

A vibrant field of yellow tulips in full bloom, set against a clear, bright blue sky. The flowers are the central focus, with their petals showing a rich yellow hue and some subtle red streaks. The background is a soft-focus field of more tulips, creating a sense of depth. The overall mood is bright and cheerful.

# REPORT 2021

# EpicLatino

## **ACKNOWLEDGMENTS**

This report is based on the data collected during the year 2021 by 29 newborn units (NICU) from Latin America that belong to the neonatal network EpicLatino. We appreciate the invaluable support of the participating NICUs who contributed this information, and we acknowledge the dedication and work of the researchers, NICU directors, and the people who have entered the information into the database. Additionally, we appreciate the support given by Dr. Shoo Lee, former director of the Maternal-Infant Research Center at Mount Sinai Hospital, scientific director CIHR Institute of Human Development, Child and Youth Health, an Associate Member of the Lunenfeld-Tanenbaum Research Institute, and professor at the University of Toronto for his help, leadership and financial support through the CIHR grant, for the development of this project. Dr. Shoo Lee, has been named to the Order of Canada, the country's highest honor for his lifetime achievement. We thank also Amara Rivero for her important collaboration in the reception and organization of the database.

## **STRUCTURE OF THE NEONATAL EPICLATINO NETWORK**

The EpicLatino neonatal network is a group of Latin American researchers and neonatologists who work on projects related to perinatal and neonatal care. It was founded in 2015 by Drs. Carlos Fajardo, Angela Hoyos, Carolina Villegas, Fernando Aguinaga, María Inés Martinini and Mariela Fernández. Thanks to the contacts with the Canadian neonatal network (CNN), data collection has been carried out under this network's program, translated into Spanish. Thanks to this system, the units that were already collecting information contributed their database of several years. This network maintains a standard database that allows researchers to participate in collaborative projects, both national and international. Health professionals, researchers and administrators can actively participate in different research projects related to clinical aspects, health services, health policies, etc. focused on improving the quality of care, efficacy, and effectiveness of neonatal care.

### **The Latin American Epic Neonatal Network Foundation**

Board of directors:	Dr. Carlos Fajardo	Dra. Angela Hoyos
	Dr. Fernando Aguinaga	Dr. Horacio Osiovich
	Dr. Alfonso Solimano	

### **Coordinating center Neonatal EpicLatino network**

President: Dr. Carlos Fajardo

Board of directors:

Dr. Angela Hoyos	Dr. Carolina Villegas
Dr. Fernando Aguinaga	Dr. María Inés Martinini
Dr. Mariela Fernández	

Analysts: Drs. Carlos Fajardo and Angela Hoyos.

Review committee: Drs. Carlos Fajardo, Pablo Vasquez and Angela Hoyos

<b>Acronym</b>	<b>Institutions</b>	<b>Above sea level (m)</b>	<b>Place</b>	<b>Investigators</b>
CDC	Clínica del Country	2640	Bogotá, Colombia	Dr. Angela Hoyos
CDSC	Clínica Dávila	570	Santiago, Chile	Dr. Manuel Becerra
CLC	Clínica la Colina	2640	Bogotá, Colombia	Drs. Martha Colon, Ximena Soler
CMISL	Clínica Materno Infantil San Luis	959	Bucaramanga, Colombia	Dr Martha Lucía Africano, Nurse: Luz Marina Ramírez
CS	Clínica Somer	2113	Rio Negro, Colombia	Drs. Edwin Antonio González, Luisa Medina Nurse: Luz Beatriz Sáenz
CSB	Clínica Santa Bárbara	2850	Quito, Ecuador	Drs. Edgar Jara Muñoz Natalia Sánchez and Pamela Izquierdo
CSFP	Clínica San Felipe	3	Lima, Perú	Drs. Jaime Zegarra y Fabiola Rivera
CSMS	Clínica de Santa María de Santiago	570	Santiago, Chile	Drs. María Carolina Gandolfi, Luisina Martínez
CUC	Clínica Universitaria Colombia	2640	Bogotá, Colombia	Drs. Leslie Martinez Ginna Blanco Caviedes
CV	Clínica Vespucio	570	Santiago, Chile	Dr. Iván Morera
HCI	Hospital Civil de Ipiales E.S.E	2898	Ipiales, Colombia	Drs. Carlos Guillermo Burbano
HCMP	Hospital Central Dr. Ignacio Morones Prieto	1850	San Luis Potosí, México	Dr. Carolina Villegas
HDC	S.E.S. Hospital de Caldas	2150	Manizales, Colombia	Dr. Oscar Julián López Uribe y enfermera Diana Marcela López
HDLV	Hospital de los Valles	2850	Quito, Ecuador	Drs. Verónica Delgado, Verónica Puebla, Verónica Rodríguez, Christian Ghia and Cesar Egas
HEM	Hospital Español de Mendoza	746	Mendoza, Argentina	Drs. Damián Pretz, Daniel Agost

<b>Acronym</b>	<b>Institutions</b>	<b>Above sea level (m)</b>	<b>Place</b>	<b>Investigators</b>
HGDC	Hospital General Docente de Calderón	2850	Quito, Ecuador	Drs. Elina Yáñez Valencia, Katty Grova, and Grethel Betancourt
HGM	Hospital General EISS de Manta	6	Manta, Ecuador	Drs. Ibelice Rocío Zambrano, Yaslin Delgado, Mariela Macias, Danixa Rodriguez, Yraida Millan and Karla Zambrano.
HILP	Hospital Italiano de La Plata	10	La Plata, Argentina	Drs. Guillermo Agustin Zambosco and Maricel Uria
HLL	Hospital Luis Lagomaggiore	746	Mendoza, Argentina	Dra. Cristina De Gaetano
HMC	Hospital Militar Central	2640	Bogotá, Colombia	Drs. Claudia Alarcón, Jorge López and Alejandro Colmenares
HMT	Hospital Metropolitano	2850	Quito, Ecuador	Drs. Fernando Aguinaga, Verónica Guzmán and Francis Ponce
HRPG	H Regional DR Rafael Pascacio Gamboa	522	Tuxtla Gutiérrez, México	Dr. María de la Luz Sánchez Tirado
HRPP	Hospital Nacional Ramiro Prialé	3259	Huancayo, Perú	Drs. Stevie Guisbert Elescano, Daniel Lozano Moreno, and Luz Noelia Jesús
HRU	Hospital Regional Universitario de Colima	570	Colima, Mexico	Dr. Juana de la Luz Castellanos
HSJ	Hospital San José	2640	Bogotá, Colombia	Drs. Diana Arias and Bladimir Marin Montoya
HSVP	Hospital Departamental San Vicente de Paul	828	Garzón, Huila, Colombia	Drs. Nidia Patricia Barrera Herrera and Flor Ángela Galindo
LCMC	Los Cobos Medical Center	2640	Bogotá, Colombia	Dr. Oscar Ovalle
MNSM	Maternidad Nuestra Sra. de las Mercedes	396	Tucuman, Argentina	Drs. María Inés Martinini, Daniel Amado, María Jorgelina Neme, Marta Alvarez, Gloria Ferreyra

<b>Acronym</b>	<b>Institutions</b>	<b>Above sea level (m)</b>	<b>Place</b>	<b>Investigators</b>
				and Maria Cristina Sanchez
SEHOS	St. Elisabeth Hospital	1	Willemstad, Curaçao	Dr. Naijla Duque

The units which did not complete more than 10 patients  $\leq$  32 weeks gestational age at birth during the year, will not be included in the comparison section between units. Only the patients with all the information are included.

### **Description of the NICU participants**

All participating units have intensive and intermediate care beds and all (except one) have basic care beds. All (except one) receive sometime referrals from other institutions. All participating institutions have a delivery room. Some units enter only or mainly premature  $\leq 32$  weeks and at least one other  $<2000$  gr at birth.

Document written and prepared by Drs. Carlos Fajardo, and Angela Hoyos

## Acronyms used in the document

asl: above sea level  
BPD: Bronchopulmonary Dysplasia  
Birthweight: Weight at birth in grams  
CONS: Staphylococcus coagulase negative  
CPAP: Continuous Airway Pressure  
Gestational Age: Gestational age at birth in weeks  
GBS: Group B Streptococcus  
Gr: grams  
HFOV: High Frequency oscillatory ventilation  
IQR: interquartile range  
IPPV: Intermittent positive pressure ventilation  
IVH: Intraventricular Hemorrhage  
NEC: Necrotizing Enterocolitis  
NICU: Neonatal Intensive care units  
NIVn: nasal noninvasive ventilation  
OTI: Oral Tracheal Intubation  
PDA: Patent ductus arteriosus  
PMA: Postmenstrual age  
PPV: Positive Pressure ventilation  
ROP: Retinopathy of Prematurity  
Staph aureus: Staphylococcus aureus  
TPN: parenteral nutrition  
w: Weeks

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## **GENERAL SUMMARY**

This report is based on data collected during 2021 by 29 newborn third-level care units (NICU) from Latin America and that belong to the EpicLatino neonatal network. For the analysis of the different variables, all the NICUs were included in the database. For comparison between units, only those with more than 10 patients  $\leq 32$  weeks at birth during the year, were included, so data calculated in se comparison section correspond to 15 NICUs. The goals of EpicLatino's neonatal network are:

- To establish and maintain a data source for Latin American Newborn Units.
- To provide the infrastructure to facilitate knowledge on morbidity and mortality and care of newborns in Latin America.
- To facilitate the obtaining of reliable data that produces information and to translate into actions that allow the improvement of neonatal and perinatal health at the local and regional level.
- To establish a Latin American network of researchers interested in neonatal and perinatal care.
- To develop innovative research methods that lead to the improvement of the quality of neonatal and perinatal health care and attention in Latin America.

### **Summary of Results / Methodology**

EpicLatino neonatal network data source: admissions from January 1, 2021 to December 31, 2021.

The total number of eligible admissions from participating centers was 3895, deaths at the delivery room or moribund on admission were not included.

Total number of patients admitted to participating NICUs 3895.

Total number of eligible very premature infants ( $\leq 32$  weeks at birth) 896.

Total number of very low Birthweight infants ( $\leq 1500$  gr at birth) 611.

The Gestational Age in this document refers to full weeks (example week 32 includes children from 32 weeks to 32 weeks and 6 days of gestation). Those children transferred to the normal newborn area (primary care level) were excluded, but those who died during their stay in the unit were included regardless of the time in the unit. The demographic information of the patients, without personal identification data, components of care and the end results upon leaving the hospital were entered into a computer and sent electronically to MiCare, where data was verified; Statistical analysis was performed at the coordinating center in Calgary and Bogotá.

## **BACKGROUND AND OBJECTIVES**

NICUs use the combined capabilities of diverse health care members and advances in technology to provide effective care for newborns. To assist in this task, the EpicLatino neonatal network data source provides ordinal and categorical information to identify variations in issues such as mortality and morbidity and the use of available resources.

Three scores are used, namely: SNAP II, NTISS and TRIPS, which allow adjusting the risk variations in both mortality and morbidity. This adjustment will allow in subsequent analyzes to investigate what specific practices can be changed to improve the quality of care of our newborns.



Using the EPIQ (Evidence-Based Practice Quality Improvement) program allows exploring new methodologies to identify care practices associated with good or poor outcomes and provide a way to improve the quality of evidence-based care.

## **INFORMATION SYSTEMS**

The patients included in this report were admitted to the EpicLatino network sites from January 1, 2021 to December 31, 2021. The patients remained hospitalized in one of the NICUs of the EpicLatino network for a minimum of 24 hours or died or were transported to a second or third level unit in that term. There was a total of 3895 admissions including 54 readmissions.

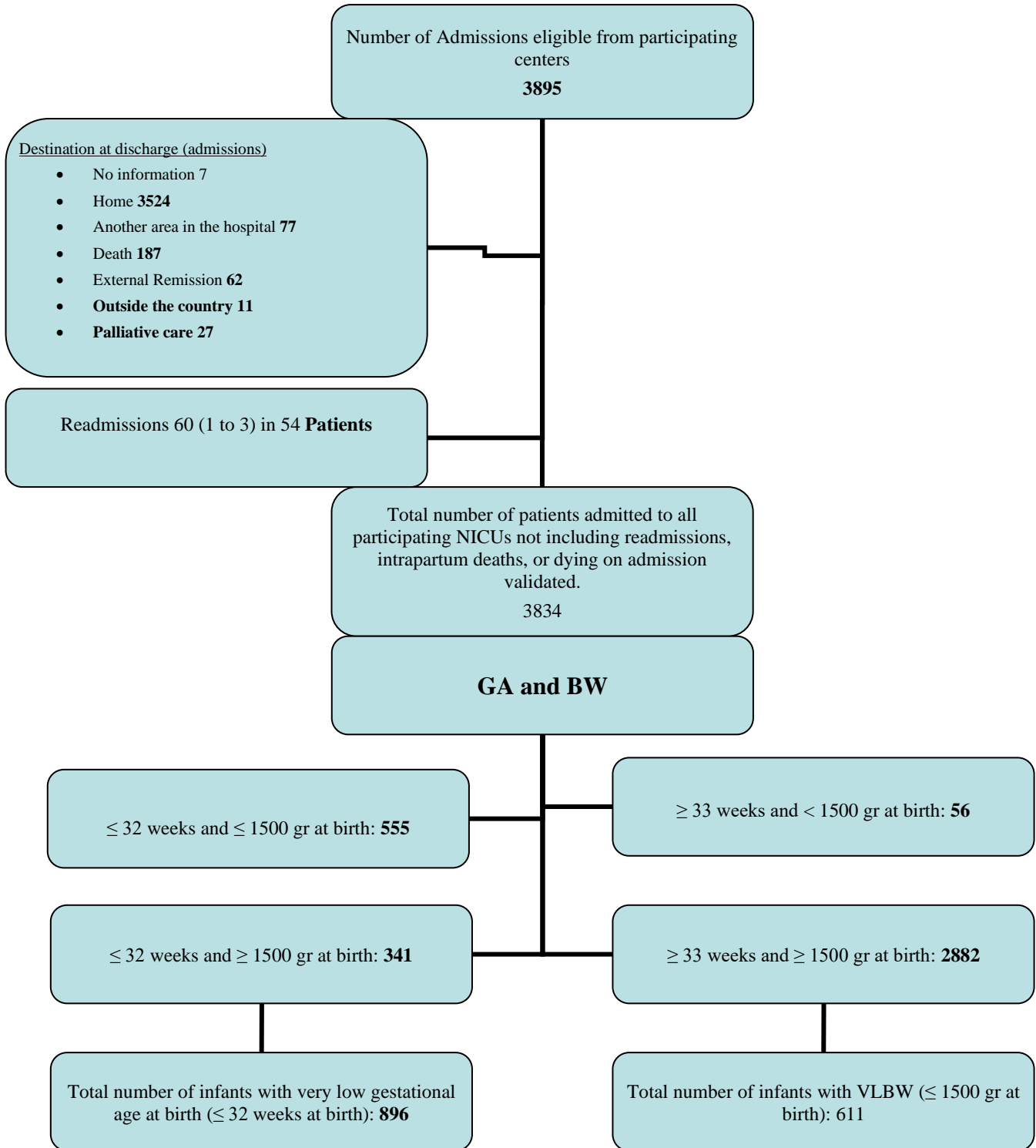
Patient information was collected retrospectively from medical records by researchers or their associates using standardized definitions and protocols present in the network operating manual available to all participating NICUs. This information was entered into a computer using the program that allows for errors to be reviewed locally prior to being sent to the Research Center for Maternal and Child Care (MiCARE) in Toronto. The information of the patients in the different NICUs is available only to the researcher corresponding to each NICU. All data that could identify the patient were removed BEFORE the data was transferred to the coordinating center. The confidentiality of the patients was strictly preserved.

As the responsibility of the local researcher in each participating center, the information is stored in a secure data source of the NICU or in a secure alternative site such as a medical file, a computer area, etc. At the coordinating center, the central data source is stored in a secure computer located on a server and a copy is maintained and secured by the Mount Sinai Hospital's IT and technology department.

At the coordinating center, analyzes by variable, between two variables and multiple variables are conducted both for the entire group and for each individual center. Multiple logistic regression analysis is used to identify risk factors associated with increased mortality and morbidity. The pooled information allows the presentation of graphs of mortality and morbidity results from Gestational Age and Birthweight. Similar systems have been used to guide stratification in randomized studies, assist quality assurance, and predict resource utilization. The STATA 17 Program was used, StataCorp, 4905 Lakeway Drive, College Station, Texas 77845 USA

## A. DESCRIPTIVE ANALYSIS

### DESCRIPTIVE ANALYSIS: GENERAL DATA



## PRESENTATION 1

**Number of Admissions in the Participating Centers (Table)**

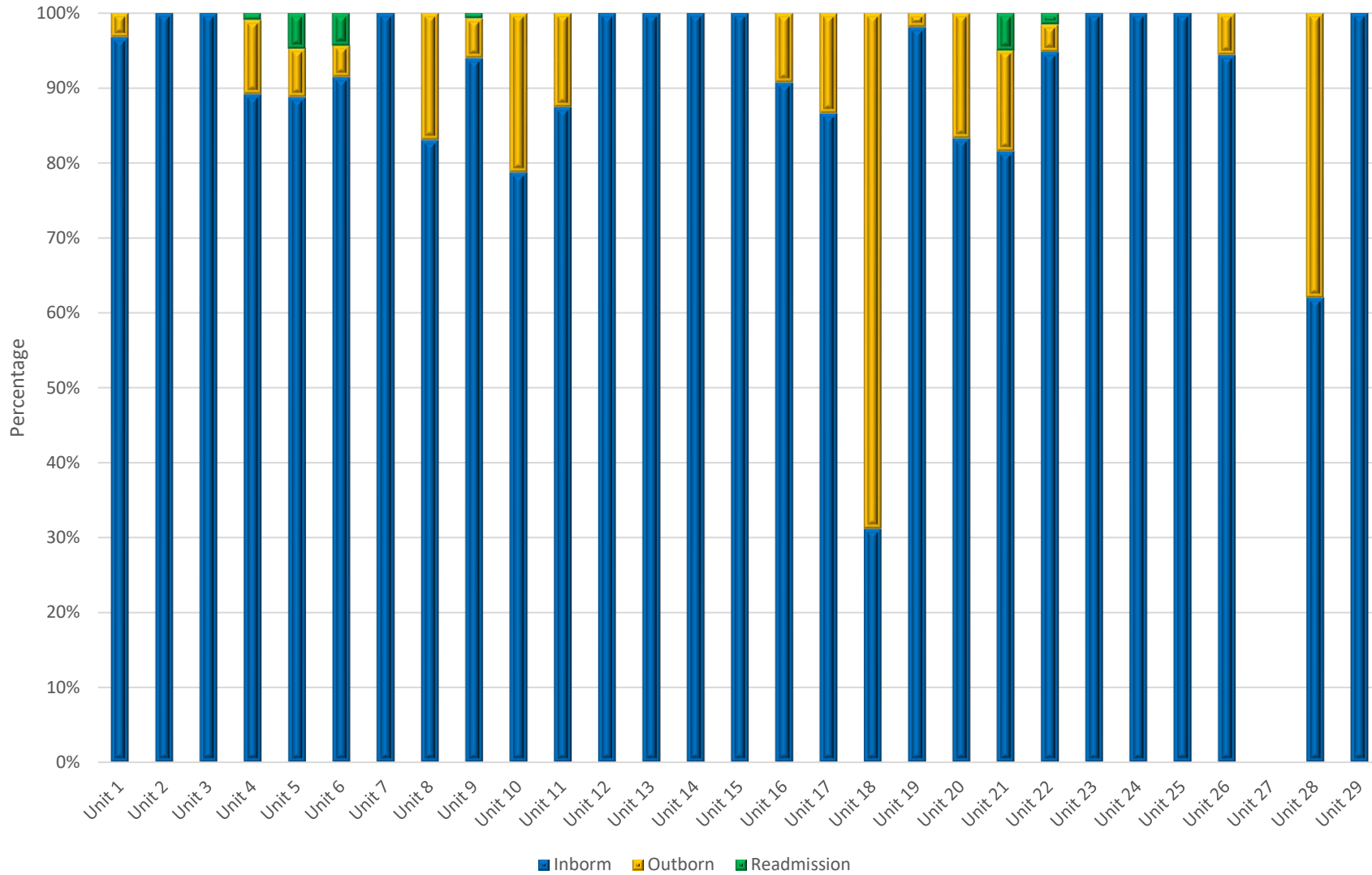
NICUs		Not validated*	Inborn	Outborn	Readmissions	Total validated including readmissions
Unit 1	N	0	30	1	0	31
	%	0%	97%	3%	0%	
Unit 2	N	0	11	0	0	11
	%	0%	100%	0%	0%	
Unit 3	N	0	152	0	0	152
	%	0%	100%	0%	0%	
Unit 4	N	0	99	11	1	111
	%	0%	89%	10%	1%	
Unit 5	N	0	500	37	26	563
	%	0%	89%	7%	5%	
Unit 6	N	0	43	2	2	47
	%	0%	91%	4%	4%	
Unit 7	N	0	9	0	0	9
	%	0%	100%	0%	0%	
Unit 8	N	0	972	198	0	1170
	%	0%	83%	17%	0%	
Unit 9	N	0	141	8	1	150
	%	0%	94%	5%	1%	
Unit 10	N	0	145	39	0	184
	%	0%	79%	21%	0%	
Unit 11	N	0	14	2	0	16
	%	0%	88%	13%	0%	
Unit 12	N	0	26	0	0	26
	%	0%	100%	0%	0%	
Unit 13	N	3	55	0	0	55
	%	6%	100%	0%	0%	
Unit 14	N	0	13	0	0	13
	%	0%	100%	0%	0%	

NICUs		Not validated*	Inborn	Outborn	Readmissions	Total validated including readmissions
Unit 15	N	0	20	0	0	20
	%	0%	100%	0%	0%	
Unit 16	N	2	147	15	0	162
	%	1%	91%	9%	0%	
Unit 17	N	0	13	2	0	15
	%	0%	87%	13%	0%	
Unit 18	N	0	5	11	0	16
	%	0%	31%	69%	0%	
Unit 19	N	0	317	6	0	323
	%	0%	98%	2%	0%	
Unit 20	N	0	5	1	0	6
	%	0%	83%	17%	0%	
Unit 21	N	0	368	61	22	451
	%	0%	82%	14%	5%	
Unit 22	N	0	128	5	2	135
	%	0%	95%	4%	1%	
Unit 23	N	1	25	0	0	25
	%	4%	100%	0%	0%	
Unit 24	N	0	14	0	0	14
	%	0%	100%	0%	0%	
Unit 25	N	0	101	0	0	101
	%	0%	100%	0%	0%	
Unit 26	N	0	34	2	0	36
	%	0%	94%	6%	0%	
Unit 27	N	1	0	0	0	0
	%	100%				
Unit 28	N	0	18	11	0	29
	%	0%	62%	38%	0%	
Unit 29	N	0	17	0	0	17
	%	0%	100%	0%	0%	

NICUs		Not validated*	Inborn	Outborn	Readmissions	Total validated including readmissions
<b>Total</b>	<b>N</b>	7	3422	412	54	3888
	<b>%</b>	0.20%	88%	11%	1%	

\* Incomplete or unreliable information

Number of Admissions in the Participating Centers (Graph)



Comment: This analysis includes 3888 admissions to the participating NICUs during 1 of January 2021 to 31 of December 2021 validated, with 54 readmissions.

## PRESENTATION 2

**Score severity (SNAP II Y SNAPPE II) by NICUs (table)**

NICU	Admissions With information	Without Information	Mean	
			SNAP Score	SNAPPE II Score
Unit 1	30	1	14.3	14.7
Unit 2	11	0	19.3	21.3
Unit 3	145	7	3.3	9.8
Unit 4	110	0	5.0	10.7
Unit 5	529	8	1.3	2.2
Unit 6	44	1	13.9	19.5
Unit 7	9	0	5.6	9.6
Unit 8	1143	27	2.2	3.3
Unit 9	148	1	8.0	14.8
Unit 10	176	8	4.1	5.5
Unit 11	15	1	3.1	8.5
Unit 12	24	2	11.9	14.0
Unit 13	52	1	9.5	16.7
Unit 14	13	0	10.3	11.8
Unit 15	20	0	8.7	12.5
Unit 16	162	0	8.2	11.2
Unit 17	14	1	14.4	29.4
Unit 18	15	1	14.6	24.7
Unit 19	126	197	2.7	4.7
Unit 20	5	1	14.6	18.0
Unit 21	426	3	2.0	3.3
Unit 22	133	0	3.9	5.6
Unit 23	23	2	9.3	21.5
Unit 24	14	0	6.2	10.4
Unit 25	99	2	9.0	10.2
Unit 26	35	1	7.5	12.7
Unit 27	0	0	0.0	0.0
Unit 28	5	24	0.0	0.0
Unit 29	17	0	9.1	14.7
General/average	3543	289	3.9	6.1

Comment: This analysis of Disease severity scores (SNAP AND SNAPPE II) includes 3543 admissions without readmissions (who had complete data). Comparison of the severity score between NICUs may show large variations due to the different patient inclusion criteria of each NICU.

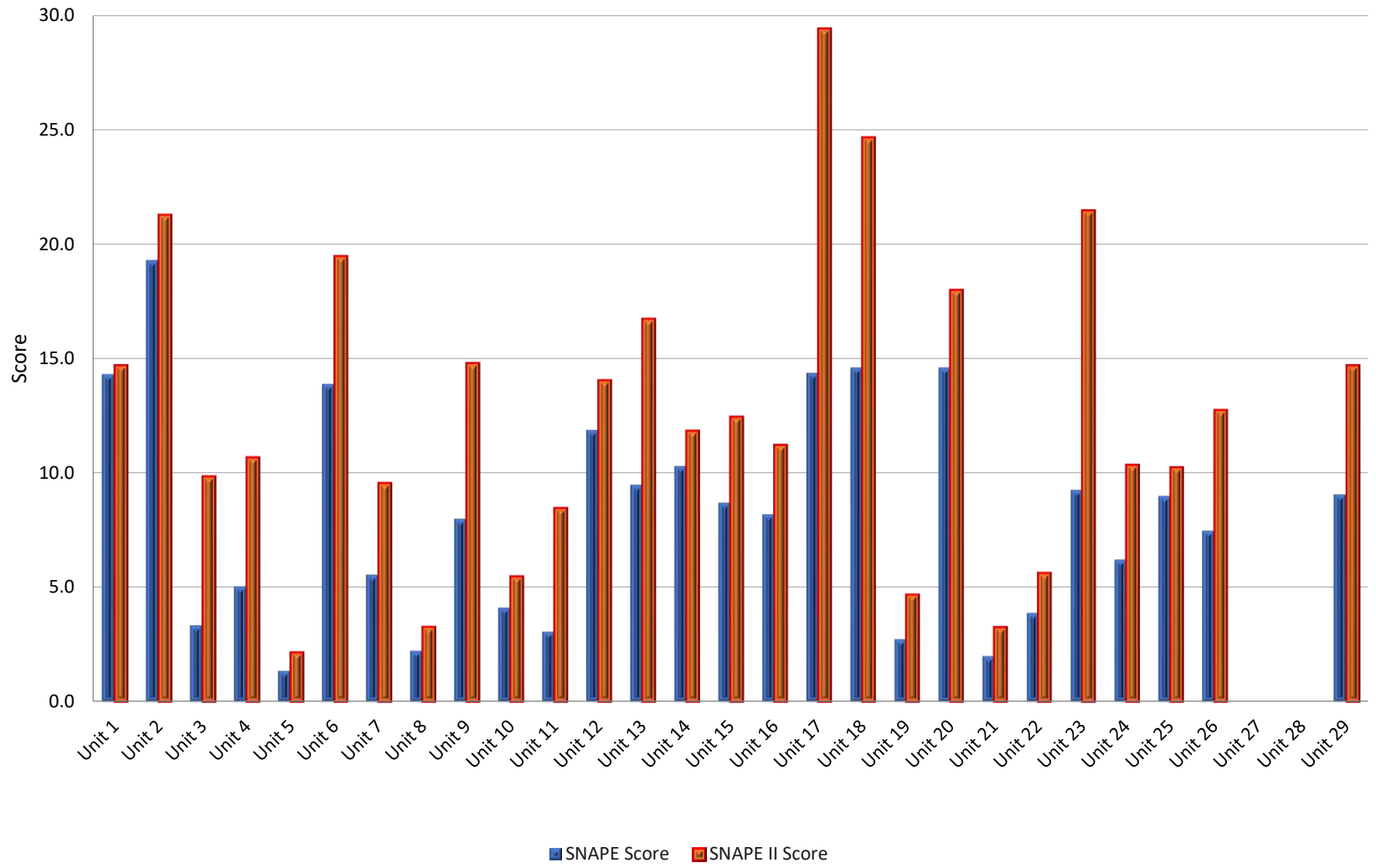
The SNAP calculation includes the following variables:

- Average arterial pressure (mm Hg)
- Lower temperature
- PO<sub>2</sub> (mm Hg) / FiO<sub>2</sub>%)
- Lower serum pH
- Multiple seizures
- Diuresis (ml/k/h)

For the calculation of SNAPPE II the following variables are added:

- Apgar at 5 minutes
- Birthweight (gr)
- Small for Gestational Age (less than 3rd percentile)

No Readmissions

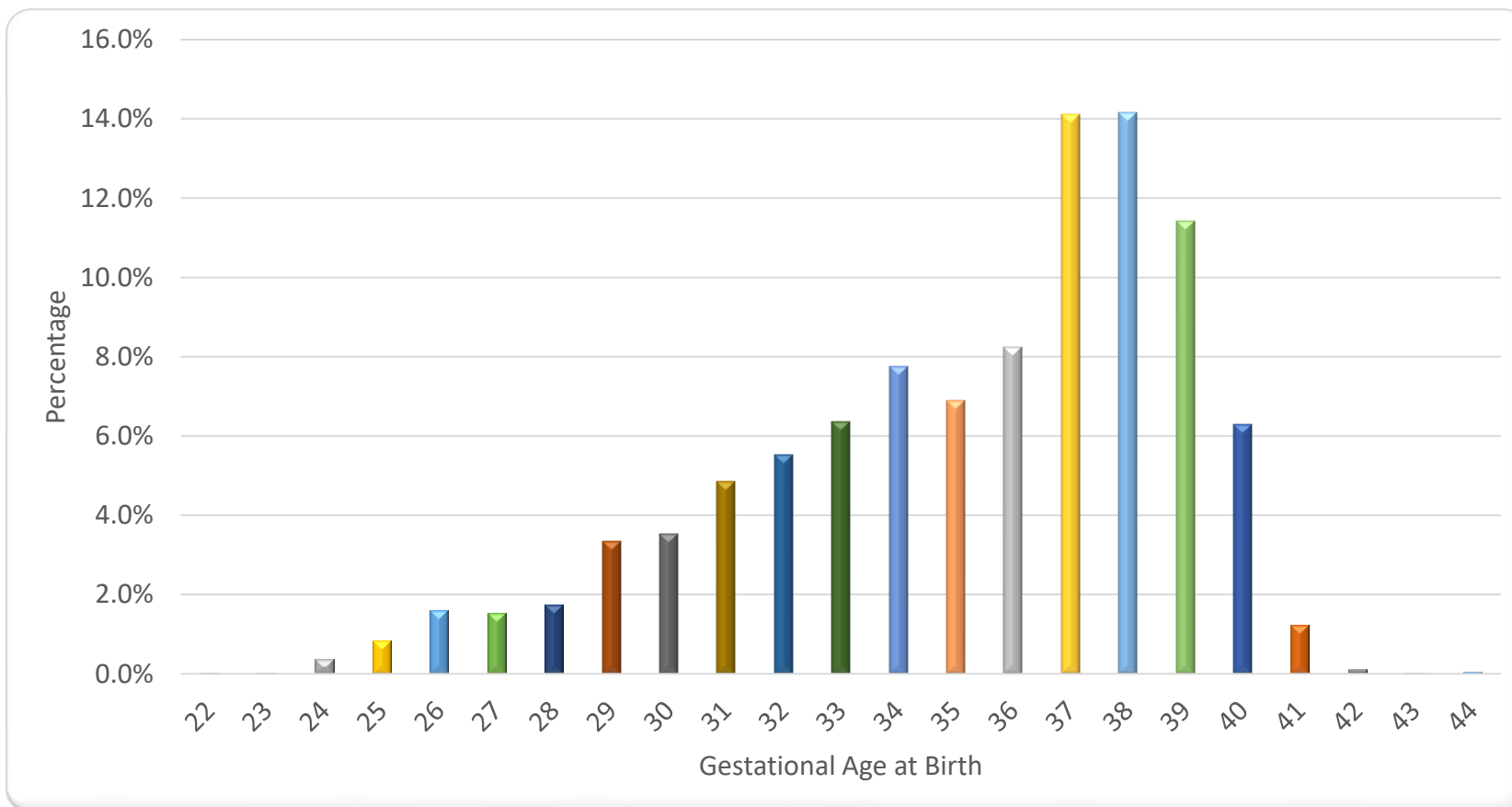




ANALYSIS BASED ON THE NUMBER OF ELIGIBLE NEWBORNS ADMITTED  
TO PARTICIPATING UNITS

### PRESENTATION 3

Distribution of Patients by Gestational Age at Birth (Graph)



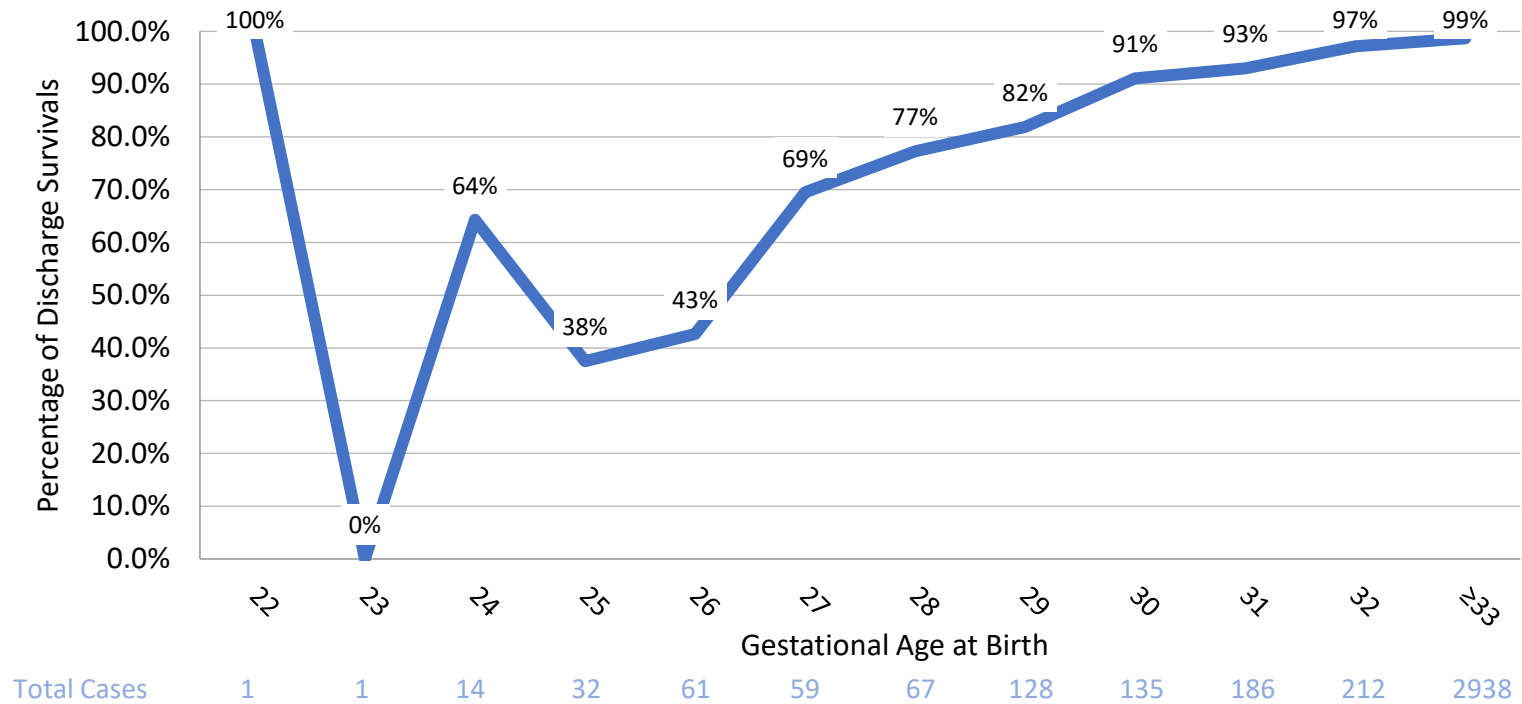
**Distribution of Patients by Gestational Age (Gestational Age) (Table)**

stational Age weeks*	n	Percentage	Cumulative Percentage
22	1	0.03%	0.03%
23	1	0.03%	0.05%
24	14	0.37%	0.42%
25	32	0.83%	1.25%
26	61	1.59%	2.84%
27	59	1.54%	4.38%
28	67	1.75%	6.13%
29	128	3.34%	9.47%
30	135	3.52%	12.99%
31	186	4.85%	17.84%
32	212	5.53%	23.37%
33	244	6.36%	29.73%
34	297	7.75%	37.48%
35	264	6.89%	44.37%
36	316	8.24%	52.61%
37	541	14.11%	66.72%
38	543	14.16%	80.88%
39	438	11.42%	92.31%
40	241	6.29%	98.59%
41	47	1.23%	99.82%
42	4	0.10%	99.92%
43	1	0.03%	99.95%
44	2	0.05%	100.00%
Total	3,834		

Comment: The distribution of patients by Gestational Age. Not validated patients and readmissions were excluded.

## PRESENTATION 4

### NICU Discharge Survival by Gestational Age at birth (Graph)



Transferred and palliative patients are included as survivors, many units generally do not resuscitate infants <24 weeks.

**NICU Discharge Survival by Gestational Age (Gestational Age) at birth (Table)**

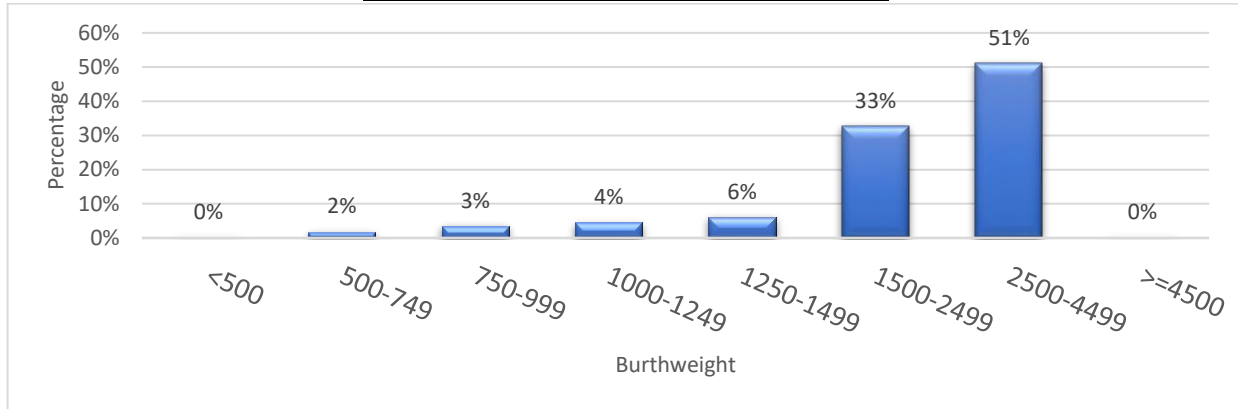
Gestational Age weeks	Survived	Deaths	Total	Percentage of survival
22	1	0	1	100%
23	0	1	1	0%
24	9	5	14	64%
25	12	20	32	38%
26	26	35	61	43%
27	41	18	59	69%
28	52	15	67	77%
29	105	23	128	82%
30	123	12	135	91%
31	173	13	186	93%
32	206	6	212	97%
≥33	2899	39	2938	99%
<b>Total</b>	<b>3647</b>	<b>187</b>	<b>3834</b>	<b>95.1%</b>

Discharge with palliative care, transferred and referred patients are included.

Comment: For the survival calculation, patients with complete data were included (validated). Readmissions were excluded. The overall survival was 95.1%. These data should be analyzed with caution because not all NICUs included patients younger than 24 weeks. Another error factor is because many units do not include patients who died in the delivery. The outcome of the transfers is also unknown. Note that only over 27 weeks survival > 50% is achieved except 24 weeks.

## PRESENTATION 5

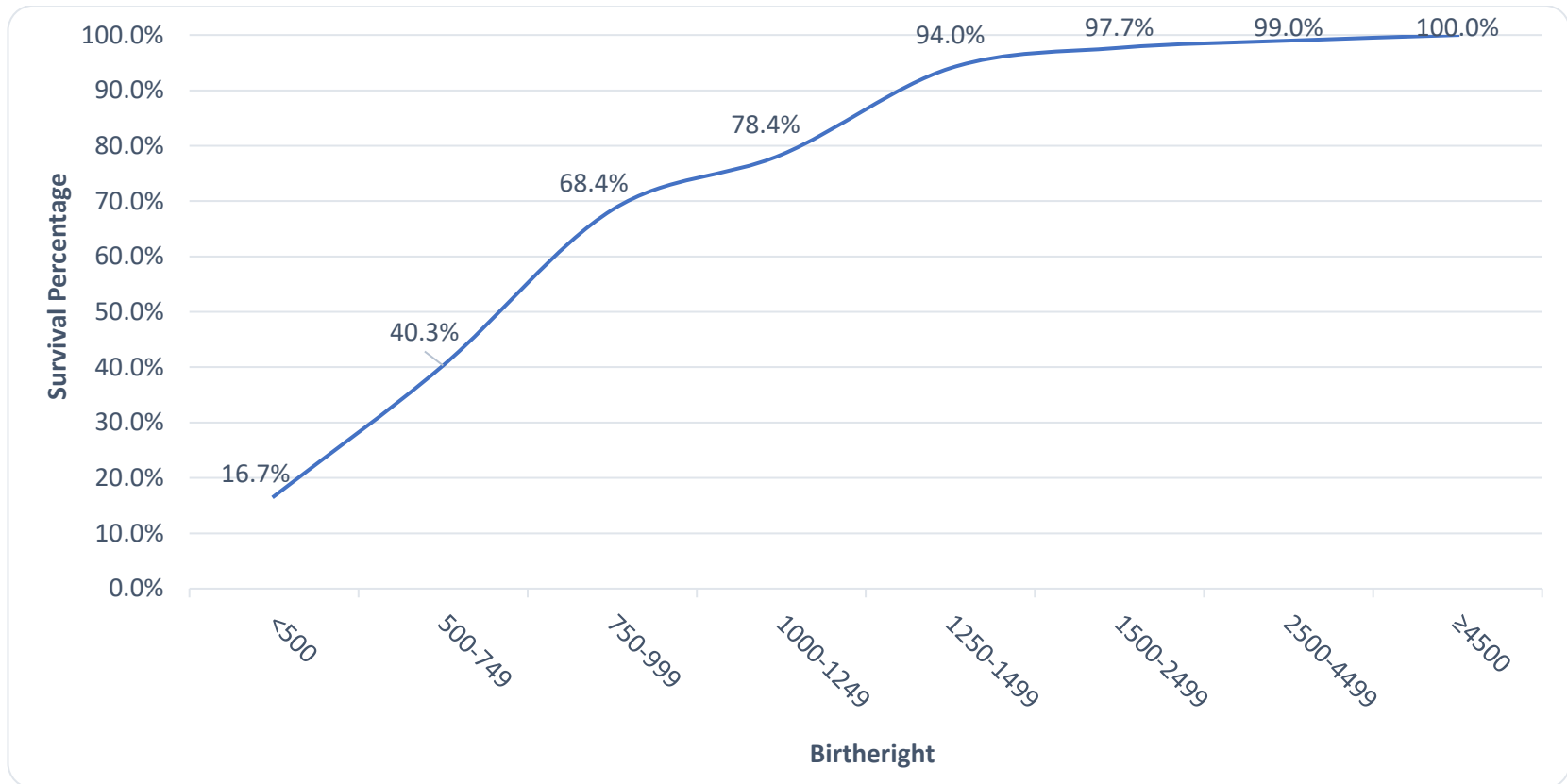
### Distribution of Patients by Birth Weight



Birthweight gr	Total admissions n	Percentage	Accumulated percentage
<500	6	0.2%	0.2%
500-749	67	1.7%	1.9%
750-999	133	3.5%	5.4%
1000-1249	171	4.5%	9.8%
1250-1499	234	6.1%	15.9%
1500-2499	1,253	32.7%	48.6%
2500-4499	1,962	51.2%	99.8%
≥4500	8	0.2%	100.0%
<b>Total</b>	<b>3,834</b>		

Comment: This report should be analyzed with caution because not all NICUs included in their database, the admission of patients under 500 grams and deaths in the delivery room are not included and some only report cases  $\leq 32$  weeks or under 2000 gr. This report includes the data available in the database (validated).

**PRESENTATION 6**  
**NICU Discharge Survival by Birthweight**



**NICU Discharge Survival by Birthweight (Table)**

Birthweight (g)	Total number of validated patients without readmissions	Mortality	Survived infants	Percentage
<500	6	5	1	17%
500-749	67	40	27	40%
750-999	133	42	91	68%
1000-1249	171	37	134	78%
1250-1499	234	14	220	94%
1500-2499	1,253	29	1,224	98%
2500-4499	1,962	20	1,942	99%
≥4500	8	0	8	100%
<b>Total</b>	<b>3,834</b>	<b>187</b>	<b>3,647</b>	

Transfers and palliative patients are included as survivors; it does not include delivery room deaths.

Comment: This report should be analyzed with caution because not all NICUs included in their database the admission of patients under 500 grams and some only report patients  $\leq 32$  weeks or under 2000 gr. This report includes the data available in the database (validated).



## PRESENTATION 7

### Maternal Characteristics

Parameters	Frequency*		Gestational Age (weeks)			Total Babies
			≤ 32	33-36	≥37	
Prenatal Control	No	n	61	42	39	142
		%	7%	4%	2%	4%
	Yes	n	763	1,049	1,635	3447
		%	85%	94%	90%	90%
	Unknown	n	72	30	143	245
		%	8%	3%	8%	6%
Drugs	No	n	889	1,113	1,791	3793
		%	99%	99%	99%	99%
	Yes	n	7	8	26	41
		%	1%	1%	1%	1%
Smoking	No	n	888	1,112	1,788	3788
		%	99%	99%	98%	99%
	Yes	n	8	9	29	46
		%	1%	3%	19%	6%
Hypertension/ Preeclampsia	Yes	n	291	284	120	695
		%	32%	25%	7%	18%
	No	n	536	791	1,553	2880
		%	60%	71%	85%	75%
	Unknown	n	69	46	144	259
		%	8%	4%	8%	7%
Diabetes	Yes	n	77	104	113	294
		%	9%	9%	6%	8%
	No	n	740	961	1,563	3264
		%	83%	86%	86%	85%
	Unknown	n	79	56	141	276
		%	9%	5%	8%	7%

Parameters	Frequency	Gestational Age (weeks)			Total infants	
		≤ 32	33-36	≥37		
Magnesium Sulphate	Yes	n	371	136	24	531
		%	41%	12%	1%	14%
	No	n	485	939	1,635	3059
		%	54%	84%	90%	80%
	Unknown	n	40	45	158	243
		%	4%	4%	9%	6%
Antenatal Steroids	YES	n	597	441	60	1098
		%	67%	39%	3%	29%
	No	n	168	407	1,138	1713
		%	19%	36%	63%	45%
	Unknown	N	131	272	619	1022
		%	15%	24%	34%	27%
	Completed course within last week prior to birth	N	286	181	11	478
		%	48%	41%	18%	44%
	Completed course prior to 1 week before birth	N	105	141	20	266
		%	18%	32%	33%	24%
	Completed course but timing unknown	N	32	28	16	76
		%	5%	6%	27%	7%
	Partial within last 24 hours	N	138	54	11	203
%		23%	12%	18%	18%	
Partial > 24 hours ago	n	29	26	2	57	
	%	5%	6%	3%	5%	
Partial course but timing unknown	n	7	11	0	18	
	%	1%	2%	0%	2%	
Delivery Type	Vaginal	n	191	215	504	910
		%	21%	19%	28%	24%
	Cesarean	n	699	896	1230	2825
		%	78%	80%	68%	74%
	Unknown	n	6	10	83	99
		%	1%	1%	5%	3%

Parameters	Frequency	Gestational Age (weeks)			Total Infants	
			≤ 32	33-36		≥37
PRESENTATION	Vertex	n	621	679	1043	2343
		%	69%	61%	57%	61%
	Breech	n	103	91	36	230
		%	11%	8%	2%	6%
	Other	n	132	305	589	1026
		%	15%	27%	32%	27%
	Unknown	n	40	46	149	235
		%	4%	4%	8%	6%
PRM	<24 Hours	n	576	908	1,510	2994
		%	64%	81%	83%	78%
	24 Hours-1 Week	n	90	52	47	189
		%	10%	5%	3%	5%
	>1 Week	n	37	16	0	53
		%	4%	1%	0%	1%
	Unknown	n	193	145	260	598
		%	22%	13%	14%	16%
Chorioamnionitis*	Yes	n	87	26	11	124
		%	8%	2%	1%	3%
	No	n	538	619	896	1754
		%	53%	51%	49%	51%
	Unknown	n	241	476	910	1606
		%	38%	47%	49%	46%

Comments: Babies are counted, not mothers. Only patients with complete data were included for the analysis (validated). PRM: Premature rupture of membranes.

\* Chorioamnionitis is defined as suspected or confirmed documented in the medical record or the presence of maternal fever and leukocytosis or uterine tenderness.

PRESENTATION 8

Reanimation (Gestational Age < 31 weeks) (Table)

Characteristics		Gestational Age (weeks)									
		22	23	24	25	26	27	28	29	30	
Number of Patients	n	1	1	14	32	61	59	67	128	135	
Palliative Care in the delivery room	n	0	0	0	0	1	0	0	1	0	
	%	0%	0%	0%	0%	0.0%	0%	0%	0.0%	0%	
No Active Resuscitation Needed/Given*	n	0	0	1	0	2	2	4	16	14	
	%	0.0%	0.0%	7.1%	0.0%	3.3%	3.4%	6.0%	12.5%	10.4%	
Only CPAP	n	0	0	5	10	14	12	21	52	61	
	%	0.0%	0.0%	35.7%	31.3%	23.0%	20.3%	31.3%	40.6%	45.2%	
PPV and Bag Mask	n	0	1	4	11	19	21	29	33	32	
	%	0.0%	100.0%	28.6%	34.4%	31.1%	35.6%	43.3%	25.8%	23.7%	
PPV with ET Tube	n	1	1	10	22	34	39	46	48	40	
	%	100.0%	100.0%	71.4%	68.8%	55.7%	66.1%	68.7%	37.5%	29.6%	
Chest Compressions	n	0	1	2	3	4	4	2	5	2	
	%	0.0%	100.0%	14.3%	9.4%	6.6%	6.8%	3.0%	3.9%	1.5%	
Epinephrine	n	0	1	1	1	1	2	1	3	2	
	%	0.0%	100.0%	7.1%	3.1%	1.6%	3.4%	1.5%	2.3%	1.5%	
Unknown	n	0	0	0	1	4	3	0	3	3	
	%	0.0%	0.0%	0.0%	3.1%	6.6%	5.1%	0.0%	2.3%	2.2%	
Initial FiO <sub>2</sub>	21%	n	0	0	0	0	1	0	1	3	4
		%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	1.5%	2.3%	3.0%
	>21%	n	0	0	4	15	36	29	33	59	59
		%	0.0%	0.0%	28.6%	46.9%	59.0%	49.2%	49.3%	46.1%	43.7%
	100%	n	1	1	3	6	9	9	9	19	24
		%	100.0%	100.0%	21.4%	18.8%	14.8%	15.3%	13.4%	14.8%	17.8%
	Unknown	n	0	0	7	11	15	21	24	47	48
		%	0.0%	0.0%	50.0%	34.4%	24.6%	35.6%	35.8%	36.7%	35.6%

Characteristics		Gestational Age (weeks)									
		22	23	24	25	26	27	28	29	30	
Number of Patients	n	1	1	14	32	61	59	67	128	135	
Maximum FiO <sub>2</sub> Used	21%	n	0	0	0	0	1	0	1	2	2
		%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	1.5%	1.6%	1.5%
	22%-40%	n	0	0	4	9	19	17	20	48	42
		%	0.0%	0.0%	28.6%	28.1%	31.1%	28.8%	29.9%	37.5%	31.1%
	41%-70%	n	0	0	0	5	11	8	8	12	12
	%	0.0%	0.0%	0.0%	15.6%	18.0%	13.6%	11.9%	9.4%	8.9%	
>70%	n	1	1	3	9	13	12	13	19	28	
	%	100.0%	100.0%	21.4%	28.1%	21.3%	20.3%	19.4%	14.8%	20.7%	
Without information	n	0	0	7	9	17	22	25	47	51	
	%	0.0%	0.0%	50.0%	28.1%	27.9%	37.3%	37.3%	36.7%	37.8%	

\* Interpretation may mean not required or not offered.

Comment: only patients with complete information for analysis were included. The resuscitation time was defined as the first 30 minutes of life, any subsequent resuscitation is not present in these tables. Note that the sum of the percentages may be different from 100% because some patients could have received more than one procedure and some patients do not have information, but the percentage was calculated for each procedure separately.

## PRESENTATION 8A

### Reanimation (Gestational Age $\geq 31$ weeks) (table)

Characteristics		Gestational Age (weeks)							
		31	32	33	34	35	36	$\geq 37$	
<b>Number of Patients</b>	n	186	212	244	297	264	316	1817	
<b>Palliative Care in the delivery room</b>	n	0	0	0	0	1	0	0	
	%	0%	0%	0%	0%	0%	0%	0%	
<b>No Active Resuscitation Needed/Given*</b>	n	39	52	72	123	152	174	799	
	%	21%	25%	30%	41%	58%	55%	44%	
<b>Only CPAP</b>	n	83	89	77	77	45	43	104	
	%	45%	42%	32%	26%	17%	14%	6%	
<b>PPV and Bag Mask</b>	n	49	34	50	43	32	34	113	
	%	26%	16%	20%	14%	12%	11%	6%	
<b>PPV with ET Tube</b>	N	43	30	28	13	7	6	34	
	%	23%	14%	11%	4%	3%	2%	2%	
<b>Chest Compressions</b>	n	2	2	3	2	4	1	11	
	%	1%	1%	1%	1%	2%	0%	1%	
<b>Epinephrine</b>	n	1	1	2	1	0	0	6	
	%	1%	0%	1%	0%	0%	0%	0%	
<b>Unknown</b>	n	2	4	6	4	7	13	78	
	%	1%	2%	2%	1%	3%	4%	4%	
<b>Initial FiO<sub>2</sub></b>	<b>21%</b>	n	4	8	6	26	14	14	79
		%	2%	4%	2%	9%	5%	4%	4%
	<b>22-99 %</b>	n	87	82	92	90	44	69	362
		%	47%	39%	38%	30%	17%	22%	20%
	<b>100%</b>	n	19	21	36	19	13	14	38
		%	10%	10%	15%	6%	5%	4%	2%
	<b>Unknown</b>	n	76	101	110	162	193	219	1338
		%	41%	48%	45%	55%	73%	69%	74%

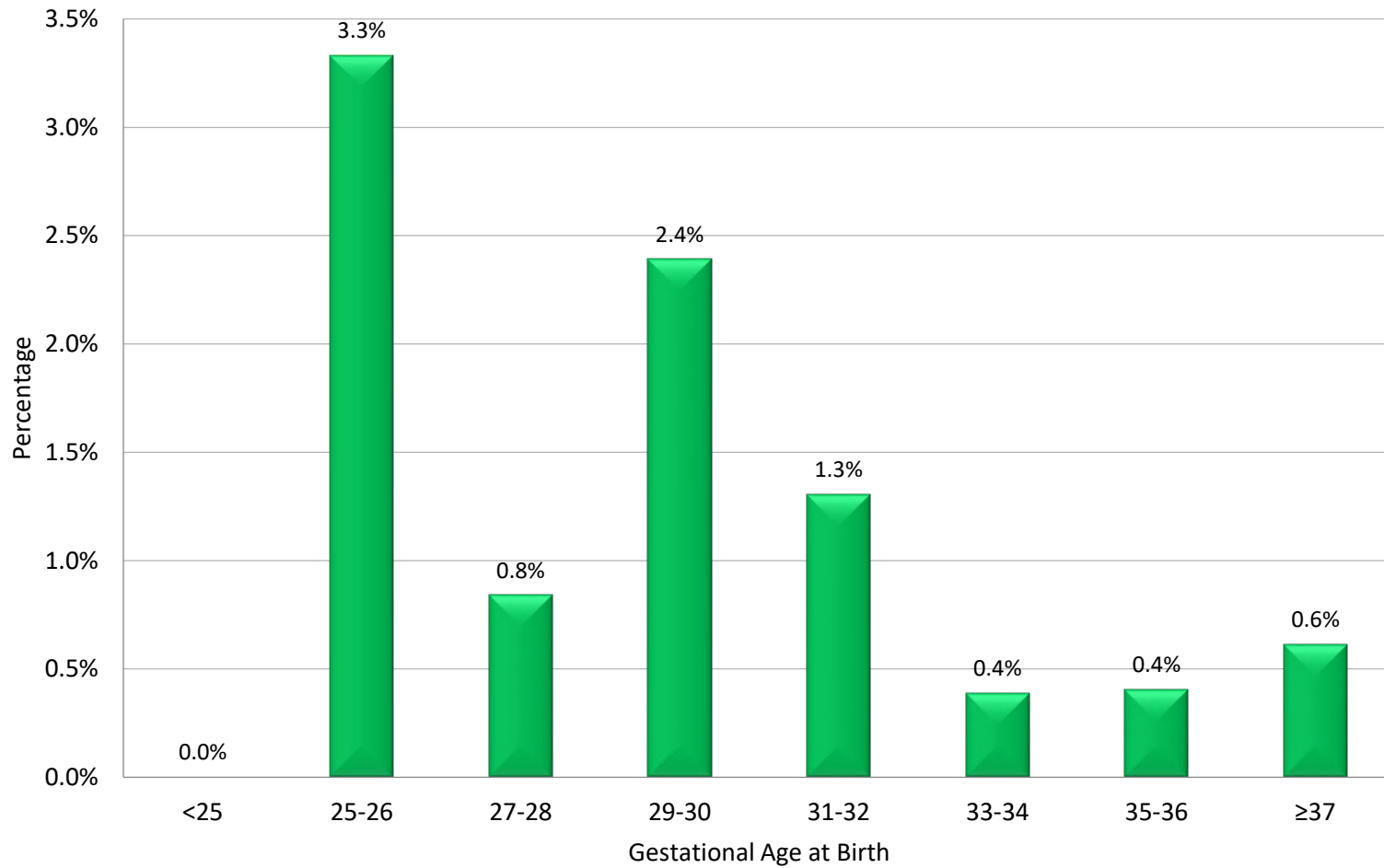
Characteristics		Gestational Age (weeks)							
		31	32	33	34	35	36	≥37	
Number of Patients	n	186	212	244	297	264	316	1817	
Maximum FIO <sub>2</sub> Used	<b>21%</b>	n	9	4	7	22	20	29	238
		%	5%	2%	3%	7%	8%	9%	13%
	<b>22%-40%</b>	n	64	57	72	58	19	29	97
		%	34%	27%	30%	20%	7%	9%	5%
	<b>41%-70%</b>	n	17	15	9	10	4	8	26
		%	9%	7%	4%	3%	2%	3%	1%
	<b>&gt;70%</b>	n	22	27	41	24	13	17	47
		%	12%	13%	17%	8%	5%	5%	3%
	<b>No information</b>	n	74	109	115	183	208	233	1,409
		%	40%	51%	47%	62%	79%	74%	78%

\* Interpretation may mean not required or not offered.

Comment: only patients with complete information for analysis were included. The resuscitation time was defined as the first 30 minutes of life, any subsequent resuscitation is not present in these tables. Note that the sum of the percentages may be different from 100% because some patients could have received more than one procedure and some patients do not have information, but the percentage was calculated for each procedure separately.

## PRESENTATION 9

Early Sepsis (by Gestational Age) in < 3 days of birth (graph)





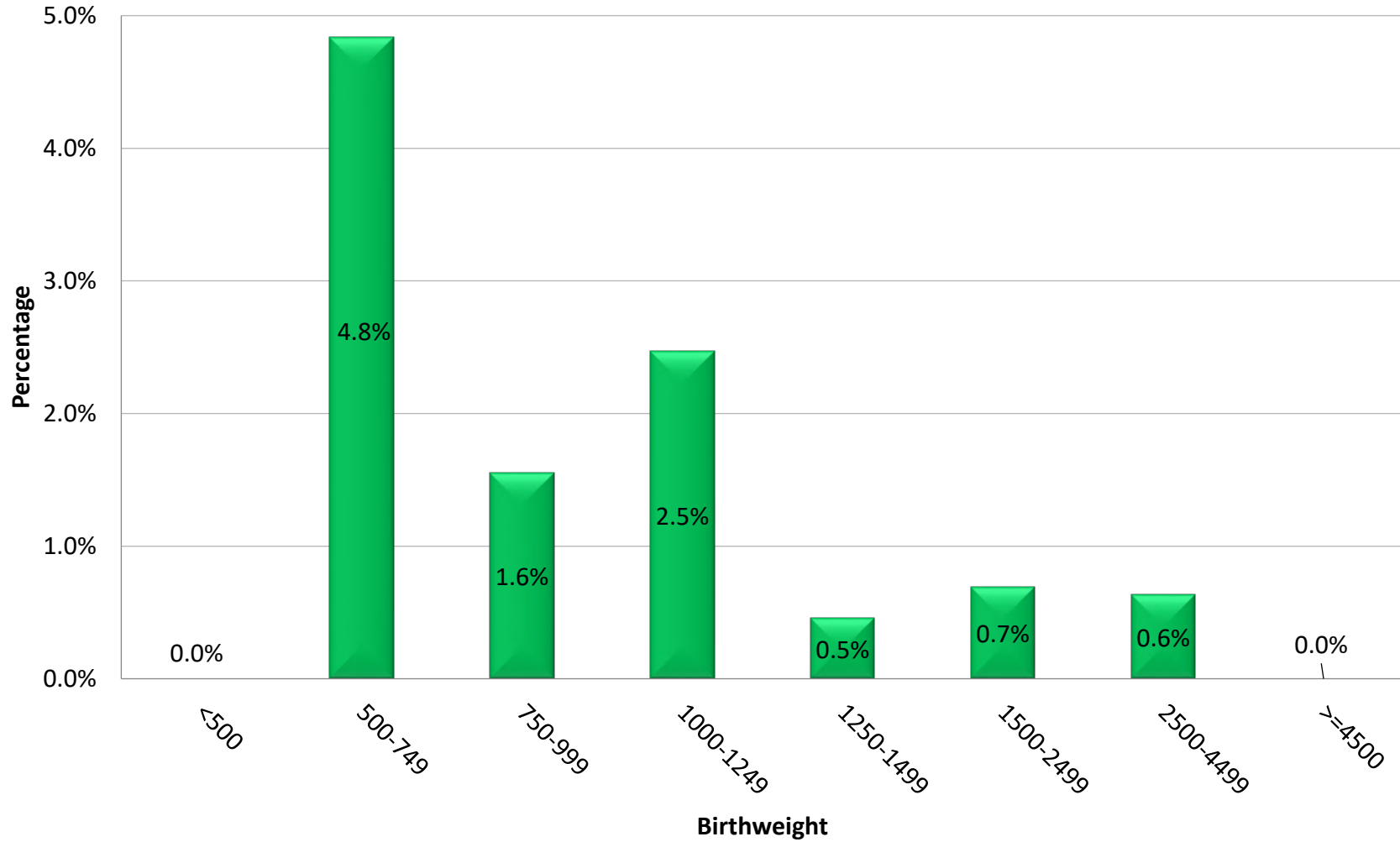
**Early Sepsis (by Gestational Age) in < 3 days of birth (table)**

Gestational Age (weeks)	Total number of Infants 2 days of life	Total number of Infected Infants 2 days of life	Percentage of Infected Infants	Total number of Microorganisms	Microorganisms					
					CONS	E coli	GBS	Listeria	Other Germs	Other gram -
<25	14	0	0.0%	0	0	0	0	0	0	0
25-26	90	3	3.3%	0	0	0	0	0	1	2
27-28	119	1	0.8%	4	1	0	0	0	3	0
29-30	251	6	2.4%	3	0	0	0	0	3	1
31-32	383	5	1.3%	6	1	1	0	0	3	2
33-34	517	2	0.4%	5	0	0	0	0	1	1
35-36	494	2	0.4%	3	1	0	0	0	1	0
≥37	1308	8	0.6%	2	1	0	0	0	3	4
<b>Total</b>	3176	27	0.9%	23	4	1	0	0	15	10

Comment: Early sepsis is considered when there is a blood culture and/or culture of the spinal fluid with bacteria or fungi in the first two days of life. For the analysis of early infection, patients with complete data by Gestational Age at birth were included. Among the other gram-negative germs are *Klebsiella*, *Pseudomona*, *Serratia* etc. Infections in blood and CSF are counted separately.

## PRESENTATION 9A

Early Sepsis (< 3 days of birth/Admission) by Birthweight (graph)



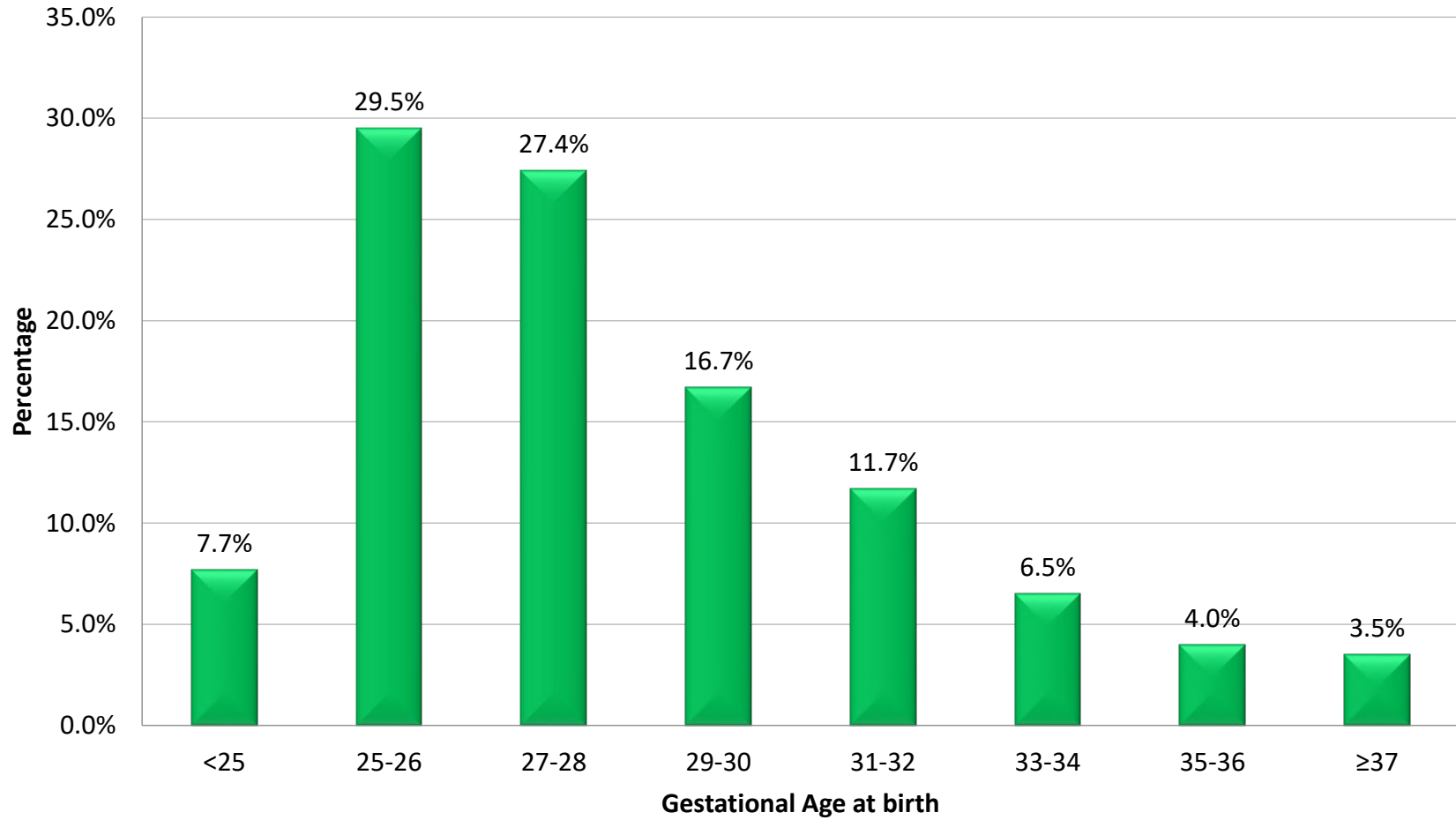
**Early Sepsis (< 3 days of birth/Admission) by Birthweight (table)**

Birthweight (g)	Total number of Infants	Total number of Infected Infants < 3 days of stay	Percentage of Infected Infants	Total number of Microorganisms	Microorganisms					
					CONS	E coli	GBS	Other Germs	Listeria	Other Gram -
<500	6	0	0.0%	0	0	0	0	0	0	0
500-749	62	3	4.8%	3	0	0	0	1	0	2
750-999	129	2	1.6%	3	1	0	0	0	0	2
1000-1249	162	4	2.5%	6	0	1	0	5	0	0
1250-1499	220	1	0.5%	1	1	0	0	0	0	0
1500-2499	1,164	8	0.7%	9	1	0	0	5	0	3
2500-4499	1,426	9	0.6%	10	3	0	0	4	0	3
≥4500	7	0	0.0%	0	0	0	0	0	0	0
<b>Total</b>	<b>3176</b>	<b>27</b>	<b>0.9%</b>	<b>32</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>10</b>

Comment: only patients with complete information were included. Early sepsis is considered when there is a blood culture and/or positive culture of the spinal fluid for bacteria or fungi in the first two days of birth or admission. Low birthweight mortality may explain the low number of cases. Low number of cases in statistics should be with regarded with caution. CONS: Coagulase Negative Staph. GBS: Group B Strep. Infections in blood and CSF are counted separately.

## PRESENTATION 10

Late Sepsis or Associated with Health Care (by Gestational Age) (graph)



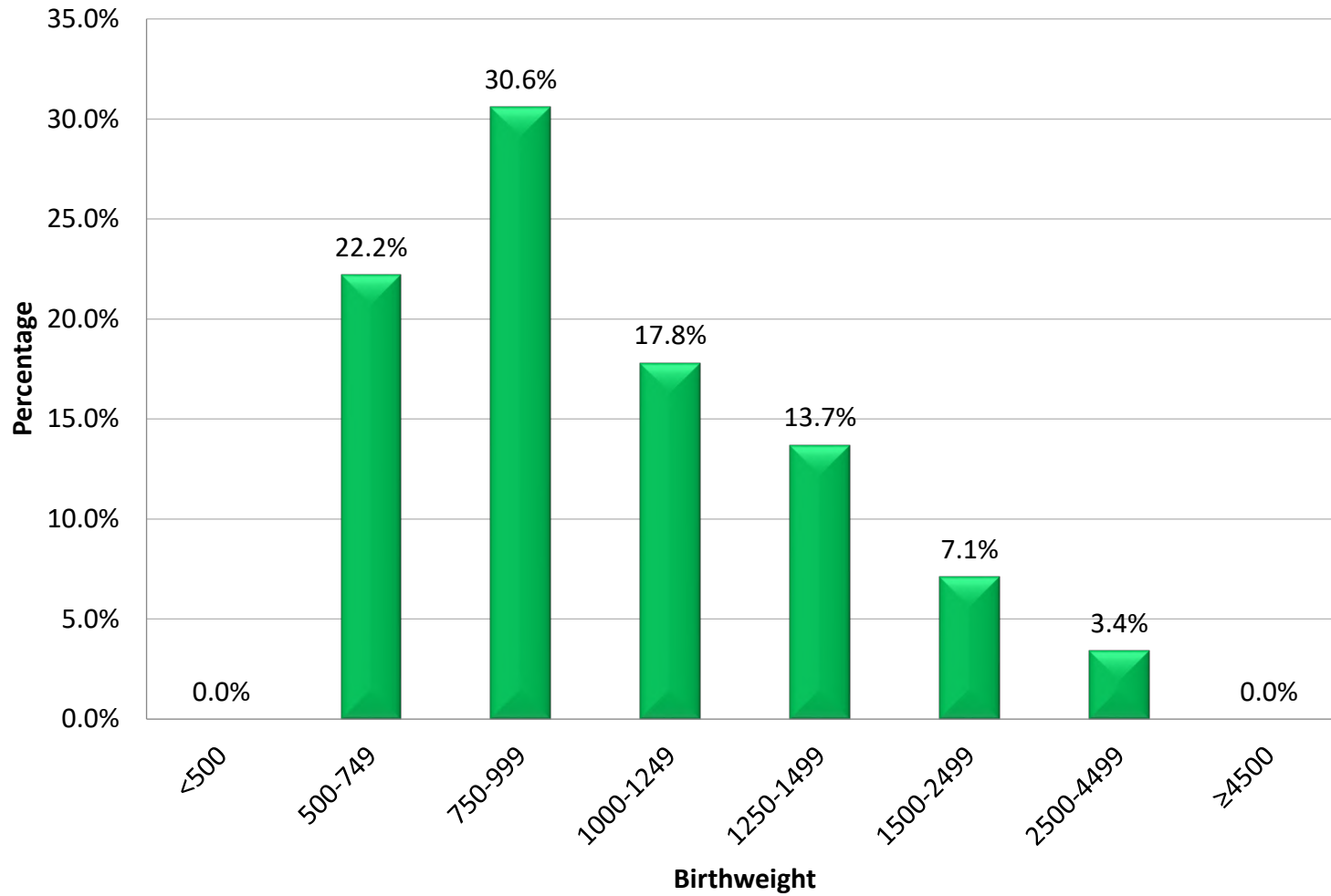
**Late Onset Sepsis or Associated with Health Care (by Gestational Age) (table)**

Gestational Age (weeks)	Total number of Infants > 2 days	Total number of Infected Infants >2 days of stay	Percentage of Infected Infants	Total number of Microorganisms	Microorganisms						
					CONS	<i>E. Coli</i>	<i>Staph. aureus</i>	Fungi	Other Gram -	Other Organism	Listeria
<b>&lt;25</b>	13	1	7.7%	2	0	1	0	0	0	1	0
<b>25-26</b>	78	23	29.5%	38	11	3	9	0	12	3	0
<b>27-28</b>	113	31	27.4%	51	22	2	6	2	14	5	0
<b>29-30</b>	252	42	16.7%	74	18	2	5	10	28	11	0
<b>31-32</b>	386	45	11.7%	68	24	2	6	1	25	10	0
<b>33-34</b>	525	34	6.5%	54	11	0	7	13	18	5	0
<b>35-36</b>	531	21	4.0%	24	7	1	0	2	9	4	1
<b>≥37</b>	1559	54	3.5%	67	17	13	5	1	25	6	0
<b>Total</b>	3457	251	7.3%	378	110	24	38	29	131	45	1

Comment: only patients with complete information were included. Late sepsis or associated with health care is considered when there is a positive blood culture or culture of spinal fluid for bacteria or fungi after the second day of life. Infants who died or left in the first two days of birth were excluded. Other Gram-negative bacteria correspond to: *Klebsiella*, *Serratia*, *Pseudomona*, etc. The incidence may be underestimated due to high mortality in the lower gestational ages. Infections in blood and CSF are counted separately.

## PRESENTATION 11

Late Sepsis or Associated with Health Care (by Birthweight) (Graph)



**Late Onset Sepsis or Associated with Health Care (by Birthweight)\* (Table)**

Birthweight	Total number of Infants	Total number of Infected Infants >2 days of stay	Percentage of Infected Infants	Total number of Microorganisms	Microorganisms							
					CONS	<i>E coli</i>	<i>Other Gram -</i>	<i>Staph. aureus</i>	Other Germs	Listeria	Fungi	
<b>&lt;500</b>	4	0	0.0%	0	0	0	0	0	0	0	0	0
<b>500-749</b>	54	12	22.2%	24	6	1	8	6	2	0	1	
<b>750-999</b>	121	37	30.6%	59	20	3	18	8	8	0	2	
<b>1000-1249</b>	157	28	17.8%	45	15	1	20	5	4	0	0	
<b>1250-1499</b>	226	31	13.7%	56	18	1	15	7	6	0	9	
<b>1500-2499</b>	1214	86	7.1%	111	31	6	42	6	19	0	7	
<b>2500-4499</b>	1677	57	3.4%	83	20	12	28	6	6	1	10	
<b>≥4500</b>	4	0	0.0%	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>3457</b>	<b>251</b>	<b>7.3%</b>	<b>378</b>	<b>110</b>	<b>24</b>	<b>131</b>	<b>38</b>	<b>45</b>	<b>1</b>	<b>29</b>	

**Comment:** only patients with complete information were included. Late sepsis or associated with health care is considered when there is a positive blood culture or culture of spinal fluid for bacteria or fungi after the second day of life. Infants who died or left in the first two days of birth were excluded. Other Gram-negative bacteria correspond to: *Klebsiella*, *Serratia*, *Pseudomona*, etc. The incidence may be underestimated due to high mortality in the lower gestational ages. Infections in blood and CSF are counted separately.

## PRESENTATION 12

**Other Diagnosis / Interventions / Procedures by Gestational Age groups (table)**

Characteristics		Gestational Age at Birth									
		<25	25-26	27-28	29-30	31-32	33-34	35-36	≥37	Total	
<b>Total</b>	<b>n</b>	<b>16</b>	<b>93</b>	<b>126</b>	<b>263</b>	<b>398</b>	<b>541</b>	<b>580</b>	<b>1,817</b>	<b>3,834</b>	
<b>Prophylactic</b>	<b>Indomethacin</b>	<b>n</b>	2	6	9	0	2	0	1	0	20
		<b>%</b>	13%	6%	7%	0%	1%	0%	0%	0%	1%
	<b>Probiotics</b>	<b>n</b>	0	10	18	32	33	74	95	345	607
		<b>%</b>	0%	11%	14%	12%	8%	14%	16%	19%	16%
<b>RDS</b>	<b>No</b>	<b>n</b>	5	16	32	87	214	375	492	1,682	2,903
		<b>%</b>	31%	17%	25%	33%	54%	69%	85%	93%	76%
	<b>Definite</b>	<b>n</b>	11	72	87	151	156	140	70	116	803
		<b>%</b>	69%	77%	69%	57%	39%	26%	12%	6%	21%
	<b>Uncertain</b>	<b>n</b>	0	5	7	25	26	23	15	11	112
		<b>%</b>	0%	5%	6%	10%	7%	4%	3%	1%	3%
	<b>NA / Unknown</b>	<b>n</b>	0	0	0	0	2	3	3	8	16
		<b>%</b>	0%	0%	0%	0%	1%	1%	1%	0%	0%
<b>Surfactant</b>	<b>n</b>	11	77	101	140	133	73	24	12	571	
	<b>%</b>	69%	83%	80%	53%	33%	13%	4%	1%	15%	
<b>Pneumothorax<sup>s</sup></b>	<b>Diagnostic</b>	<b>n</b>	3	3	4	8	9	7	7	18	59
		<b>%</b>	19%	3%	3%	3%	2%	1%	1%	1%	2%
	<b>Observation</b>	<b>n</b>	1	0	0	0	0	2	2	8	13
		<b>%</b>	33%	0%	0%	0%	0%	29%	29%	44%	0%
	<b>Needle/Paracentesis/ Chest tube</b>	<b>n</b>	2	3	4	9	9	6	3	9	45
		<b>%</b>	67%	100%	100%	113%	100%	86%	43%	50%	1.2%
<b>Seizures Suspected/ definite</b>	<b>n</b>	2	12	16	23	10	12	13	47	135	
	<b>%</b>	13%	13%	13%	9%	3%	2%	2%	3%	4%	



Comment: Only patients with complete validated data without readmissions were included for this analysis. Percentages < 0.5% appear as 0% by approximation. The percentage of each procedure was calculated on the total number of patients. Some patients received more than one procedure. In pneumothorax treatment, patients with complete data were included, the difference in percentages not reported corresponds to patients without treatment data

**Other Diagnosis / Interventions / Procedures by Gestational Age Groups Continuation**

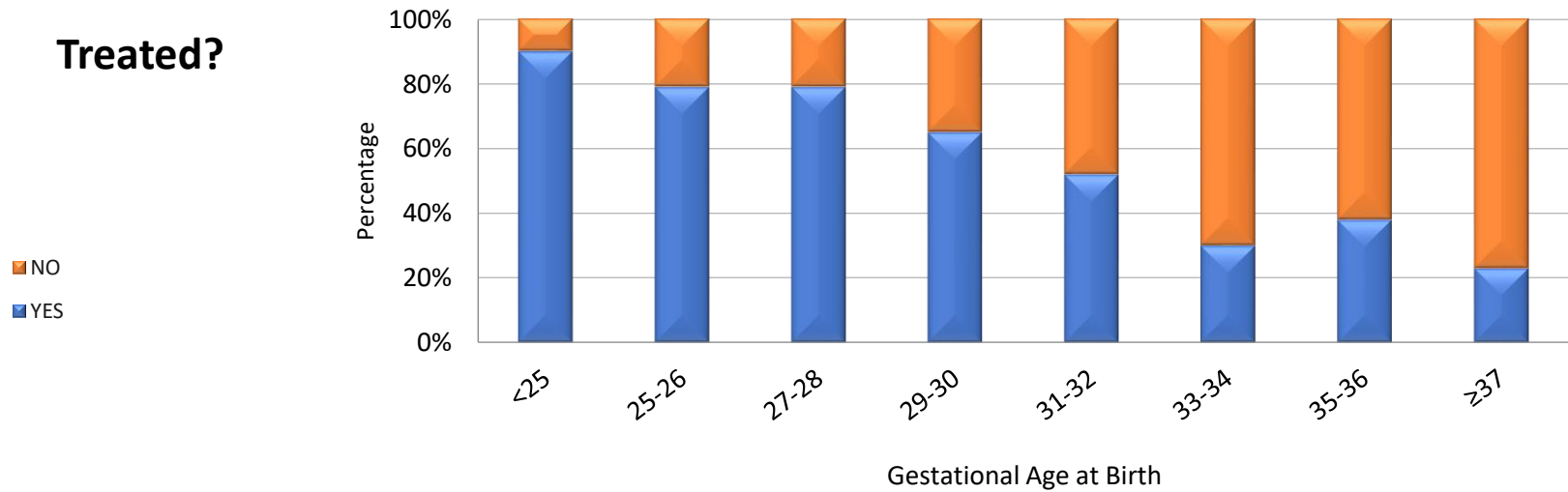
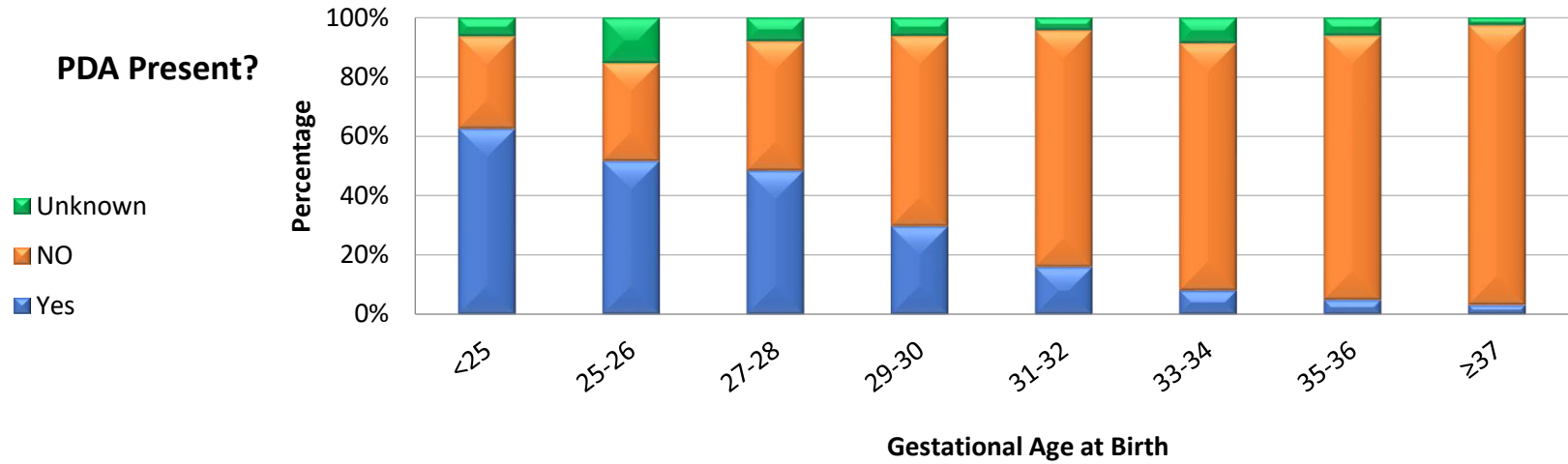
Characteristics		Gestational Age at Birth								Total	
		<25	25-26	27-28	29-30	31-32	33-34	35-36	≥37		
		n	16	93	126	263	398	541	580	1,817	3,834
Surgery	Laparotomy	n	0	2	2	4	2	6	3	8	27
		%	0.0%	2.2%	1.6%	1.5%	0.5%	1.1%	0.5%	0.4%	0.7%
	Thoracotomy	n	0	2	2	4	2	6	3	8	27
		%	0.0%	2.2%	1.6%	1.5%	0.5%	1.1%	0.5%	0.4%	0.7%
	Shunt VP	n	0	0	0	0	0	1	1	1	3
		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%
Gastrointestinal Perforation	Spontaneous	n	0	1	2	1	1	0	0	2	7
		%	0.0%	1.1%	1.6%	0.4%	0.3%	0.0%	0.0%	0.1%	0.2%
	Related to NEC	n	0	9	5	2	2	2	2	2	24
		%	0.0%	9.7%	4.0%	0.8%	0.5%	0.4%	0.3%	0.1%	0.6%
	Unknown	n	0	0	0	1	0	0	0	3	4
		%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.2%	0.1%
Stenosis Acquired		n	0	0	1	1	0	0	0	1	3
		%	0.0%	0.0%	0.8%	0.4%	0.0%	0.0%	0.0%	0.1%	0.1%
Exchange Transfusion		n	0	0	0	1	1	0	0	3	5
		%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%	0.0%	0.2%	0.1%
Congenital Anomalies*	Major	n	1	3	1	9	17	23	4	39	97
		%	6.3%	3.2%	0.8%	3.4%	4.3%	4.3%	0.7%	2.1%	2.5%
	Minor	n	0	6	12	17	22	25	23	76	181
		%	0.0%	6.5%	9.5%	6.5%	5.5%	4.6%	4.0%	4.2%	4.7%

Comment: only patients with complete information were included. The percentage of each procedure was calculated over the total number of patients in each group. Some patients received more than one procedure. In treatment of pneumothorax, the difference in percentages not reported corresponds to patients without information of the treatment. \*Congenital Anomalies are defined as major and minor according to CNN report 2013 modified, link: <http://www.canadianneonatalnetwork.org> Report 2013, Appendix p. 124. Patients may have more than one malformation.

ANALYSIS BASED ON THE NUMBER OF INFANTS ELIGIBLE VERY PREMATURE ( $\leq 32$  WEEKS GESTATIONAL AGE) OR INFANTS OF VERY LOW BIRTHWEIGHT ( $<1500$  GRS AT BIRTH)

## PRESENTATION 13

**Presence\* and treatment for Patent Ductus Arteriosus (by Gestational Age at birth)**

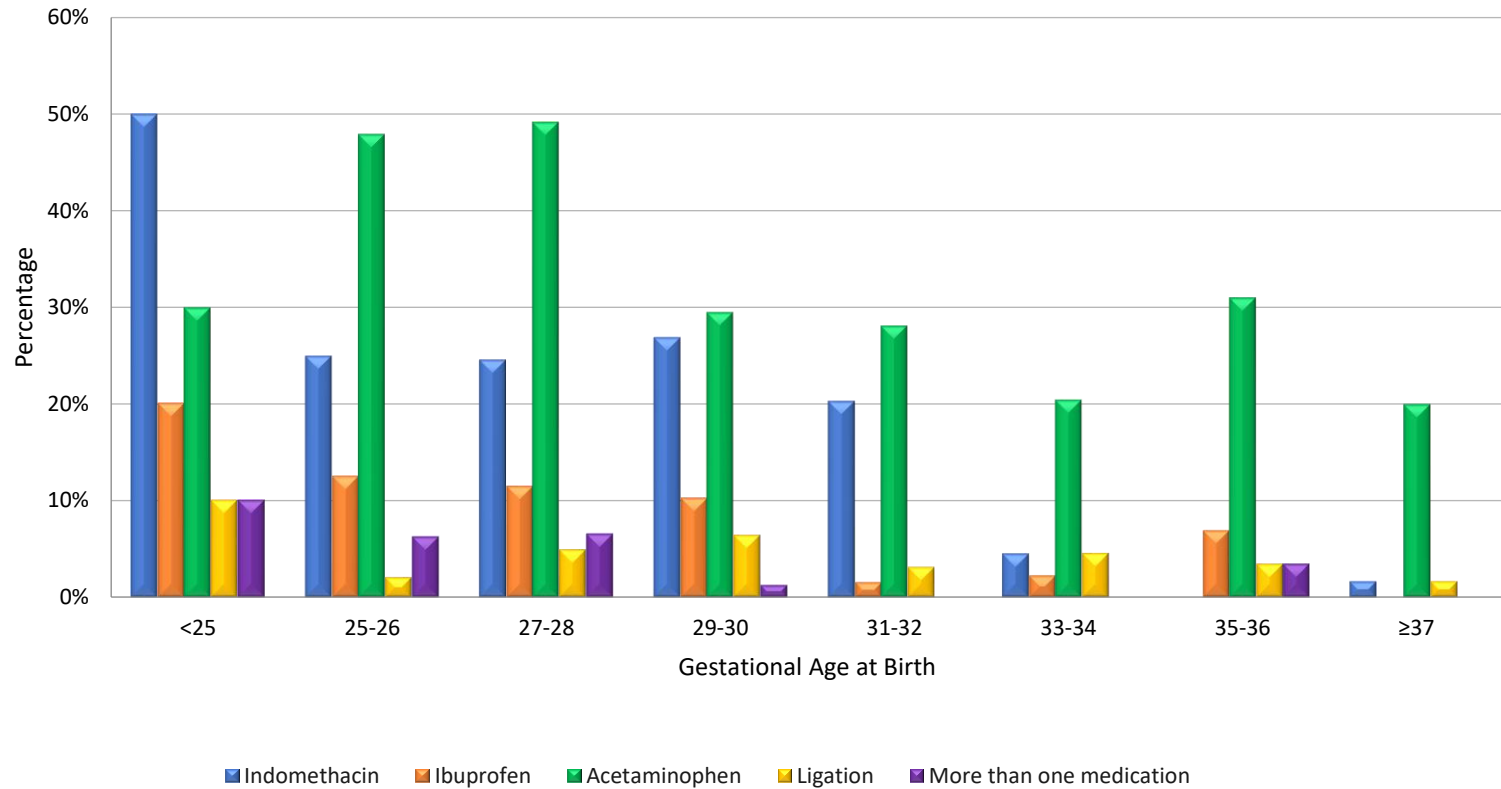


Gestational Age (weeks)	n		PDA *			PDA Treated		
			Yes	No	Unknown/Without information	Yes	No	Total
<b>&lt;25</b>	n	16	10	5	1	9	1	10
	%		63%	31%	6%	90%	10%	
<b>25-26</b>	n	93	48	31	14	38	10	48
	%		52%	33%	15%	79%	21%	
<b>27-28</b>	n	126	61	55	10	48	13	61
	%		48%	44%	8%	79%	21%	
<b>29-30</b>	n	263	78	169	16	51	27	78
	%		30%	64%	6%	65%	35%	
<b>31-32</b>	n	398	64	317	17	33	31	64
	%		16%	80%	4%	52%	48%	
<b>33-34</b>	n	541	44	451	46	13	31	44
	%		8%	83%	9%	30%	70%	
<b>35-36</b>	n	580	29	516	35	11	18	29
	%		5%	89%	6%	38%	62%	
<b>≥37</b>	n	1817	60	1710	47	14	46	60
	%		3%	94%	3%	23%	77%	
<b>Total</b>	n	3834	394	3254	186	217	177	394
	%		10%	85%	5%	55%	45%	

\* It is possible that some cases reported as unknown are due to the lack of taking an echocardiogram, although most units report cases without symptoms as without ductus arteriosus.

## PRESENTATION 13A

Patent Ductus Arteriosus Type of Treatment (by Gestational Age at birth) (graph).



Comment: For the PDA analysis, only the patients with complete data were included. The calculation for the PDA treatment was made over the total number the patients with PDA diagnosis in each gestational age group.

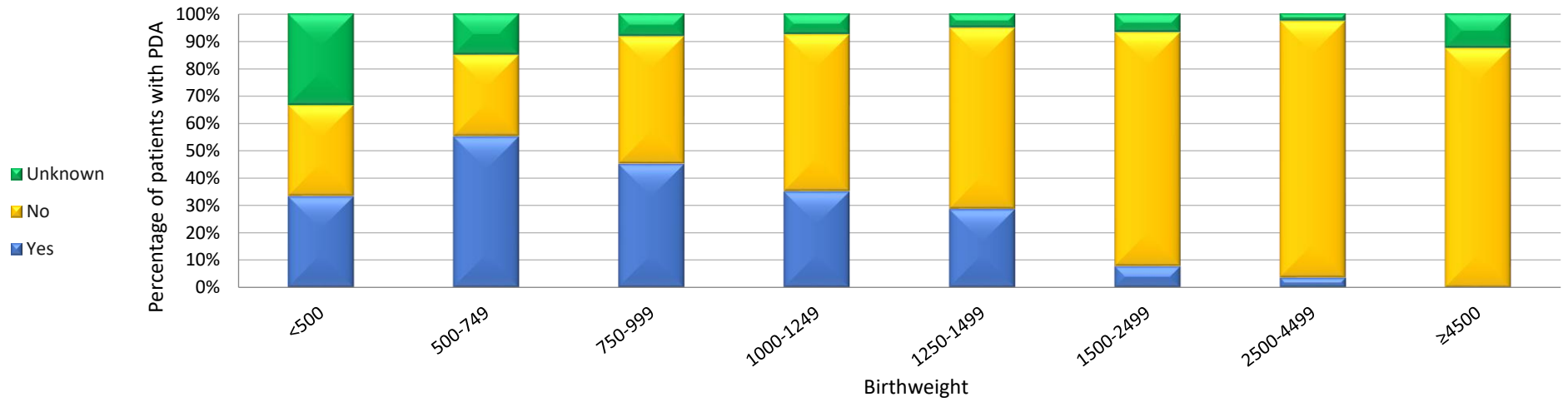
**Patent Ductus Arteriosus Treatment (by Gestational Age at birth) Continuation.**

Gestational Age (weeks)	Total number of Patients with PDA	Treatment				
		Indomethacin	Ibuprofen	Acetaminophen	Ligation	More than one medication
<b>&lt;25</b>	10	5	2	3	1	1
		50%	20%	30%	10%	10%
<b>25-26</b>	48	12	6	23	1	3
		25%	13%	48%	2%	6%
<b>27-28</b>	61	15	7	30	3	4
		25%	11%	49%	5%	7%
<b>29-30</b>	78	21	8	23	5	1
		27%	10%	29%	6%	1%
<b>31-32</b>	64	13	1	18	2	0
		20%	2%	28%	3%	0%
<b>33-34</b>	44	2	1	9	2	0
		5%	2%	20%	5%	0%
<b>35-36</b>	29	0	2	9	1	1
		0%	7%	31%	3%	3%
<b>≥37</b>	60	1	0	12	1	0
		2%	0%	20%	2%	0%
<b>Total</b>	394	69	27	127	16	10
		18%	7%	32%	4%	3%

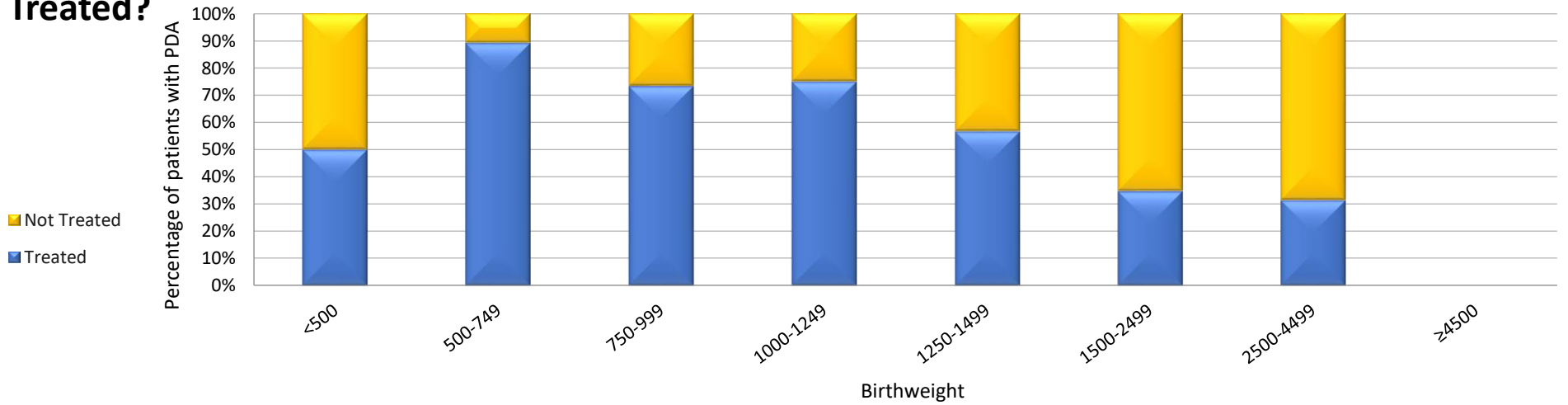
## PRESENTATION 14

### Presence and treatment for Patent Ductus Arteriosus (by Birthweight) (graph)

#### PDA Present?



#### Treated?





**Presence and treatment for Patent Ductus Arteriosus (by Birthweight) (table)**

Birthweight (grs)	Total Patients		PDA			Treatment	
			Yes	No	Unknown	Yes	No
< 500	n	6	2	2	2	1	1
	%		33%	33%	33%	50%	50%
500-749	n	67	37	20	10	33	4
	%		55%	30%	15%	89%	11%
750-999	n	133	60	62	11	44	16
	%		45%	47%	8%	73%	27%
1000-1249	n	171	60	98	13	45	15
	%		35%	57%	8%	75%	25%
1250-1499	n	234	67	155	12	38	29
	%		29%	66%	5%	57%	43%
1500-2499	n	1,253	98	1070	85	34	64
	%		8%	85%	7%	35%	65%
2500-4499	n	1,962	70	1840	52	22	48
	%		4%	94%	3%	31%	69%
≥4500	n	8	0	7	1	0	0
	%		0%	88%	13%		
Total	n	3834	394	3,254	186	217	177
	%		10%	85%	5%	55%	45%

**PRESENTATION 14A**

**Type of Treatment for Patent Ductus Arteriosus (by Birthweight) (table)**

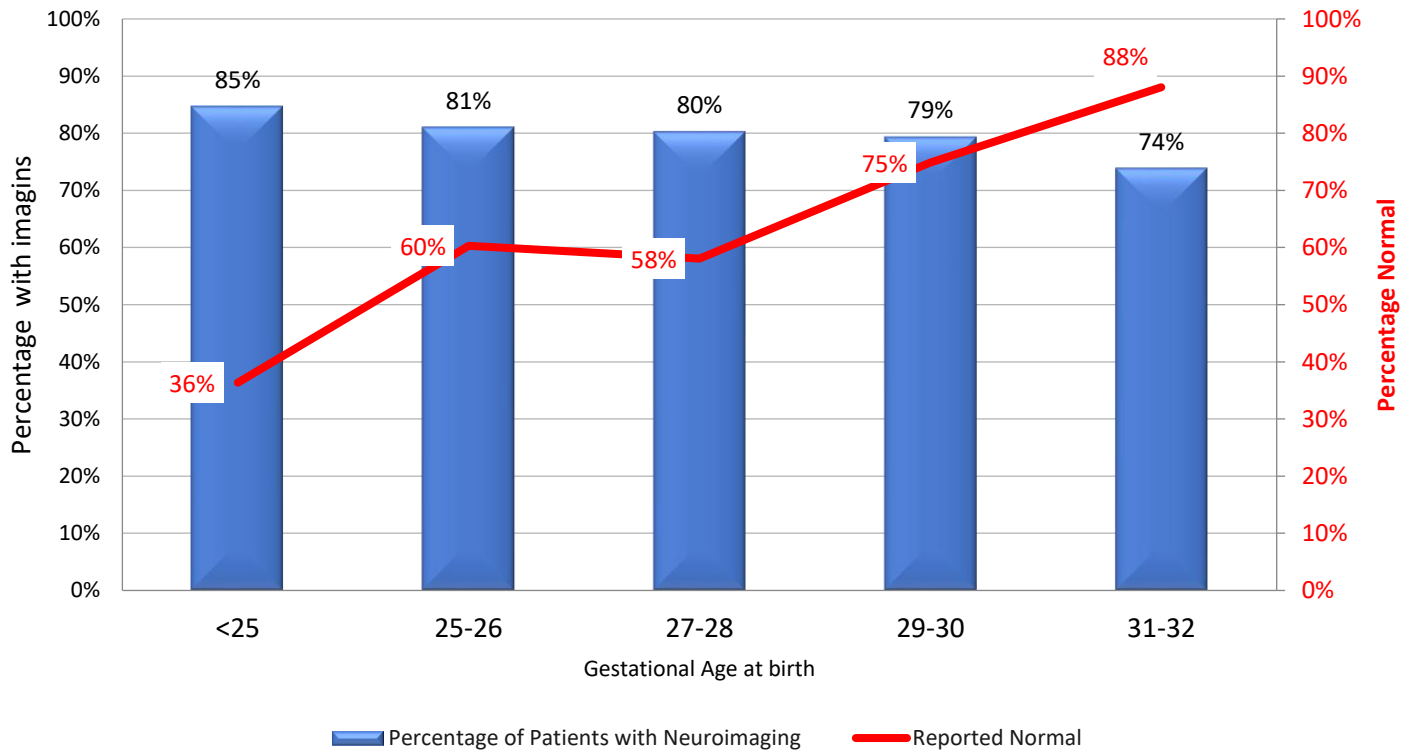
Birthweight (gr)	Total number of Patients with PDA	Treatment				
		Indomethacin	Ibuprofen	Acetaminophen	Ligation	More than one medication
<500	2	0 0%	0 0%	1 50%	0 0%	0 0%
500-749	37	9 24%	5 14%	22 59%	5 14%	3 8%
750-999	60	17 28%	5 8%	24 40%	0 0%	2 3%
1000-1249	60	17 28%	7 12%	24 40%	3 5%	3 5%
1250-1499	67	14 21%	7 10%	18 27%	3 4%	1 1%
1500-2499	98	10 10%	2 2%	20 20%	3 3%	0 0%
2500-4499	70	2 3%	1 1%	18 26%	2 3%	1 1%
≥4500	0	0	0	0	0	0
Total	394	69 28%	27 17%	127 18%	16 5%	10 3%

**B. ANALYSIS BASED ON THE NUMBER OF ELIGIBLE NEWBORNS SOME VERY PREMATURE ( $\leq 32$  WEEKS GESTATIONAL AGE) OR VERY LOW WEIGHT NEWBORNS AT BIRTH ( $<1500$  GRAMS AT BIRTH)**

## PRESENTATION 15

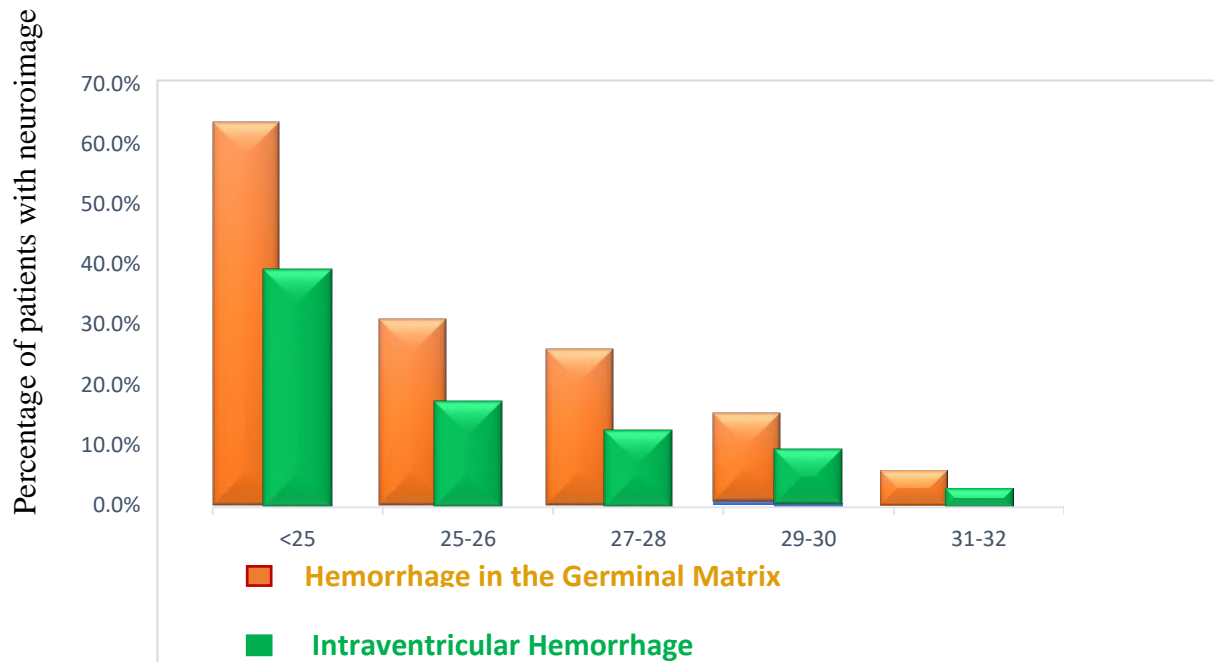
**Findings in Neuroimaging in ≤ 32 weeks (by Gestational Age at birth) (table and graph)**

Gestational Age (weeks)		Total patients	Total Patients with Neuroimaging		Reported Normal	
n	%					
<b>&lt;25</b>	n	13	11	85%	4	36%
<b>25-26</b>	n	84	68	81%	41	60%
<b>27-28</b>	n	116	93	80%	54	58%
<b>29-30</b>	n	241	191	79%	143	75%
<b>31-32</b>	n	374	276	74%	243	88%
<b>Total</b>	n	828	639	77%	485	76%

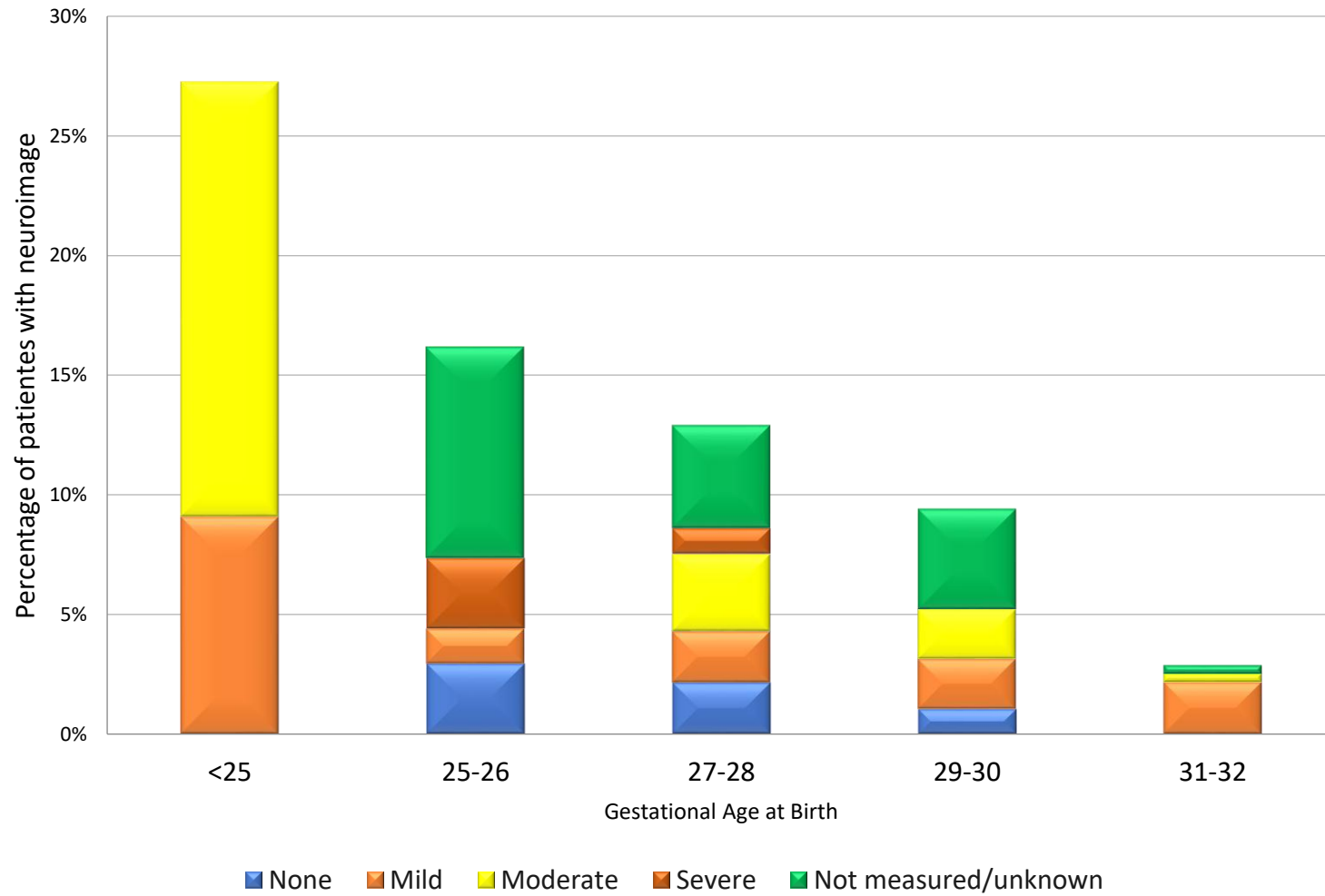


**Hemorrhage Findings in Germinal Matrix and Ventricles in ≤ 32 weeks (by Gestational Age at birth)**

Gestational Age (weeks)	Patients with Neuroimaging		Hemorrhage in the Germinal Matrix				Intraventricular Hemorrhage				
			Suspected		Present		Suspected		Present		
<25	n	%	11	0	0.0%	7	64%	0	0.0%	4	36.4%
25-26	n	%	68	0	0.0%	21	31%	0	0.0%	11	16.2%
27-28	n	%	93	0	0.0%	24	26%	0	0.0%	11	11.8%
29-30	n	%	191	1	0.5%	28	15%	1	0.5%	16	8.4%
31-32	n	%	276	0	0.0%	16	6%	0	0.0%	8	2.9%
<b>Total</b>	n	%	639	1	0.5%	96	15%	1	0.2%	50	7.8%



**Findings of Ventriculomegaly in Patients with Neuroimaging in  $\leq 32$  weeks (by Gestational Age at birth) (graph)**



Low gestational age deaths affect statistics.

**Ventriculomegaly Findings in Patients with Neuroimaging in ≤ 32 weeks (by Gestational Age at birth) (table)**

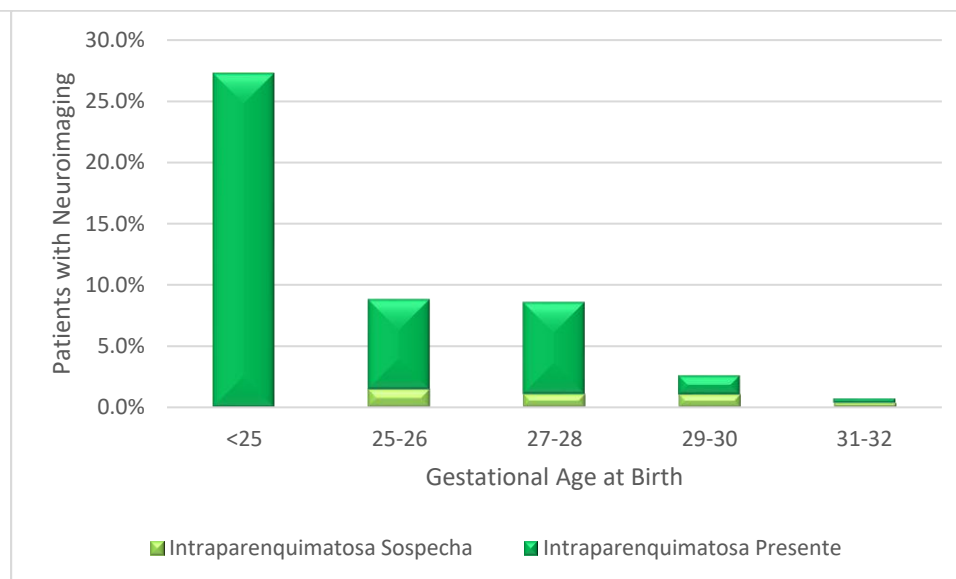
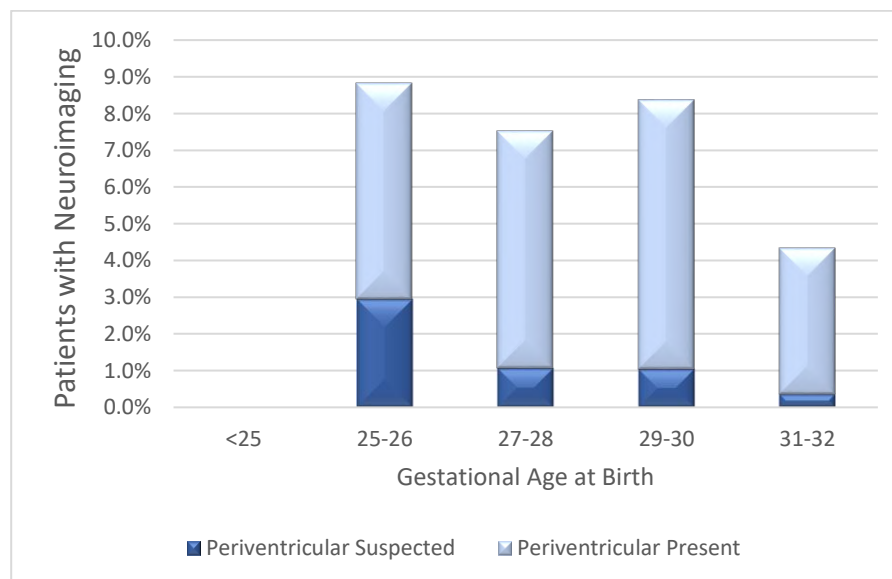
Gestational Age (weeks)			Patients with Neuroimaging	Ventriculomegaly									
				None		Mild		Moderate		Severe		Not measured/unknown	
<b>&lt;25</b>	n	%	11	0	0%	1	9%	2	18%	0	0%	0	0%
<b>25-26</b>	n	%	68	2	3%	1	1%	0	0%	2	3%	6	9%
<b>27-28</b>	n	%	93	2	2%	2	2%	3	3%	1	1%	4	4%
<b>29-30</b>	n	%	191	2	1%	4	2%	4	2%	0	0%	8	4%
<b>31-32</b>	n	%	276	0	0%	6	2%	1	0%	0	0%	1	0%
<b>Total</b>	n	%	639	6	1%	14	2%	10	2%	3	0%	19	3%

Comment: only patients with complete information were included.

## PRESENTATION 16

**Findings: periventricular and Intraparenchymal Hemorrhage in  $\leq 32$  weeks (by Gestational Age at birth) (table and graphic)**

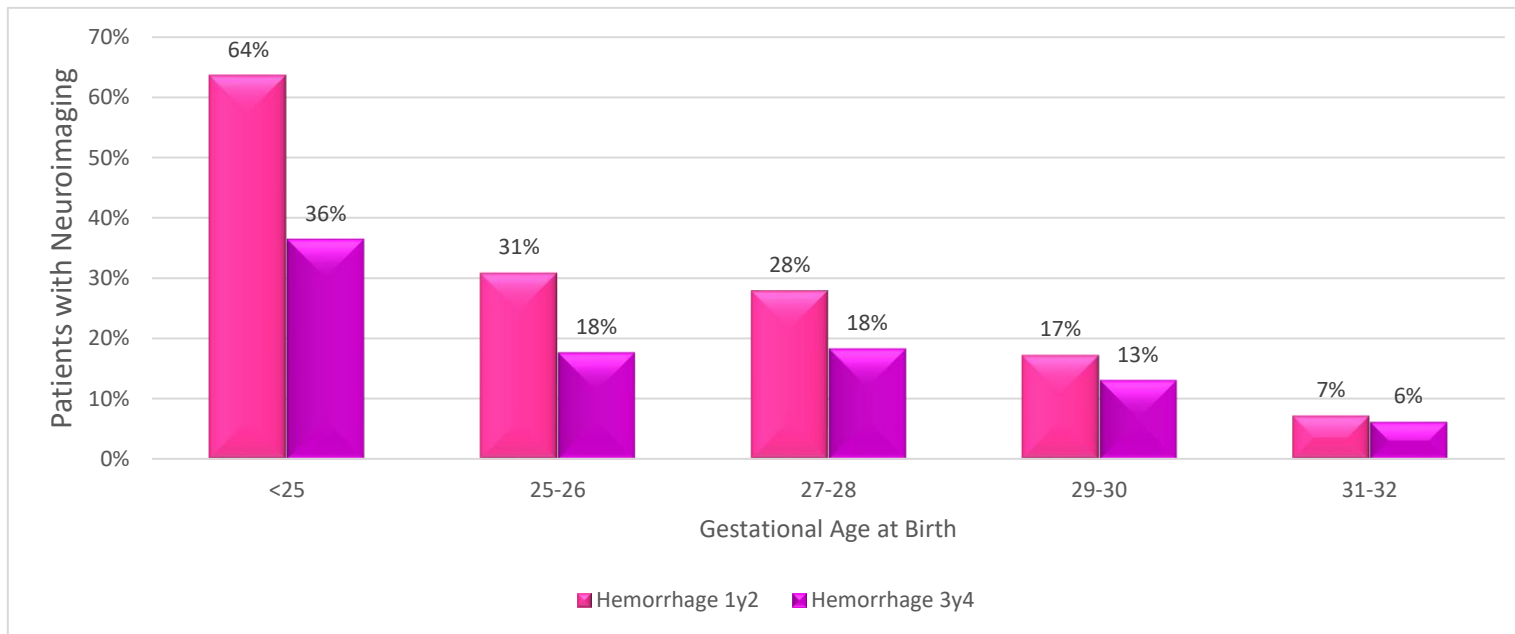
Gestational Age (weeks)			Patients with Neuroimaging		Periventricular Hemorrhage				Intraparenchymal Hemorrhage			
					Suspected		Present		Suspected		Present	
<b>&lt;25</b>	n	%	11	0	0.0%	0	0.0%	0	0.0%	3	27.3%	
<b>25-26</b>	n	%	68	2	2.9%	4	5.9%	1	1.5%	5	7.4%	
<b>27-28</b>	n	%	93	1	1.1%	6	6.5%	1	1.1%	7	7.5%	
<b>29-30</b>	n	%	191	2	1.0%	14	7.3%	2	1.0%	3	1.6%	
<b>31-32</b>	n	%	276	1	0.4%	11	4.0%	1	0.4%	1	0.4%	
<b>Total</b>	n	%	639	6	0.9%	35	5.5%	5	0.8%	19	3.0%	





**Hemorrhage Findings Grade 1 and 2 versus 3 and 4 in ≤ 32 weeks (by Gestational Age at birth)**

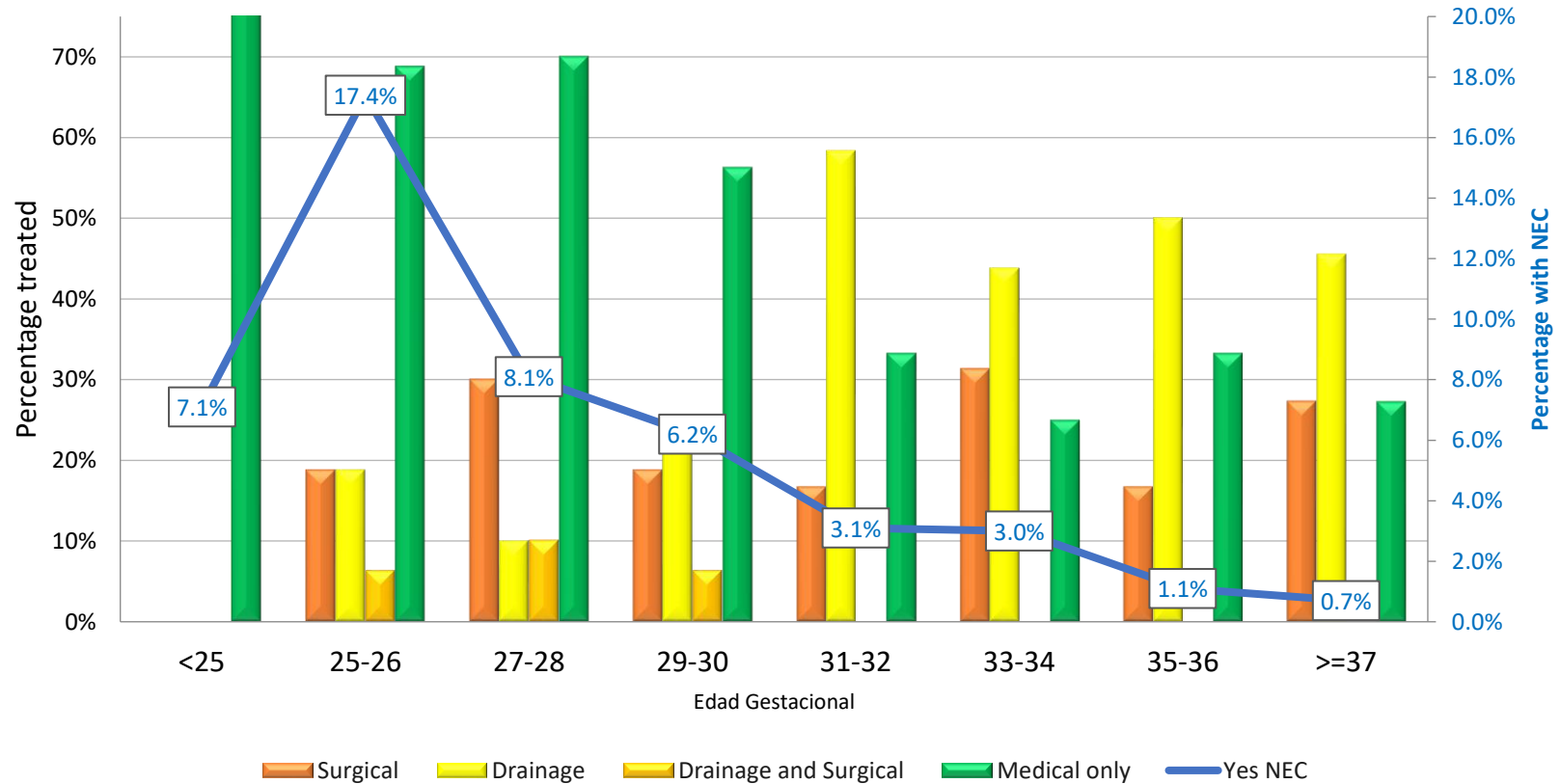
Gestational Age (weeks)		Patients With Neuroimaging	Hemorrhage 1y2		Hemorrhage 3y4	
<b>&lt;25</b>	n %	11	7	64%	4	36%
<b>25-26</b>	n %	68	21	31%	12	18%
<b>27-28</b>	n %	93	26	28%	17	18%
<b>29-30</b>	n %	191	33	17%	25	13%
<b>31-32</b>	n %	276	20	7%	17	6%
<b>Total</b>	n %	639	107	17%	75	12%



Comment: only patients with complete information to whom image was taken were included. Grade 1 and 2 is defined when there is hemorrhage in the germinal matrix and/or ventricles, without intra or periventricular dilation or hemorrhage. Grade 3 and 4 when there were ventricular dilation or hemorrhage outside the ventricles.

## PRESENTATION 17

**Necrotizing Enterocolitis (NEC) and Treatment Modalities (by Gestational Age at Birth) (graph)**



Comment: For the Necrotizing Enterocolitis (NEC) analysis, only patients with complete data were included. The definition of NEC was used according to the following criteria: a) Pneumatosis (air within the intestinal wall) or portal/hepatic air diagnosed by radiographs or b) diagnosis of NEC during surgery or autopsy. Diagnosis of "suspected NEC" was not classified as NEC. The treatment percentages were calculated on infants diagnosed with NEC, it may be underestimated at low gestational age due to mortality.

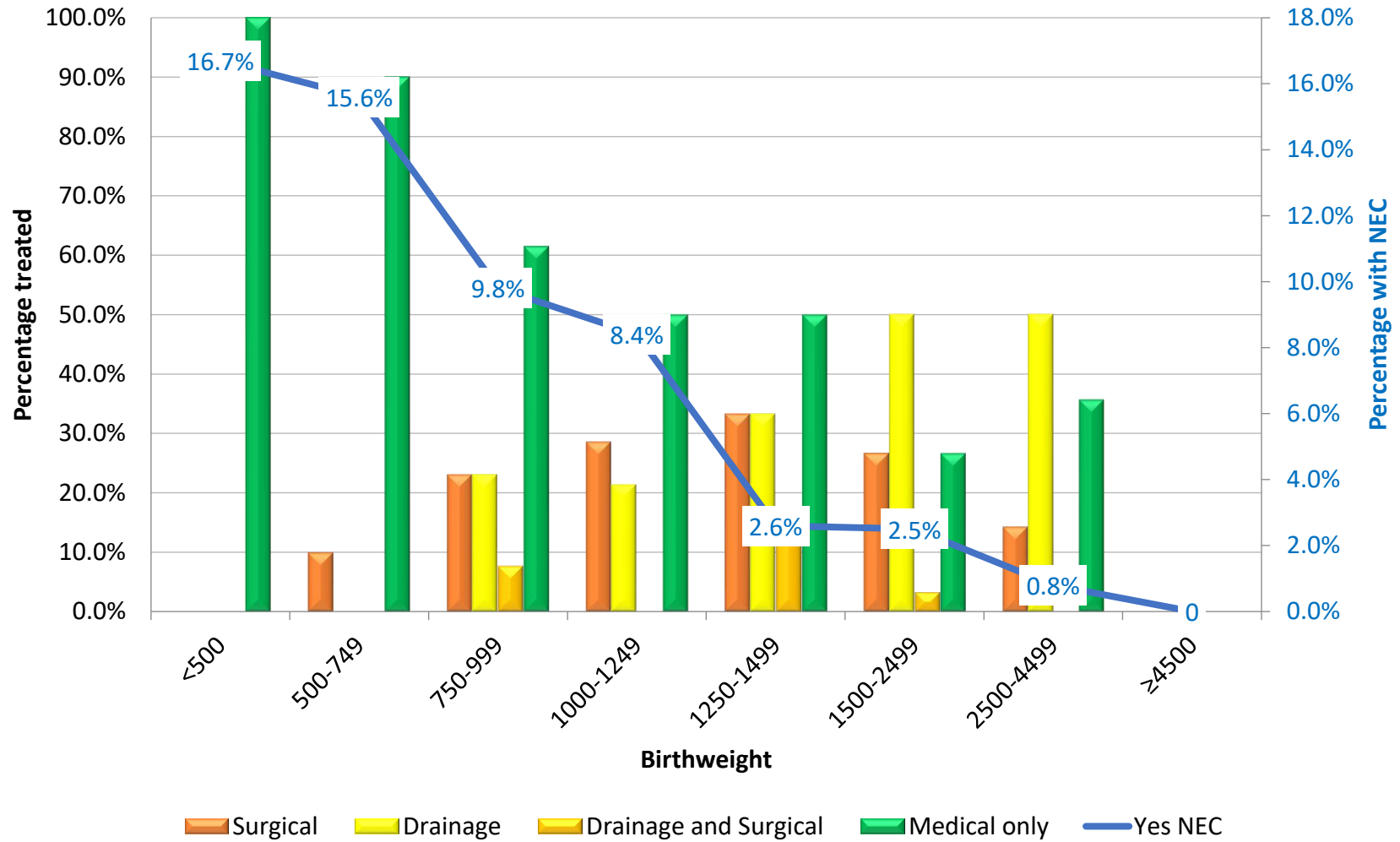
**Necrotizing Enterocolitis and Treatment Modalities (by Gestational Age at Birth) (table)**

Gestational Age (weeks)	Total Number of Cases		Yes NEC		Treatment								
					Medical only		Surgical		Drainage		Drainage and Surgical		
<b>&lt;25</b>	n	%	14	1	7.1%	1	100.0%	0		0		0	
<b>25-26</b>	n	%	92	16	17.4%	11	68.8%	3	18.8%	3	18.8%	1	6.3%
<b>27-28</b>	n	%	123	10	8.1%	7	70.0%	3	30.0%	1	10.0%	1	10.0%
<b>29-30</b>	n	%	257	16	6.2%	9	56.3%	3	18.8%	4	25.0%	1	6.3%
<b>31-32</b>	n	%	391	12	3.1%	4	33.3%	2	16.7%	7	58.3%	0	
<b>33-34</b>	n	%	534	16	3.0%	4	25.0%	5	31.3%	7	43.8%	0	
<b>35-36</b>	n	%	545	6	1.1%	2	33.3%	1	16.7%	3	50.0%	0	
<b>≥37</b>	n	%	1652	11	0.7%	3	27.3%	3	27.3%	5	45.5%	0	
<b>Total</b>	n	%	3608	88	2.4%	41	46.6%	20	22.7%	30	34.1%	3	3.4%

Patients with more than 10 days of life at admission were excluded because at this age the risk of NEC may have passed. All validated patients from the database of all gestational ages are included and for this reason caution should be exercised in interpreting those > 32 weeks because not all units admit these patients of these ages.

## PRESENTATION 18

Necrotizing Enterocolitis and Treatment Modalities (by Birthweight) (graph)



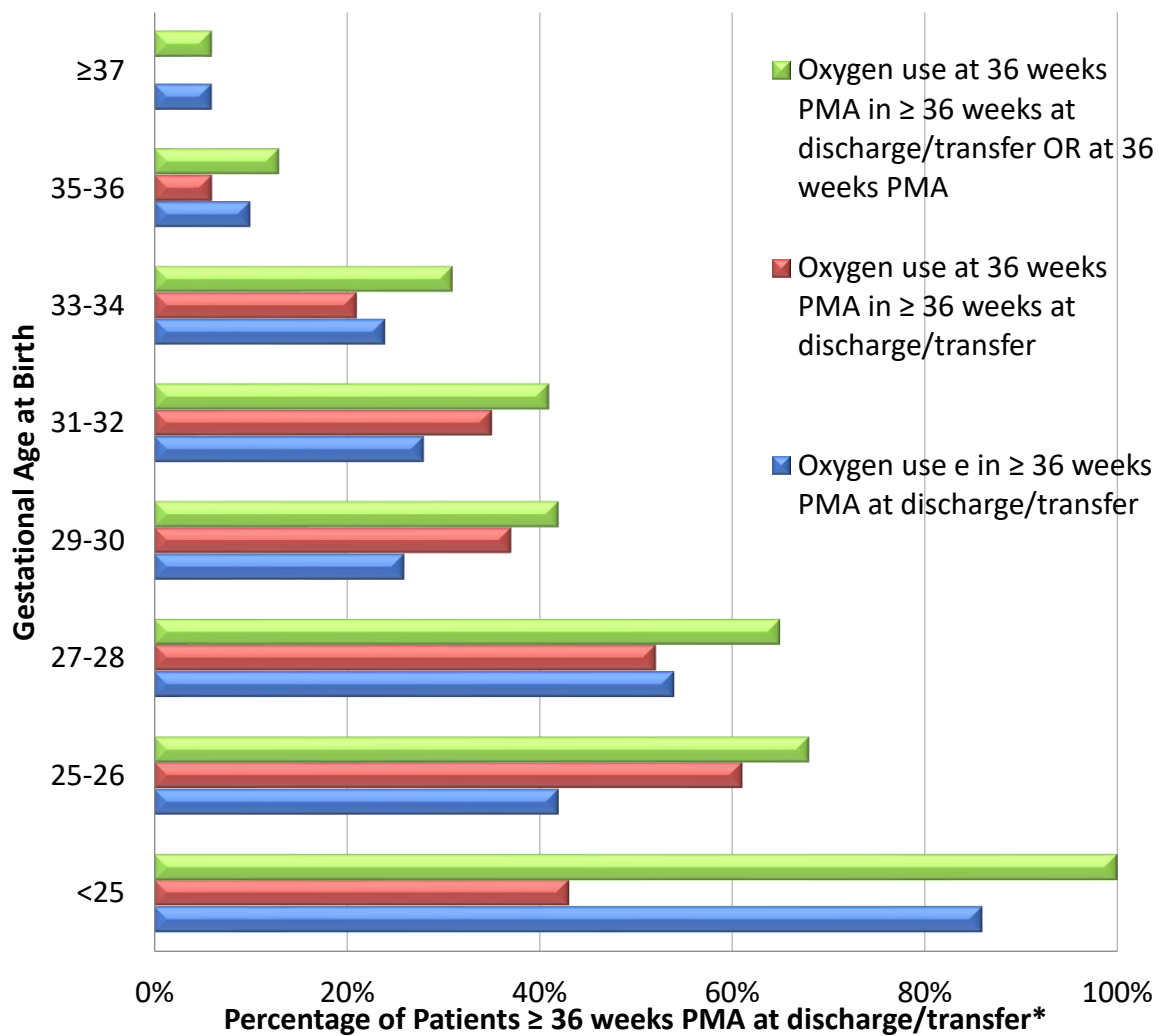
**Necrotizing Enterocolitis and Treatment Modalities (by Birthweight) (table)**

Birthweight (g)			Total No of Cases	Yes NEC		Treatment							
						Medical only		Surgical		Drainage		Drainage and Surgical	
<b>&lt;500</b>	n	%	3	1	33.3%	0		0		1	100.0%	0	
<b>500-749</b>	n	%	42	4	9.5%	3	75.0%	0		2	50.0%	0	
<b>750-999</b>	n	%	87	10	11.5%	3	30.0%	5	50.0%	4	40.0%	1	10.0%
<b>1000-1249</b>	n	%	171	19	11.1%	9	47.4%	6	31.6%	9	47.4%	4	21.1%
<b>1250-1499</b>	n	%	147	7	4.8%	4	57.1%	2	28.6%	2	28.6%	1	14.3%
<b>1500-2499</b>	n	%	1091	22	2.0%	9	40.9%	7	31.8%	9	40.9%	3	13.6%
<b>2500-4499</b>	n	%	1904	15	0.8%	7	46.7%	3	20.0%	5	33.3%	0	
<b>≥4500</b>	n	%	11	0		0		0		0		0	
<b>Total</b>	n	%	3456	78	2.3%	35	1.0%	23	0.7%	32	0.9%	9	0.3%

Comment: For the Necrotizing Enterocolitis (NEC) analysis, only patients with complete data were included. The definition of NEC was used according to the following criteria: a) Pneumatosis (air within the intestinal wall) or portal/hepatic air diagnosed by radiographs or b) diagnosis of NEC during surgery or autopsy. Diagnosis of "suspected NEC" was not classified as NEC. The treatment percentages were calculated on infants diagnosed with NEC, that may be underestimated at low weights due to mortality. NEC in larger infants may be a different pathology.

## PRESENTATION 19

### Supplemental Oxygen Requirement (graph)



Remember the different above the sea level of some of the units. w: weeks. PMA: postmenstrual age. \*Patients who left at < 36 weeks PMA, died, or were readmitted were excluded.

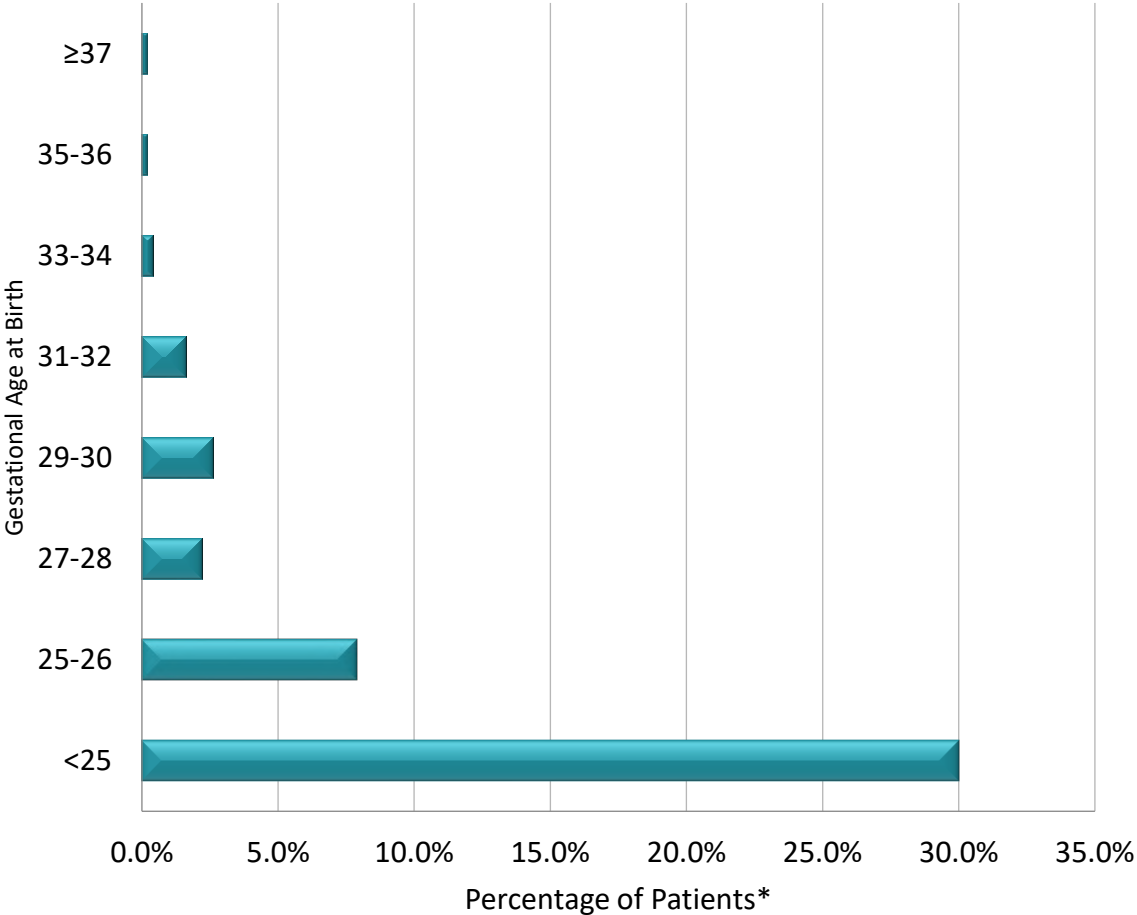
**Supplemental Oxygen Requirement (table)**

Gestational Age (weeks)		Total Number of Patients	Patients < 36 weeks PMA at discharge	Number of Patients ≥ 36 weeks PMA at discharge/transfer	Oxygen use in ≥ 36 weeks PMA at discharge/transfer	Oxygen use at 36 weeks PMA in ≥ 36 weeks at discharge/transfer	Oxygen use at 36 weeks PMA in ≥ 36 weeks at discharge/transfer OR at 36 weeks PMA
<b>&lt;25</b>	n %	16	9	7	6 86%	3 43%	7 100%
<b>25-26</b>	n %	93	62	31	13 42%	19 61%	21 68%
<b>27-28</b>	n %	126	55	71	38 54%	37 52%	46 65%
<b>29-30</b>	n %	265	97	168	44 26%	62 37%	71 42%
<b>31-32</b>	n %	399	140	259	72 28%	90 35%	106 41%
<b>33-34</b>	n %	549	200	349	85 24%	74 21%	108 31%
<b>35-36</b>	n %	591	67	524	51 10%	31 6%	69 13%
<b>≥37</b>	n %	1849	0	1849	118 6%	5 0%	120 6%
<b>Total</b>	n %	3888	630	3258	427 13%	321 10%	548 17%

Comment: only patients with complete information were included. w: weeks. PMA: postmenstrual age. The percentage was calculated excluding the total number of patients the deceased or remitted or < 36 weeks at discharge.

### PRESENTATION 20

Any Respiratory Support Requirement (by Gestational Age) in infants at discharge/transfer in patients that did not die. (graph)



\*\*Patients who died were excluded.



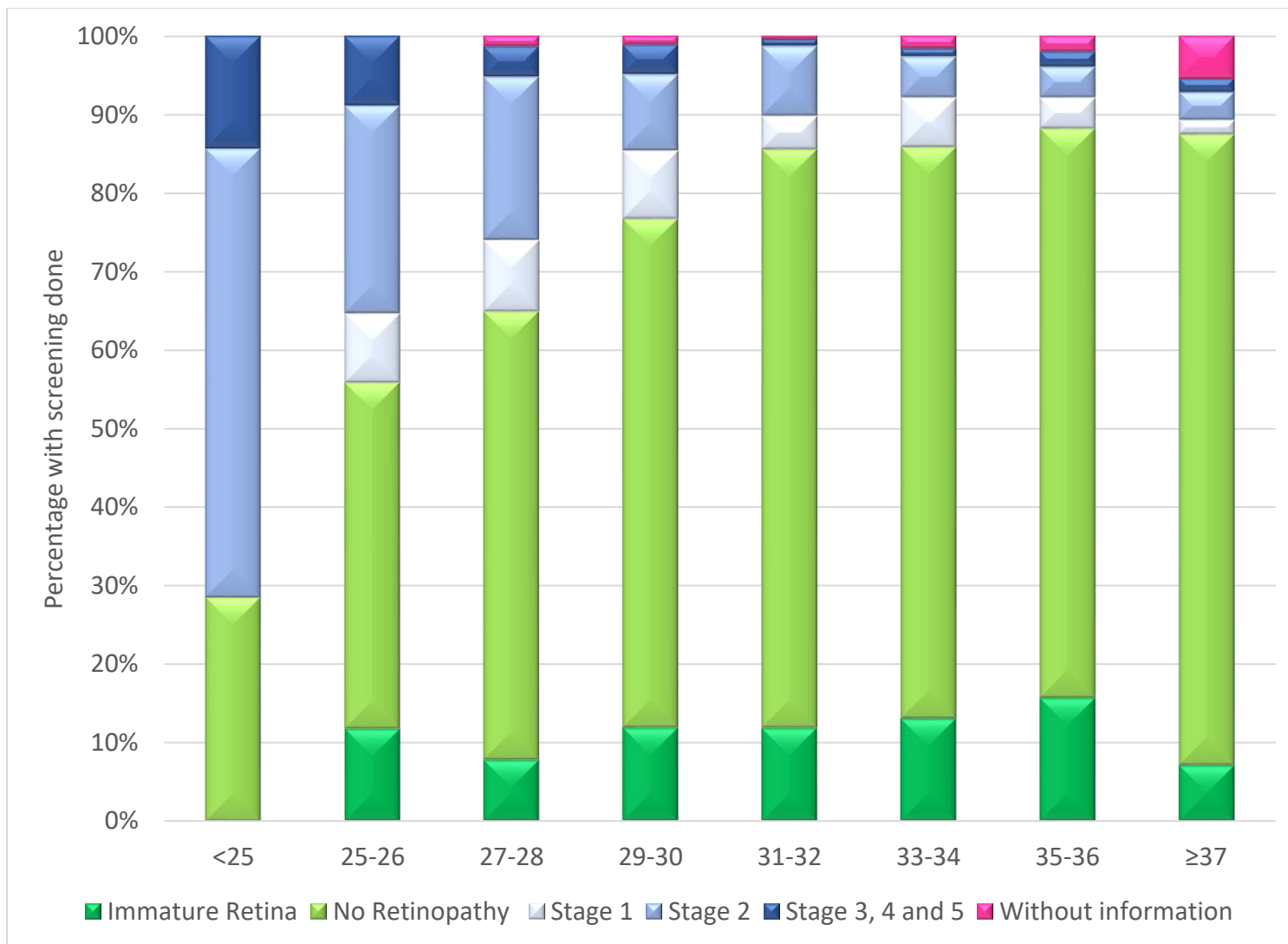
**Any Respiratory Support (by Gestational Age) in infants that did not die (table)**

Gestational Age (weeks)			Total Number of Patients that did not die	Respiratory support at discharge	
<b>&lt;25</b>	n	%	10	3	30.0%
<b>25-26</b>	n	%	38	3	7.9%
<b>27-28</b>	n	%	93	2	2.2%
<b>29-30</b>	n	%	230	6	2.6%
<b>31-32</b>	n	%	380	6	1.6%
<b>33-34</b>	n	%	530	2	0.4%
<b>35-36</b>	n	%	585	1	0.2%
<b>≥37</b>	n	%	1835	3	0.2%
<b>Total</b>	n	%	3701	26	0.7%

Comment: For the analysis of respiratory support received at discharge, only patients who had complete data were included. Respiratory support is defined as CPAP, noninvasive ventilation or assisted ventilation, it does not include only oxygen or low flow nasal cannula for its administration. Estimates of the percentages of respiratory support received at discharge over the number of infants with known results that did not die.

## PRESENTATION 21

Incidence of Retinopathy of Prematurity (by Gestational Age) (graph)



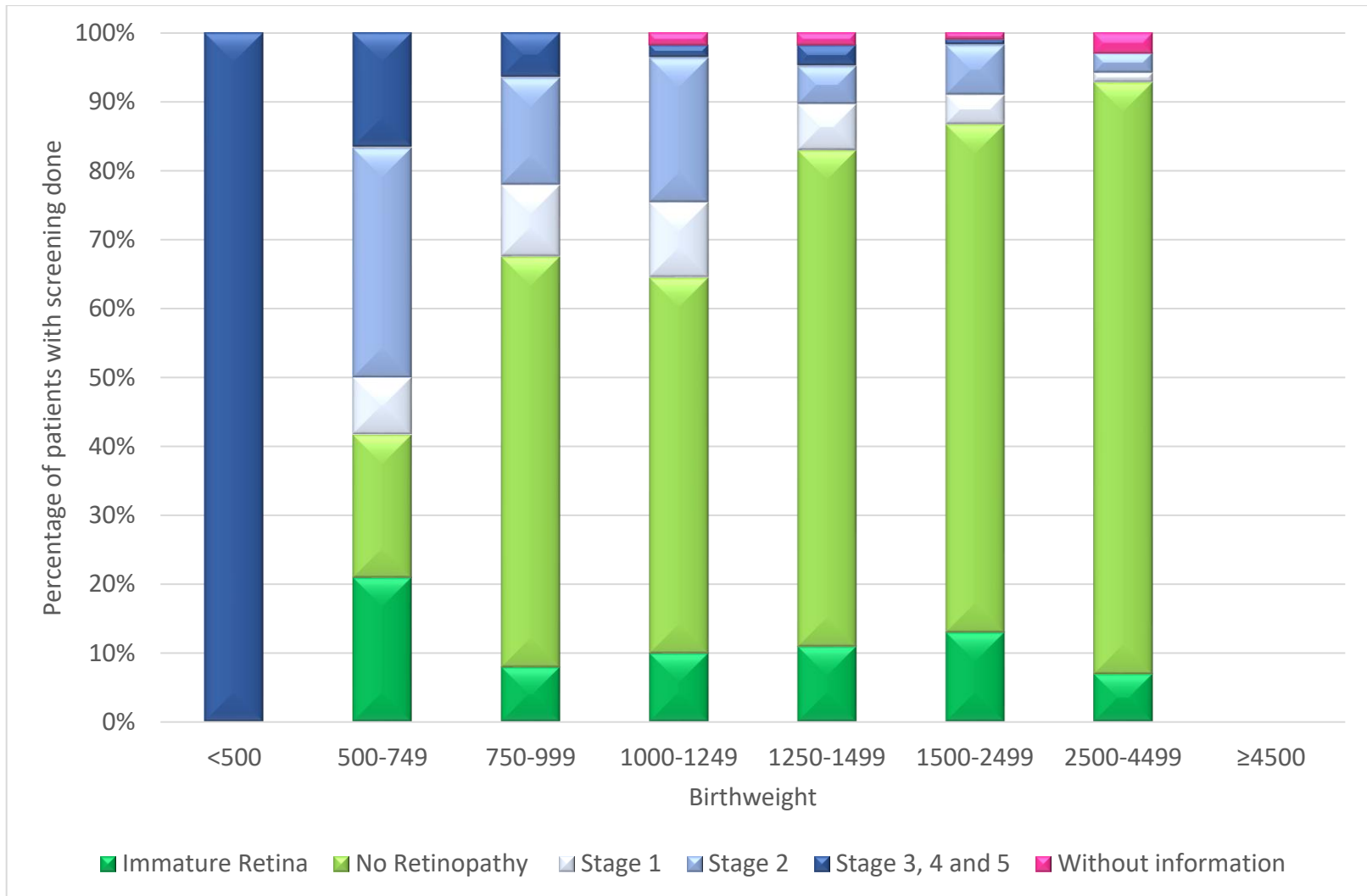
**Incidence of Retinopathy of Prematurity (by Gestational Age) (table)**

Gestational Age weeks	Number of Patients	Number of infants with Screening Done		Immature Retina		Retinopathy of Prematurity									
						No		Stage 1		Stage 2		Stage 3, 4 and 5		Without information	
<b>&lt;25</b>	n %	16	7 44%	0	0.0%	2	28.6%	0	0.0%	4	57.1%	1	14.3%	0	0.0%
<b>25-26</b>	n %	93	34 37%	4	11.8%	15	44.1%	3	8.8%	9	26.5%	3	8.8%	0	0.0%
<b>27-28</b>	n %	126	77 61%	6	7.8%	44	57.1%	7	9.1%	16	20.8%	3	3.9%	1	1.3%
<b>29-30</b>	n %	263	185 70%	22	11.9%	120	64.9%	16	8.6%	18	9.7%	7	3.8%	2	1.1%
<b>31-32</b>	n %	398	236 59%	28	11.9%	174	73.7%	10	4.2%	21	8.9%	2	0.8%	1	0.4%
<b>33-34</b>	n %	541	191 35%	25	13.1%	139	72.8%	12	6.3%	10	5.2%	2	1.0%	3	1.6%
<b>35-36</b>	n %	580	51 9%	8	15.7%	37	72.5%	2	3.9%	2	3.9%	1	2.0%	1	2.0%
<b>≥37</b>	n %	1817	56 3%	4	7.1%	45	80.4%	1	1.8%	2	3.6%	1	1.8%	3	5.4%
<b>Total</b>	n %	3834	837 22%	97	11.6%	576	68.8%	51	6.1%	82	9.8%	20	2.4%	11	1.3%

Comment: For the Retinopathy of Prematurity (ROP) analysis, only patients who had complete data were included. The calculation of ROP percentages was made over the number of infants with screening done. The difference between immature retina and no retinopathy is only definition.

## PRESENTATION 22

Incidence of Retinopathy of Prematurity by Birthweight (graph)



**Retinopathy of Prematurity by Birthweight (table)**

Birthweight (g)	Number of Patients	Number of infants with Screening Done		Immature Retina		Retinopathy of Prematurity										
						No		Stage 1		Stage 2		Stage 3, 4 and 5		Without information		
<b>&lt;500</b>	n %	6	1	17%	0	0%	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%
<b>500-749</b>	n %	67	24	36%	5	21%	5	20.8%	2	8.3%	8	33.3%	4	16.7%	0	0.0%
<b>750-999</b>	n %	133	77	58%	6	8%	46	59.7%	8	10.4%	12	15.6%	5	6.5%	0	0.0%
<b>1000-1249</b>	n %	171	110	64%	11	10%	60	54.5%	12	10.9%	23	20.9%	2	1.8%	2	1.8%
<b>1250-1499</b>	n %	234	164	70%	18	11%	118	72.0%	11	6.7%	9	5.5%	5	3.0%	3	1.8%
<b>1500-2499</b>	n %	1253	391	31%	52	13%	287	73.4%	17	4.3%	28	7.2%	3	0.8%	4	1.0%
<b>2500-4499</b>	n %	1962	70	4%	5	7%	60	85.7%	1	1.4%	2	2.9%	0	0.0%	2	2.9%
<b>≥4500</b>	n %	8	0	0%	0		0		0		0		0		0	
<b>Total</b>	n %	3834	837	22%	97	12%	576	68.8%	51	6.1%	82	9.8%	20	2.4%	11	1.3%

Comment: For the Retinopathy of Prematurity (ROP) analysis, only patients who had complete data were included. The calculation of ROP percentages was made over the number of infants with screening done. The difference between immature retina and no retinopathy is only definition.

## PRESENTATION 23

**Therapy Cryo/Laser /Anti-VEGF in infants with Retinopathy of Prematurity (by Gestational Age) (table)**

Gestational Age (weeks)	Number of Admissions	Number of infants with Screening Done		ROP Therapy		ROP Therapy				
						Cryo	Laser	Anti- VEGF	Both laser and Anti-VEGF	
<b>&lt;25</b>	n %	16	7 43.8%	4 57.1%	0	4 100.0%	0	0		
<b>25-26</b>	n %	93	34 36.6%	3 8.8%	0	1 33.3%	3 100.0%	1		
<b>27-28</b>	n %	126	77 61.1%	4 5.2%	0	2 50.0%	2 50.0%	0		
<b>29-30</b>	n %	263	185 70.3%	8 4.3%	1 13%	2 25.0%	6 75.0%	1		
<b>31-32</b>	n %	398	236 59.3%	1 0.4%	0	1 100.0%	0	0		
<b>33-34</b>	n %	541	191 35.3%	1 0.5%	0	1 100.0%	0	0		
<b>35-36</b>	n %	580	51 8.8%	0	0	0	0	0		
<b>≥37</b>	n %	1817	56 3.1%	1 1.8%	0	1 100.0%	0	0		
<b>Total</b>	n %	3834	837 21.8%	22 2.6%	1 5%	12 54.5%	11 50.0%	2		

Comment: For the analysis of ROP therapy, only patients who had screening done were included and percentage was calculated over the total number of patients treated. Due to the low number of patients, caution is required interpret the percentages.

## PRESENTATION 24

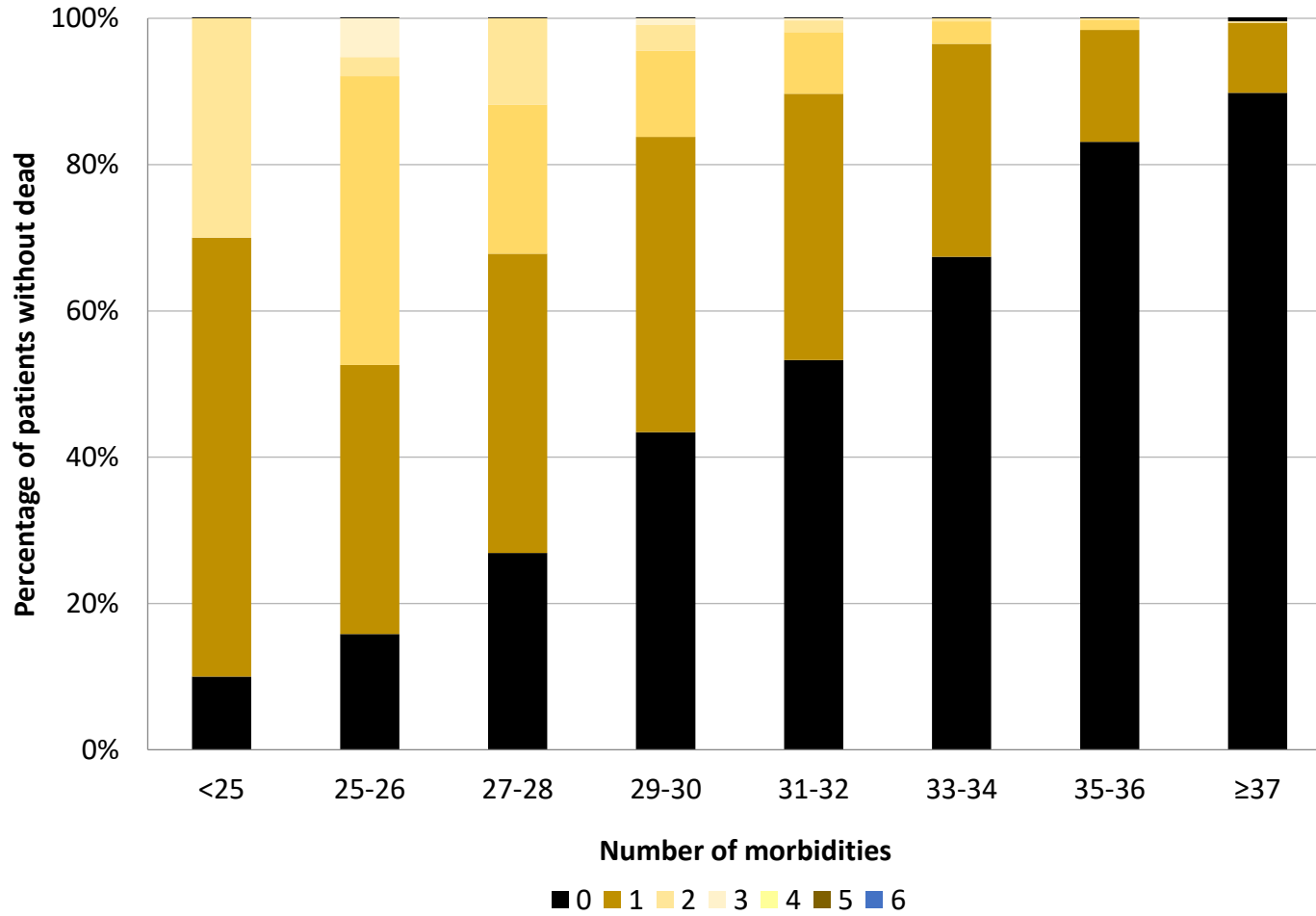
**Therapy Cryo/Laser /Anti-VEGF in infants with Retinopathy of Prematurity (by Birthweight) (table)**

BIRTHWEIGHT (gr)	Number of Admissions	Number of infants with Screening Done	ROP Therapy	ROP Therapy							
				Cryo		Laser		Anti- VEGF		Both laser and Anti-VEGF	
<b>&lt;500</b>	n %	6	1 17%	1	100.0%	0	0	1	100%	0	
<b>500-749</b>	n %	67	24 36%	7	29.2%	0	5 71%	3	43%	1	14%
<b>750-999</b>	n %	133	77 58%	7	9.1%	0	2 29%	5	71%	0	
<b>1000-1249</b>	n %	171	110 64%	1	0.9%	0	1 100%	1	100%	1	100%
<b>1250-1499</b>	n %	234	164 70%	4	2.4%	1 25%	2 50%	1	25%	0	
<b>1500-2499</b>	n %	1253	391 31%	1	0.3%	0	1 100%	0		0	
<b>2500-4499</b>	n %	1962	70 4%	1	1.4%	0	1 100%	0		0	
<b>≥4500</b>	n %	8	0	0		0	0	0		0	
<b>Total</b>	n %	3834	837 22%	22	3%	1 5%	12 55%	11	50%	2	9%

Comment: For the analysis of ROP therapy, only patients who had screening done were included and percentage was calculated over the total number of patients treated. Due to the low number of patients in some groups, caution is required interpret the percentages.

## PRESENTATION 25

Number of Significant Morbidities by Gestational Age (Six Morbidities) (graph)





**Number of Significant Morbidities by Gestational Age in Patients that did not Die (Six Morbidities) (table)**

Gestation al Age (weeks)	Number de Patients that did not Die	Number of Morbidities											
		0		1		2		3		4		5	6
<b>&lt;25</b> n %	10	1	10.0%	6	60.0%	0		3	30.0%	0		0	0
<b>25-26</b> n %	38	6	15.8%	14	36.8%	15	39.5%	1	2.6%	2	5.3%	0	0
<b>27-28</b> n %	93	25	26.9%	38	40.9%	19	20.4%	11	11.8%	0		0	0
<b>29-30</b> n %	228	99	43.4%	92	40.4%	27	11.8%	8	3.5%	2	0.9%	0	0
<b>31-32</b> n %	379	202	53.3%	138	36.4%	32	8.4%	6	1.6%	1	0.3%	0	0
<b>33-34</b> n %	522	352	67.4%	152	29.1%	16	3.1%	2	0.4%	0		0	0
<b>35-36</b> n %	574	477	83.1%	88	15.3%	8	1.4%	1	0.2%	0		0	0
<b>≥37</b> n %	1803	1619	89.8%	173	9.6%	0		3	0.2%	0		0	0
<b>Total</b> n %	3647	2781	76.3%	701	19.2%	117	3.2%	35	1.0%	5	0.1%	0	0

The six morbidities included in the analysis are:

- A.** Ventriculomegaly or Periventricular Leukomalacia or Intraparenchymal Hemorrhage
- B.** ROP ≥ grade 3
- C.** O2 use at 36 weeks PMA or at discharge.
- D.** Early or late infection confirmed by the presence of Bacteria or Fungi in Blood or CSF.
- E.** NEC grade II or III
- F.** PDA that required ligation.

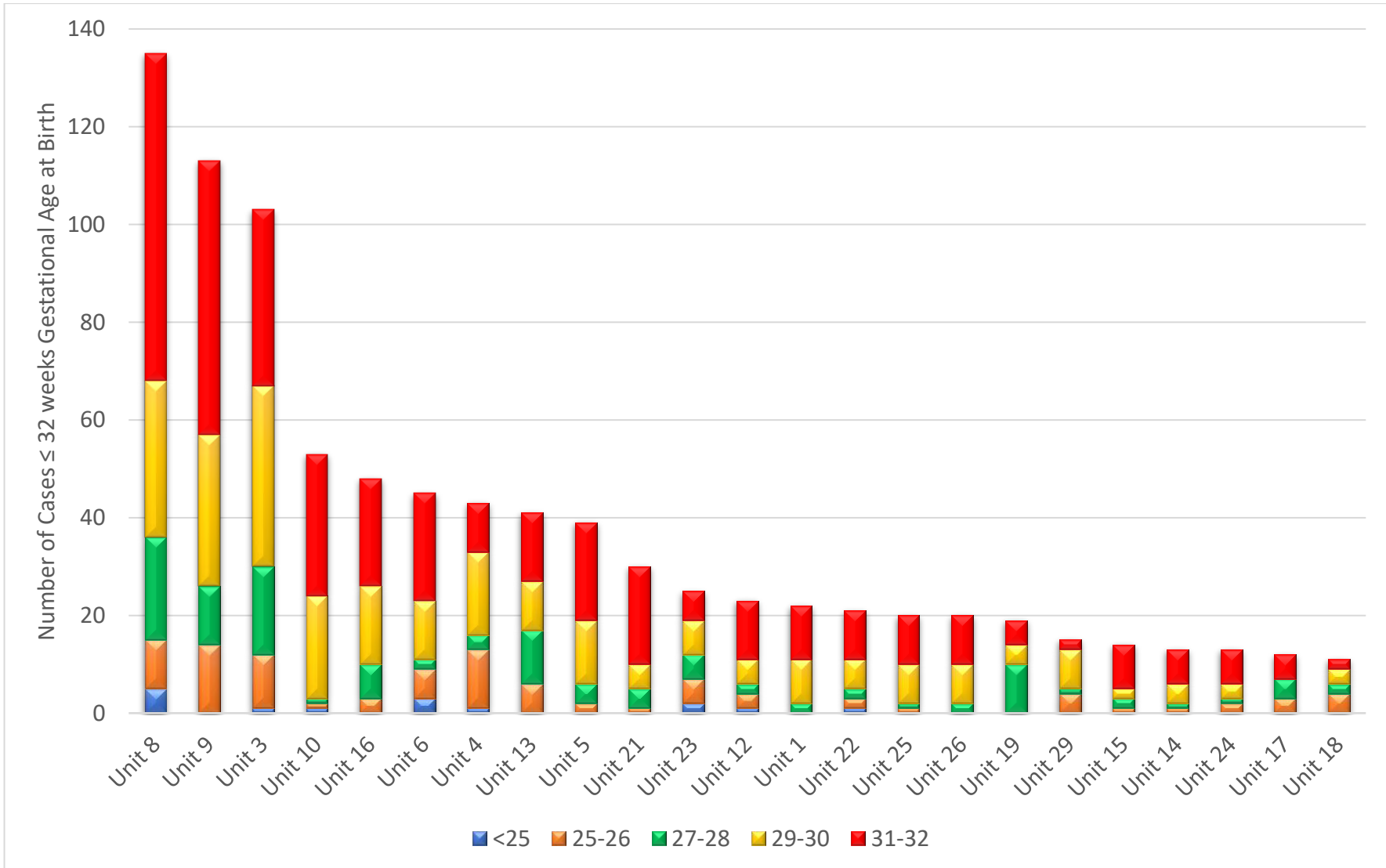
Comment: Patients with complete data were included for the analysis. The calculation of the frequency of morbidities was made on the Number of Infants without Dead.

**c. COMPARISONS BETWEEN SITES**

COMPARISONS BETWEEN SITES - POPULATION

## PRESENTATION 26

**Number of Patients  $\leq$  32 weeks at birth by Gestational Age and Specific Unit ((graph arranged in descending order)**



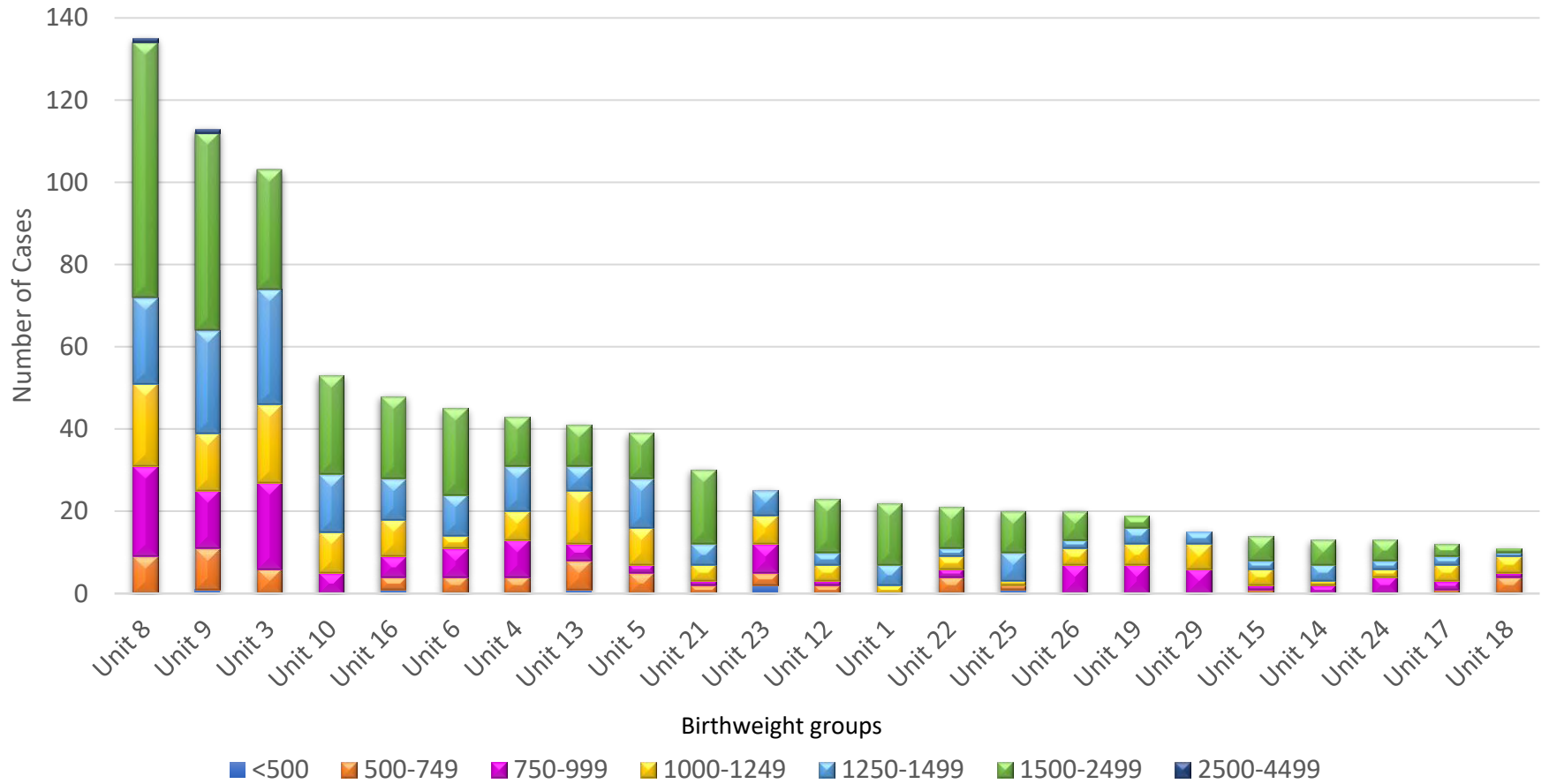
**Number of Patients ≤ 32 weeks at birth by Gestational Age and Specific Unit. (Table)**

UNITS	Gestational Age at Birth					
	<25	25-26	27-28	29-30	31-32	Total
Unit 8	5	10	21	32	67	135
Unit 9	0	14	12	31	56	113
Unit 3	1	11	18	37	36	103
Unit 10	1	1	1	21	29	53
Unit 16	0	3	7	16	22	48
Unit 6	3	6	2	12	22	45
Unit 4	1	12	3	17	10	43
Unit 13	0	6	11	10	14	41
Unit 5	0	2	4	13	20	39
Unit 21	0	1	4	5	20	30
Unit 23	2	5	5	7	6	25
Unit 12	1	3	2	5	12	23
Unit 1	0	0	2	9	11	22
Unit 22	1	2	2	6	10	21
Unit 25	0	1	1	8	10	20
Unit 26	0	0	2	8	10	20
Unit 19	0	0	10	4	5	19
Unit 29	0	4	1	8	2	15
Unit 15	0	1	2	2	9	14
Unit 14	0	1	1	4	7	13
Unit 24	0	2	1	3	7	13
Unit 17	0	3	4	0	5	12
Unit 18	0	4	2	3	2	11
Total	15	92	118	261	392	878

Comment: The number of patients by Gestational Age at birth excluded units with ≤ 10 cases ≤ 32 weeks gestational age at birth. It is also only units with complete data and without readmissions.

## PRESENTATION 27

**Number of Patients  $\leq$  32 weeks at birth by Birthweight and Specific Unit (graph arranged in descending order) (Graph)**



**Number of Patients ≤ 32 weeks at birth by Birthweight and Specific Unit (graph arranged in descending order) (table)**

UNITS	BIRTHWEIGHT GROUPS							Total
	<500	500-749	750-999	1000-1249	1250-1499	1500-2499	2500-4499	
Unit 8	0	9	22	20	21	62	1	135
Unit 9	1	10	14	14	25	48	1	113
Unit 3	0	6	21	19	28	29	0	103
Unit 10	0	0	5	10	14	24	0	53
Unit 16	1	3	5	9	10	20	0	48
Unit 6	0	4	7	3	10	21	0	45
Unit 4	0	4	9	7	11	12	0	43
Unit 13	1	7	4	13	6	10	0	41
Unit 5	0	5	2	9	12	11	0	39
Unit 21	0	2	1	4	5	18	0	30
Unit 23	2	3	7	7	6	0	0	25
Unit 12	0	2	1	4	3	13	0	23
Unit 1	0	0	0	2	5	15	0	22
Unit 22	0	4	2	3	2	10	0	21
Unit 25	1	1	0	1	7	10	0	20
Unit 26	0	0	7	4	2	7	0	20
Unit 19	0	0	7	5	4	3	0	19
Unit 29	0	0	6	6	3	0	0	15
Unit 15	0	1	1	4	2	6	0	14
Unit 14	0	0	2	1	4	6	0	13
Unit 24	0	0	4	2	2	5	0	13
Unit 17	0	1	2	4	2	3	0	12
Unit 18	0	4	1	4	1	1	0	11
Total	6	66	130	155	185	334	2	878

Comment: The number of patients by birthweight included patients ≤ 32 weeks at birth in units with > 10 cases. No readmissions were included.

## COMPARISONS BETWEEN UNITS - SURVIVAL/MORTALITY

## PRESENTATION 28

**CRUDE Frequency of Survival by Gestational Age and Unit in  $\leq 32$  weeks at Birth (Table).**

UNITS			<25	25-26	27-28	29-30	31-32	Total
Unit 1	Number of Survivors	n	0	0	1	9	9	19
	Number of deaths	n	0	0	1	0	2	3
	Total	n	0	0	2	9	11	22
	% de Survival	%				50%	100%	82%
Unit 3	Number of Survivors	n	1	1	13	33	11	59
	Number of deaths	n	0	10	5	4	25	44
	Total	n	1	11	18	37	36	103
	% de Survival	%	100%	9%	72%	89%	31%	57%
Unit 4	Number of Survivors	n	0	6	3	17	2	28
	Number of deaths	n	1	6	0	0	8	15
	Total	n	1	12	3	17	10	43
	% de Survival	%	0%	50%	100%	100%	20%	65%
Unit 5	Number of Survivors	n	0	0	2	12	14	28
	Number of deaths	n	0	2	2	1	6	11
	Total	n	0	2	4	13	20	39
	% de Survival	%			50%	92%	70%	72%
Unit 6	Number of Survivors	n	3	5	2	12	21	43
	Number of deaths	n	0	1	0	0	1	2
	Total	n	3	6	2	12	22	45
	% de Survival	%	100%	83%	100%	100%	95%	96%
Unit 8	Number of Survivors	n	2	4	16	30	44	96
	Number of deaths	n	3	6	5	2	23	39
	Total	n	5	10	21	32	67	135
	% de Survival	%	40%	40%	76%	94%	66%	71%
Unit 9	Number of Survivors	n	0	2	7	28	32	69
	Number of deaths	n	0	12	5	3	24	44
	Total	n	0	14	12	31	56	113
	% de Survival	%			58%	90%	57%	61%



UNITS			<25	25-26	27-28	29-30	31-32	Total
Unit 10	Number of Survivors	n	1	1	0	20	26	48
	Number of deaths	n	0	0	1	1	3	5
	Total	n	1	1	1	21	29	53
	% de Survival	%	100%	100%	0%	95%	90%	91%
Unit 12	Number of Survivors	n	0	2	2	5	10	19
	Number of deaths	n	1	1	0	0	2	4
	Total	n	1	3	2	5	12	23
	% de Survival	%	0%	67%	100%	100%	83%	83%
Unit 13	Number of Survivors	n	0	2	8	9	5	24
	Number of deaths	n	0	4	3	1	9	17
	Total	n	0	6	11	10	14	41
	% de Survival	%		33%	73%	90%	36%	59%
Unit 14	Number of Survivors	n	0	1	1	4	7	13
	Number of deaths	n	0	0	0	0	0	0
	Total	n	0	1	1	4	7	13
	% de Survival	%		100%	100%	100%	100%	100%
Unit 15	Number of Survivors	n	0	1	2	1	9	13
	Number of deaths	n	0	0	0	1	0	1
	Total	n	0	1	2	2	9	14
	% de Survival	%		100%	100%	50%	100%	93%
Unit 16	Number of Survivors	n	0	0	5	13	21	39
	Number of deaths	n	0	3	2	3	1	9
	Total	n	0	3	7	16	22	48
	% de Survival	%		0%	71%	81%	95%	81%
Unit 17	Number of Survivors	n	0	2	4	0	4	10
	Number of deaths	n	0	1	0	0	1	2
	Total	n	0	3	4	0	5	12
	% de Survival	%		67%	100%		80%	83%

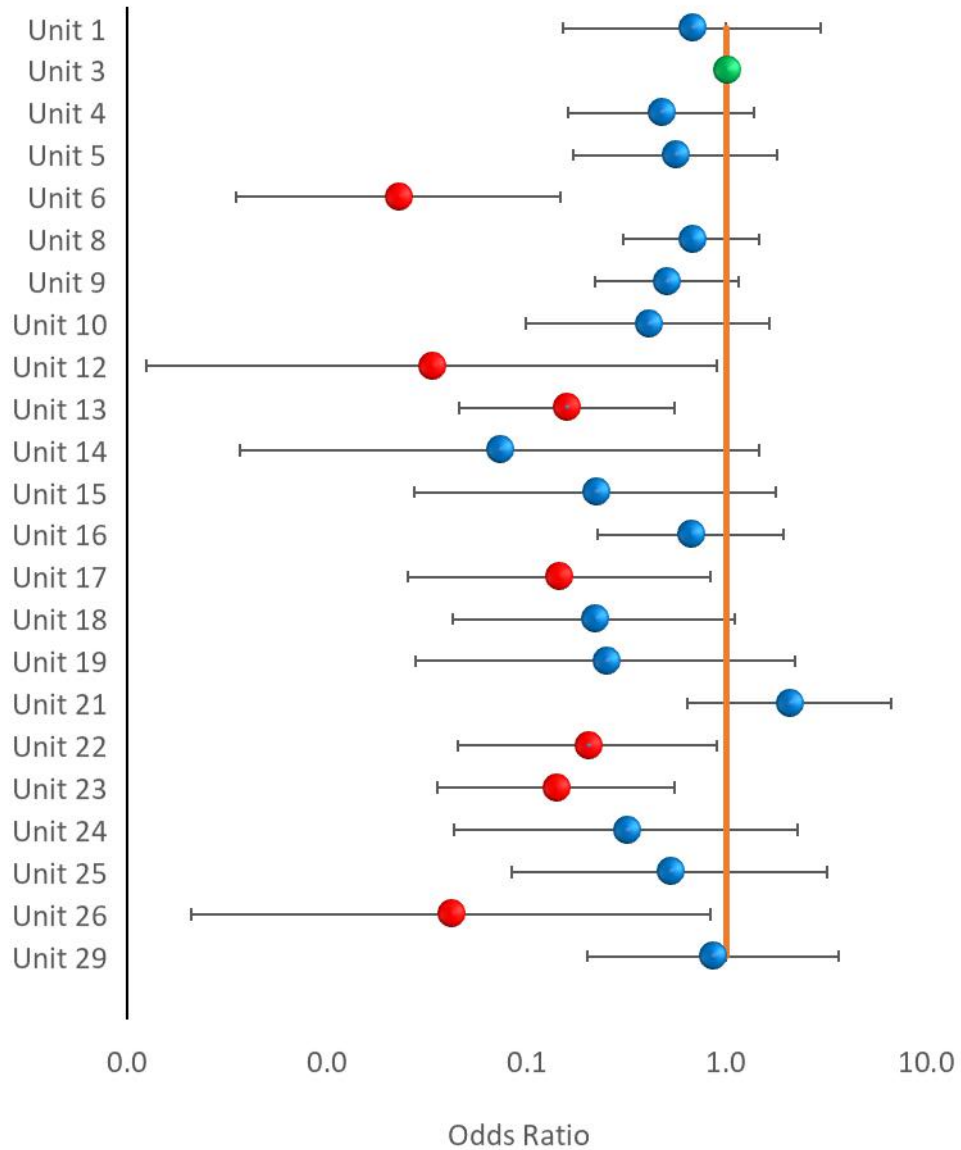
UNITS			<25	25-26	27-28	29-30	31-32	Total
Unit 18	Number of Survivors	n	0	2	1	2	2	7
	Number of deaths	n	0	2	1	1	0	4
	Total	n	0	4	2	3	2	11
	% de Survival	%		50%	50%	67%	100%	64%
Unit 19	Number of Survivors	n	0	0	7	4	5	16
	Number of deaths	n	0	0	3	0	0	3
	Total	n	0	0	10	4	5	19
	% de Survival	%			70%	100%	100%	84%
Unit 21	Number of Survivors	n	0	0	1	2	19	22
	Number of deaths	n	0	1	3	3	1	8
	Total	n	0	1	4	5	20	30
	% de Survival	%		0%	25%	40%	95%	73%
Unit 22	Number of Survivors	n	1	1	2	5	9	18
	Number of deaths	n	0	1	0	1	1	3
	Total	n	1	2	2	6	10	21
	% de Survival	%	100%	50%	100%	83%	90%	86%
Unit 23	Number of Survivors	n	1	3	4	6	5	19
	Number of deaths	n	1	2	1	1	1	6
	Total	n	2	5	5	7	6	25
	% de Survival	%	50%	60%	80%	86%	83%	76%
Unit 24	Number of Survivors	n	0	2	1	2	7	12
	Number of deaths	n	0	0	0	1	0	1
	Total	n	0	2	1	3	7	13
	% de Survival	%		100%	100%	67%	100%	92%
Unit 25	Number of Survivors	n	0	0	1	7	10	18
	Number of deaths	n	0	1	0	1	0	2
	Total	n	0	1	1	8	10	20
	% de Survival	%		0%	100%	88%	100%	90%

UNITS			<25	25-26	27-28	29-30	31-32	Total
Unit 26	Number of Survivors	n	0	0	2	8	10	20
	Number of deaths	n	0	0	0	0	0	0
	Total	n	0	0	2	8	10	20
	% de Survival	%			100%	100%	100%	100%
Unit 29	Number of Survivors	n	0	2	1	6	2	11
	Number of deaths	n	0	2	0	2	0	4
	Total	n	0	4	1	8	2	15
	% de Survival	%		50%	100%	75%	100%	73%
TOTAL	Number of Survivors	n	9	37	86	235	284	651
	Number of deaths	n	6	55	32	26	108	227
	Total	n	15	92	118	261	392	878
	% de Survival	%	60%	40%	73%	90%	72%	74%

Comment: For the analysis of survival by Gestational Age, only patients who had complete data were included. Deaths of infants in the delivery room were excluded. Interpretation of these data should be done with caution because the few number of patients at low gestational ages.

## PRESENTATION 29

**Odd Ratio (Adjusted by SNAPEPE II, Gestational Age and Mayor Malformations) for mortality by unit in less ≤ 32 weeks Gestational Age (graph with log scale)**



Unit 3 reference in green chosen due adequate number of infants. Interpret with caution the units with few infants and large intervals. Statistically significant difference was found in units in red and reference unit in green.

**Odd Ratio (Adjusted by SNAPEPE II, Gestational Age and mayor malformations) for mortality by unit in less ≤ 32 weeks Gestational Age (table)**

UNITS	CASES	OR	p Value	CI 95%
Unit 1	22	0.7	0.604	0.2 - 3.0
Unit 3	103	1.0		
Unit 4	43	0.5	0.170	0.2 - 1.4
Unit 5	38	0.6	0.326	0.2 - 1.8
Unit 6	43	0.0	<b>0.000</b>	0.0 - 0.1
Unit 8	135	0.7	0.315	0.3 - 1.5
Unit 9	113	0.5	0.106	0.2 - 1.2
Unit 10	53	0.4	<b>0.208</b>	0.1 - 1.7
Unit 12	23	0.0	<b>0.043</b>	0.0 - 0.9
Unit 13	41	0.2	<b>0.004</b>	0.0 - 0.5
Unit 14	13	0.1	0.087	0.0 - 1.5
Unit 15	14	0.2	0.156	0.0 - 1.8
Unit 16	48	0.7	0.459	0.2 - 2.0
Unit 17	12	0.1	<b>0.030</b>	0.0 - 0.8
Unit 18	11	0.2	0.067	0.0 - 1.1
Unit 19	19	0.2	0.212	0.0 - 2.2
Unit 21	30	2.1	0.226	0.6 - 6.7
Unit 22	21	0.2	<b>0.036</b>	0.0 - 0.9
Unit 23	25	0.1	<b>0.005</b>	0.0 - 0.6
Unit 24	13	0.3	0.254	0.0 - 2.3
Unit 25	20	0.5	0.484	0.1 - 3.2
Unit 26	20	0.0	<b>0.037</b>	0.0 - 0.8
Unit 29	15	0.9	0.839	0.2 - 3.7
<b>Reference</b>	<b>UNIT 3</b>			

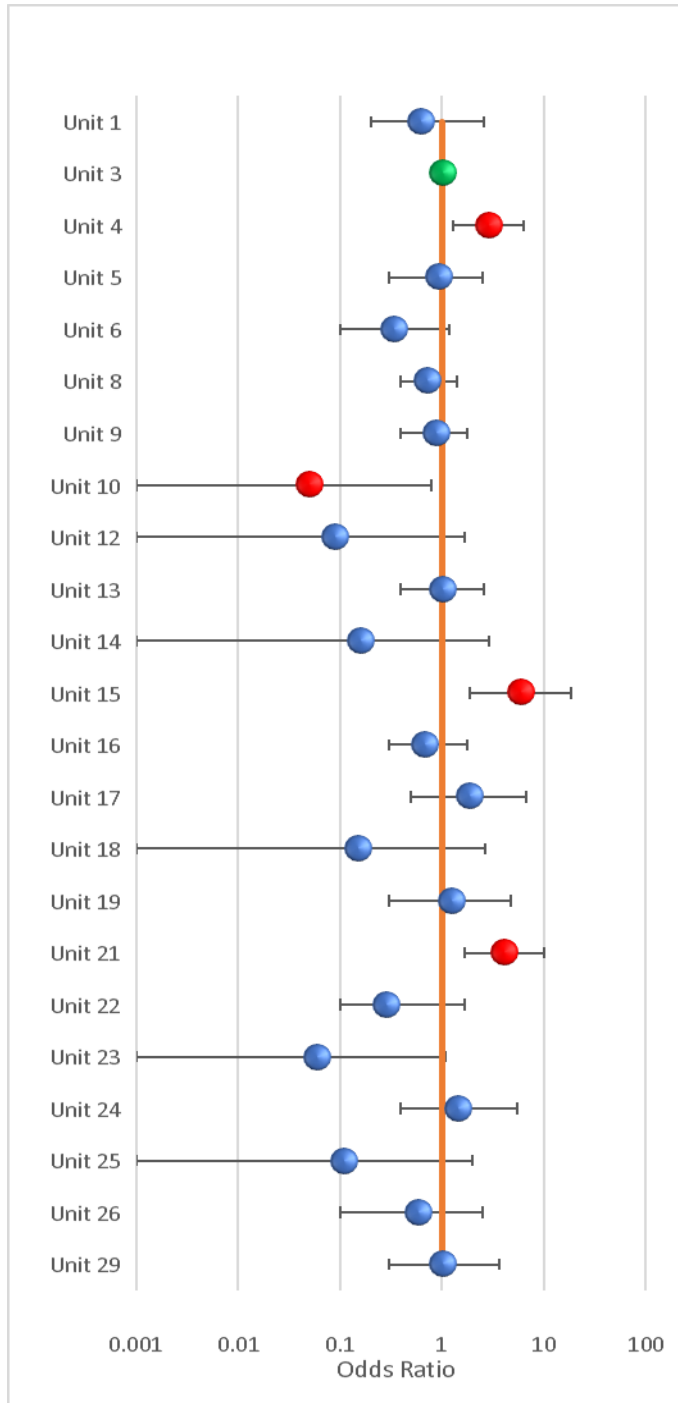
Comment: A logistic regression with adjustment by SNAPEPE II, Gestational Age and Mayor malformations (see presentation 12) was performed. The maximum likelihood estimation method proposed by David Firth (Firthlogit)<sup>1</sup> for the low frequency of events was used. The low frequency may explain the imprecision of the estimates for some of the units. Additionally, the value of p was calculated to assess the statistical significance of the results of 0.05.

Participating units included all patients with complete discharge data who died. Those who were transferred were included. No readmissions were included. Unit 19 was used as reference for the large number of cases. No statistically significant difference was found.

COMPARISON BY LOCATIONS, MORBIDITIES AND ADJUSTED RISK  
ANALYSIS

### PRESENTATION 30

Odds Ratio in Late Onset Sepsis in  $\leq 32w$  Gestational Age Adjusted by SNAPEPE II and Gestational Age (Comparison by UNITS) (graph with log scale)



In red the units with significant difference, in green the referent unit 22 chosen for the large number of cases and lowest infection. Interpretation of some of the data should be done with caution because CI are large.

**Odds Ratio in Late Onset Sepsis in less  $\leq$  32 w Gestational Age Adjusted by SNAPEPE II and Gestational Age (Comparison by UNITS) (table)**

UNITS	CASES	OR	p Value	CI 95%
Unidad 1	22	0.5	0.386	0.1 - 2.3
Unidad 3	103	1.0	Ref	
Unidad 4	43	0.4	0.069	0.1 - 1.1
Unidad 5	38	0.5	0.279	0.2 - 1.6
Unidad 6	43	0.0	<b>0.000</b>	0.0 - 0.1
Unidad 8	135	0.5	0.099	0.2 - 1.1
Unidad 9	113	0.4	<b>0.026</b>	0.2 - 0.9
Unidad 10	53	0.3	0.099	0.1 - 1.2
Unidad 12	23	0.0	<b>0.028</b>	0.0 - 0.7
Unidad 13	41	0.1	<b>0.001</b>	0.0 - 0.5
Unidad 14	13	0.1	0.065	0.0 - 1.2
Unidad 15	14	0.1	<b>0.049</b>	0.0 - 1.0
Unidad 16	48	0.5	0.163	0.2 - 1.4
Unidad 17	12	0.1	<b>0.018</b>	0.0 - 0.7
Unidad 18	11	0.2	<b>0.042</b>	0.0 - 0.9
Unidad 19	19	0.2	0.142	0.0 - 1.7
Unidad 21	30	1.6	0.429	0.5 - 5.0
Unidad 22	21	0.2	<b>0.016</b>	0.0 - 0.7
Unidad 23	25	0.1	<b>0.004</b>	0.0 - 0.5
Unidad 24	13	0.3	0.172	0.0 - 1.8
Unidad 25	20	0.4	0.327	0.1 - 2.4
Unidad 26	20	0.0	<b>0.027</b>	0.0 - 0.7
Unidad 29	15	0.7	0.601	0.2 - 2.8
<b>Referencia UNIDAD 3</b>				

Odd Ratio: (OR) Reference Unit 22 was chosen for the number of infants and low incidence of infections. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum likelihood estimation method proposed by David Firth (Firthlogit) for the low frequency of events was used. The low frequency may explain the imprecision of the estimates for some of the units. Statistically significant p values are marked in bold.

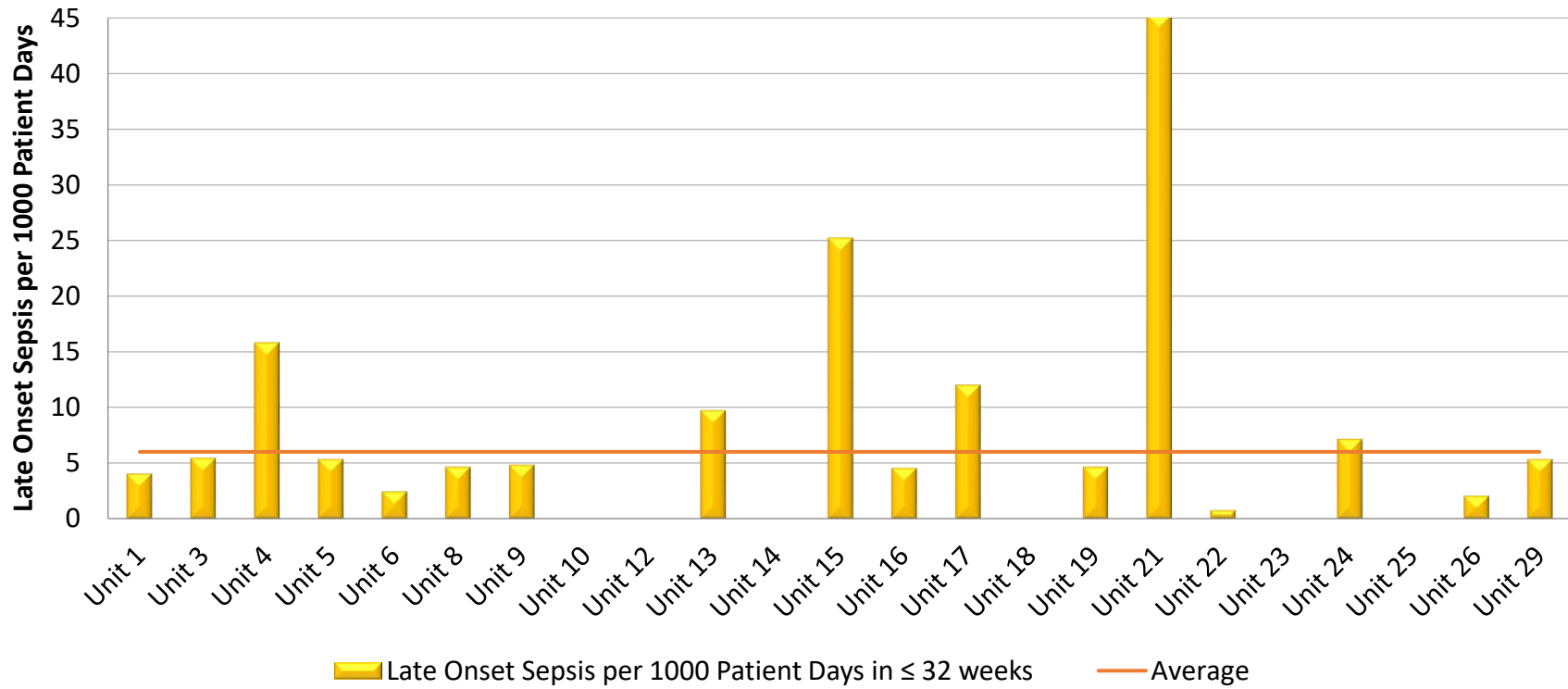
Additionally, the value of p was calculated to assess the statistical significance of the results of 0.05.

Comment: Late onset sepsis or infection associated with health care is considered when there is a positive blood culture or cerebrospinal fluid (CSF) for bacteria or fungi after the second day of life. Only patients with complete data were included for the analysis. All readmissions were included. Infections in blood and CSF are counted separately. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year.



### PRESENTATION 31

Late Onset Infections per 1000 Patient Days in infants  $\leq 32$  weeks Gestational Age (graph)



Five units didn't report any infection in  $\leq 32$  weeks (positive blood culture or CSF in one year).

Average (red line) is increase by the units with many infections.

**Late Onset Infections per 1000 Patient Days in infants  $\leq$  32 weeks Gestational Age (table)**

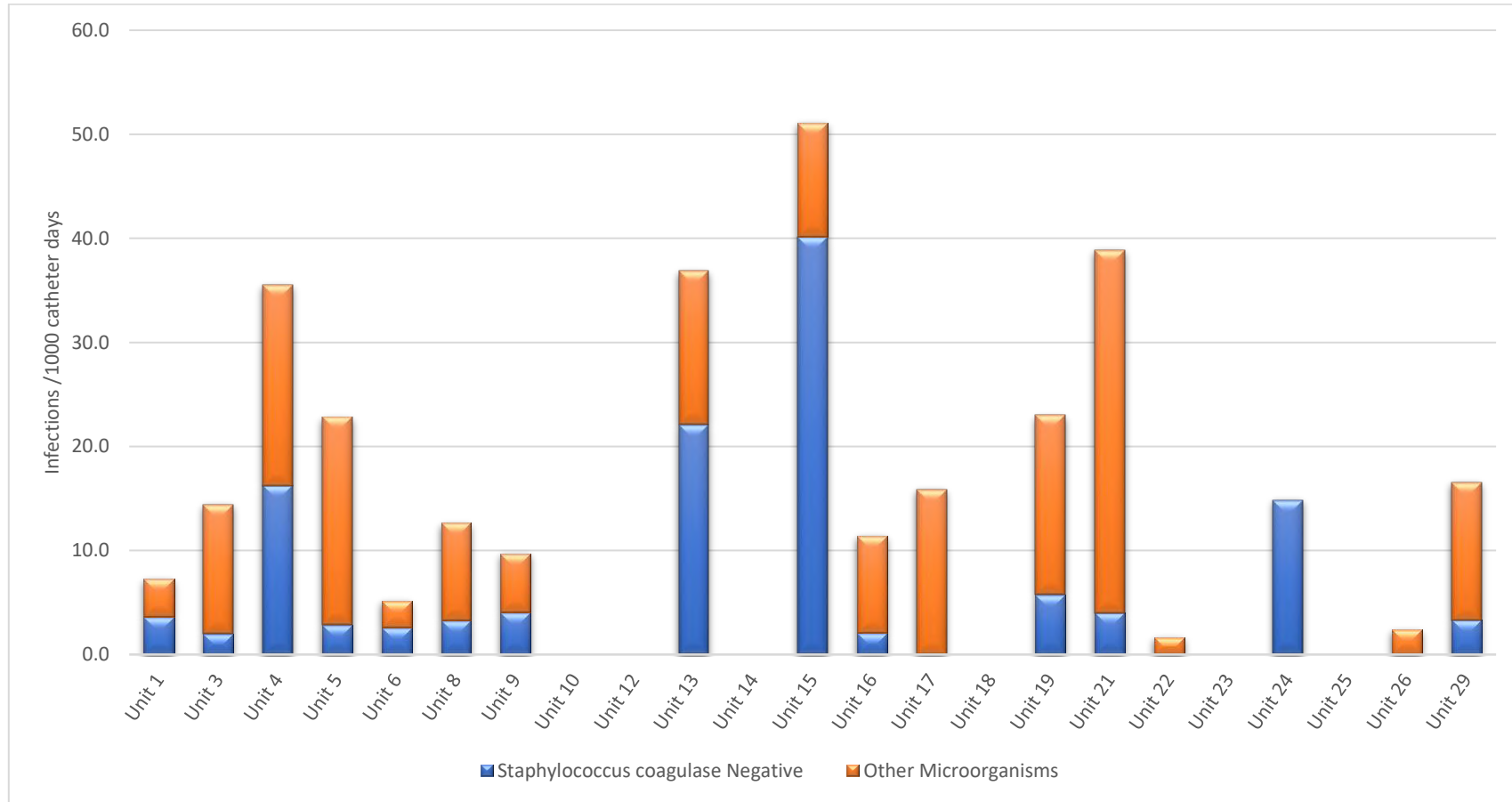
UNITS	Number de Patients*	Late Onset Infections* per 1000 Patient Days in $\leq$ 32 weeks GA	Total Days of Stay*
Unit 1	22	4.1	493
Unit 3	103	5.5	5234
Unit 4	43	15.9	2201
Unit 5	38	5.4	1471
Unit 6	43	2.5	2381
Unit 8	135	4.7	5348
Unit 9	113	4.9	4901
Unit 10	53	0.0	2006
Unit 12	23	0.0	1052
Unit 13	41	9.8	1532
Unit 14	13	0.0	605
Unit 15	14	25.3	554
Unit 16	48	4.6	2404
Unit 17	12	12.1	413
Unit 18	11	0.0	626
Unit 19	19	4.7	848
Unit 21	30	45.3	861
Unit 22	21	0.8	1190
Unit 23	25	0.0	1243
Unit 24	13	7.2	552
Unit 25	20	0.0	597
Unit 26	20	2.1	946
Unit 29	15	5.4	927
<b>TOTAL</b>	<b>875</b>	<b>6.0</b>	<b>38385</b>

\* For the number of infections, the number of patients and for the number of days of stay, all who remained hospitalized for less than 3 days were excluded

**Comment:** Late-onset infection is defined when there is a positive blood culture or CSF for bacteria or fungi after the second day of life. Only patients with complete data  $\leq$  32 weeks Gestational Age at birth were included (validated). It is possible that sites with a high transfer rate to a lower level may report a high incidence since they are more stable and with less risk of infection. Readmissions were not included. Infections in blood and CSF are counted separately. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year.

## PRESENTATION 32

Late Sepsis per 1000 Catheter Days in infants  $\leq 32$  weeks Gestational Age (graph)



Five units didn't report any infection in  $\leq 32$  weeks (positive blood culture or CSF).

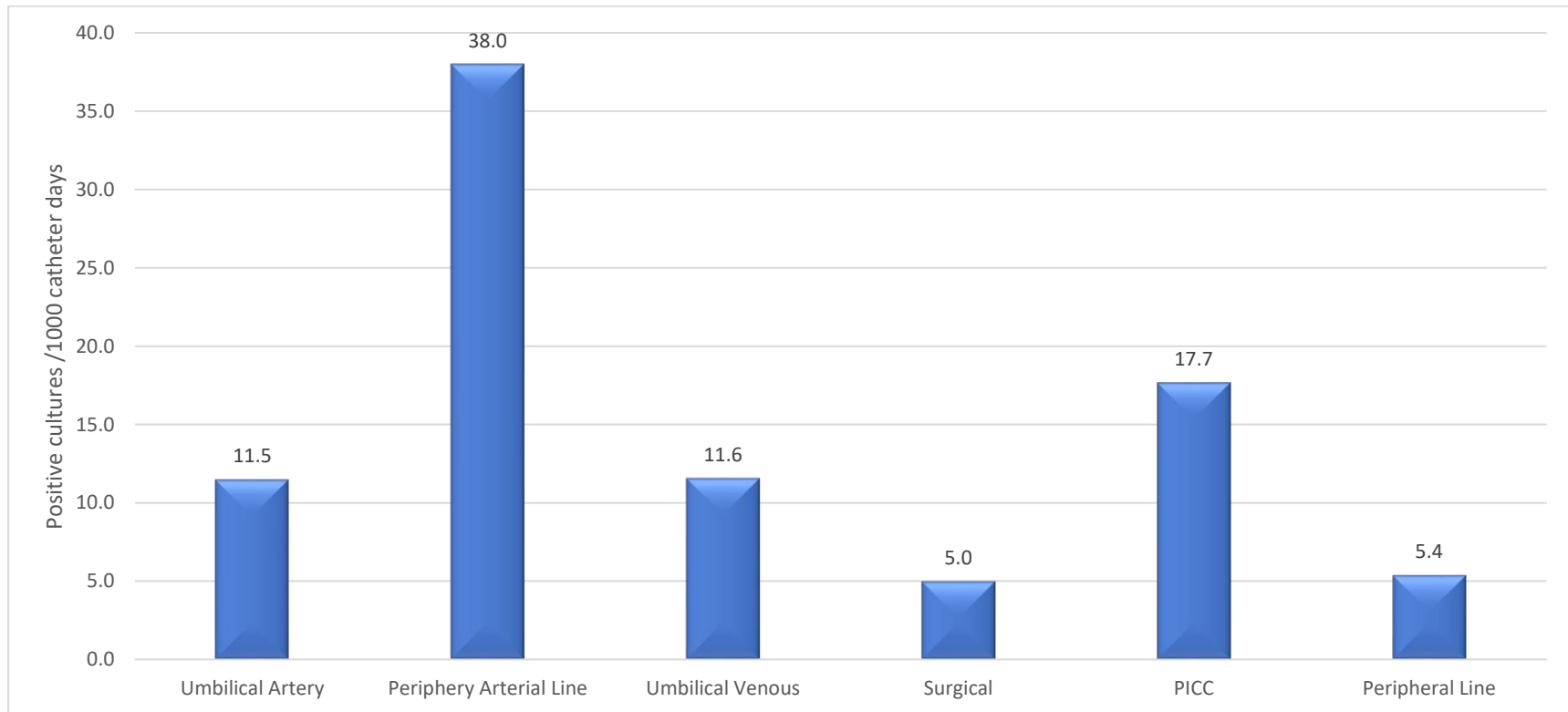
**Late Sepsis per 1000 Catheter Days in infants ≤ 32 weeks Gestational Age (table)**

UNITS	Patients using Central catheter in ≤ 32 weeks	Number of late Infections in ≤ 32 weeks	Number of catheter days	<i>Staphylococcus coagulase</i> Negative		Other Microorganisms	
				Number of Infections	Number of Infections /1000 catheter days	Number of Infections	Number of Infections /1000 catheter days
Unit 1	22	7.2	276	1	3.6	1	3.6
Unit 3	103	14.4	2013	4	2.0	25	12.4
Unit 4	43	35.5	985	16	16.2	19	19.3
Unit 5	37	22.8	351	1	2.8	7	19.9
Unit 6	41	5.2	1,164	3	2.6	3	2.6
Unit 8	130	12.6	2136	7	3.3	20	9.4
Unit 9	110	9.7	2,475	10	4.0	14	5.7
Unit 10	50	0.0	519	0	0.0	0	0.0
Unit 12	23	0.0	435	0	0.0	0	0.0
Unit 13	40	36.9	407	9	22.1	6	14.7
Unit 14	13	0.0	235	0	0.0	0	0.0
Unit 15	14	51.1	274	11	40.1	3	10.9
Unit 16	48	11.4	966	2	2.1	9	9.3
Unit 17	12	15.8	316	0	0.0	5	15.8
Unit 18	10	0.0	208	0	0.0	0	0.0
Unit 19	17	23.0	174	1	5.7	3	17.2
Unit 21	29	38.8	1,004	4	4.0	35	34.9
Unit 22	21	1.7	604	0	0.0	1	1.7
Unit 23	25	0.0	373	0	0.0	0	0.0
Unit 24	13	14.8	270	4	14.8	0	0.0
Unit 25	20	0.0	190	0	0.0	0	0.0
Unit 26	20	2.4	843	0	0.0	2	2.4
Unit 29	15	16.5	303	1	3.3	4	13.2
Total/ Average	856	51.8	16521	74	4.5	210	12.7

**Comment:** A patient with late-onset infection is defined when there is a positive blood culture or CSF for bacteria or fungi after the second day of life. Only patients with complete data ≤ 32 weeks birth Gestational Age were included. If a baby had more than one episode of infection, each was counted separate. Other Microorganisms include *Enterobacter cloacae*, *Enterococcus* sp, *Streptococcus* group B, *Clamidia trachomatis*, *Citrobacter diversus*, *Bifidobacteria* species, *Citrobacter freundii*, *Klbesiella oxytoca*, *Serratia marcenses* and other gram-positive cocci. Consider the difference in the number of central catheter days in the different units when analyzing the data. Infections in blood and CSF are counted separately. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

### PRESENTATION 33

**Positive Cultures during catheter use per 1000 Catheter Days in Infants ≤ 32 weeks Gestational Age according to catheter type (graph)**



Comment: An infection was counted if the blood or spinal fluid cultures were positive when one of the catheters was being used; if there were more than one catheter, it was accounted separately. The number of total days with the respective catheter per 1000 days was used as the denominator. There is no information on what number of catheter changes were made or days between use. Infections in blood and CSF are counted separately.

**Positive cultures during catheter use per 1000 catheter days in infants ≤ 32 weeks Gestational Age according to catheter type (table)**

Catheter Type	Number of positive cultures during catheter use	Total number of days with each type of catheter	Positive cultures x 1000 catheter days
Umbilical Artery	14	1,217	11.5
Periphery Arterial Line	6	158	38.0
Umbilical Venous	23	1,991	11.6
Surgical	2	401	5.0
PICC	124	7,009	17.7
Peripheral Line	51	9,401	5.4

Positive culture using catheter was defined when the date of positive culture coincided with the catheter being used. When more than one catheter is used at the same time, each was counted separately. Infections in blood and CSF are counted separately. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year. Interpretation of some of the data should be done with caution, specially surgical because of only two positive cultures. Surgical catheter data are unreliable as there are only two positive cultures.

## PRESENTATION 34

### Neuroimaging Anomalies in infants ≤ 32 weeks Gestational Age by UNIT. Intraventricular Hemorrhage I and II (table)

UNITS	Gestational Age (weeks)	<25	25-26	27-28	29-30	31-32	Total
<b>Unit 1</b>	Patients with imagen	0	0	0	0	0	0
	# Patients with IVH I and II						
	Percentage						
<b>Unit 3</b>	Patients with imagen	1	8	13	34	32	88
	# Patients with IVH I and II	1	6	4	7	3	21
	Percentage	100%	75%	31%	21%	9%	24%
<b>Unit 4</b>	Patients with imagen	1	12	3	15	7	38
	# Patients with IVH I and II	1	2	0	0	0	3
	Percentage	100%	17%	0%	0%	0%	8%
<b>Unit 5</b>	Patients with imagen	0	2	3	10	18	33
	# Patients with IVH I and II		0	1	0	2	3
	Percentage		0%	33%	0%	11%	9%
<b>Unit 6</b>	Patients with imagen	1	6	2	11	21	41
	# Patients with IVH I and II	0	0	0	0	1	1
	Percentage	0%	0%	0%	0%	5%	2%
<b>Unit 8</b>	Patients with imagen	4	7	10	22	41	84
	# Patients with IVH I and II	2	0	0	0	1	3
	Percentage	50%	0%	0%	0%	2%	4%
<b>Unit 9</b>	Patients with imagen	0	7	10	24	41	82
	# Patients with IVH I and II		2	2	4	1	9
	Percentage		29%	20%	17%	2%	11%
<b>Unit 10</b>	Patients with imagen	0	0	0	3	5	8
	# Patients with IVH I and II	0	0	0	1	0	1
	Percentage				33%	0%	13%
<b>Unit 12</b>	Patients with imagen	1	2	2	5	11	21
	# Patients with IVH I and II	1	1	0	3	3	8
	Percentage	100%	50%	0%	60%	27%	38%
<b>Unit 13</b>	Patients with imagen	0	5	11	8	13	37
	# Patients with IVH I and II	0	3	6	0	1	10
	Percentage		60%	55%	0%	8%	27%
<b>Unit 14</b>	Patients with imagen	0	1	1	4	7	13
	# Patients with IVH I and II	0	1	0	0	0	1
	Percentage		100%	0%	0%	0%	8%
<b>Unit 15</b>	Patients with imagen	0	1	2	1	8	12
	# Patients with IVH I and II	0	0	0	0	2	2
	Percentage		0%	0%	0%	25%	17%

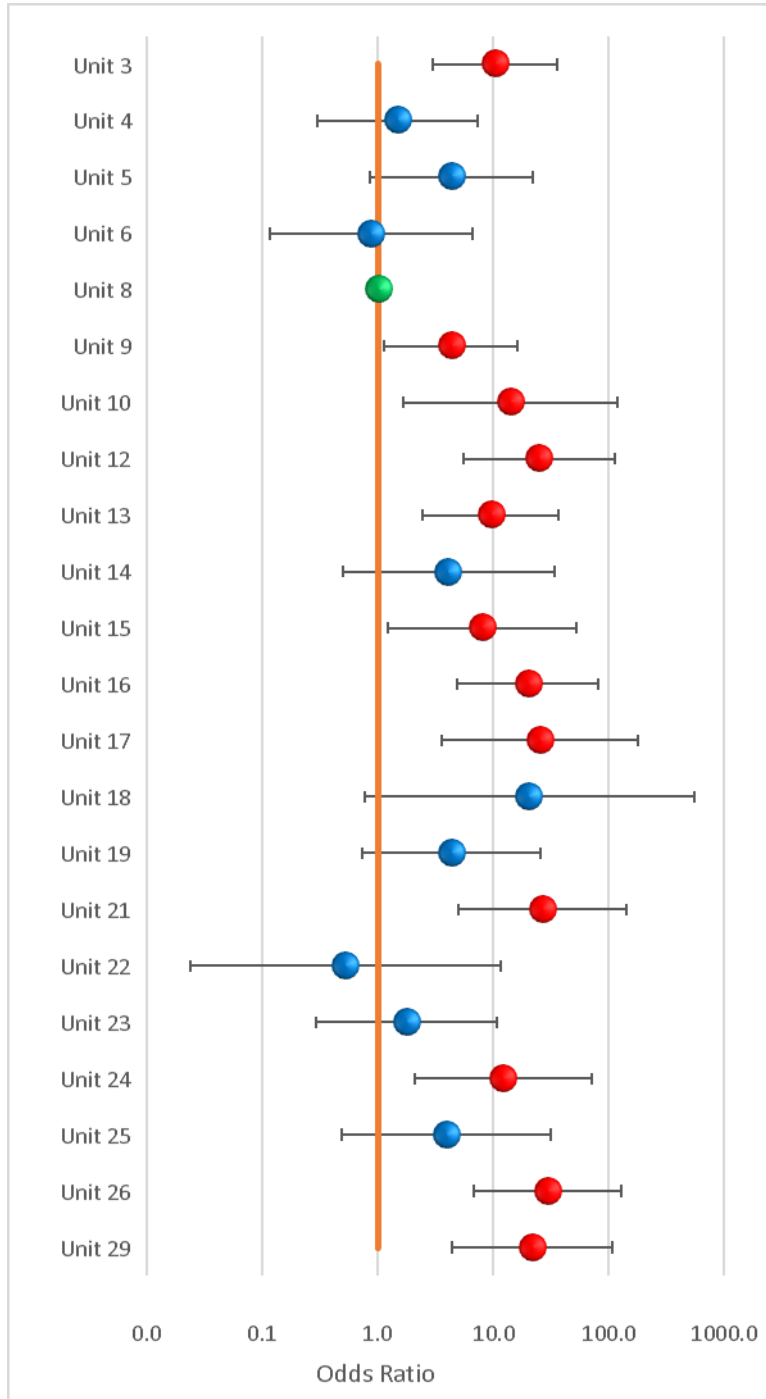
UNITS	Gestational Age (weeks)	<25	25-26	27-28	29-30	31-32	Total
<b>Unit 16</b>	Patients with imagen	0	3	4	11	9	27
	# Patients with IVH I and II	0	3	2	5	0	10
	Percentage		100%	50%	45%	0%	37%
<b>Unit 17</b>	Patients with imagen	0	2	3	0	2	7
	# Patients with IVH I and II	0	1	2	0	1	4
	Percentage		50%	67%		50%	57%
<b>Unit 18</b>	Patients with imagen	0	0	0	0	2	2
	# Patients with IVH I and II	0	0	0	0	0	0
	Percentage					0%	0%
<b>Unit 19</b>	Patients with imagen	0	0	9	2	5	16
	# Patients with IVH I and II	0	0	2	0	0	2
	Percentage			22%	0%	0%	13%
<b>Unit 21</b>	Patients with imagen	0	0	2	2	8	12
	# Patients with IVH I and II	0	0	2	1	1	4
	Percentage			100%	50%	13%	33%
<b>Unit 22</b>	Patients with imagen	1	2	2	6	7	18
	# Patients with IVH I and II	0	0	0	0	0	0
	Percentage	0%	0%	0%	0%	0%	0%
<b>Unit 23</b>	Patients with imagen	2	3	4	6	6	21
	# Patients with IVH I and II	2	0	0	0	0	2
	Percentage	100%	0%	0%	0%	0%	10%
<b>Unit 24</b>	Patients with imagen	0	2	1	3	6	12
	# Patients with IVH I and II	0	1	1	0	1	3
	Percentage		50%	100%	0%	17%	25%
<b>Unit 25</b>	Patients with imagen	0	1	1	5	9	16
	# Patients with IVH I and II	0	0	0	1	0	1
	Percentage		0%	0%	20%	0%	6%
<b>Unit 26</b>	Patients with imagen	0	0	2	8	10	20
	# Patients with IVH I and II	0	0	0	6	2	8
	Percentage			0%	75%	20%	40%
<b>Unit 29</b>	Patients with imagen	0	3	1	8	2	14
	# Patients with IVH I and II	0	1	1	4	0	6
	Percentage		33%	100%	50%	0%	43%

Comment: Unit 1 did not report any neuroimage and two other Units didn't report any hemorrhage. Patients with complete data with neuroimaging were included. Germinal matrix hemorrhage and/or intraventricular hemorrhage without ventricular enlargement are included in grade I or II intraventricular hemorrhage (IVH). The low number of infants makes interpretation difficult. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.



### PRESENTATION 35

**ODDS RATIO Neuroimaging Anomalies in infants  $\leq 32$  weeks Gestational Age by UNIT.  
(Graph with log scale) Intraventricular Hemorrhage I and II**



In red the units with significant difference and in green referent unit. Interpretation of some of the data should be done with caution because some CI are large.

**ODDS RATIO Neuroimaging Anomalies in infants ≤ 32 weeks Gestational Age by UNIT.  
Intraventricular Hemorrhage I and II (table)**

UNITS	N	OR	P values	CI 95%
Unit 3	88	10.3	<b>0.000</b>	3.0 - 35.8
Unit 4	38	1.5	0.629	0.3 - 7.3
Unit 5	33	4.3	0.075	0.9 - 21.8
Unit 6	41	0.9	0.897	0.1 - 6.6
Unit 8	84	1.0	ref	
Unit 9	82	4.3	<b>0.032</b>	1.1 - 16.3
Unit 10	8	14.1	<b>0.016</b>	1.6 - 120.4
Unit 12	21	25.0	<b>0.000</b>	5.6 - 111.7
Unit 13	37	9.5	<b>0.001</b>	2.5 - 36.8
Unit 14	13	4.1	0.188	0.5 - 33.7
Unit 15	12	8.0	<b>0.029</b>	1.2 - 51.9
Unit 16	27	19.9	<b>0.000</b>	4.9 - 81.1
Unit 17	7	25.3	<b>0.001</b>	3.6 - 177.3
Unit 18	2	20.6	0.071	0.8 - 550.2
Unit 19	16	4.4	0.102	0.7 - 25.9
Unit 21	12	26.7	<b>0.000</b>	5.0 - 144.0
Unit 22	18	0.5	0.687	0.0 - 11.6
Unit 23	21	1.8	0.526	0.3 - 10.8
Unit 24	12	12.2	<b>0.005</b>	2.1 - 71.0
Unit 25	16	3.9	0.197	0.5 - 31.7
Unit 26	20	29.5	<b>0.000</b>	6.7 - 128.8
Unit 29	14	21.9	<b>0.000</b>	4.5 - 108.0
<b>Reference</b>		UNIT 8		

Comment: patients with complete data with neuroimaging were included. Some Units did not report any hemorrhage. The risk of patients with hemorrhage I and II was calculated against all patients with neuroimaging. Germinal matrix hemorrhage and/or intraventricular hemorrhage without ventricular enlargement are included in grade I or II intraventricular hemorrhage (IVH). Statistically significant p values are marked in bold.

Odd Ratio: (OR) Reference Unit 8 was chosen for the number of infants and lowest incidence values. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. The low frequency may explain the imprecision of the estimates for some of the units. Additionally, the value of p was calculated to assess the statistical significance of the results of 0.05. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

### PRESENTATION 36

Anomalies in Neuroimaging (Intraventricular Hemorrhage III and IV) in infants  $\leq 32$  weeks Gestational Age by unit (table)

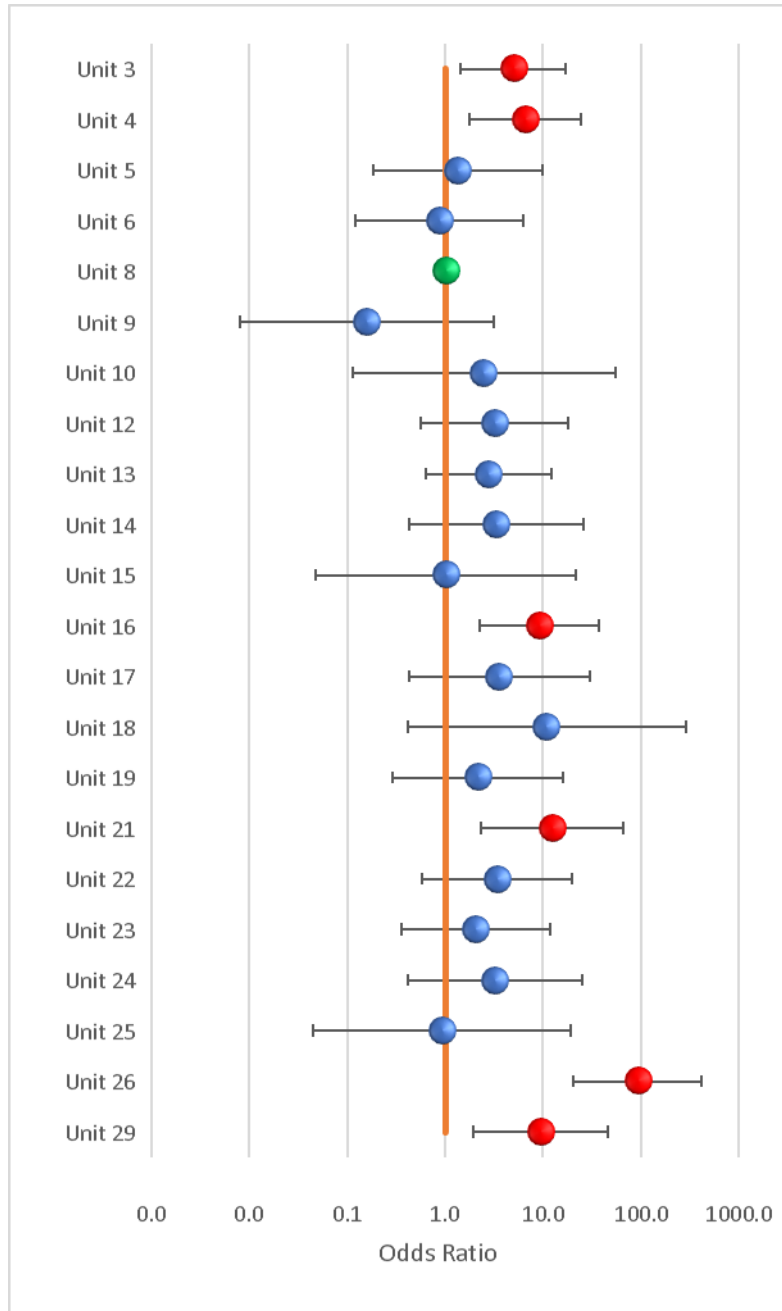
UNITS	Gestational Age (weeks)	<25	25-26	27-28	29-30	31-32	Total
<b>Unit 1</b>	Patients with imagen	0	0	0	0	0	0
	# Patients with IVH III and IV						
	Percentage						
<b>Unit 3</b>	Patients with imagen	1	8	13	34	32	88
	# Patients with IVH III and IV	0	5	4	3	2	14
	Percentage	0%	63%	31%	9%	6%	16%
<b>Unit 4</b>	Patients with imagen	1	12	3	15	7	38
	# Patients with IVH III and IV	1	3	1	3	2	10
	Percentage	100%	25%	33%	20%	29%	26%
<b>Unit 5</b>	Patients with imagen	0	2	3	10	18	33
	# Patients with IVH III and IV	0	0	1	0	0	1
	Percentage		0%	33%	0%	0%	3%
<b>Unit 6</b>	Patients with imagen	1	6	2	11	21	41
	# Patients with IVH III and IV	0	1	0	0	0	1
	Percentage	0%	17%	0%	0%	0%	2%
<b>Unit 8</b>	Patients with imagen	4	7	10	22	41	84
	# Patients with IVH III and IV	1	0	1	1	0	3
	Percentage	25%	0%	10%	5%	0%	4%
<b>Unit 9</b>	Patients with imagen	0	7	10	24	41	82
	# Patients with IVH III and IV	0	0	0	0	0	0
	Percentage		0%	0%	0%	0%	0%
<b>Unit 10</b>	Patients with imagen	0	0	0	3	5	8
	# Patients with IVH III and IV	0	0	0	0	0	0
	Percentage				0%	0%	0%
<b>Unit 12</b>	Patients with imagen	1	2	2	5	11	21
	# Patients with IVH III and IV	1	0	0	0	1	2
	Percentage	100%	0%	0%	0%	9%	10%
<b>Unit 13</b>	Patients with imagen	0	5	11	8	13	37
	# Patients with IVH III and IV	0	1	1	0	2	4
	Percentage		20%	9%	0%	15%	11%
<b>Unit 14</b>	Patients with imagen	0	1	1	4	7	13
	# Patients with IVH III and IV	0	0	0	1	0	1
	Percentage		0%	0%	25%	0%	8%
<b>Unit 15</b>	Patients with imagen	0	1	1	4	7	13
	# Patients with IVH III and IV	0	0	0	0	0	0
	Percentage		0%	0%	0%	0%	0%

UNITS	Gestational Age (weeks)	<25	25-26	27-28	29-30	31-32	Total
<b>Unit 16</b>	Patients with imagen	0	3	4	11	9	27
	# Patients with IVH III and IV	0	1	2	3	1	7
	Percentage		33%	50%	27%	11%	26%
<b>Unit 17</b>	Patients with imagen	0	2	3	0	2	7
	# Patients with IVH III and IV	0	1	0	0	0	1
	Percentage		50%	0%		0%	14%
<b>Unit 18</b>	Patients with imagen	0	0	0	0	2	2
	# Patients with IVH III and IV	0	0	0	0	0	0
	Percentage					0%	0%
<b>Unit 19</b>	Patients with imagen	0	0	9	2	5	16
	# Patients with IVH III and IV	0	0	1	0	0	1
	Percentage			11%	0%	0%	6%
<b>Unit 21</b>	Patients with imagen	0	0	2	2	8	12
	# Patients with IVH III and IV	0	0	1	2	0	3
	Percentage			50%	100%	0%	25%
<b>Unit 22</b>	Patients with imagen	1	2	2	6	7	18
	# Patients with IVH III and IV	0	0	1	0	1	2
	Percentage	0%	0%	50%	0%	14%	11%
<b>Unit 23</b>	Patients with imagen	2	3	4	6	6	21
	# Patients with IVH III and IV	1	0	0	1	0	2
	Percentage	50%	0%	0%	17%	0%	10%
<b>Unit 24</b>	Patients with imagen	0	2	1	3	6	12
	# Patients with IVH III and IV	0	0	0	0	1	1
	Percentage		0%	0%	0%	17%	8%
<b>Unit 25</b>	Patients with imagen	0	1	1	5	9	16
	# Patients with IVH III and IV	0	0	0	0	0	0
	Percentage		0%	0%	0%	0%	0%
<b>Unit 26</b>	Patients with imagen	0	0	2	8	10	20
	# Patients with IVH III and IV	0	0	2	7	6	15
	Percentage			100%	88%	60%	75%
<b>Unit 29</b>	Patients with imagen	0	3	1	8	2	14
	# Patients with IVH III and IV	0	0	1	3	0	4
	Percentage		0%	100%	38%	0%	29%

Comment: Unit 1 did not report neuroimaging taken and other units any hemorrhage. Only patients with central nervous system images were included. Empty boxes mean no patients or information in that group. Intraventricular hemorrhage with ventricular enlargement or parenchymal echogenicity or periventricular leukomalacia are considered grade III or IV IVH (intraventricular hemorrhage). Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

### PRESENTATION 37

**ODDS RATIO of Anomalies in Neuroimaging (Intraventricular Hemorrhage III and IV) in infants  $\leq 32$  weeks Gestational Age by unit (graph with log scale)**



In red the units with significant difference and in green referent unit. Interpretation of some of the data should be done with caution because some units have large CI.

**Odds Ratio of Anomalies in Neuroimaging (Hemorrhage Intraventricular III and IV) in infants ≤ 32 weeks Gestational Age by unit (table)**

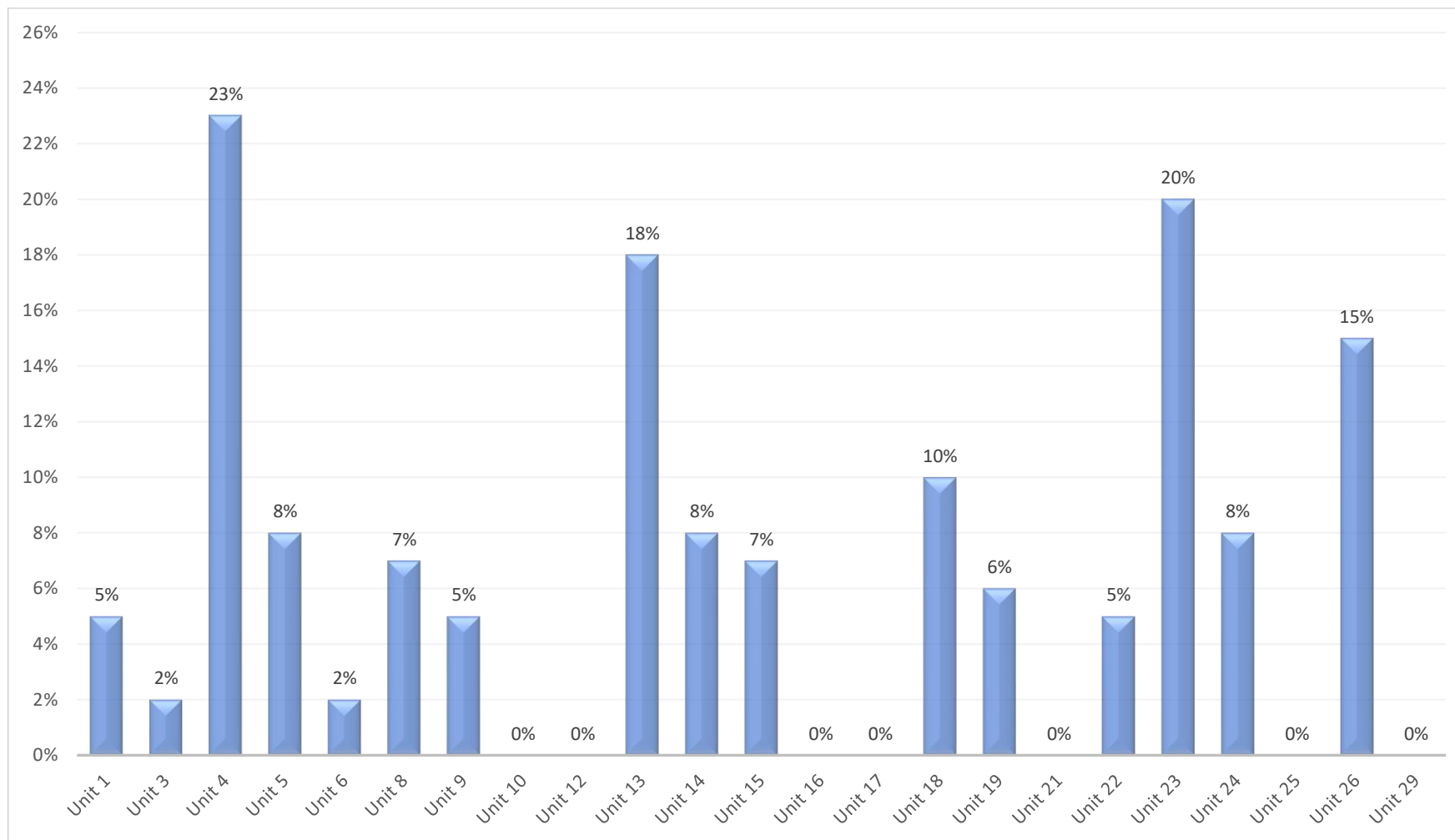
UNITS	N	OR	P values	CI 95%
Unidad 3	88	5.0	<b>0.011</b>	1.4 - 17.0
Unidad 4	38	6.6	<b>0.005</b>	1.8 - 24.3
Unidad 5	33	1.3	0.770	0.2 - 9.7
Unidad 6	41	0.9	0.900	0.1 - 6.3
Unidad 8	84	1.0	Ref	
Unidad 9	82	0.2	0.228	0.0 - 3.2
Unidad 10	8	2.5	0.560	0.1 - 54.4
Unidad 12	21	3.2	0.192	0.6 - 18.2
Unidad 13	37	2.8	0.169	0.6 - 12.3
Unidad 14	13	3.4	0.245	0.4 - 25.9
Unidad 15	12	1.0	0.990	0.0 - 21.5
Unidad 16	27	9.1	<b>0.002</b>	2.3 - 36.7
Unidad 17	7	3.6	0.240	0.4 - 30.0
Unidad 18	2	10.9	0.152	0.4 - 284.2
Unidad 19	16	2.2	0.453	0.3 - 16.1
Unidad 21	12	12.4	<b>0.003</b>	2.3 - 66.4
Unidad 22	18	3.4	0.171	0.6 - 19.5
Unidad 23	21	2.1	0.415	0.4 - 11.8
Unidad 24	12	3.3	0.260	0.4 - 25.4
Unidad 25	16	0.9	0.962	0.0 - 19.3
Unidad 26	20	91.9	<b>0.000</b>	20.6 - 410.0
Unidad 29	14	9.5	<b>0.005</b>	2.0 - 46.3
<b>Reference</b>		<b>UNIT 8</b>		

Intraventricular hemorrhage with ventricular enlargement or parenchymal echogenicity or periventricular leukomalacia are considered grade III or IV IVH (intraventricular hemorrhage). Reference unit 8 was chosen for the adequate number of infants and low incidence. A logistic regression was performed with adjustment for SNAPEPE II and Gestational Age. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. The low frequency in some units also explains the imprecision of the estimates. The low number of infants underestimates the difference.

Statistically significant p values are marked in bold. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

## PRESENTATION 38

**NEC (Stage  $\geq 2$ ) in Infants  $\leq 32$  weeks Gestational Age (Frequency and treatment by UNIT) (graph)**



Note that some units reported 0 NEC.

**NEC (Stage  $\geq$  2) in Infants  $\leq$  32 weeks Gestational Age and  $\leq$  10 days at admission (Frequency and treatment by UNIT)**

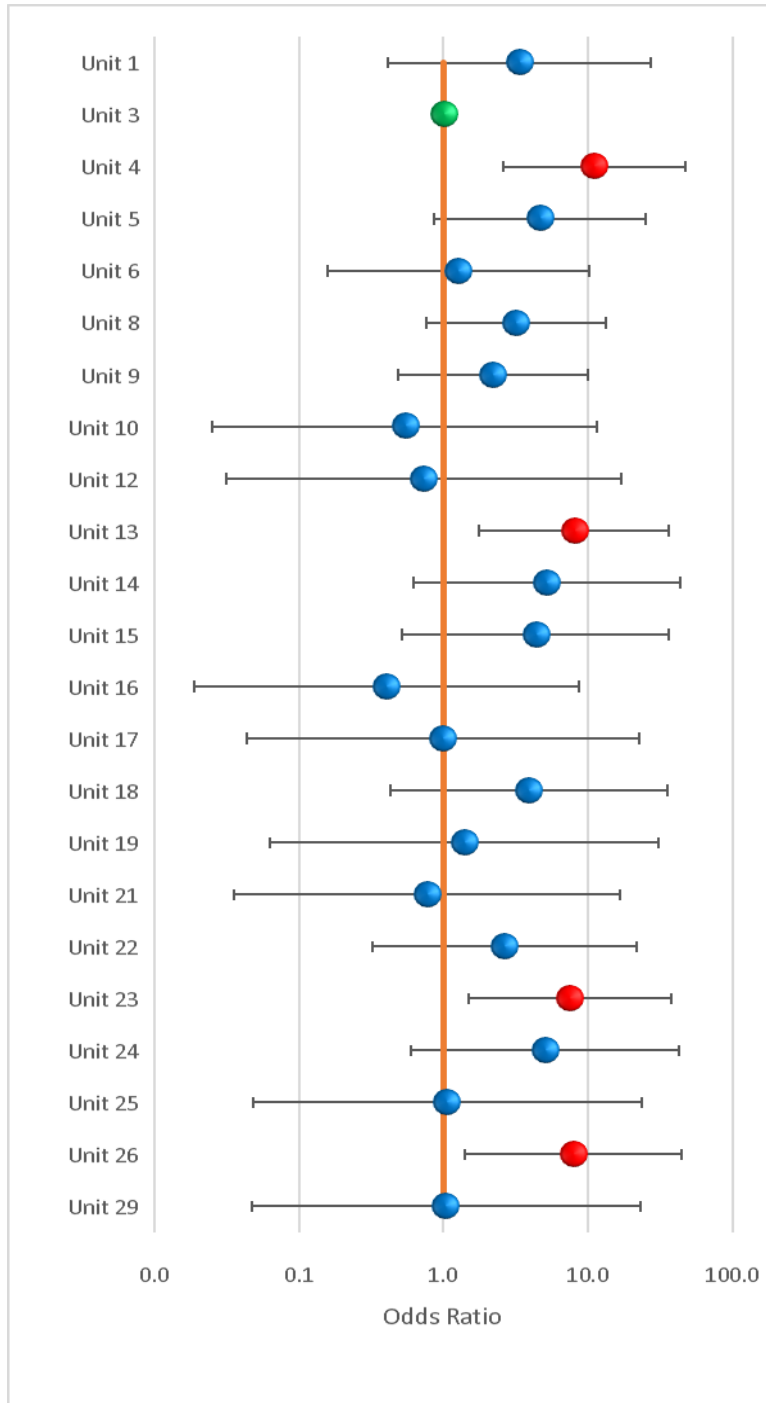
UNITS	Number of Patients		NEC		Treatment				
					Surgical		Drainage		
Unidad 1	n	%	22	1	5%	0	0%	0	0%
Unidad 3	n	%	103	2	2%	1	50%	1	50%
Unidad 4	n	%	43	10	23%	2	20%	0	0%
Unidad 5	n	%	37	3	8%	1	33%	1	33%
Unidad 6	n	%	41	1	2%	1	100%	1	100%
Unidad 8	n	%	130	9	7%	1	11%	8	89%
Unidad 9	n	%	110	6	5%	2	33%	1	17%
Unidad 10	n	%	50	0	0%	0		0	
Unidad 12	n	%	23	0	0%	0		0	
Unidad 13	n	%	40	7	18%	0	0%	1	14%
Unidad 14	n	%	13	1	8%	0	0%	0	0%
Unidad 15	n	%	14	1	7%	1	100%	0	0%
Unidad 16	n	%	48	0	0%	0		0	
Unidad 17	n	%	12	0	0%	0		0	
Unidad 18	n	%	10	1	10%	0	0%	0	0%
Unidad 19	n	%	17	1	6%	1	100%	0	0%
Unidad 21	n	%	29	0	0%	0		0	
Unidad 22	n	%	21	1	5%	0	0%	0	0%
Unidad 23	n	%	25	5	20%	0	0%	2	40%
Unidad 24	n	%	13	1	8%	1	100%	0	0%
Unidad 25	n	%	20	0	0%	0		0	
Unidad 26	n	%	20	3	15%	0	0%	0	0%
Unidad 29	n	%	15	0	0%	0	0%	0	0%
<b>Total</b>	n	%	856	54	6%	11	20%	15	28%

Comment: NEC: Necrotizing Enterocolitis. Patients  $\leq$  32 weeks Gestational Age at Birth who had complete data were included. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year and more than 10 days at admission. Empty cells, no patient/information.



### PRESENTATION 39

Odds Ratio in NEC (Stage  $\geq 2$ ) in  $\leq 32$  weeks Gestational Age Adjusted by SNAPEPE II and Gestational Age (By UNITS) (graphic with log scale)



In red the units with significant difference and in green referent unit chosen for low incidence with enough number of cases. Interpretation of some of the data should be done with caution because some CI are large. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

**Odds Ratio in NEC (Stage  $\geq 2$ ) in  $\leq 32$  weeks Gestational Age and  $\leq 10$  days at admission  
Adjusted by SNAPEPE II and Gestational Age (By UNITS) (table)**

UNITS	N	OR	P values	CI 95%
Unit 1	22	3.4	0.256	0.4 - 27.4
Unit 3	103	1.0	Ref	
Unit 4	43	11.0	<b>0.001</b>	2.6 - 47.1
Unit 5	37	4.6	0.073	0.9 - 25.0
Unit 6	41	1.3	0.821	0.2 - 10.2
Unit 8	130	3.2	0.112	0.8 - 13.2
Unit 9	110	2.2	0.304	0.5 - 10.0
Unit 10	50	0.5	0.693	0.0 - 11.6
Unit 12	23	0.7	0.850	0.0 - 17.2
Unit 13	40	8.0	<b>0.007</b>	1.8 - 36.2
Unit 14	13	5.2	0.127	0.6 - 43.8
Unit 15	14	4.4	0.174	0.5 - 36.6
Unit 16	48	0.4	0.562	0.0 - 8.6
Unit 17	12	1.0	0.993	0.0 - 22.6
Unit 18	10	3.9	0.226	0.4 - 35.5
Unit 19	17	1.4	0.833	0.1 - 30.9
Unit 21	29	0.8	0.870	0.0 - 16.8
Unit 22	21	2.7	0.361	0.3 - 21.7
Unit 23	25	7.5	<b>0.015</b>	1.5 - 37.8
Unit 24	13	5.1	0.136	0.6 - 42.6
Unit 25	20	1.1	0.968	0.0 - 23.5
Unit 26	20	7.9	<b>0.019</b>	1.4 - 44.5
Unit 29	15	1.0	0.980	0.0 - 23.1
<b>Reference</b>		3		

Odd Ratio. Reference unit 3 was chosen at it has a low incidence with enough number of infants. A logistic regression with adjustment by SNAPEPE II and Gestational Age was done. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. The statistics should be interpreted with caution due to the small number of infants and large intervals. Statistically significant p values are marked in bold. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 40

Supplemental oxygen at 36w PMA in infants  $\leq$  32 weeks Gestational Age at Birth by units and Gestational Age groups (table)

UNITS		Gestational Age (weeks)							
		<26		26-28		29-32		Total	
n	%	n	%	n	%	n	%	n	%
Unidad 1	n %					0	0%	0	0%
Unidad 3	n %	0	0%	2	17%	3	5%	5	7%
Unidad 4	n %	3	50%	0	0%	2	9%	5	16%
Unidad 5	n %	1	100%	1	50%	19	86%	21	84%
Unidad 6	n %	6	75%	0	0%	1	4%	7	19%
Unidad 8	n %	5	83%	9	90%	34	52%	48	59%
Unidad 9	n %	2	100%	5	71%	19	28%	26	34%
Unidad 10	n %	1	100%			20	65%	21	66%
Unidad 12	n %	0	0%	0	0%	0	0%	0	0%
Unidad 13	n %	1	100%	5	100%	5	83%	11	92%
Unidad 14	n %	1	100%	1	100%	2	22%	4	36%
Unidad 15	n %	1	100%	2	100%	5	71%	8	80%
Unidad 16	n %			3	75%	23	88%	26	87%
Unidad 17	n %			1	50%	0	0%	1	33%
Unidad 18	n %	1	33%	1	100%	2	67%	4	57%
Unidad 19	n %			3	43%	2	50%	5	45%
Unidad 21	n %			0	0%	2	18%	2	17%
Unidad 22	n %	1	50%	0	0%	0	0%	1	5%
Unidad 23	n %	0	0%	0	0%	0	0%	0	0%
Unidad 24	n %			1	100%	4	57%	5	63%
Unidad 25	n %					4	57%	4	57%
Unidad 26	n %			0	0%	2	20%	2	17%
Unidad 29	n %					3	60%	3	60%

\*Patients <36w discharge/transfer/died were excluded. Empty cells mean no data.

Comments: Only patients with complete data were included. Infants were classified with supplemental oxygen at 36w PMA (pos menstrual age) if they received supplemental O<sub>2</sub> on the day they had 36w PMA. No chest radiography was required at the time of diagnosis. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year. Some units are high above sea level.

## PRESENTATION 41

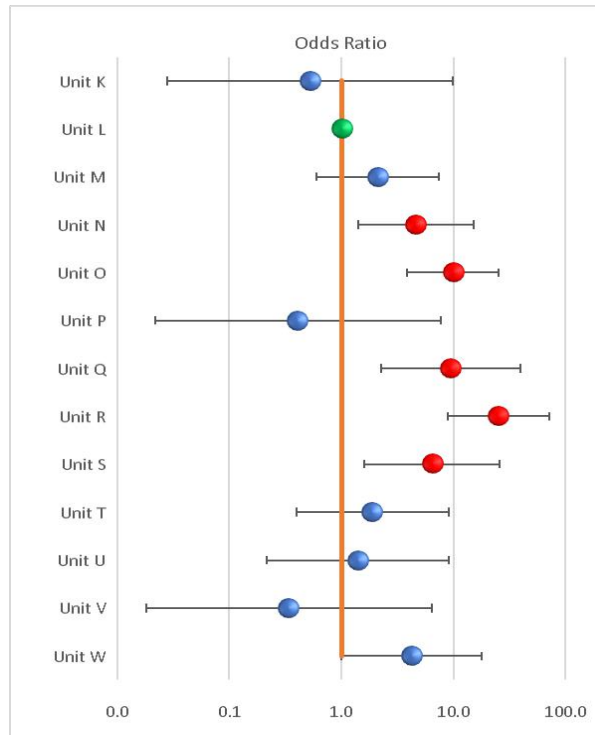
**Supplemental oxygen at 36w PMA, at discharge or Death in infants ≤ 32 weeks Gestational Age at birth by unit and by Gestational Age group (table)**

UNITES	n	%	Gestational Age at Birth (weeks)							
			<26		26-28		29-32		Total	
Unidad 1	n	%	0		1	50%	2	10%	3	14%
Unidad 3	n	%	12	100%	12	67%	11	15%	35	34%
Unidad 4	n	%	10	77%	1	33%	2	7%	13	30%
Unidad 5	n	%	2	100%	2	50%	23	72%	27	71%
Unidad 6	n	%	7	78%	0	0%	3	9%	10	23%
Unidad 8	n	%	15	100%	16	76%	42	42%	73	54%
Unidad 9	n	%	14	100%	9	75%	28	32%	51	45%
Unidad 10	n	%	1	50%	1	100%	24	48%	26	49%
Unidad 12	n	%	3	75%	0	0%	1	6%	4	17%
Unidad 13	n	%	5	83%	6	55%	10	42%	21	51%
Unidad 14	n	%	1	100%	1	100%	2	18%	4	31%
Unidad 15	n	%	1	100%	2	100%	6	55%	9	64%
Unidad 16	n	%	3	100%	5	71%	30	79%	38	79%
Unidad 17	n	%	1	33%	2	50%	1	20%	4	33%
Unidad 18	n	%	3	75%	2	100%	4	80%	9	82%
Unidad 19	n	%	0		8	80%	2	22%	10	53%
Unidad 21	n	%	1	100%	3	75%	5	20%	9	30%
Unidad 22	n	%	3	100%	0	0%	2	13%	5	24%
Unidad 23	n	%	3	43%	1	20%	2	15%	6	24%
Unidad 24	n	%	0		1	100%	6	60%	7	54%
Unidad 25	n	%	1	100%	0		7	39%	8	40%
Unidad 26	n	%	0		0	0%	3	17%	3	15%
Unidad 29	n	%	2	50%	0		6	60%	8	53%

Empty cells mean no patients or information. Comments: Infants were classified with supplemental Oxygen at 36w PMA (post menstrual age) if they received supplemental O<sub>2</sub> on the day they had 36w PMA, died at any age or were discharge. No chest radiograph was required at the time of diagnosis. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

## PRESENTATION 42

ODDS RATIO of supplemental **OXYGEN** at **36w PMA** in **UNITS < 2000** m over sea level Adjusted by SNAPEPE II and Gestational Age in  $\leq 32$  w Gestational Age at Birth (graph)



UNITES	OR	Valor de p	CI 95%
Unit K	0.5	0.668	0.0 - 9.9
Unit L	1.0	Ref	
Unit M	2.1	0.243	0.6 - 7.4
Unit N	4.6	<b>0.011</b>	1.4 - 15.1
Unit O	9.9	<b>0.000</b>	3.9 - 25.1
Unit P	0.4	0.549	0.0 - 7.7
Unit Q	9.4	<b>0.002</b>	2.3 - 39.2
Unit R	25.2	<b>0.000</b>	8.9 - 71.3
Unit S	6.4	<b>0.009</b>	1.6 - 25.9
Unit T	1.9	0.424	0.4 - 9.0
Unit U	1.4	0.722	0.2 - 9.1
Unit V	0.3	0.472	0.0 - 6.4
Unit W	4.2	0.051	1.0 - 17.9
<b>Reference</b>	<b>L</b>		

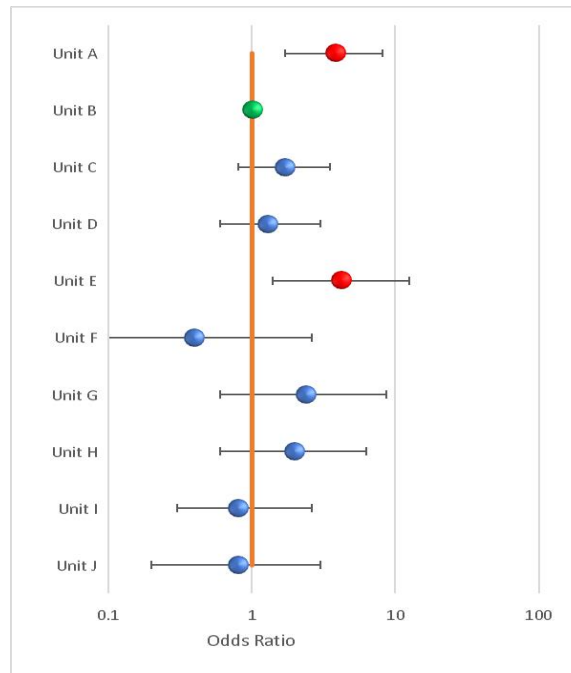
In green referent unit, in red units statistically significantly different. PMA postmenstrual age.

Odd Ratio. Reference unit L was chosen for the low value with an adequate number of infants. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. Statistically significant p values are marked in bold.

Comment: For the analysis of the variables of units above sea level, due to the small number of units in each group it was decided to assign letters for confidentiality. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 43

**OXYGEN supplement Odds Ratio at 36 weeks (By UNITS) at  $\geq 2000$  m over sea level, Adjusted by SNAPEPE II and Gestational Age in  $\leq 32$  weeks Gestational Age at birth (Graph [with log scale]/Table)**



In green referent unit, in red units statistically significantly different

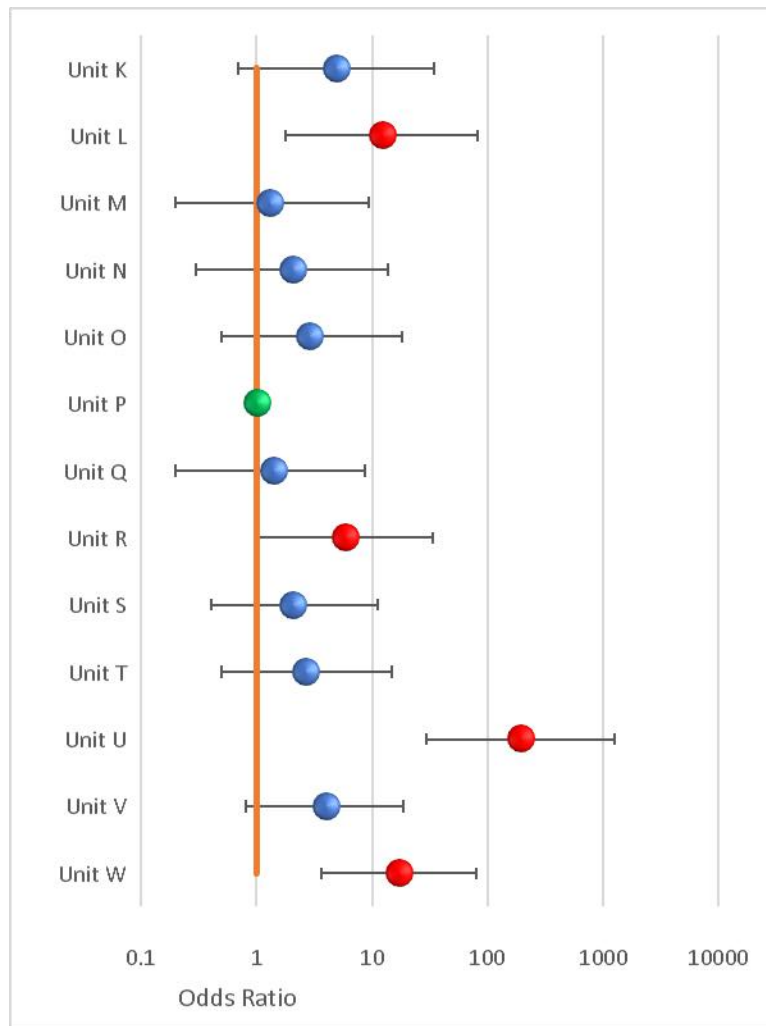
UNITS	N	OR	p value	CI 95%
Unit A	38	3.8	<b>0.001</b>	1.7 - 8.2
Unit B	113	1.0	Ref	
Unit C	53	1.7	0.170	0.8 - 3.5
Unit D	41	1.3	0.487	0.6 - 3.0
Unit E	14	4.2	<b>0.012</b>	1.4 - 12.6
Unit F	12	0.4	0.366	0.1 - 2.6
Unit G	11	2.4	0.196	0.6 - 8.6
Unit H	13	2.0	0.252	0.6 - 6.3
Unit I	20	0.8	0.772	0.3 - 2.6
Unit J	15	0.8	0.790	0.2 - 3.0
<b>Reference</b>		<b>B</b>		

Reference unit B was chosen for the low incidence and adequate number of infants. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. Statistically significant p values are marked in bold.

Comment: For the analysis of the variables of units above sea level, due to the small number of units in each group it was decided to assign letters for confidentiality. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 44

**OXYGEN supplement Odds Ratio at 36 weeks PMA, at discharge or DEATH in UNITS < 2000 m over sea level, Adjusted by SNAPEPE II and Gestational Age (By UNITS) in  $\leq 32$  w Gestational Age (Graph with log scale)**



In green referent unit, in red units statistically significantly different

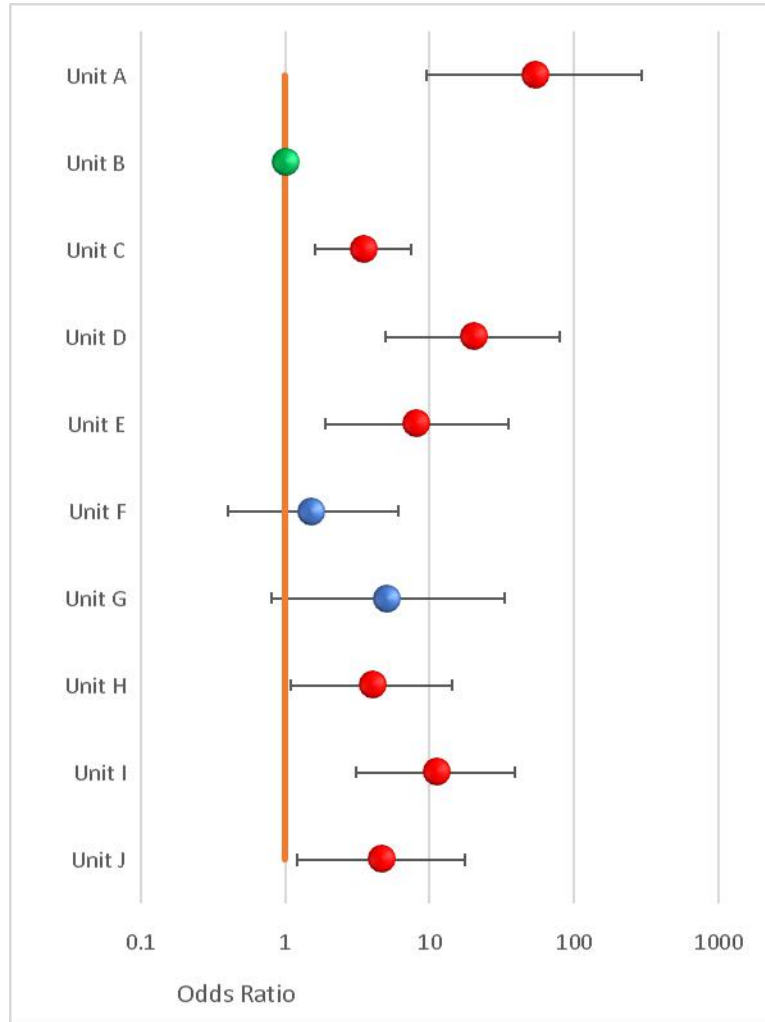
UNITES	N	OR	Valor de p	CI 95%
Unidad K	14	4.9	0.109	0.7 - 34.4
Unidad L	19	12.3	<b>0.010</b>	1.8 - 83.0
Unidad M	26	1.3	0.774	0.2 - 9.3
Unidad N	22	2.1	0.444	0.3 - 13.7
Unidad O	1	2.9	0.253	0.5 - 18.4
Unidad P	12	1.0	<b>Ref</b>	
Unidad Q	23	1.4	0.708	0.2 - 8.6
Unidad R	21	5.9	<b>0.045</b>	1.0 - 33.3
Unidad S	4	2.1	0.386	0.4 - 11.1
Unidad T	6	2.7	0.260	0.5 - 14.7
Unidad U	16	192.7	<b>0.000</b>	29.6 - 1255.2
Unidad V	3	4.0	0.081	0.8 - 18.9
Unidad W	8	17.0	<b>0.000</b>	3.6 - 80.0
Reference		Unit P		

Reference unit P was chosen for the large number of infants with low values. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. For the analysis of the variables of units above sea level, due to the small number of cases in each group it was decided to assign letters for confidentiality. The statistics should be interpreted with caution due to the small number of infants in some units. Death, 36w PMA and oxygen at discharge was define in previous presentations. Statistically significant p values are marked in bold. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.



## PRESENTATION 45

OXYGEN supplement Odds Ratio at **36 weeks PMA**, at discharge or **DEATH** in **UNITS  $\geq 2000$**  m over sea level, Adjusted by SNAPEPE II and Gestational Age (By UNIT) in  $\leq 32$  w Gestational Age (graph)



In green referent unit, in red units statistically significantly different

UNITS	N	OR	p value	CI 95%
Unit A	38	53.5	<b>0.000</b>	9.6 - 297.3
Unit B	113	1	Ref	
Unit C	53	3.5	<b>0.001</b>	1.6 - 7.5
Unit D	41	20.1	<b>0.000</b>	5.0 - 80.1
Unit E	14	8.1	<b>0.005</b>	1.9 - 35.1
Unit F	12	1.5	0.560	0.4 - 6.1
Unit G	11	5.1	0.084	0.8 - 33.0
Unit H	13	4.0	0.033	1.1 - 14.5
Unit I	20	11.1	<b>0.000</b>	3.1 - 39.4
Unit J	15	4.6	0.024	1.2 - 17.5
<b>Reference</b>		<b>B</b>		

Reference unit B was chosen for the large number of infants with the lowest values. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. For the analysis of the variables of units above sea level, due to the small number of units in each group it was decided to assign letters for confidentiality. The statistics should be interpreted with caution due to the small number of infants in some units. Death, 36w PMA and oxygen at discharge was define in previous presentations. Statistically significant p values are marked in bold. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 46

### Use and Duration of **PRENATAL** Steroids in Mothers of Infants ≤ 34 weeks Gestational Age

UNITS	Total number of patients	Received Steroids		Unknown Yes received Steroids		Complete						Partial		
						Last week		Before		Time Unknown		Last week		Before
Unit 1	n %	31	16 52%	1 3%	11 69%	0 0%	0 0%	0 0%	3 19%	1 0%	1 0%			
Unit 3	n %	150	121 81%	16 11%	37 31%	27 22%	25 21%	25 21%	2 1%	5 1%				
Unit 4	n %	62	54 87%	0 0%	25 46%	23 43%	1 2%	5 9%	0 4%	0 9%				
Unit 5	n %	97	76 78%	0 0%	48 63%	28 37%	0 0%	0 0%	0 0%	0 0%				
Unit 6	n %	45	45 100%	0 0%	25 56%	7 16%	1 2%	12 27%	0 0%	0 0%				
Unit 8	n %	261	0 0%	191 73%	0	0	0	0	0	0				
Unit 9	n %	140	100 71%	10 7%	44 44%	27 27%	2 2%	22 22%	4 4%	1 1%				
Unit 10	n %	96	80 83%	4 4%	45 56%	13 16%	3 4%	14 18%	3 4%	2 3%				
Unit 12	n %	26	25 96%	0 0%	6 24%	8 32%	1 4%	9 36%	1 4%	0 0%				
Unit 13	n %	53	38 72%	1 2%	17 45%	7 18%	3 8%	9 24%	2 5%	0 0%				
Unit 14	n %	13	10 77%	0 0%	5 50%	2 20%	0 0%	3 30%	0 0%	0 0%				
Unit 15	n %	18	14 78%	1 6%	6 43%	2 14%	0 0%	6 43%	0 0%	0 0%				
Unit 16	n %	81	66 81%	1 1%	17 26%	13 20%	1 2%	17 26%	17 26%	1 2%				
Unit 17	n %	14	13 93%	0 0%	5 38%	0 0%	1 8%	5 38%	0 0%	2 15%				
Unit 18	n %	12	6 50%	1 8%	4 67%	0 0%	1 17%	0 0%	0 0%	1 17%				
Unit 19	n %	48	37 77%	1 2%	33 89%	2 5%	0 0%	2 5%	0 0%	0 0%				
Unit 21	n %	69	35 51%	6 9%	8 23%	7 20%	7 20%	11 31%	2 6%	0 0%				
Unit 22	n %	41	29 71%	1 2%	12 41%	11 38%	1 3%	5 17%	0 0%	0 0%				
Unit 23	n %	25	23 92%	0 0%	17 74%	1 4%	0 0%	5 22%	0 0%	0 0%				
Unit 24	n %	14	12 86%	0 0%	8 67%	1 8%	0 0%	3 25%	0 0%	0 0%				
Unit 25	n %	54	47 87%	0 0%	22 47%	16 34%	0 0%	6 13%	3 6%	0 0%				
Unit 26	n %	28	3 11%	3 11%	1 33%	1 33%	1 33%	0 0%	0 0%	0 0%				
Unit 29	n %	17	17 100%	0 0%	0 0%	2 12%	1 6%	7 41%	7 41%	0 0%				
TOTAL	n %	1394	867 62%	236 17%	396 46%	198 23%	49 6%	169 19%	42 5%	13 1%				

Comment: Statistics are based on data entered, and some should be interpreted with caution due to the small number of infants in some units. Readmissions were not included. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

## PRESENTATION 47

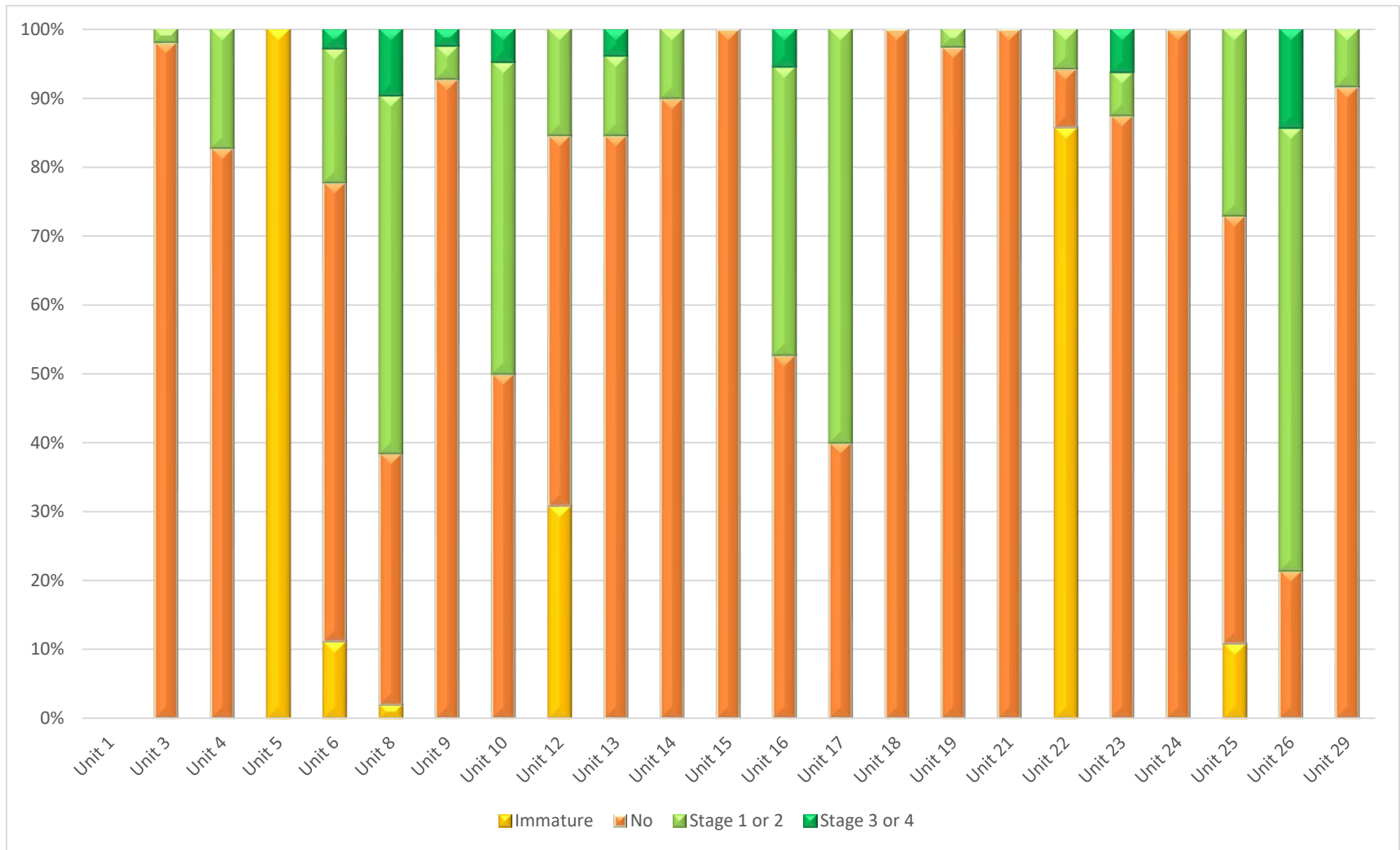
### POSTNATAL Corticosteroids in Infants ≤ 32 weeks Gestational Age, Route and Indication

UNITS	Oral	% of total treated	Intravenous	% of total treated	Inhaled	% of total treated	Total Number of therapies	Total Number of Patients
Unit 1	0	0%	2	100%	0	0%	2	1
Unit 3	3	17%	15	83%	0	0%	18	17
Unit 4	0	0%	14	93%	1	7%	15	15
Unit 5	5	45%	6	55%	0	0%	11	6
Unit 6	0	0%	4	100%	0	0%	4	3
Unit 8	2	6%	1	3%	29	91%	32	28
Unit 9	4	36%	7	64%	0	0%	11	8
Unit 10	2	14%	9	64%	3	21%	14	7
Unit 12	1	50%	1	50%	0	0%	2	1
Unit 13	0	0%	8	100%	0	0%	8	7
Unit 14	0		0		0		0	0
Unit 15	0		0		0		0	0
Unit 16	1	8%	9	75%	2	17%	12	6
Unit 17	0	0%	1	100%	0	0%	1	1
Unit 18	3	60%	2	40%	0	0%	5	4
Unit 19	5	83%	1	17%	0	0%	6	2
Unit 21	6	40%	8	53%	1	7%	15	11
Unit 22	0		0		0		0	0
Unit 23	0	0%	2	100%	0	0%	2	2
Unit 24	5	100%	0	0%	0	0%	5	1
Unit 25	0		0		0		0	0
Unit 26	0	0%	26	65%	14	35%	40	14
Unit 29	0	0%	1	100%	0	0%	1	1
<b>TOTAL</b>	<b>37</b>	<b>18%</b>	<b>117</b>	<b>57%</b>	<b>50</b>	<b>25%</b>	<b>204</b>	<b>135</b>

Comment: Only the units with complete data were included for the analysis (validated). Readmissions were excluded. Only units with more than 10 patients ≤ 32 weeks Gestational Age. Empty cells indicate absence of cases reported.

## PRESENTATION 48

**Stages of Retinopathy of Prematurity in all Patients with ophthalmic examination (graph)**



**Stages of Retinopathy of Prematurity in all patients with ophthalmological examination**  
**(table)**

UNITS	Total Number of Neonates	Total Number of patients studied	Stages of Retinopathy of Prematurity									
			Immature		No		Stage 1 or 2		Stage 3 or 4			
Unit 1	n %	31	0	0%								
Unit 3	n %	150	111	74%	0	0%	104	94%	2	2%	0	0%
Unit 4	n %	62	29	47%	0	0%	24	83%	5	17%	0	0%
Unit 5	n %	97	41	42%	41	100%	0	0%	0	0%	0	0%
Unit 6	n %	45	37	82%	4	11%	24	65%	7	19%	1	3%
Unit 8	n %	261	52	20%	1	2%	19	37%	27	52%	5	10%
Unit 9	n %	140	83	59%	0	0%	77	93%	4	5%	2	2%
Unit 10	n %	96	43	45%	0	0%	21	49%	19	44%	2	5%
Unit 12	n %	26	13	50%	4	31%	7	54%	2	15%	0	0%
Unit 13	n %	53	26	49%	0	0%	22	85%	3	12%	1	4%
Unit 14	n %	13	10	77%	0	0%	9	90%	1	10%	0	0%
Unit 15	n %	18	16	89%	0	0%	16	100%	0	0%	0	0%
Unit 16	n %	81	55	68%	0	0%	29	53%	23	42%	3	5%
Unit 17	n %	14	5	36%	0	0%	2	40%	3	60%	0	0%
Unit 18	n %	12	6	50%	0	0%	6	100%	0	0%	0	0%
Unit 19	n %	48	39	81%	0	0%	38	97%	1	3%	0	0%
Unit 21	n %	69	17	25%	0	0%	17	100%	0	0%	0	0%
Unit 22	n %	41	35	85%	30	86%	3	9%	2	6%	0	0%
Unit 23	n %	25	16	64%	0	0%	14	88%	1	6%	1	6%
Unit 24	n %	14	13	93%	0	0%	13	100%	0	0%	0	0%
Unit 25	n %	54	37	69%	4	11%	23	62%	10	27%	0	0%
Unit 26	n %	28	14	50%	0	0%	3	21%	9	64%	2	14%
Unit 29	n %	17	12	71%	0	0%	11	92%	1	8%	0	0%
<b>TOTAL</b>	<b>n %</b>	<b>1395</b>	<b>710</b>	<b>51%</b>	<b>84</b>	<b>12%</b>	<b>482</b>	<b>68%</b>	<b>120</b>	<b>17%</b>	<b>17</b>	<b>2%</b>

Comment: The units with data were included in patients with ophthalmic examination for this analysis. This table should be analyzed with caution because some cells have a low number of patients. This table and graph were not broken down into birthweight groups because of the low number in some units. Probably some of the infants reported as without retinopathy are immature retina. Note that one unit did not report eye exams. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 48A

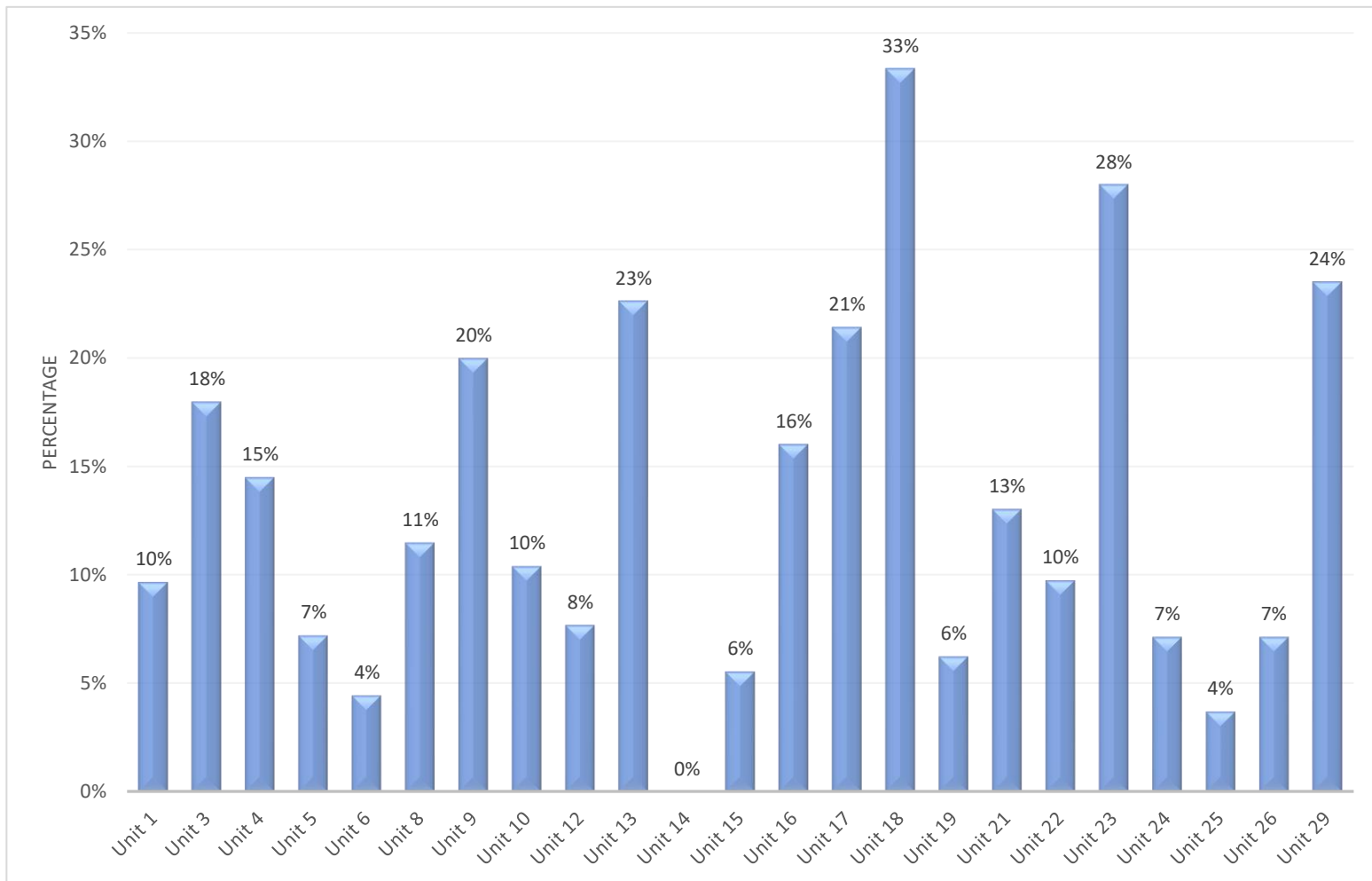
### Therapy for Retinopathy of Prematurity in all patients

UNITS	Patients Treated	Cryo		Laser		VEGF		More than one therapy
		n	%	n	%	n	%	n
Unit 1								
Unit 3	1					1	100%	
Unit 4								
Unit 5								
Unit 6	2			2	100%		0%	
Unit 8	3			2	67%	1	50%	1
Unit 9	3			2	67%	2	67%	1
Unit 10	3	1	33%	2	67%		0%	
Unit 12								
Unit 13	1			1	100%			
Unit 14								
Unit 15								
Unit 16	3					3	100%	
Unit 17								
Unit 18								
Unit 19								
Unit 21								
Unit 22	1			1	100%		0%	
Unit 23	1					1	100%	
Unit 24								
Unit 25								
Unit 26	2					2	100%	
Unit 29								
<b>Total</b>	<b>18</b>	<b>1</b>	<b>6%</b>	<b>10</b>	<b>56%</b>	<b>10</b>	<b>50%</b>	<b>2</b>

Comment: only patients with complete information were included. The statistics should be interpreted with caution due to the small number of infants. Some units without ophthalmologist with experience in these treatments send their patients to other institutions. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

## PRESENTATION 49

Stages III of Retinopathy of Prematurity (ROP) or Death in infants  $\leq 32$  weeks GA (Graph)





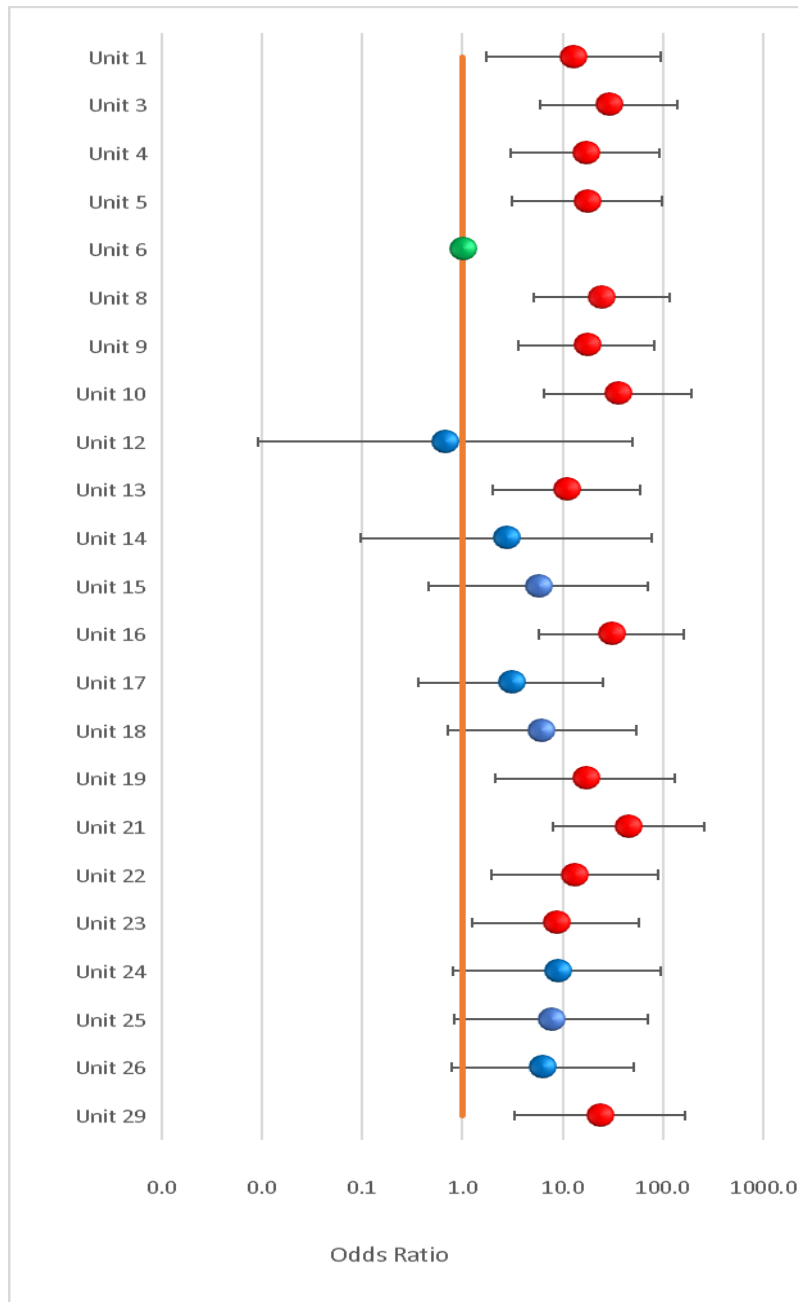
Stages III of Retinopathy of Prematurity (ROP) or Death in infants  $\leq$  32 weeks GA (table)

UNITS	Total	Retinopathy III to V	Death	Both	Percentage of Patients with ROP Stage III/IV or Deaths
Unit 1	31	0	3	3	10%
Unit 3	150	0	27	27	18%
Unit 4	62	0	9	9	15%
Unit 5	97	0	7	7	7%
Unit 6	45	1	1	2	4%
Unit 8	261	5	25	30	11%
Unit 9	140	2	26	28	20%
Unit 10	96	2	8	10	10%
Unit 12	26	0	2	2	8%
Unit 13	53	1	11	12	23%
Unit 14	13	0	0	0	0%
Unit 15	18	0	1	1	6%
Unit 16	81	3	10	13	16%
Unit 17	14	0	3	3	21%
Unit 18	12	0	4	4	33%
Unit 19	48	0	3	3	6%
Unit 21	69	0	9	9	13%
Unit 22	41	0	4	4	10%
Unit 23	25	1	6	7	28%
Unit 24	14	0	1	1	7%
Unit 25	54	0	2	2	4%
Unit 26	28	2	0	2	7%
Unit 29	17	0	4	4	24%
<b>Total</b>	1395	17	166	183	13%

Comment: only patients with complete information were included. For this analysis, only patients  $<$  34 weeks GA with ROP stage III were included, plus all patients younger than 34 weeks GA who died. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year.

## PRESENTATION 50

**ODDS RATIO of Retinopathy of Prematurity (ROP) Stages  $\geq$  III or Death in infants with  $\leq$  34 w GA controlled by SNAPEPE II and Gestational Age (graph with CI log scale)**



In green referent unit, in red units with statistically significant difference.

Reference unit 6 was chosen for an adequate number of infants and low results. A logistic regression with adjustment by SNAPEPE II and Gestational Age was performed. The maximum penalized likelihood estimation method proposed by David Firth (Firthlogit<sup>1</sup>) for the low frequency of events was used. The statistics should be interpreted with caution due to the small number of infants in some units and very large CI. Death, and ROP III or more was defined in previous presentations. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

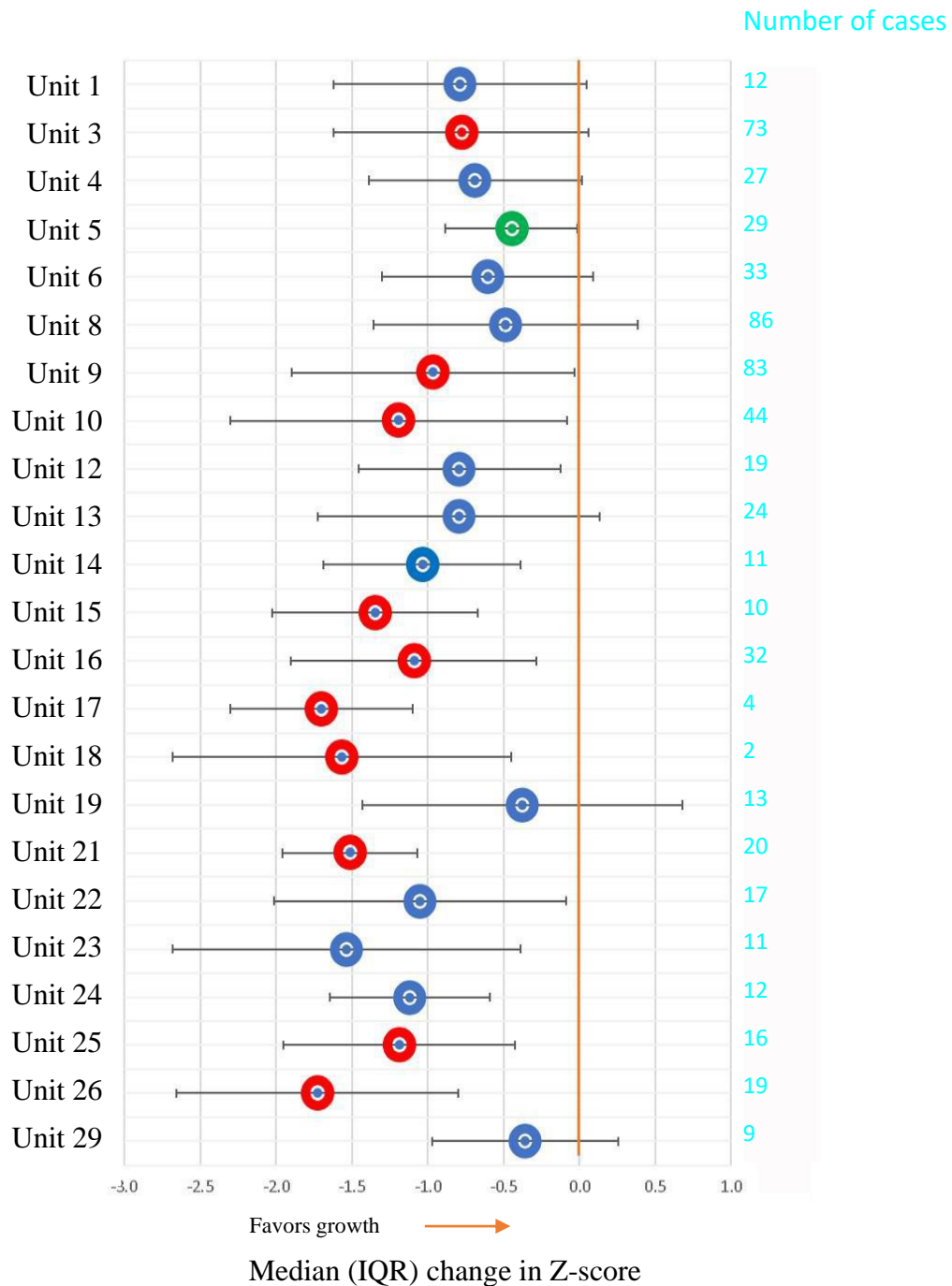
**ODDS RATIO of Retinopathy of Prematurity (ROP) Stages  $\geq$ III or Death in infants with  $\leq$  34 weeks GA at birth (Table)**

UNITS	N	OR	P value	CI 95%
Unit 1	31	12.7	<b>0.013</b>	1.7 - 93.8
Unit 3	150	28.5	<b>0.000</b>	5.9 - 137.9
Unit 4	62	16.8	<b>0.001</b>	3.1 - 92.5
Unit 5	97	17.5	<b>0.001</b>	3.1 - 97.7
Unit 6	45	1.0	Ref	
Unit 8	261	24.4	<b>0.000</b>	5.1 - 116.6
Unit 9	140	17.2	<b>0.000</b>	3.6 - 81.9
Unit 10	96	35.1	<b>0.000</b>	6.4 - 190.8
Unit 12	26	0.7	0.853	0.0 - 49.0
Unit 13	53	11.0	<b>0.005</b>	2.0 - 59.6
Unit 14	13	2.8	0.553	0.1 - 77.9
Unit 15	18	5.7	0.176	0.5 - 71.3
Unit 16	81	30.4	<b>0.000</b>	5.7 - 161.3
Unit 17	14	3.0	0.305	0.4 - 25.2
Unit 18	12	6.2	0.098	0.7 - 53.9
Unit 19	48	16.7	<b>0.008</b>	2.1 - 131.9
Unit 21	69	45.0	<b>0.000</b>	7.9 - 255.2
Unit 22	41	13.2	<b>0.008</b>	1.9 - 89.5
Unit 23	25	8.5	<b>0.028</b>	1.3 - 57.6
Unit 24	14	8.7	0.075	0.8 - 94.7
Unit 25	54	7.7	0.071	0.8 - 70.4
Unit 26	28	6.3	0.085	0.8 - 50.8
Unit 29	17	23.4	<b>0.002</b>	3.3 - 166.5
<b>Reference</b>		<b>Unit 6</b>		

Statistically significant p values are marked in red. The statistics should be interpreted with caution due to the small number of infants in some units and very large CI.

## PRESENTATION 51

### Median change in Weight Z-SCORE in preterm babies $\leq 32$ weeks GA between birthweight and weight at discharge, using Fenton 2013 curves



Interquartile ranges (IQR). The median weight Z-score change is the difference between birthweight Z-score and weight Z-score at discharge. The further from "0" (red line, regain weight birth percentile) the greater the fall. The units were compared by median nonparametric regression adjusted for gestational age at birth and SNAPEPE II. In green referent unit with the lowest change and in red units statistically significantly different. The ranges have wide variability. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

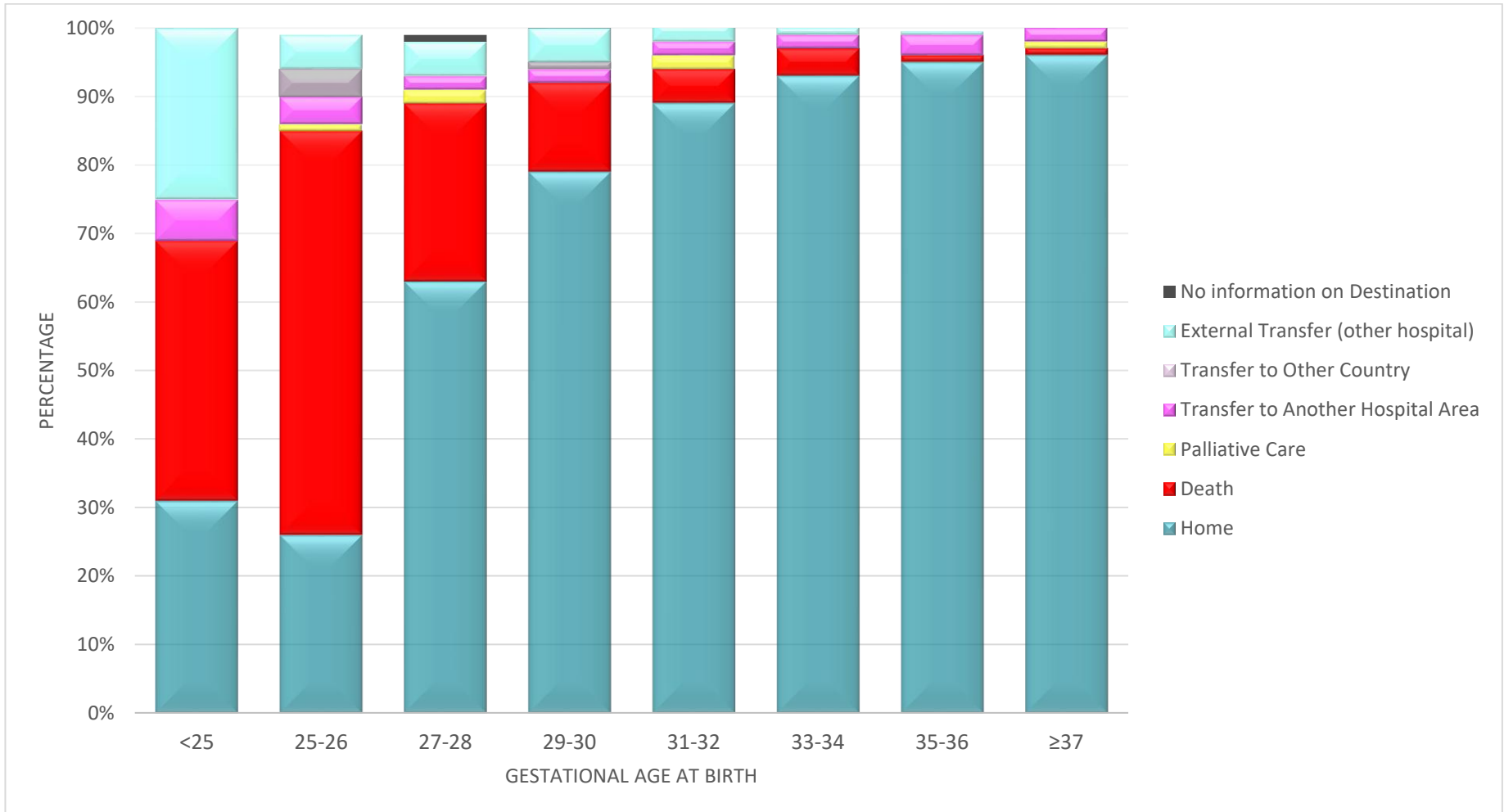
UNITS	Patients discharged < 32w GA	Median change in Z-score	Median Z-score at Birth	Median Z-score at discharge	p*
Unit 1	12	-0.8	0.3	-0.3	0.567
Unit 3	73	-0.8	-0.3	-1.2	<b>0.043</b>
Unit 4	27	-0.7	0.0	-0.8	0.306
Unit 5	29	-0.4	-0.6	-0.8	ref
Unit 6	33	-0.6	0.0	-0.5	0.541
Unit 8	86	-0.5	0.0	-0.5	0.744
Unit 9	83	-1.0	-0.2	-1.3	<b>0.008</b>
Unit 10	44	-1.2	-0.3	-1.3	<b>0.000</b>
Unit 12	19	-0.8	0.3	-0.6	0.082
Unit 13	24	-0.8	0.0	-0.7	0.503
Unit 14	11	-1.0	0.0	-0.8	0.171
Unit 15	10	-1.4	0.1	-1.4	<b>0.007</b>
Unit 16	32	-1.1	-0.2	-1.2	<b>0.001</b>
Unit 17	4	-1.7	0.0	-1.8	<b>0.035</b>
Unit 18	2	-1.6	-0.5	-2.1	<b>0.008</b>
Unit 19	13	-0.4	-0.6	-0.8	0.506
Unit 21	20	-1.5	0.3	-1.2	<b>0.000</b>
Unit 22	17	-1.0	-0.4	-1.2	0.096
Unit 23	11	-1.5	-0.6	-1.8	0.138
Unit 24	12	-1.1	-0.3	-1.3	0.069
Unit 25	16	-1.2	-0.2	-1.2	<b>0.001</b>
Unit 26	19	-1.7	-0.8	-2.5	<b>0.000</b>
Unit 29	9	-0.4	-0.7	-1.2	0.583

Comment: only patients with complete information discharged home were included. The Z-score at birth and at discharge was calculated and the median difference for each NICU was determined. The units were compared using a median regression controlled by Gestational Age. The statistics should be interpreted with caution due to the small number of infants in some units. Statistically significant p values are marked in bold.

#### **D. CONDITIONS AND DISCHARGE DESTINATION**

## PRESENTATION 52

Destination at discharge (All Patients\*) (graph)



Destination at discharge (All Patients\*) (table)

Gestational Age (weeks)		Home	Death	Palliative Care	Transfer to Another Hospital Area	Transfer to Other Country	External Transfer (other hospital)	No information on Destination	Total
<25	n	5	6	0	1	0	4	0	16
	%	31%	38%	0%	6%	0%	25%	0%	
25-26	n	24	55	1	4	4	5	0	93
	%	26%	59%	1%	4%	4%	5%	0%	
27-28	n	80	33	3	3	0	6	1	126
	%	63%	26%	2%	2%	0%	5%	1%	
29-30	n	207	35	1	4	2	13	1	263
	%	79%	13%	0%	2%	1%	5%	0.4%	
31-32	n	354	19	8	6	1	10	0	398
	%	89%	5%	2%	2%	0%	3%	0.0%	
33-34	n	503	19	2	9	1	6	1	541
	%	93%	4%	0%	2%	0%	1.1%	0.2%	
35-36	n	553	6	2	15	1	3	0	580
	%	95%	1%	0%	3%	0%	0.5%	0.0%	
≥37	n	1,745	14	10	35	2	10	1	1,817
	%	96%	1%	1%	2%	0%	1%	0.1%	
Total	n	3,471	187	27	77	11	57	4	3,834
	%	91%	5%	1%	2%	0.3%	1%	0.1%	

Readmissions are excluded.

Comment: only patients with complete information are included (validated). The statistics should be interpreted with caution due to the small number of infants in some units.



## PRESENTATION 53

**Support at discharge in survivors (table)**

Total Patients		<25	25-26	27-28	29-30	31-32	33-34	35-36	≥37	Total
n		10	37	89	226	371	519	572	1792	3616
Oxygen	n	8	19	51	69	110	109	53	109	528
	%	80%	51%	57%	31%	30%	21%	9%	6%	15%
Gastrostomy	n	1	0	1	1	2	0	1	4	10
	%	10%	0%	1%	0%	1%	0%	0%	0%	0%
Monitor	n	4	3	3	7	7	4	2	14	44
	%	40%	8%	3%	3%	2%	1%	0%	1%	1%
Gavage	n	1	2	2	6	5	1	1	5	23
	%	10%	5%	2%	3%	1%	0%	0%	0%	1%
Ostomies	n	0	0	0	2	0	1	0	5	8
	%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Ventilation	n	3	2	1	4	4	1	1	2	18
	%	30%	5%	1%	2%	1%	0%	0%	0%	0%
CPAP	n	0	1	1	2	2	1	0	1	8
	%	0%	3%	1%	1%	1%	0%	0%	0%	0%
Human Milk	n	6	25	65	182	310	469	538	1685	3280
	%	60%	68%	73%	81%	84%	90%	94%	94%	91%
Formula	n	6	23	61	167	250	273	190	396	1366
	%	60%	62%	69%	74%	67%	53%	33%	22%	38%

Survivors include transfers in and out. No readmissions were included. Statistics should be interpreted with caution due to the small number of infants in some units. Patients could receive more than one therapy.

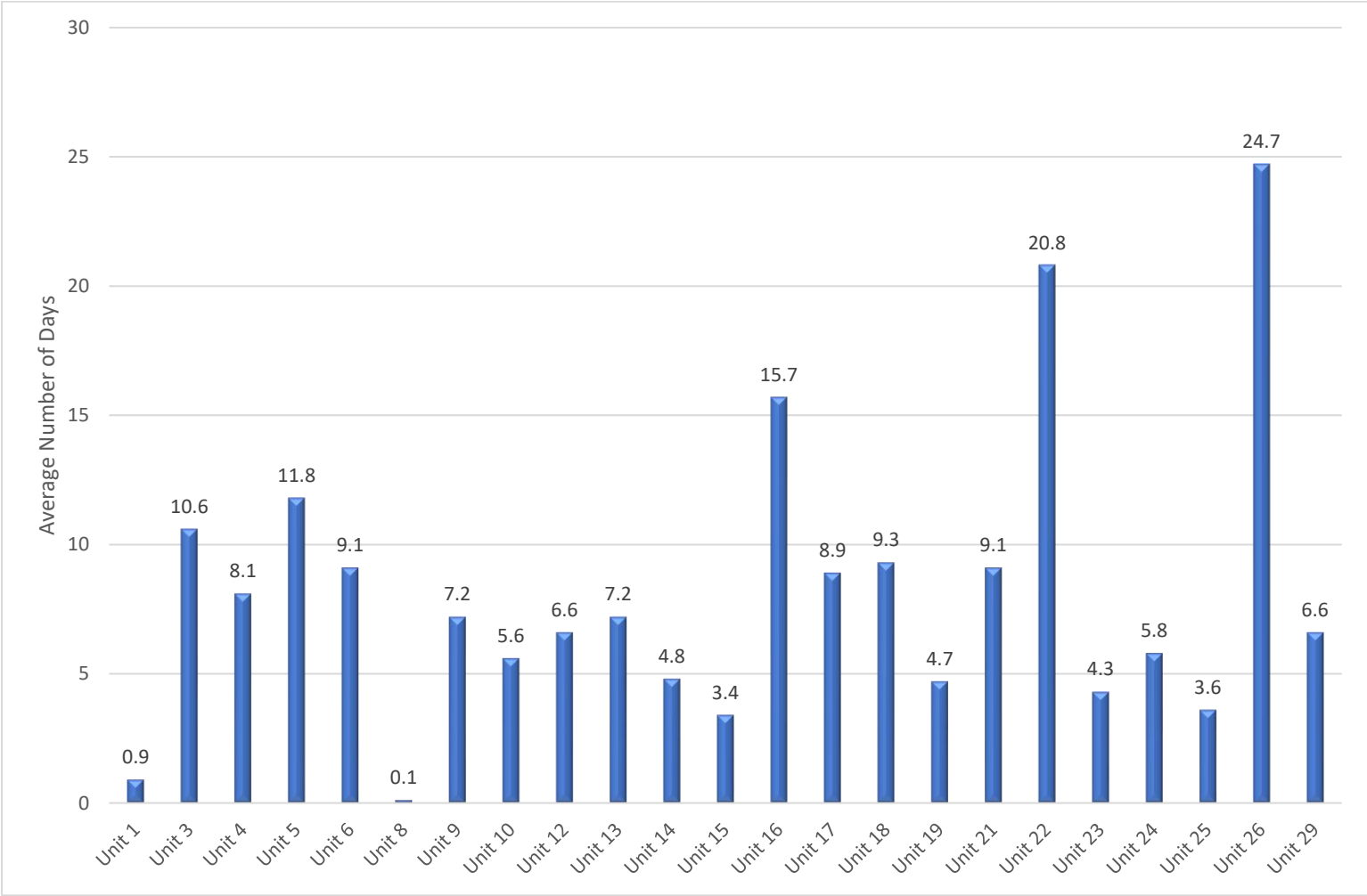
Comment: only patients with complete information for analysis were included (validated). Patients who died were excluded.

## **E. SUPPORT AND HOSPITALIZATION DURATION**

It is based on the number of infants  $\leq 32$  weeks at birth and discharged from the network units (data on infants is not available after being transferred to other institutions).

# PRESENTATION 54

## Invasive mechanical ventilation days (in infants Gestational Age ≤ 32 weeks)



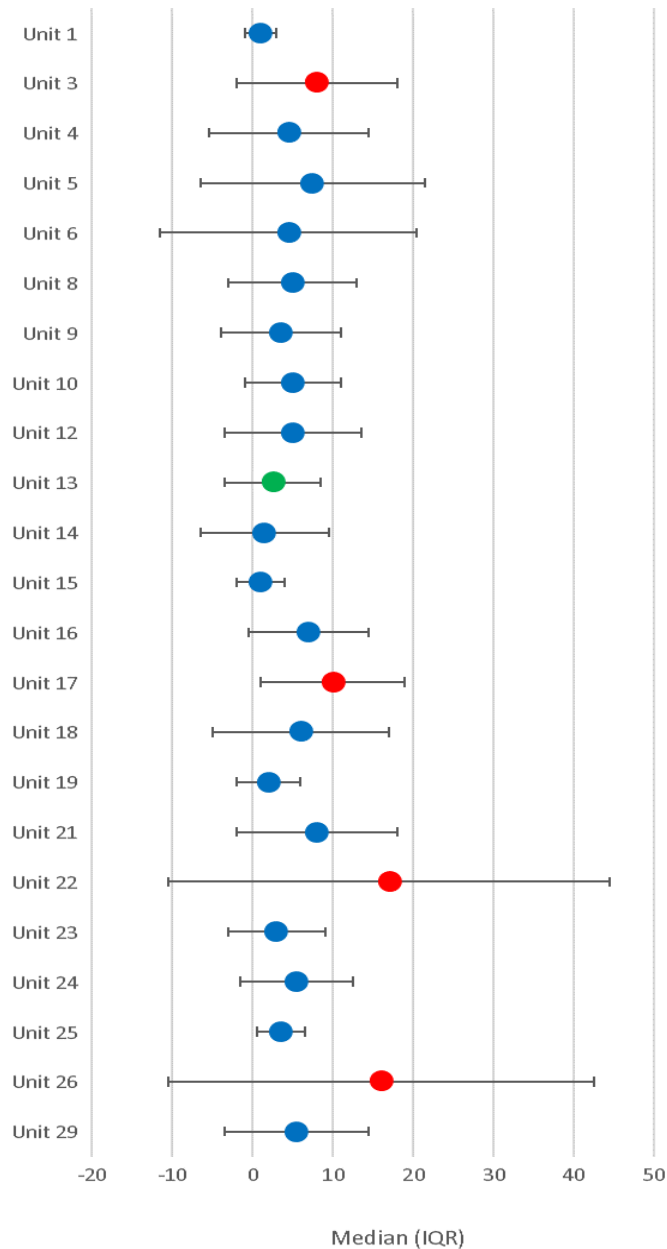
**Invasive mechanical ventilation days (in infants Gestational Age ≤ 32 weeks) cont...**

UNITS	Patients		Invasive Ventilation (days)				
	Ventilated Patients	Average number of days	Total Days	HFOV		Conventional	
	n	days	n	n	%	n	%
Unit 1	7	0.9	13	7	54%	7	54%
Unit 3	71	10.6	788	71	9%	71	9%
Unit 4	14	8.1	113	14	12%	14	12%
Unit 5	8	11.8	127	8	6%	8	6%
Unit 6	18	9.1	289	18	6%	18	6%
Unit 8	54	0.1	597	54	9%	54	9%
Unit 9	84	7.2	661	84	13%	84	13%
Unit 10	17	5.6	102	17	17%	17	17%
Unit 12	8	6.6	65	8	12%	8	12%
Unit 13	22	7.2	223	22	10%	22	10%
Unit 14	6	4.8	32	6	19%	6	19%
Unit 15	7	3.4	24	7	29%	7	29%
Unit 16	32	15.7	503	32	6%	32	6%
Unit 17	9	8.9	99	9	9%	9	9%
Unit 18	10	9.3	104	10	10%	10	10%
Unit 19	9	4.7	45	9	20%	9	20%
Unit 21	13	9.1	124	13	10%	13	10%
Unit 22	16	20.8	362	16	4%	16	4%
Unit 23	19	4.3	106	19	18%	19	18%
Unit 24	6	5.8	41	6	15%	6	15%
Unit 25	8	3.6	36	8	22%	8	22%
Unit 26	16	24.7	396	16	4%	16	4%
Unit 29	14	6.6	105	14	13%	14	13%
<b>Total</b>	<b>195</b>	<b>8.25</b>	<b>2265</b>	<b>195</b>		<b>195</b>	

Comment: only patients with complete information were included. Invasive mechanical ventilation includes patients with High Frequency Ventilation (HFOV) and intermittent positive pressure ventilation (IPPV). Mortality significantly affects the groups with low gestational age. Only patients with invasive mechanical ventilation were included. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

## PRESENTATION 55

Median days in **Invasive Mechanical Ventilation** and Regression analysis (in infants Gestational Age  $\leq 32$  weeks) Adjusted by Gestational Age at birth and SNAPEPEII. by Unit



Median [IQR] (interquartile range) of days of invasive mechanical ventilation. The units were compared by median nonparametric regression adjusted for gestational age at birth. In red the unit with statistically significant difference and in green the reference unit (Unit 13) for having a low median in the group with enough patients. The statistics should be interpreted with caution due to the small number of infants in some units and large intervals. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

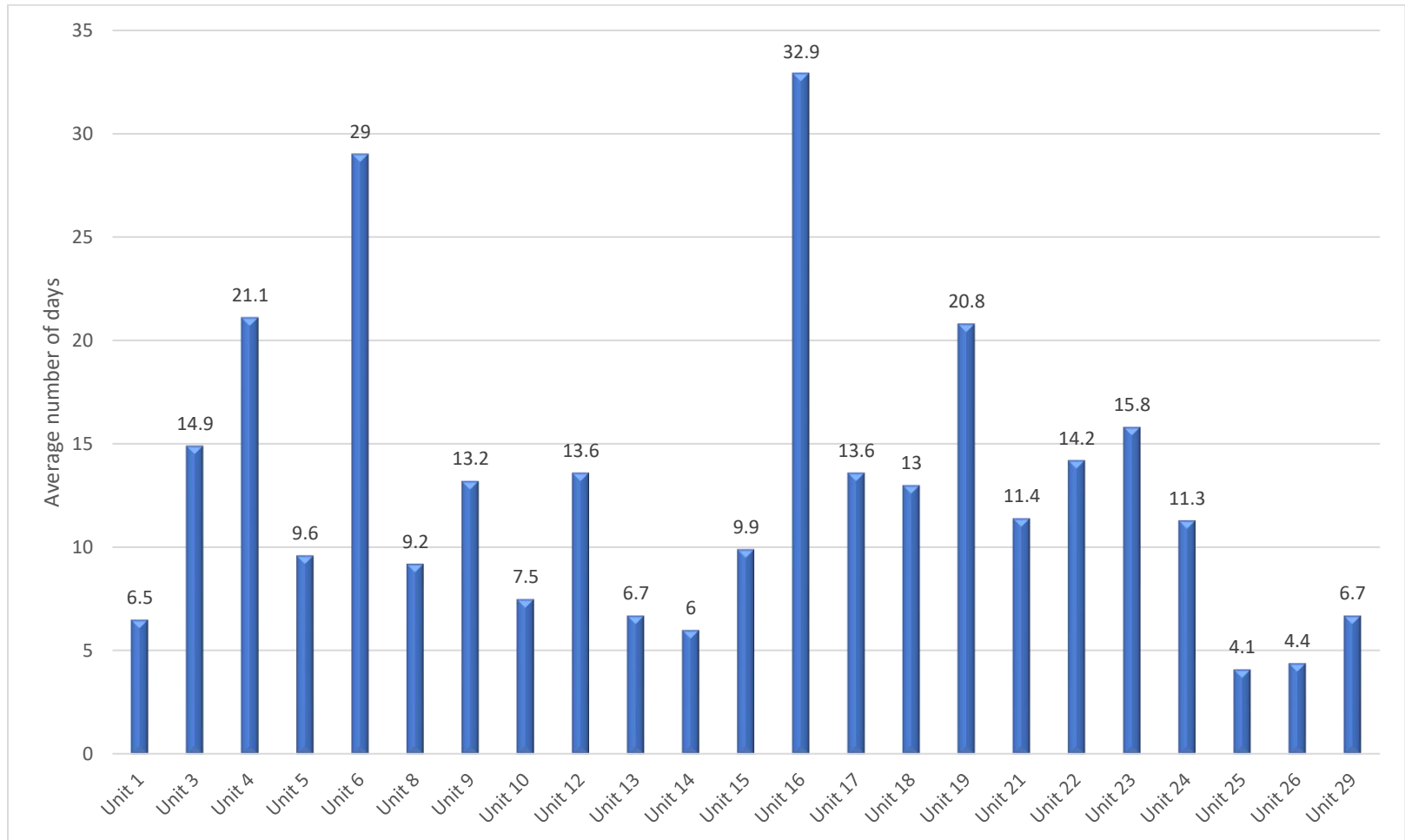
**Median Days in Invasive Mechanical Ventilation Regression analysis (in infants  
Gestational Age ≤ 32 weeks) Adjusted by Gestational Age at birth. Comparison by Units.  
Cont...**

UNITS	N	p50	p25	p75	p
Unit 1	7	1.0	1.0	3.0	0.564
Unit 3	71	8.0	4.0	14.0	0.021
Unit 4	14	4.5	2.0	12.0	0.770
Unit 5	8	7.5	3.0	17.0	0.054
Unit 6	18	4.5	2.0	18.0	0.380
Unit 8	54	5.0	3.0	11.0	0.273
Unit 9	84	3.5	2.0	9.5	0.910
Unit 10	17	5.0	3.0	9.0	0.770
Unit 12	8	5.0	1.5	10.0	0.311
Unit 13	22	2.5	1.0	7.0	Ref
Unit 14	6	1.5	1.0	9.0	0.762
Unit 15	7	1.0	1.0	4.0	0.397
Unit 16	32	7.0	5.5	13.0	0.148
Unit 17	9	10.0	6.0	15.0	<b>0.012</b>
Unit 18	10	6.0	3.0	14.0	0.380
Unit 19	9	2.0	1.0	5.0	0.490
Unit 21	13	8.0	4.0	14.0	0.190
Unit 22	16	17.0	9.0	36.5	<b>0.000</b>
Unit 23	19	3.0	1.0	7.0	0.860
Unit 24	6	5.5	2.0	9.0	0.618
Unit 25	8	3.5	2.0	5.0	0.949
Unit 26	16	16.0	7.5	34.0	<b>0.000</b>
Unit 29	14	5.5	3.0	12.0	0.584

Statistically significant p values are marked in bold.

## PRESENTATION 56

Average **NON**-Invasive Ventilation Days by Unit in  $\leq 32$  weeks Gestational Age



**Average NON-Invasive Ventilation Days by Unit in ≤ 32 weeks Gestational Age (table)**

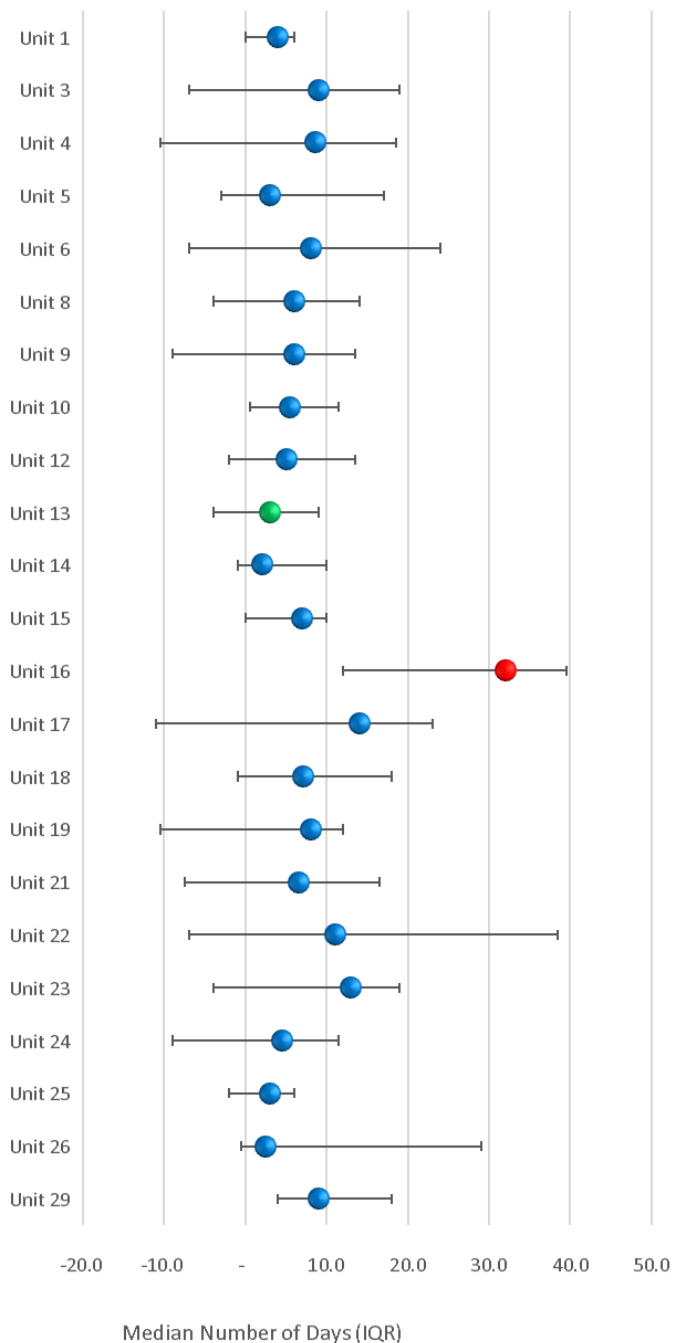
UNITS	Patients		NON-Invasive Ventilation (days)						
	Ventilated Patients	Average number of days	Total Days	VNI (with Frequency)		CPAP		High Flow nasal cannula	
	n	days	n	n	%	n	%	n	%
Unit 1	18	6.5	117	7	6%	90	77%	20	17%
Unit 3	76	14.9	1135	13	1%	922	81%	200	18%
Unit 4	38	21.1	801	175	22%	218	27%	408	51%
Unit 5	17	9.6	164	41	25%	107	65%	16	10%
Unit 6	39	29.0	1131	119	11%	248	22%	764	68%
Unit 8	103	9.2	944	9	1%	791	84%	144	15%
Unit 9	77	13.2	1020	147	14%	93	9%	780	76%
Unit 10	44	7.5	329	265	81%	6	2%	58	18%
Unit 12	17	13.6	232	81	35%	99	43%	52	22%
Unit 13	23	6.7	155	91	59%	12	8%	52	34%
Unit 14	11	6.0	66	0	0%	61	92%	5	8%
Unit 15	11	9.9	109	11	10%	24	22%	74	68%
Unit 16	37	32.9	1219	1020	84%	199	16%	0	0%
Unit 17	10	13.6	136	42	31%	34	25%	60	44%
Unit 18	7	13.0	91	47	52%	34	37%	10	11%
Unit 19	16	20.8	333	35	11%	149	45%	149	45%
Unit 21	24	11.4	274	174	64%	99	36%	1	0%
Unit 22	17	14.2	242	124	51%	118	49%	0	0%
Unit 23	18	15.8	285	6	2%	279	98%	0	0%
Unit 24	12	11.3	135	52	39%	49	36%	34	25%
Unit 25	19	4.1	78	35	45%	29	37%	14	18%
Unit 26	14	4.4	61	10	16%	47	77%	4	7%
Unit 29	9	6.7	60	25	42%	2	3%	33	55%
Total	657	0.0	9117	2529	28%	3710	41%	2878	32%

Comment: only patients with complete information were included. NON-Invasive Ventilation includes CPAP, non-invasive ventilation with frequency and high flow nasal cannula. Patients with only oxygen or low-flow cannula were excluded. The statistics should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.



## PRESENTATION 57

### Median Days in NON-Invasive Ventilation and Regression analysis by unit in $\leq 32$ weeks Gestational Age



Median  $\pm$ IQR (interquartile range) days of non-invasive ventilation and interquartile ranges. The units were compared by median nonparametric regression adjusted for gestational age at birth. In red the units with statistically significant difference and in green the reference unit (Unit 13 for having a low median among units with adequate number of patients). Statistics are dependent on the number of patients and should be interpreted with caution due to the small number of infants in some units and large interquartile ranges.

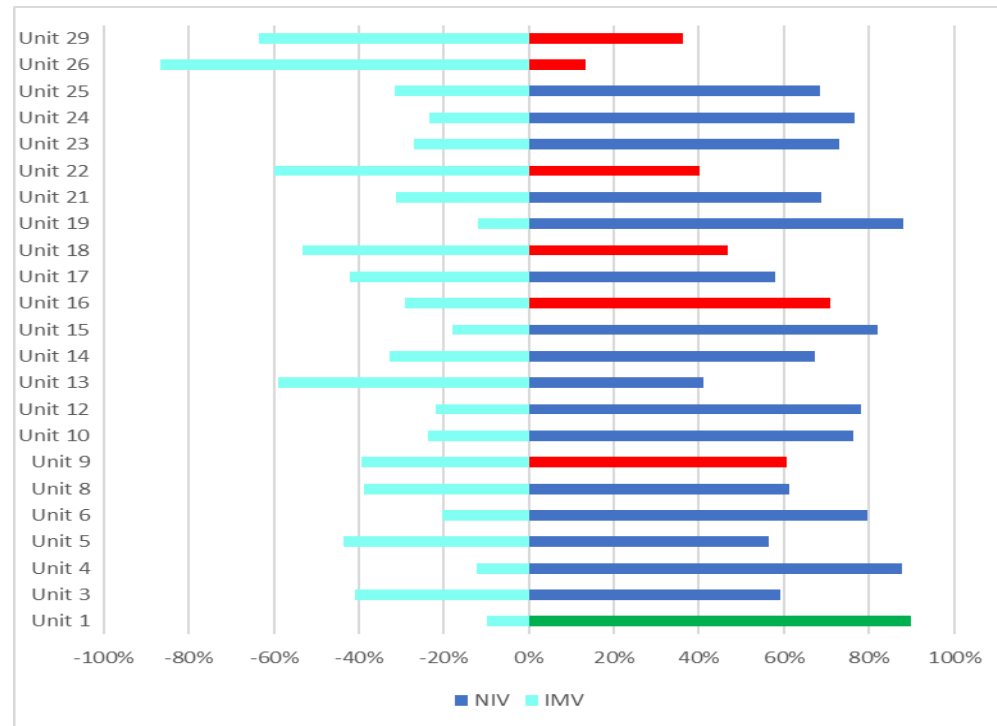
**Regression and Median Days of NON-Invasive Ventilation by unit in  $\leq 32$  weeks Gestational Age, (table)**

UNITS	N	p50	p25	p75	p
Unit 1	18	4	3	7	0.895
Unit 3	76	9	4	20	0.093
Unit 4	38	8.5	5	24	0.156
Unit 5	17	3	1	7	0.737
Unit 6	39	8	5	20	0.168
Unit 8	103	6	2	12	0.663
Unit 9	77	6	4	19	0.321
Unit 10	44	5.5	4	9	0.470
Unit 12	17	5	2	9	0.714
Unit 13	23	3	2	9	Ref
Unit 14	11	2	2	5	0.857
Unit 15	11	7	5	12	0.417
Unit 16	37	32	22	42	<b>0.000</b>
Unit 17	10	14	1	26	0.361
Unit 18	7	7	7	15	0.852
Unit 19	16	8	5	23.5	0.897
Unit 21	24	6.5	4	18	0.402
Unit 22	17	11	3	21	0.264
Unit 23	18	13	4	21	0.461
Unit 24	12	4.5	3	16.5	0.704
Unit 25	19	3	2	7	0.799
Unit 26	14	2.5	2	5	0.891
Unit 29	9	9	4	9	0.988

Statistically significant p values are marked in bold. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year. Regression analysis as in previous presentations.

## PRESENTATION 58

### Median of NON-Invasive Ventilation Days Over Invasive Ventilation Days by Unit in $\leq 32$ weeks Gestational Age adjusted by GE and SPAPEPII



Median and IQR (interquartile range) of non-invasive over invasive mechanical ventilation median (IMV in negative values for visual comparison). In red the units with significant differences with respect to unit 1 (reference in green) which was chosen for larger number of data and high percentage of NIV/IMV. Differences was calculated with median logistic regression adjusted by Gestational Age and SPAPEPII. Invasive ventilation includes HFOV and IPPV and NON-Invasive ventilation includes CPAP, NIVn (nasal non-invasive ventilation) and high-flow cannulas. The statistics should be interpreted with caution due to the small number of infants in some units and large Median ranges.

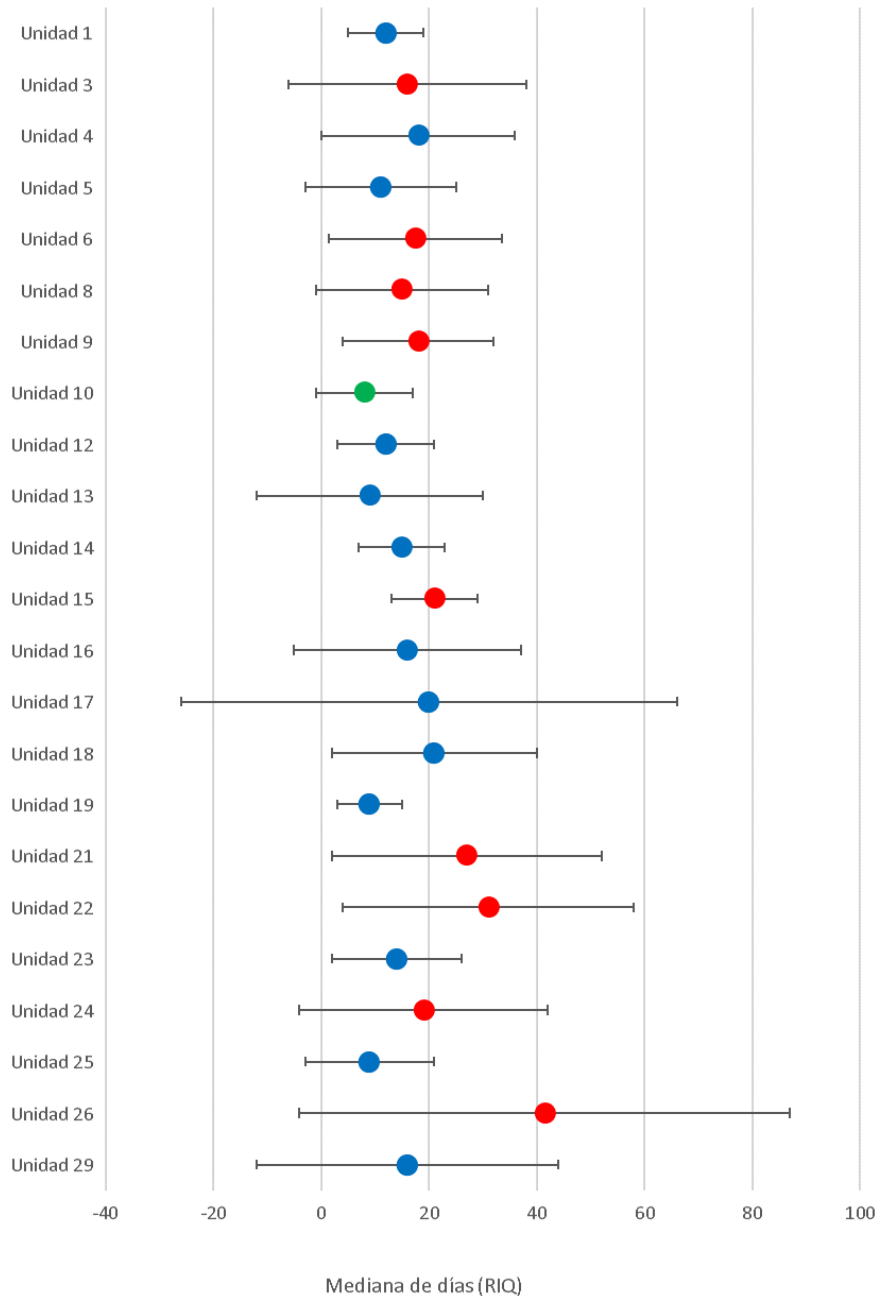
**NON-Invasive Ventilation Days Over Invasive Ventilation Days by Unit in ≤ 32 weeks Gestational Age**

UNITS	NIV	IMV*	p
Unit 1	117	-13	Ref
Unit 3	1135	-788	<b>0.000</b>
Unit 4	801	-113	0.506
Unit 5	164	-127	0.427
Unit 6	1131	-289	0.557
Unit 8	944	-597	0.058
Unit 9	1020	-661	<b>0.000</b>
Unit 10	329	-102	0.088
Unit 12	232	-65	0.291
Unit 13	155	-223	0.111
Unit 14	66	-32	0.620
Unit 15	109	-24	0.557
Unit 16	1219	-503	<b>0.012</b>
Unit 17	136	-99	0.204
Unit 18	91	-104	<b>0.012</b>
Unit 19	333	-45	0.310
Unit 21	274	-124	0.123
Unit 22	242	-362	<b>0.002</b>
Unit 23	285	-106	0.096
Unit 24	135	-41	0.445
Unit 25	78	-36	0.213
Unit 26	61	-396	<b>0.000</b>
Unit 29	60	-105	<b>0.000</b>

\*Values in negative for visual comparison. Statistically significant p values are marked in bold. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

## PRESENTATION 59

### Median and IQR Days with Catheter (in infants Gestational Age $\leq 32$ weeks) by Unit.



Median  $\pm$ IQR (interquartile range) days with catheter. The units were compared by median nonparametric regression adjusted for gestational age at birth and SNAPEPEII. In red the units with statistically significant difference. Only babies with at least 1 day of catheter were included. Unit 10 was chosen as the reference for low median, adequate number of infants and narrower ranges in green. Includes arterial and venous umbilical catheters, PICC catheters, arterial lines, surgical lines, and peripheral lines. Statistics are dependent on the number of patients and should be interpreted with caution due to the small number of infants in some units and large interquartile ranges. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

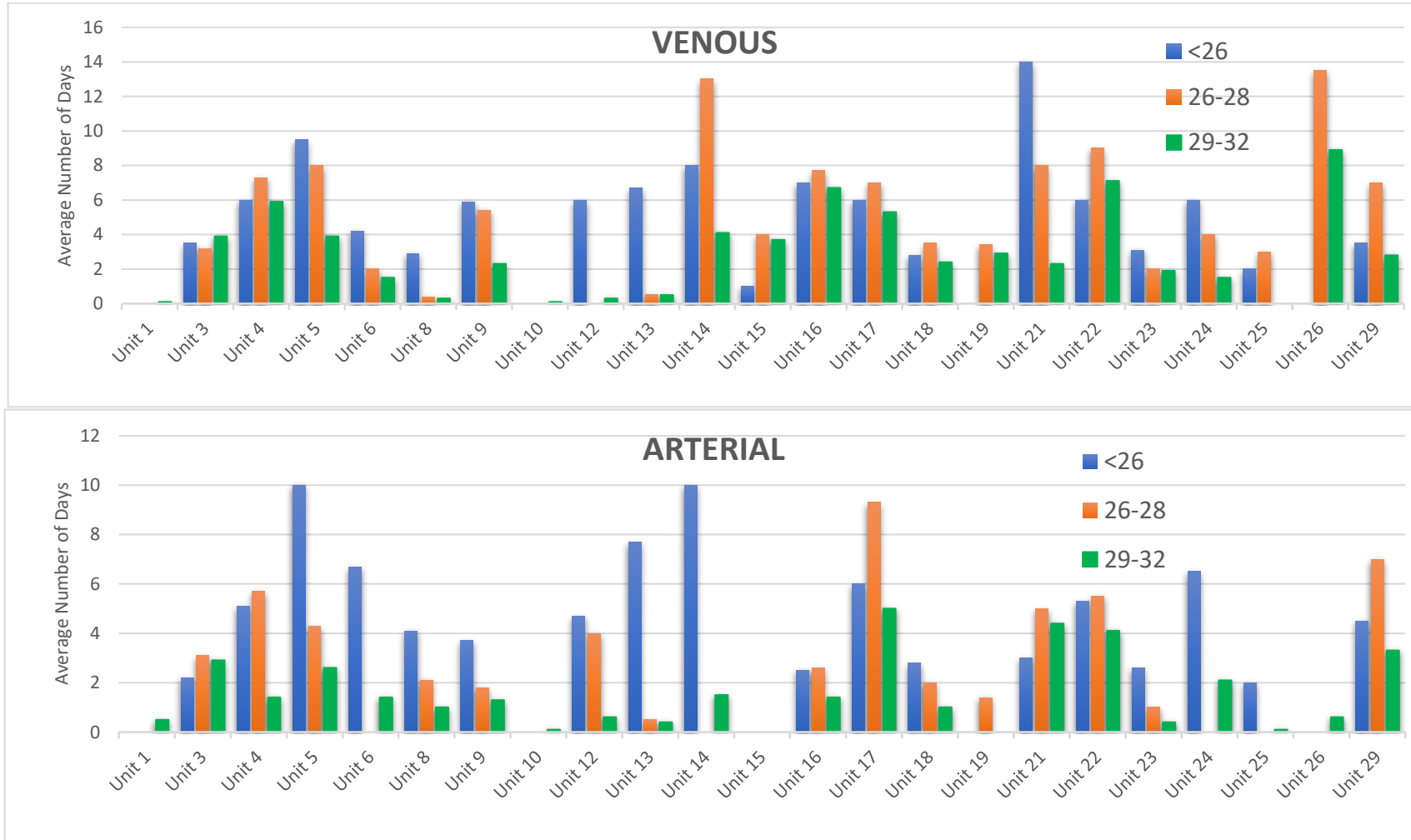
**Median Number of Days with Catheter (in infants Gestational Age ≤ 32 weeks) by Unit. (Table)**

UNITS	Number of Patients	Total number of days	Days			
	n		p50	p25	p75	p
Unit 1	276	21	12	8	15	0.539
Unit 3	2013	99	16	9	31	<b>0.026</b>
Unit 4	985	43	18	8	26	0.092
Unit 5	351	17	11	6	20	0.589
Unit 6	1164	42	17.5	10	26	<b>0.017</b>
Unit 8	2136	108	15	9	25	<b>0.048</b>
Unit 9	2475	111	18	12	26	<b>0.003</b>
Unit 10	519	48	8	6	15	<b>Ref</b>
Unit 12	435	22	12	7	16	0.694
Unit 13	407	26	9	4	25	0.718
Unit 14	235	13	15	12	20	0.341
Unit 15	274	13	21	17	25	<b>0.030</b>
Unit 16	966	47	16	9	30	0.066
Unit 17	316	11	20	7	53	0.054
Unit 18	208	11	21	6	25	0.231
Unit 19	174	17	9	7	13	0.852
Unit 21	1004	29	27	19	44	<b>0.000</b>
Unit 22	604	20	31	14.5	41.5	<b>0.000</b>
Unit 23	373	22	14	9	21	0.767
Unit 24	270	13	19	8	31	<b>0.024</b>
Unit 25	190	19	9	4	16	0.866
Unit 26	843	20	41.5	14.5	60	<b>0.000</b>
Unit 29	303	15	16	5	33	0.554
<b>Total</b>	<b>16521</b>	<b>787</b>	<b>396</b>	<b>211</b>	<b>637.5</b>	

Statistically significant p values are marked in bold.

## PRESENTATION 60

**Average Number of Days with Arterial and Venous Umbilical Catheter (in Children with Gestational Age  $\leq 32$  Weeks) by gestational age groups and units**



**Average Number of Days with Arterial and Venous Umbilical Catheter (in Children with Gestational Age ≤ 32 Weeks) by gestational age groups and units (TABLE)**

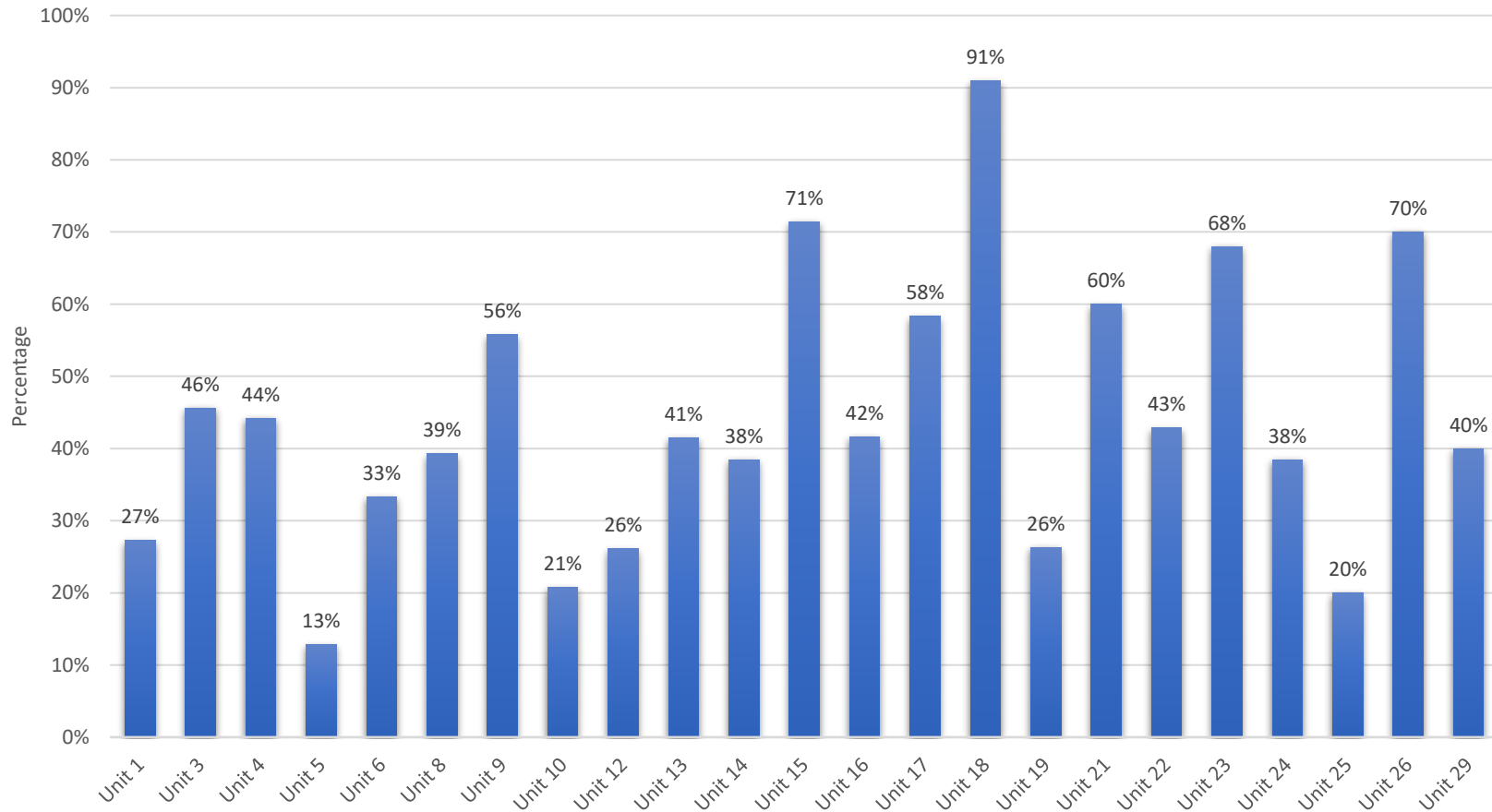
UNITS	AVERAGE NUMBER OF DAYS WITH CATHETER											
	VENOUS CATHETER						ARTERIAL CATHETER					
	<26		26-28		29-32		<26		26-28		29-32	
	n	average	n	average	n	average	n	average	n	average	n	average
Unit 1	0	0.0	2	0.0	19	0.1	0	0.0	2	0.0	19	0.5
Unit 3	11	3.5	18	3.2	70	3.9	11	2.2	18	3.1	70	2.9
Unit 4	13	6.0	3	7.3	27	5.9	13	5.1	3	5.7	27	1.4
Unit 5	2	9.5	3	8.0	12	3.9	2	10.0	3	4.3	12	2.6
Unit 6	9	4.2	2	2.0	31	1.5	9	6.7	2	0.0	31	1.4
Unit 8	15	2.9	21	0.4	72	0.3	15	4.1	21	2.1	72	1.0
Unit 9	14	5.9	12	5.4	85	2.3	14	3.7	12	1.8	85	1.3
Unit 10	2	0.0	1	0.0	45	0.1	2	0.0	1	0.0	45	0.1
Unit 12	3	6.0	2	0.0	17	0.3	3	4.7	2	4.0	17	0.6
Unit 13	3	6.7	8	0.5	15	0.5	3	7.7	8	0.5	15	0.4
Unit 14	1	8.0	1	13.0	11	4.1	1	10.0	1	0.0	11	1.5
Unit 15	1	1.0	2	4.0	10	3.7	1	0.0	2	0.0	10	0.0
Unit 16	2	7.0	7	7.7	38	6.7	2	2.5	7	2.6	38	1.4
Unit 17	3	6.0	4	7.0	4	5.3	3	6.0	4	9.3	4	5.0
Unit 18	4	2.8	2	3.5	5	2.4	4	2.8	2	2.0	5	1.0
Unit 19	0	0.0	10	3.4	7	2.9	0	0.0	10	1.4	7	0.0
Unit 21	1	14.0	4	8.0	24	2.3	1	3.0	4	5.0	24	4.4
Unit 22	3	6.0	2	9.0	15	7.1	3	5.3	2	5.5	15	4.1
Unit 23	7	3.1	5	2.0	10	1.9	7	2.6	5	1.0	10	0.4
Unit 24	2	6.0	1	4.0	10	1.5	2	6.5	1	0.0	10	2.1
Unit 25	1	2.0	1	3.0	17	0.0	1	2.0	1	0.0	17	0.1
Unit 26	0	0.0	2	13.5	18	8.9	0	0.0	2	0.0	18	0.6
Unit 29	4	3.5	1	7.0	10	2.8	4	4.5	1	7.0	10	3.3
Total/average	101	4.3	123	3.1	572	1.5	101	4.7	114	3.8	572	2.7

Comment: Average number of days with catheter. Only patients with complete data with at least 1 catheter day were included. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.



## PRESENTATION 61

Percentage of Patients who received **Packed Red Blood Cells** (in infants  $\leq 32$  weeks Gestational Age) by Unit



All patients  $\leq 32$  weeks gestational age at birth were included. Number of packed red blood cell (RBC) transfusion as well as number of infants who received transfusions were recorded. Statistics are dependent on the number of patients and should be interpreted with caution due to the small number of infants in some units. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

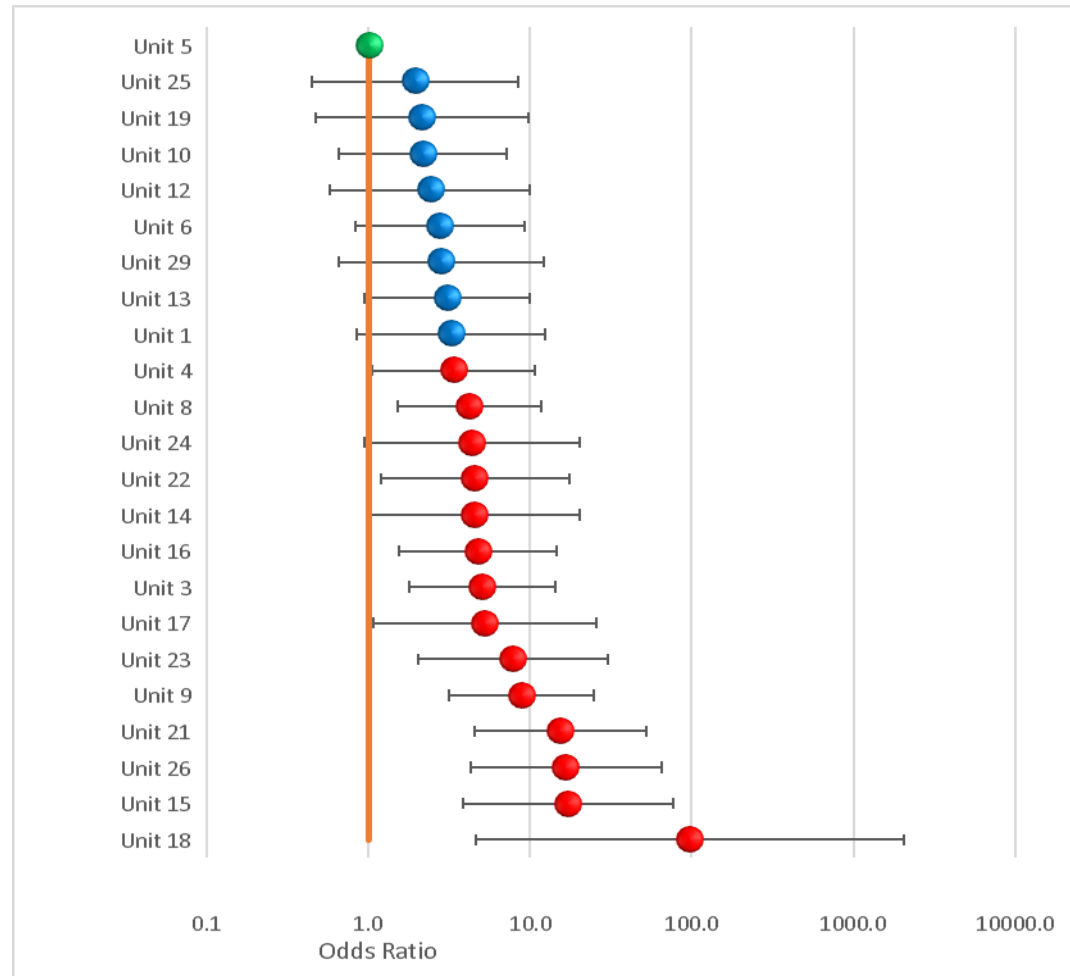
**Transfusions (in Infants Gestational Age ≤ 32 weeks) by Unit (TABLE)**

<b>UNITS</b>	<b>Patients ≤ 32 weeks Gestational Age</b>	<b>Number of Patient Transfused</b>	<b>Number of transfusions</b>	<b>Percentage of transfused patient</b>	<b>Number or transfusion per patient</b>
Unit 1	22	6	13	27%	2.2
Unit 3	103	47	86	46%	1.8
Unit 4	43	19	67	44%	3.5
Unit 5	39	5	13	13%	2.6
Unit 6	45	15	73	33%	4.9
Unit 8	135	53	99	39%	1.9
Unit 9	113	63	160	56%	2.5
Unit 10	53	11	17	21%	1.5
Unit 12	23	6	20	26%	3.3
Unit 13	41	17	108	41%	6.4
Unit 14	13	5	10	38%	2.0
Unit 15	14	10	16	71%	1.6
Unit 16	48	20	30	42%	1.5
Unit 17	12	7	20	58%	2.9
Unit 18	11	10	24	91%	2.4
Unit 19	19	5	13	26%	2.6
Unit 21	30	18	70	60%	3.9
Unit 22	21	9	14	43%	1.6
Unit 23	25	17	38	68%	2.2
Unit 24	13	5	10	38%	2.0
Unit 25	20	4	7	20%	1.8
Unit 26	20	14	49	70%	3.5
Unit 29	15	6	9	40%	1.5
<b>TOTAL</b>	<b>878</b>	<b>372</b>	<b>966</b>	<b>42%</b>	<b>2.6</b>

All patients ≤ 32 weeks gestational age at birth were included. Number of packed red blood cell (RBC) transfusion as well as number of infants transfused were recorded. Statistics are dependent on the number of patients in a particular age group and should be interpreted with caution due to the small number of infants in some units.

## PRESENTATION 62

Odds Ratio  $\pm$  CI 95% of the number of Infants  $\leq$  32 weeks Gestational Age at Birth who received transfusions in each unit controlled by SNAPEPE II and Gestational Age (incremental graph with log scale)



Odd Ratio  $\pm$  95% CI ordered in ascending order. All infants  $\leq$  32 weeks gestational age are included. Unit 5 in green was chosen as reference due to the lower incidence of transfusion with enough infants. The units with statistically significant difference in red. The upper confidence intervals of some units are very large. Statistics are dependent on the number of patients at a particular gestational age group and should be interpreted with caution due to the small number of infants in some units and intervals. Units were excluded if they had  $\leq$  10 patients  $\leq$  32 weeks GA at birth during the year.

**Odds Ratio of the number of Transfused Infants ≤ 32 weeks Gestational Age at Birth in each unit controlled by SNAPEPE II and Gestational Age (incremental table)**

UNITS	N	OR	P values	CI 95%
Unit 5	38	1.0	Ref	
Unit 25	20	1.9	0.382	0.4 - 8.4
Unit 19	19	2.1	0.326	0.5 - 9.7
Unit 10	53	2.2	0.204	0.7 - 7.1
Unit 12	23	2.4	0.226	0.6 - 9.9
Unit 6	43	2.8	0.097	0.8 - 9.2
Unit 29	15	2.8	0.166	0.7 - 12.1
Unit 13	41	3.1	0.064	0.9 - 10.0
Unit 1	22	3.2	0.086	0.8 - 12.3
Unit 4	43	3.4	<b>0.041</b>	1.1 - 10.7
Unit 8	135	4.2	<b>0.006</b>	1.5 - 11.7
Unit 24	13	4.4	0.059	0.9 - 20.2
Unit 22	21	4.6	<b>0.026</b>	1.2 - 17.4
Unit 14	13	4.6	<b>0.045</b>	1.0 - 20.3
Unit 16	48	4.8	<b>0.007</b>	1.5 - 14.7
Unit 3	103	5.0	<b>0.002</b>	1.8 - 14.3
Unit 17	12	5.3	<b>0.041</b>	1.1 - 25.8
Unit 23	25	7.9	<b>0.003</b>	2.0 - 30.4
Unit 9	113	8.8	<b>0.000</b>	3.1 - 24.9
Unit 21	30	15.4	<b>0.000</b>	4.5 - 52.9
Unit 26	20	16.7	<b>0.000</b>	4.3 - 65.6
Unit 15	14	17.2	<b>0.000</b>	3.9 - 76.5
Unit 18	11	97.4	<b>0.003</b>	4.6 - 2067.2
<b>Reference</b>		<b>Unit 5</b>		

Statistically significant p values are marked in bold.

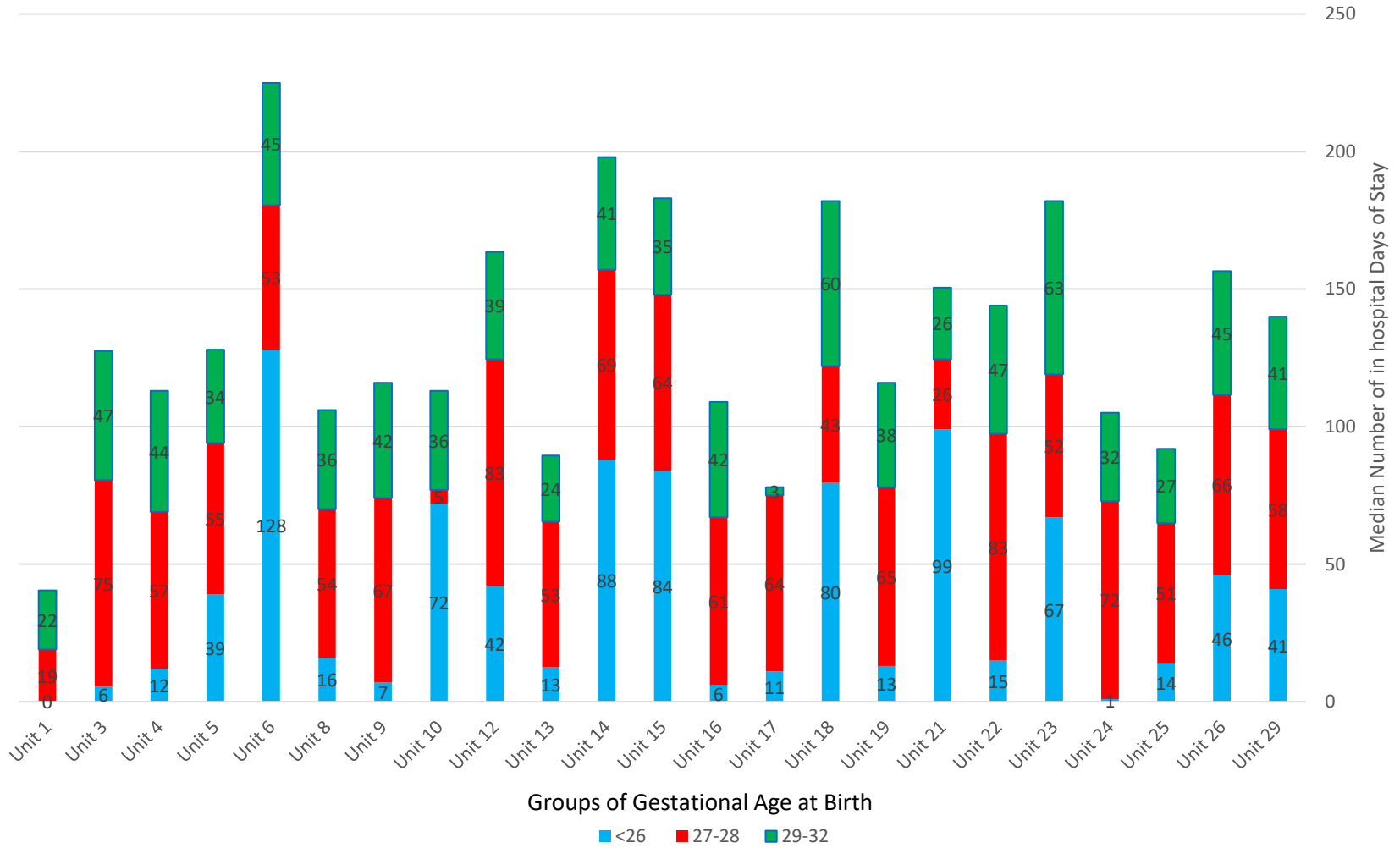
### PRESENTATION 63

#### Days of in hospital Stay by Gestational Age Groups and by Unit (Gestational Age ≤ 32 Weeks)

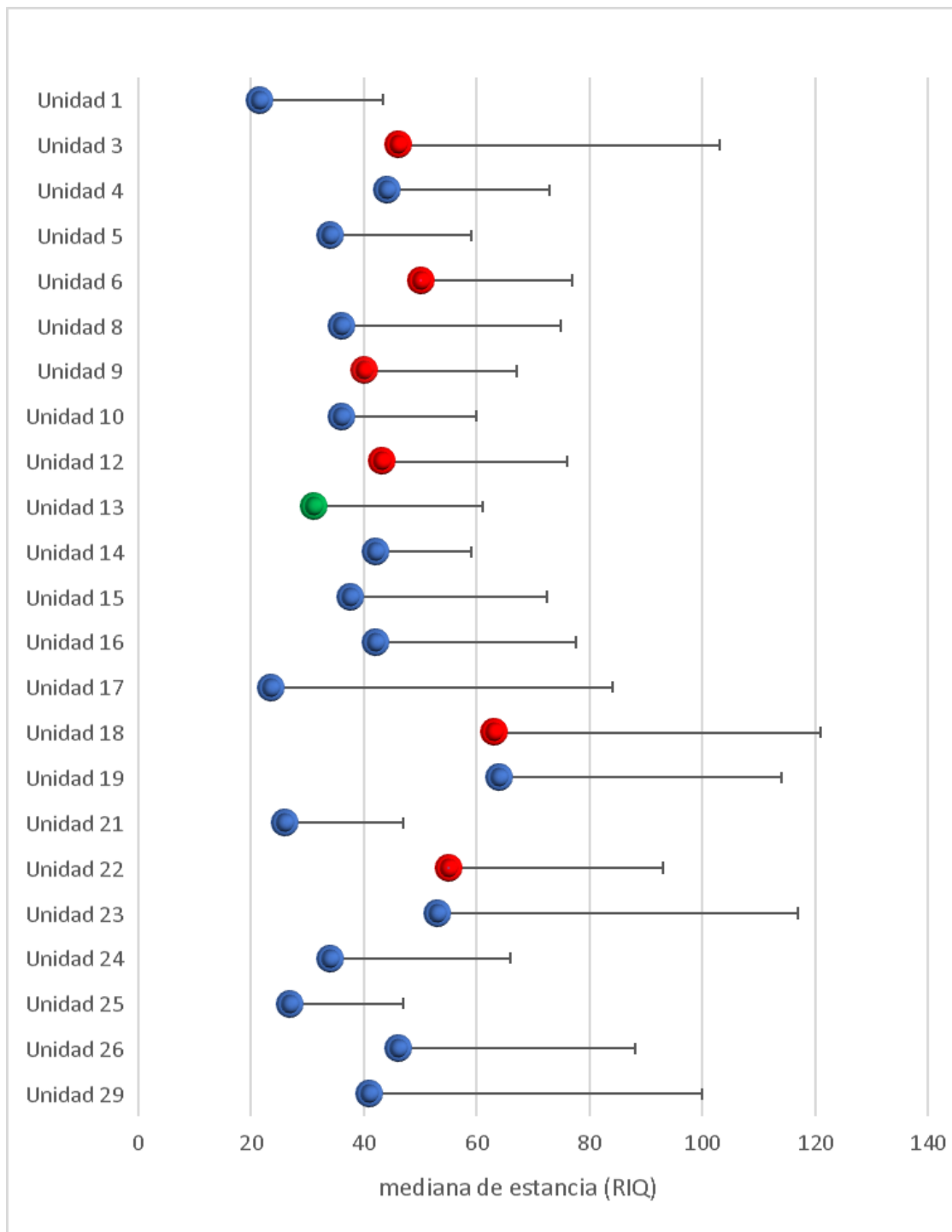
Unit	Gestational Age at Birth									p
	<26 sem			27-28			29-32			
	Patients	Total Days	Median	Patients	Total Days	Median	Patients	Total Days	Median	
Unit 1	0	0	0	2	38	19	20	457	21.5	0.943
Unit 3	12	275	5.5	18	1279	75	73	3688	47	<b>0.003</b>
Unit 4	13	886	12	3	175	57	27	1141	44	0.232
Unit 5	2	78	39	4	218	55	33	1355	34	0.207
Unit 6	9	1144	128	2	105	52.5	34	1581	44.5	<b>0.001</b>
Unit 8	15	633	16	21	1005	54	99	3846	36	0.065
Unit 9	14	381	7	12	705	67	87	3924	42	<b>0.019</b>
Unit 10	2	144	72	1	5	5	50	1935	36	0.304
Unit 12	4	205	42	2	165	82.5	17	682	39	<b>0.044</b>
Unit 13	6	159	12.5	11	660	53	24	731	24	ref
Unit 14	1	88	88	1	69	69	11	448	41	0.116
Unit 15	1	84	84	2	128	64	11	342	35	0.303
Unit 16	3	16	6	7	666	61	38	1743	42	0.051
Unit 17	3	79	11	4	279	64	5	55	3	0.996
Unit 18	4	353	79.5	2	85	42.5	5	238	60	<b>0.036</b>
Unit 19	1	13	13	10	563	65	9	456	38	0.053
Unit 21	3	230	99	4	130	25.5	25	749	26	0.864
Unit 22	7	289	15	2	165	82.5	16	805	46.5	<b>0.017</b>
Unit 23	2	134	67	5	238	52	13	716	63	0.400
Unit 24	1	1	1	1	72	72	10	346	32	0.206
Unit 25	4	96	14	1	51	51	18	545	27	0.720
Unit 26	20	946	46	2	131	65.5	18	815	45	0.051
Unit 29	15	930	41	1	58	58	10	776	41	0.371
Total	142	7164	898.5	118	6990	1292	653	27374	867.5	Total

IQR: interquartile Range. Comment: only patients with complete information were included and readmissions were excluded. Mortality in low gestational ages may modify results.

**Median Number of in hospital Days of Stay by Gestational Age Groups and by Unit (Gestational Age ≤ 32 Weeks at Birth)**



**Median Number of in hospital Days of Stay by Unit Adjusted by Gestational Age at birth and SPAPEPEII  
(Gestational Age ≤ 32 Weeks)**



The units were compared by median nonparametric regression adjusted for gestational age at birth and SNAPEPEII. Unit 13 was chosen for the low median stay, and with enough cases (in green). Units with statistically significantly difference are shown in red. Interpret data cautiously in units with very wide interquartile (IQR) ranges.

## PRESENTATION 64

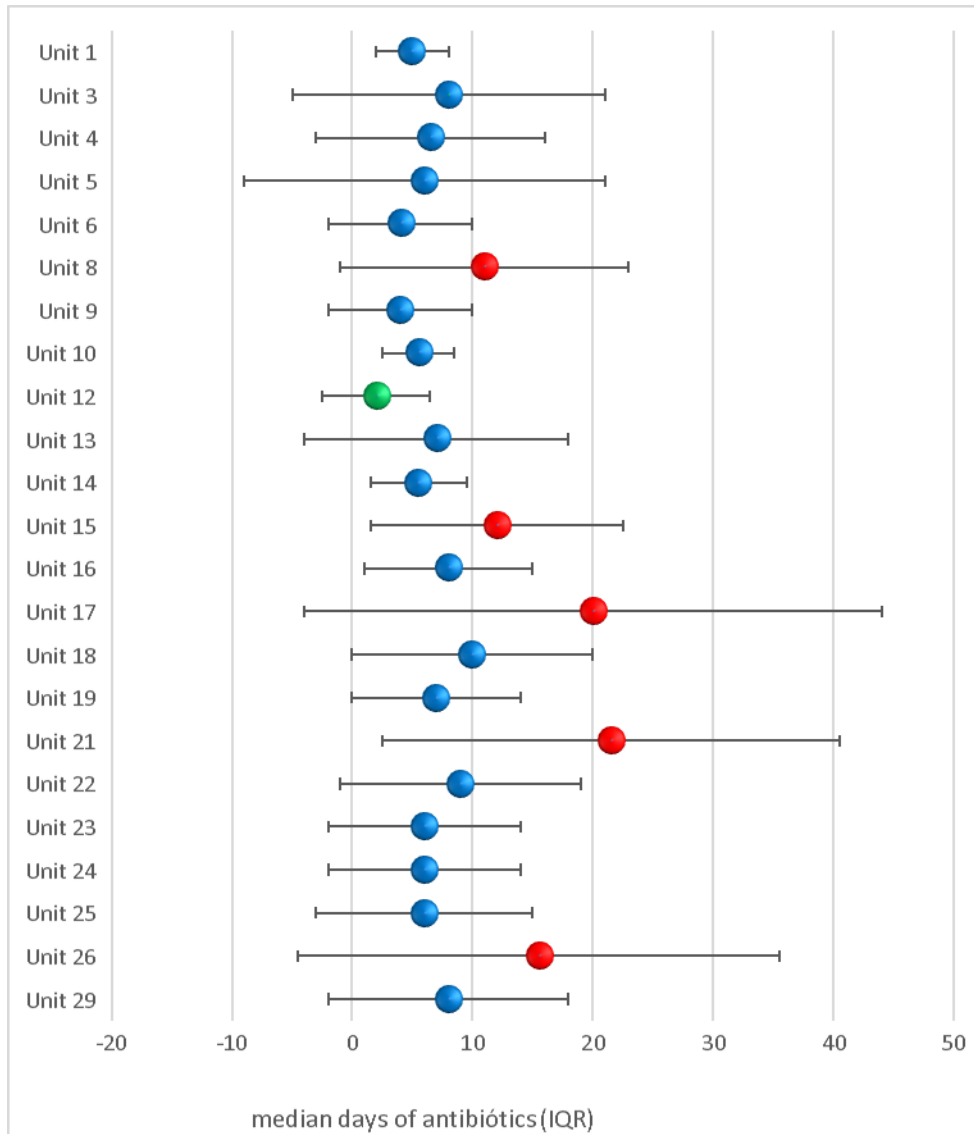
### Days of ANTIBIOTICS in Infants ≤ 32 weeks Gestational Age at birth, by Unit in 3 Gestational Age Groups

UNITS	Days of Antibiotics								
	<26 w			26-28w			29-32w		
	Total patients	Total Days	Number of days per patient	Total patients	Total Days	Number of days per patient	Total patients	Total Days	Number of days per patient
Unit 1	0	0		2	12	6	20	101	5
Unit 3	12	71	5.9	18	193	11	73	771	11
Unit 4	13	149	11.5	3	52	17	27	121	4
Unit 5	2	31	15.5	4	2	1	33	89	3
Unit 6	9	223	24.8	2	29	15	34	112	3
Unit 8	15	326	21.7	21	313	15	99	1003	10
Unit 9	14	132	9.4	12	72	6	87	431	5
Unit 10	2	12	6.0	1	6	6	50	205	4
Unit 12	4	49	12.3	2	10	5	17	65	4
Unit 13	6	43	7.2	11	203	18	24	74	3
Unit 14	1	21	21.0	1	7	7	11	17	2
Unit 15	1	12	12.0	2	30	15	11	111	10
Unit 16	3	15	5.0	7	78	11	38	405	11
Unit 17	3	41	13.7	4	132	33	5	39	8
Unit 18	4	47	11.8	2	23	12	5	42	8
Unit 19	1	0	0.0	10	81	8	9	27	3
Unit 21	3	13	4.3	4	106	27	25	441	18
Unit 22	7	54	7.7	2	22	11	16	122	8
Unit 23	2	58	29.0	5	17	3	13	95	7
Unit 24	1	25	25.0	1	3	3	10	22	2
Unit 25	4	1	0.3	1	10	10	18	45	3
Unit 26	20	0	0.0	2	56	28	18	390	22
Unit 29	15	33	2.2	1	45	45	10	88	9
<b>TOTAL</b>	142	1172	8.3	92	1162	12.6	653	4816	7.4



## PRESENTATION 65

Median and Interquartile days of ANTIBIOTIC in infants  $\leq 32$  weeks Gestational Age at birth by Unit controlled by Gestational Age and SNAPEPEII



Median days and IQR (interquartile range) of antibiotics. The units were compared by median nonparametric regression adjusted for gestational age at birth and SNAPEPEII. Reference unit 12 in green chosen for lower median and IQR with adequate number of patients. In red the units with statistically significant difference. Statistics are dependent on the number of patients and should be interpreted with caution due to the small number of infants in some units and large IQR. Units were excluded if they had  $\leq 10$  patients  $\leq 32$  weeks GA at birth during the year.

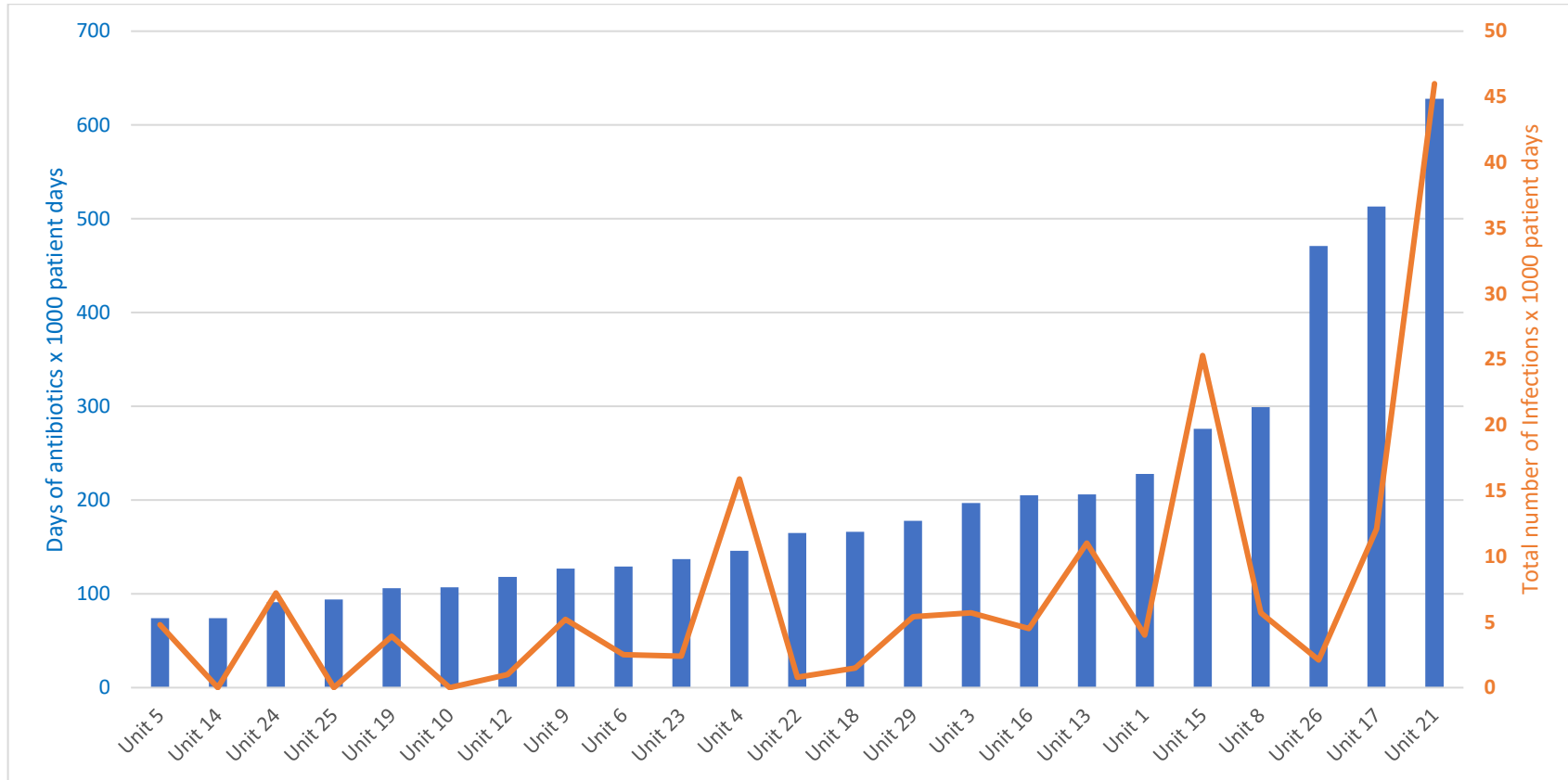
**Antibiotics days in Infants ≤ 32 weeks Gestational Age at Birth, by Unit (Table)**

UNITS	Number of antibiotic Days	Statistics of Days with Antibiotics			
		p50	p25	p75	p
Unit 1	22	5	4	7	0.387
Unit 3	103	8	4	17	0.035
Unit 4	43	6.5	2	11.5	0.262
Unit 5	39	6	1.5	16.5	0.231
Unit 6	45	4	3	9	0.700
Unit 8	135	11	6	18	<b>0.001</b>
Unit 9	113	4	3	9	0.512
Unit 10	53	5.5	4	7	0.269
Unit 12	23	2	2	6.5	ref
Unit 13	41	7	5	16	0.227
Unit 14	13	5.5	3	7	0.520
Unit 15	14	12	7	17.5	<b>0.011</b>
Unit 16	48	8	6	13	0.071
Unit 17	12	20	4	28	<b>0.000</b>
Unit 18	11	10	5	15	0.070
Unit 19	19	7	3	10	0.141
Unit 21	30	21.5	13	32	<b>0.000</b>
Unit 22	21	9	4	14	0.059
Unit 23	25	6	3	11	0.502
Unit 24	13	6	3	11	0.387
Unit 25	20	6	1	10	0.619
Unit 26	20	15.5	10	30	<b>0.000</b>
Unit 29	15	8	5	15	0.302

The reference unit 12 was taken as the lowest median with an adequate number of patients. All patients with complete data were taken with at least 1 day of antibiotics. Statistically significant p values are marked in bold.

## PRESENTATION 66

**Days of ANTIBIOTICS Use and Total Number of Infections x 1000 Days of stay in Infants ≤ 32 weeks Gestational Age at birth by Unit graphed in increment of antibiotic days**



Infections are defined as positive blood or spinal fluid culture. The days of antibiotics were taken from the database as administered at any time during their stay. The stay was taken from all patient admissions. Infections include early and late infections.

The correlation between antibiotics and infection of these units using Spearman's correlation is significant. Spearman rho = 0.5285, p 0.0095, indicating that the use of antibiotics does increase with a greater number of infections, but not exclusively due to proven infection, since there are units with a low incidence of infection and a high number of antibiotics. It is striking some units report 0 positive cultures but have a significant number of days of use of antibiotics per 1000 patient days. Infections in blood and CSF are counted separately. Units were excluded if they had ≤ 10 patients ≤ 32 weeks GA at birth during the year.

**Days of Antibiotic Use and Total Number of Infections x 1000 Days of stay in Infants ≤ 32 weeks Gestational Age at birth and Discharged home by Unit (table)**

UNITS	Days of antibiotics x 1000 patient days	Total number of Infections x 1000 patient days
Unit 5	74	4.8
Unit 14	74	0.0
Unit 24	91	7.2
Unit 25	94	0.0
Unit 19	106	3.9
Unit 10	107	0.0
Unit 12	118	1.0
Unit 9	127	5.2
Unit 6	129	2.5
Unit 23	137	2.4
Unit 4	146	15.9
Unit 22	165	0.8
Unit 18	166	1.5
Unit 29	178	5.4
Unit 3	197	5.7
Unit 16	205	4.5
Unit 13	206	11.0
Unit 1	228	4.0
Unit 15	276	25.3
Unit 8	299	5.7
Unit 26	471	2.1
Unit 17	513	12.1
Unit 21	628	46.0

Comment: only patients with complete information and discharged home was used. Antibiotics days were taken from the database as administered at any time during the stay. The length of stay was taken from all admissions. Early and late infections were included. Three units did not report any positive blood or spinal cultures. It is presented in increment of antibiotic days

## **F. Therapeutic Hypothermia**

## PRESENTATION 67

### Therapeutic Hypothermia all cases

Sarnat staging at the time of admission and needing therapeutic hypothermia\*

Hypothermia		Stage 1	Stage 2	Stage 3	Stage 4	Unknown	No information	Total						
	Yes	6	17%	20	57%	9	24%	0	0%	1	3%	2	6%	37
No											36	100%	36	49%
Unknown									1	100%			1	1%
Total													74	

Sarnat staging at the end of Hypothermia

Stage 1	Stage 2	Stage 3	Normal	Unknown					
22	63%	3	9%	2	6%	6	17%	2	6%

Units that reported cases with encephalopathy

Unit	Received Hypothermia							
	YES		NO		Unknown		Total	
	n	%	n	%	n	%	n	%
Unidad 3	2	5%	2	6%	0	0%	4	
Unidad 4	4	11%	1	3%	0	0%	5	
Unidad 5	0	0%	2	6%	0	0%	2	
Unidad 6	0	0%	1	3%	0	0%	1	
Unidad 9	0	0%	1	3%	0	0%	1	
Unidad 10	0	0%	2	6%	0	0%	2	
Unidad 16	21	57%	8	22%	0	0%	29	
Unidad 17	0	0%	1	3%	0	0%	1	
Unidad 18	0	0%	1	3%	0	0%	1	
Unidad 19	10	27%	0	0%	0	0%	10	
Unidad 21	0	0%	1	3%	0	0%	1	
Unidad 22	0	0%	2	6%	0	0%	2	
Unidad 25	0	0%	4	11%	0	0%	4	
Unidad 26	0	0%	3	8%	0	0%	3	
Unidad 28	0	0%	7	19%	0	0%	7	
Total	37	100%	36	100%	1	100%	74	

Reason for not receiving hypothermia*		%
<2K or <35 weeks' gestation	9	28%
Extreme conditions	2	6%
Intracranial trauma	1	3%
Mild encephalopathy	10	31%
Unit Policy	1	3%
Delayed transfer	1	2%
Unknown	5	16%
Total	32	

(\*Many cases with more than one reason)

Hypothermia Characteristics			
Method	Selective Head	2	5.4%
	Whole body cooling	35	94.5%
Characteristics of neonates who received hypothermia			
Temperatura			
Target temperature	<33°C	1	2.7%
	33-34°C	29	78.4%
	33.5-34.5°C	7	18.6%
	34-35°C	0	0%
	34.5-35.5°C	0	0%
	Unknown	0	0%
Other Characteristics			
Seizures at onset	7/37*		18.9%
Seizures upon completion	7/25**		28.0%
Hypotension	8/34***		23.5%
Thrombocytopenia	5/34***		14.7%
Coagulopathy	6/34***		18%
Persistent metabolic acidosis	2/34***		5.9%
Death	3/37*		8.1%

\*Initial seizures and death of patients receiving hypothermia. Seizures were counted without evidence on EEG or any other method except clinical.

\*\*The seizures at the end are calculated on the total who underwent some form of EEG or amplitude-integrated Brain Function.

\*\*\*On the total number of patients with data (three cases did not indicate if they presented complications).

## **G. CONCLUSIONS**

The data and the differences found from our units can be used to establish changes in management that will substantially improve the quality of care of newborns. Additionally, research can be carried out to analyze different risk factors and their outcomes. It can also be used by the community as a form of comparison to establish managements.



## References

1. Firth D. (1993). Bias reduction of maximum likelihood estimates. *Biometrika* 80, 27–38  
[10.1093/biomet/80.1.27](https://doi.org/10.1093/biomet/80.1.27).