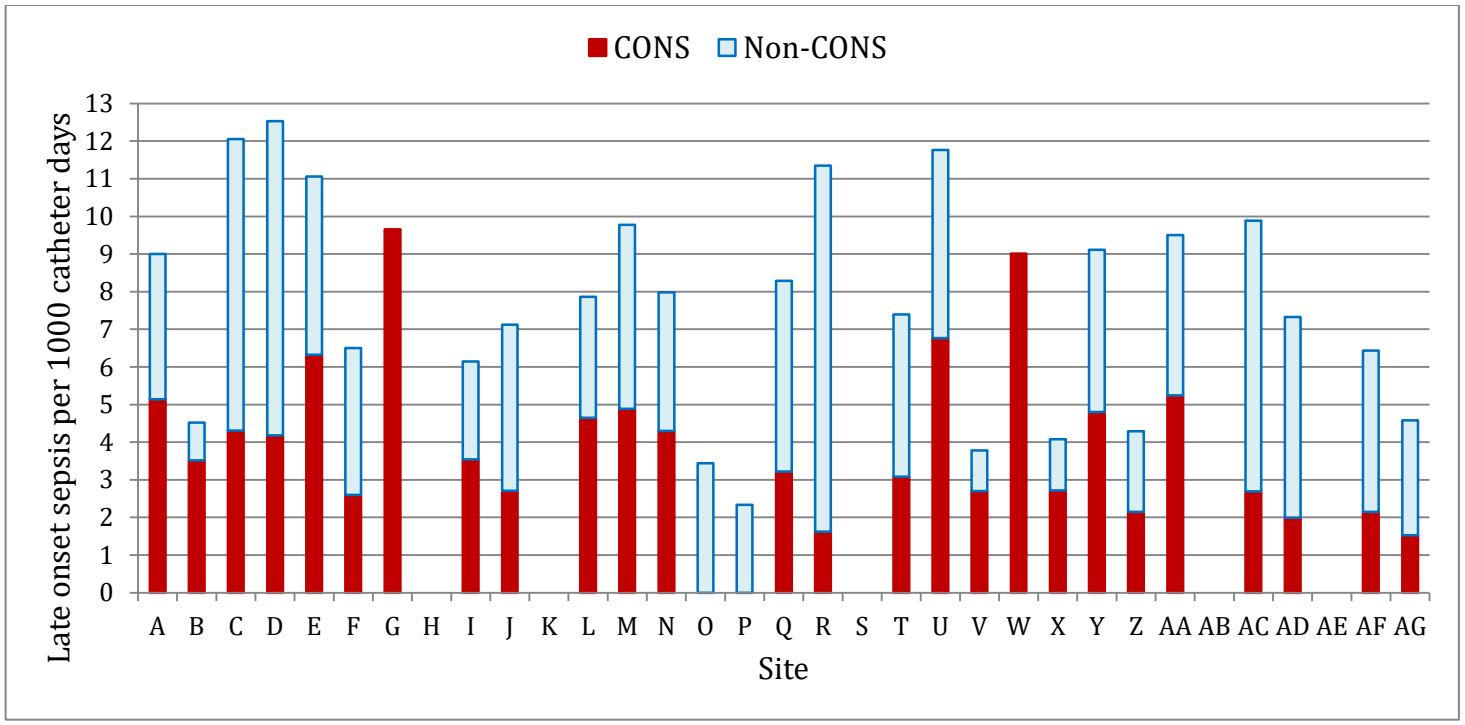

| Site | Infections per 1000 patient days | Site | Infections per 1000 patient days | Site | Infections per 1000 patient days |
|---|---|---|---|---|---|
| **A** | 2.5 | **L** | 2.9 | **W** | 3.1 |
| **B** | 2.0 | **M** | 2.1 | **X** | 1.4 |
| **C** | 3.7 | **N** | 3.6 | **Y** | 5.9 |
| **D** | 6.0 | **O** | 1.7 | **Z** | 3.1 |
| **E** | 2.8 | **P** | 0.4 | **AA** | 3.0 |
| **F** | 2.0 | **Q** | 3.0 | **AB** | 0.0 |
| **G** | 2.9 | **R** | 2.9 | **AC** | 5.9 |
| **H** | 0.0 | **S** | 0.0 | **AD** | 3.3 |
| **I** | 4.3 | **T** | 2.9 | **AE** | 1.0 |
| **J** | 3.8 | **U** | 5.0 | **AF** | 3.3 |
| **K** | 1.5 | **V** | 6.1 | **AG** | 1.1 |
| | | | | **CNN** | 3.4 |

Total number of neonates = 4 405

**COMMENTS:** Late onset sepsis is defined as positive blood and/or cerebrospinal fluid culture after 2 days of age (includes all admissions). Considerable variation exists when late onset sepsis is analyzed as infections per 1000 patient days. Note that it is possible that certain sites with high retro transfer rates may report a high incidence per 1000 patient days since neonates who are transferred out are those with lower acuity. If a neonate had >1 distinct episodes of infection, each episode will be counted as separate infections in the numerator.

**In presentations #38 and #39**, the infection was assigned to the hospital where the infection happened and not assigned to the hospital where the first episode of sepsis happened.

**Presentation #39a**
**Central Line-Associated Bloodstream Infections per 1000 central line* days:**
**GA < 33 weeks: Site specific crude rates**

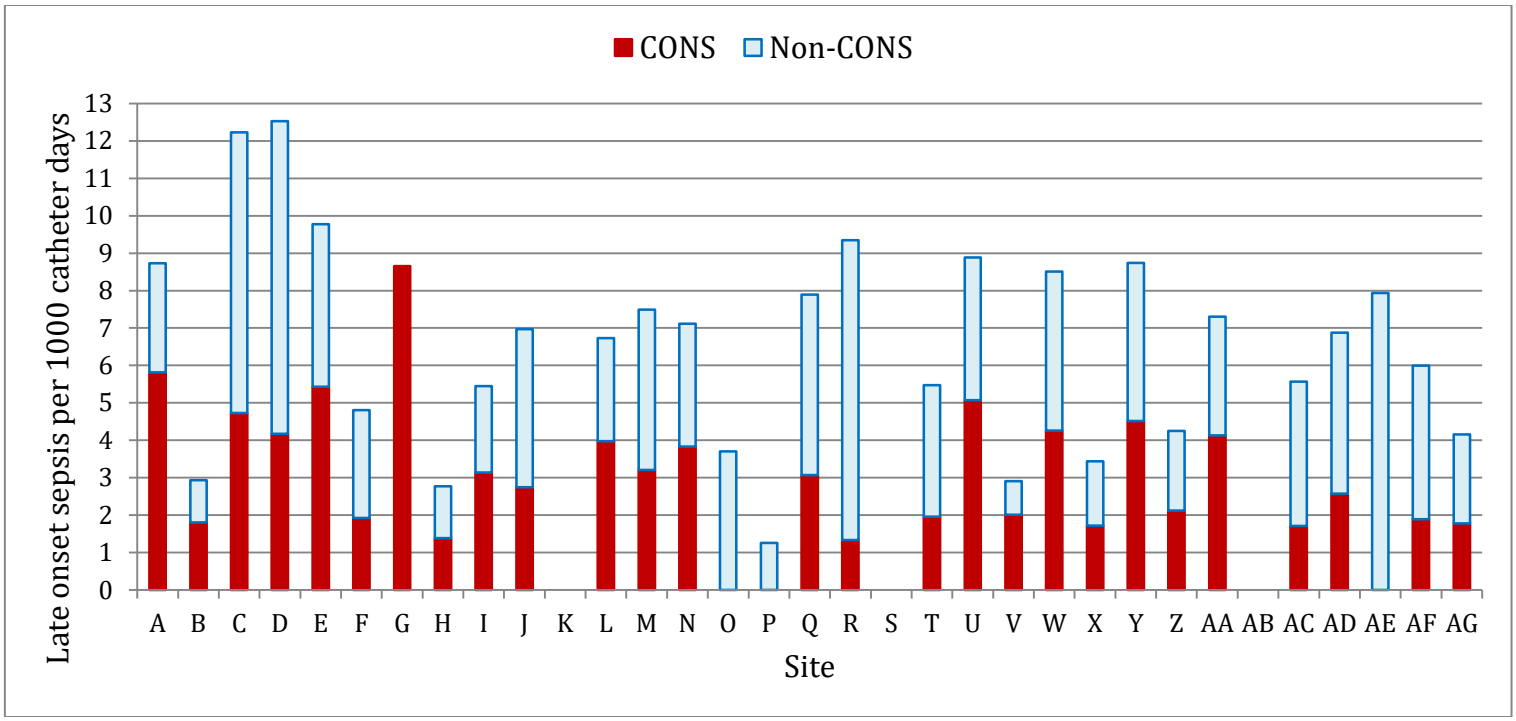



| Site | CLABSI** | | Central line days | CLABSI per 1000 central line days | |
|---|---|---|---|---|---|
| | CONS | Non-CONS | | CONS | Non-CONS |
| **A** | 4 | 3 | 778 | 5.1 | 3.9 |
| **B** | 7 | 2 | 1992 | 3.5 | 1.0 |
| **C** | 10 | 18 | 2323 | 4.3 | 7.7 |
| **D** | 8 | 16 | 1916 | 4.2 | 8.4 |
| **E** | 4 | 3 | 633 | 6.3 | 4.7 |
| **F** | 2 | 3 | 769 | 2.6 | 3.9 |
| **G** | 5 | 0 | 518 | 9.7 | 0.0 |
| **H** | 0 | 0 | 492 | 0.0 | 0.0 |
| **I** | 15 | 11 | 4233 | 3.5 | 2.6 |
| **J** | 8 | 13 | 2950 | 2.7 | 4.4 |
| **K** | 0 | 0 | 151 | 0.0 | 0.0 |
| **L** | 13 | 9 | 2799 | 4.6 | 3.2 |
| **M** | 3 | 3 | 614 | 4.9 | 4.9 |
| **N** | 14 | 12 | 3257 | 4.3 | 3.7 |
| **O** | 0 | 4 | 1162 | 0.0 | 3.4 |
| **P** | 0 | 1 | 428 | 0.0 | 2.3 |
| **Q** | 7 | 11 | 2173 | 3.2 | 5.1 |

| Site | CLABSI** | | Central line days | CLABSI per 1000 central line days | |
|---|---|---|---|---|---|
| | CONS | Non-CONS | | CONS | Non-CONS |
| **R** | 1 | 6 | 617 | 1.6 | 9.7 |
| **S** | 0 | 0 | 7 | 0.0 | 0.0 |
| **T** | 5 | 7 | 1623 | 3.1 | 4.3 |
| **U** | 23 | 17 | 3399 | 6.8 | 5.0 |
| **V** | 15 | 6 | 5551 | 2.7 | 1.1 |
| **W** | 1 | 0 | 111 | 9.0 | 0.0 |
| **X** | 2 | 1 | 735 | 2.7 | 1.4 |
| **Y** | 20 | 18 | 4170 | 4.8 | 4.3 |
| **Z** | 2 | 2 | 933 | 2.1 | 2.1 |
| **AA** | 16 | 13 | 3051 | 5.2 | 4.3 |
| **AB** | 0 | 0 | 245 | 0.0 | 0.0 |
| **AC** | 3 | 8 | 1113 | 2.7 | 7.2 |
| **AD** | 3 | 8 | 1502 | 2.0 | 5.3 |
| **AE** | 0 | 0 | 164 | 0.0 | 0.0 |
| **AF** | 12 | 24 | 5598 | 2.1 | 4.3 |
| **AG** | 2 | 4 | 1310 | 1.5 | 3.1 |
| **CNN** | 205 | 223 | 57317 | 3.6 | 3.9 |

*Central line = Any of UV, surgical CVL, or PICC
** CLABSI was defined as a primary bloodstream infection in a neonate who developed infection while a central line was in situ or within 2 days of removal of the central line.

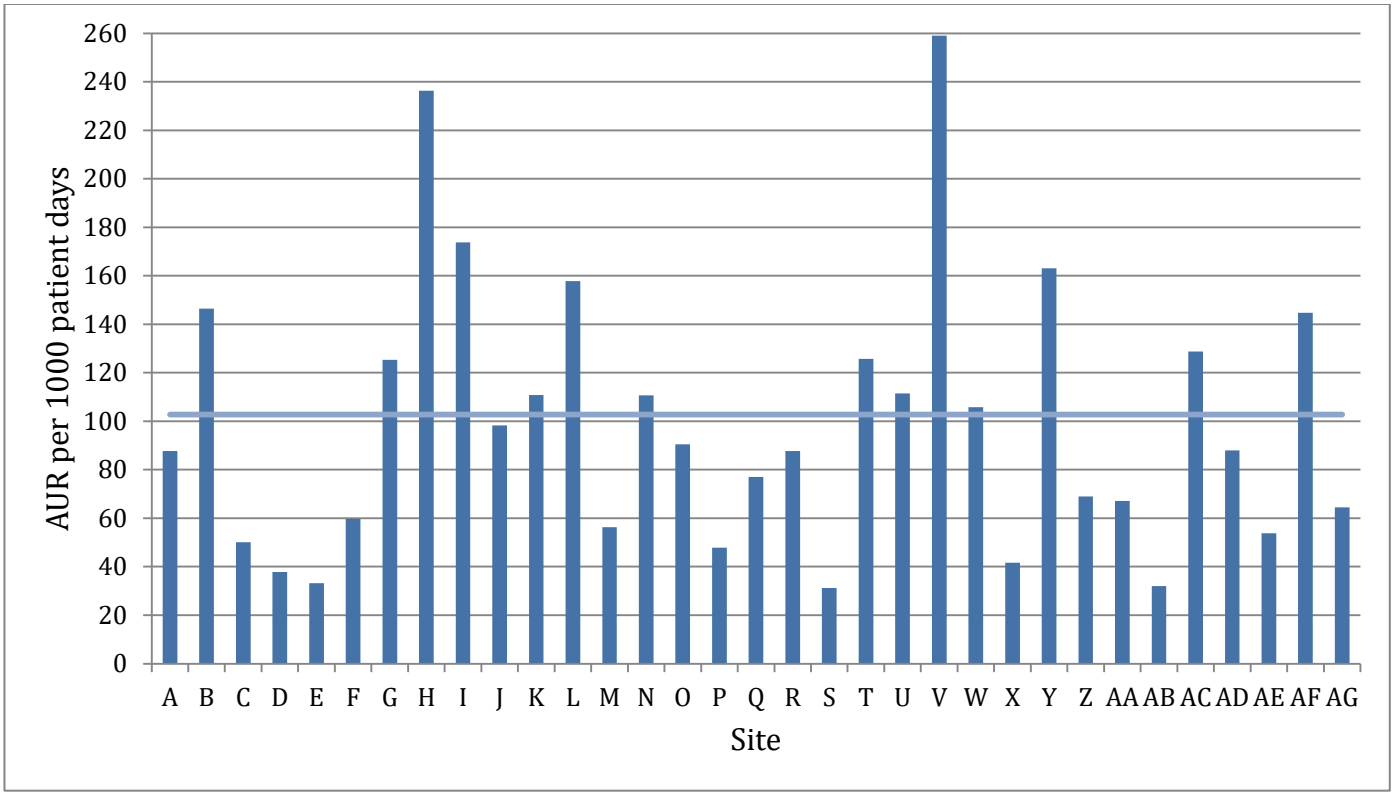
**Presentation #39b**
**Central Line-Associated Bloodstream Infections per 1000 central line* days:**
**All neonates: Site specific crude rates**




| Site | CLABSI** | | Central line days | CLABSI per 1000 central line days | |
|---|---|---|---|---|---|
| | CONS | Non-CONS | | CONS | Non-CONS |
| **A** | 6 | 3 | 1031 | 5.8 | 2.9 |
| **B** | 8 | 5 | 4432 | 1.8 | 1.1 |
| **C** | 12 | 19 | 2535 | 4.7 | 7.5 |
| **D** | 8 | 16 | 1916 | 4.2 | 8.4 |
| **E** | 5 | 4 | 921 | 5.4 | 4.3 |
| **F** | 2 | 3 | 1041 | 1.9 | 2.9 |
| **G** | 5 | 0 | 578 | 8.7 | 0.0 |
| **H** | 3 | 3 | 2163 | 1.4 | 1.4 |
| **I** | 15 | 11 | 4776 | 3.1 | 2.3 |
| **J** | 15 | 23 | 5454 | 2.8 | 4.2 |
| **K** | 0 | 0 | 190 | 0.0 | 0.0 |
| **L** | 13 | 9 | 3267 | 4.0 | 2.8 |
| **M** | 3 | 4 | 934 | 3.2 | 4.3 |
| **N** | 14 | 12 | 3656 | 3.8 | 3.3 |
| **O** | 0 | 7 | 1888 | 0.0 | 3.7 |
| **P** | 0 | 1 | 792 | 0.0 | 1.3 |
| **Q** | 7 | 11 | 2280 | 3.1 | 4.8 |
| **R** | 1 | 6 | 749 | 1.3 | 8.0 |
| **S** | 0 | 0 | 38 | 0.0 | 0.0 |
| **T** | 5 | 9 | 2557 | 2.0 | 3.5 |
| **U** | 28 | 21 | 5517 | 5.1 | 3.8 |
| **V** | 18 | 8 | 8948 | 2.0 | 0.9 |
| **W** | 1 | 1 | 235 | 4.3 | 4.3 |
| **X** | 2 | 2 | 1163 | 1.7 | 1.7 |
| **Y** | 30 | 28 | 6637 | 4.5 | 4.2 |
| **Z** | 2 | 2 | 941 | 2.1 | 2.1 |
| **AA** | 26 | 20 | 6295 | 4.1 | 3.2 |
| **AB** | 0 | 0 | 383 | 0.0 | 0.0 |
| **AC** | 4 | 9 | 2335 | 1.7 | 3.9 |
| **AD** | 6 | 10 | 2327 | 2.6 | 4.3 |
| **AE** | 0 | 2 | 252 | 0.0 | 7.9 |
| **AF** | 12 | 26 | 6343 | 1.9 | 4.1 |
| **AG** | 3 | 4 | 1683 | 1.8 | 2.4 |
| **CNN** | 254 | 279 | 84257 | 3.0 | 3.3 |

*Central line = Any of UV, surgical CVL, or PICC
** CLABSI was defined as a primary bloodstream infection in a neonate who developed infection while a central line was in situ or within 2 days of removal of the central line.

**Presentation #40**
**Days of antimicrobial use per 1000 patient days among neonates who did not develop NEC, early-onset sepsis or late onset sepsis: GA <33 weeks***

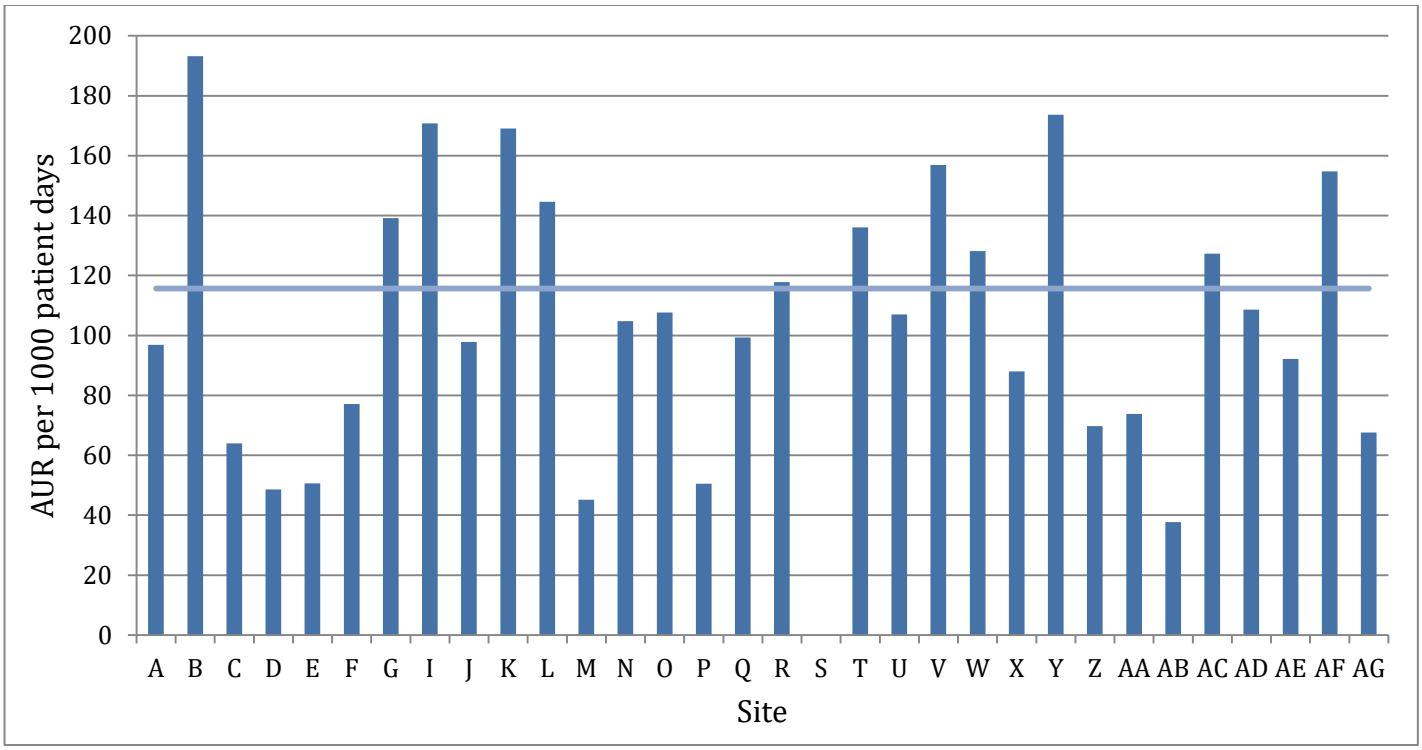



| Site | Days of antimicrobial use per 1000 patient days | Site | Days of antimicrobial use per 1000 patient days | Site | Days of antimicrobial use per 1000 patient days |
|---|---|---|---|---|---|
| **A** | 87.7 | **L** | 157.8 | **W** | 105.8 |
| **B** | 146.5 | **M** | 56.3 | **X** | 41.7 |
| **C** | 50.1 | **N** | 110.7 | **Y** | 163.1 |
| **D** | 37.8 | **O** | 90.5 | **Z** | 68.9 |
| **E** | 33.3 | **P** | 47.9 | **AA** | 67.1 |
| **F** | 59.7 | **Q** | 77.1 | **AB** | 32.0 |
| **G** | 125.4 | **R** | 87.7 | **AC** | 128.8 |
| **H** | 236.4 | **S** | 31.3 | **AD** | 87.9 |
| **I** | 173.8 | **T** | 125.7 | **AE** | 53.8 |
| **J** | 98.2 | **U** | 111.5 | **AF** | 144.8 |
| **K** | 110.8 | **V** | 259.0 | **AG** | 64.4 |
| | | | | **CNN** | 102.8 |

*Denominators were based on neonates born < 33 weeks' GA without major congenital anomaly who did not develop early-onset sepsis, late-onset sepsis or necrotising enterocolitis.

**Note:** Prophylactic administration of trimethoprim or amoxicillin for the prevention of urinary tract infections with a suspected renal anomaly was not included.

**Presentation #41**
**Days of antimicrobial use per 1000 patient days among neonates who did not develop NEC, early-onset sepsis or late onset sepsis: GA <29 weeks***



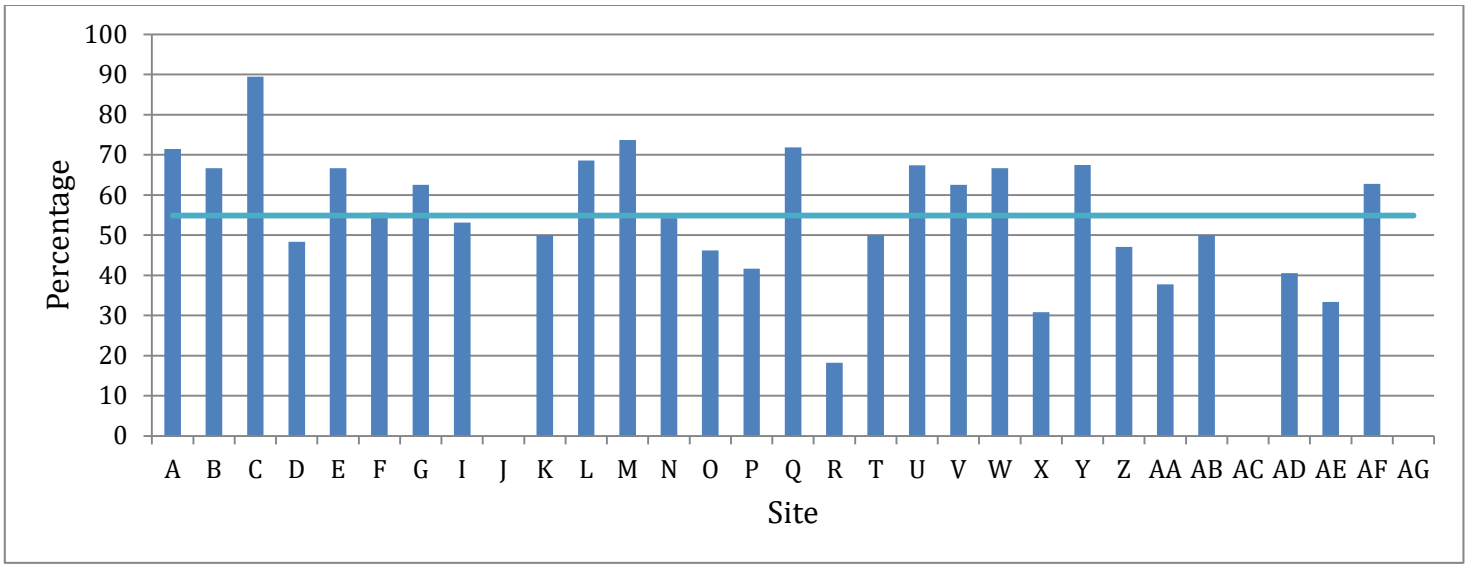

| Site | Days of antimicrobial use per 1000 patient days | Site | Days of antimicrobial use per 1000 patient days | Site | Days of antimicrobial use per 1000 patient days |
|---|---|---|---|---|---|
| **A** | 96.8 | **M** | 45.2 | **X** | 88.0 |
| **B** | 193.2 | **N** | 104.8 | **Y** | 173.7 |
| **C** | 63.9 | **O** | 107.6 | **Z** | 69.7 |
| **D** | 48.6 | **P** | 50.5 | **AA** | 73.8 |
| **E** | 50.6 | **Q** | 99.3 | **AB** | 37.7 |
| **F** | 77.1 | **R** | 117.8 | **AC** | 127.3 |
| **G** | 139.2 | **S** | 0.0 | **AD** | 108.6 |
| **I** | 170.7 | **T** | 136.1 | **AE** | 92.2 |
| **J** | 97.9 | **U** | 107.0 | **AF** | 154.7 |
| **K** | 169.1 | **V** | 156.9 | **AG** | 67.6 |
| **L** | 144.6 | **W** | 128.2 | **CNN** | 115.7 |

*Denominators were based on neonates born < 29 weeks' GA without major congenital anomaly who did not develop early-onset sepsis, late-onset sepsis or necrotising enterocolitis.

**Note:** Site H does not have any neonates with GA < 29.

**Note:** Prophylactic administration of trimethoprim or amoxicillin for the prevention of urinary tract infections with a suspected renal anomaly was not included.

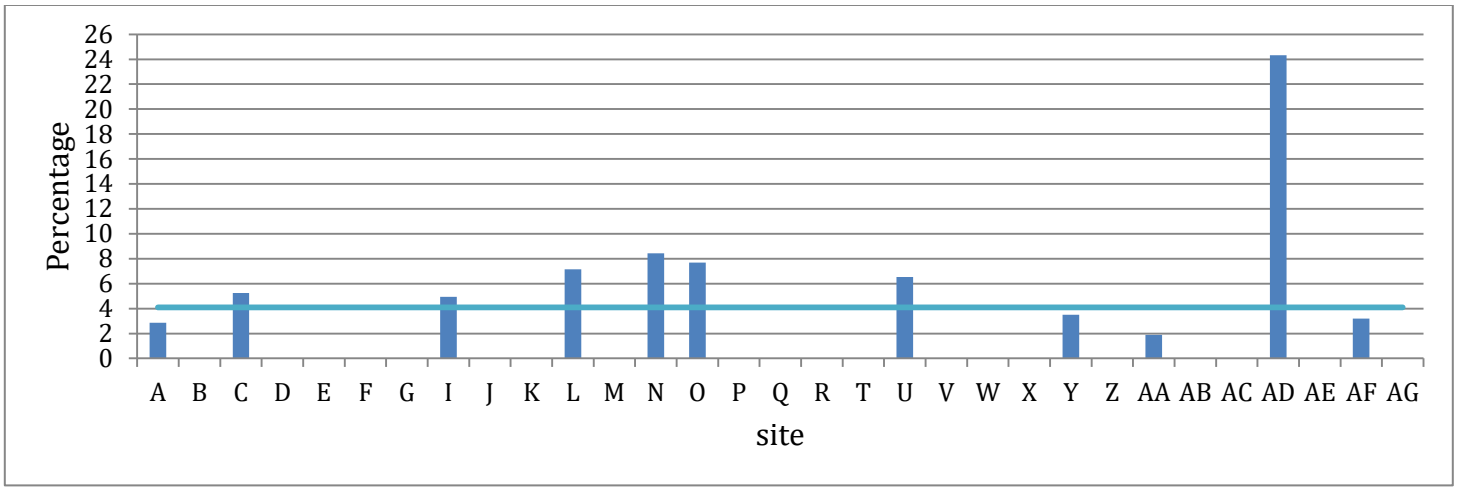
**Presentation #42**
**Rate of treatment# for patent ductus arteriosus (PDA): GA<29 weeks who had PDA*:**
**Site specific crude rates**




| Site | Treatment# for PDA among neonates who had PDA (%) | | Site | Treatment# for PDA among neonates who had PDA (%) |
|---|---|---|---|---|
| **A** | 71.4 | | **R** | 18.2 |
| **B** | 66.7 | | **T** | 50.0 |
| **C** | 89.5 | | **U** | 67.4 |
| **D** | 48.3 | | **V** | 62.5 |
| **E** | 66.7 | | **W** | 66.7 |
| **F** | 55.6 | | **X** | 30.8 |
| **G** | 62.5 | | **Y** | 67.4 |
| **I** | 53.1 | | **Z** | 47.1 |
| **J** | 0.0 | | **AA** | 37.7 |
| **K** | 50.0 | | **AB** | 50.0 |
| **L** | 68.6 | | **AC** | 0.0 |
| **M** | 73.7 | | **AD** | 40.5 |
| **N** | 54.2 | | **AE** | 33.3 |
| **O** | 46.2 | | **AF** | 62.8 |
| **P** | 41.7 | | **AG** | 0.0 |
| **Q** | 71.9 | | **CNN** | 54.9 |

Total number of neonates who had PDA (GA <29) = 1 027
*PDA diagnosis is based on clinical suspicion and/or echocardiography findings.
#Treatment of PDA includes any of indomethacin, ibuprofen, acetaminophen, or ligation.
The percentage of neonates with treated PDA was attributed to the site where the neonate was first admitted.
Note: Sites H and S do not have any neonates with GA < 29 who had PDA.

**Presentation #43**
**Surgical or device patent ductus arteriosus (PDA) closure rate: GA<29 weeks who had PDA: Site specific crude rates**




| Site | Surgical ligation for PDA among neonates who had PDA (%) | | Site | Surgical ligation for PDA among neonates who had PDA (%) |
|---|---|---|---|---|
| **A** | 2.9 | | **R** | 0.0 |
| **B** | 0.0 | | **T** | 0.0 |
| **C** | 5.3 | | **U** | 6.5 |
| **D** | 0.0 | | **V** | 0.0 |
| **E** | 0.0 | | **W** | 0.0 |
| **F** | 0.0 | | **X** | 0.0 |
| **G** | 0.0 | | **Y** | 3.5 |
| **I** | 4.9 | | **Z** | 0.0 |
| **J** | 0.0 | | **AA** | 1.9 |
| **K** | 0.0 | | **AB** | 0.0 |
| **L** | 7.1 | | **AC** | 0.0 |
| **M** | 0.0 | | **AD** | 24.3 |
| **N** | 8.4 | | **AE** | 0.0 |
| **O** | 7.7 | | **AF** | 3.2 |
| **P** | 0.0 | | **AG** | 0.0 |
| **Q** | 0.0 | | **CNN** | 4.1 |

Total number of neonates who had PDA (GA<29) = 1 027

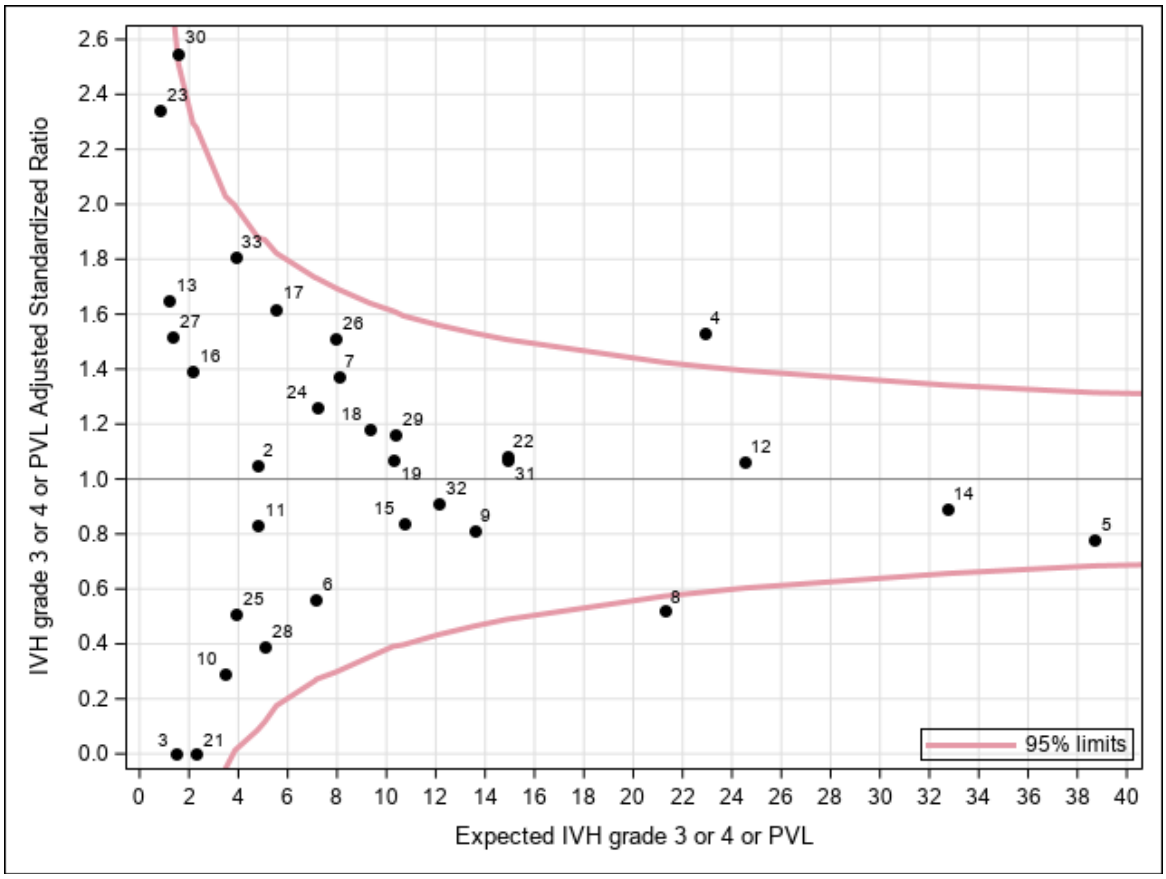
Note: Sites H and S do not have any neonates with GA < 29 who had PDA.
The percentage of neonates with treated PDA was attributed to the site where the neonate was first admitted.

**Presentation #44a**
**IVH grade 3 or 4 or PVL: GA<33 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with IVH G3/4 or PVL | Adjusted# expected number of neonates with IVH G3/4 or PVL | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 110 | 104 | 5 | 4.8 | 1.0 | 0.3 | 2.4 |
| **3** | 19 | 16 | 0 | 1.5 | 0.0 | . | 2.5 |
| **4** | 301 | 212 | 35 | 22.9 | 1.5 | 1.1 | 2.1 |
| **5** | 365 | 320 | 30 | 38.7 | 0.8 | 0.5 | 1.1 |
| **6** | 83 | 82 | 4 | 7.1 | 0.6 | 0.2 | 1.4 |
| **7** | 147 | 122 | 11 | 8.0 | 1.4 | 0.7 | 2.4 |
| **8** | 318 | 285 | 11 | 21.3 | 0.5 | 0.3 | 0.9 |
| **9** | 161 | 134 | 11 | 13.6 | 0.8 | 0.4 | 1.5 |
| **10** | 50 | 43 | 1 | 3.5 | 0.3 | 0.0 | 1.6 |
| **11** | 85 | 57 | 4 | 4.8 | 0.8 | 0.2 | 2.1 |
| **12** | 298 | 230 | 26 | 24.5 | 1.1 | 0.7 | 1.6 |
| **13** | 25 | 21 | 2 | 1.2 | 1.6 | 0.2 | 5.9 |
| **14** | 362 | 321 | 29 | 32.7 | 0.9 | 0.6 | 1.3 |
| **15** | 158 | 135 | 9 | 10.7 | 0.8 | 0.4 | 1.6 |
| **16** | 65 | 53 | 3 | 2.2 | 1.4 | 0.3 | 4.1 |
| **17** | 102 | 75 | 9 | 5.5 | 1.6 | 0.7 | 3.1 |
| **18** | 142 | 112 | 11 | 9.3 | 1.2 | 0.6 | 2.1 |
| **19** | 134 | 109 | 11 | 10.3 | 1.1 | 0.5 | 1.9 |
| **21** | 47 | 38 | 0 | 2.3 | 0.0 | . | 1.6 |
| **22** | 172 | 138 | 16 | 14.9 | 1.1 | 0.6 | 1.7 |
| **23** | 18 | 13 | 2 | 0.9 | 2.3 | 0.3 | 8.5 |
| **24** | 120 | 99 | 9 | 7.2 | 1.3 | 0.6 | 2.4 |
| **25** | 76 | 60 | 2 | 3.9 | 0.5 | 0.1 | 1.9 |
| **26** | 143 | 129 | 12 | 8.0 | 1.5 | 0.8 | 2.6 |
| **27** | 30 | 25 | 2 | 1.3 | 1.5 | 0.2 | 5.5 |
| **28** | 84 | 68 | 2 | 5.1 | 0.4 | 0.0 | 1.4 |
| **29** | 120 | 103 | 12 | 10.3 | 1.2 | 0.6 | 2.0 |
| **30** | 28 | 24 | 4 | 1.6 | 2.6 | 0.7 | 6.5 |
| **31** | 188 | 172 | 16 | 14.9 | 1.1 | 0.6 | 1.7 |
| **32** | 182 | 152 | 11 | 12.1 | 0.9 | 0.5 | 1.6 |
| **33** | 87 | 75 | 7 | 3.9 | 1.8 | 0.7 | 3.7 |

**Numeric site codes were used in Presentations 44a-d and they may not correspond to other presentations in this report. Neonates with major congenital anomalies are excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
Note: Sites 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #44b**
**IVH grade 3 or 4 or PVL: GA<33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 44a**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<33 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed IVH or PVL/expected IVH or PVL
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

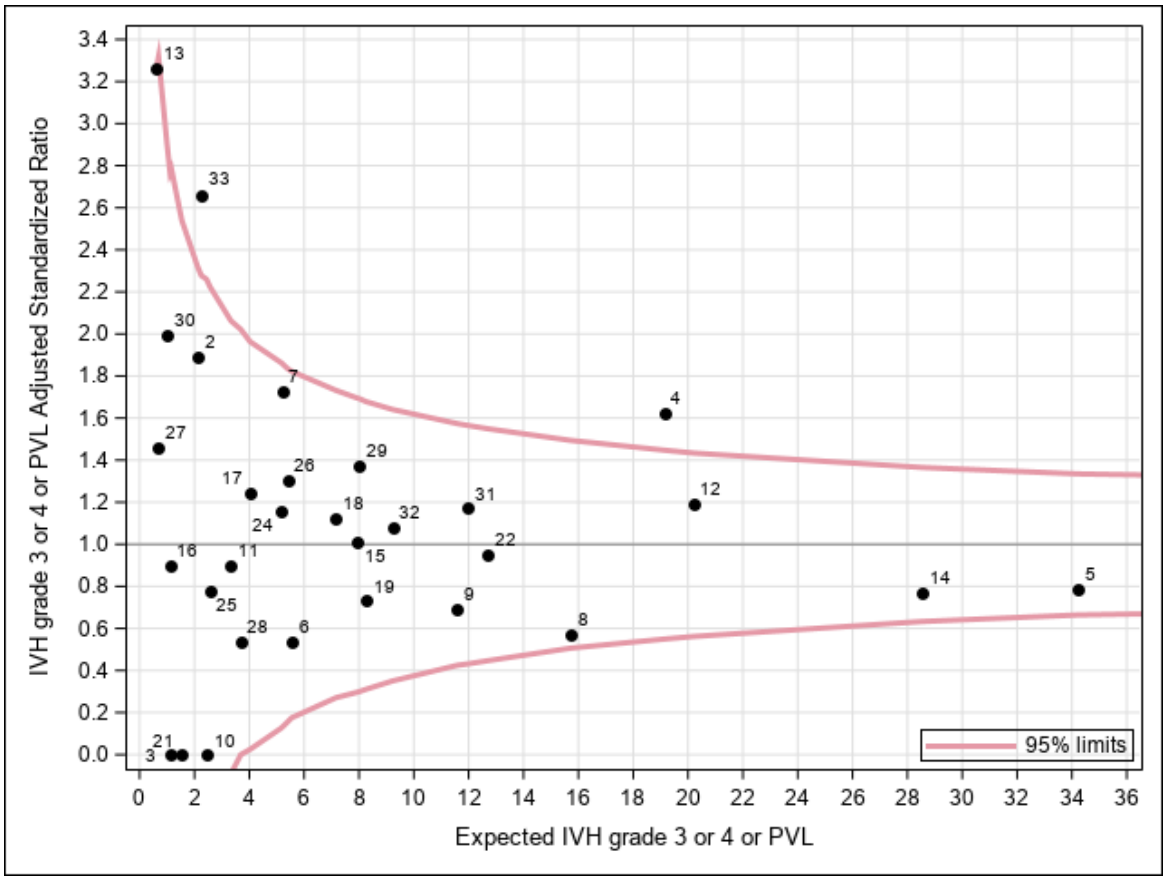
**Explanation for Presentation 44b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #44c**
**IVH grade 3 or 4 or PVL: GA<29 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with IVH G3/4 or PVL | Adjusted# expected number of neonates with IVH G3/4 or PVL | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 27 | 27 | 4 | 2.1 | 1.9 | 0.5 | 4.8 |
| **3** | 8 | 8 | 0 | 1.2 | 0.0 | . | 3.2 |
| **4** | 122 | 121 | 31 | 19.1 | 1.6 | 1.1 | 2.3 |
| **5** | 214 | 208 | 27 | 34.2 | 0.8 | 0.5 | 1.1 |
| **6** | 34 | 34 | 3 | 5.5 | 0.5 | 0.1 | 1.6 |
| **7** | 37 | 37 | 9 | 5.2 | 1.7 | 0.8 | 3.3 |
| **8** | 122 | 116 | 9 | 15.7 | 0.6 | 0.3 | 1.1 |
| **9** | 71 | 67 | 8 | 11.6 | 0.7 | 0.3 | 1.4 |
| **10** | 13 | 12 | 0 | 2.4 | 0.0 | . | 1.5 |
| **11** | 23 | 22 | 3 | 3.3 | 0.9 | 0.2 | 2.6 |
| **12** | 115 | 107 | 24 | 20.2 | 1.2 | 0.8 | 1.8 |
| **13** | 9 | 7 | 2 | 0.6 | 3.3 | 0.4 | 11.8 |
| **14** | 191 | 190 | 22 | 28.5 | 0.8 | 0.5 | 1.2 |
| **15** | 58 | 56 | 8 | 7.9 | 1.0 | 0.4 | 2.0 |
| **16** | 12 | 12 | 1 | 1.1 | 0.9 | 0.0 | 5.0 |
| **17** | 32 | 29 | 5 | 4.0 | 1.2 | 0.4 | 2.9 |
| **18** | 55 | 50 | 8 | 7.2 | 1.1 | 0.5 | 2.2 |
| **19** | 55 | 53 | 6 | 8.3 | 0.7 | 0.3 | 1.6 |
| **21** | 16 | 16 | 0 | 1.5 | 0.0 | . | 2.4 |
| **22** | 81 | 78 | 12 | 12.7 | 0.9 | 0.5 | 1.7 |
| **24** | 41 | 40 | 6 | 5.2 | 1.2 | 0.4 | 2.5 |
| **25** | 18 | 18 | 2 | 2.6 | 0.8 | 0.1 | 2.8 |
| **26** | 43 | 43 | 7 | 5.4 | 1.3 | 0.5 | 2.7 |
| **27** | 6 | 6 | 1 | 0.7 | 1.5 | 0.0 | 8.1 |
| **28** | 29 | 29 | 2 | 3.7 | 0.5 | 0.1 | 2.0 |
| **29** | 43 | 42 | 11 | 8.0 | 1.4 | 0.7 | 2.5 |
| **30** | 9 | 8 | 2 | 1.0 | 2.0 | 0.2 | 7.2 |
| **31** | 79 | 77 | 14 | 12.0 | 1.2 | 0.6 | 2.0 |
| **32** | 66 | 64 | 10 | 9.2 | 1.1 | 0.5 | 2.0 |
| **33** | 21 | 21 | 6 | 2.3 | 2.7 | 1.0 | 5.8 |

**Numeric site codes were used in Presentations 44a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies are excluded.**
## The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates**.**

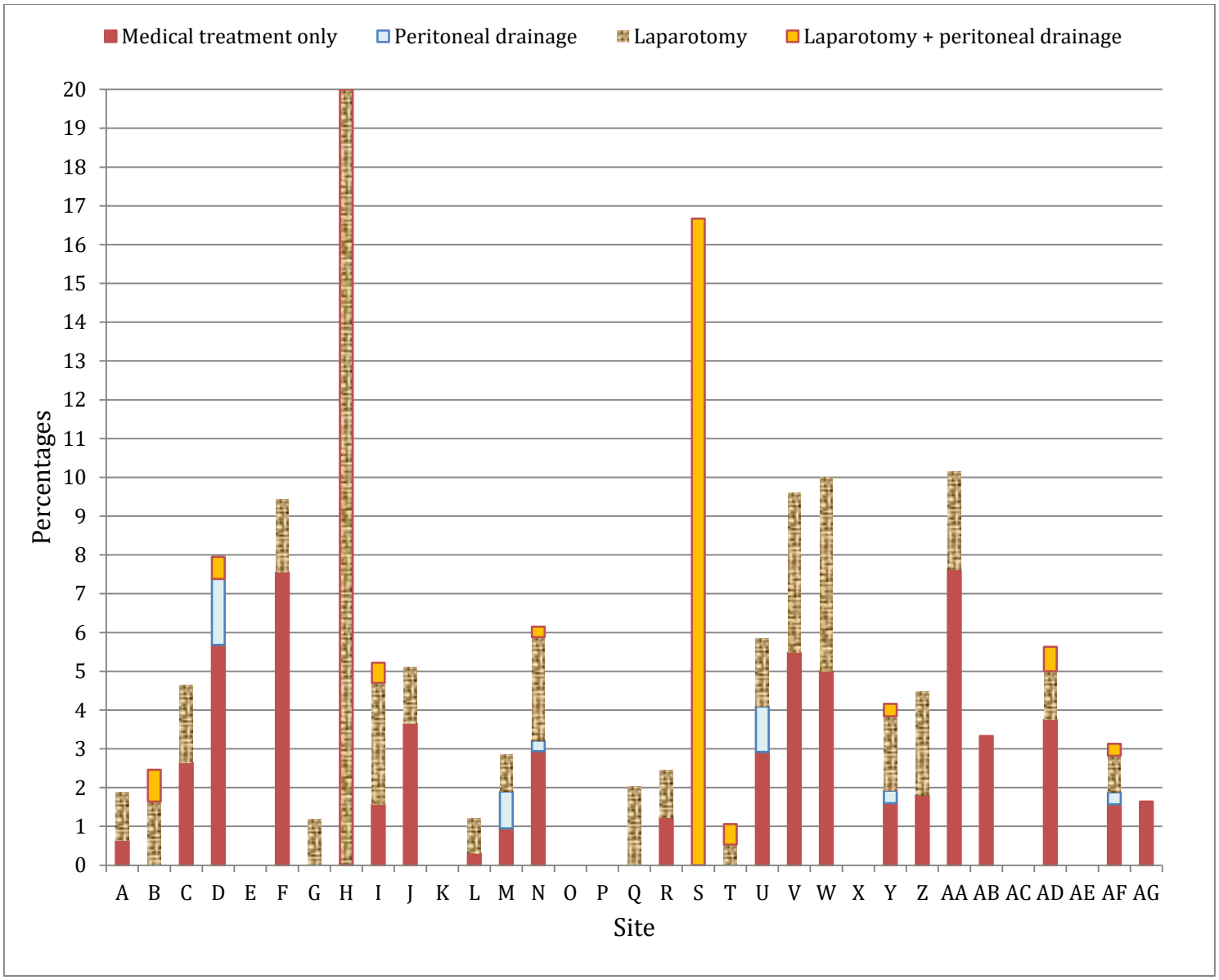
**Presentation #44d**
**IVH grade 3 or 4 or PVL: GA<29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 44c**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<29 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed IVH or PVL/expected IVH or PVL
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 44d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #45**
**Necrotizing enterocolitis (NEC) rates by treatment strategies: GA<33 weeks:**
**Site specific crude rates**



**Presentation #45** (continued)

**Necrotizing enterocolitis (NEC) treatment rates: GA<33 weeks: Site specific crude rates**

| Site | Treatment (%) | | | | NEC |
|---|---|---|---|---|---|
| | Medical treatment only | Peritoneal drainage | Laparotomy | Peritoneal drainage + Laparotomy | |
| **A** | 0.6 | 0.0 | 1.3 | 0.0 | 1.9 |
| **B** | 0.0 | 0.0 | 1.6 | 0.8 | 2.5 |
| **C** | 2.7 | 0.0 | 2.0 | 0.0 | 4.6 |
| **D** | 5.7 | 1.7 | 0.0 | 0.6 | 8.0 |
| **E** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **F** | 7.6 | 0.0 | 1.9 | 0.0 | 9.4 |
| **G** | 0.0 | 0.0 | 1.2 | 0.0 | 1.2 |
| **H** | 0.0 | 0.0 | 20.0 | 0.0 | 20.0 |
| **I** | 1.6 | 0.0 | 3.1 | 0.5 | 5.2 |
| **J** | 3.7 | 0.0 | 1.5 | 0.0 | 5.1 |
| **K** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **L** | 0.3 | 0.0 | 0.9 | 0.0 | 1.2 |
| **M** | 1.0 | 1.0 | 1.0 | 0.0 | 2.9 |
| **N** | 2.9 | 0.3 | 2.7 | 0.3 | 6.2 |
| **O** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **P** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Q** | 0.0 | 0.0 | 2.0 | 0.0 | 2.0 |
| **R** | 1.2 | 0.0 | 1.2 | 0.0 | 2.5 |
| **S** | 0.0 | 0.0 | 0.0 | 16.7 | 16.7 |
| **T** | 0.0 | 0.0 | 0.5 | 0.5 | 1.1 |
| **U** | 2.9 | 1.2 | 1.8 | 0.0 | 5.8 |
| **V** | 5.5 | 0.0 | 4.1 | 0.0 | 9.6 |
| **W** | 5.0 | 0.0 | 5.0 | 0.0 | 10.0 |
| **X** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Y** | 1.6 | 0.3 | 1.9 | 0.3 | 4.2 |
| **Z** | 1.8 | 0.0 | 2.7 | 0.0 | 4.5 |
| **AA** | 7.6 | 0.0 | 2.5 | 0.0 | 10.2 |
| **AB** | 3.3 | 0.0 | 0.0 | 0.0 | 3.3 |
| **AC** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **AD** | 3.8 | 0.0 | 1.3 | 0.6 | 5.6 |
| **AE** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **AF** | 1.6 | 0.3 | 0.9 | 0.3 | 3.1 |
| **AG** | 1.6 | 0.0 | 0.0 | 0.0 | 1.6 |
| **Total** | 2.0 | 0.2 | 1.6 | 0.2 | 4.0 |

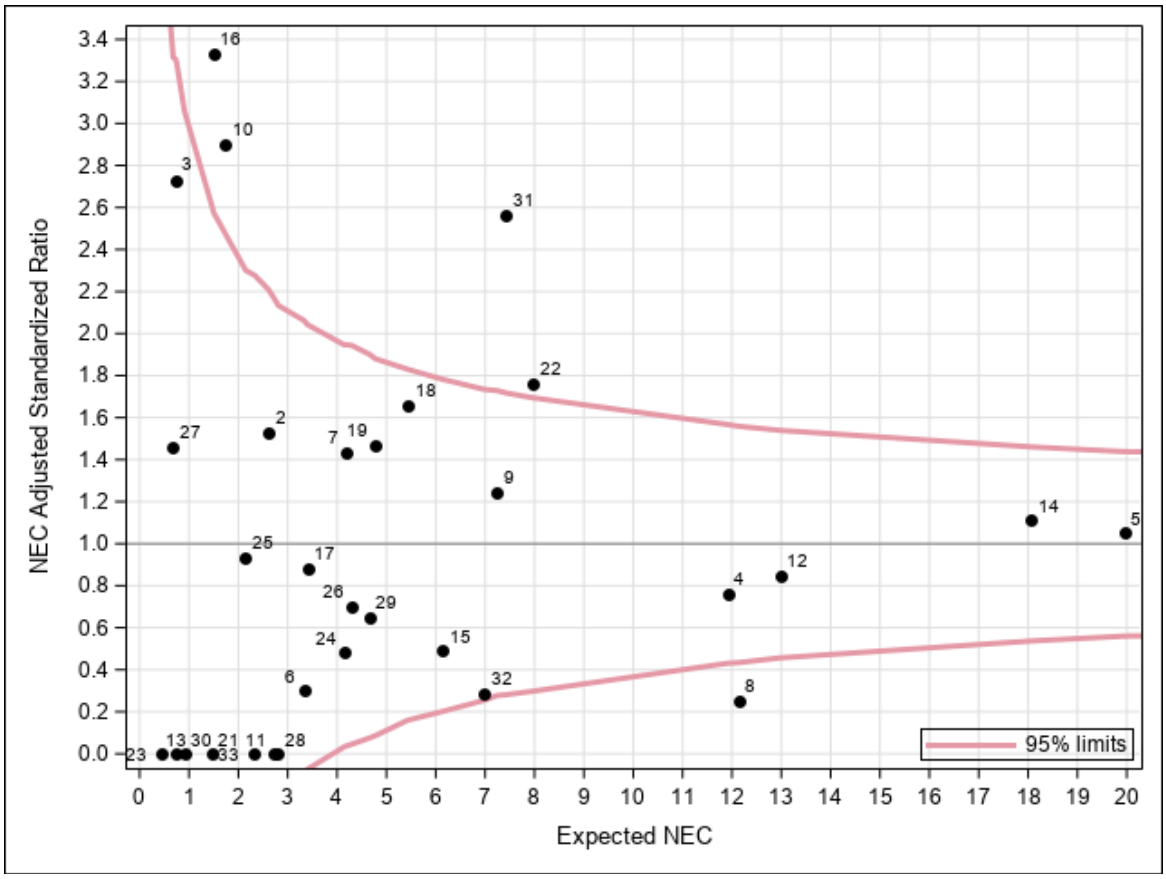
**COMMENTS:** These analyses include 4 405 neonates from 33 sites.

**Presentation #46a**
**Necrotizing enterocolitis (NEC): GA<33 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of neonates with NEC | Adjusted# expected number of neonates with NEC | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 110 | 4 | 2.6 | 1.5 | 0.4 | 3.9 |
| **3** | 19 | 2 | 0.7 | 2.7 | 0.3 | 9.9 |
| **4** | 301 | 9 | 11.9 | 0.8 | 0.3 | 1.4 |
| **5** | 365 | 21 | 19.9 | 1.1 | 0.7 | 1.6 |
| **6** | 83 | 1 | 3.3 | 0.3 | 0.0 | 1.7 |
| **7** | 147 | 6 | 4.2 | 1.4 | 0.5 | 3.1 |
| **8** | 318 | 3 | 12.1 | 0.2 | 0.0 | 0.7 |
| **9** | 161 | 9 | 7.2 | 1.2 | 0.6 | 2.4 |
| **10** | 50 | 5 | 1.7 | 2.9 | 0.9 | 6.8 |
| **11** | 85 | 0 | 2.7 | 0.0 | . | 1.3 |
| **12** | 298 | 11 | 13.0 | 0.8 | 0.4 | 1.5 |
| **13** | 25 | 0 | 0.7 | 0.0 | . | 4.9 |
| **14** | 362 | 20 | 18.1 | 1.1 | 0.7 | 1.7 |
| **15** | 158 | 3 | 6.1 | 0.5 | 0.1 | 1.4 |
| **16** | 65 | 5 | 1.5 | 3.3 | 1.1 | 7.8 |
| **17** | 102 | 3 | 3.4 | 0.9 | 0.2 | 2.6 |
| **18** | 142 | 9 | 5.4 | 1.7 | 0.8 | 3.1 |
| **19** | 134 | 7 | 4.8 | 1.5 | 0.6 | 3.0 |
| **21** | 47 | 0 | 1.5 | 0.0 | . | 2.5 |
| **22** | 172 | 14 | 7.9 | 1.8 | 1.0 | 3.0 |
| **23** | 18 | 0 | 0.4 | 0.0 | . | 8.3 |
| **24** | 120 | 2 | 4.1 | 0.5 | 0.1 | 1.7 |
| **25** | 76 | 2 | 2.1 | 0.9 | 0.1 | 3.4 |
| **26** | 143 | 3 | 4.3 | 0.7 | 0.1 | 2.0 |
| **27** | 30 | 1 | 0.7 | 1.5 | 0.0 | 8.1 |
| **28** | 84 | 0 | 2.8 | 0.0 | . | 1.3 |
| **29** | 120 | 3 | 4.6 | 0.6 | 0.1 | 1.9 |
| **30** | 28 | 0 | 0.9 | 0.0 | . | 4.0 |
| **31** | 188 | 19 | 7.4 | 2.6 | 1.5 | 4.0 |
| **32** | 182 | 2 | 7.0 | 0.3 | 0.0 | 1.0 |
| **33** | 87 | 0 | 2.3 | 0.0 | . | 1.6 |

**Numeric site codes were used in Presentations 46a-d and they may not correspond to other presentations in this report. Neonates with major congenital anomalies are excluded.**
# Variables adjusted for in the prediction model: GA, SGA, sex, and SNAPII > 20
Note: Sites 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #46b**
**Necrotizing enterocolitis (NEC): GA<33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 46a**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed NEC/expected NEC
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 46b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

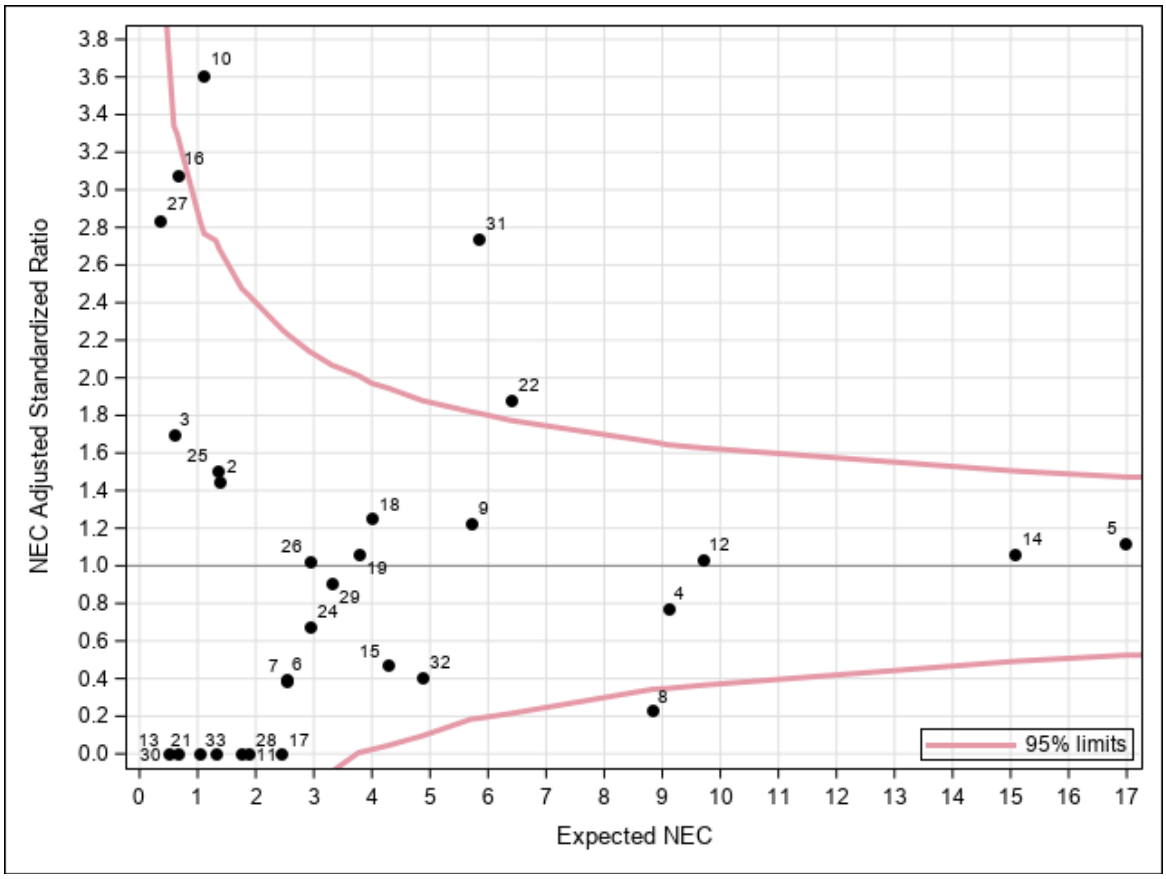
**Presentation #46c**
**NEC: GA<29 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of neonates with NEC | Adjusted## expected number of neonates with NEC | Adjusted## standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 27 | 2 | 1.4 | 1.5 | 0.2 | 5.3 |
| **3** | 8 | 1 | 0.6 | 1.7 | 0.0 | 9.5 |
| **4** | 122 | 7 | 9.1 | 0.8 | 0.3 | 1.6 |
| **5** | 214 | 19 | 17.0 | 1.1 | 0.7 | 1.7 |
| **6** | 34 | 1 | 2.5 | 0.4 | 0.0 | 2.2 |
| **7** | 37 | 1 | 2.5 | 0.4 | 0.0 | 2.2 |
| **8** | 122 | 2 | 8.8 | 0.2 | 0.0 | 0.8 |
| **9** | 71 | 7 | 5.7 | 1.2 | 0.5 | 2.5 |
| **10** | 13 | 4 | 1.1 | 3.6 | 1.0 | 9.2 |
| **11** | 23 | 0 | 1.8 | 0.0 | . | 2.1 |
| **12** | 115 | 10 | 9.7 | 1.0 | 0.5 | 1.9 |
| **13** | 9 | 0 | 0.5 | 0.0 | . | 7.4 |
| **14** | 191 | 16 | 15.1 | 1.1 | 0.6 | 1.7 |
| **15** | 58 | 2 | 4.3 | 0.5 | 0.1 | 1.7 |
| **16** | 12 | 2 | 0.6 | 3.1 | 0.3 | 11.1 |
| **17** | 32 | 0 | 2.4 | 0.0 | . | 1.5 |
| **18** | 55 | 5 | 4.0 | 1.3 | 0.4 | 2.9 |
| **19** | 55 | 4 | 3.8 | 1.1 | 0.3 | 2.7 |
| **21** | 16 | 0 | 1.0 | 0.0 | . | 3.5 |
| **22** | 81 | 12 | 6.4 | 1.9 | 1.0 | 3.3 |
| **24** | 41 | 2 | 2.9 | 0.7 | 0.1 | 2.4 |
| **25** | 18 | 2 | 1.3 | 1.5 | 0.2 | 5.4 |
| **26** | 43 | 3 | 2.9 | 1.0 | 0.2 | 3.0 |
| **27** | 6 | 1 | 0.4 | 2.8 | 0.0 | 15.8 |
| **28** | 29 | 0 | 1.9 | 0.0 | . | 2.0 |
| **29** | 43 | 3 | 3.3 | 0.9 | 0.2 | 2.6 |
| **30** | 9 | 0 | 0.7 | 0.0 | . | 5.6 |
| **31** | 79 | 16 | 5.8 | 2.7 | 1.6 | 4.4 |
| **32** | 66 | 2 | 4.9 | 0.4 | 0.0 | 1.5 |
| **33** | 21 | 0 | 1.3 | 0.0 | . | 2.8 |

**Numeric site codes were used in Presentations 46a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies are excluded.**
## The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.

**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentation #46d**
**NEC: GA<29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 46c**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed NEC/expected NEC
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 46d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #47**
**Chronic lung disease (CLD): GA<33 weeks: Site specific crude rates**

| | GA at birth | | | | | | | | | | Overall rate of CLD | Overall rate of Mod-Sev CLD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <25 | | 25-26 | | 27-28 | | 29-30 | | 31-32 | | | |
| | Any CLD | Mod-Sev CLD | Any CLD | Mod-Sev CLD | Any CLD | Mod-Sev CLD | Any CLD | Mod-Sev CLD | Any CLD | Mod-Sev CLD | | |
| **A** | 100.0 | 100.0 | 71.4 | 57.1 | 37.5 | 37.5 | 11.9 | 9.5 | 10.5 | 7.0 | 25.8 | 22.5 |
| **B** | 100.0 | 40.0 | 76.9 | 53.9 | 68.4 | 42.1 | 36.0 | 20.0 | 11.3 | 3.8 | 37.4 | 20.9 |
| **C** | 100.0 | 100.0 | 76.9 | 69.2 | 35.3 | 35.3 | 11.6 | 11.6 | 11.4 | 10.0 | 23.0 | 21.6 |
| **D** | 95.2 | 90.0 | 63.2 | 44.4 | 58.6 | 41.4 | 25.0 | 12.5 | 10.0 | 4.0 | 40.3 | 28.7 |
| **E** | 50.0 | 0.0 | 75.0 | 25.0 | 35.7 | 7.1 | 13.3 | 13.3 | 0.0 | 0.0 | 22.1 | 9.3 |
| **F** | 100.0 | 100.0 | 40.0 | 20.0 | 0.0 | 0.0 | 18.8 | 12.5 | 14.3 | 9.5 | 22.9 | 16.7 |
| **G** | 83.3 | 83.3 | 69.2 | 69.2 | 33.3 | 33.3 | 17.4 | 17.4 | 0.0 | 0.0 | 27.4 | 27.4 |
| **H** | NA | NA | NA | NA | NA | NA | 100.0 | 100.0 | 33.3 | 33.3 | 50.0 | 50.0 |
| **I** | 92.1 | 92.1 | 60.7 | 50.9 | 25.3 | 18.4 | 50.7 | 49.3 | 20.4 | 18.6 | 41.8 | 37.8 |
| **J** | 100.0 | 100.0 | 66.7 | 66.7 | 37.0 | 37.0 | 12.9 | 12.9 | 4.0 | 4.0 | 26.5 | 26.5 |
| **K** | NA | NA | 100.0 | 100.0 | 60.0 | 40.0 | 20.0 | 20.0 | 0.0 | 0.0 | 24.0 | 20.0 |
| **L** | 100.0 | 100.0 | 92.3 | 92.3 | 65.0 | 61.7 | 34.1 | 28.4 | 16.2 | 16.2 | 43.9 | 41.7 |
| **M** | 80.0 | 60.0 | 90.0 | 70.0 | 61.5 | 50.0 | 31.6 | 21.1 | 9.6 | 5.8 | 32.3 | 23.5 |
| **N** | 56.3 | 31.3 | 32.7 | 30.8 | 46.5 | 40.0 | 25.3 | 22.9 | 5.9 | 4.5 | 33.0 | 26.6 |
| **O** | 100.0 | 50.0 | 90.0 | 70.0 | 25.0 | 25.0 | 26.1 | 17.4 | 2.7 | 2.7 | 25.0 | 18.8 |
| **P** | 100.0 | 100.0 | 50.0 | 50.0 | 50.0 | 42.9 | 25.0 | 10.0 | 10.0 | 0.0 | 27.7 | 19.1 |
| **Q** | 100.0 | 100.0 | 81.8 | 81.8 | 45.8 | 45.8 | 32.3 | 32.3 | 24.3 | 23.2 | 38.2 | 37.8 |
| **R** | 100.0 | 100.0 | 62.5 | 62.5 | 66.7 | 66.7 | 20.0 | 20.0 | 9.8 | 7.3 | 26.3 | 25.0 |
| **S** | NA | NA | NA | NA | NA | NA | 0.0 | 0.0 | 33.3 | 0.0 | 20.0 | 0.0 |
| **T** | 100.0 | 83.3 | 80.0 | 40.0 | 40.0 | 25.7 | 17.3 | 15.4 | 7.5 | 4.5 | 27.3 | 19.3 |
| **U** | 83.3 | 76.5 | 65.0 | 60.0 | 24.0 | 24.0 | 17.1 | 17.1 | 8.5 | 8.5 | 28.7 | 26.9 |
| **V** | NA | NA | 83.3 | 66.7 | 80.0 | 80.0 | 70.6 | 70.6 | 27.0 | 25.0 | 47.7 | 45.3 |
| **W** | NA | NA | 40.0 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 11.1 |
| **X** | NA | NA | 100.0 | 20.0 | 58.3 | 33.3 | 21.7 | 8.7 | 28.9 | 13.3 | 35.3 | 15.3 |
| **Y** | 94.7 | 89.5 | 59.1 | 54.6 | 52.0 | 51.0 | 22.2 | 22.2 | 14.5 | 14.5 | 32.0 | 31.1 |
| **Z** | NA | NA | 100.0 | 80.0 | 65.0 | 65.0 | 18.4 | 15.8 | 17.8 | 15.9 | 30.6 | 28.0 |
| **AA** | 90.0 | 60.0 | 79.0 | 57.9 | 54.3 | 42.9 | 24.1 | 13.8 | 12.4 | 11.1 | 34.5 | 25.9 |
| **AB** | NA | NA | 50.0 | 50.0 | 50.0 | 0.0 | 8.3 | 8.3 | 18.2 | 9.1 | 20.7 | 10.3 |
| **AC** | NA | NA | NA | NA | 0.0 | 0.0 | 16.7 | 0.0 | 12.5 | 12.5 | 13.3 | 6.7 |
| **AD** | 100.0 | 100.0 | 100.0 | 80.0 | 86.7 | 50.0 | 72.5 | 27.5 | 80.0 | 7.3 | 81.6 | 31.2 |
| **AE** | NA | NA | NA | NA | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 |
| **AF** | 88.9 | 88.9 | 68.2 | 65.9 | 48.2 | 44.4 | 36.8 | 36.8 | 14.2 | 13.3 | 37.5 | 36.2 |
| **AG** | 100.0 | 100.0 | 69.2 | 69.2 | 23.8 | 23.8 | 16.7 | 16.7 | 4.0 | 4.0 | 20.5 | 20.5 |
| **Overall** | 86.6 | 76.5 | 68.0 | 58.0 | 46.6 | 38.7 | 27.5 | 22.6 | 15.0 | 10.4 | 34.5 | 28.2 |

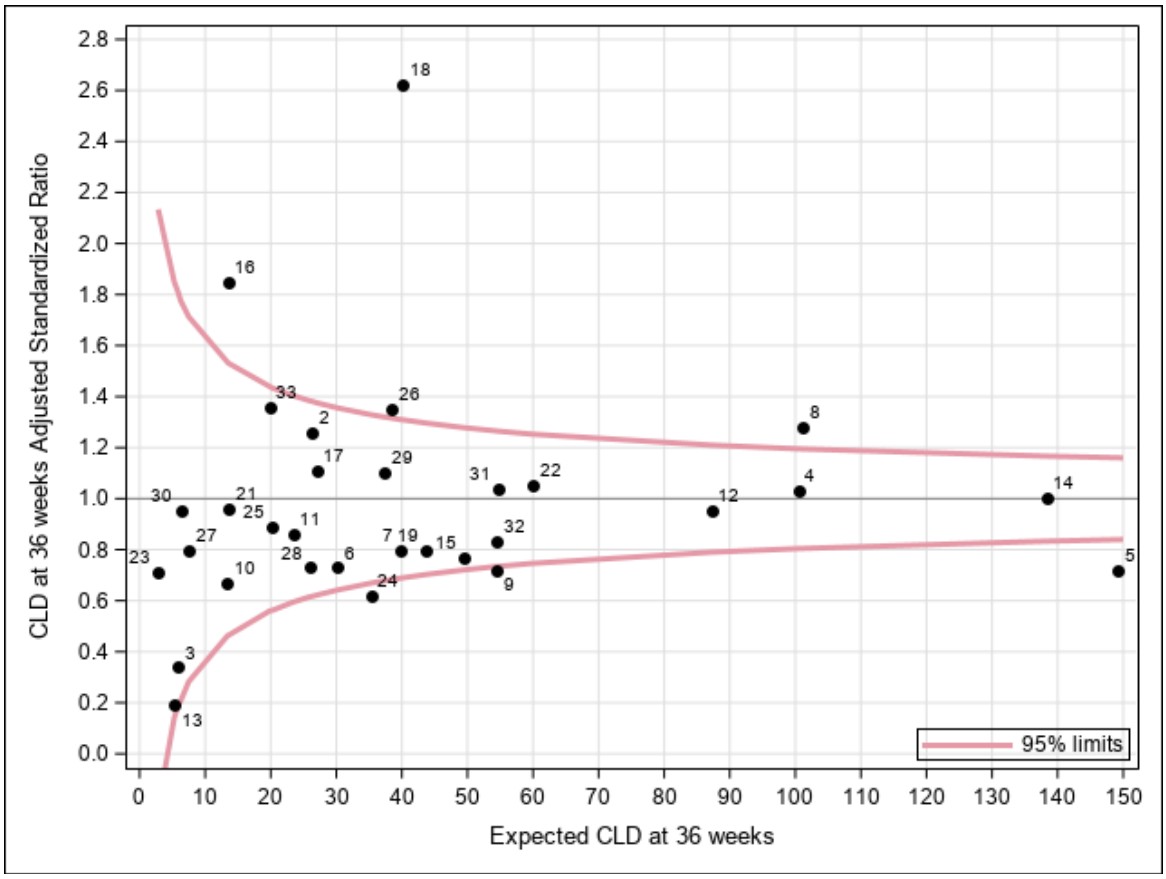
Total number of neonates = 4 118
287 neonates were excluded due to death prior to week 36 or first admission after week 36
NA = Data not available

**Presentation #48a**
**Chronic lung disease (CLD): GA <33 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with CLD at 36w or discharge | Adjusted# expected number of CLD at 36w or discharge | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 110 | 106 | 33 | 26.2 | 1.3 | 0.9 | 1.8 |
| **3** | 19 | 17 | 2 | 5.9 | 0.3 | 0.0 | 1.2 |
| **4** | 301 | 290 | 103 | 100.5 | 1.0 | 0.8 | 1.2 |
| **5** | 365 | 343 | 108 | 149.3 | 0.7 | 0.6 | 0.9 |
| **6** | 83 | 82 | 22 | 30.2 | 0.7 | 0.5 | 1.1 |
| **7** | 147 | 144 | 32 | 39.8 | 0.8 | 0.6 | 1.1 |
| **8** | 318 | 304 | 130 | 101.2 | 1.3 | 1.1 | 1.5 |
| **9** | 161 | 148 | 39 | 54.3 | 0.7 | 0.5 | 1.0 |
| **10** | 50 | 45 | 9 | 13.4 | 0.7 | 0.3 | 1.3 |
| **11** | 85 | 79 | 20 | 23.4 | 0.9 | 0.5 | 1.3 |
| **12** | 298 | 267 | 83 | 87.2 | 1.0 | 0.8 | 1.2 |
| **13** | 25 | 21 | 1 | 5.3 | 0.2 | 0.0 | 1.1 |
| **14** | 362 | 341 | 138 | 138.3 | 1.0 | 0.8 | 1.2 |
| **15** | 158 | 150 | 38 | 49.5 | 0.8 | 0.5 | 1.1 |
| **16** | 65 | 58 | 25 | 13.5 | 1.9 | 1.2 | 2.7 |
| **17** | 102 | 96 | 30 | 27.0 | 1.1 | 0.8 | 1.6 |
| **18** | 142 | 129 | 105 | 40.0 | 2.6 | 2.1 | 3.2 |
| **19** | 134 | 129 | 35 | 43.7 | 0.8 | 0.6 | 1.1 |
| **21** | 47 | 46 | 13 | 13.6 | 1.0 | 0.5 | 1.6 |
| **22** | 172 | 155 | 63 | 59.8 | 1.1 | 0.8 | 1.3 |
| **23** | 18 | 15 | 2 | 2.8 | 0.7 | 0.1 | 2.6 |
| **24** | 120 | 115 | 22 | 35.3 | 0.6 | 0.4 | 0.9 |
| **25** | 76 | 75 | 18 | 20.3 | 0.9 | 0.5 | 1.4 |
| **26** | 143 | 139 | 52 | 38.6 | 1.3 | 1.0 | 1.8 |
| **27** | 30 | 29 | 6 | 7.5 | 0.8 | 0.3 | 1.7 |
| **28** | 84 | 81 | 19 | 25.9 | 0.7 | 0.4 | 1.1 |
| **29** | 120 | 113 | 41 | 37.2 | 1.1 | 0.8 | 1.5 |
| **30** | 28 | 24 | 6 | 6.3 | 1.0 | 0.3 | 2.1 |
| **31** | 188 | 166 | 57 | 54.7 | 1.0 | 0.8 | 1.4 |
| **32** | 182 | 170 | 45 | 54.5 | 0.8 | 0.6 | 1.1 |
| **33** | 87 | 81 | 27 | 19.8 | 1.4 | 0.9 | 2.0 |

**Numeric site codes were used in Presentations 48a-d and they may not correspond to other presentations in this report. Neonates with major congenital anomalies and death before 36 weeks were excluded.** # The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Site 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #48b**
**Chronic lung disease (CLD): GA <33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 48a**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<33 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed CLD/expected CLD
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 48b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Note:** Deaths before 36 weeks were excluded in the denominator.

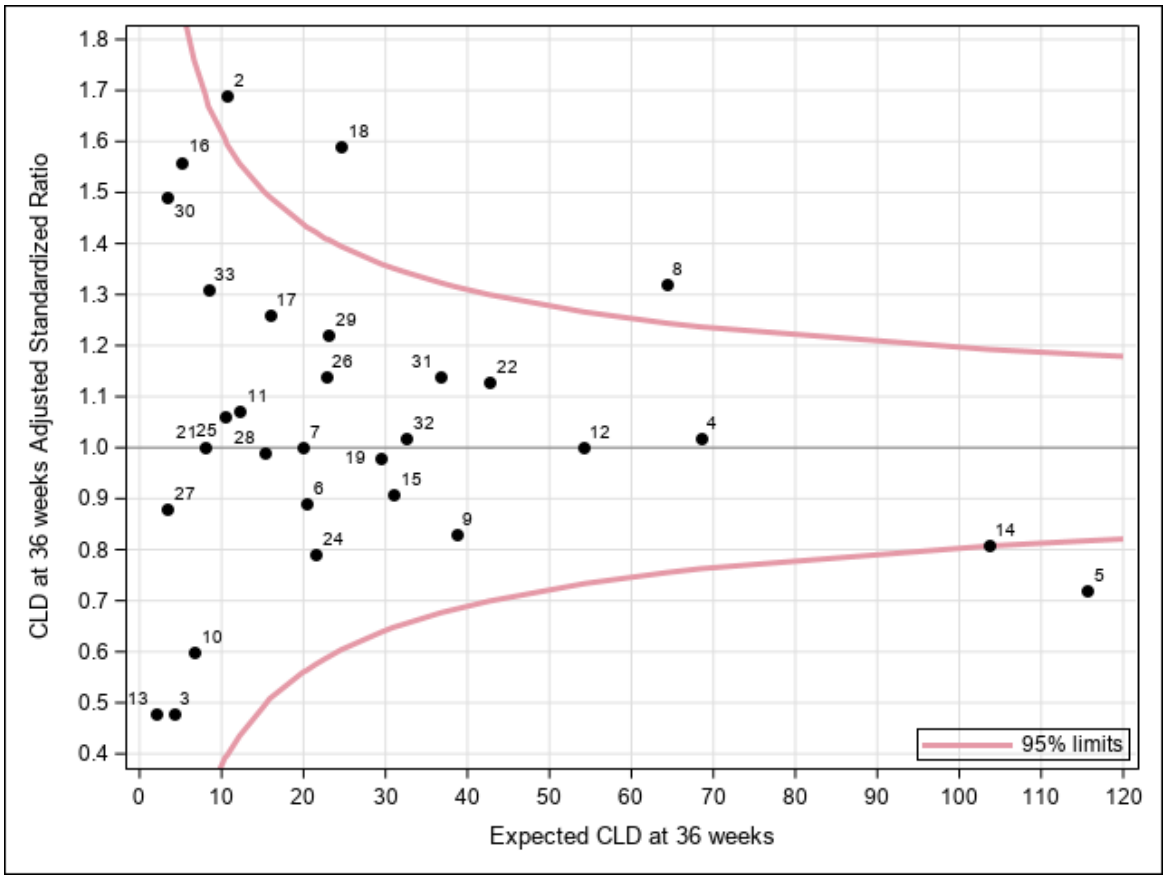
**Presentation #48c**
**Chronic lung disease (CLD): GA <29 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with CLD at 36w or discharge | Adjusted# expected number of neonates with CLD at 36w or discharge | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 27 | 24 | 18 | 10.6 | 1.7 | 1.0 | 2.7 |
| **3** | 8 | 7 | 2 | 4.2 | 0.5 | 0.1 | 1.7 |
| **4** | 122 | 114 | 70 | 68.5 | 1.0 | 0.8 | 1.3 |
| **5** | 214 | 192 | 83 | 115.6 | 0.7 | 0.6 | 0.9 |
| **6** | 34 | 33 | 18 | 20.3 | 0.9 | 0.5 | 1.4 |
| **7** | 37 | 34 | 20 | 19.9 | 1.0 | 0.6 | 1.5 |
| **8** | 122 | 109 | 85 | 64.4 | 1.3 | 1.1 | 1.6 |
| **9** | 71 | 61 | 32 | 38.6 | 0.8 | 0.6 | 1.2 |
| **10** | 13 | 10 | 4 | 6.6 | 0.6 | 0.2 | 1.5 |
| **11** | 23 | 20 | 13 | 12.2 | 1.1 | 0.6 | 1.8 |
| **12** | 115 | 88 | 54 | 54.3 | 1.0 | 0.7 | 1.3 |
| **13** | 9 | 5 | 1 | 2.1 | 0.5 | 0.0 | 2.6 |
| **14** | 191 | 171 | 84 | 103.6 | 0.8 | 0.6 | 1.0 |
| **15** | 58 | 52 | 28 | 30.9 | 0.9 | 0.6 | 1.3 |
| **16** | 12 | 10 | 8 | 5.1 | 1.6 | 0.7 | 3.1 |
| **17** | 32 | 27 | 20 | 15.9 | 1.3 | 0.8 | 1.9 |
| **18** | 55 | 43 | 39 | 24.6 | 1.6 | 1.1 | 2.2 |
| **19** | 55 | 51 | 29 | 29.5 | 1.0 | 0.7 | 1.4 |
| **21** | 16 | 15 | 8 | 8.0 | 1.0 | 0.4 | 2.0 |
| **22** | 81 | 68 | 48 | 42.6 | 1.1 | 0.8 | 1.5 |
| **24** | 41 | 37 | 17 | 21.4 | 0.8 | 0.5 | 1.3 |
| **25** | 18 | 17 | 11 | 10.4 | 1.1 | 0.5 | 1.9 |
| **26** | 43 | 41 | 26 | 22.7 | 1.1 | 0.7 | 1.7 |
| **27** | 6 | 6 | 3 | 3.4 | 0.9 | 0.2 | 2.6 |
| **28** | 29 | 26 | 15 | 15.2 | 1.0 | 0.6 | 1.6 |
| **29** | 43 | 37 | 28 | 23.0 | 1.2 | 0.8 | 1.8 |
| **30** | 9 | 6 | 5 | 3.4 | 1.5 | 0.5 | 3.5 |
| **31** | 79 | 63 | 42 | 36.8 | 1.1 | 0.8 | 1.5 |
| **32** | 66 | 55 | 33 | 32.4 | 1.0 | 0.7 | 1.4 |
| **33** | 21 | 16 | 11 | 8.4 | 1.3 | 0.7 | 2.3 |

**Numeric site codes were used in Presentations 48a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies and death before 36 weeks were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.

**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentation #48d**
**Chronic lung disease (CLD): GA <29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 48c**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<29 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed CLD/expected CLD
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 48d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

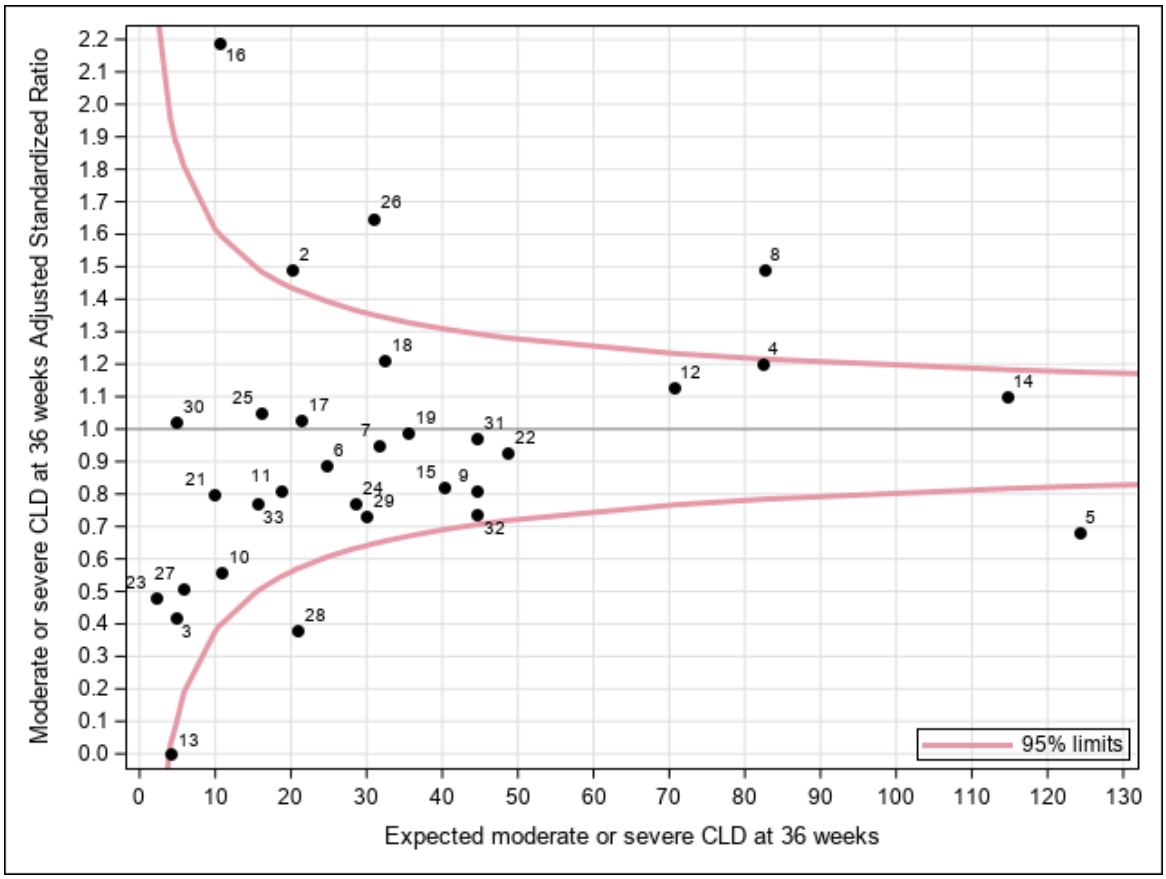
**Note:** Deaths before 36 weeks were excluded in the denominator.

**Presentation #49a**
**Moderate or severe chronic lung disease (CLD): GA <33 weeks:**
**Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with m/s CLD at 36w or discharge | Adjusted# expected number of m/s CLD at 36w or discharge | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 110 | 105 | 30 | 20.2 | 1.5 | 1.0 | 2.1 |
| **3** | 19 | 17 | 2 | 4.8 | 0.4 | 0.0 | 1.5 |
| **4** | 301 | 290 | 99 | 82.3 | 1.2 | 1.0 | 1.5 |
| **5** | 365 | 341 | 85 | 124.2 | 0.7 | 0.5 | 0.8 |
| **6** | 83 | 82 | 22 | 24.8 | 0.9 | 0.6 | 1.3 |
| **7** | 147 | 144 | 30 | 31.7 | 0.9 | 0.6 | 1.4 |
| **8** | 318 | 304 | 123 | 82.7 | 1.5 | 1.2 | 1.8 |
| **9** | 161 | 147 | 36 | 44.5 | 0.8 | 0.6 | 1.1 |
| **10** | 50 | 45 | 6 | 10.8 | 0.6 | 0.2 | 1.2 |
| **11** | 85 | 79 | 15 | 18.6 | 0.8 | 0.5 | 1.3 |
| **12** | 298 | 266 | 80 | 70.7 | 1.1 | 0.9 | 1.4 |
| **13** | 25 | 21 | 0 | 4.1 | 0.0 | . | 0.9 |
| **14** | 362 | 340 | 126 | 114.7 | 1.1 | 0.9 | 1.3 |
| **15** | 158 | 150 | 33 | 40.3 | 0.8 | 0.6 | 1.1 |
| **16** | 65 | 57 | 23 | 10.5 | 2.2 | 1.4 | 3.3 |
| **17** | 102 | 95 | 22 | 21.3 | 1.0 | 0.6 | 1.6 |
| **18** | 142 | 129 | 39 | 32.3 | 1.2 | 0.9 | 1.7 |
| **19** | 134 | 129 | 35 | 35.4 | 1.0 | 0.7 | 1.4 |
| **21** | 47 | 41 | 8 | 9.9 | 0.8 | 0.3 | 1.6 |
| **22** | 172 | 153 | 45 | 48.5 | 0.9 | 0.7 | 1.2 |
| **23** | 18 | 15 | 1 | 2.1 | 0.5 | 0.0 | 2.7 |
| **24** | 120 | 115 | 22 | 28.5 | 0.8 | 0.5 | 1.2 |
| **25** | 76 | 75 | 17 | 16.2 | 1.1 | 0.6 | 1.7 |
| **26** | 143 | 138 | 51 | 31.0 | 1.6 | 1.2 | 2.2 |
| **27** | 30 | 29 | 3 | 5.9 | 0.5 | 0.1 | 1.5 |
| **28** | 84 | 81 | 8 | 20.9 | 0.4 | 0.2 | 0.8 |
| **29** | 120 | 113 | 22 | 30.1 | 0.7 | 0.5 | 1.1 |
| **30** | 28 | 24 | 5 | 4.9 | 1.0 | 0.3 | 2.4 |
| **31** | 188 | 166 | 43 | 44.5 | 1.0 | 0.7 | 1.3 |
| **32** | 182 | 170 | 33 | 44.5 | 0.7 | 0.5 | 1.0 |
| **33** | 87 | 81 | 12 | 15.5 | 0.8 | 0.4 | 1.4 |

**Numeric site codes were used in Presentations 49a-d and they may not correspond to other presentations in this report. Neonates with major congenital anomalies and death before 36 weeks were excluded.** # The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Site 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #49b**
**Moderate or severe chronic lung disease (CLD): GA <33 weeks:**
**Adjusted standardized ratios by site**




**Explanation for Presentation 49a**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<33 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed CLD/expected CLD
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 49b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Note:** Deaths before 36 weeks were excluded in the denominator.

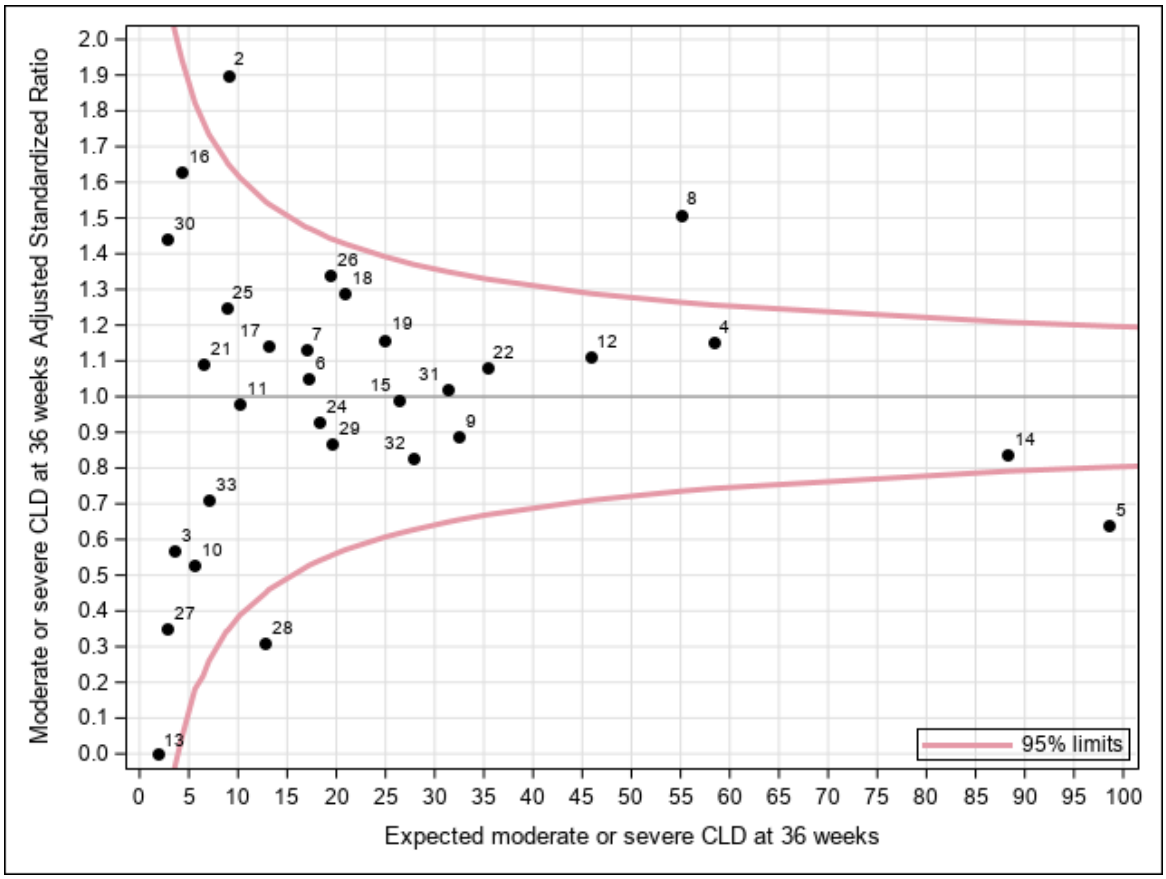
**Presentation #49c**
**Moderate or severe chronic lung disease (CLD): GA <29 weeks:**
**Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with m/s CLD at 36w or discharge | Adjusted# expected number of neonates with m/s CLD at 36w or discharge | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 27 | 24 | 17 | 9.0 | 1.9 | 1.1 | 3.0 |
| **3** | 8 | 7 | 2 | 3.5 | 0.6 | 0.1 | 2.1 |
| **4** | 122 | 114 | 67 | 58.4 | 1.1 | 0.9 | 1.5 |
| **5** | 214 | 191 | 63 | 98.5 | 0.6 | 0.5 | 0.8 |
| **6** | 34 | 33 | 18 | 17.2 | 1.0 | 0.6 | 1.7 |
| **7** | 37 | 34 | 19 | 16.9 | 1.1 | 0.7 | 1.8 |
| **8** | 122 | 109 | 83 | 55.1 | 1.5 | 1.2 | 1.9 |
| **9** | 71 | 60 | 29 | 32.4 | 0.9 | 0.6 | 1.3 |
| **10** | 13 | 10 | 3 | 5.6 | 0.5 | 0.1 | 1.6 |
| **11** | 23 | 20 | 10 | 10.2 | 1.0 | 0.5 | 1.8 |
| **12** | 115 | 87 | 51 | 45.8 | 1.1 | 0.8 | 1.5 |
| **13** | 9 | 5 | 0 | 1.8 | 0.0 | . | 2.1 |
| **14** | 191 | 170 | 74 | 88.2 | 0.8 | 0.7 | 1.1 |
| **15** | 58 | 52 | 26 | 26.4 | 1.0 | 0.6 | 1.4 |
| **16** | 12 | 10 | 7 | 4.3 | 1.6 | 0.7 | 3.4 |
| **17** | 32 | 26 | 15 | 13.2 | 1.1 | 0.6 | 1.9 |
| **18** | 55 | 43 | 27 | 20.9 | 1.3 | 0.9 | 1.9 |
| **19** | 55 | 51 | 29 | 25.0 | 1.2 | 0.8 | 1.7 |
| **21** | 16 | 14 | 7 | 6.4 | 1.1 | 0.4 | 2.2 |
| **22** | 81 | 66 | 38 | 35.3 | 1.1 | 0.8 | 1.5 |
| **24** | 41 | 37 | 17 | 18.2 | 0.9 | 0.5 | 1.5 |
| **25** | 18 | 17 | 11 | 8.8 | 1.2 | 0.6 | 2.2 |
| **26** | 43 | 41 | 26 | 19.4 | 1.3 | 0.9 | 2.0 |
| **27** | 6 | 6 | 1 | 2.8 | 0.4 | 0.0 | 2.0 |
| **28** | 29 | 26 | 4 | 12.8 | 0.3 | 0.1 | 0.8 |
| **29** | 43 | 37 | 17 | 19.5 | 0.9 | 0.5 | 1.4 |
| **30** | 9 | 6 | 4 | 2.8 | 1.4 | 0.4 | 3.7 |
| **31** | 79 | 63 | 32 | 31.3 | 1.0 | 0.7 | 1.4 |
| **32** | 66 | 55 | 23 | 27.8 | 0.8 | 0.5 | 1.2 |
| **33** | 21 | 16 | 5 | 7.0 | 0.7 | 0.2 | 1.7 |

**Numeric site codes were used in Presentations 49a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies and death before 36 weeks were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.

**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentation #49d**
**Moderate or severe chronic lung disease (CLD): GA <29 weeks:**
**Adjusted standardized ratios by site**

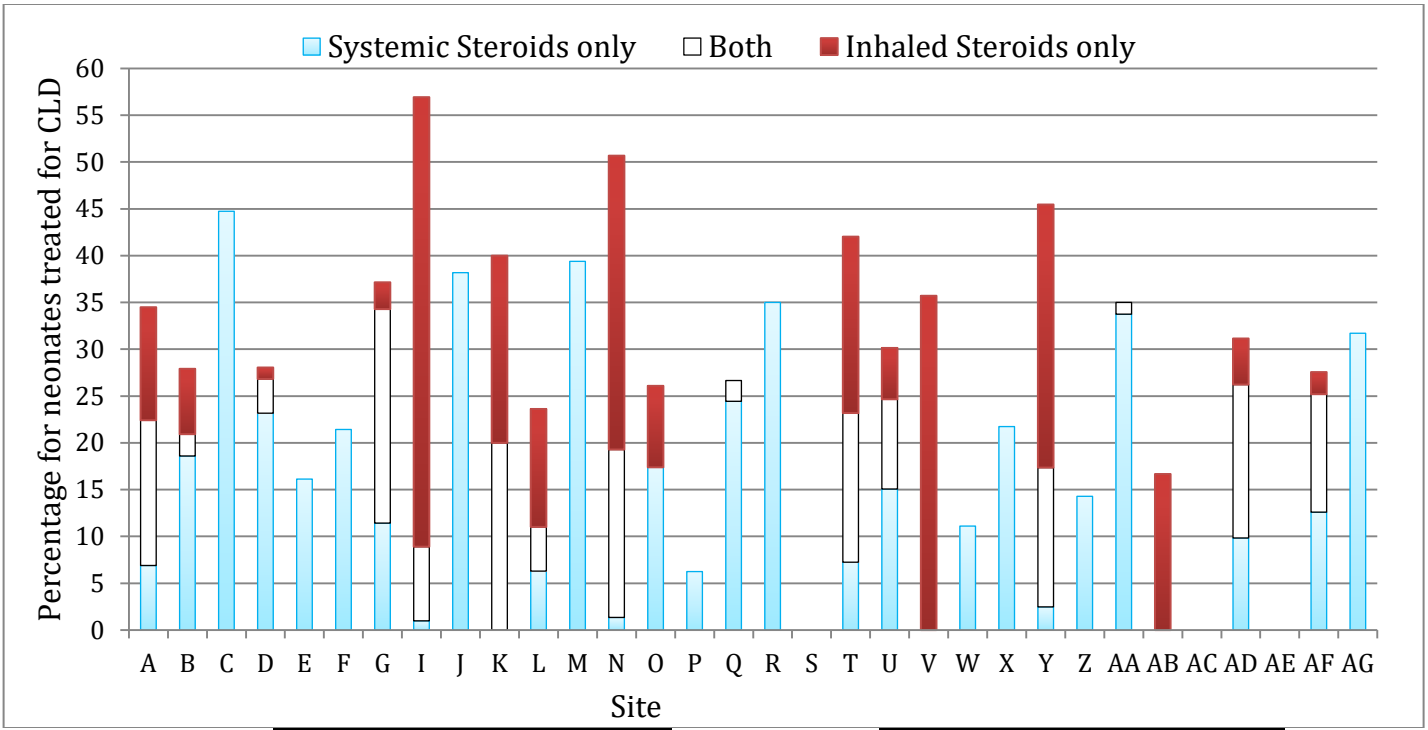



**Explanation for Presentation 49c**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<29 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed CLD/expected CLD
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 49d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Note:** Deaths before 36 weeks were excluded in the denominator.

**Presentation #50a**
**Postnatal use of steroids for treatment of CLD: GA<29 weeks: Site specific crude rates†**

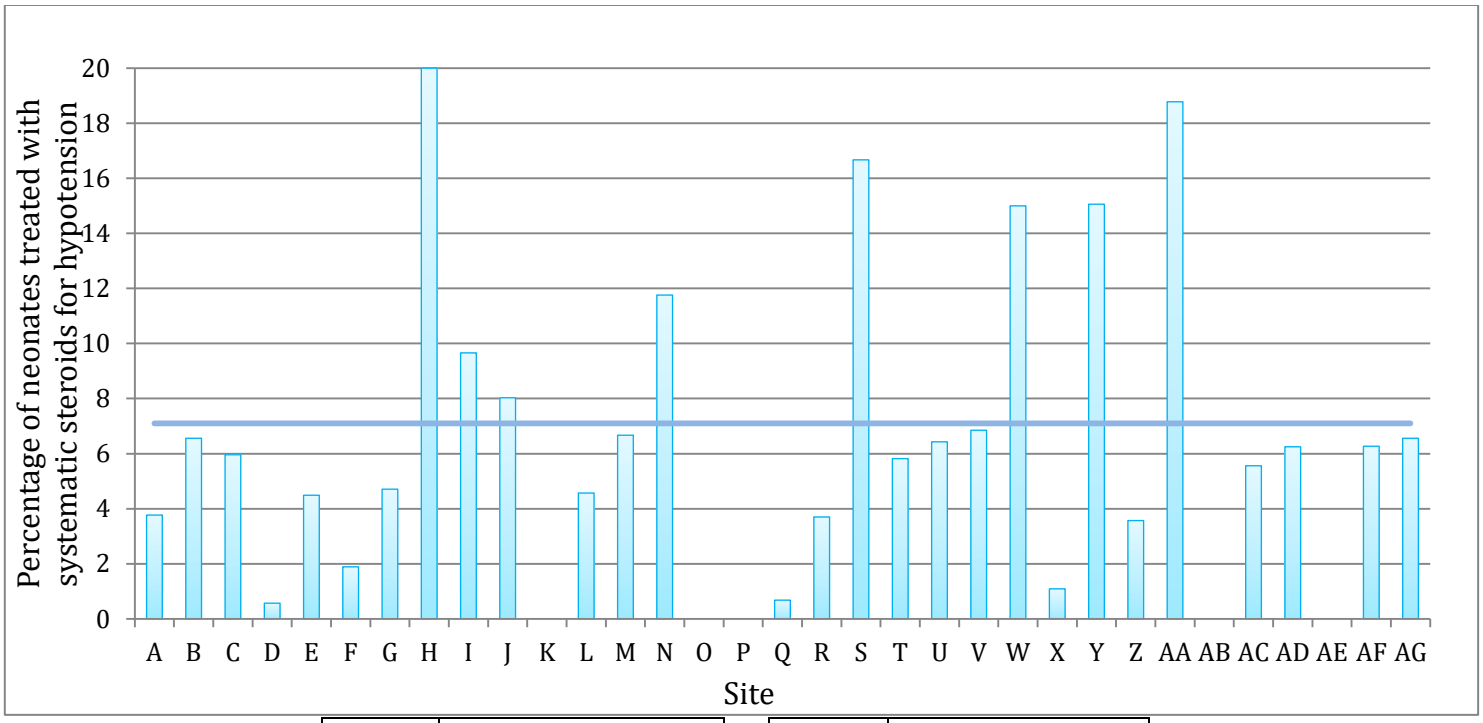



| Site | Postnatal steroid use (%) | | |
|---|---|---|---|
| | Systemic Steroids only | Both | Inhaled Steroids only |
| **A** | 6.9 | 15.5 | 12.1 |
| **B** | 18.6 | 2.3 | 7.0 |
| **C** | 44.7 | 0.0 | 0.0 |
| **D** | 23.2 | 3.7 | 1.2 |
| **E** | 16.1 | 0.0 | 0.0 |
| **F** | 21.4 | 0.0 | 0.0 |
| **G** | 11.4 | 22.9 | 2.9 |
| **I** | 1.0 | 7.9 | 48.0 |
| **J** | 38.2 | 0.0 | 0.0 |
| **K** | 0.0 | 20.0 | 20.0 |
| **L** | 6.3 | 4.7 | 12.6 |
| **M** | 39.4 | 0.0 | 0.0 |
| **N** | 1.4 | 17.9 | 31.4 |
| **O** | 17.4 | 0.0 | 8.7 |
| **P** | 6.3 | 0.0 | 0.0 |
| **Q** | 24.4 | 2.2 | 0.0 |
| **R** | 35.0 | 0.0 | 0.0 |

| Site | Postnatal steroid use (%) | | |
|---|---|---|---|
| | Systemic Steroids only | Both | Inhaled Steroids only |
| **S** | 0.0 | 0.0 | 0.0 |
| **T** | 7.3 | 15.9 | 18.8 |
| **U** | 15.1 | 9.6 | 5.5 |
| **V** | 0.0 | 0.0 | 35.7 |
| **W** | 11.1 | 0.0 | 0.0 |
| **X** | 21.7 | 0.0 | 0.0 |
| **Y** | 2.5 | 14.9 | 28.1 |
| **Z** | 14.3 | 0.0 | 0.0 |
| **AA** | 33.8 | 1.3 | 0.0 |
| **AB** | 0.0 | 0.0 | 16.7 |
| **AC** | 0.0 | 0.0 | 0.0 |
| **AD** | 9.8 | 16.4 | 4.9 |
| **AE** | 0.0 | 0.0 | 0.0 |
| **AF** | 12.6 | 12.6 | 2.4 |
| **AG** | 31.7 | 0.0 | 0.0 |
| | | | |
| **Total** | 12.8 | 8.7 | 15.2 |

Total number of neonates = 1 720
† Percentage of neonates treated for CLD at each network site; results were attributed to the site of first admission; Site H did not have any neonates with GA<29.
**COMMENTS:** Specific criteria for these treatments at each site were not documented here.

**Presentation #50b**
**Systemic steroids for hypotension: GA<33 weeks: Site specific crude rates†**




| Site | Postnatal systemic steroids use for hypotension (%) |
|---|---|
| **A** | 3.8 |
| **B** | 6.6 |
| **C** | 6.0 |
| **D** | 0.6 |
| **E** | 4.5 |
| **F** | 1.9 |
| **G** | 4.7 |
| **H** | 20.0 |
| **I** | 9.7 |
| **J** | 8.0 |
| **K** | 0.0 |
| **L** | 4.6 |
| **M** | 6.7 |
| **N** | 11.8 |
| **O** | 0.0 |
| **P** | 0.0 |
| **Q** | 0.7 |

| Site | Postnatal systemic steroids use for hypotension (%) |
|---|---|
| **R** | 3.7 |
| **S** | 16.7 |
| **T** | 5.8 |
| **U** | 6.4 |
| **V** | 6.9 |
| **W** | 15.0 |
| **X** | 1.1 |
| **Y** | 15.1 |
| **Z** | 3.6 |
| **AA** | 18.8 |
| **AB** | 0.0 |
| **AC** | 5.6 |
| **AD** | 6.3 |
| **AE** | 0.0 |
| **AF** | 6.3 |
| **AG** | 6.6 |
| **Total** | 7.1 |

Total number of neonates = 4 405
† Percentage of neonates treated with systemic steroids for hypotension at each network site; results were attributed to the site of first admission.

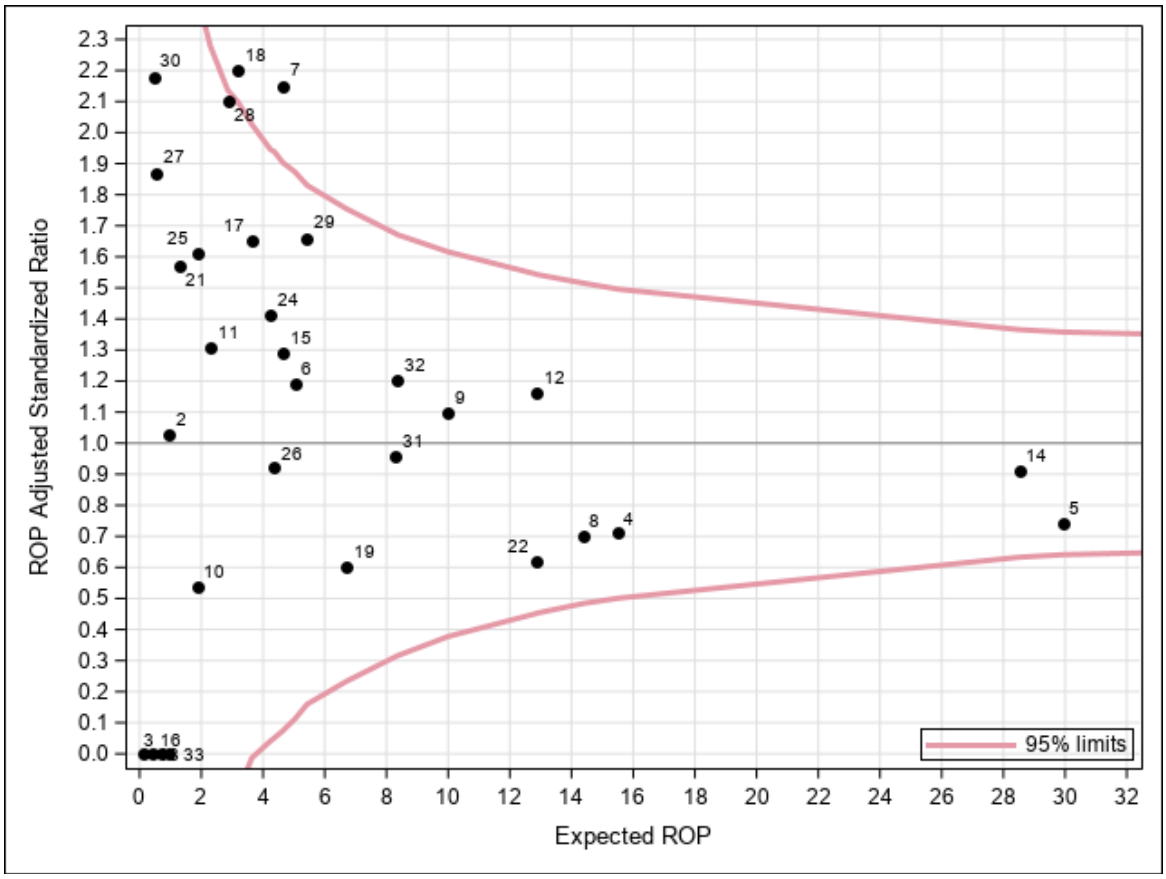
**COMMENTS:** Specific criteria for these treatments at each site were not documented here.

**Presentation #51a**
**ROP ≥ Stage 3: GA<33 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with ROP ≥ Stage 3 | Adjusted# expected number of neonates with ROP ≥ Stage 3 | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 51 | 51 | 1 | 1.0 | 1.0 | 0.0 | 5.8 |
| **3** | 14 | 14 | 0 | 0.7 | 0.0 | . | 5.0 |
| **4** | 127 | 127 | 11 | 15.5 | 0.7 | 0.4 | 1.3 |
| **5** | 156 | 156 | 22 | 29.9 | 0.7 | 0.5 | 1.1 |
| **6** | 56 | 56 | 6 | 5.0 | 1.2 | 0.4 | 2.6 |
| **7** | 88 | 88 | 10 | 4.6 | 2.2 | 1.0 | 4.0 |
| **8** | 108 | 108 | 10 | 14.4 | 0.7 | 0.3 | 1.3 |
| **9** | 47 | 47 | 11 | 10.0 | 1.1 | 0.5 | 2.0 |
| **10** | 26 | 26 | 1 | 1.9 | 0.5 | 0.0 | 3.0 |
| **11** | 37 | 37 | 3 | 2.3 | 1.3 | 0.3 | 3.8 |
| **12** | 85 | 85 | 15 | 12.9 | 1.2 | 0.7 | 1.9 |
| **13** | 12 | 12 | 0 | 0.1 | 0.0 | . | 25.3 |
| **14** | 183 | 183 | 26 | 28.5 | 0.9 | 0.6 | 1.3 |
| **15** | 47 | 47 | 6 | 4.6 | 1.3 | 0.5 | 2.8 |
| **16** | 12 | 12 | 0 | 0.4 | 0.0 | . | 8.4 |
| **17** | 47 | 47 | 6 | 3.6 | 1.6 | 0.6 | 3.6 |
| **18** | 33 | 33 | 7 | 3.2 | 2.2 | 0.9 | 4.5 |
| **19** | 68 | 68 | 4 | 6.7 | 0.6 | 0.2 | 1.5 |
| **21** | 26 | 26 | 2 | 1.3 | 1.6 | 0.2 | 5.7 |
| **22** | 73 | 73 | 8 | 12.8 | 0.6 | 0.3 | 1.2 |
| **24** | 74 | 74 | 6 | 4.2 | 1.4 | 0.5 | 3.1 |
| **25** | 20 | 20 | 3 | 1.9 | 1.6 | 0.3 | 4.7 |
| **26** | 52 | 52 | 4 | 4.4 | 0.9 | 0.2 | 2.3 |
| **27** | 18 | 18 | 1 | 0.5 | 1.9 | 0.0 | 10.4 |
| **28** | 40 | 40 | 6 | 2.9 | 2.1 | 0.8 | 4.6 |
| **29** | 71 | 71 | 9 | 5.4 | 1.7 | 0.8 | 3.1 |
| **30** | 16 | 16 | 1 | 0.5 | 2.2 | 0.0 | 12.1 |
| **31** | 83 | 83 | 8 | 8.3 | 1.0 | 0.4 | 1.9 |
| **32** | 91 | 91 | 10 | 8.3 | 1.2 | 0.6 | 2.2 |
| **33** | 46 | 46 | 0 | 1.0 | 0.0 | . | 3.8 |

**Numeric site codes were used in Presentations 51a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies are excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1, 20, 23 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #51b**
**ROP ≥ Stage 3: GA<33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 51a**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<33 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed ROP/expected ROP
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

**Explanation for Presentation 51b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

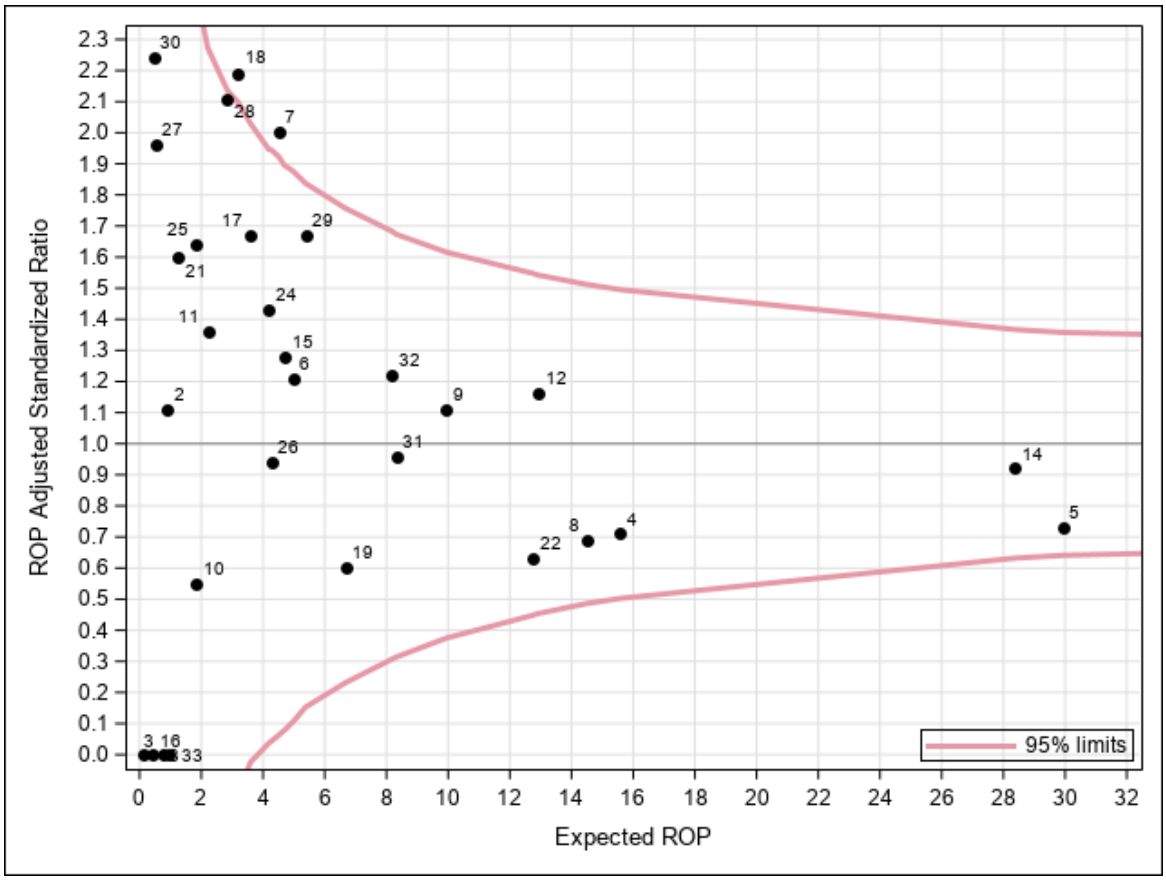
**Presentation #51c**
**ROP ≥ Stage 3: GA<29 weeks: Adjusted standardized ratios by site**

| Site | Total number of neonates | Number of neonates with available data | Number of neonates with ROP≥ Stage 3 | Adjusted# expected number of neonates with ROP≥ Stage 3 | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|---|
| **2** | 27 | 24 | 1 | 0.9 | 1.1 | 0.0 | 6.2 |
| **3** | 8 | 7 | 0 | 0.7 | 0.0 | . | 5.0 |
| **4** | 122 | 98 | 11 | 15.6 | 0.7 | 0.4 | 1.3 |
| **5** | 214 | 143 | 22 | 29.9 | 0.7 | 0.5 | 1.1 |
| **6** | 34 | 32 | 6 | 5.0 | 1.2 | 0.4 | 2.6 |
| **7** | 37 | 34 | 9 | 4.5 | 2.0 | 0.9 | 3.8 |
| **8** | 122 | 95 | 10 | 14.5 | 0.7 | 0.3 | 1.3 |
| **9** | 71 | 36 | 11 | 9.9 | 1.1 | 0.6 | 2.0 |
| **10** | 13 | 10 | 1 | 1.8 | 0.6 | 0.0 | 3.1 |
| **11** | 23 | 18 | 3 | 2.2 | 1.4 | 0.3 | 4.0 |
| **12** | 115 | 73 | 15 | 12.9 | 1.2 | 0.7 | 1.9 |
| **13** | 9 | 6 | 0 | 0.1 | 0.0 | . | 29.7 |
| **14** | 191 | 149 | 26 | 28.4 | 0.9 | 0.6 | 1.3 |
| **15** | 58 | 37 | 6 | 4.7 | 1.3 | 0.5 | 2.8 |
| **16** | 12 | 6 | 0 | 0.4 | 0.0 | . | 8.4 |
| **17** | 32 | 27 | 6 | 3.6 | 1.7 | 0.6 | 3.6 |
| **18** | 55 | 24 | 7 | 3.2 | 2.2 | 0.9 | 4.5 |
| **19** | 55 | 50 | 4 | 6.7 | 0.6 | 0.2 | 1.5 |
| **21** | 16 | 14 | 2 | 1.3 | 1.6 | 0.2 | 5.8 |
| **22** | 81 | 63 | 8 | 12.8 | 0.6 | 0.3 | 1.2 |
| **24** | 41 | 36 | 6 | 4.2 | 1.4 | 0.5 | 3.1 |
| **25** | 18 | 10 | 3 | 1.8 | 1.6 | 0.3 | 4.8 |
| **26** | 43 | 20 | 4 | 4.3 | 0.9 | 0.3 | 2.4 |
| **27** | 6 | 6 | 1 | 0.5 | 2.0 | 0.0 | 10.9 |
| **28** | 29 | 25 | 6 | 2.8 | 2.1 | 0.8 | 4.6 |
| **29** | 43 | 37 | 9 | 5.4 | 1.7 | 0.8 | 3.2 |
| **30** | 9 | 6 | 1 | 0.4 | 2.2 | 0.0 | 12.4 |
| **31** | 79 | 57 | 8 | 8.3 | 1.0 | 0.4 | 1.9 |
| **32** | 66 | 55 | 10 | 8.2 | 1.2 | 0.6 | 2.3 |
| **33** | 21 | 16 | 0 | 0.9 | 0.0 | . | 4.0 |

**Numeric site codes were used in Presentations 51a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies are excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.

**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentation #51d**
**ROP ≥ Stage 3: GA<29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 51c**
Column 1: Numeric site codes
Column 2: Total number of neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of eligible neonates at each site (<29 weeks GA and no major anomaly) who were actually used to fit the model
Column 4: Number of neonates with outcome of interest among those eligible neonates
Column 5: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 6: Adjusted standardized ratio calculated based on observed ROP/expected ROP
Columns 7 and 8: 95% CI around the adjusted standardized ratio for the outcome

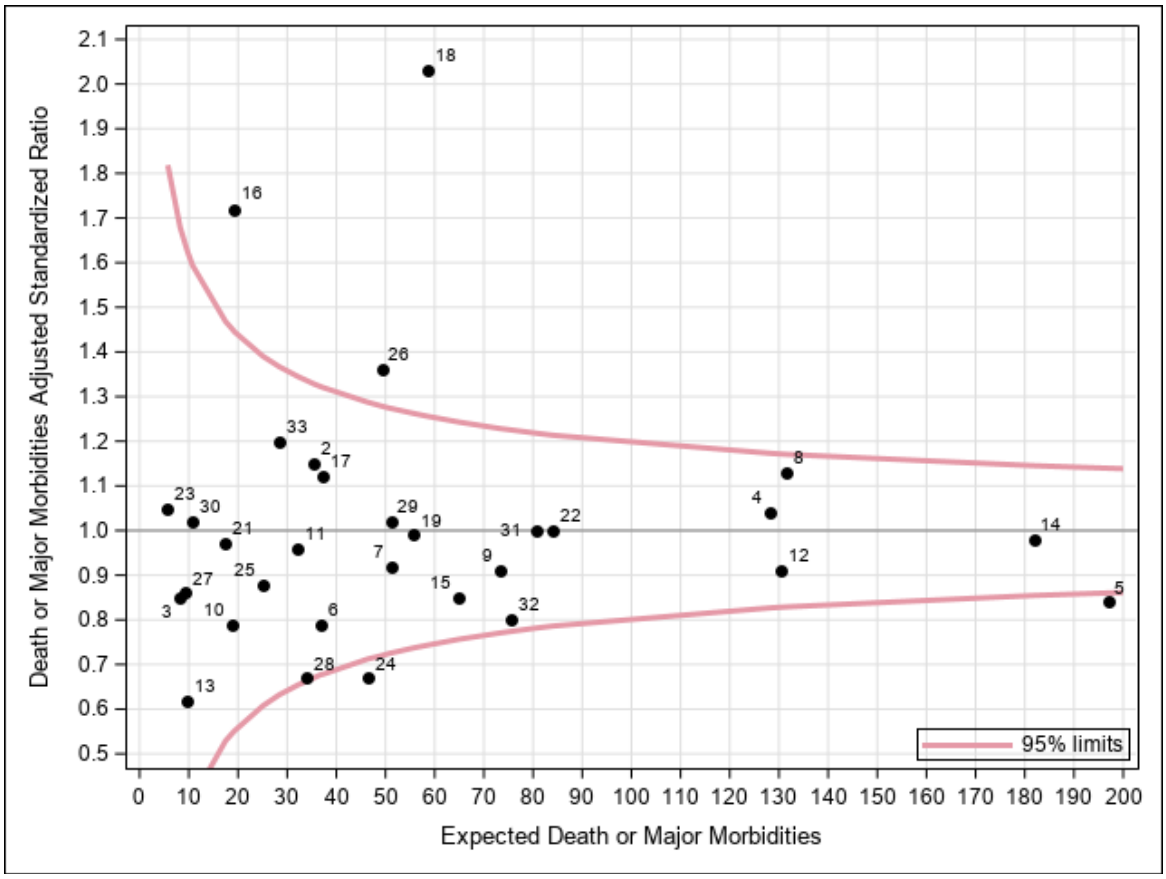
**Explanation for Presentation 51d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #52a**
**Mortality or major morbidity: GA < 33 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of neonates with mortality or major morbidities | Adjusted# expected number of neonates with mortality or major morbidities | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 110 | 41 | 35.5 | 1.2 | 0.8 | 1.6 |
| **3** | 19 | 7 | 8.2 | 0.8 | 0.3 | 1.7 |
| **4** | 301 | 133 | 128.3 | 1.0 | 0.9 | 1.2 |
| **5** | 365 | 166 | 197.0 | 0.8 | 0.7 | 1.0 |
| **6** | 83 | 29 | 36.9 | 0.8 | 0.5 | 1.1 |
| **7** | 147 | 47 | 51.1 | 0.9 | 0.7 | 1.2 |
| **8** | 318 | 149 | 131.6 | 1.1 | 1.0 | 1.3 |
| **9** | 161 | 67 | 73.3 | 0.9 | 0.7 | 1.2 |
| **10** | 50 | 15 | 19.0 | 0.8 | 0.4 | 1.3 |
| **11** | 85 | 31 | 32.2 | 1.0 | 0.7 | 1.4 |
| **12** | 298 | 119 | 130.5 | 0.9 | 0.8 | 1.1 |
| **13** | 25 | 6 | 9.7 | 0.6 | 0.2 | 1.3 |
| **14** | 362 | 179 | 181.9 | 1.0 | 0.8 | 1.1 |
| **15** | 158 | 55 | 65.0 | 0.8 | 0.6 | 1.1 |
| **16** | 65 | 33 | 19.2 | 1.7 | 1.2 | 2.4 |
| **17** | 102 | 42 | 37.4 | 1.1 | 0.8 | 1.5 |
| **18** | 142 | 119 | 58.5 | 2.0 | 1.7 | 2.4 |
| **19** | 134 | 55 | 55.8 | 1.0 | 0.7 | 1.3 |
| **21** | 47 | 17 | 17.5 | 1.0 | 0.6 | 1.6 |
| **22** | 172 | 84 | 84.0 | 1.0 | 0.8 | 1.2 |
| **23** | 18 | 6 | 5.7 | 1.0 | 0.4 | 2.3 |
| **24** | 120 | 31 | 46.4 | 0.7 | 0.5 | 0.9 |
| **25** | 76 | 22 | 25.0 | 0.9 | 0.6 | 1.3 |
| **26** | 143 | 67 | 49.2 | 1.4 | 1.1 | 1.7 |
| **27** | 30 | 8 | 9.3 | 0.9 | 0.4 | 1.7 |
| **28** | 84 | 23 | 34.1 | 0.7 | 0.4 | 1.0 |
| **29** | 120 | 52 | 51.0 | 1.0 | 0.8 | 1.3 |
| **30** | 28 | 11 | 10.8 | 1.0 | 0.5 | 1.8 |
| **31** | 188 | 81 | 80.7 | 1.0 | 0.8 | 1.2 |
| **32** | 182 | 60 | 75.4 | 0.8 | 0.6 | 1.0 |
| **33** | 87 | 34 | 28.4 | 1.2 | 0.8 | 1.7 |

Major morbidity = IVH 3 or 4 or PVL or BPD or ROP >stage 2 or NEC or nosocomial sepsis
**Numeric site codes were used in Presentations 52a-d and they may not correspond to other presentations in this report. Neonates with major congenital anomalies were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1 and 20 were not included in this analysis due to small number of eligible neonates in this category.

**Presentation #52b**
**Mortality or major morbidity: GA < 33 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 52a**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<33 weeks GA and no major anomaly)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, small for gestational age, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed death or morbidities/expected deaths or morbidities
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

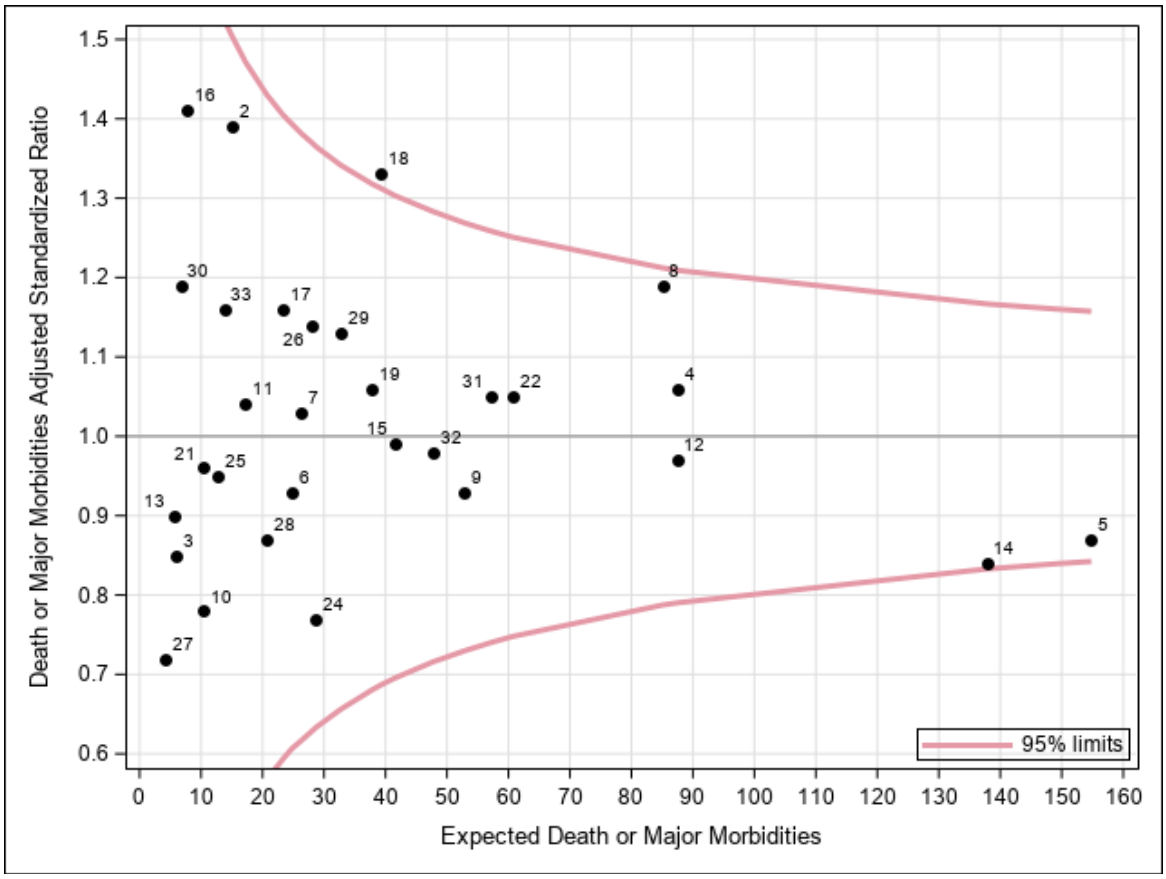
**Explanation for Presentation 52b**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

**Presentation #52c**
**Mortality or major morbidity: GA < 29 weeks: Adjusted standardized ratios by site**

| Site | Number of neonates | Number of neonates with mortality or major morbidities | Adjusted# expected number of neonates with mortality or major morbidities | Adjusted# standardized ratio | 95% confidence interval for adjusted standardized ratio | |
|---|---|---|---|---|---|---|
| **2** | 27 | 21 | 15.1 | 1.4 | 0.9 | 2.1 |
| **3** | 8 | 5 | 5.9 | 0.8 | 0.3 | 2.0 |
| **4** | 122 | 93 | 87.6 | 1.1 | 0.9 | 1.3 |
| **5** | 214 | 135 | 154.8 | 0.9 | 0.7 | 1.0 |
| **6** | 34 | 23 | 24.8 | 0.9 | 0.6 | 1.4 |
| **7** | 37 | 27 | 26.3 | 1.0 | 0.7 | 1.5 |
| **8** | 122 | 101 | 85.1 | 1.2 | 1.0 | 1.4 |
| **9** | 71 | 49 | 52.8 | 0.9 | 0.7 | 1.2 |
| **10** | 13 | 8 | 10.3 | 0.8 | 0.3 | 1.5 |
| **11** | 23 | 18 | 17.3 | 1.0 | 0.6 | 1.6 |
| **12** | 115 | 85 | 87.5 | 1.0 | 0.8 | 1.2 |
| **13** | 9 | 5 | 5.6 | 0.9 | 0.3 | 2.1 |
| **14** | 191 | 116 | 137.8 | 0.8 | 0.7 | 1.0 |
| **15** | 58 | 41 | 41.5 | 1.0 | 0.7 | 1.3 |
| **16** | 12 | 11 | 7.8 | 1.4 | 0.7 | 2.5 |
| **17** | 32 | 27 | 23.3 | 1.2 | 0.8 | 1.7 |
| **18** | 55 | 52 | 39.1 | 1.3 | 1.0 | 1.7 |
| **19** | 55 | 40 | 37.8 | 1.1 | 0.8 | 1.4 |
| **21** | 16 | 10 | 10.4 | 1.0 | 0.5 | 1.8 |
| **22** | 81 | 64 | 60.8 | 1.1 | 0.8 | 1.3 |
| **24** | 41 | 22 | 28.7 | 0.8 | 0.5 | 1.2 |
| **25** | 18 | 12 | 12.7 | 0.9 | 0.5 | 1.7 |
| **26** | 43 | 32 | 28.1 | 1.1 | 0.8 | 1.6 |
| **27** | 6 | 3 | 4.1 | 0.7 | 0.1 | 2.1 |
| **28** | 29 | 18 | 20.7 | 0.9 | 0.5 | 1.4 |
| **29** | 43 | 37 | 32.7 | 1.1 | 0.8 | 1.6 |
| **30** | 9 | 8 | 6.7 | 1.2 | 0.5 | 2.3 |
| **31** | 79 | 60 | 57.2 | 1.0 | 0.8 | 1.3 |
| **32** | 66 | 47 | 47.7 | 1.0 | 0.7 | 1.3 |
| **33** | 21 | 16 | 13.8 | 1.2 | 0.7 | 1.9 |

Major morbidity = IVH 3 or 4 or PVL or BPD or ROP >stage 2 or NEC or nosocomial sepsis
**Numeric site codes were used in Presentations 52a-d and they may not correspond to other presentations in this report.**
**Neonates with major congenital anomalies were excluded.**
# The prediction model was adjusted for GA, SGA, sex, and SNAPII > 20.
**Note:** Sites 1, 20, 23 were excluded from the analysis due to the small number of eligible neonates.

**Presentation #52d**
**Mortality or major morbidity: GA < 29 weeks: Adjusted standardized ratios by site**




**Explanation for Presentation 52c**
Column 1: Numeric site codes
Column 2: Number of eligible neonates at each site (<29 weeks GA and no major anomaly)
Column 3: Number of neonates with outcome of interest among those eligible neonates
Column 4: Expected number of neonates with outcome of interest after adjustment for GA, SGA, sex, and SNAPII > 20
Column 5: Adjusted standardized ratio calculated based on observed death or morbidities/expected deaths or morbidities
Columns 6 and 7: 95% CI around the adjusted standardized ratio for the outcome

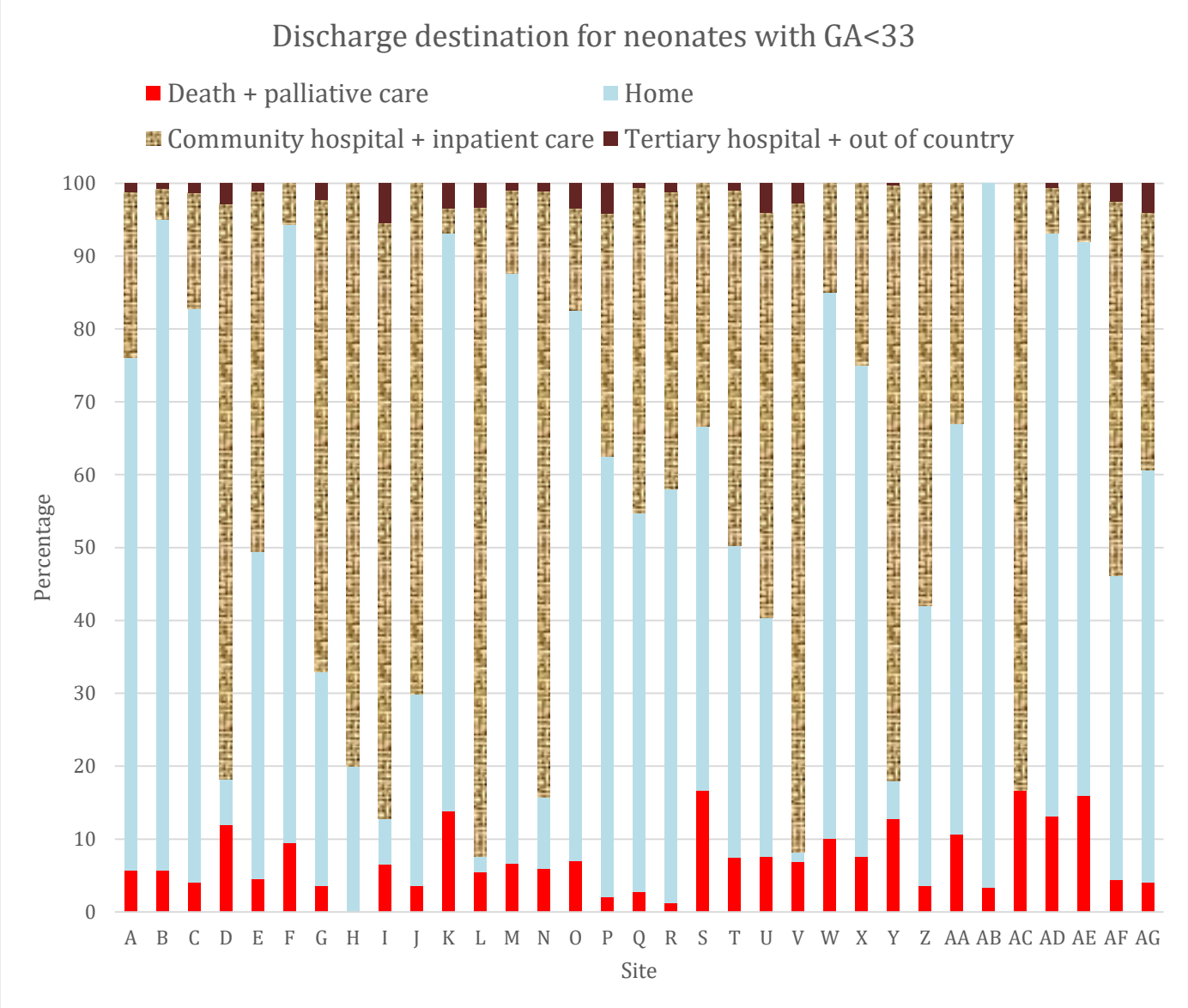
**Explanation for Presentation 52d**
X-axis: Expected number of neonates with outcome (value from Column 4 of previous presentation)
Y-axis: Adjusted standardized ratio (value from Column 5 of previous presentation)
Dark points with numerical notation: Site and its location matching x and y axis values
Red funnel shaped lines: 95% confidence limits based on entire network information.
Sites outside of red lines represent higher or lower (depending upon position in graph) adjusted standardized ratio. However, for determining whether site is statistically different from others, one should also assess 95% CI and check whether both upper and lower boundaries are also outside of the funnel area or not.

# F. Discharge Disposition and Status

**Presentation #53a**
**Final discharge destination: All GA: Crude rates**

| | | GA (completed weeks) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **< 25** | **25-26** | **27-28** | **29-30** | **31-32** | **33-34** | **35-36** | **≥37** | **Total** |
| **Home** | N | 130 | 210 | 304 | 398 | 615 | 1038 | 1226 | 3552 | 7473 |
| | % | 34.4 | 39.9 | 37.3 | 37.5 | 37.9 | 47.1 | 49.6 | 55.4 | 48.2 |
| **Community hospital** | N | 57 | 179 | 372 | 556 | 841 | 840 | 536 | 636 | 4017 |
| | % | 15.1 | 34.0 | 45.6 | 52.4 | 51.8 | 38.1 | 21.7 | 9.9 | 25.9 |
| **Tertiary hospital** | N | 26 | 11 | 14 | 14 | 14 | 20 | 49 | 258 | 406 |
| | % | 6.9 | 2.1 | 1.7 | 1.3 | 0.9 | 0.9 | 2.0 | 4.0 | 2.6 |
| **Died** | N | 124 | 72 | 47 | 26 | 30 | 23 | 38 | 111 | 471 |
| | % | 32.8 | 13.7 | 5.8 | 2.5 | 1.9 | 1.0 | 1.5 | 1.7 | 3.0 |
| **Palliative care (home/another institute)** | N | 0 | 1 | 1 | 2 | 0 | 1 | 3 | 18 | 26 |
| | % | 0.0 | 0.2 | 0.1 | 0.2 | 0.0 | 0.1 | 0.1 | 0.3 | 0.2 |
| **Another inpatient area in site** | N | 40 | 53 | 75 | 64 | 124 | 281 | 619 | 1838 | 3094 |
| | % | 10.6 | 10.1 | 9.2 | 6.0 | 7.6 | 12.8 | 25.1 | 28.7 | 20.0 |
| **Out of country discharge** | N | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 6 |
| | % | 0.3 | 0.2 | 0.3 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| **Total neonates included** | N | 378 | 527 | 815 | 1061 | 1624 | 2204 | 2471 | 6413 | 15493 |
| | % | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Discharge destination missing** | N | | | | | | | | | 0 |
| **GA missing** | N | | | | | | | | | 0 |
| **Total number of neonates** | N | | | | | | | | | 15493 |

**Presentation #53b**
**Final discharge destination by site: GA<33**



**Presentation #53b (continued)**
**Final discharge destination by site: GA<33**

| | Discharge destination | | | |
|---|---|---|---|---|
| **Site** | **Death + Palliative care** | **Home** | **Community hospital + inpatient area** | **Tertiary hospital + Out of country** |
| **A** | 5.7 | 70.4 | 22.6 | 1.3 |
| **B** | 5.7 | 89.3 | 4.1 | 0.8 |
| **C** | 4.0 | 78.8 | 15.9 | 1.3 |
| **D** | 11.9 | 6.3 | 79.0 | 2.8 |
| **E** | 4.5 | 44.9 | 49.4 | 1.1 |
| **F** | 9.4 | 84.9 | 5.7 | 0.0 |
| **G** | 3.5 | 29.4 | 64.7 | 2.4 |
| **H** | 0.0 | 20.0 | 80.0 | 0.0 |
| **I** | 6.5 | 6.3 | 81.7 | 5.5 |
| **J** | 3.7 | 26.3 | 70.1 | 0.0 |
| **K** | 13.8 | 79.3 | 3.5 | 3.5 |
| **L** | 5.5 | 2.1 | 89.0 | 3.4 |
| **M** | 6.7 | 81.0 | 11.4 | 1.0 |
| **N** | 5.9 | 9.9 | 83.2 | 1.1 |
| **O** | 7.0 | 75.6 | 14.0 | 3.5 |
| **P** | 2.1 | 60.4 | 33.3 | 4.2 |
| **Q** | 2.7 | 52.0 | 44.6 | 0.7 |
| **R** | 1.2 | 56.8 | 40.7 | 1.2 |
| **S** | 16.7 | 50.0 | 33.3 | 0.0 |
| **T** | 7.4 | 42.9 | 48.7 | 1.1 |
| **U** | 7.6 | 32.8 | 55.6 | 4.1 |
| **V** | 6.9 | 1.4 | 89.0 | 2.7 |
| **W** | 10.0 | 75.0 | 15.0 | 0.0 |
| **X** | 7.6 | 67.4 | 25.0 | 0.0 |
| **Y** | 12.8 | 5.1 | 81.7 | 0.3 |
| **Z** | 3.6 | 38.4 | 58.0 | 0.0 |
| **AA** | 10.7 | 56.4 | 33.0 | 0.0 |
| **AB** | 3.3 | 96.7 | 0.0 | 0.0 |
| **AC** | 16.7 | 0.0 | 83.3 | 0.0 |
| **AD** | 13.1 | 80.0 | 6.3 | 0.6 |
| **AE** | 16.0 | 76.0 | 8.0 | 0.0 |
| **AF** | 4.4 | 41.7 | 51.4 | 2.5 |
| **AG** | 4.1 | 56.6 | 35.3 | 4.1 |
| **Total %** | **6.9** | **37.6** | **53.6** | **1.9** |
| **Total N** | **303** | **1657** | **2361** | **84** |

**Presentation #54**
**Resource use (proportion of admissions and of total patient days) per case-mix group within each site among sites with COMPLETE data (n=28)**

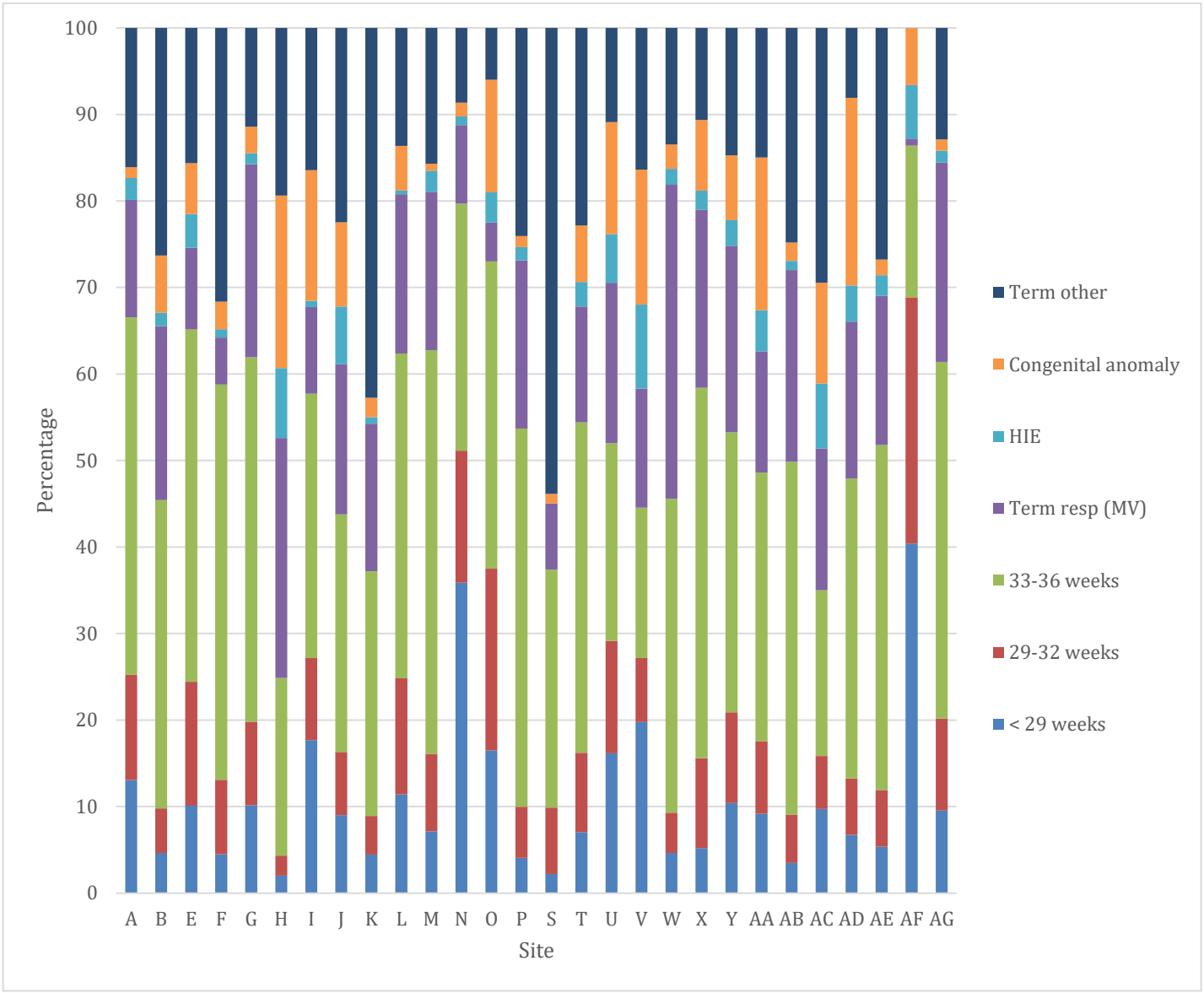
**DEFINITIONS for case mix groups**

For each site all admission were included (so same patient may be counted twice since unit of analysis is the admission)

Admissions to were categorized according to 1 diagnostic group – i.e. an admission can only be categorized in one of these groups

| | DEFINITION |
|---|---|
| < 29 weeks | Born <29 weeks GA WITHOUT major congenital anomaly |
| 29-32 weeks | Born 29-32 weeks GA WITHOUT major congenital anomaly |
| 33-36 weeks | Born 33-36 weeks GA WITHOUT major congenital anomaly or HIE |
| Term with resp support | Born ≥37 weeks GA<br>- WITHOUT major congenital anomaly<br>- Without hypoxic ischemic encephalopathy (with and without cooling)<br>- Received ≥1 days of respiratory support defined as any of the following<br>o HFV<br>o IPPV<br>o NI Ventilation<br>o CPAP<br>o High flow |
| HIE | Infants born ≥35 weeks with hypoxic ischemic encephalopathy (with and without cooling) |
| Congenital anomaly | Infant with MAJOR congenital anomaly – regardless of GA |
| Term other | Infants born ≥37 weeks that do not meet any of the diagnostic categories |

**Presentation #54a**
**Proportion of admissions per case-mix group within each site among sites with COMPLETE data (n=28) – Graph format**

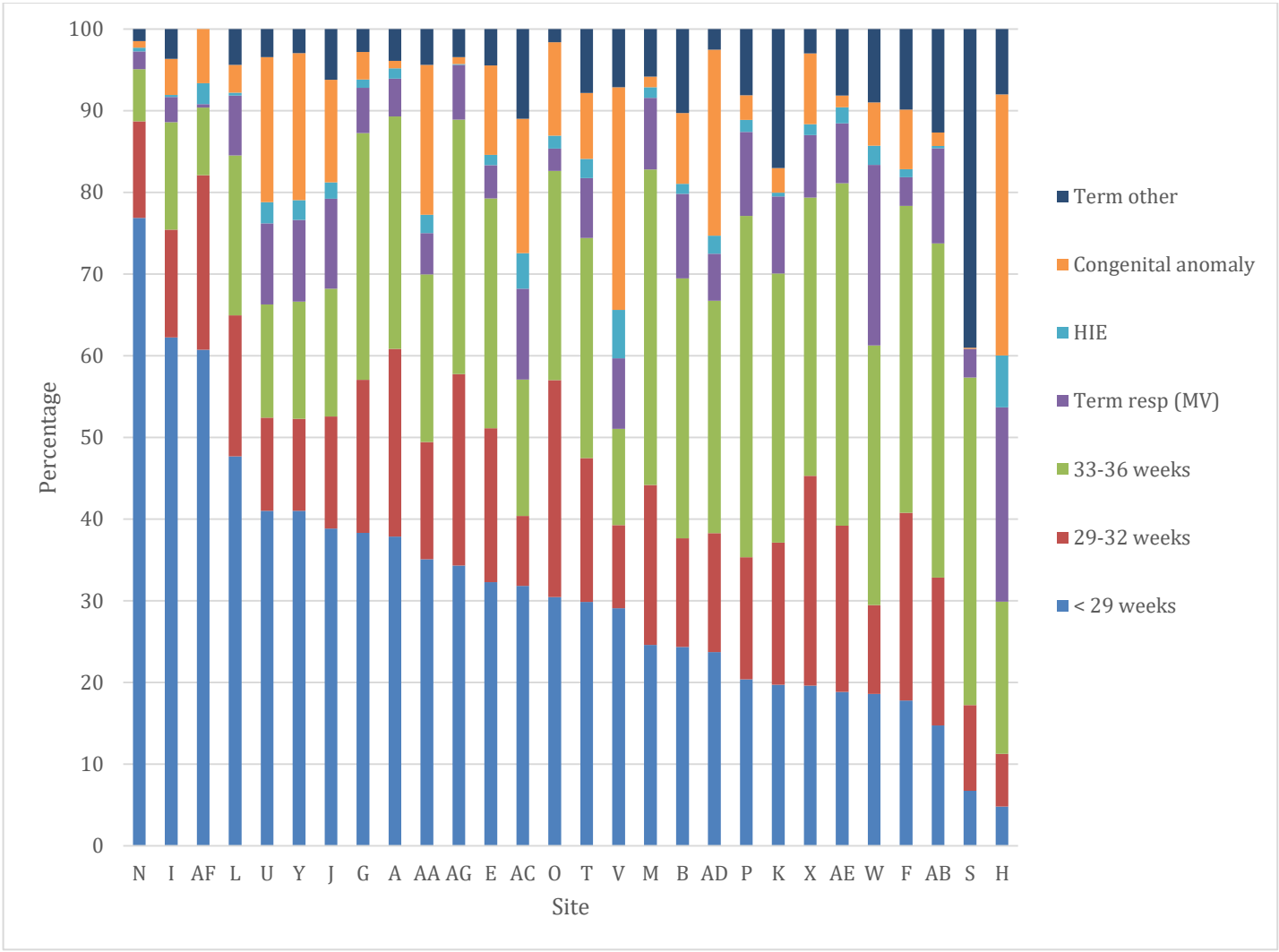


**Presentation #54a (continued)**
**Proportion of admissions per case-mix group within each site among sites with COMPLETE data (n=28) – Table format**

| Site | < 29 weeks | 29-32 weeks | 33-36 weeks | Term resp (MV) | HIE | Congenital anomaly | Term other |
|---|---|---|---|---|---|---|---|
| A | 13.1 | 12.2 | 41.3 | 13.6 | 2.5 | 1.3 | 16.1 |
| B | 4.6 | 5.2 | 35.7 | 20.1 | 1.6 | 6.6 | 26.3 |
| E | 10.1 | 14.3 | 40.7 | 9.5 | 3.9 | 5.9 | 15.6 |
| F | 4.5 | 8.6 | 45.7 | 5.4 | 1.0 | 3.2 | 31.6 |
| G | 10.2 | 9.6 | 42.1 | 22.3 | 1.3 | 3.1 | 11.4 |
| H | 2.0 | 2.3 | 20.5 | 27.8 | 8.1 | 19.9 | 19.4 |
| I | 17.7 | 9.5 | 30.6 | 10.0 | 0.7 | 15.1 | 16.4 |
| J | 9.0 | 7.3 | 27.5 | 17.3 | 6.7 | 9.8 | 22.5 |
| K | 4.5 | 4.5 | 28.3 | 17.1 | 0.7 | 2.2 | 42.8 |
| L | 11.4 | 13.4 | 37.5 | 18.4 | 0.5 | 5.2 | 13.6 |
| M | 7.1 | 9.0 | 46.6 | 18.3 | 2.4 | 0.8 | 15.7 |
| N | 35.9 | 15.3 | 28.5 | 9.1 | 1.0 | 1.6 | 8.7 |
| O | 16.5 | 21.0 | 35.5 | 4.5 | 3.5 | 13.0 | 6.0 |
| P | 4.1 | 5.9 | 43.7 | 19.4 | 1.5 | 1.3 | 24.0 |
| S | 2.2 | 7.7 | 27.5 | 7.7 | 0.0 | 1.1 | 53.9 |
| T | 7.1 | 9.2 | 38.2 | 13.4 | 2.8 | 6.5 | 22.8 |
| U | 16.2 | 13.0 | 22.9 | 18.6 | 5.6 | 13.0 | 10.9 |
| V | 19.8 | 7.4 | 17.4 | 13.8 | 9.7 | 15.6 | 16.4 |
| W | 4.7 | 4.7 | 36.3 | 36.3 | 1.9 | 2.8 | 13.5 |
| X | 5.2 | 10.4 | 42.8 | 20.5 | 2.2 | 8.2 | 10.6 |
| Y | 10.4 | 10.5 | 32.4 | 21.6 | 3.0 | 7.5 | 14.7 |
| AA | 9.2 | 8.4 | 31.0 | 14.0 | 4.7 | 17.7 | 15.0 |
| AB | 3.5 | 5.6 | 40.8 | 22.1 | 1.1 | 2.1 | 24.8 |
| AC | 9.7 | 6.1 | 19.2 | 16.4 | 7.5 | 11.7 | 29.4 |
| AD | 6.7 | 6.5 | 34.7 | 18.1 | 4.2 | 21.7 | 8.1 |
| AE | 5.4 | 6.6 | 39.9 | 17.3 | 2.4 | 1.8 | 26.8 |
| AF | 40.4 | 28.5 | 17.5 | 0.8 | 6.2 | 6.6 | 0.0 |
| AG | 9.5 | 10.6 | 41.2 | 23.1 | 1.3 | 1.3 | 12.9 |
| **Total** | 12.0 | 9.8 | 33.0 | 16.2 | 3.3 | 8.8 | 17.0 |

Denominator = total admission in site
*only for sites with complete data

**Presentation #54b**
**Proportion of <u>total patient days</u> per case-mix group within each site among sites with COMPLETE data (n=28) – Graph format**



**Presentation #54b (continued)**
**Proportion of <u>total patient days</u> per case-mix group within each site among sites with COMPLETE data (n=28) – Table format**

| Site | < 29 weeks | 29-32 weeks | 33-36 weeks | Term resp (MV) | HIE | Congenital anomaly | Term other |
|---|---|---|---|---|---|---|---|
| A | 37.9 | 23.0 | 28.5 | 4.6 | 1.3 | 0.9 | 3.9 |
| B | 24.3 | 13.3 | 31.8 | 10.4 | 1.2 | 8.6 | 10.3 |
| E | 32.3 | 18.8 | 28.2 | 4.0 | 1.3 | 10.9 | 4.5 |
| F | 17.8 | 23.0 | 37.6 | 3.5 | 1.0 | 7.3 | 9.9 |
| G | 38.3 | 18.7 | 30.2 | 5.5 | 1.0 | 3.4 | 2.8 |
| H | 4.8 | 6.5 | 18.6 | 23.8 | 6.3 | 32.0 | 8.0 |
| I | 62.2 | 13.2 | 13.1 | 3.1 | 0.3 | 4.4 | 3.7 |
| J | 38.9 | 13.7 | 15.6 | 11.0 | 2.0 | 12.5 | 6.2 |
| K | 19.7 | 17.4 | 33.0 | 9.4 | 0.5 | 3.0 | 17.0 |
| L | 47.7 | 17.2 | 19.6 | 7.3 | 0.4 | 3.4 | 4.4 |
| M | 24.6 | 19.6 | 38.6 | 8.8 | 1.3 | 1.3 | 5.9 |
| N | 76.9 | 11.8 | 6.4 | 2.2 | 0.5 | 0.8 | 1.5 |
| O | 30.5 | 26.5 | 25.6 | 2.8 | 1.6 | 11.4 | 1.6 |
| P | 20.4 | 14.9 | 41.8 | 10.3 | 1.5 | 3.0 | 8.1 |
| S | 6.7 | 10.5 | 40.1 | 3.5 | 0.0 | 0.1 | 39.0 |
| T | 29.9 | 17.6 | 26.9 | 7.3 | 2.4 | 8.1 | 7.8 |
| U | 41.0 | 11.4 | 13.9 | 9.9 | 2.6 | 17.7 | 3.5 |
| V | 29.1 | 10.2 | 11.8 | 8.6 | 5.9 | 27.3 | 7.1 |
| W | 18.6 | 10.9 | 31.8 | 22.1 | 2.3 | 5.3 | 9.0 |
| X | 19.6 | 25.7 | 34.1 | 7.6 | 1.3 | 8.7 | 3.0 |
| Y | 41.0 | 11.3 | 14.4 | 10.0 | 2.4 | 18.0 | 3.0 |
| AA | 35.1 | 14.3 | 20.5 | 5.1 | 2.2 | 18.4 | 4.4 |
| AB | 14.7 | 18.1 | 40.9 | 11.6 | 0.3 | 1.7 | 12.7 |
| AC | 31.8 | 8.5 | 16.7 | 11.1 | 4.3 | 16.5 | 11.0 |
| AD | 23.7 | 14.6 | 28.5 | 5.7 | 2.2 | 22.8 | 2.5 |
| AE | 18.8 | 20.4 | 41.9 | 7.3 | 2.0 | 1.4 | 8.2 |
| AF | 60.7 | 21.4 | 8.3 | 0.4 | 2.6 | 6.6 | 0.0 |
| AG | 34.3 | 23.4 | 31.1 | 6.7 | 0.1 | 0.8 | 3.4 |
| **Total** | 37.1 | 15.8 | 22.3 | 7.1 | 1.9 | 10.8 | 5.0 |

Proportion of total patient days = (sum of length of stay of all the patients within a category) / (sum of length of stay of each patient admitted in the NICU for the year)

*only for sites with complete data

**Presentation #55**
**Support at discharge: Neonates who were discharged directly home: Crude rates**

| | | GA (completed weeks) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **< 25** | **25-26** | **27-28** | **29-30** | **31-32** | **33-34** | **35-36** | **≥37** | **Total** |
| **Total available** | N | 378 | 527 | 815 | 1061 | 1624 | 2204 | 2471 | 6413 | 15493 |
| **Number of neonates who survived and were discharged home directly from the NICU** | **N** | **130** | **210** | **304** | **398** | **615** | **1038** | **1226** | **3552** | **7473** |
| **Oxygen** | N | 52 | 59 | 40 | 31 | 29 | 42 | 31 | 103 | 387 |
| | % | 40.0 | 28.1 | 13.2 | 7.8 | 4.7 | 4.1 | 2.5 | 2.9 | 5.2 |
| **Monitor** | N | 15 | 12 | 26 | 25 | 21 | 34 | 27 | 138 | 298 |
| | % | 11.5 | 5.7 | 8.6 | 6.3 | 3.4 | 3.3 | 2.2 | 3.9 | 4.0 |
| **Enterostomy** | N | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 11 | 18 |
| | % | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 | 0.1 | 0.2 | 0.3 | 0.2 |
| **Gavage** | N | 27 | 34 | 32 | 23 | 19 | 23 | 26 | 93 | 277 |
| | % | 20.8 | 16.2 | 10.5 | 5.8 | 3.1 | 2.2 | 2.1 | 2.6 | 3.7 |
| **Tracheostomy** | N | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 3 | 8 |
| | % | 0.8 | 0.5 | 0.7 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 0.1 |
| **Gastrostomy** | N | 6 | 3 | 5 | 5 | 2 | 3 | 9 | 26 | 59 |
| | % | 4.6 | 1.4 | 1.6 | 1.3 | 0.3 | 0.3 | 0.7 | 0.7 | 0.8 |
| **Ventilation** | N | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 2 | 7 |
| | % | 0.0 | 1.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 |
| **CPAP** | N | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 8 | 14 |
| | % | 3.1 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 |
| **Feeding status at discharge directly home** | | | | | | | | | | |
| **Human milk only (mother's own milk and/or donor milk)** | N | 58 | 74 | 120 | 178 | 279 | 371 | 356 | 1142 | 2578 |
| | % | 44.6 | 35.2 | 39.5 | 44.7 | 45.4 | 35.7 | 29.0 | 32.2 | 34.5 |
| **Formula only** | N | 43 | 75 | 107 | 130 | 199 | 294 | 363 | 901 | 2112 |
| | % | 33.1 | 35.7 | 35.2 | 32.7 | 32.4 | 28.3 | 29.6 | 25.4 | 28.3 |
| **Human milk and formula** | N | 24 | 51 | 67 | 79 | 111 | 343 | 477 | 1392 | 2544 |
| | % | 18.5 | 24.3 | 22.0 | 19.9 | 18.1 | 33.0 | 38.9 | 39.2 | 34.0 |
| **Unknown/Missing** | N | 5 | 10 | 10 | 11 | 26 | 30 | 30 | 117 | 239 |
| | % | 3.9 | 4.8 | 3.3 | 2.8 | 4.2 | 2.9 | 2.5 | 3.3 | 3.2 |

**Note:** In this presentation, denominators were based on the number of neonates who survived and were discharged directly home.

# G. Hypoxic Ischemic Encephalopathy

**Presentation #56**
**Hypoxic Ischemic Encephalopathy**

**A. Sarnat staging at the time of admission and receipt of hypothermia**

| | | Sarnat's staging of HIE on admission | | | | |
|---|---|---|---|---|---|---|
| | | **Stage 1** | **Stage 2** | **Stage 3** | **Unknown stage** | **Total** |
| **Hypothermia treatment** | **Yes** | 45 | 338 | 120 | 37 | 540 |
| | **No** | 86 | 25 | 30 | 31 | 172 |
| | **Unknown** | 0 | 5 | 2 | 1 | 8 |
| | **Total** | **131** | **368** | **152** | **69** | **720** |

**B. Reason for not receiving hypothermia treatment***

| **Reason** | **Number** |
|---|---|
| Chromosomal anomalies | 0 |
| Major congenital anomalies | 4 |
| Weight < 2000g or GA < 35 weeks | 36 |
| Extreme condition | 13 |
| Head trauma or intracranial hemorrhage | 4 |
| Mild HIE | 78 |
| Unit policy | 14 |
| Health care team preference | 4 |
| Delayed transfer | 7 |
| Parental request | 1 |
| Unknown | 34 |

*One neonate can have more than one reasons.

**C. Time of admission**

| **Time** | **Number** |
|---|---|
| <6 hours from birth | 481 |
| 6 – 12 hours from birth | 181 |
| >12 hours from birth | 58 |
| Total | 720 |

**Presentation #56** (continued)
**Hypoxic Ischemic Encephalopathy**

### D. Characteristics of neonates who received hypothermia (N=540)

| Characteristics | N | | Results |
|---|---|---|---|
| **Target temperature** | 540 | < $33^0$C | 4 (1%) |
| | | 33-$34^0$C | 325 (60%) |
| | | 33.5-$34.5^0$C | 91 (17%) |
| | | 34-$35^0$C | 13 (2%) |
| | | 34.5-$35.5^0$C | 2 (0%) |
| | | Unknown | 105 (19%) |
| **Seizures at initiation** | 540 | | 160 (30%) |
| **Seizures at completion** | 540 | | 0 (0%) |
| **GA** | 540 | 33 | 0 (0%) |
| | | 34 | 7 (1%) |
| | | 35 | 37 (7%) |
| | | 36 | 52 (10%) |
| | | ≥37 | 444 (82%) |
| **Birthweight < 2000g** | 540 | | 7 (1%) |
| **During hypothermia** | 523 | Hypotension | 181 (35%) |
| | 514 | Thrombocytopenia | 78 (15%) |
| | 526 | Coagulopathy | 170 (32%) |
| | 510 | Persistent metabolic acidosis | 88 (17%) |
| **Death** | 540 | | 49 (9%) |
| **Discharge on palliation** | 540 | | 10 (2%) |

### E. Encephalopathy stage in relation to hypothermia treatment

| **Encephalopathy stage*** | | **At the end of hypothermia** | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Stage 1** | **Stage 2** | **Stage 3** | **Unknown** | **Normal** | **Total** |
| **At the start of hypothermia** | **Stage 1** | 11 | 1 | 0 | 5 | 23 | 40 |
| | **Stage 2** | 66 | 131 | 2 | 27 | 119 | 345 |
| | **Stage 3** | 6 | 12 | 69 | 18 | 9 | 114 |
| | **Unknown** | 1 | 0 | 2 | 23 | 15 | 41 |
| | **Total** | 84 | 144 | 73 | 73 | 166 | 540 |

*The numbers may be different from table A because table E presents encephalopathy staging at the start and end of hypothermia, whereas table A presents encephalopathy staging at the first assessment.

**Presentation #56** (continued)

**F. Outcomes of infants with hypoxic ischemic encephalopathy that received therapeutic hypothermia stratified per stage of encephalopathy at time of initiation of therapeutic hypothermia and combined**

| | Stage 1 | Stage 2 | Stage 3 | Stage unknown | Total |
|---|---|---|---|---|---|
| Number of infants | 40 | 345 | 114 | 41 | 540 |
| Mortality, % | 0 | 4 (1%) | 44 (39%) | 1 (2%) | 49 (9%) |
| Brain injury[a], % | 6/35 (17%) | 79/319 (25%) | 52/85 (61%) | 10/37 (27%) | 147/476 (31%) |
| Mortality or brain injury[b], % | 6/35 (17%) | 82/322 (25%) | 79/108 (73%) | 11/38 (29%) | 178/503 (35%) |
| Length of stay among survivors, days, median (IQR) | 7.5 (6.5, 10) | 9 (7, 13) | 18.5 (11, 30) | 11 (8, 16) | 10 (7, 15) |
| Length of stay among infants who died, days, median (IQR) | N/A | 4 (3, 4.5) | 5 (3, 8) | 1 (1, 1) | 4 (3, 7) |
| Gavage feeds at NICU discharge or transfer among survivors, %* | 7 (18%) | 59 (17%) | 24 (21%) | 4 (10%) | 94 (17%) |

Brain injury defined as any of the following abnormalities on neonatal MRI: basal ganglia/thalamic injury and/or watershed/white matter injury, and diffusion changes

[a] Brain injury rate is calculated among infants with magnetic resonance imaging results
[b]Mortality or Brain injury rate is calculated among infants who died and/or had magnetic resonance imaging results

**Presentation #56** (continued)
**Hypoxic Ischemic Encephalopathy**
For neonates* who received hypothermia (N=485)

## G. Timing of Hypothermia and Temperature ranges during Hypothermia

| Characteristics | | N | Mean (h) | SD (h) | Min (h) | 1st Q (h) | Median (h) | 3rd Q (h) | Max (h) | Outside of recommendation |
|---|---|---|---|---|---|---|---|---|---|---|
| **Timing** of hypothermia (in hours)** | **Age at Initiation** | 540 | 5.2 | 4.6 | 0.0 | 3.0 | 4.7 | 6.2 | 69.6 | After 6 hours 151 (28%) |
| | **Age at re-warming** | 539 | 72.9 | 18.9 | 2.6 | 74.7 | 76.7 | 78.4 | 117.6 | After 78 hours 159 (29%) |
| **Temperature during hypothermia** | **Lowest temp during hypothermia** | 423 | 32.8 | 0.8 | 28.1 | 32.5 | 33.0 | 33.2 | 35.9 | Lowest temp < 32.5C 91 (22%) |
| | **Highest temp during hypothermia** | 423 | 34.0 | 0.6 | 32.2 | 33.7 | 33.9 | 34.1 | 37.5 | Highest temp > 35.5C 17 (4%) |

*Neonates with time of initiation > 72 hours were excluded.
**All timings were calculated from time of birth in hours of age.

# H. Trend Analyses over last 12 years

This section includes trend analyses of specific outcomes from the last 12 years (2013-24) for neonates <33 weeks' GA in CNN sites. The following table describes the number of neonates in the respective GA categories that were included in these trend analyses. Delivery room deaths were excluded.

**Number of neonates by admission year and GA**

| | | GA | | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **Number of Sites** | **22** | **23** | **24** | **25** | **26** | **27** | **28** | **29** | **30** | **31** | **32** | |
| **2013** | 29 | 16 | 76 | 197 | 247 | 267 | 357 | 434 | 479 | 620 | 733 | 836 | 4262 |
| **2014** | 31 | 8 | 81 | 226 | 250 | 332 | 362 | 412 | 517 | 585 | 743 | 871 | 4387 |
| **2015** | 30 | 14 | 99 | 177 | 248 | 289 | 317 | 425 | 470 | 536 | 662 | 793 | 4030 |
| **2016** | 30 | 16 | 79 | 214 | 275 | 272 | 380 | 431 | 437 | 551 | 722 | 861 | 4238 |
| **2017** | 31 | 16 | 133 | 215 | 257 | 294 | 325 | 434 | 467 | 606 | 743 | 868 | 4358 |
| **2018** | 32 | 25 | 132 | 215 | 271 | 334 | 380 | 424 | 518 | 576 | 744 | 863 | 4482 |
| **2019** | 32 | 25 | 118 | 217 | 279 | 297 | 342 | 440 | 470 | 613 | 740 | 905 | 4446 |
| **2020** | 33 | 15 | 127 | 201 | 236 | 265 | 310 | 402 | 491 | 593 | 634 | 834 | 4108 |
| **2021** | 33 | 32 | 99 | 214 | 254 | 298 | 331 | 448 | 514 | 577 | 761 | 941 | 4469 |
| **2022** | 33 | 30 | 126 | 195 | 254 | 261 | 351 | 432 | 529 | 589 | 642 | 912 | 4321 |
| **2023** | 33 | 38 | 107 | 235 | 219 | 269 | 323 | 395 | 507 | 585 | 690 | 910 | 4278 |
| **2024** | 33 | 42 | 136 | 200 | 237 | 290 | 389 | 426 | 483 | 578 | 706 | 918 | 4405 |

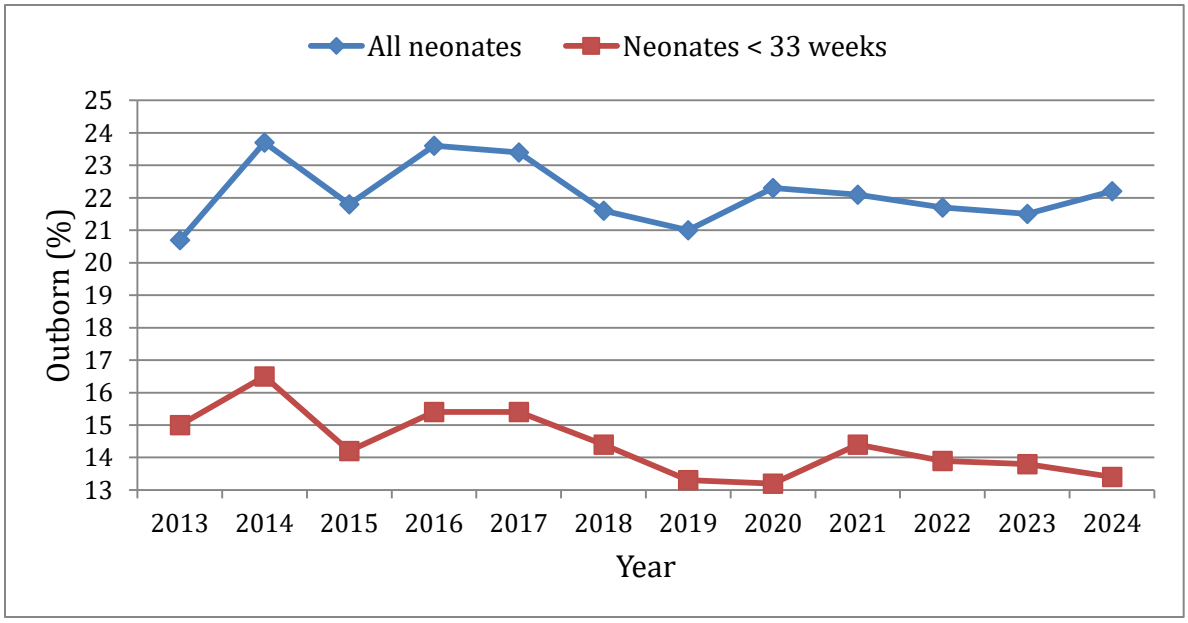
**Number of neonates by admission year and birth weight**

| | | Birth weight | | | | | Total |
|---|---|---|---|---|---|---|---|
| **Year** | **Number of Sites** | **< 500** | **500 - 749** | **750 - 999** | **1000 – 1249** | **1250 – 1499** | |
| **2013** | 29 | 36 | 428 | 651 | 842 | 919 | 2876 |
| **2014** | 31 | 36 | 458 | 760 | 804 | 922 | 2980 |
| **2015** | 30 | 40 | 406 | 680 | 792 | 864 | 2782 |
| **2016** | 30 | 40 | 472 | 710 | 744 | 901 | 2867 |
| **2017** | 31 | 38 | 478 | 678 | 806 | 920 | 2920 |
| **2018** | 32 | 55 | 508 | 739 | 807 | 977 | 3086 |
| **2019** | 32 | 50 | 482 | 685 | 802 | 937 | 2956 |
| **2020** | 33 | 43 | 436 | 668 | 731 | 878 | 2756 |
| **2021** | 33 | 43 | 479 | 673 | 831 | 933 | 2959 |
| **2022** | 33 | 58 | 479 | 649 | 793 | 942 | 2921 |
| **2023** | 33 | 55 | 490 | 635 | 816 | 883 | 2879 |
| **2024** | 33 | 56 | 515 | 670 | 826 | 968 | 3035 |

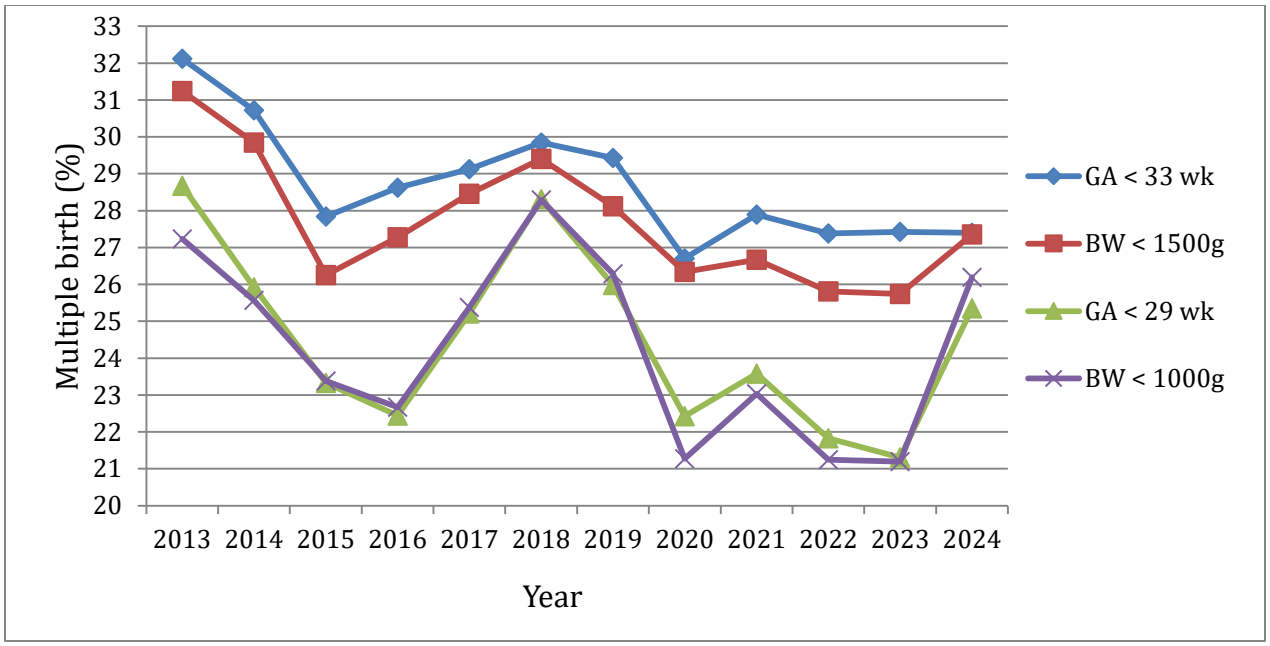
## 1. Neonates in the participating sites: Admission status:

| | | All neonates | | | Infants with GA<33 weeks | | |
|---|---|---|---|---|---|---|---|
| **Year** | **Number of Sites** | **Total Number of Neonates*** | **Inborn (%)** | **Outborn (%)** | **Number of Neonates* with GA<33** | **Inborn (%)** | **Outborn (%)** |
| **2013** | **29** | 14 489 | 11 487 (79.2%) | 3 002 (20.7%) | 4 262 | 3 624 (85.0%) | 638 (15.0%) |
| **2014** | **31** | 14 038 | 11 473 (76.3%) | 3 565 (23.7%) | 4 383 | 3658 (83.5%) | 725 (16.5%) |
| **2015** | **30** | 14 814 | 11 583 (78.2%) | 3 231 (21.8%) | 4 030 | 3 459 (85.8%) | 571 (14.2%) |
| **2016** | **30** | 14 905 | 11 388 (76.4%) | 3 517 (23.6%) | 4 238 | 3 585 (84.6%) | 653 (15.4%) |
| **2017** | **31** | 14 773 | 11 320 (76.6%) | 3 453 (23.4%) | 4 358 | 3 685 (84.6%) | 673 (15.4%) |
| **2018** | **32** | 15 479 | 12 134 (78.4%) | 3 345 (21.6%) | 4 481 | 3 836 (85.6%) | 645 (14.4%) |
| **2019** | **32** | 14 868 | 11 750 (79.0%) | 3 118 (21.0%) | 4 446 | 3 856 (86.7%) | 590 (13.3%) |
| **2020** | **33** | 14 271 | 11 091 (77.7%) | 3 180 (22.3%) | 4 108 | 3 564 (86.8%) | 544 (13.2%) |
| **2021** | **33** | 14 651 | 11 419 (77.9%) | 3 232 (22.1%) | 4 469 | 3 826 (85.6%) | 643 (14.4%) |
| **2022** | **33** | 14 494 | 11 345 (78.3%) | 3 149 (21.7%) | 4 321 | 3 722 (86.1%) | 599 (13.9%) |
| **2023** | **33** | 14 469 | 11 363 (78.5%) | 3 106 (21.5%) | 4 278 | 3 686 (86.2%) | 592 (13.8%) |
| **2024** | **33** | 15 493 | 12 051 (77.8%) | 3 442 (22.2%) | 4 405 | 3 814 (86.6%) | 591 (13.4%) |

*total number of neonates excluding those who are missing admission status

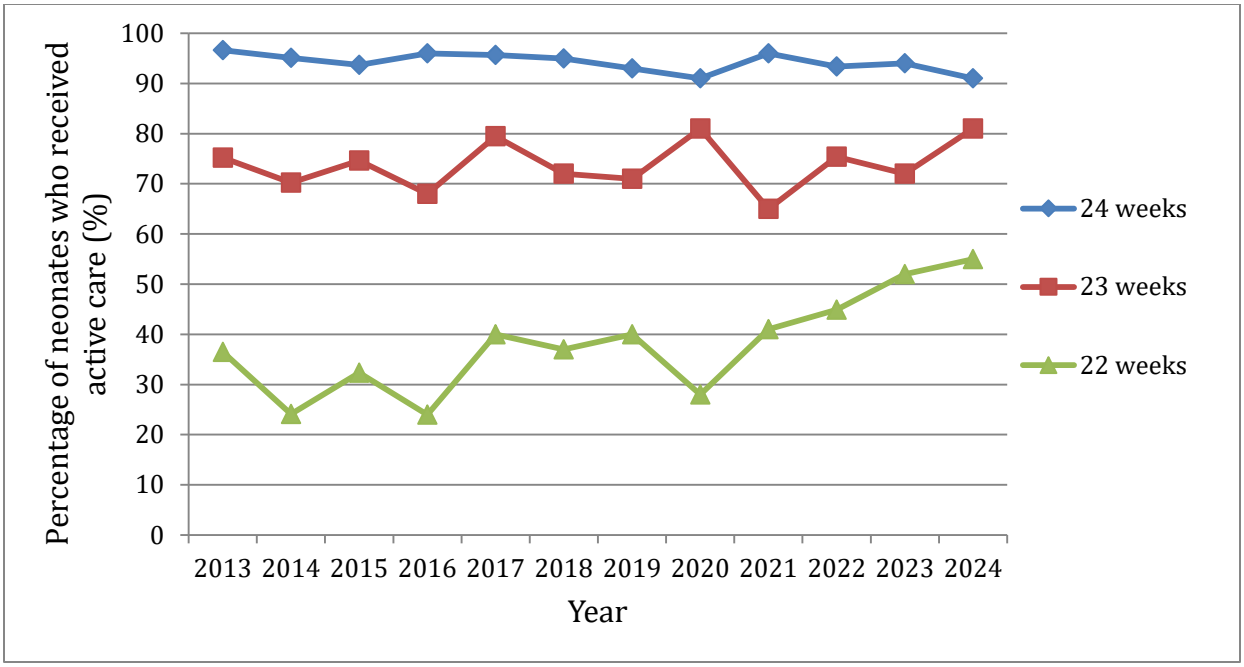


**2. Multiple births**




| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **GA < 29 weeks** | Total | 1569 | 1667 | 1674 | 1780 | 1717 | 1556 | 1675 | 1649 | 1586 | 1720 |
| | Multiple | 366 | 374 | 422 | 504 | 446 | 349 | 395 | 360 | 338 | 436 |
| | | (23%) | (22%) | (25%) | (28%) | (26%) | (22%) | (24%) | (22%) | (21%) | (25%) |
| | Twin | 321 | 345 | 375 | 466 | 415 | 316 | 364 | 336 | 321 | 396 |
| | Higher-Order | 45 | 29 | 47 | 38 | 31 | 33 | 31 | 24 | 17 | 40 |
| **GA < 33 weeks** | Total | 4030 | 4238 | 4358 | 4481 | 4445 | 4108 | 4468 | 4321 | 4278 | 4405 |
| | Multiple | 1122 | 1213 | 1269 | 1337 | 1308 | 1097 | 1246 | 1183 | 1173 | 1207 |
| | | (28%) | (29%) | (29%) | (30%) | (29%) | (27%) | (28%) | (27%) | (27%) | (27%) |
| | Twin | 996 | 1094 | 1156 | 1202 | 1191 | 1000 | 1112 | 1079 | 1075 | 1094 |
| | Higher-Order | 126 | 119 | 113 | 135 | 117 | 97 | 134 | 104 | 98 | 113 |
| **BW < 1000g** | Total | 1126 | 1222 | 1194 | 1301 | 1217 | 1147 | 1194 | 1186 | 1180 | 1241 |
| | Multiple | 264 | 277 | 303 | 368 | 320 | 244 | 275 | 252 | 250 | 325 |
| | | (23%) | (23%) | (25%) | (28%) | (26%) | (21%) | (23%) | (21%) | (21%) | (26%) |
| | Twin | 236 | 260 | 269 | 338 | 295 | 218 | 249 | 232 | 233 | 300 |
| | Higher-Order | 28 | 17 | 34 | 30 | 25 | 26 | 26 | 20 | 17 | 25 |
| **BW < 1500g** | Total | 2782 | 2867 | 2920 | 3085 | 2955 | 2756 | 2958 | 2921 | 2879 | 3035 |
| | Multiple | 731 | 782 | 831 | 907 | 831 | 726 | 789 | 754 | 741 | 830 |
| | | (26%) | (27%) | (28%) | (29%) | (28%) | (26%) | (27%) | (26%) | (26%) | (27%) |
| | Twin | 634 | 703 | 747 | 812 | 757 | 656 | 706 | 687 | 677 | 750 |
| | Higher-Order | 97 | 79 | 84 | 95 | 74 | 70 | 83 | 67 | 64 | 80 |

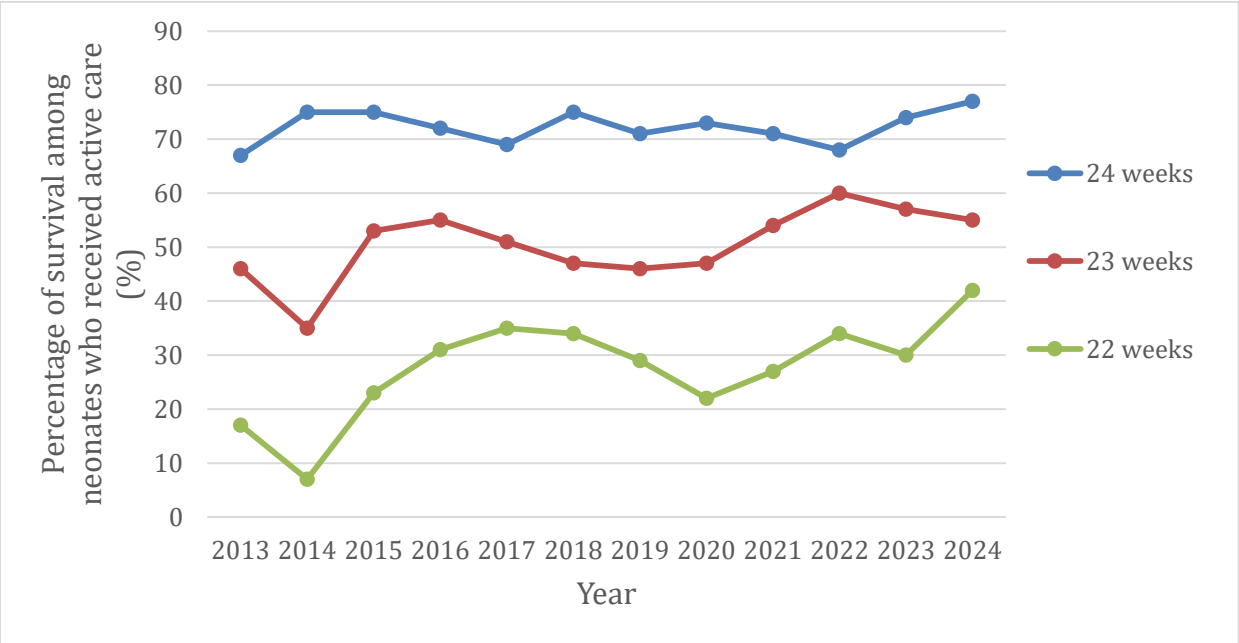
**3a. Proportion of neonates who received active care out of all (including delivery room (DR) deaths)**




| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 weeks | Number of neonates who received active care *(a-c) +e* | 22 | 16 | 26 | 35 | 35 | 18 | 37 | 35 | 46 | 51 |
| | Total number of neonates including DR deaths *a+d+e* | 68 | 67 | 65 | 95 | 88 | 64 | 91 | 78 | 89 | 92 |
| | Percentage of neonates who received active care | 32% | 24% | 40% | 37% | 40% | 28% | 41% | 45% | 52% | 55% |
| 23 weeks | Number of neonates who received active care *(a-c) +e* | 106 | 82 | 136 | 133 | 127 | 131 | 101 | 129 | 116 | 141 |
| | Total number of neonates including DR deaths *a+d+e* | 142 | 121 | 171 | 185 | 178 | 162 | 155 | 171 | 161 | 175 |
| | Percentage of neonates who received active care | 75% | 68% | 80% | 72% | 71% | 81% | 65% | 75% | 72% | 81% |
| 24 weeks | Number of neonates who received active care *(a-c) +e* | 178 | 217 | 221 | 224 | 224 | 199 | 216 | 197 | 235 | 200 |
| | Total number of neonates including DR deaths *a+d+e* | 190 | 227 | 231 | 235 | 240 | 218 | 226 | 211 | 249 | 219 |
| | Percentage of neonates who received active care | 94% | 96% | 96% | 95% | 93% | 91% | 96% | 93% | 94% | 91% |

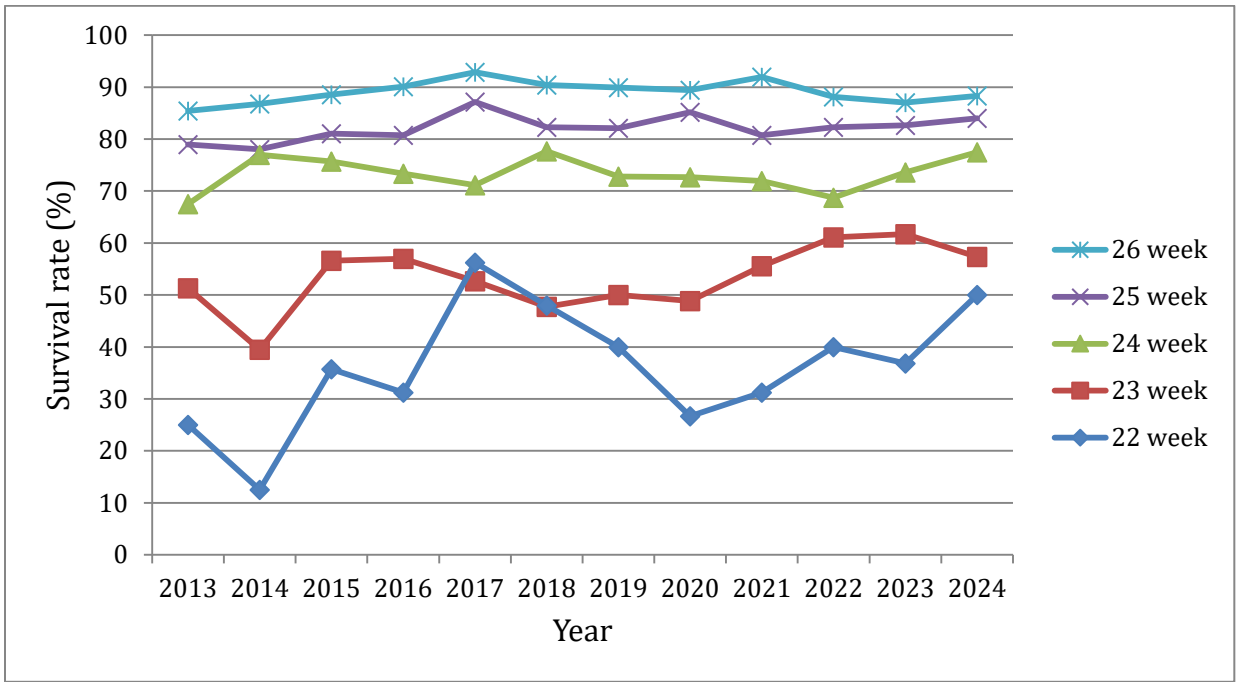
**Note:** Refer to presentation #4 for detailed breakdown of neonates by GA.
The alphabet notations used in the table above are carried from presentation #4.
**Information should be interpreted with caution as not all sites provided data on delivery room deaths. Active care refers to infants who received cardiopulmonary resuscitation at birth.**

**3b. Trends in survival among neonates who received active care (including delivery room deaths)**

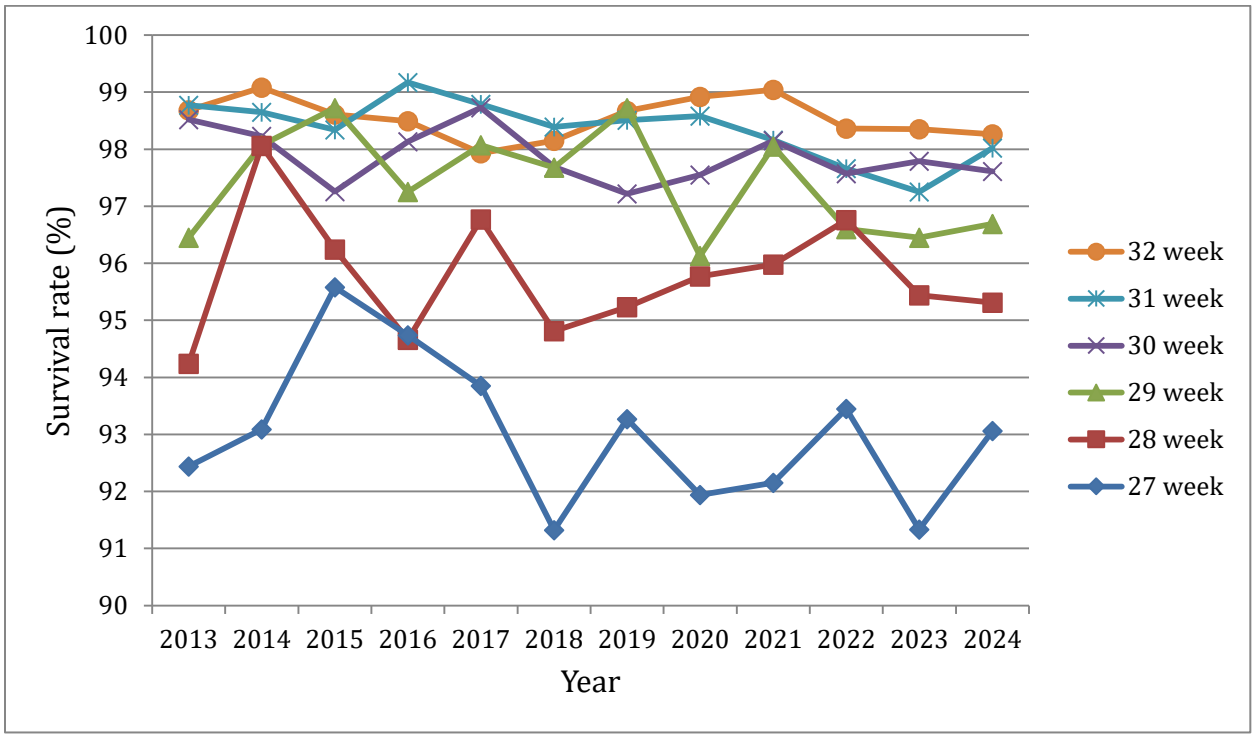


**4. Survival rate among those who were admitted to NICU:**

**a. 22-26 weeks' GA:**

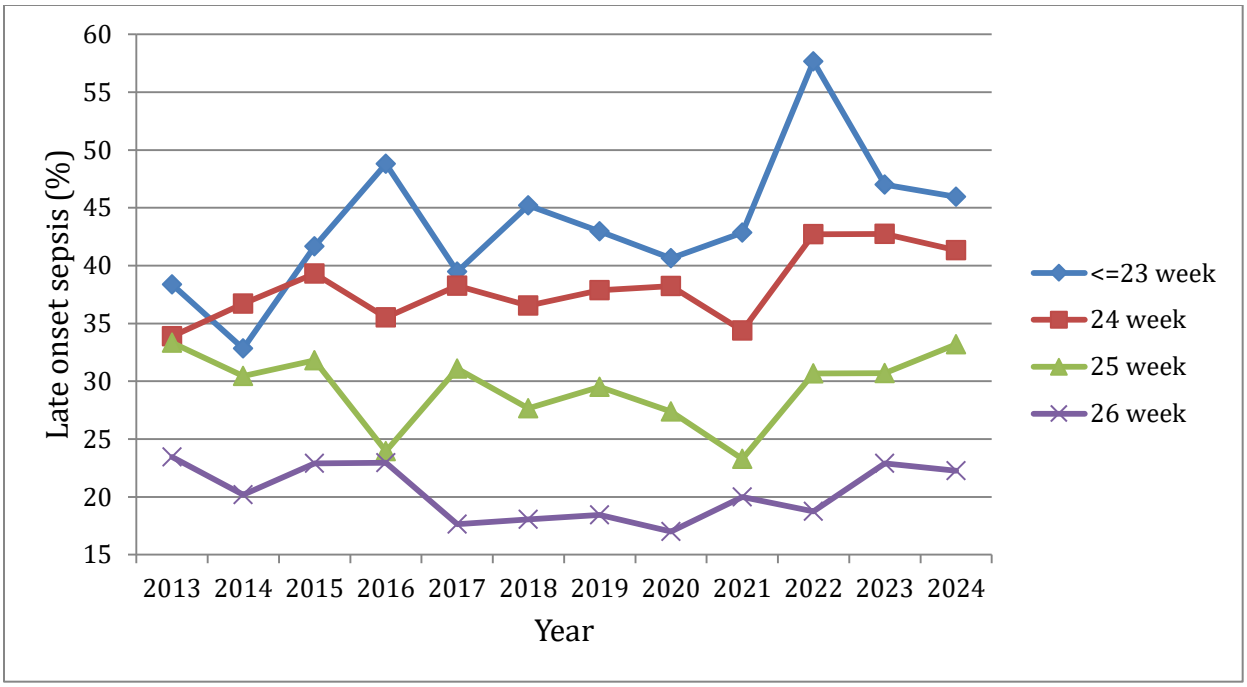



**b. 27-32 weeks' GA:**

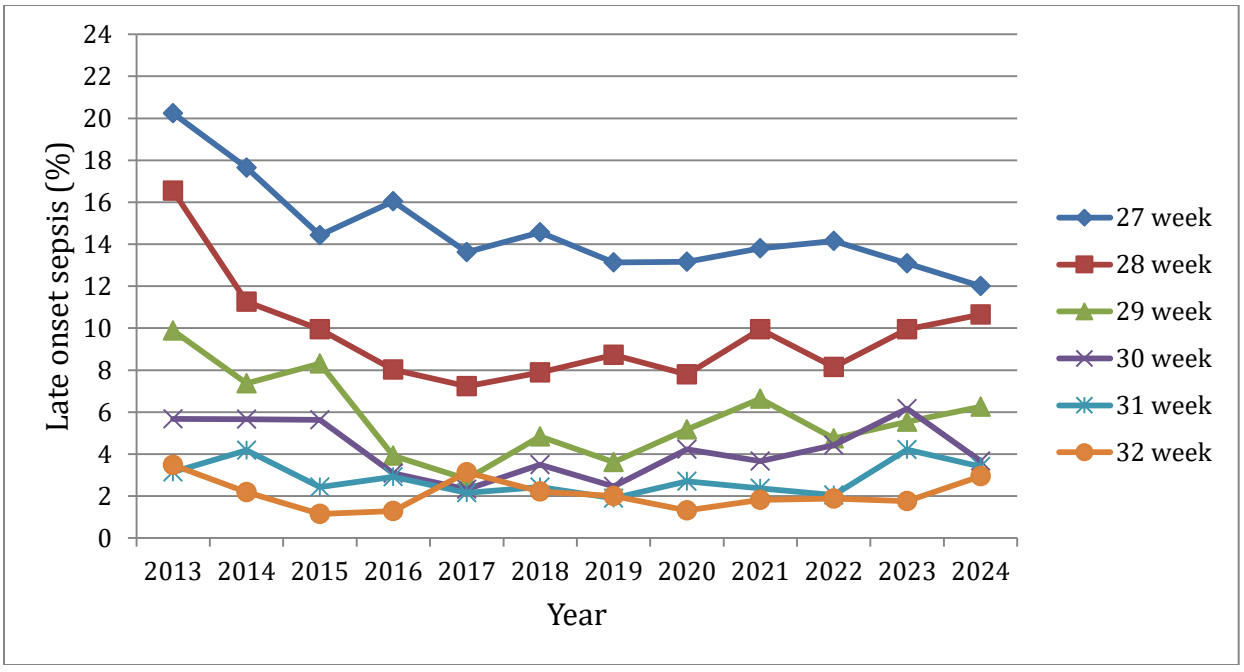


**5. Late onset sepsis (with at least one infection) among neonates who survived beyond 2 days post birth**

**a. 22-26 weeks' GA:**

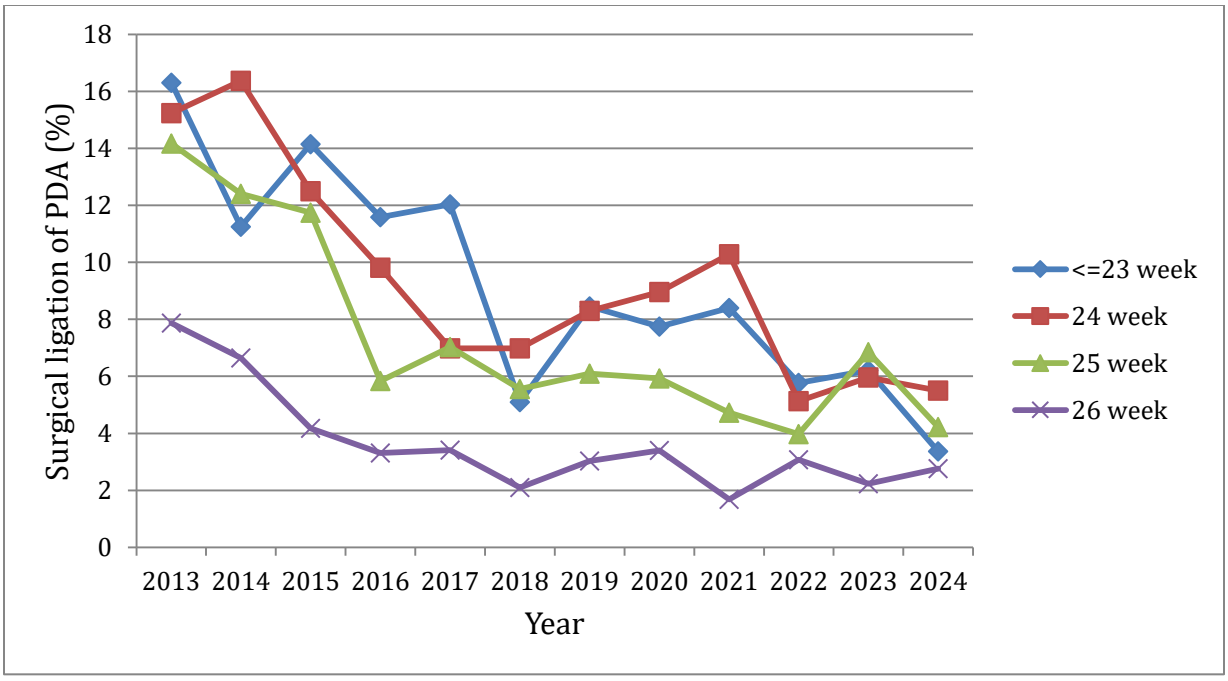



**b. 27-32 weeks' GA:**

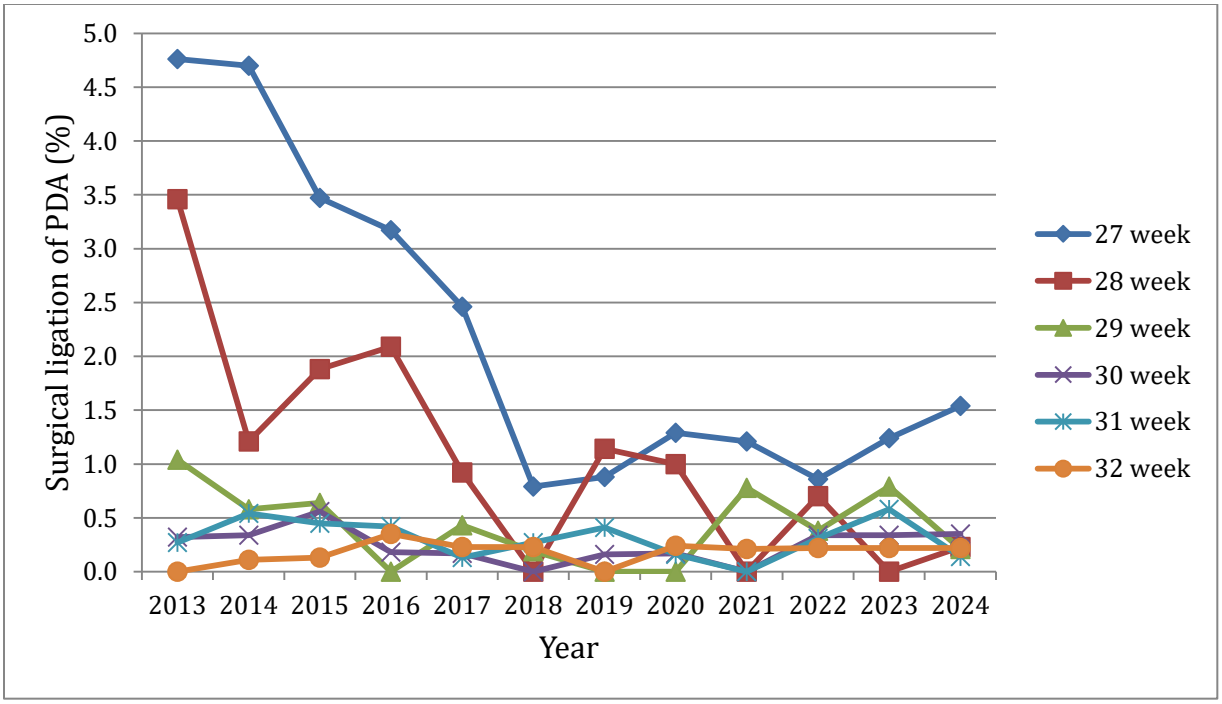


**6. Surgical ligation or device closure of PDA among all neonates**

**a. 22-26 weeks' GA:**

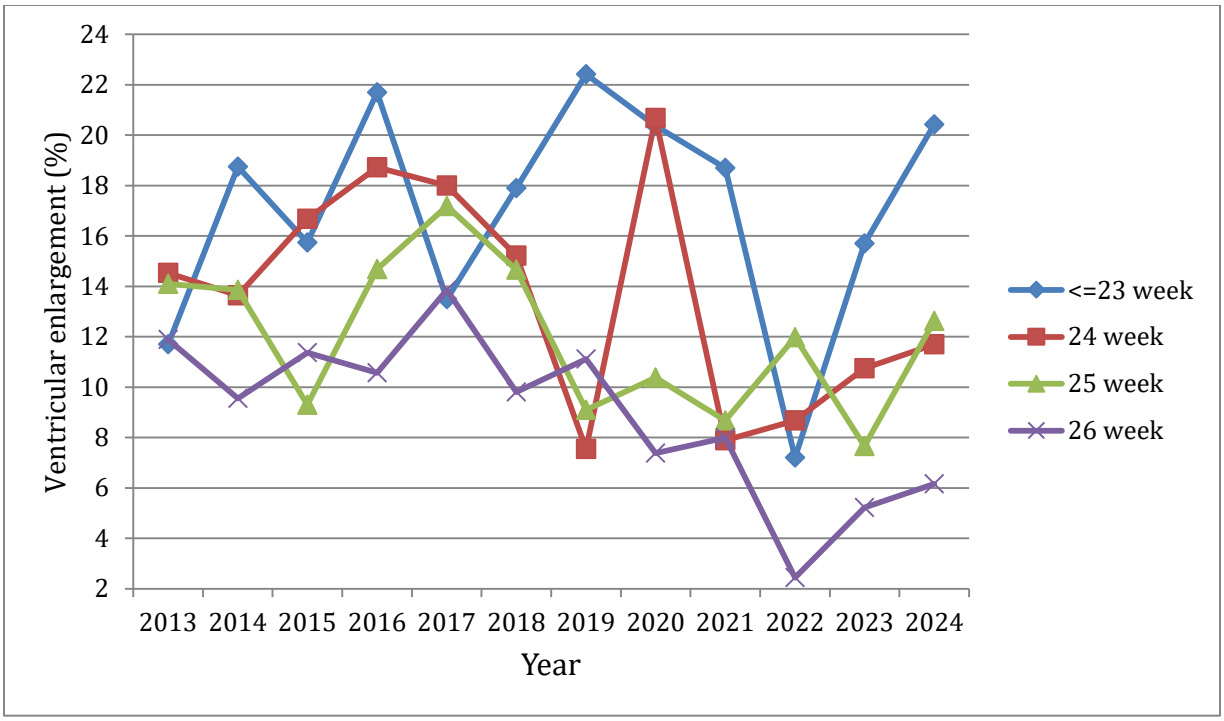



**b. 27-32 weeks' GA**:

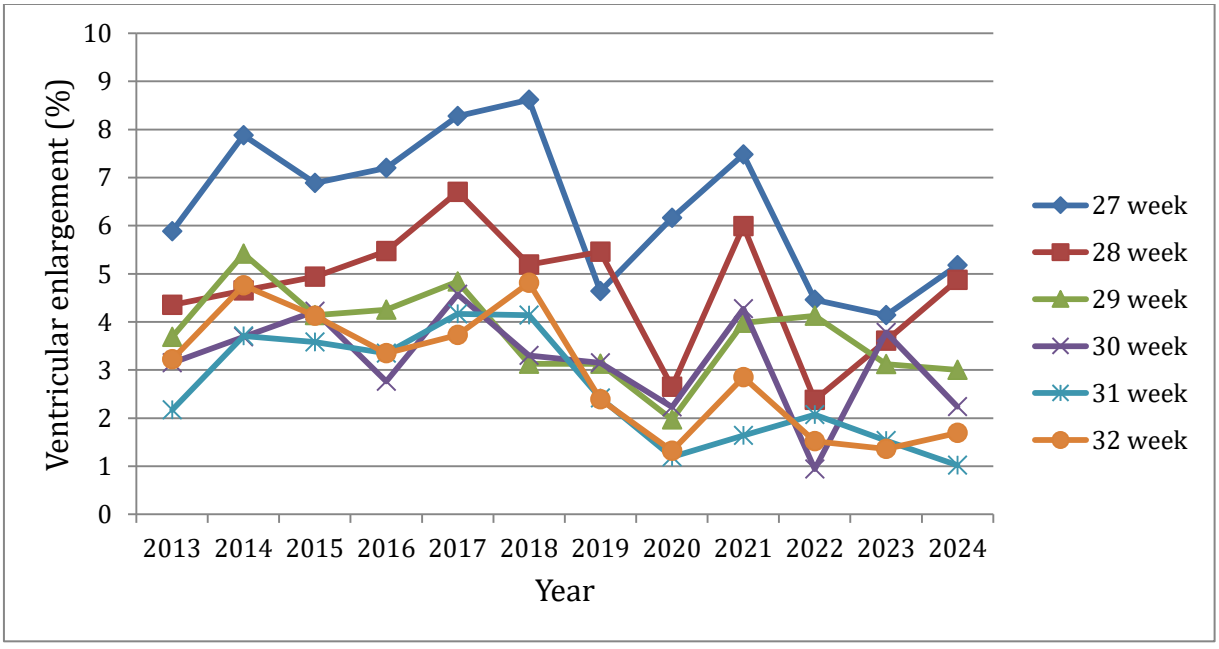


**7. Ventricular enlargement (VE): (moderate and severe VE only; among neonates who received ultrasound exams)**

**a. 22-26 weeks' GA:**

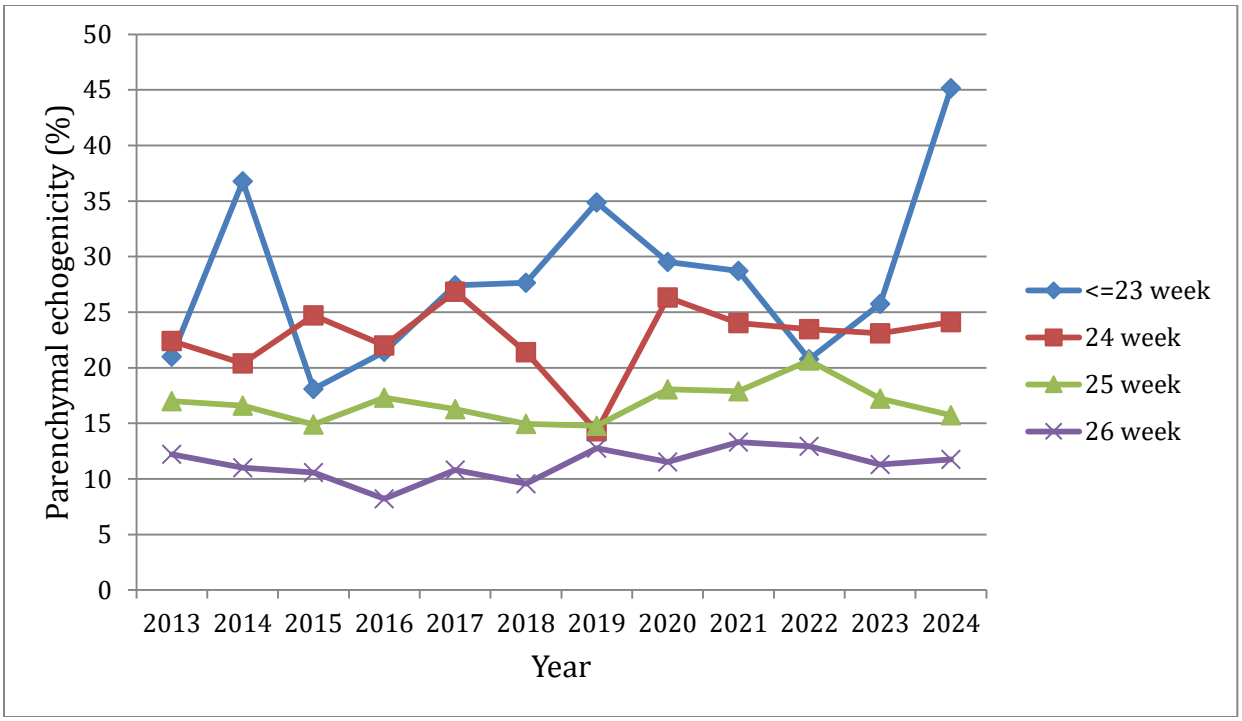



**b. 27-32 weeks' GA:**

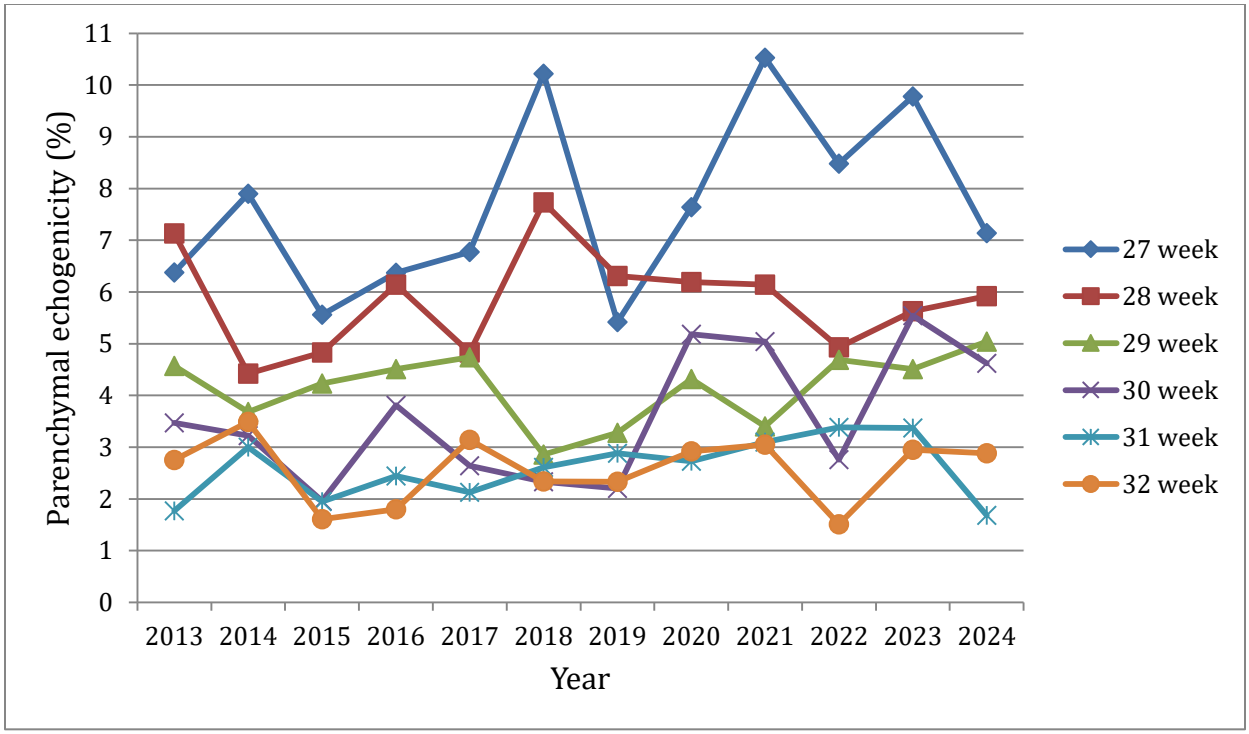


**8. PVL or intra-parenchymal lesion (among neonates who received ultrasound exams)**

**a. 22-26 weeks' GA:**

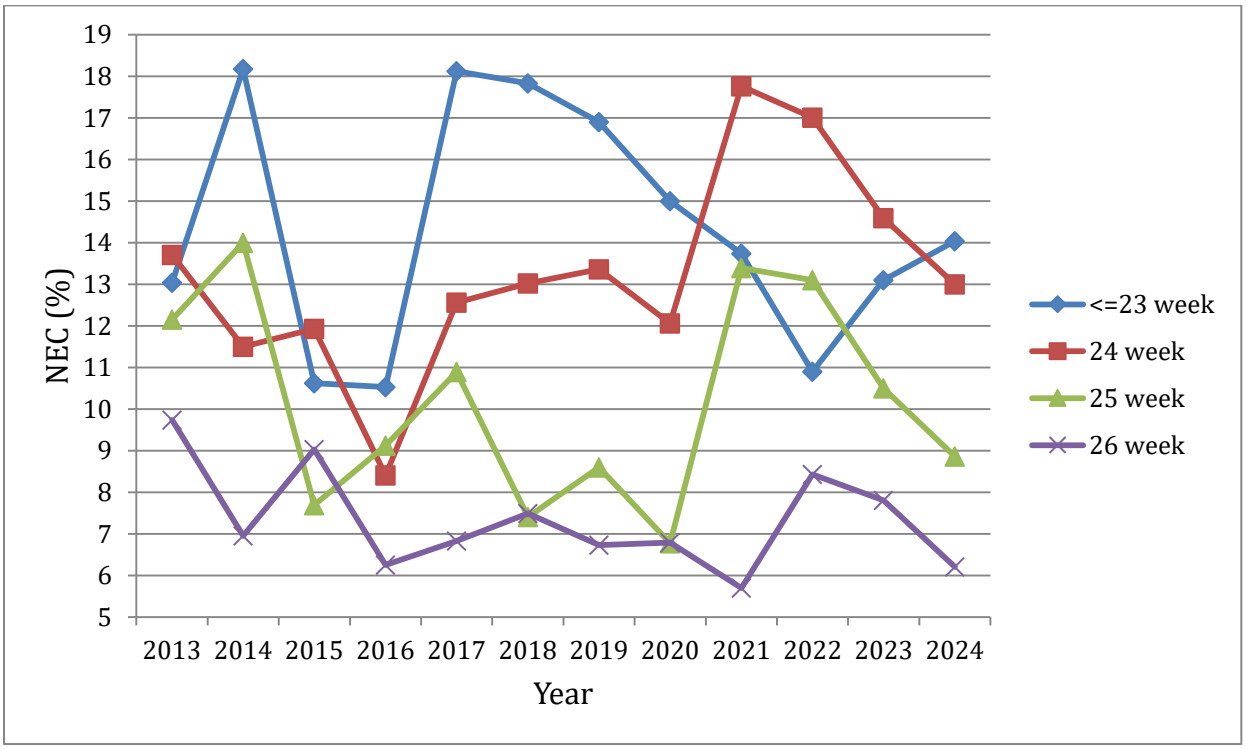



**b. 27-32 weeks GA:**

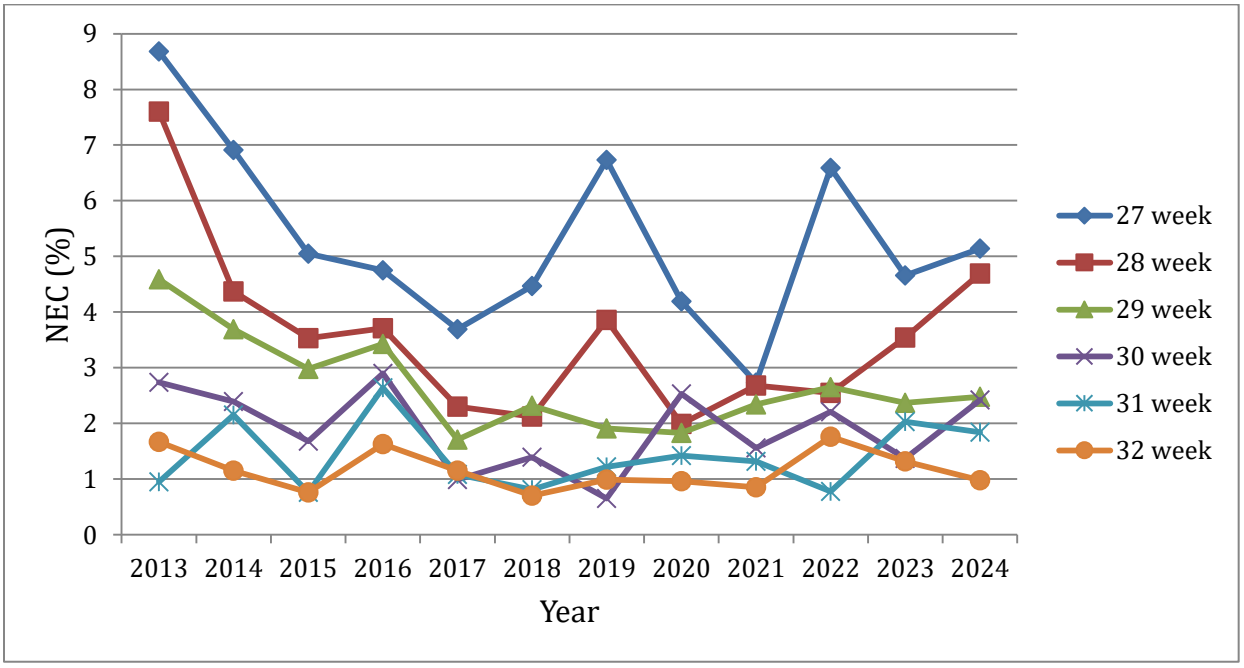


**9. NEC:**

**a. 22-26 weeks' GA:**

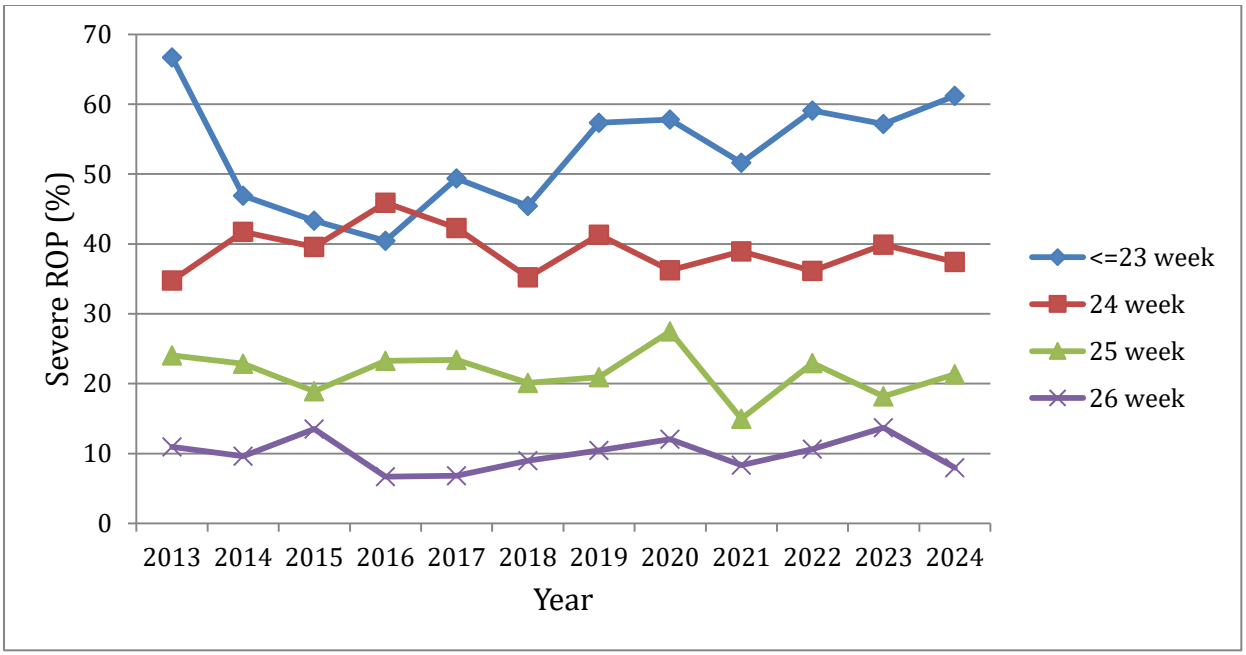



**b. 27-32 weeks' GA:**

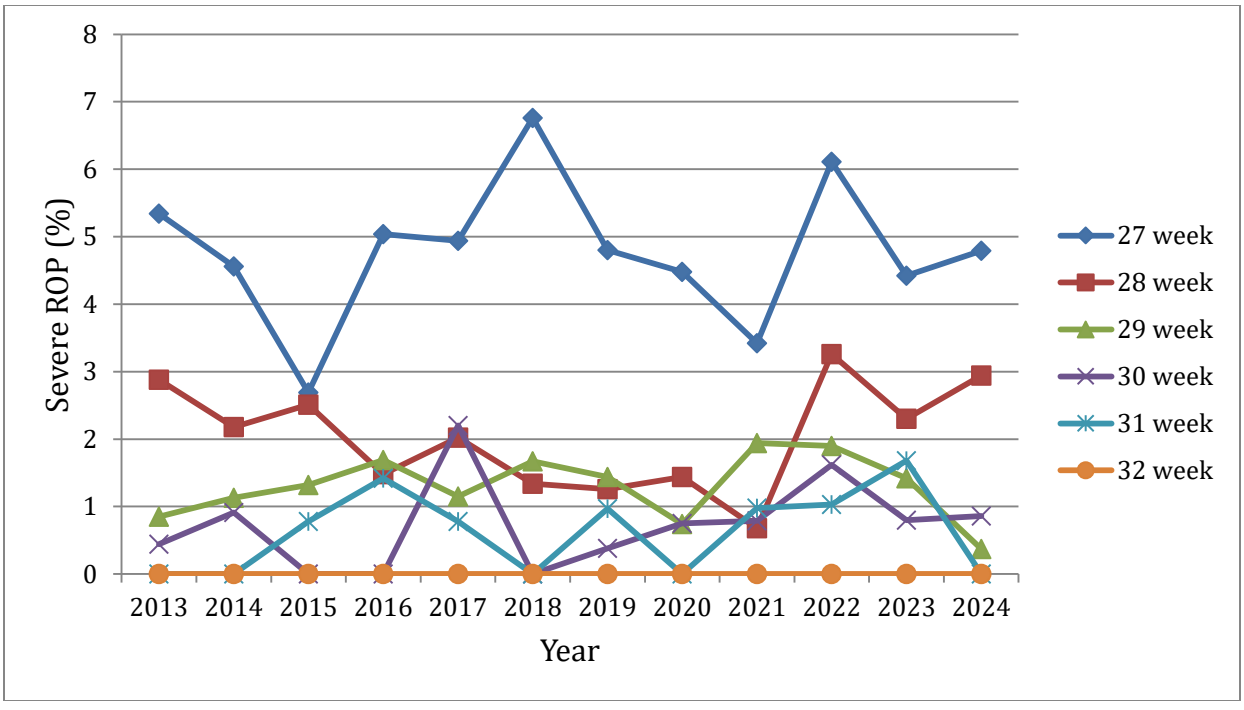


**10. Severe ROP (≥ Stage 3 or ROP treatment) among neonates who received eye exams:**

**a. 22-26 weeks' GA:**

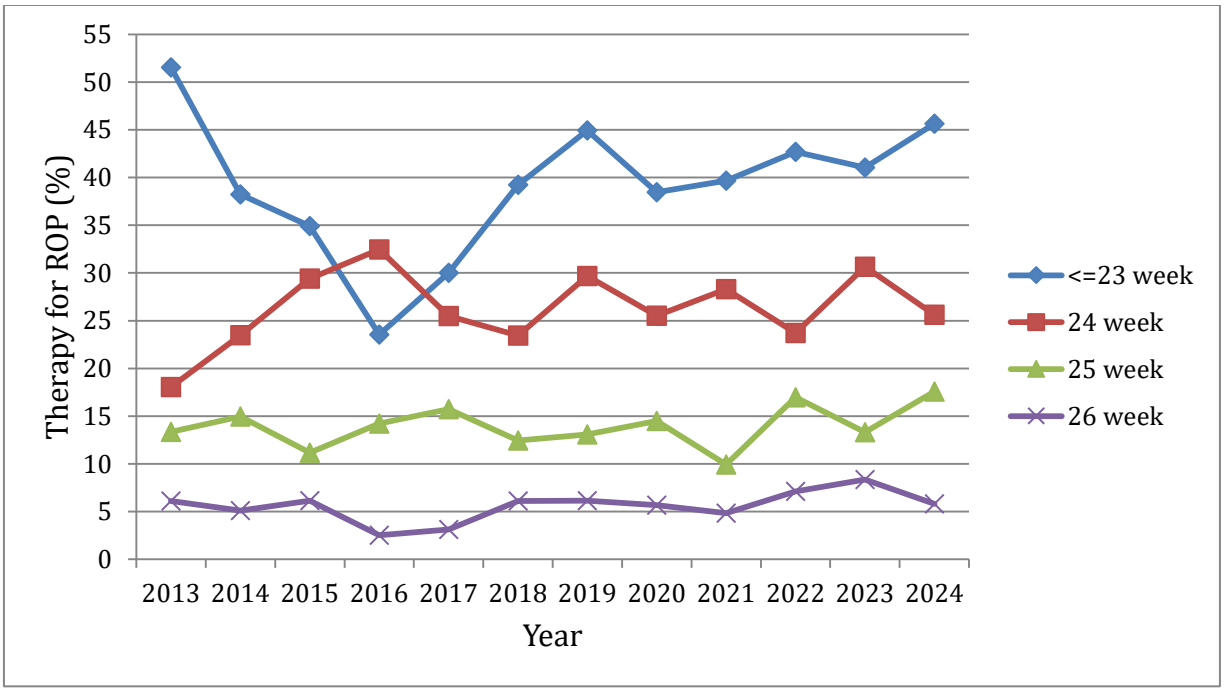



**b. 27-32 weeks' GA:**

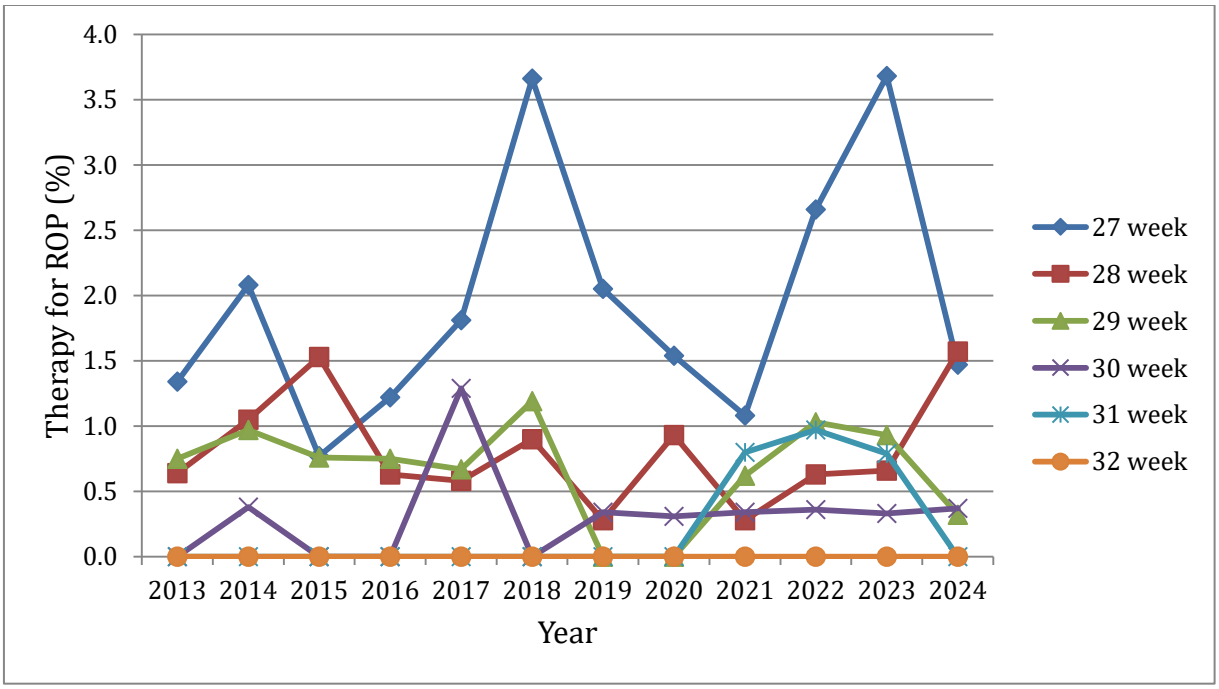


**11. Therapy for ROP (among neonates who received eye exams)**

**a. 22-26 weeks' GA:**

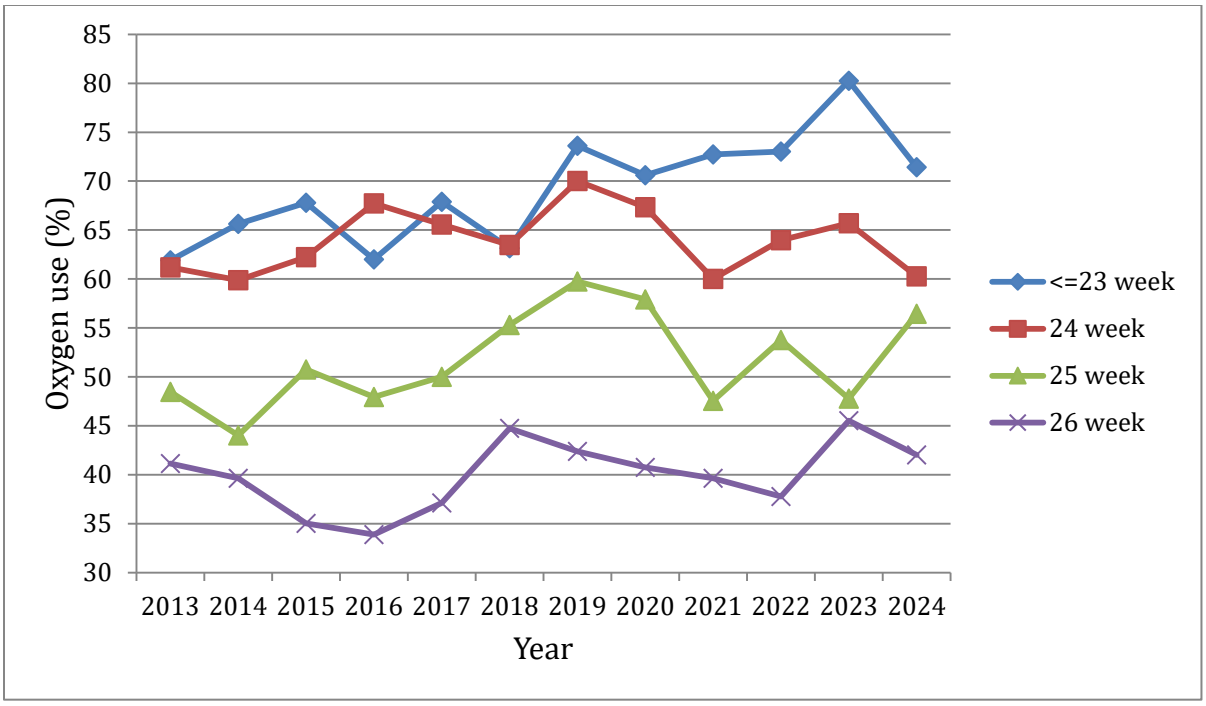



**b. 27-32 weeks' GA:**

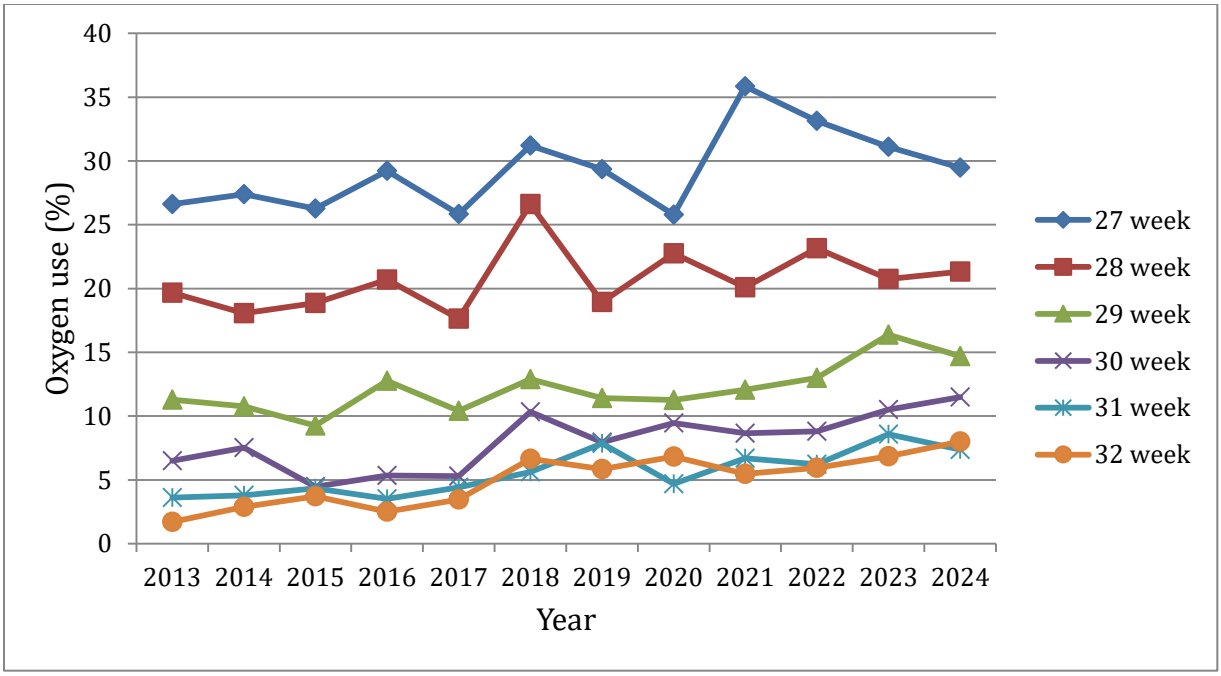


**12a. Oxygen use at 36 weeks or at discharge:**

**a. 22-26 weeks' GA:**

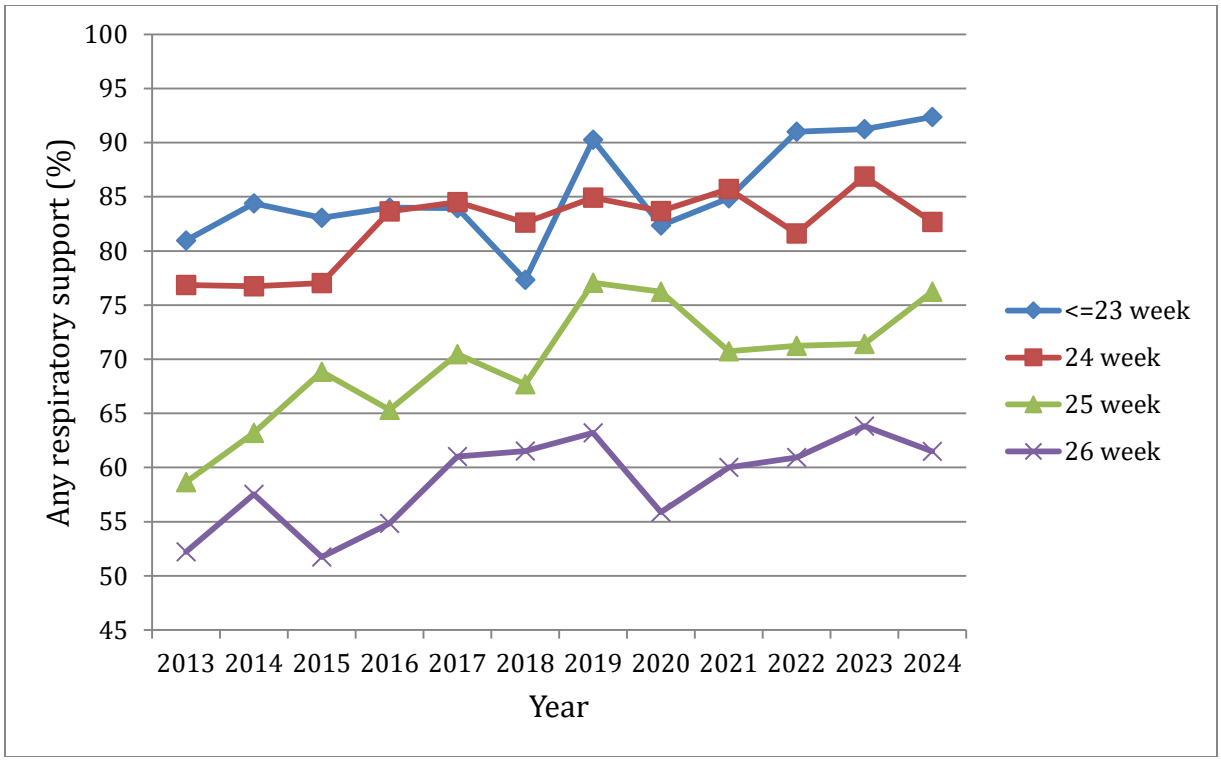



**b. 27-32 weeks' GA:**

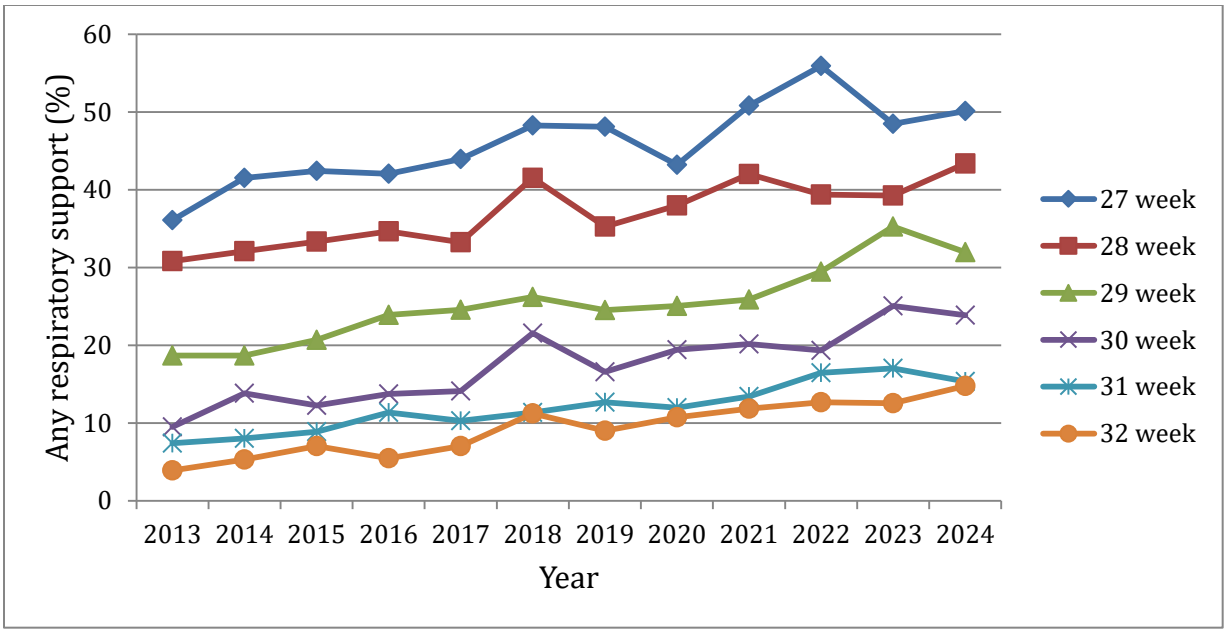


**12b. Any respiratory support (including supplemental oxygen) at 36 weeks or at discharge:**

**a. 22-26 weeks' GA:**

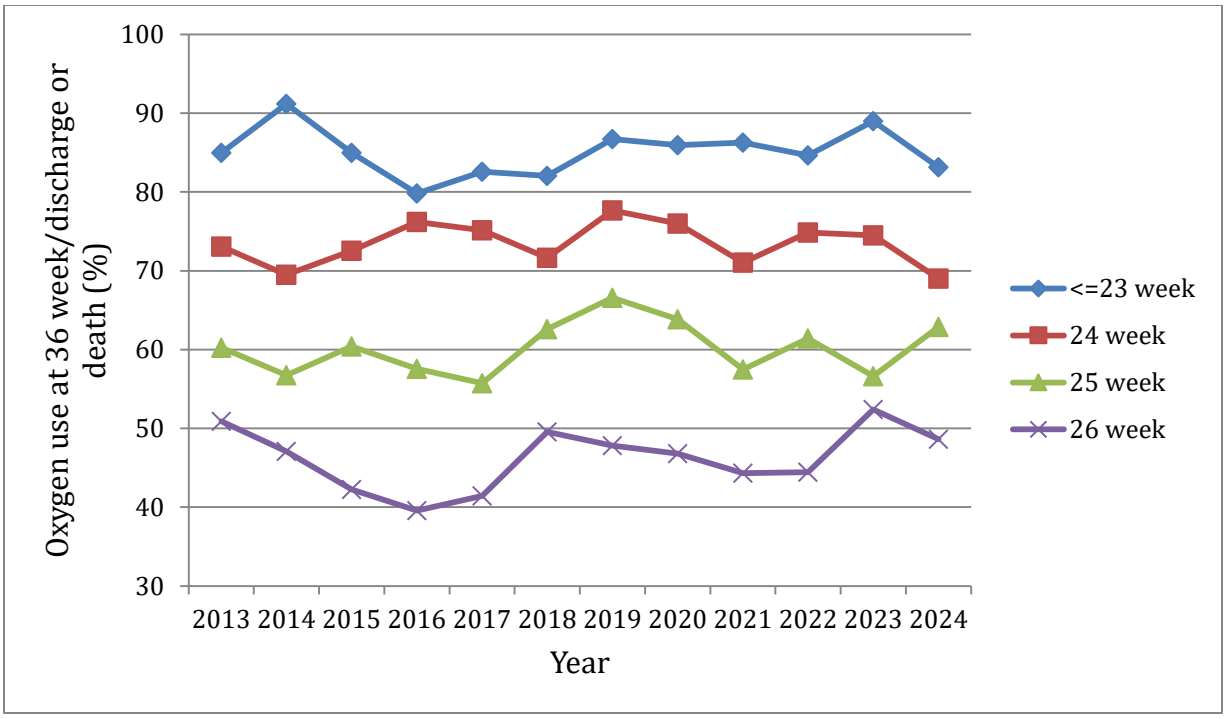



**b. 27-32 weeks' GA:**

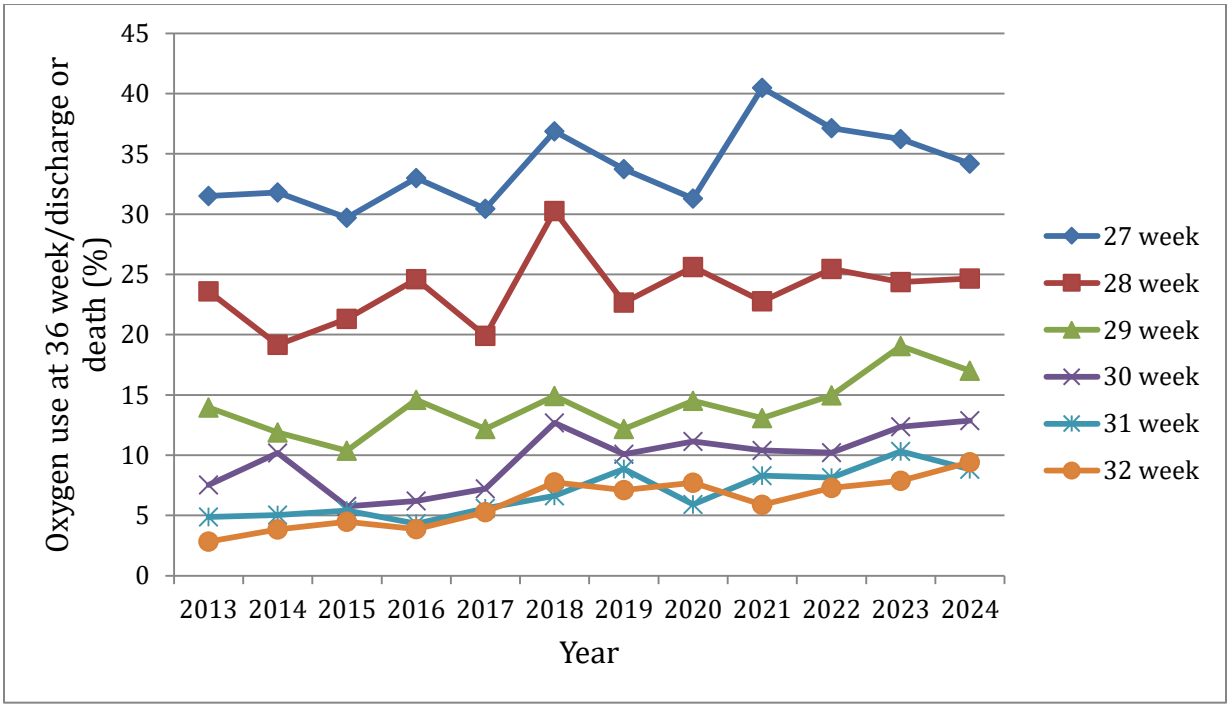


**13a. Oxygen use at 36 weeks/discharge or death:**

**a. 22-26 weeks' GA:**

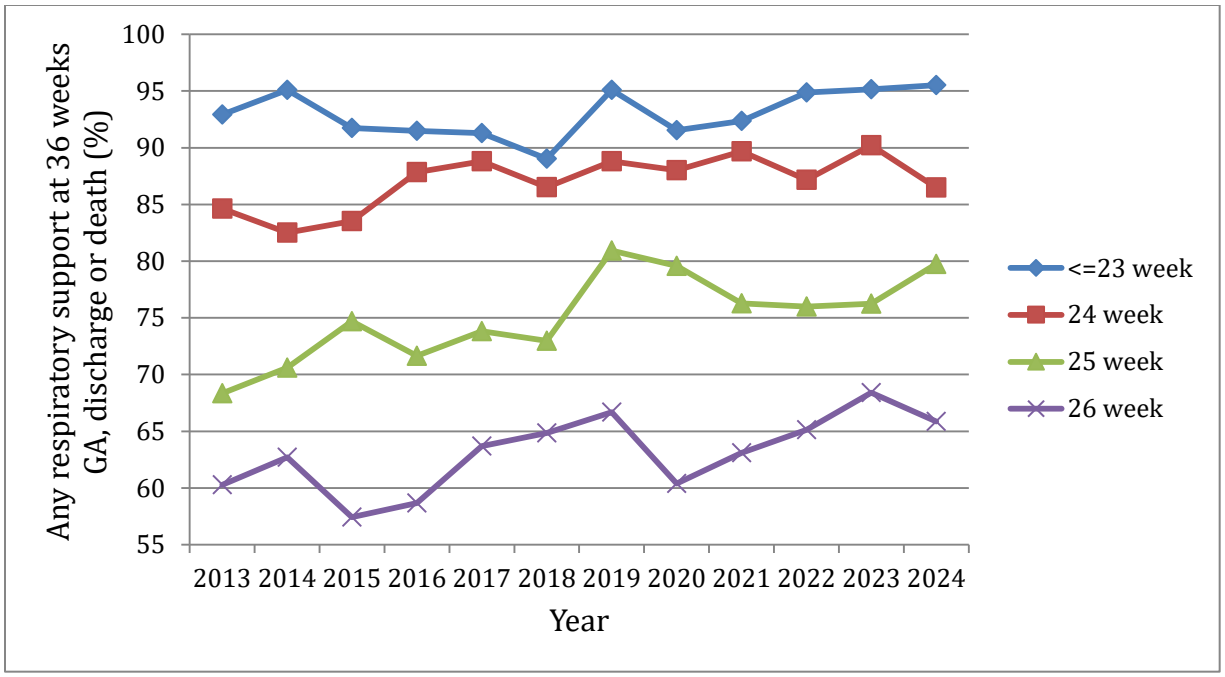



**b. 27-32 weeks' GA:**

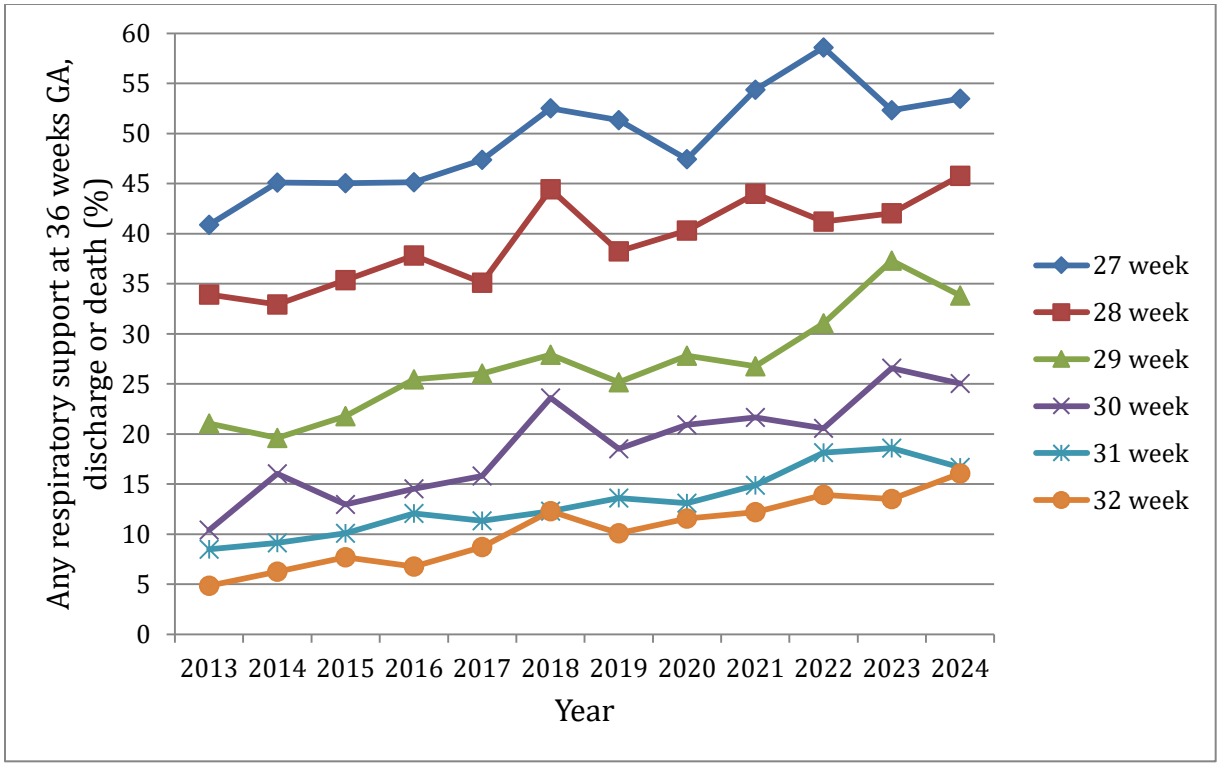


**13b. Any respiratory support (including supplemental oxygen) at 36 weeks/discharge or death:**

**a. 22-26 weeks' GA:**

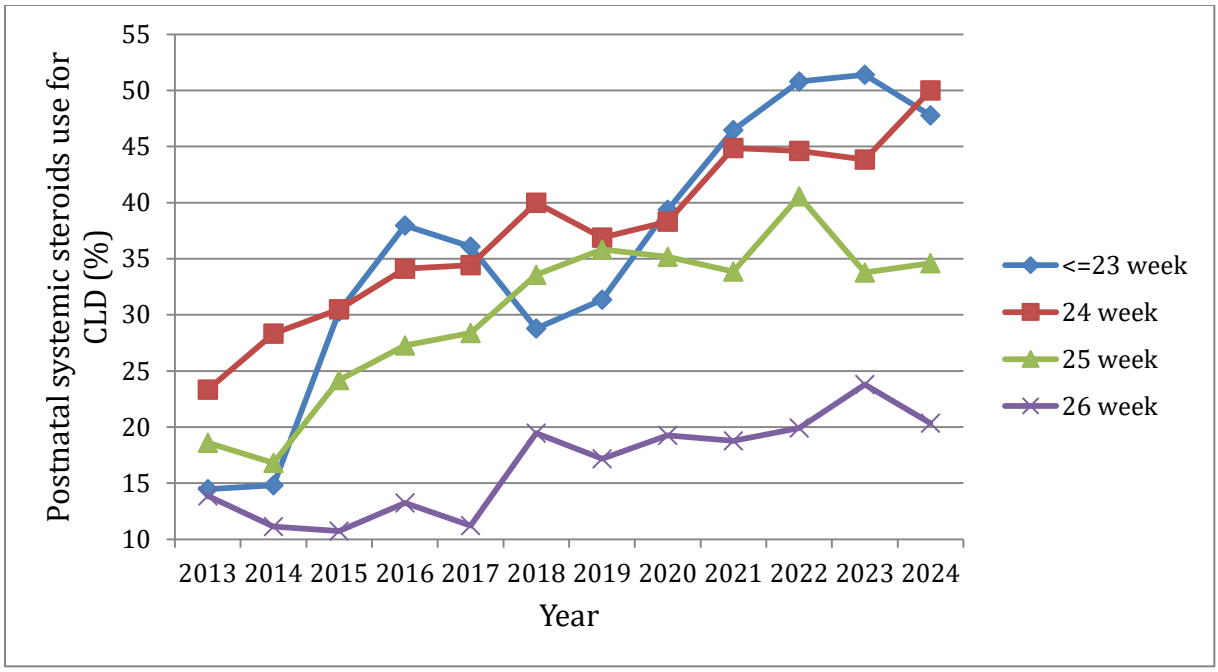



**b. 27-32 weeks' GA:**

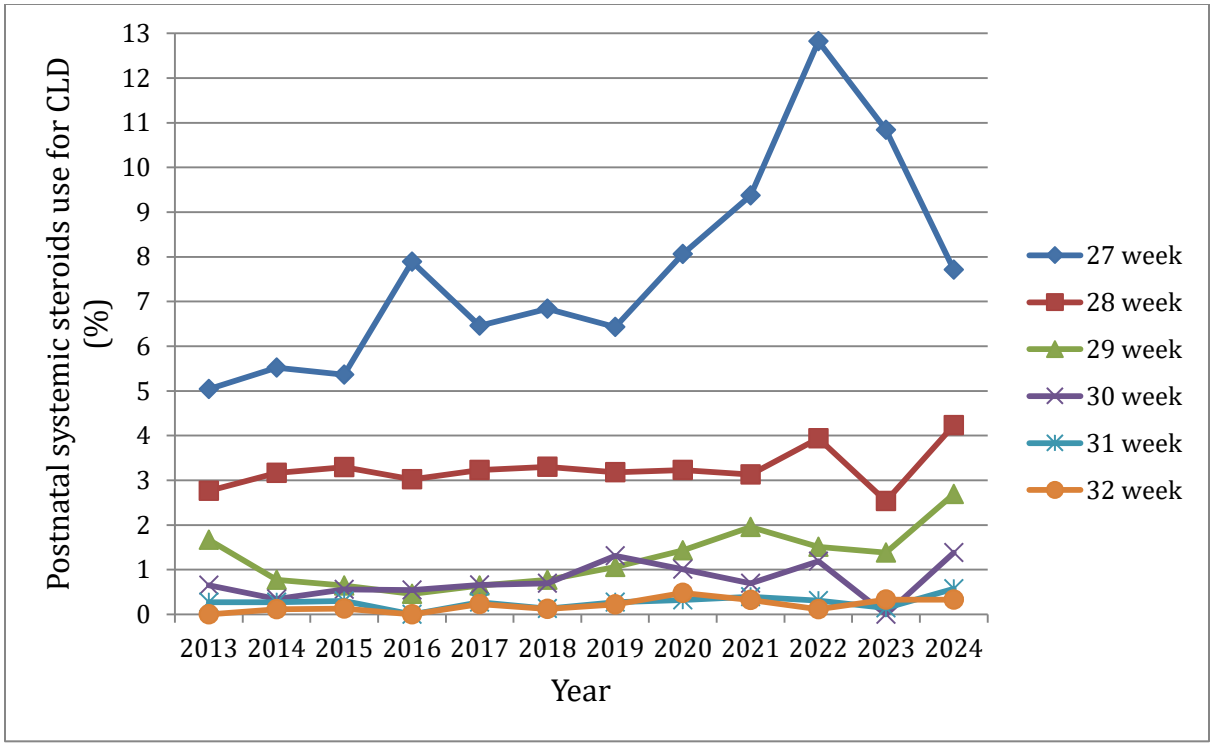


**14. Postnatal systemic steroids use for chronic lung disease (CLD)**

**a. 22-26 weeks' GA:**




**b. 27-32 weeks' GA:**

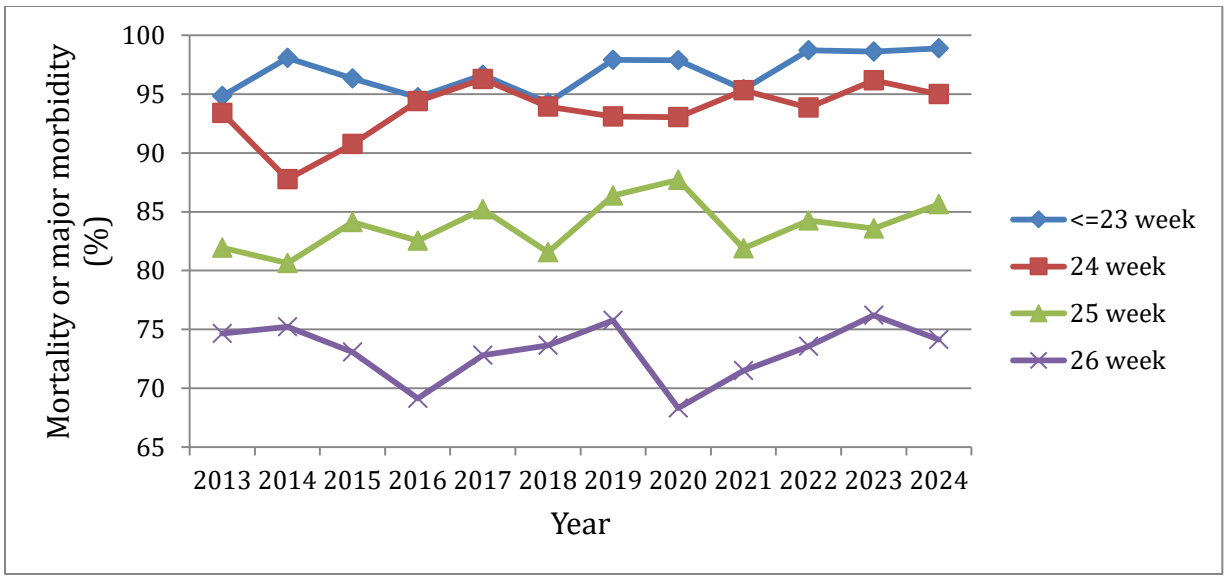


**15. Mortality or major morbidity (latter including ANY CLD)**

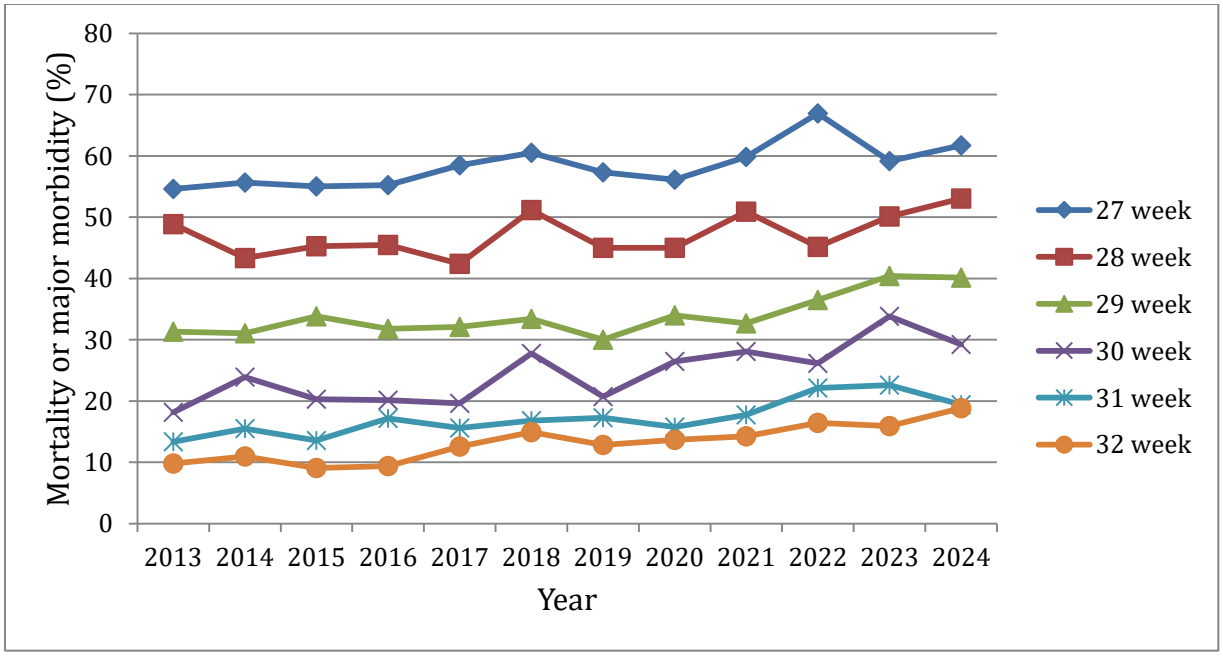
Major morbidity was counted as any one of the following:

1. CLD (any grade)
2. Severe ROP (stage 3,4,5 and/or those with ROP treatment)
3. Severe neurological injury (IVH grade 3 or grade 4 or PVL)
4. NEC (stage 2 or 3)
5. Late onset sepsis (any positive blood and/or cerebrospinal fluid culture after 2 days of age)

**a. 22-26 weeks' GA:**




**b. 27-32 weeks' GA:**

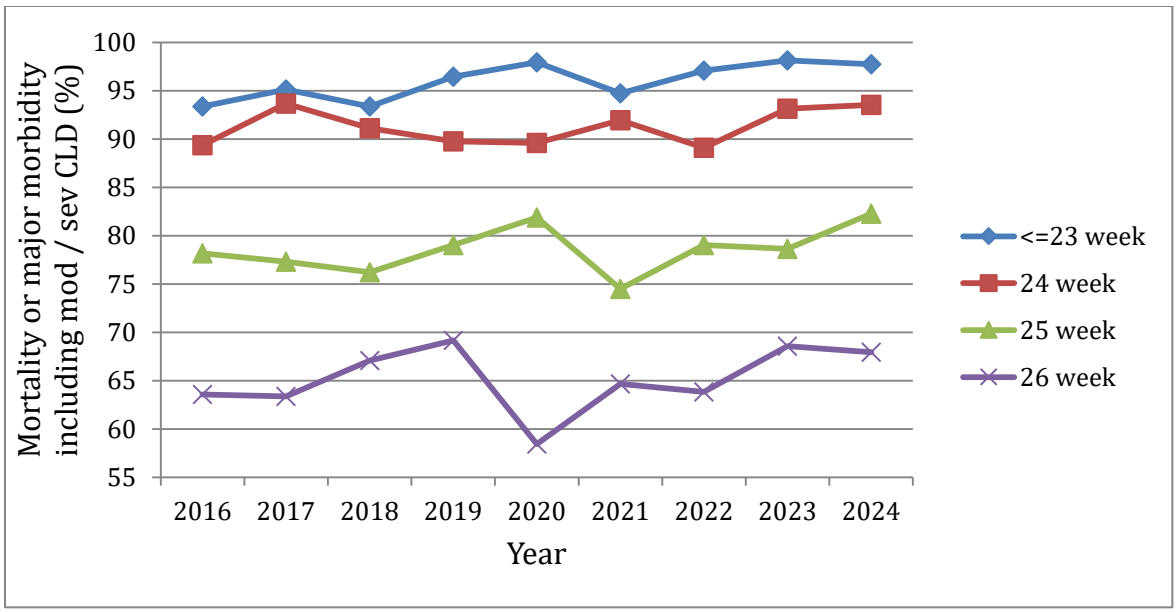


**16. Mortality or major morbidity (latter including ONLY moderate or severe CLD)**

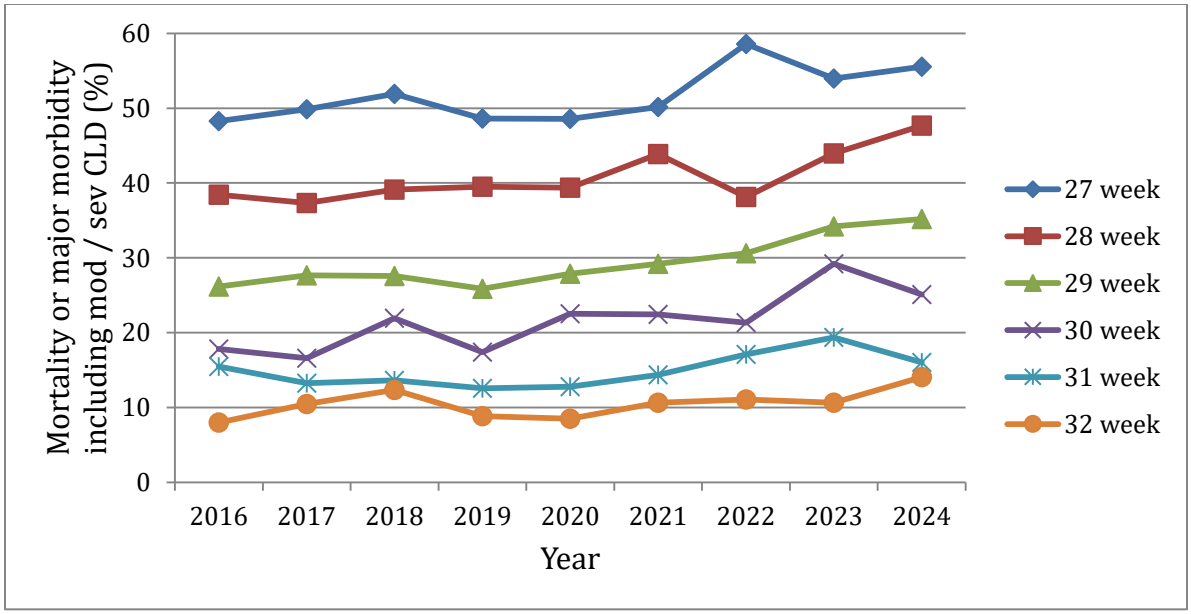
Major morbidity was counted as any one of the following:

1. Severe ROP (stage 3,4,5 and/or those with ROP treatment)
2. Severe neurological injury (IVH grade 3 or grade 4 or PVL)
3. NEC (stage 2 or 3)
4. Late onset sepsis (any positive blood and/or cerebrospinal fluid culture after 2 days of age)
5. Moderate or severe CLD

**a. 22-26 weeks' GA:**




**b. 27-32 weeks' GA:**



# I. 2024 CNN publications

## Peer reviewed publications

1) Zhou, Q., Ong, M., Ye, X. Y., Ting, J. Y., Shah, P. S., Synnes, A., Luu, T. M., Lee, S., & Canadian Neonatal Network & Canadian Neonatal Follow-Up Network Investigators (2024). Long-Term Neurodevelopmental Impairment among Very Preterm Infants with Sepsis, Meningitis, and Intraventricular Hemorrhage. *Neonatology*, *121*(1), 65–73. https://doi.org/10.1159/000534178
2) Gurram Venkata, S. K. R., Lodha, A., Hicks, M., Jain, A., Lapointe, A., Makary, H., Kanungo, J., Lee, K. S., Ye, X., Shah, P. S., Soraisham, A. S., Canadian Neonatal Network and Canadian Neonatal Follow Up Network, & Canadian Neonatal Network and Canadian Neonatal Follow Up NetworkTM (2024). Neurodevelopmental outcomes of preterm neonates receiving rescue inhaled nitric oxide in the first week of age: a cohort study. *Archives of disease in childhood. Fetal and neonatal edition*, *109*(2), 211–216. https://doi.org/10.1136/archdischild-2023-325418
3) Yeung, T., Ahmed, A., Wong, J., Toye, J., Abou Mehrem, A., Mukerji, A., Lapointe, A., Ng, E., Beltempo, M., Pechlivanoglou, P., Lee, S., Shah, P. S., & Canadian Preterm Birth Network and Canadian Neonatal Network Investigators (2024). Variations in Site-Specific Costs for Infants Born Extremely Preterm in Canadian Neonatal Intensive Care Units. *The Journal of pediatrics*, *266*, 113863. https://doi.org/10.1016/j.jpeds.2023.113863
4) Garfinkle, J., Khairy, M., Simard, M. N., Wong, J., Shah, P. S., Luu, T. M., Beltempo, M., & Canadian Neonatal Network and Canadian Neonatal Follow-Up Network Investigators (2024). Corrected Age at Bayley Assessment and Developmental Delay in Extreme Preterms. *Pediatrics*, *153*(2), e2023063654. https://doi.org/10.1542/peds.2023-063654
5) Jabbour, E., Patel, S., Lacroix, G., Pechlivanoglou, P., Shah, P. S., Beltempo, M., & Canadian Preterm Birth Network Investigators Canadian Neonatal Network Investigators (2024). Validation of a Costing Algorithm and Cost Drivers for Neonates Admitted to the Neonatal Intensive Care Unit. *American journal of perinatology*, *41*(12), 1688–1696. https://doi.org/10.1055/a-2251-6238
6) Abou Mehrem, A., Toye, J., Beltempo, M., Aziz, K., Bizgu, V., Wong, J., Singhal, N., Shah, P. S., & Canadian Neonatal Network and Canadian Preterm Birth Network Investigators (2024). Process and Outcome Measures for Infants Born Moderate and Late Preterm in Tertiary Canadian Neonatal Intensive Care Units. *The Journal of pediatrics*, *269*, 113976. https://doi.org/10.1016/j.jpeds.2024.113976
7) Hodgson, E., Briatico, D., Klapman, S., Skarsgard, E., Beltempo, M., Shah, P. S., Huisman, E., Walton, J. M., Livingston, M. H., & Canadian Association of Pediatric Surgeons Network (CAPSNet) and Canadian Neonatal Network (CNN) investigators (2024). Association of Exclusive Breast Milk Intake and Outcomes in Infants With Uncomplicated Gastroschisis: A National Cohort Study. *Journal of pediatric surgery*, *59*(5), 863–868. https://doi.org/10.1016/j.jpedsurg.2024.01.045
8) Mukerji, A., Read, B., Yang, J., Baczynski, M., Ng, E., Dunn, M., Ethier, G., Abou Mehrem, A., Beltempo, M., Drolet, C., da Silva, O., Louis, D., Lemyre, B., Afifi, J., Singh, B., Sherlock, R., Stavel, M., Masse, E., Kanungo, J., Wong, J., … Shah, P. S. (2024). CPAP Versus NIPPV Postextubation in Preterm Neonates: A Comparative-Effectiveness Study. *Pediatrics*, *153*(4), e2023064045. https://doi.org/10.1542/peds.2023-064045
9) Elkhouli, M., Raghuram, K., Elhanafy, T., Asztalos, E., Banihani, R., Shah, P. S., & Mohamed, A. (2024). Association of low hemoglobin at birth and neurodevelopmental outcomes in preterm neonates ≤28 weeks' gestation: a retrospective cohort study. *Journal of perinatology : official journal of the California Perinatal Association*, *44*(6), 880–885. https://doi.org/10.1038/s41372-024-01946-y
10) Fazio, M., Jabbour, E., Patel, S., Bertelle, V., Lapointe, A., Lacroix, G., Gravel, S., Cabot, M., Piedboeuf, B., Beltempo, M., & Quebec investigators of the Canadian Neonatal Network (CNN) (2024). Association of Shift-Level Organizational Factors with Nosocomial Infection in the Neonatal

Intensive Care Unit. *Journal of pediatrics. Clinical practice*, *13*, 200112. https://doi.org/10.1016/j.jpedcp.2024.200112

## Abstracts

1) Kashkari H, El-Naggar W, Yoon E, Afifi J, McDonald S, Beltempo M, Shah P, Crane J. Umbilical cord management in preterm infants born by cesarean delivery. PAS 2024: 2135.4.
2) Lo E, Shah P, Chow JM, Stavel M, Harabor A, Alvaro R, Augustine S, Banihani R, Lee S, Rolnitsky A. Association of cytomegalovirus infection in preterm infants and neonatal outcomes. PAS 2024: 2425.3
3) Mukerji A, Read B, De Oliveira B, Louis D, Makary H, Zwicker J, Thomas K, Dunn M, Shah P. Severity of bronchopulmonary dysplasia using a Canadian definition and early childhood outcomes: A population-based cohort study. PAS 2024: 3080.1.
4) Afifi J, Shah P, Richter L, Lee S, Raghuram K, Thomas K, Mukerji A, Kanungo J, Lapointe A, Morin A, El-Naggar W, Salami O, Olukotun M. Predictors of neurodevelopmental impairment in extreme preterm infants with unremarkable cranial ultrasound: A Canadian population-based cohort. PAS 2024: 3055.3

## Oral Poster Symposia

1) Ting J, Roberts A, Wong J, Khurshid F, Choudhury J, Autmizguine J, Elsharkawy A, Lemyre B, Ojah C, Mukerji A, Gupta-Bhatnagar S, Dunn M, Lapointe A, Yoon E, Richter L, Balay C, Robinson J, Afifi J, Louis D, Shah P. Epidemiology and outcomes of a multidrug-resistant sepsis in the neonatal intensive care unit: A national cohort study. PAS 2024: 606:318.
2) Bouadi N, Beltempo M, Ethier G, Boucoiran I, McDonald S, Villeneuve A. Deferred cord clamping in twin pregnancies across Canada: A national survey of practices. PAS 2024: 68.260
3) Afifi J, Richter L, Lee S, Hicks M, Beltempo M, Colby L, Bourque CJ, Salami O, Synnes A. Sociodemographic and family characteristics of children with and without neurodevelopmental impairment in a Canadian cohort of extreme preterm children. PAS 2024.

# J. Appendices

## Outcomes Definitions

**Mortality:** Death prior to discharge from the NICU.

**Severe neurological injury: Intraventricular hemorrhage (IVH), ventricular enlargement or parenchymal echogenicity or periventricular leukomalacia (PVL):** Defined as grade 3 IVH (intraventricular hemorrhage with ventricular enlargement) or grade 4 IVH (intraventricular hemorrhage and persistent parenchymal echogenicity) or persistent parenchymal echogenicity.

**Ventricular enlargement**

- ***None:*** Measurement of ventricles was <7 mm at any level section of lateral ventricle.
- ***Mild:*** Measurement was 7 to 10 mm at any level of the larger lateral ventricle. Classify as "mild" if there was no mention of "ventricular enlargement", "ventriculomegaly" or "hydrocephalus", or if the most severe report was of "mild ventriculomegaly" or "mild ventricular enlargement", or if described as "suspected"
- ***Moderate:*** Measurement was 11 to 15 mm at any level of the larger lateral ventricle on sagittal scan. Classify as "moderate" if the terms "grade III IVH", "ventricular enlargement", "ventriculomegaly" or "hydrocephalus" were used with "moderate", or without descriptors.
- ***Severe:*** Measurement was >15 mm at any level of the larger lateral ventricle on a sagittal scan, or ventricular drainage/shunting was required. If no measurement was made, classify as "severe" if the terms "severe" or "significant" were used to describe "grade III IVH", "ventricular enlargement", "ventriculomegaly" or "hydrocephalus".
- ***Not measured***
- ***Unknown***

**Severe retinopathy of prematurity (ROP):** Stage 3, 4 or 5 ROP as defined by the International Classification of Retinopathy of Prematurity[1] and/or those infants requiring treatment (laser or intraocular injection). ROP was scored as the highest stage in either eye identified at any time.

**Necrotizing enterocolitis (NEC):** Stage 2 or 3 NEC according to Bell's classification[2], diagnosed by clinical and imaging findings.

**Sepsis:** Isolation of bacterial, fungal or viral organism from blood or cerebrospinal fluid in a symptomatic infant.

**Chronic lung disease (CLD)**: Defined as respiratory support given at 36 weeks' post menstrual age or at discharge (if earlier than 36 weeks' PMA) to level 2 centers and was classified in different degrees of severity described as follows (Note that some sites collect CLD status at 36 weeks' PMA for infants transferred to level 2 centers):

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[1] An International Committee for the Classification of Retinopathy of Prematurity. **The International Classificaiton of Retinopathy of Prematurity Revisited.** Arch Ophthalmol 2005;123:991-999

[2] Bell MJ, Ternberg JL, Feigin RD, et al. **Neonatal necrotizing enterocolitis. Therapeutic decisions based upon clinical staging.** Ann Surg 1978;187:1–7

**Chronic lung disease (CLD)** continued:

| Severity | Respiratory support at time of classification (at 36 weeks' PMA or at discharge if baby was discharged prior to 36 weeks' PMA) | Oxygen | Flow rate |
|---|---|---|---|
| No CLD | None | 21% | None |
| Mild CLD | Headbox or incubator | >21% | Any amount |
| | Nasal cannula | 100% | <0.1L/min |
| | Nasal cannula blended air/oxygen | 21-99% | <1.5L/min |
| Moderate CLD | Nasal cannula | 100% | ≥0.1L/min |
| | Nasal cannula blended air/oxygen | 21-29% | ≥1.5L/min |
| | CPAP, SIPAP, NIPPV, NIHFV | 21-29% | |
| Severe CLD | Nasal cannula blended oxygen | ≥30% | ≥1.5L/min |
| | CPAP, SIPAP, NIPPV, NIHFV | ≥30% | |
| | Mechanical ventilation (intubated) | 21-100% | |

**Survival without major morbidities:** Defined as survival at discharge from the NICU without having any of CLD, NEC stage 2 or 3, IVH grade 3 or 4 or PVL, sepsis, or ROP stage 3, 4, 5, or ROP treatment.

## Variables Definitions

Definitions of CNN variables can be found in the CNN abstractors' manual. The manual can be accessed on the CNN website (www.canadianneonatalnetwork.org/portal) via the following link:
https://www.canadianneonatalnetwork.org/Doc/Manual/CNNManual.pdf

## Major Anomalies

A list of major anomalies can be found in the 2013 annual report, pages 124-127.
It is available via the following link:
http://www.canadianneonatalnetwork.org/Portal/LinkClick.aspx?fileticket=lreR0871sjA%3d&tabid=39

# Abbreviations

| | |
|---|---|
| **ANCS** | Antenatal Corticosteroids |
| **BW** | Birth Weight |
| **BPD** | Bronchopulmonary dysplasia |
| **CONS** | Coagulase-Negative Staphylococcus |
| **CPAP** | Continuous Positive Airway Pressure |
| **CLABSI** | Central Line-Associated Bloodstream Infection |
| **CLD** | Chronic Lung Disease |
| **CVL** | Central Venous Line |
| **DR** | Delivery Room |
| **EPIQ** | Evidence-based Practice for Improving Quality |
| **ETT** | Endotracheal Tube |
| **GA** | Gestational Age |
| **GBS** | Group B Streptococcus |
| **GM** | Germinal Matrix |
| **HFV** | High Frequency Ventilation |
| **HIE** | Hypoxic Ischemic Encephalopathy |
| **ICROP** | International Classification of Retinopathy of Prematurity |
| **IPPV** | Intermittent Positive Pressure Ventilation |
| **IVH** | Intra-Ventricular Hemorrhage |
| **NEC** | Necrotizing Enterocolitis |
| **NI** | Nosocomial Infection |
| **NICE** | Neonatal-Perinatal Interdisciplinary Capacity Enhancement |
| **NICU** | Neonatal Intensive Care Units |
| **NTISS** | Neonatal Therapeutic Intervention Scoring System |
| **PDA** | Patent Ductus Arteriosus |
| **PEC** | Parenchymal Echogenicity |
| **PICC** | Peripherally Inserted Central Catheters |
| **PIV** | Peripheral Intravenous |
| **PMA** | Postmenstrual Age |
| **PPV** | Positive Pressure Ventilation |

| | |
|---|---|
| **PVL** | Periventricular Leukomalacia |
| **RDS** | Respiratory Distress Syndrome |
| **ROP** | Retinopathy of Prematurity |
| **SD** | Standard Deviation |
| **SEM** | Standard Error of Mean |
| **SGA** | Small for Gestational Age |
| **SNAP** | Score for Acute Neonatal Physiology |
| **SNAP-IIPE** | Score for Acute Neonatal Physiology Version II, Perinatal Extension |
| **SR** | Standardized Ratio |
| **TPN** | Total Parenteral Nutrition |
| **TRIPS** | Transport Risk Index of Physiologic Stability |
| **UV** | Umbilical Vein |
| **VE** | Ventricular Enlargement |
| **VEGF** | Vascular Endothelial Growth Factor |
| **VLBW** | Very Low Birth Weight |
| **VP** | Ventriculoperitoneal |

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