

Rapport d'activité du Collège de médecins pour la mère et le nouveau-né
(section néonatalogie)
Année 2010 et perspectives 2011-2012

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1. Le site web: Newborn College

Le collège a effectué un travail important pour la nouvelle application web de la récolte des données. En effet fin 2009 il a été décidé de ne plus travailler avec la firme Orbid pour le développement mais de confier celui-ci à Monsieur C. Nguyenba du CHU Saint-Pierre. L'application web permet un enregistrement on line ou un import à partir de fichiers existants. Tous les items du Nicaudit et de Euroneonet sont inclus dans l'enregistrement. Le benchmarking, l'analyse des tendances et les rapports peuvent être créés par les utilisateurs. Toutes les données enregistrées au cours des années précédentes ont été récupérées sur le site. A titre d'exemple 2 rapports cumulatifs sont joints en annexes comparants les années 2004-2006 à 2007-2009 (Annual report). Des contacts avec Euroneonet sont en cours pour l'export vers le benchmarking européen.

2. Le flux des données

L'encodage des données constitue un problème récurrent en médecine périnatale. Afin de permettre un enregistrement plus fiable et non redondant différentes démarches ont été effectuées envers les autres plateformes électroniques eHealth et eBirth. Un document reprenant tous les aspects des flux des données a été envoyé à tous les chefs de service Nic et est joint en annexe (Dataflow Nic). L'intégration des données obligatoires de la déclaration de naissance électronique eBirth dans le site Newborn College fait l'objet d'une collaboration avec la firme HealthConnect et devrait pouvoir être financé de manière complémentaire.

3. Le projet qualité autour des infections nosocomiales: NeoKiss

La mission des collèges porte sur un enregistrement ayant pour résultat une amélioration de la qualité des soins. Les infections nosocomiales ont un impact considérable sur la morbidité et la mortalité en néonatalogie. L'année 2011 sera consacrée à la mise en route d'un outil de surveillance et de feedback de ces infections. Un projet similaire a été initié en 1999 en Allemagne (NeoKiss). La réduction significative des infections a rendu l'enregistrement

obligatoire. Un groupe de travail en collaboration avec l'Institut de Santé Publique et la "Belgian Infection Control Society" a été mis en place pour piloter le projet.

4. L'enregistrement des données de follow-up

Un financement du follow-up par l'INAMI a été accordé. Ce financement fait l'objet d'une réflexion quant aux modalités pratiques. Il est probable que le financement sera lié à un enregistrement minimal. Le Collège confirme sa volonté d'assurer l'enregistrement d'un "minimal dataset" en concordance avec les items de la base Euroneonet et en collaboration avec le groupe de travail de la Société Scientifique GBN-BVN.

5. Contrat de Collaboration avec C.Nguyenba pour le site web

La reprise du site web par le service informatique du CHU Saint-Pierre est une étape transitoire. L'extension de l'application nécessite une structuration de la collaboration informatique. Les modalités de collaboration sont reprises en annexe.

Annexes:

Annual reports 2004-2006 et 2007-2009

Dataflow NIC (FR et NL)

Newborn College website characteristics

GBN/BVN

Groupement Belge de Néonatalogie

Belgische Vereniging voor Neonatalogie



Newborn College

Cumulative Report

from 2004 to 2006

ALL NICS

<1500g

**Cumulative Report
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**Cumulative Report
Abbreviations**

Abbreviations

- AT Antenatal transfer
- BPD Bronchopulmonary dysplasia
- CLD Chronic lung disease
- ENM Early neonatal mortality
- GA Gestational age
- IB Inborn
- IC Intracerebral hemorrhage
- IHM In hospital mortality
- IUT Intra uterine transfer
- LNM Late neonatal mortality
- N Number
- OB Outborn
- PC25 25th percentile or lower quartile
- PC75 75th percentile or upper quartile
- PDA Persistent ductus arteriosus
- PMA postmenstrual age

Remarks

ATTENTION ! Until 2008 (included) the database selects only patients < 1500g when comparisons or globalisations among Nic's are made. Starting in 2009 all baby's <1500g or < 32 w are included. Only in the annual report of your own Nic you can select according gestational age even before 2009 if you had entered all your patients.

Occurrences:

Some items allow multiple entry and will be counted as occurrences. Occurrences can be patients or events, treatments etc. Percentages can be calculated according to events or to patients. Sometimes the sum of the percentages can exceed 100.

Definitions

IC hemorrhage grade >2 includes:

- Focal periventricular hemorrhagic infarction
- Intraventricular hemorrhage with dilatation
- Cerebellar hemorrhage
- Subarachnoidal hemorrhage
- Thalamoventricular hemorrhage
- Lobar cerebral hemorrhage
- Extensive periventricular hemorrhagic infarction
- Sub- or epidural hemorrhage

CLD at 36 weeks

Starting 2009 definitions have changed. In order not to loose the previous information following (imperfect) equivalence have been used:

	before 2009	after 2009
No BPD	No BPD	No BPD
Mild BPD	No O2 but Cpap	Grade I
Moderate/severe	O2 at 36w or art ventilation	Grade II/III



**Cumulative Report
Partipating NIC units**

Partipating NIC units

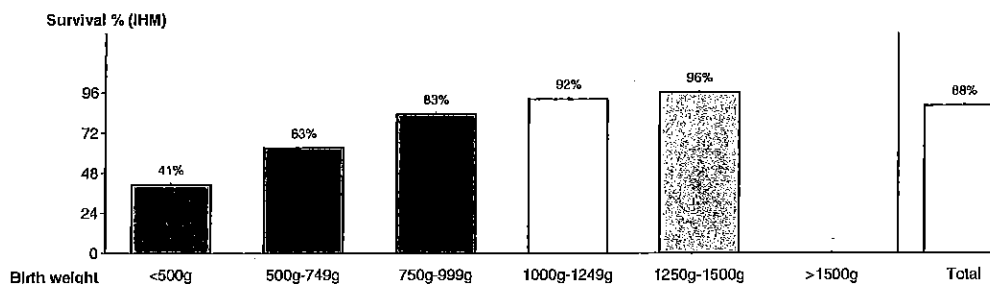
Year	Number of NIC units
2002	5
2003	7
2004	17
2005	18
2006	16
2007	16
2008	12
2009	14
2010	13



Cumulative Report
1. Survival and birth weight

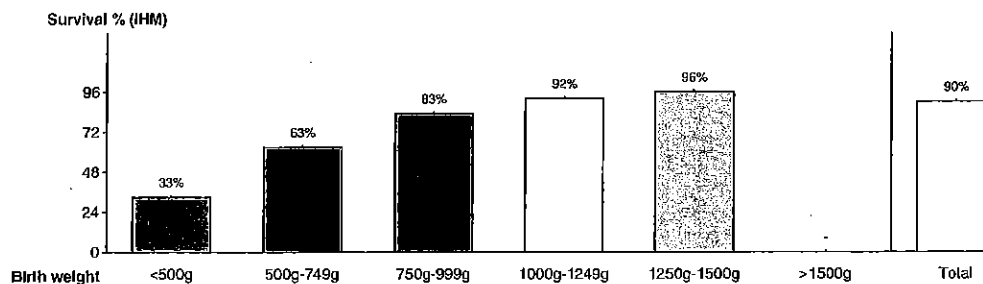
1.A. All patients

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Less than 500g	22	7	68	6	73	13	41	.8	22/2893
Between 500g and 749g	293	80	73	27	91	63	10.1	293/2893	
Between 750g and 999g	630	68	89	41	93	109	83	21.8	630/2893
Between 1000g and 1249g	725	35	95	21	97	56	92	25.1	725/2893
Between 1250g and 1500g	1223	32	97	19	98	51	96	42.3	1223/2893
Greater than 1500g	-	-	-	-	-	-	-	-	-
Total	2893	222	92	114	96	336	88	100	2893/2893



1.B. Inborn: local and AT/IUT

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Less than 500g	18	7	61	5	72	12	33	.6	18/2893
Between 500g and 749g	252	66	74	27	89	93	63	8.7	252/2893
Between 750g and 999g	549	63	89	31	94	94	83	19.0	549/2893
Between 1000g and 1249g	597	27	95	18	97	45	92	20.6	597/2893
Between 1250g and 1500g	987	26	97	12	99	38	96	34.1	987/2893
Greater than 1500g	-	-	-	-	-	-	-	-	-
Total	2403	189	93	93	97	282	90	83.1	2403/2893

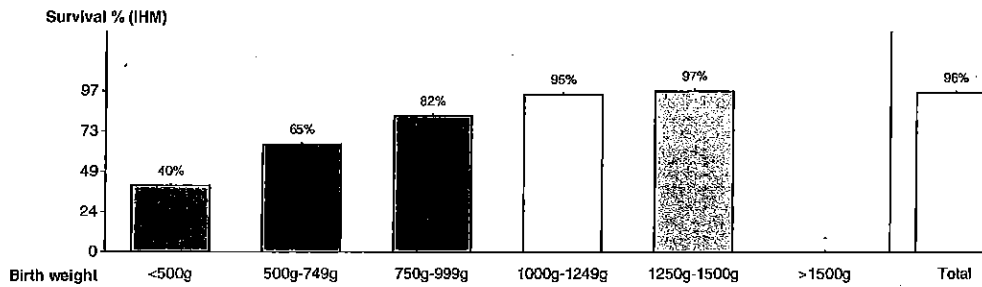




Cumulative Report
1. Survival and birth weight

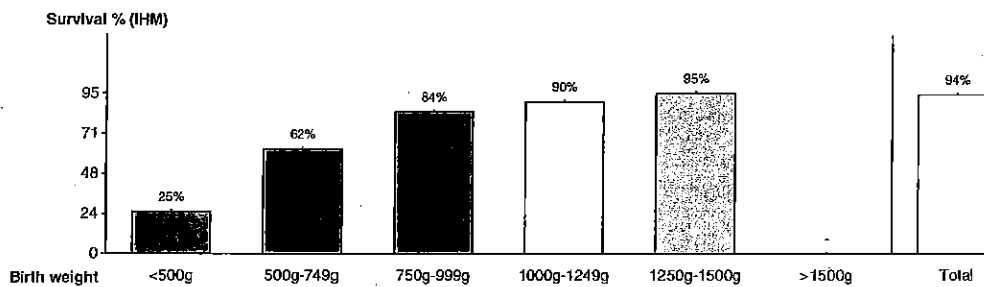
1.C. Inborn: local

Birthweight (g)	N	ENM survival %	ENM survival %	ENM survival %	IHM survival %	IHM survival %	% of total
Less than 500g	10	3	70	3	70	6	40
Between 500g and 749g	106	27	75	10	91	37	65
Between 750g and 999g	233	26	89	16	93	42	82
Between 1000g and 1249g	284	8	97	5	98	13	95
Between 1250g and 1500g	495	10	98	5	99	15	97
Greater than 1500g	-	-	-	-	-	-	-
Total	1128	74	97	39	99	113	96



1.D. Inborn: AT/IUT

Birthweight (g)	N	ENM survival %	ENM survival %	ENM survival %	IHM survival %	IHM survival %	% of total
Less than 500g	8	4	50	2	75	6	25
Between 500g and 749g	146	39	73	17	88	56	62
Between 750g and 999g	316	37	88	15	95	52	84
Between 1000g and 1249g	313	19	94	13	96	32	90
Between 1250g and 1500g	492	16	97	7	99	23	95
Greater than 1500g	-	-	-	-	-	-	-
Total	1275	115	96	54	98	169	94

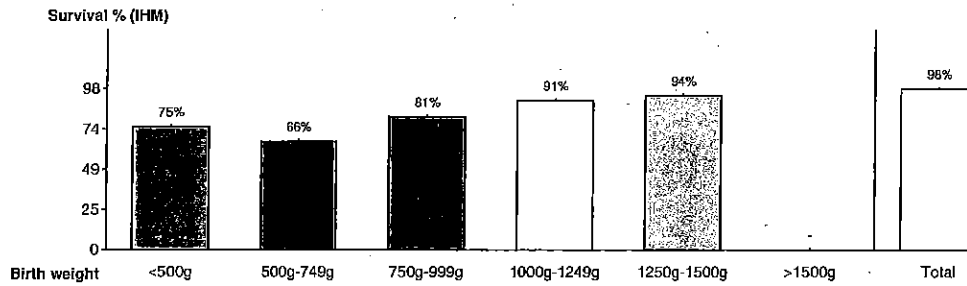




Cumulative Report
1. Survival and birth weight

1.E. Outborn

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total
Less than 500g	4	0	100	75	.1 4/2893
Between 500g and 749g	41	14	66	100	1.4 41/2893
Between 750g and 999g	81	5	94	10	88 15 81 2.8 81/2893
Between 1000g and 1249g	128	8	94	3	98 11 91 4.4 128/2893
Between 1250g and 1500g	236	6	97	7	97 13 94 8.2 236/2893
Greater than 1500g	-	-	-	-	-
Total	490	33	99	21	99 54 98 16.9 490/2893

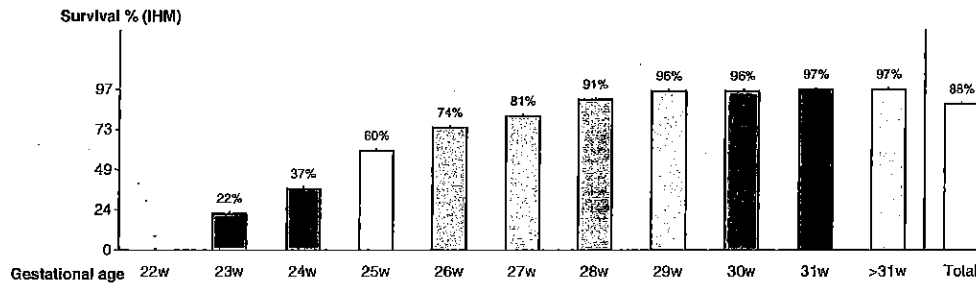




Cumulative Report
2. Survival and gestational age

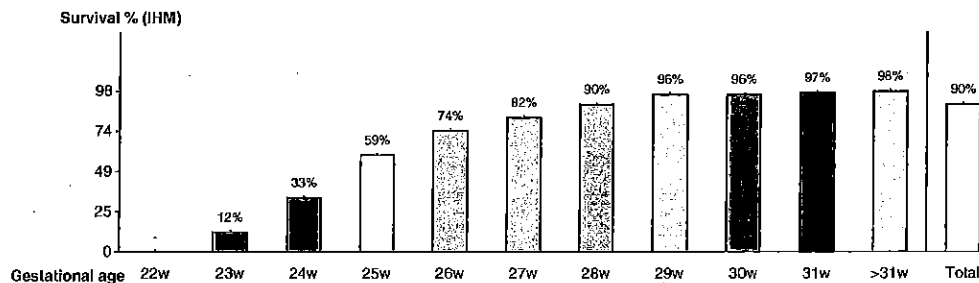
2.A. All patients

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total				
22 weeks	-	-	-	-	-				
23 weeks	9	6	33	1	89	7	22	.3	9/2893
24 weeks	67	33	51	9	87	42	37	2.3	67/2893
25 weeks	157	44	72	19	88	63	60	5.4	157/2893
26 weeks	265	44	83	24	91	68	74	9.2	265/2893
27 weeks	321	34	89	26	92	60	81	11.1	321/2893
28 weeks	403	22	95	16	96	38	91	13.9	403/2893
29 weeks	391	9	98	5	99	14	96	13.5	391/2893
30 weeks	446	16	96	4	99	20	96	15.4	446/2893
31 weeks	315	6	98	4	99	10	97	10.9	315/2893
Greater than 31 weeks	519	8	98	6	99	14	97	17.9	519/2893
Total	2893	222	92	114	96	336	88	100	2893/2893



2.B. Inborn: local and AT/IUT

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total				
22 weeks	-	-	-	-	-				
23 weeks	8	6	25	1	87	7	12	.3	8/2893
24 weeks	51	25	51	9	82	34	33	1.8	51/2893
25 weeks	139	40	71	17	88	57	59	4.8	139/2893
26 weeks	218	38	83	19	91	57	74	7.5	218/2893
27 weeks	273	29	89	21	92	50	82	9.4	273/2893
28 weeks	339	19	94	14	96	33	90	11.7	339/2893
29 weeks	313	7	98	4	99	11	96	10.8	313/2893
30 weeks	367	13	96	3	99	16	96	12.7	367/2893
31 weeks	269	5	98	2	99	7	97	9.3	269/2893
Greater than 31 weeks	426	7	98	3	99	10	98	14.7	426/2893
Total	2403	189	93	93	97	282	90	83.1	2403/2893

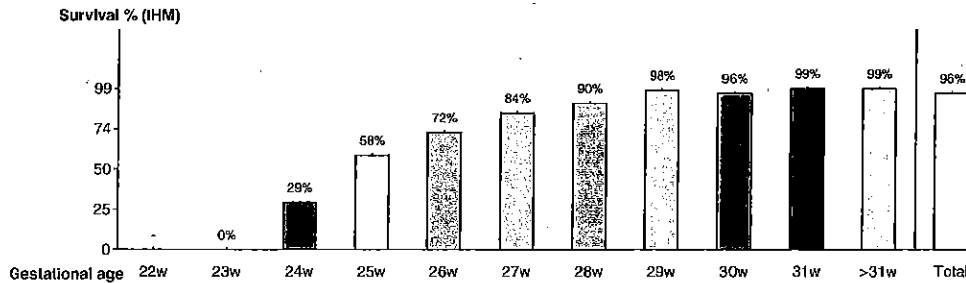




Cumulative Report
2. Survival and gestational age

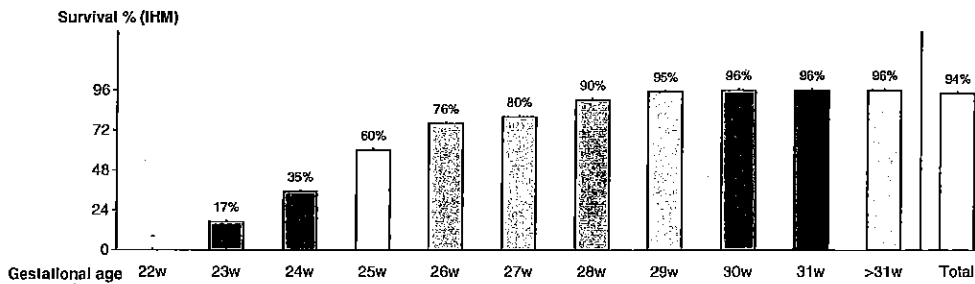
2.C. Inborn: local

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total				
22 weeks	-	-	-	-	-				
23 weeks	2	0	0	100	2/2893				
24 weeks	17	8	53	76	12	29	.6	17/2893	
25 weeks	52	14	73	85	22	58	1.8	52/2893	
26 weeks	102	20	80	91	29	72	3.5	102/2893	
27 weeks	129	14	89	95	21	84	4.5	129/2893	
28 weeks	144	8	94	96	14	90	5.0	144/2893	
29 weeks	132	1	99	99	2	98	4.6	132/2893	
30 weeks	187	5	97	98	8	96	6.5	187/2893	
31 weeks	129	0	100	99	1	99	4.5	129/2893	
Greater than 31 weeks	234	2	99	0	100	2	99	8.1	234/2893
Total	1128	74	97	39	99	113	96	39	1128/2893



2.D. Inborn: AT/IUT

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total				
22 weeks	-	-	-	-	-				
23 weeks	6	4	33	1	83	5	17	.2	6/2893
24 weeks	34	17	50	5	85	22	35	1.2	34/2893
25 weeks	87	26	70	9	90	35	60	3.0	87/2893
26 weeks	116	18	84	10	91	28	76	4.0	116/2893
27 weeks	144	15	90	14	90	29	80	5.0	144/2893
28 weeks	195	11	94	8	96	19	90	6.7	195/2893
29 weeks	181	6	97	3	98	9	95	6.3	181/2893
30 weeks	180	8	96	0	100	8	96	6.2	180/2893
31 weeks	140	5	96	1	99	6	96	4.8	140/2893
Greater than 31 weeks	192	5	97	3	98	8	96	6.6	192/2893
Total	1275	115	96	54	98	169	94	44.1	1275/2893

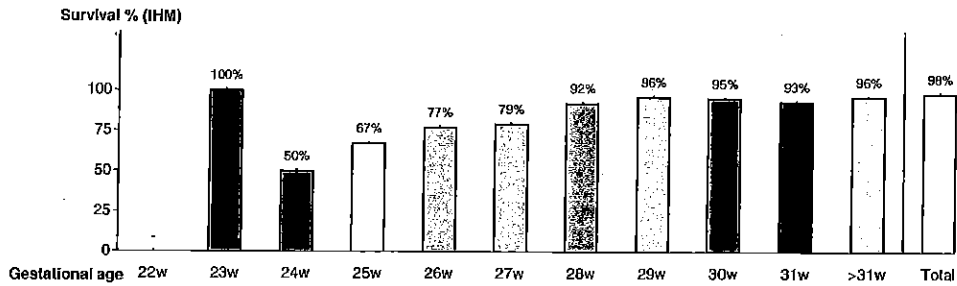




Cumulative Report
2. Survival and gestational age

2.E. Outborn

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total				
22 weeks	-	-	-	-	-				
23 weeks	1	0	100	0	100	0	1/2893		
24 weeks	16	8	50	0	100	8	50	.6	16/2893
25 weeks	18	4	78	2	89	6	67	.6	18/2893
26 weeks	47	6	87	5	89	11	77	1.6	47/2893
27 weeks	48	5	90	5	90	10	79	1.7	48/2893
28 weeks	64	3	95	2	97	5	92	2.2	64/2893
29 weeks	78	2	97	1	99	3	96	2.7	78/2893
30 weeks	79	3	96	1	99	4	95	2.7	79/2893
31 weeks	46	1	98	2	96	3	93	1.6	46/2893
Greater than 31 weeks	93	1	99	3	97	4	96	3.2	93/2893
Total	490	33	99	21	99	54	98	16.9	490/2893



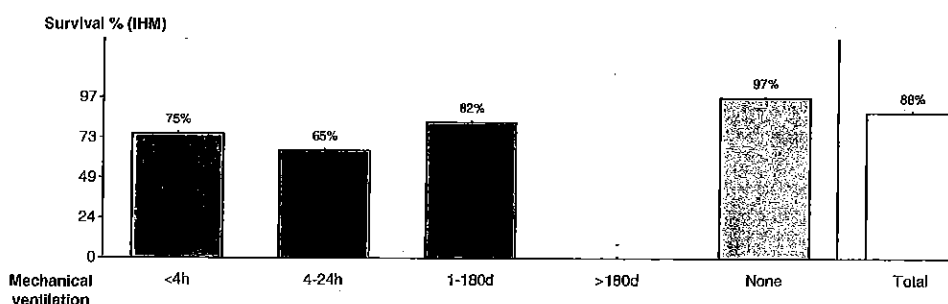


Cumulative Report
3. Caring activities in the NIC unit

3.A. Respiratory support

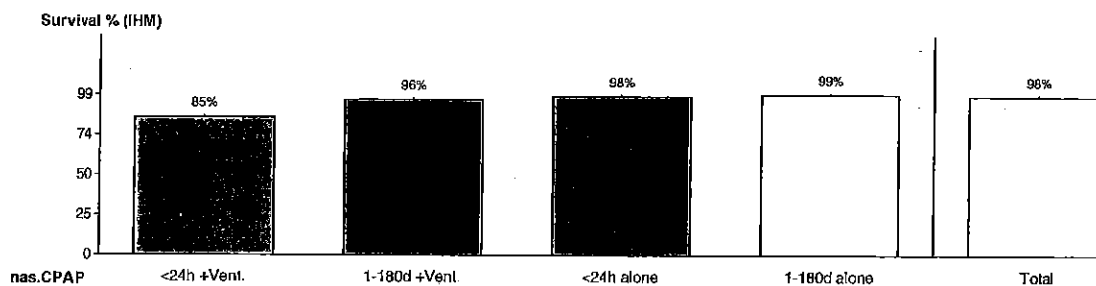
3.A.1. Mechanical ventilation

Mechanical ventilation	N	ENM survival %	LNM survival %	IHM survival %	% of total				
< 4 hours	32	8	75	0	100	8	75	1.1	32/2893
4-24 hours	91	29	68	3	97	32	65	3.1	91/2893
1-180 days	1419	149	89	103	93	252	82	49.0	1419/2893
> 180 days	-	-	-	-	-	-	-	-	-
None	1351	36	97	8	99	44	97	46.7	1351/2893
Total	2893	222	92	114	96	336	88	100	2893/2893



3.A.2. Nasal CPAP

Nasal CPAP	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Nasal CPAP (<24 hours) and ventilation	46	6	87	1	98	7	85	1.6	46/2893
Nasal CPAP (1-180 days) and ventilation	978	11	99	24	98	35	96	33.8	978/2893
Nasal CPAP (<24 hours) alone	60	1	98	0	100	1	98	2.1	60/2893
Nasal CPAP (1-180 days) alone	621	2	100	2	100	4	99	21.5	621/2893
Total	1705	20	99	27	99	47	98	58.9	1705/2893



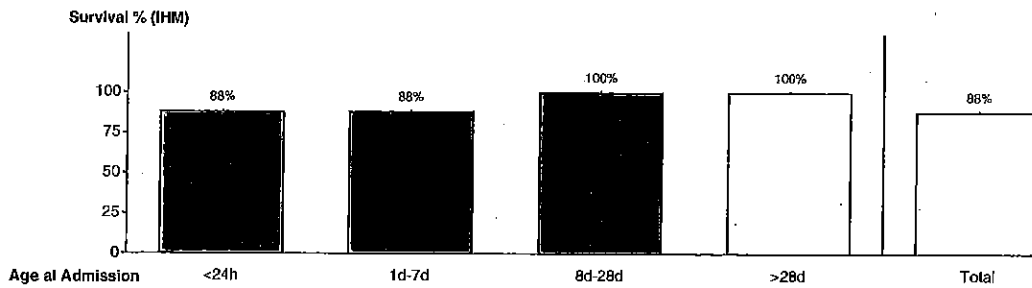


Cumulative Report
3. Caring activities in the NIC unit

3.B. Age at the time of admission

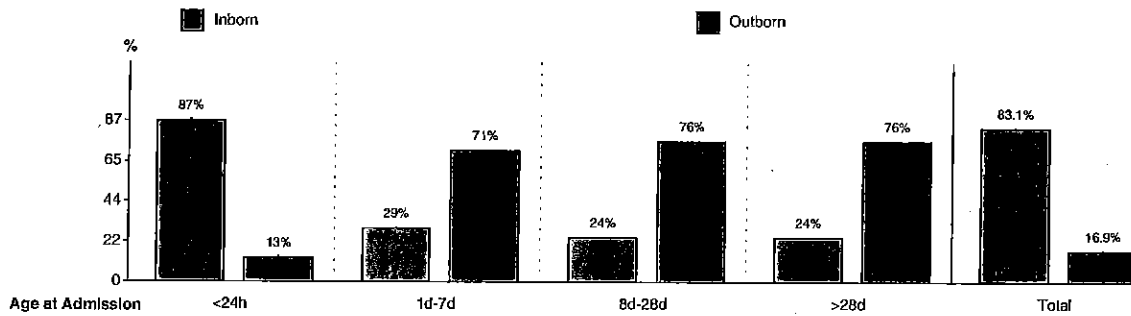
3.B.1. Age at the time of admission and survival

Age at admission	N	ENM survival %	LNМ survival %	IHM survival %	% of total
Less than 24h	2692	220 92	108 96	328 88	93.1 2692/2893
Between 1 day and 7 days	69	2 97	6 91	8 88	2.4 69/2893
Between 8 days and 28 days	45	0 100	0 100	0 100	1.6 45/2893
Greater than 28 days	87	0 100	0 100	0 100	3.0 87/2893
Total	2893	222 92	114 96	336 88	100 2893/2893



3.B.2. Age at the time of admission and origin

Age at admission	N	Inborn				Outborn				% of total
		N	%	% of IB	N	%	% of OB			
Less than 24h	2692	2351	87	98	2351/2403	341	13	70	341/490	93.1 2692/2893
Between 1 day and 7 days	69	20	29	1	20/2403	49	71	10	49/490	2.4 69/2893
Between 8 days and 28 days	45	11	24	0	11/2403	34	76	7	34/490	1.6 45/2893
Greater than 28 days	87	21	24	1	21/2403	66	76	13	66/490	3 87/2893
Total	2893	2403	83.1	100.0	2403/2403	490	16.9	100.0	490/490	100.0 2893/2893



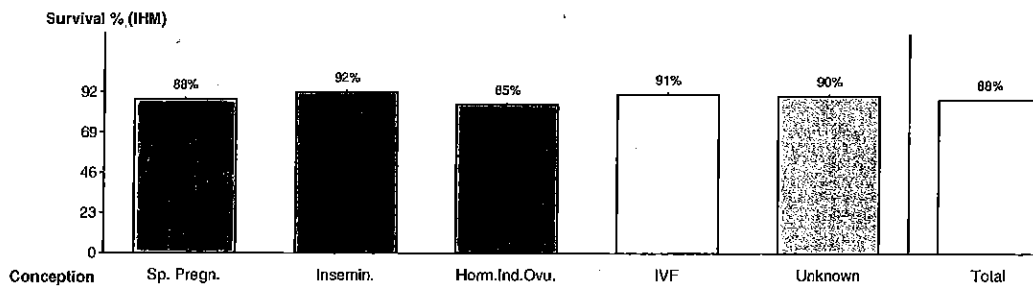


Cumulative Report
3. Caring activities in the NIC unit

3.C. Conception

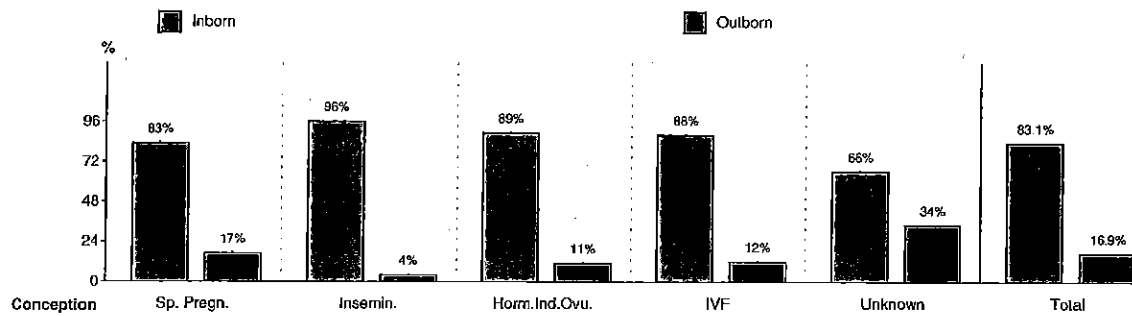
3.C.1. Conception and survival

Conception	N	ENM survival %	ENM	LNMs survival %	LNMs	IHM survival %	IHM	% of total	Total
Spontaneous pregnancy	2342	178	92	98	96	276	88	81.0	2342/2893
Insemination	26	1	96	1	96	2	92	.9	26/2893
Hormonal induction of ovulation	136	16	88	5	96	21	85	4.7	136/2893
In vitro fertilisation	261	20	92	4	98	24	91	9.0	261/2893
Unknown	128	7	95	6	95	13	90	4.4	128/2893
Total	2893	222	92	114	96	336	88	100	2893/2893



3.C.2. Conception and origin

Conception	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Spontaneous pregnancy	2342	1942	83	81	1942/2403	400	17	82	400/490	81	2342/2893
Insemination	26	25	96	1	25/2403	1	4	0	1/490	.9	26/2893
Hormonal induction of ovulation	136	121	89	5	121/2403	15	11	3	15/490	4.7	136/2893
In vitro fertilisation	261	230	88	10	230/2403	31	12	6	31/490	9	261/2893
Unknown	128	85	66	4	85/2403	43	34	9	43/490	4.4	128/2893
Total	2893	2403	83.1	100.0	2403/2403	490	16.9	100.0	490/490	100.0	2893/2893



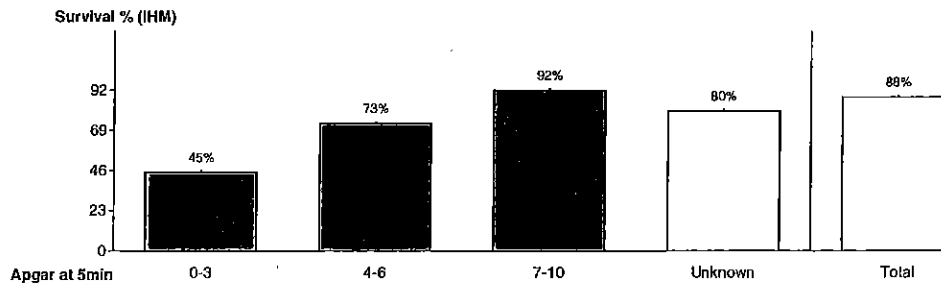


Cumulative Report
3. Caring activities in the NIC unit

3.D. Apgar score at 5 minutes

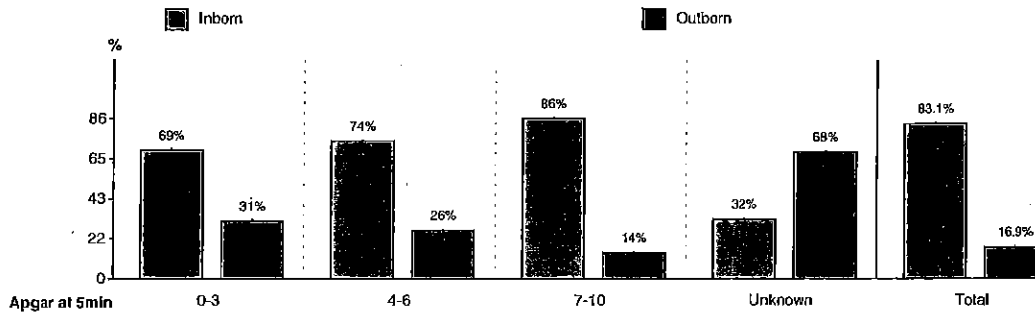
3.D.1. Apgar score at 5 minutes and survival

Apgar score at 5 min	N	ENM survival %	ENM survival %	LNM survival %	LNM survival %	IHM survival %	IHM survival %	% of total	% of total
Apgar (at 5min) 0-3	101	52	49	4	96	56	45	3.5	101/2893
Apgar (at 5min) 4-6	303	56	82	26	91	82	73	10.5	303/2893
Apgar (at 5min) 7-10	2445	109	96	80	97	189	92	84.5	2445/2893
Unknown	44	5	89	4	91	9	80	1.5	44/2893
Total	2893	222	92	114	96	336	88	100	2893/2893



3.D.2. Apgar score at 5 minutes and origin

Apgar score at 5 min	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Apgar (at 5min) 0-3	101	70	69	3	70/2403	31	31	6	31/490	3.5	101/2893
Apgar (at 5min) 4-6	303	224	74	9	224/2403	79	26	16	79/490	10.5	303/2893
Apgar (at 5min) 7-10	2445	2095	86	87	2095/2403	350	14	71	350/490	84.5	2445/2893
Unknown	44	14	32	1	14/2403	30	68	6	30/490	1.5	44/2893
Total	2893	2403	83.1	100.0	2403/2403	490	16.9	100.0	490/490	100.0	2893/2893



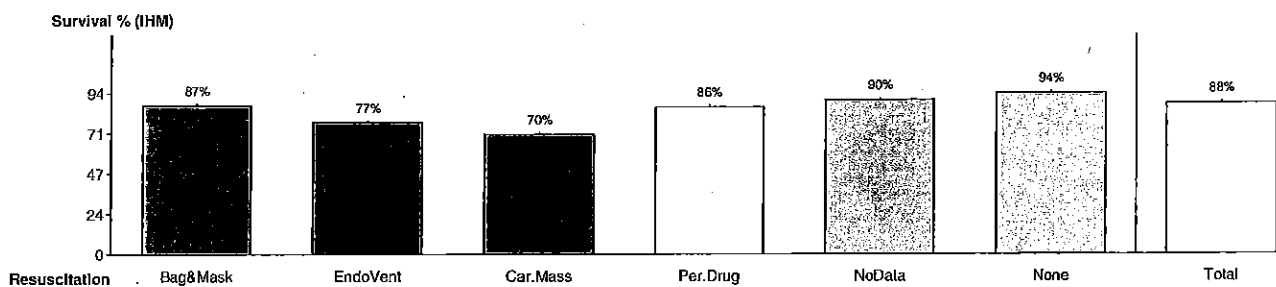


Cumulative Report
3. Caring activities in the NIC unit

3.E. Neonatal resuscitation

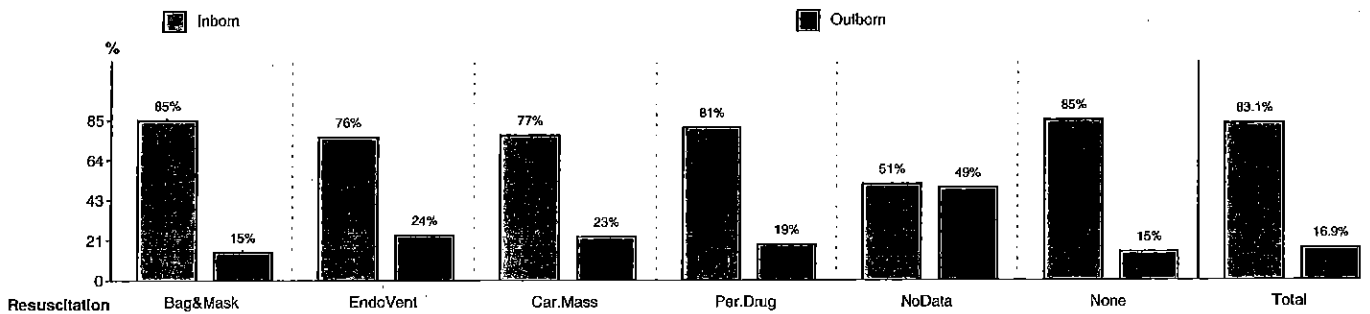
3.E.1. Neonatal resuscitation and survival

Resuscitation	N	ENM survival %	ENM	ENM survival %	LNM survival %	IHM survival %	IHM	IHM survival %	% of total
Bag and Mask	1271	111	91	56	96	167	87	43.9	1271/2893
Endotracheal ventilation	929	147	84	65	93	212	77	32.1	929/2893
Cardiacmassage	74	14	81	8	89	22	70	2.6	74/2893
Perfusion and/or drugs	634	70	89	21	97	91	86	21.9	634/2893
No data	39	3	92	1	97	4	90	1.3	39/2893
None	1065	47	96	22	98	69	94	36.8	1065/2893
Total (Nb of occurrences-Nb of patients)	4012-2893	392-222	92	173-114	96	565-336	88	100.0	2893/2893



3.E.2. Neonatal resuscitation and origin

Resuscitation	N	Inborn			Outborn			% of total			
		N	%	% of IB	N	%	% of OB				
Bag and Mask	1271	1078	85	45	1078/2403	193	15	39	193/490	43.9	1271/2893
Endotracheal ventilation	929	710	76	30	710/2403	219	24	45	219/490	32.1	929/2893
Cardiacmassage	74	57	77	2	57/2403	17	23	3	17/490	2.6	74/2893
Perfusion and/or drugs	634	515	81	21	515/2403	119	19	24	119/490	21.9	634/2893
No data	39	20	51	1	20/2403	19	49	4	19/490	1.3	39/2893
None	1065	900	85	37	900/2403	165	15	34	165/490	36.8	1065/2893
Total (Nb of occurrences-Nb of patients)	4012-2893	3280-2403	83.1	100.0	2403/2403	732-490	16.9	100.0	490/490	100.0	2893/2893



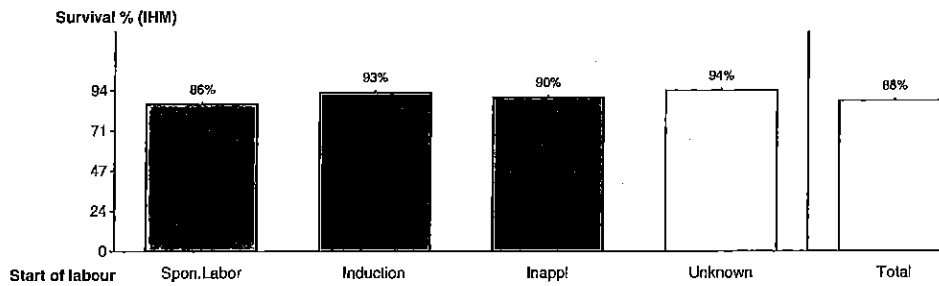


Cumulative Report
3. Caring activities in the NIC unit

3.F. Start of labour

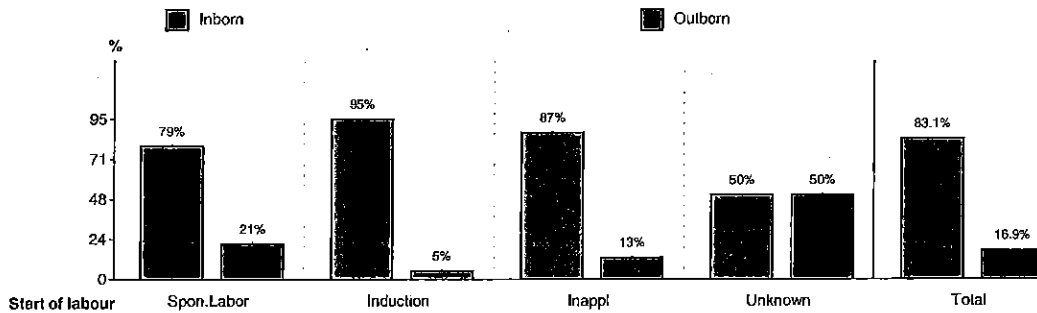
3.F.1. Start of labour and survival

Start of labour	N	ENM survival %	ENM survival %	LNM survival %	LNM survival %	IHM survival %	IHM survival %	% of total	% of total
Spontaneous labour	1634	150	91	71	96	221	86	56.5	1634/2893
Induction	215	7	97	7	97	14	93	7.4	215/2893
Inapplicable	1012	64	94	35	97	99	90	35.0	1012/2893
Unknown	32	1	97	1	97	2	94	1.1	32/2893
Total	2893	222	92	114	96	336	88	100	2893/2893



3.F.2. Start of labour and origin

Start of labour	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Spontaneous labour	1634	1298	79	54	1298/2403	336	21	69	336/490	56.5	1634/2893
Induction	215	204	95	8	204/2403	11	5	2	11/490	7.4	215/2893
Inapplicable	1012	885	87	37	885/2403	127	13	26	127/490	35	1012/2893
Unknown	32	16	50	1	16/2403	16	50	3	16/490	1.1	32/2893
Total	2893	2403	83.1	100.0	2403/2403	490	16.9	100.0	490/490	100.0	2893/2893



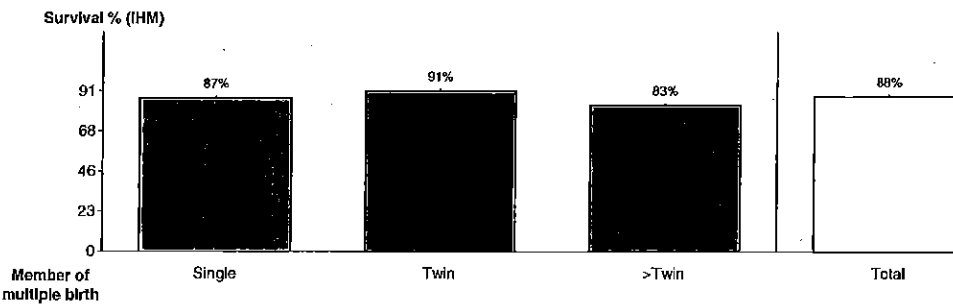


Cumulative Report
3. Caring activities in the NIC unit

3.G. Multiple pregnancy

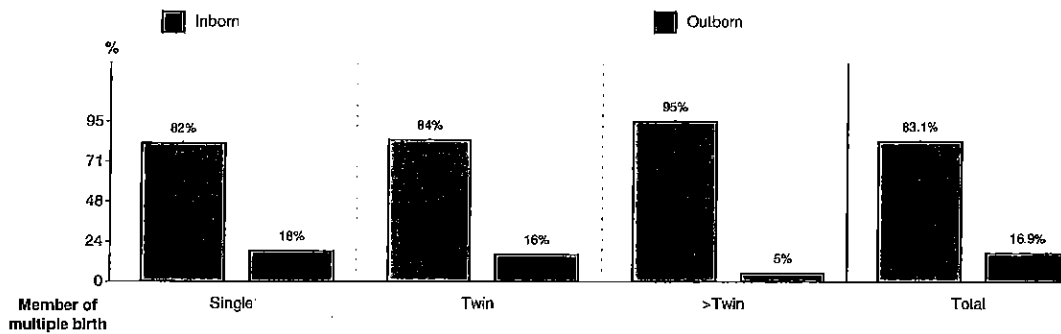
3.G.1. Multiple pregnancy and survival

Member of multiple birth	N	ENM survival %	LNM survival %	IHM survival %	% of total
Single	1936	158 92	86 96	244 87	66.9 1936/2893
Twin	859	52 94	23 97	75 91	29.7 859/2893
More than twin	98	12 88	5 95	17 83	3.4 98/2893
Total	2893	222 92	114 96	336 88	100 2893/2893



3.G.2. Multiple pregnancy and origin

Member of multiple birth	N	Inborn				Outborn				% of total
		N	%	% of IB	N	%	% of OB			
Single	1936	1585	82	66 1585/2403	351	18	72 351/490	66.9 1936/2893		
Twin	859	725	84	30 725/2403	134	16	27 134/490	29.7 859/2893		
More than twin	98	93	95	4 93/2403	5	5	1 5/490	3.4 98/2893		
Total	2893	2403	83.1	100.0 2403/2403	490	16.9	100.0 490/490	100.0 2893/2893		

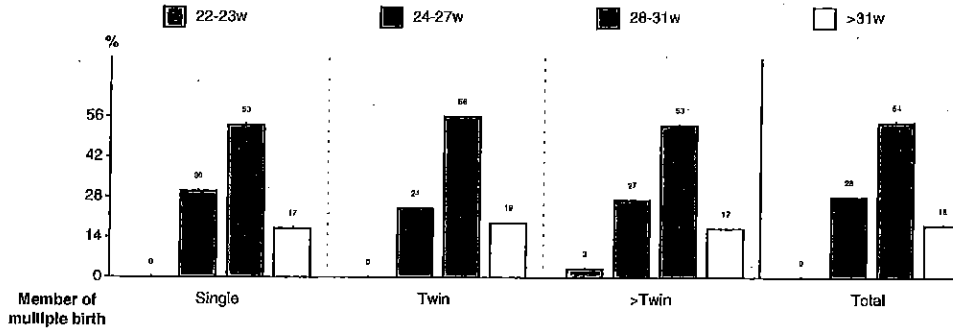




Cumulative Report
3. Caring activities in the NIC unit

3.G.3. Multiple pregnancy and GA

Member of multiple birth	N	22-23w %	24-27w %	28-31w %	>31w %	% of popul.
Single	1936	6 0	575 30	1019 53	336 17	66.9 1936/2893
Twin	859	0 0	209 24	484 56	166 19	29.7 859/2893
More than twin	98	3 3	26 27	52 53	17 17	3.4 98/2893
Total	2893	9 0	810 28	1555 54	519 18	100.0 2893/2893





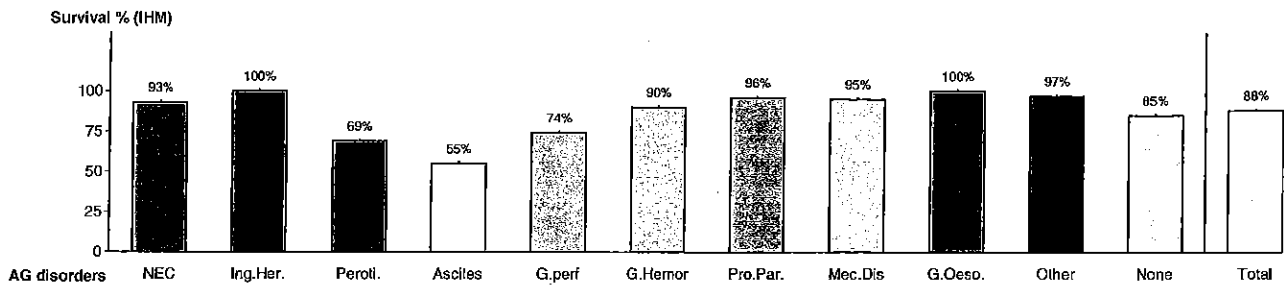
Cumulative Report
3. Caring activities in the NIC unit

3.H. Neonatal diseases

3.H.1. Acquired gastrointestinal disorders

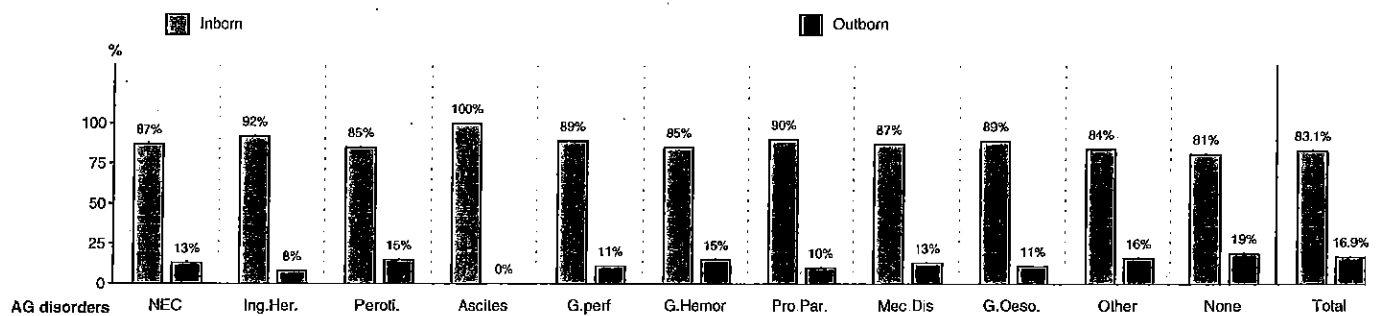
3.H.1.a. Acquired gastrointestinal disorders and survival

Acquired gastrointestinal disorders	N	ENM survival %	LNM survival %	IHM survival %	% of total		
Necrotising enterocolitis	165	0	100	12	93	5.7	165/2893
Inguinal herniation	95	0	100	0	100	3.3	95/2893
Peritonitis	13	0	100	4	69	.4	13/2893
Ascites	11	1	91	4	64	.4	11/2893
Gastrointestinal perforation	62	3	95	13	79	2.1	62/2893
Gastrointestinal hemorrhage	52	3	94	2	96	1.8	52/2893
Prolonged paralytic ileus	90	0	100	4	96	3.1	90/2893
Meconium dis. preterm infant	92	1	99	4	96	3.2	92/2893
Gastro - oesophageal reflux	396	0	100	0	100	13.7	396/2893
Other	127	1	99	3	98	4.4	127/2893
None	2015	213	89	83	96	69.7	2015/2893
Total (Nb of occurrences-Nb of patients)	3118-2893	222-222	92	129-114	96	88	100.0 2893/2893



3.H.1.b. Acquired gastrointestinal disorders and origin

Acquired gastrointestinal disorders	N	Inborn		Outborn		% of total	
		N	%	N	%		
Necrotising enterocolitis	165	144	87	21	13	5.7	165/2893
Inguinal herniation	95	87	92	8	8	3.3	95/2893
Peritonitis	13	11	85	2	15	.4	13/2893
Ascites	11	11	100	0	0	.4	11/2893
Gastrointestinal perforation	62	55	89	7	11	2.1	62/2893
Gastrointestinal hemorrhage	52	44	85	8	15	1.8	52/2893
Prolonged paralytic ileus	90	81	90	9	10	3.1	90/2893
Meconium dis. preterm infant	92	80	87	12	13	3.2	92/2893
Gastro - oesophageal reflux	396	351	89	45	11	13.7	396/2893
Other	127	107	84	20	16	4.4	127/2893
None	2015	1635	81	380	19	69.7	2015/2893
Total (Nb of occurrences-Nb of patients)	3118-2893	2606-2403	83.1	512-490	16.9	100.0	2893/2893





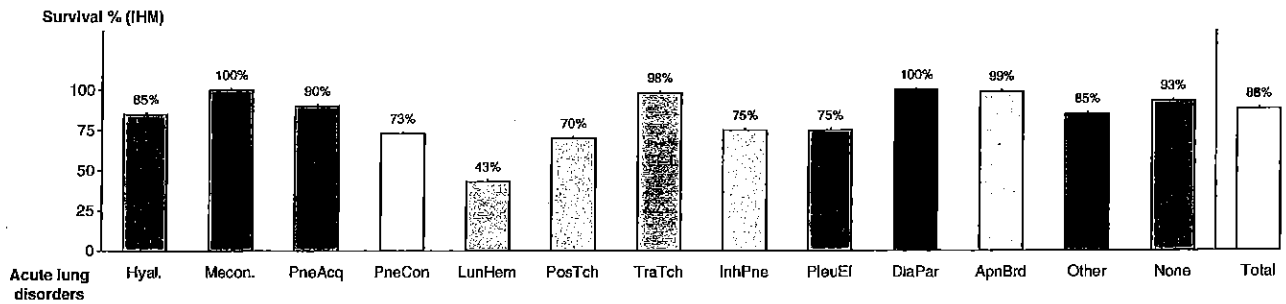
Cumulative Report
3. Caring activities in the NIC unit

3.H.2. Cardiorespiratory diseases

3.H.2.1. Acute lung disorders

3.H.2.1.a. Acute lung disorders and survival

Acute lung disorders	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Hyaline membrane disease	1783	175	90	96	95	271	85	61.6	1783/2893
Meconium aspiration syndrome	3	0	100	0	100	0	100	.1	3/2893
Pneumonia acquired	51	0	100	5	90	5	90	1.8	51/2893
Pneumonia congenital	51	13	75	1	98	14	73	1.8	51/2893
Lung hemorrhage	51	23	55	6	88	29	43	1.8	51/2893
Postasphyxial lungedema	10	2	80	1	90	3	70	.3	10/2893
Transient tachypnea	273	2	99	3	99	5	98	9.4	273/2893
Inhalation pneumonitis	4	0	100	1	75	1	75	.1	4/2893
Pleural effusions	16	2	87	2	87	4	75	.6	16/2893
Diaphragmatic paralysis/eventration	2	0	100	0	100	0	100	.1	2/2893
Apnea/bradycardia syndrome	689	0	100	8	99	8	99	23.8	689/2893
Other	54	6	89	2	96	8	85	1.9	54/2893
None	635	38	94	8	99	46	93	21.9	635/2893
Total (Nb of occurrences-Nb of patients)	3622-2893	261-222	92	133-114	96	394-336	88	100.0	2893/2893

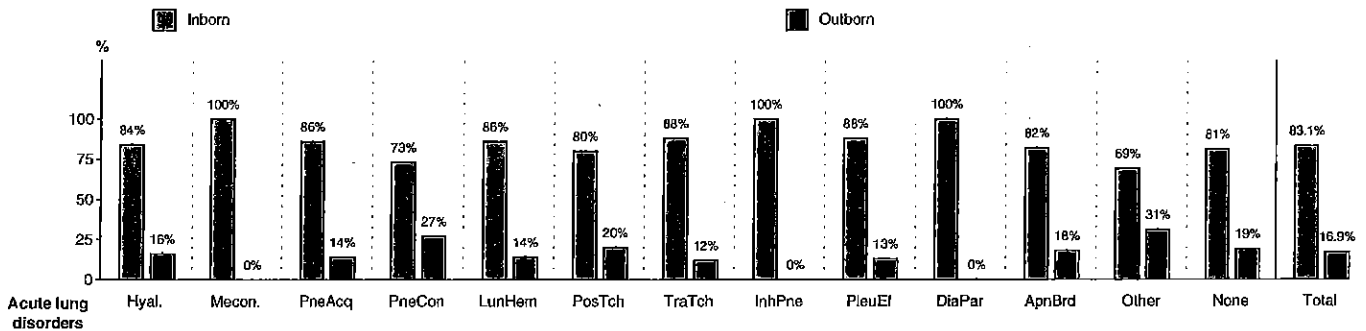




Cumulative Report
3. Caring activities in the NIC unit

3.H.2.1.b. Acute lung disorders and origin

Acute lung disorders	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Hyaline membrane disease	1783	1498	84	62	1498/2403	285	16	58	285/490	61.6	1783/2893
Meconium aspiration syndrome	3	3	100	0	3/2403	0	0	0	0/490	.1	3/2893
Pneumonia acquired	51	44	86	2	44/2403	7	14	1	7/490	1.8	51/2893
Pneumonia congenital	51	37	73	2	37/2403	14	27	3	14/490	1.8	51/2893
Lung hemorrhage	51	44	86	2	44/2403	7	14	1	7/490	1.8	51/2893
Postasphyxial lungedema	10	8	80	0	8/2403	2	20	0	2/490	.3	10/2893
Transient tachypnea	273	240	88	10	240/2403	33	12	7	33/490	9.4	273/2893
Inhalation pneumonitis	4	4	100	0	4/2403	0	0	0	0/490	.1	4/2893
Pleural effusions	16	14	88	1	14/2403	2	13	0	2/490	.6	16/2893
Diaphragmatic paralysis/eventration	2	2	100	0	2/2403	0	0	0	0/490	.1	2/2893
Apnea/bradycardia syndrome	689	567	82	24	567/2403	122	18	25	122/490	23.8	689/2893
Other	54	37	69	2	37/2403	17	31	3	17/490	1.9	54/2893
None	635	515	81	21	515/2403	120	19	24	120/490	21.9	635/2893
Total (Nb of occurrences-Nb of patients)	3622-2893	3013-2403	83.1	100.0	2403/2403	609-490	16.9	100.0	490/490	100.0	2893/2893



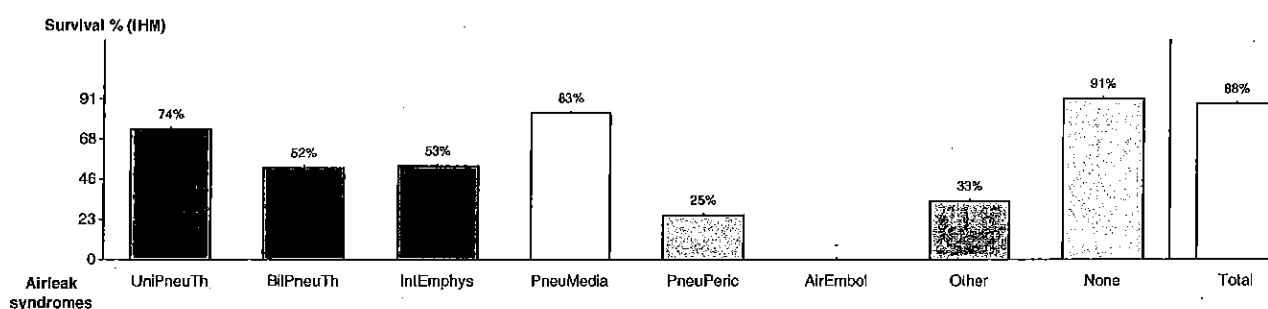


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3. Caring activities in the NIC unit

3.H.2.2. Airleak syndromes

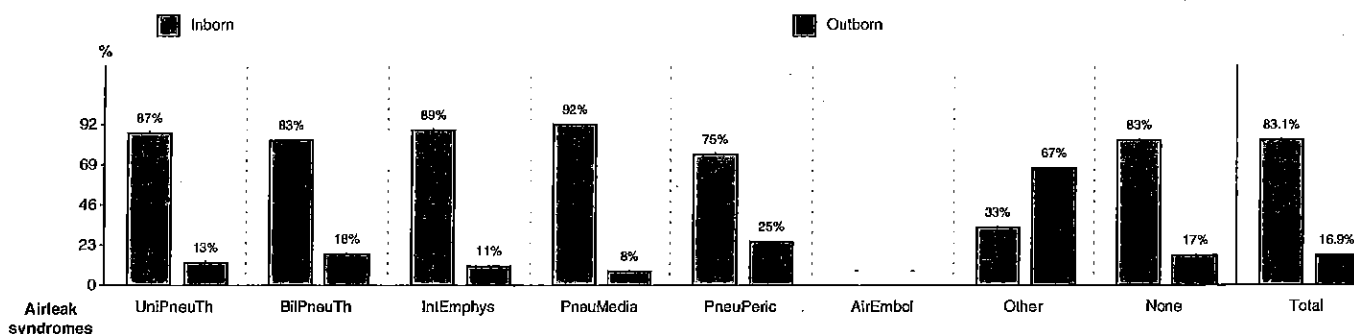
3.H.2.2.a. Airleak syndromes and survival

Air leak syndromes	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Unilateral pneumothorax	142	24	83	13	91	37	74	4.9	142/2893
Bilateral pneumothorax	40	14	65	5	87	19	52	1.4	40/2893
Interstitial emphysema	97	23	76	23	76	46	53	3.4	97/2893
Pneumomediastinum	12	0	100	2	83	2	83	.4	12/2893
Pneumopericardium	4	3	25	0	100	3	25	.1	4/2893
Air embolism	-	-	-	-	-	-	-	-	-
Other	3	1	67	1	67	2	33	.1	3/2893
None	2641	167	94	79	97	246	91	91.3	2641/2893
Total (Nb of occurrences-Nb of patients)	2939-2893	232-222	92	123-114	96	355-336	88	100.0	2893/2893



3.H.2.2.b. Airleak syndromes and origin

Air leak syndromes	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Unilateral pneumothorax	142	124	87	5	124/2403	18	13	4	18/490	4.9	142/2893
Bilateral pneumothorax	40	33	83	1	33/2403	7	18	1	7/490	1.4	40/2893
Interstitial emphysema	97	86	89	4	86/2403	11	11	2	11/490	3.4	97/2893
Pneumomediastinum	12	11	92	0	11/2403	1	8	0	1/490	.4	12/2893
Pneumopericardium	4	3	75	0	3/2403	1	25	0	1/490	.1	4/2893
Air embolism	-	-	-	-	-	-	-	-	-	-	-
Other	3	1	33	0	1/2403	2	67	0	2/490	.1	3/2893
None	2641	2184	83	91	2184/2403	457	17	93	457/490	91.3	2641/2893
Total (Nb of occurrences-Nb of patients)	2939-2893	2442-2403	83.1	100.0	2403/2403	497-490	16.9	100.0	490/490	100.0	2893/2893

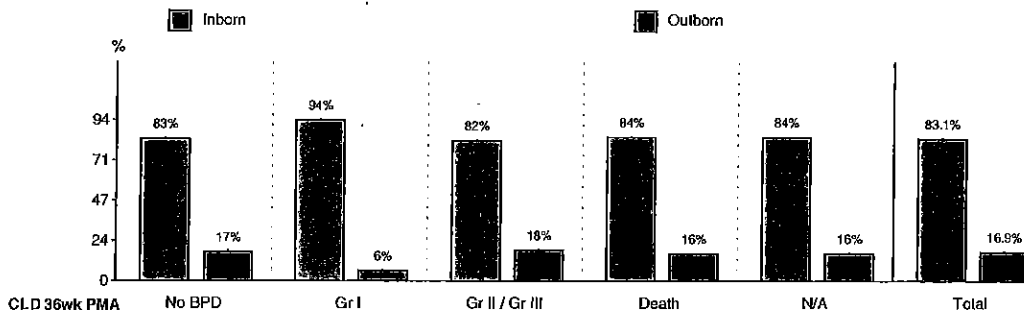




Cumulative Report
3. Caring activities in the NIC unit

3.H.2.3. CLD or death at 36 weeks PMA and origin

CLD at 36 weeks	Inborn			Outborn			% of total				
	N	N	%	% of IB	N	%					
No BPD	2239	1857	83	77	1857/2403	382	17	78	382/490	77.4	2239/2893
Grade I	17	16	94	1	16/2403	1	6	0	1/490	.6	17/2893
Grade II / Grade III	206	168	82	7	168/2403	38	18	8	38/490	7.1	206/2893
Death	374	314	84	13	314/2403	60	16	12	60/490	12.9	374/2893
Unknown or N/A	57	48	84	2	48/2403	9	16	2	9/490	2	57/2893
Total	2893	2403	83.1	100.0	2403/2403	490	16.9	100.0	490/490	100.0	2893/2893



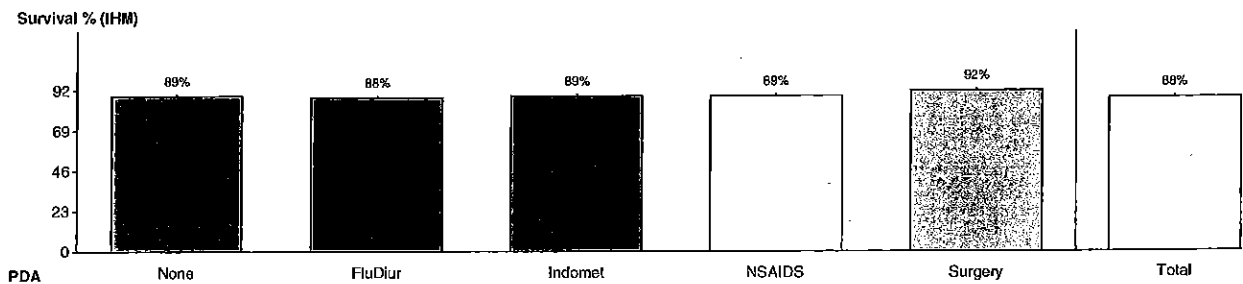


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3.H.2.4. Persistent ductus arteriosus (PDA)

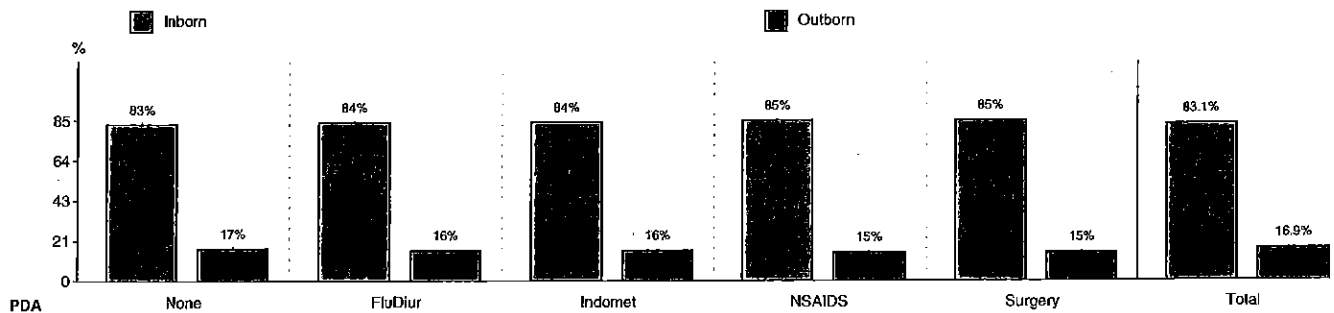
3.H.2.4.a. Persistent ductus arteriosus (PDA) and survival

Persistent ductus arteriosus (PDA)	N	ENM survival %	LNМ survival %	IHM survival %	% of total				
None	2222	91	97	89	76.8 2222/2893				
Fluid restriction + - diuretics	255	94	94	88	8.8 255/2893				
Indomethacin	274	97	92	89	9.5 274/2893				
Other NSAIDs	313	97	92	89	10.8 313/2893				
Surgery	125	100	92	92	4.3 125/2893				
Total (Nb of occurrences-Nb of patients)	3189-2893	227-222	92	135-114	96	362-336	88	100.0	2893/2893



3.H.2.4.b. Persistent ductus arteriosus (PDA) and origin

Persistent ductus arteriosus (PDA)	N	Inborn				Outborn				% of total
		N	%	% of IB	N	%	% of OB			
None	2222	1838	83	76 1838/2403	384	17	78 384/490	76.8	2222/2893	
Fluid restriction +- diuretics	255	214	84	9 214/2403	41	16	8 41/490	8.8	255/2893	
Indomethacin	274	229	84	10 229/2403	45	16	9 45/490	9.5	274/2893	
Other NSAIDs	313	267	85	11 267/2403	46	15	9 46/490	10.8	313/2893	
Surgery	125	106	85	4 106/2403	19	15	4 19/490	4.3	125/2893	
Total (Nb of occurrences-Nb of patients)	3189-2893	2654-2403	83.1	100.0 2403/2403	535-490	16.9	100.0 490/490	100.0	2893/2893	





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3. Caring activities in the NIC unit

3.H.3. Infection episodes



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3. Caring activities in the NIC unit

3.H.4. Specific congenital anomalies

3.H.4.1. Specific congenital anomalies and survival

Specific congenital malformations	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Anal imperforation	2	1	50	0	100	1	50	.1	2/2893
Limb reduction defect(s)	5	2	60	0	100	2	60	.2	5/2893
Obstructive uropathy	2	0	100	0	100	0	100	.1	2/2893
Esophageal atresia	5	0	100	0	100	0	100	.2	5/2893
Hydrocephaly	4	2	50	1	75	3	25	.1	4/2893
Congenital cardiac malformation	64	12	81	3	95	15	77	2.2	64/2893
Spina bifida	3	2	33	0	100	2	33	.1	3/2893
Intestinal atresia	3	0	100	1	67	1	67	.1	3/2893
Omphalocele	2	1	50	1	50	2	0	.1	2/2893
Gastroschisis	2	1	50	0	100	1	50	.1	2/2893
Diaphragmatic hernia	1	0	100	0	100	0	100	.0	1/2893
Karyotype anomaly	12	4	67	2	83	6	50	.4	12/2893
Cleft lip/palate	5	1	80	2	60	3	40	.2	5/2893
Anencephaly	-	-	-	-	-	-	-	-	-
Other	116	17	85	6	95	23	80	4.0	116/2893
None	2684	188	93	99	96	287	89	92.8	2684/2893
Total (Nb of occurrences-Nb of patients)	2910-2893	231-222	92	115-114	96	346-336	88	100.0	2893/2893

3.H.4.2. Specific congenital anomalies and origin

Specific congenital malformations	N	Inborn			Outborn			% of total			
		N	%	% of IB	N	%	% of OB				
Anal imperforation	2	2	100	0	2/2403	0	0	0/490	.1	2/2893	
Limb reduction defect(s)	5	5	100	0	5/2403	0	0	0/490	.2	5/2893	
Obstructive uropathy	2	2	100	0	2/2403	0	0	0/490	.1	2/2893	
Esophageal atresia	5	4	80	0	4/2403	1	20	0/1490	.2	5/2893	
Hydrocephaly	4	4	100	0	4/2403	0	0	0/490	.1	4/2893	
Congenital cardiac malformation	64	48	75	2	48/2403	16	25	3/16490	2.2	64/2893	
Spina bifida	3	3	100	0	3/2403	0	0	0/490	.1	3/2893	
Intestinal atresia	3	2	67	0	2/2403	1	33	0/1490	.1	3/2893	
Omphalocele	2	2	100	0	2/2403	0	0	0/490	.1	2/2893	
Gastroschisis	2	2	100	0	2/2403	0	0	0/490	.1	2/2893	
Diaphragmatic hernia	1	1	100	0	1/2403	0	0	0/490	0	1/2893	
Karyotype anomaly	12	11	92	0	11/2403	1	8	0/1490	.4	12/2893	
Cleft lip/palate	5	2	40	0	2/2403	3	60	1/3490	.2	5/2893	
Anencephaly	-	-	-	-	-	-	-	-	-	-	
Other	116	96	83	4	96/2403	20	17	4/20490	4	116/2893	
None	2684	2236	83	93	2236/2403	448	17	91/448490	92.8	2684/2893	
Total (Nb of occurrences-Nb of patients)	2910-2893	2420-2403	83.1	100.0	2403/2403	490-490	16.9	100.0	490/490	100.0	2893/2893

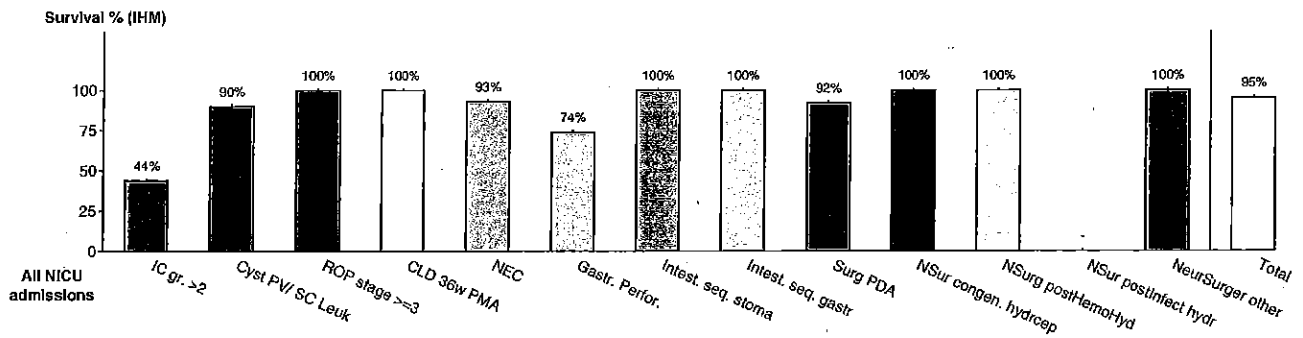


Cumulative Report
3. Caring activities in the NIC unit

3.I. Major NICU morbidity

3.I.1. Survival

All admissions	N	ENM survival %	LNM survival %	IHM survival %	% of total				
IC hemorrhage grade >2	206	77 63	38 82	115 44	7.1 206/2893				
Cystic PV and/or SC leukomalacia	67	1 99	6 91	7 90	2.3 67/2893				
ROP stage >=3	81	0 100	0 100	0 100	2.8 81/2893				
CLD at 36 weeks PMA	243	0 100	0 100	0 100	8.4 243/2893				
Necrotising enterocolitis	165	0 100	12 93	12 93	5.7 165/2893				
Gastrointestinal perforation(s)	62	3 95	13 79	16 74	2.1 62/2893				
Intestinal sequelae Stoma	14	0 100	0 100	0 100	.5 14/2893				
Intestinal sequelae Gastronomy	4	0 100	0 100	0 100	.1 4/2893				
Surgery for PDA	125	0 100	10 92	10 92	4.3 125/2893				
Neurosurgery for congenital hydrocephaly	5	0 100	0 100	0 100	.2 5/2893				
Neurosurgery for posthemorrhagic hydrocephaly	23	0 100	0 100	0 100	.8 23/2893				
Neurosurgery for post-infectious hydrocephaly	-	- -	- -	- -	-				
Neurosurgery for other reason	2	0 100	0 100	0 100	.1 2/2893				
Total (Nb of occurrences-Nb of patients)	997-742	81-77	97	79-56	98	160-133	95	25.6	742/2893

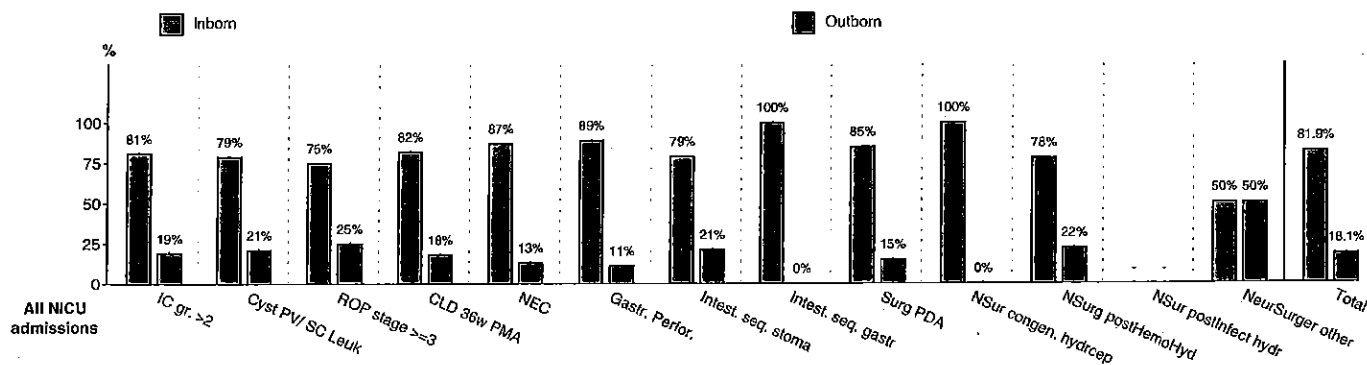




Cumulative Report
3. Caring activities in the NIC unit

3.1.2. Group by origin

All admissions	Inborn				Outborn				% of total
	N	N	%	% of IB	N	%	% of OB		
IC hemorrhage grade >2	206	166	81	27 166/608	40	19	30 40/134	7.1 206/2893	
Cystic PV and/or SC leukomalacia	67	53	79	9 53/608	14	21	10 14/134	2.3 67/2893	
ROP stage >=3	81	61	75	10 61/608	20	25	15 20/134	2.8 81/2893	
CLD at 36 weeks PMA	243	199	82	33 199/608	44	18	33 44/134	8.4 243/2893	
Necrotising enterocolitis	165	144	87	24 144/608	21	13	16 21/134	5.7 165/2893	
Gastrointestinal perforation(s)	62	55	89	9 55/608	7	11	5 7/134	2.1 62/2893	
Intestinal sequelae Stoma	14	11	79	2 11/608	3	21	2 3/134	.5 14/2893	
Intestinal sequelae Gastronomy	4	4	100	1 4/608	0	0	0 0/134	.1 4/2893	
Surgery for PDA	125	106	85	17 106/608	19	15	14 19/134	4.3 125/2893	
Neurosurgery for congenital hydrocephaly	5	5	100	1 5/608	0	0	0 0/134	.2 5/2893	
Neurosurgery for posthemorrhagic hydrocephaly	23	18	78	3 18/608	5	22	4 5/134	.8 23/2893	
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	
Neurosurgery for other reason	2	1	50	0 1/608	1	50	1 1/134	.1 2/2893	
Total (Nb of occurrences-Nb of patients)	997-742	823-608	81.9	100.0 608/608	174-134	18.1	100.0 134/134	25.6 742/2893	





Cumulative Report
3. Caring activities in the NIC unit

3.1.3. Group by gestational age

3.1.3.1. Survival

All admissions	N	22-23w		24-27w		28-31w		>31w	
		IHM	% surv.	IHM	% surv.	IHM	% surv.	IHM	% surv.
IC hemorrhage grade >2	206	3	99	85	59	27	87	0	100
Cystic PV and/or SC leukomalacia	67	0	100	3	96	3	96	1	99
ROP stage >=3	81	0	100	0	100	0	100	0	100
CLD at 36 weeks PMA	243	0	100	0	100	0	100	0	100
Necrotising enterocolitis	165	1	99	9	95	1	99	1	99
Gastrointestinal perforation(s)	62	1	98	13	79	1	98	1	98
Intestinal sequelae Stoma	14	0	100	0	100	0	100	0	100
Intestinal sequelae Gastronomy	4	0	100	0	100	0	100	0	100
Surgery for PDA	125	0	100	9	93	1	99	0	100
Neurosurgery for congenital hydrocephaly	5	0	100	0	100	0	100	0	100
Neurosurgery for posthemorrhagic hydrocephaly	23	0	100	0	100	0	100	0	100
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	-
Neurosurgery for other reason	2	0	100	0	100	0	100	0	100
Total (Nb of occurrences-Nb of patients)	997-742	5-4	99	119-99	84	33-29	96	3-1	100

3.1.3.2. Count

All admissions	N	22-23w %		24-27w %		28-31w %		>31w %		% of popul.
IC hemorrhage grade >2	206	4	2	132	64	64	31	6	3	7.1 206/2893
Cystic PV and/or SC leukomalacia	67	0	0	24	36	36	54	7	10	2.3 67/2893
ROP stage >=3	81	1	1	67	83	13	16	0	0	2.8 81/2893
CLD at 36 weeks PMA	243	1	0	118	49	122	50	2	1	8.4 243/2893
Necrotising enterocolitis	165	1	1	52	32	91	55	21	13	5.7 165/2893
Gastrointestinal perforation(s)	62	1	2	45	73	14	23	2	3	2.1 62/2893
Intestinal sequelae Stoma	14	0	0	7	50	4	29	3	21	.5 14/2893
Intestinal sequelae Gastronomy	4	0	0	1	25	2	50	1	25	.1 4/2893
Surgery for PDA	125	0	0	93	74	32	26	0	0	4.3 125/2893
Neurosurgery for congenital hydrocephaly	5	0	0	1	20	4	80	0	0	.2 5/2893
Neurosurgery for posthemorrhagic hydrocephaly	23	0	0	9	39	13	57	1	4	.8 23/2893
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	-	-
Neurosurgery for other reason	2	0	0	0	0	1	50	1	50	.1 2/2893
Total (Nb of occurrences-Nb of patients)	997-742	8-6	1	549-380	51	396-319	43	44-37	5	25.6 742/2893

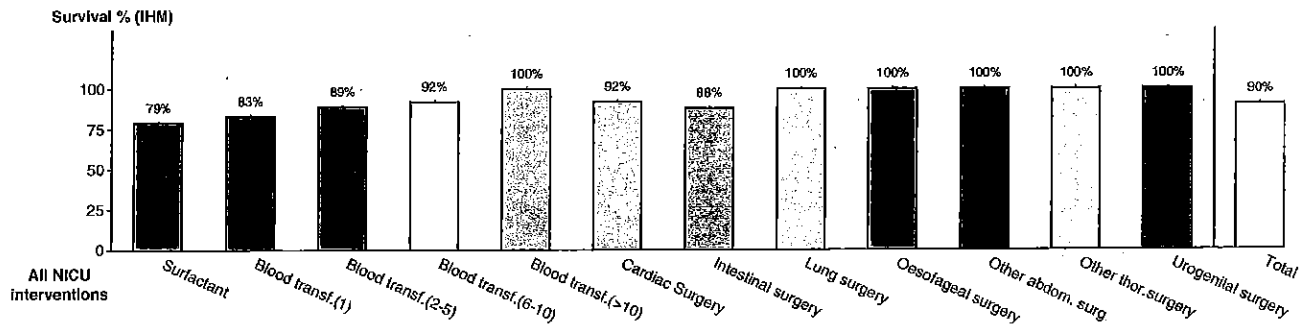


Cumulative Report
3. Caring activities in the NIC unit

3.J. Therapeutic interventions

3.J.1. Survival

All interventions	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Surfactant therapy	1162	165 86	83 93	248 79	40.2 1162/2893				
Blood transfusions (1)	497	65 87	19 96	84 83	17.2 497/2893				
Blood transfusions (2-5)	714	31 96	47 93	78 89	24.7 714/2893				
Blood transfusions (6-10)	191	1 99	15 92	16 92	6.6 191/2893				
Blood transfusions (>10)	68	0 100	0 100	0 100	2.4 68/2893				
Cardiac surgery (PDA excl)	101	1 99	7 93	8 92	3.5 101/2893				
Intestinal surgery	157	6 96	13 92	19 88	5.4 157/2893				
Lung surgery	2	0 100	0 100	0 100	.1 2/2893				
Oesophageal surgery	4	0 100	0 100	0 100	.1 4/2893				
Other abdominal surgery	7	0 100	0 100	0 100	.2 7/2893				
Other thoracic surgery	5	0 100	0 100	0 100	.2 5/2893				
Urogenital surgery	20	0 100	0 100	0 100	.7 20/2893				
Total (Nb of occurrences-Nb of patients)	2928-1801	269-172	94	184-103	96	453-275	90	62.3	1801/2893

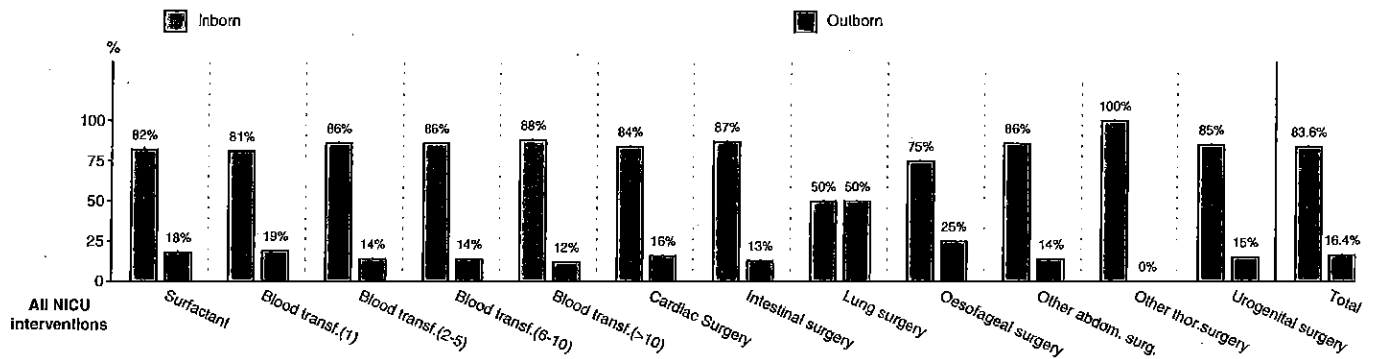




Cumulative Report
3. Caring activities in the NIC unit

3.J.2. Group by Origin

All interventions	Inborn				Outborn				% of total		
	N	N	%	% of IB	N	%	% of OB				
Surfactant therapy	1162	958	82	64	958/1506	204	18	69	204/295	40.2	1162/2893
Blood transfusions (1)	497	404	81	27	404/1506	93	19	32	93/295	17.2	497/2893
Blood transfusions (2-5)	714	613	86	41	613/1506	101	14	34	101/295	24.7	714/2893
Blood transfusions (6-10)	191	165	86	11	165/1506	26	14	9	26/295	6.6	191/2893
Blood transfusions (>10)	68	60	88	4	60/1506	8	12	3	8/295	2.4	68/2893
Cardiac surgery (PDA excl)	101	85	84	6	85/1506	16	16	5	16/295	3.5	101/2893
Intestinal surgery	157	136	87	9	136/1506	21	13	7	21/295	5.4	157/2893
Lung surgery	2	1	50	0	1/1506	1	50	0	1/295	.1	2/2893
Oesophageal surgery	4	3	75	0	3/1506	1	25	0	1/295	.1	4/2893
Other abdominal surgery	7	6	86	0	6/1506	1	14	0	1/295	.2	7/2893
Other thoracic surgery	5	5	100	0	5/1506	0	0	0	0/295	.2	5/2893
Urogenital surgery	20	17	85	1	17/1506	3	15	1	3/295	.7	20/2893
Total (Nb of occurrences-Nb of patients)	2928-1801	2453-1506	83.6	100.0	1506/1506	475-295	16.4	100.0	295/295	62.3	1801/2893





Cumulative Report
3. Caring activities in the NIC unit

3.J.3. Group by gestational age

3.J.3.1. Survival

All interventions	N	22-23w		24-27w		28-31w		>31w	
		IHM	% surv.	IHM	% surv.	IHM	% surv.	IHM	% surv.
Surfactant therapy	1162	5	100	182	84	55	95	6	99
Blood transfusions (1)	497	0	100	56	89	26	95	2	100
Blood transfusions (2-5)	714	1	100	62	91	14	98	1	100
Blood transfusions (6-10)	191	1	99	11	94	4	98	0	100
Blood transfusions (>10)	68	0	100	0	100	0	100	0	100
Cardiac surgery (PDA excl)	101	0	100	7	93	1	99	0	100
Intestinal surgery	157	1	99	13	92	4	97	1	99
Lung surgery	2	0	100	0	100	0	100	0	100
Oesophageal surgery	4	0	100	0	100	0	100	0	100
Other abdominal surgery	7	0	100	0	100	0	100	0	100
Other thoracic surgery	5	0	100	0	100	0	100	0	100
Urogenital surgery	20	0	100	0	100	0	100	0	100
Total (Nb of occurrences-Nb of patients)	2928-1801	8-5	100	331-194	82	104-68	94	10-8	99

3.J.3.2. Count

All interventions	N	22-23w %		24-27w %		28-31w %		>31w %		% of popul.
Surfactant therapy	1162	7	1	536	46	584	50	35	3	40.2 1162/2893
Blood transfusions (1)	497	0	0	118	24	322	65	57	11	17.2 497/2893
Blood transfusions (2-5)	714	1	0	285	40	401	56	27	4	24.7 714/2893
Blood transfusions (6-10)	191	2	1	121	63	67	35	1	1	6.6 191/2893
Blood transfusions (>10)	68	1	1	44	65	23	34	0	0	2.4 68/2893
Cardiac surgery (PDA excl)	101	0	0	73	72	23	23	5	5	3.5 101/2893
Intestinal surgery	157	1	1	83	53	63	40	10	6	5.4 157/2893
Lung surgery	2	0	0	0	0	2	100	0	0	.1 2/2893
Oesophageal surgery	4	0	0	0	0	4	100	0	0	.1 4/2893
Other abdominal surgery	7	0	0	2	29	4	57	1	14	.2 7/2893
Other thoracic surgery	5	0	0	4	80	1	20	0	0	.2 5/2893
Urogenital surgery	20	0	0	9	45	9	45	2	10	.7 20/2893
Total (Nb of occurrences-Nb of patients)	2928-1801	12-7	0	1275-684	38	1503-993	55	138-117	6	62.3 1801/2893

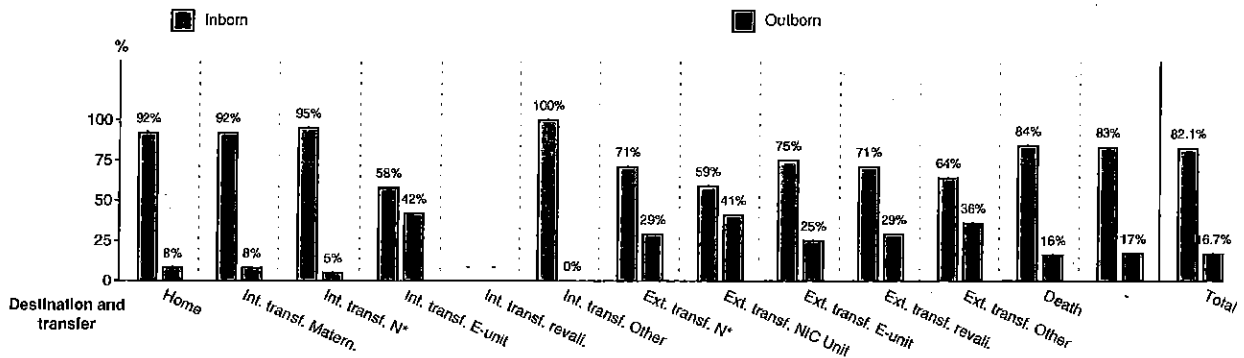


Cumulative Report
3. Caring activities in the NIC unit

3.K. Data on discharge

3.K.1. Destination at discharge

Destination transfer	Inborn			Outborn				%			
	N	N	%	% of IB	N	%	% of OB	% of total			
Home	1255	1158	92	49	1158/2374	97	8	20	97/484	43.4	1255/2893
Internal transfer Maternity	13	12	92	1	12/2374	1	8	0	1/484	.4	13/2893
Internal transfer N* function	149	142	95	6	142/2374	7	5	1	7/484	5.2	149/2893
Internal transfer E-unit	12	7	58	0	7/2374	5	42	1	5/484	.4	12/2893
Internal transfer Centre for revalidation	-	-	-	-	-	-	-	-	-	-	-
Internal transfer Other	3	3	100	0	3/2374	0	0	0	0/484	.1	3/2893
External transfer N* function	922	657	71	28	657/2374	265	29	55	265/484	31.9	922/2893
External transfer NIC Unit	75	44	59	2	44/2374	31	41	6	31/484	2.6	75/2893
External transfer E-unit	12	9	75	0	9/2374	3	25	1	3/484	.4	12/2893
External transfer Centre for revalidation	7	5	71	0	5/2374	2	29	0	2/484	.2	7/2893
External transfer Other	36	23	64	1	23/2374	13	36	3	13/484	1.2	36/2893
Death	374	314	84	13	314/2374	60	16	12	60/484	12.9	374/2893
-	35	29	83	1	29/2374	6	17	1	6/484	1.2	35/2893
Total	2893	2403	82.1	100.0	2374/2374	490	16.7	100.0	484/484	100.0	2893/2893



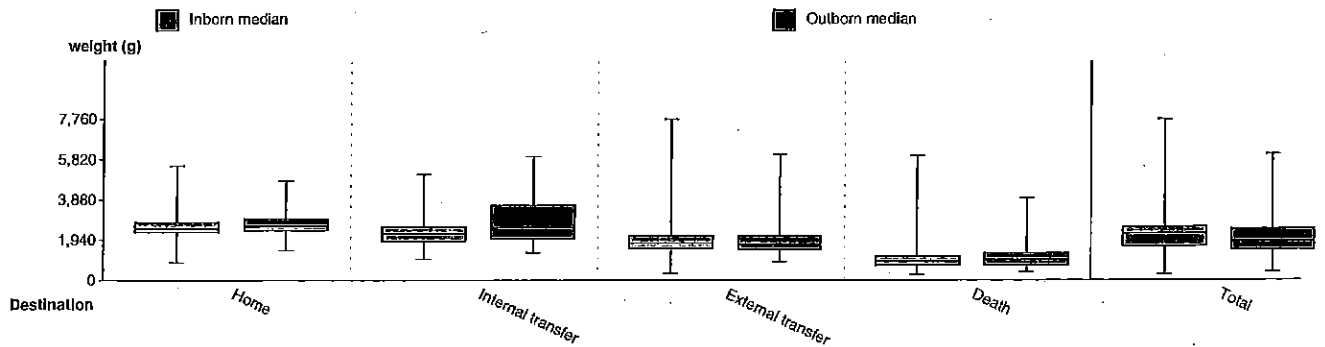


Cumulative Report
3. Caring activities in the NIC unit

3.K.2. Weight at discharge

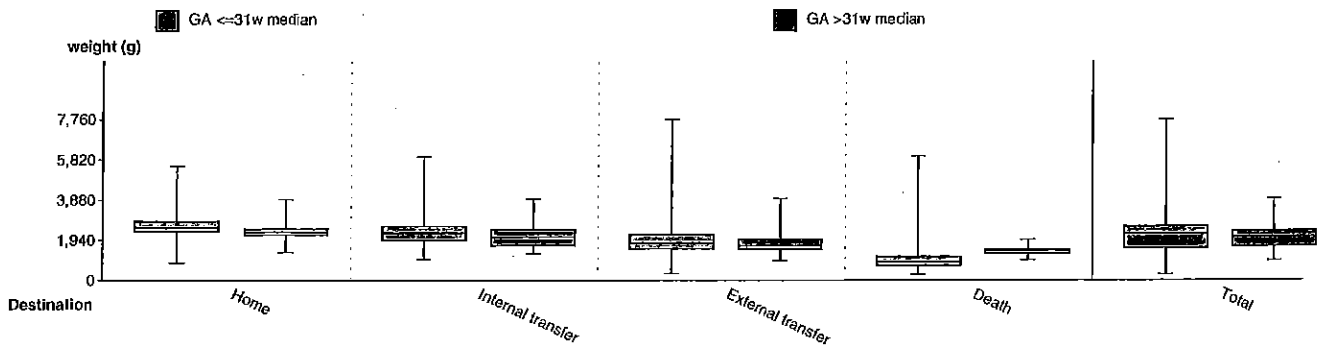
3.K.2.1. Weight (g) over origin and destination

Destination	Inborn						Outborn						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1158	850	2315	2490	2790	5514	97	1434	2400	2620	2963	4775	1158	850	2320	2500	2805	5514
Internal transfer	166	1010	1870	2245	2570	5100	14	1330	2015	2550	3610	5975	166	1010	1890	2273	2590	5975
External transfer	765	330	1535	1790	2152	7760	319	900	1490	1750	2140	6075	765	330	1520	1780	2150	7760
Death	314	280	710	895	1140	6005	60	400	710	988	1305	3962	314	280	710	905	1160	6005
Total	2403	280	1630	2250	2570	7760	490	400	1465	1875	2468	6075	2893	280	1590	2200	2560	7760



3.K.2.2. Weight (g) over GA and destination

Destination	GA ≤31w						GA >31w						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1020	850	2360	2555	2860	5514	235	1354	2190	2395	2490	3920	1020	850	2320	2500	2805	5514
Internal transfer	138	1010	1940	2295	2625	5975	42	1280	1690	2090	2445	3926	138	1010	1890	2273	2590	5975
External transfer	856	330	1530	1810	2195	7760	228	950	1500	1680	2000	3950	856	330	1520	1780	2150	7760
Death	360	280	708	898	1140	6005	14	980	1280	1453	1490	1975	360	280	710	905	1160	6005
Total	2374	280	1555	2240	2603	7760	519	950	1642	2090	2385	3950	2893	280	1590	2200	2560	7760



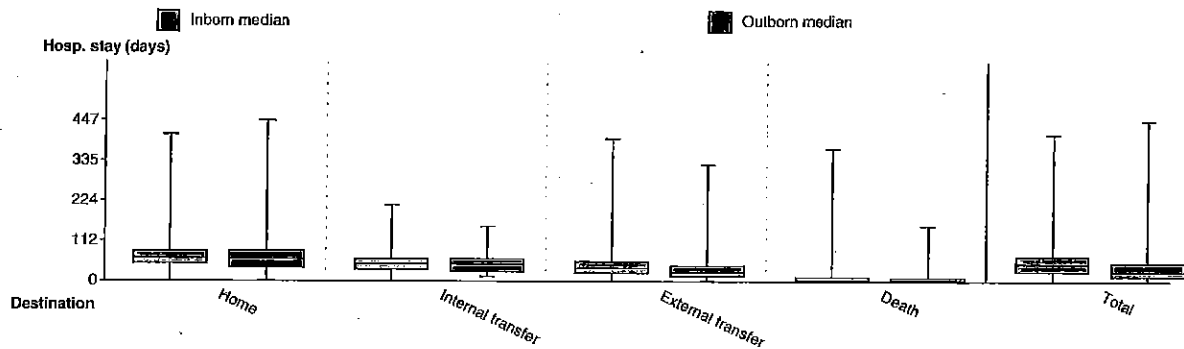


Cumulative Report
3. Caring activities in the NIC unit

3.K.3. Hospital stay (in days)

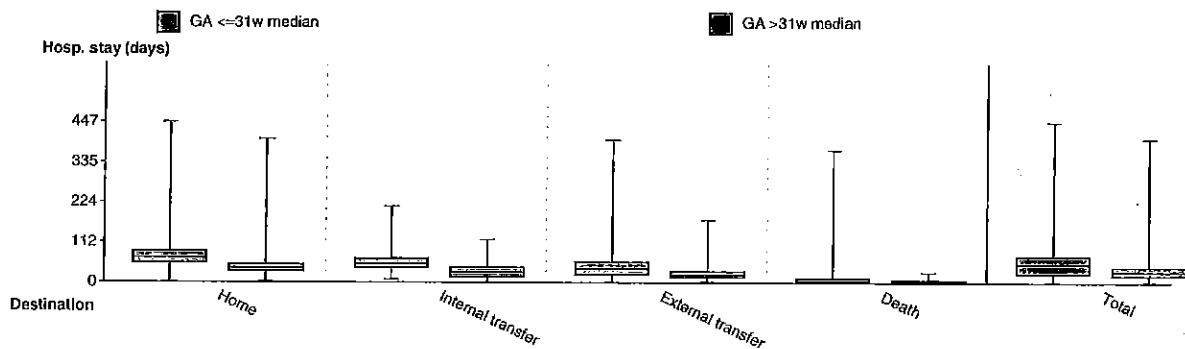
3.K.3.1. Over origin and destination

Destination	Inborn						Outborn						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1158	1	49	63	83	408	97	2	37	61	84	447	1158	1	48	63	83	447
Internal transfer	166	1	33	48	62	212	14	13	26	47	62	152	166	1	33	48	62	212
External transfer	765	1	23	37	55	397	319	1	15	25	43	324	765	1	20	34	52	397
Death	314	1	2	4	12	369	60	1	2	4	10	154	314	1	2	4	12	369
Total	2403	1	27	49	70	408	490	1	14	26	51	447	2893	1	23	46	67	447



3.K.3.2. Over GA and destination

Destination	GA ≤31w						GA >31w						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1020	1	54	69	87	447	235	2	31	40	50	400	1020	1	48	63	83	447
Internal transfer	138	8	41	52	67	212	42	1	15	29	42	119	138	1	33	48	62	212
External transfer	856	1	23	38	57	397	228	2	15	21	31	175	856	1	20	34	52	397
Death	360	1	2	4	12	369	14	1	1	2	7	28	360	1	2	4	12	369
Total	2374	1	25	51	74	447	519	1	19	30	43	400	2893	1	23	46	67	447





Cumulative Report
3. Caring activities in the NIC unit

3.L. Causes of death

3.L.1. Over origin

Possible death causes	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Congenital malformation	33	26	79	9	26/302	7	21	13	7/56	1.1	33/2893
Peripartal asphyxia and consequences	28	17	61	6	17/302	11	39	20	11/56	1	28/2893
Birth trauma	1	1	100	0	1/302	0	0	0	0/56	0	1/2893
Infection	71	62	87	21	62/302	9	13	16	9/56	2.5	71/2893
Intracranial hemorrhage	82	64	78	21	64/302	18	22	32	18/56	2.8	82/2893
Leukomalacia	7	7	100	2	7/302	0	0	0	0/56	.2	7/2893
Immaturity (lt 26 w and/or lt 750 g)	141	121	86	40	121/302	20	14	36	20/56	4.9	141/2893
Shock	65	53	82	18	53/302	12	18	21	12/56	2.2	65/2893
Respiratory insufficiency	112	93	83	31	93/302	19	17	34	19/56	3.9	112/2893
Inborn error of metabolism	2	1	50	0	1/302	1	50	2	1/56	.1	2/2893
Fetal hydrops	4	4	100	1	4/302	0	0	0	0/56	.1	4/2893
Peroperative complication	3	2	67	1	2/302	1	33	2	1/56	.1	3/2893
Iatrogenic cause of death	4	4	100	1	4/302	0	0	0	0/56	.1	4/2893
Unexpected death	1	1	100	0	1/302	0	0	0	0/56	0	1/2893
Unexplained death.	2	2	100	1	2/302	0	0	0	0/56	.1	2/2893
Other cause	15	14	93	5	14/302	1	7	2	1/56	.5	15/2893
Total (Nb of occurrences-Nb of patients)	571-358	472-302	84.4	100.0	302/302	99-56	15.6	100.0	56/56	12.4	358/2893

3.L.2. Over GA

Possible death causes	N	22-23w		24-27w		28-31w		>31w		% of popul.	
		%	%	%	%	%	%				
Congenital malformation	33	1	3	9	27	17	52	6	18	1.1	33/2893
Peripartal asphyxia and consequences	28	0	0	16	57	10	36	2	7	1.0	28/2893
Birth trauma	1	0	0	1	100	0	0	0	0	.0	1/2893
Infection	71	0	0	48	68	22	31	1	1	2.5	71/2893
Intracranial hemorrhage	82	3	4	57	70	22	27	0	0	2.8	82/2893
Leukomalacia	7	0	0	3	43	4	57	0	0	.2	7/2893
Immaturity (lt 26 w and/or lt 750 g)	141	7	5	132	94	2	1	0	0	4.9	141/2893
Shock	65	1	2	47	72	15	23	2	3	2.2	65/2893
Respiratory insufficiency	112	3	3	81	72	24	21	4	4	3.9	112/2893
Inborn error of metabolism	2	0	0	0	0	2	100	0	0	.1	2/2893
Fetal hydrops	4	0	0	3	75	1	25	0	0	.1	4/2893
Peroperative complication	3	0	0	2	67	1	33	0	0	.1	3/2893
Iatrogenic cause of death	4	0	0	2	50	1	25	1	25	.1	4/2893
Unexpected death	1	0	0	1	100	0	0	0	0	.0	1/2893
Unexplained death.	2	0	0	0	0	2	100	0	0	.1	2/2893
Other cause	15	0	0	10	67	4	27	1	7	.5	15/2893
Total (Nb of occurrences-Nb of patients)	571-358	15-7	2	412-249	70	127-88	25	17-14	4	12.4	358/2893

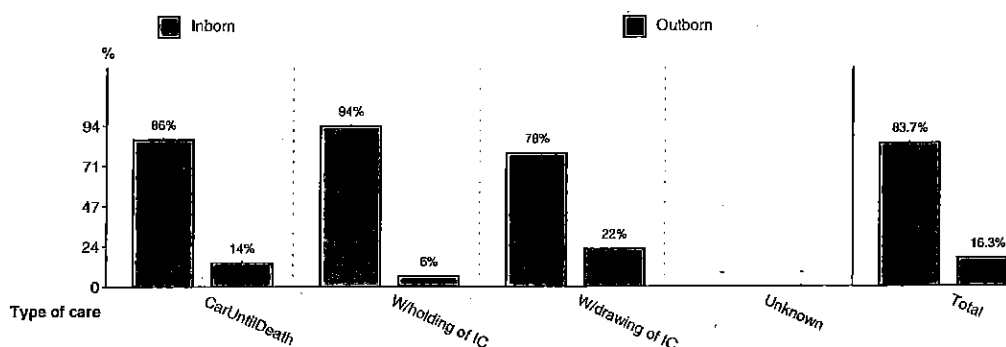


Cumulative Report
3. Caring activities in the NIC unit

3.M. Care provided at death

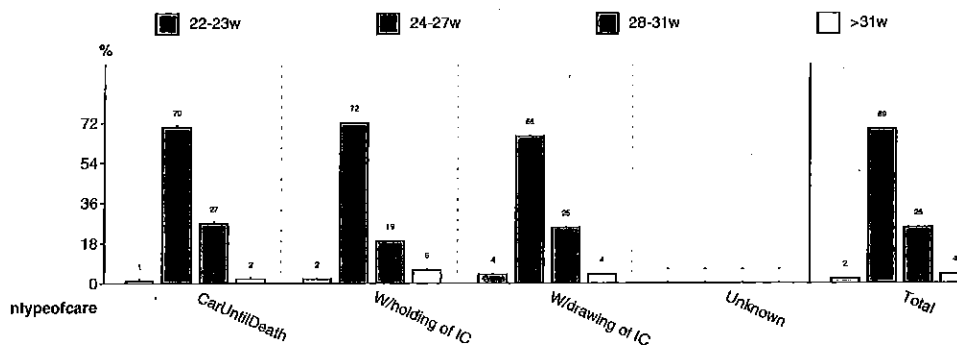
3.M.1. Care over origin

Type of care	Inborn				Outborn				% of total
	N	N	%	% of IB	N	%	% of OB		
Care given until death	169	145	86	49 145/293	24	14	42 24/57	5.8 169/2893	
Withholding of intensive care	47	44	94	15 44/293	3	6	5 3/57	1.6 47/2893	
Withdrawing of intensive care	134	104	78	35 104/293	30	22	53 30/57	4.6 134/2893	
Unknown	-	-	-	-	-	-	-	-	
Total	350	293	83.7	100.0 293/293	57	16.3	100.0 57/57	12.1 350/2893	



3.M.2. Care over GA

Type of care	N	22-23w %	24-27w %	28-31w %	>31w %	% of popul.
Care given until death	169	1 1	119 70	45 27	4 2	5.8 169/2893
Withholding of intensive care	47	1 2	34 72	9 19	3 6	1.6 47/2893
Withdrawing of intensive care	134	6 4	89 66	33 25	6 4	4.6 134/2893
Unknown	-	-	-	-	-	-
Total	350	8 2	242 69	87 25	13 4	12.1 350/2893



GBN/BVN

Groupement Belge de Néonatalogie

Belgische Vereniging voor Neonatalogie



Newborn College

Cumulative Report

from 2007 to 2009

ALL NICS

<1500g



**Cumulative Report
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**Cumulative Report
Abbreviations**

Abbreviations

- AT Antenatal transfer
- BPD Bronchopulmonary dysplasia
- CLD Chronic lung disease
- ENM Early neonatal mortality
- GA Gestational age
- IB Inborn
- IC Intracerebral hemorrhage
- IHM In hospital mortality
- IUT Intra uterine transfer
- LNM Late neonatal mortality
- N Number
- OB Outborn
- PC25 25th percentile or lower quartile
- PC75 75th percentile or upper quartile
- PDA Persistent ductus arteriosus
- PMA postmenstrual age

Remarks

ATTENTION ! Until 2008 (included) the database selects only patients < 1500g when comparisons or globalisations among Nic's are made. Starting in 2009 all baby's <1500g or < 32 w are included. Only in the annual report of your own Nic you can select according gestational age even before 2009 if you had entered all your patients.

Occurrences:

Some items allow multiple entry and will be counted as occurrences. Occurrences can be patients or events, treatments etc Percentages can be calculated according to events or to patients. Sometimes the sum of the percentages can exceed 100.

Definitions

IC hemorrhage grade >2 includes:

- Focal periventricular hemorrhagic infarction
- Intraventricular hemorrhage with dilatation
- Cerebellar hemorrhage
- Subarachnoidal hemorrhage
- Thalamoventricular hemorrhage
- Lobar cerebral hemorrhage
- Extensive periventricular hemorrhagic infarction
- Sub- or epidural hemorrhage

CLD at 36 weeks

Starting 2009 definitions have changed. In order not to loose the previous information following (imperfect) equivalence have been used:

	before 2009	after 2009
No BPD	No BPD	No BPD
Mild BPD	No O2 but Cpap	Grade I
Moderate/severe	O2 at 36w or art ventilation	Grade II/III



**Cumulative Report
Partipating NIC units**

Partipating NIC units

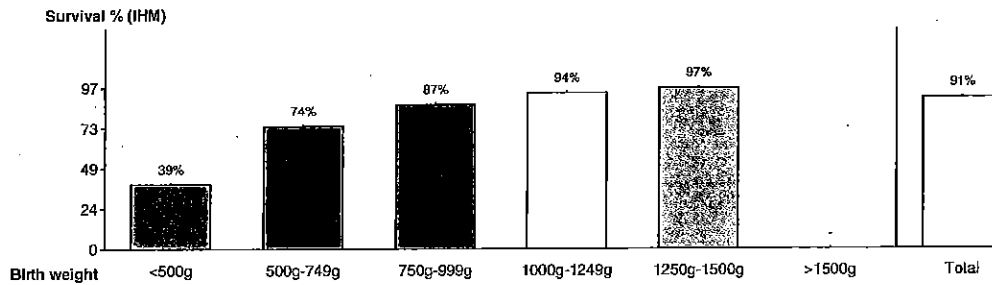
Year	Number of NIC units
2002	5
2003	7
2004	17
2005	18
2006	16
2007	16
2008	12
2009	14



Cumulative Report
1. Survival and birth weight

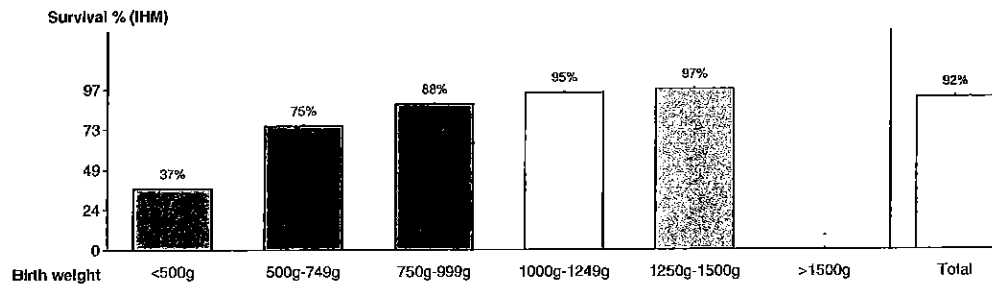
1.A. All patients

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Less than 500g	33	14	58	6	82	20	39	1.2	33/2644
Between 500g and 749g	264	47	82	21	92	68	74	10.0	264/2644
Between 750g and 999g	606	47	92	33	95	80	87	22.9	606/2644
Between 1000g and 1249g	720	28	96	15	98	43	94	27.2	720/2644
Between 1250g and 1500g	1021	20	98	8	99	28	97	38.6	1021/2644
Greater than 1500g	-	-	-	-	-	-	-	-	-
Total	2644	156	94	83	97	239	91	100	2644/2644



1.B. Inborn: local and AT/IUT

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Less than 500g	32	14	56	6	81	20	37	1.2	32/2644
Between 500g and 749g	234	38	84	20	91	58	75	8.9	234/2644
Between 750g and 999g	522	39	93	26	95	65	88	19.7	522/2644
Between 1000g and 1249g	601	21	97	10	98	31	95	22.7	601/2644
Between 1250g and 1500g	868	19	98	7	99	26	97	32.8	868/2644
Greater than 1500g	-	-	-	-	-	-	-	-	-
Total	2257	131	95	69	97	200	92	85.4	2257/2644

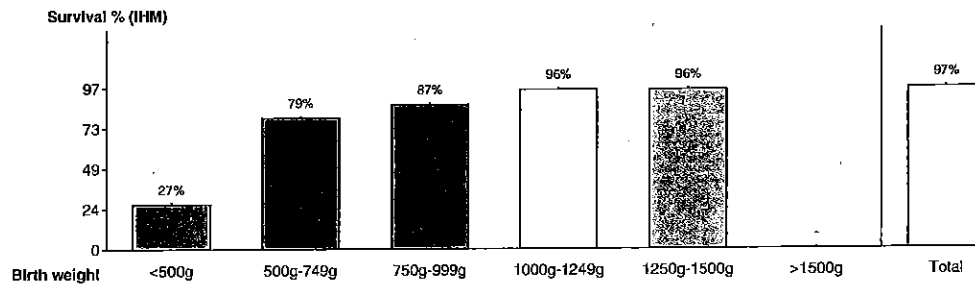




Cumulative Report
1. Survival and birth weight

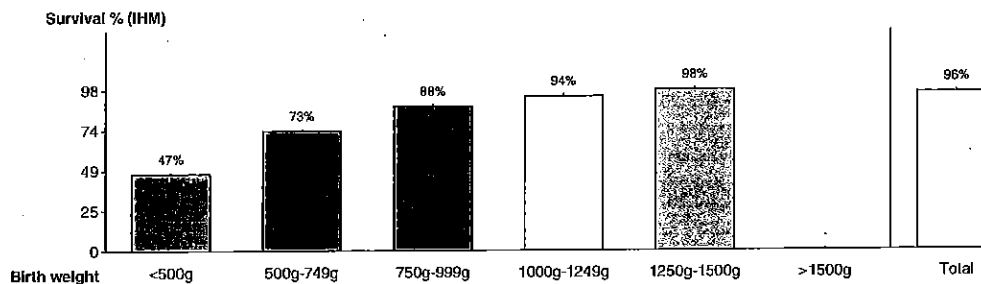
1.C. Inborn: local

Birthweight (g)	N	ENM survival %	ENM survival %	ENM survival %	IHM survival %	IHM survival %	% of total	
Less than 500g	15	9	40	2	87	11	27	.6 15/2644
Between 500g and 749g	89	14	84	5	94	19	79	3.4 89/2644
Between 750g and 999g	209	14	93	13	94	27	87	7.9 209/2644
Between 1000g and 1249g	268	8	97	4	99	12	96	10.1 268/2644
Between 1250g and 1500g	402	12	97	5	99	17	96	15.2 402/2644
Greater than 1500g	-	-	-	-	-	-	-	-
Total	983	57	98	29	99	86	97	37.2 983/2644



1.D. Inborn: AT/IUT

Birthweight (g)	N	ENM survival %	ENM survival %	ENM survival %	IHM survival %	IHM survival %	% of total	
Less than 500g	17	5	71	4	76	9	47	.6 17/2644
Between 500g and 749g	145	24	83	15	90	39	73	5.5 145/2644
Between 750g and 999g	313	25	92	13	96	38	88	11.8 313/2644
Between 1000g and 1249g	333	13	96	6	98	19	94	12.6 333/2644
Between 1250g and 1500g	466	7	98	2	100	9	98	17.6 466/2644
Greater than 1500g	-	-	-	-	-	-	-	-
Total	1274	74	97	40	98	114	96	48.2 1274/2644

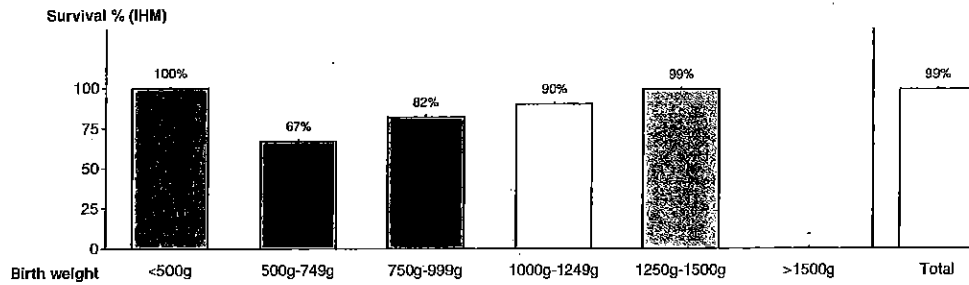




Cumulative Report
1. Survival and birth weight

1.E. Outborn

Birthweight (g)	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Less than 500g	1	0	100	0	100	0	1/2644		
Between 500g and 749g	30	9	70	1	97	10	67	1.1	30/2644
Between 750g and 999g	84	8	90	7	92	15	82	3.2	84/2644
Between 1000g and 1249g	119	7	94	5	96	12	90	4.5	119/2644
Between 1250g and 1500g	153	1	99	1	99	2	99	5.8	153/2644
Greater than 1500g	-	-	-	-	-	-	-	-	-
Total	387	25	99	14	99	39	99	14.6	387/2644

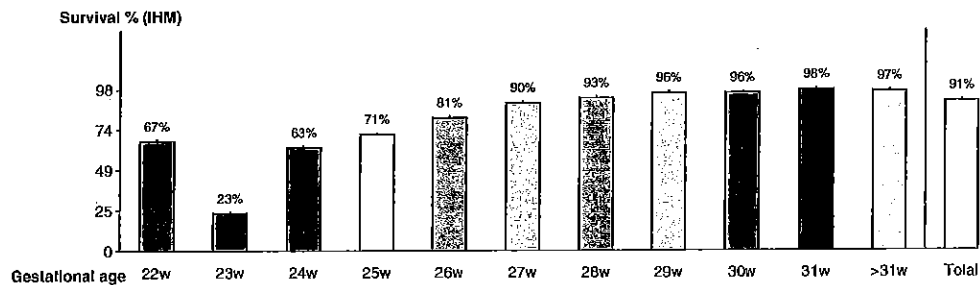




Cumulative Report
2. Survival and gestational age

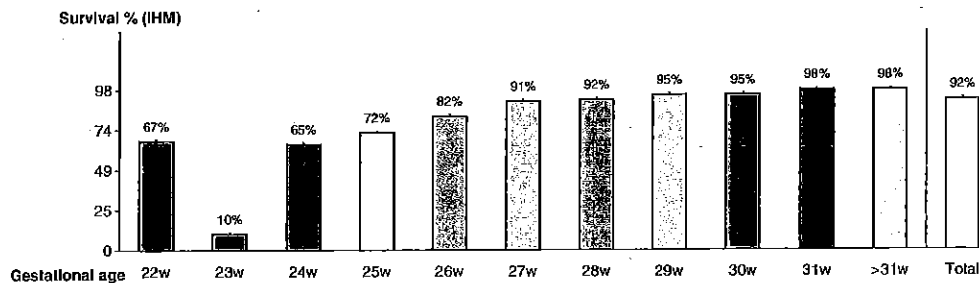
2.A. All patients

Gestational age	N	ENM survival %	LNLM survival %	IHM survival %	% of total				
22 weeks	9	2	78	1	89	3	67	.3	9/2644
23 weeks	13	8	38	2	85	10	23	.5	13/2644
24 weeks	65	19	71	5	92	24	63	2.5	65/2644
25 weeks	170	33	81	17	90	50	71	6.4	170/2644
26 weeks	248	26	90	20	92	46	81	9.4	248/2644
27 weeks	305	21	93	11	96	32	90	11.5	305/2644
28 weeks	347	14	96	11	97	25	93	13.1	347/2644
29 weeks	383	11	97	5	99	16	96	14.5	383/2644
30 weeks	329	12	96	2	99	14	96	12.4	329/2644
31 weeks	299	3	99	3	99	6	98	11.3	299/2644
Greater than 31 weeks	476	7	99	6	99	13	97	18.0	476/2644
Total	2644	156	94	83	97	239	91	100	2644/2644



2.B. Inborn: local and AT/IUT

Gestational age	N	ENM survival %	LNLM survival %	IHM survival %	% of total				
22 weeks	9	2	78	1	89	3	67	.3	9/2644
23 weeks	10	7	30	2	80	9	10	.4	10/2644
24 weeks	51	13	75	5	90	18	65	1.9	51/2644
25 weeks	151	27	82	16	89	43	72	5.7	151/2644
26 weeks	208	21	90	16	92	37	82	7.9	208/2644
27 weeks	252	17	93	6	98	23	91	9.5	252/2644
28 weeks	279	13	95	10	96	23	92	10.6	279/2644
29 weeks	343	11	97	5	99	16	95	13.0	343/2644
30 weeks	294	12	96	2	99	14	95	11.1	294/2644
31 weeks	256	3	99	3	99	6	98	9.7	256/2644
Greater than 31 weeks	404	5	99	3	99	8	98	15.3	404/2644
Total	2257	131	95	89	97	200	92	85.4	2257/2644

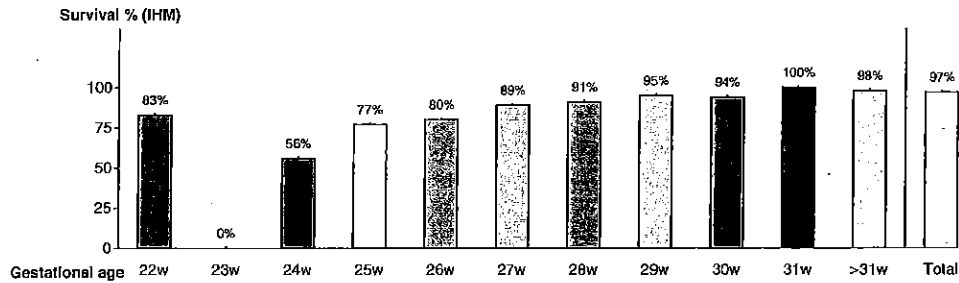




Cumulative Report
2. Survival and gestational age

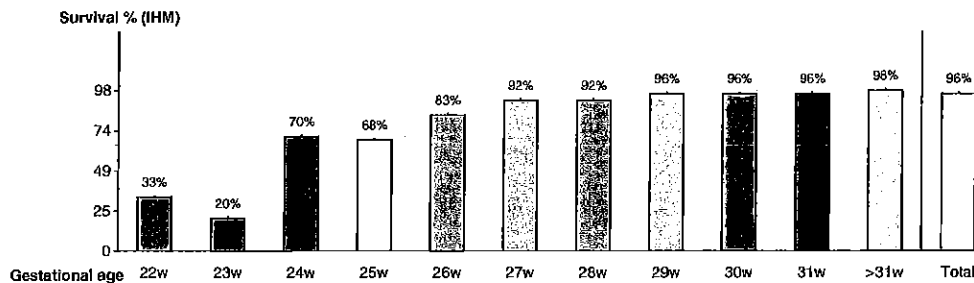
2.C. Inborn: local

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total
22 weeks	6	1 83	0 100	1 83	.2 6/2644
23 weeks	5	4 20	1 80	5 0	5/2644
24 weeks	18	7 61	1 94	8 56	.7 18/2644
25 weeks	64	8 87	7 89	15 77	2.4 64/2644
26 weeks	75	9 88	6 92	15 80	2.8 75/2644
27 weeks	100	9 91	2 98	11 89	3.8 100/2644
28 weeks	125	5 96	6 95	11 91	4.7 125/2644
29 weeks	140	4 97	3 98	7 95	5.3 140/2644
30 weeks	138	7 95	1 99	8 94	5.2 138/2644
31 weeks	102	0 100	0 100	0 100	3.9 102/2644
Greater than 31 weeks	210	3 99	2 99	5 98	7.9 210/2644
Total	983	57 98	29 99	86 97	37.2 983/2644



2.D. Inborn: AT/IUT

Gestational age	N	ENM survival %	LNM survival %	IHM survival %	% of total
22 weeks	3	1 67	1 67	2 33	.1 3/2644
23 weeks	5	3 40	1 80	4 20	.2 5/2644
24 weeks	33	6 82	4 88	10 70	1.2 33/2644
25 weeks	87	19 78	9 90	28 68	3.3 87/2644
26 weeks	133	12 91	10 92	22 83	5.0 133/2644
27 weeks	152	8 95	4 97	12 92	5.7 152/2644
28 weeks	154	8 95	4 97	12 92	5.8 154/2644
29 weeks	203	7 97	2 99	9 96	7.7 203/2644
30 weeks	156	5 97	1 99	6 96	5.9 156/2644
31 weeks	154	3 98	3 98	6 96	5.8 154/2644
Greater than 31 weeks	194	2 99	1 99	3 98	7.3 194/2644
Total	1274	74 97	40 98	114 96	48.2 1274/2644

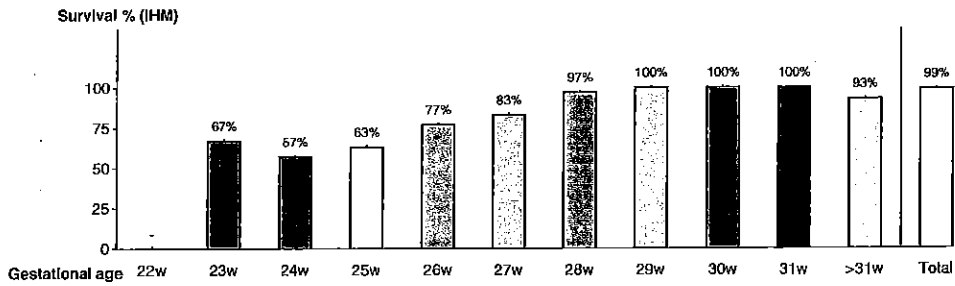




Cumulative Report
2. Survival and gestational age

2.E. Outborn

Gestational age	N	ENM survival %	ENM	ENM survival %	LNM survival %	LNM	LNM survival %	IHM survival %	IHM	IHM survival %	% of total
22 weeks	-	-	-	-	-	-	-	-	-	-	-
23 weeks	3	1	67	0	100	1	67	.1	3/2644		
24 weeks	14	6	57	0	100	6	57	.5	14/2644		
25 weeks	19	6	68	1	95	7	63	.7	19/2644		
26 weeks	40	5	87	4	90	9	77	1.5	40/2644		
27 weeks	53	4	92	5	91	9	83	2.0	53/2644		
28 weeks	68	1	99	1	99	2	97	2.6	68/2644		
29 weeks	40	0	100	0	100	0	100	1.5	40/2644		
30 weeks	35	0	100	0	100	0	100	1.3	35/2644		
31 weeks	43	0	100	0	100	0	100	1.6	43/2644		
Greater than 31 weeks	72	2	97	3	96	5	93	2.7	72/2644		
Total	367	25	99	14	99	39	99	14.6	387/2644		



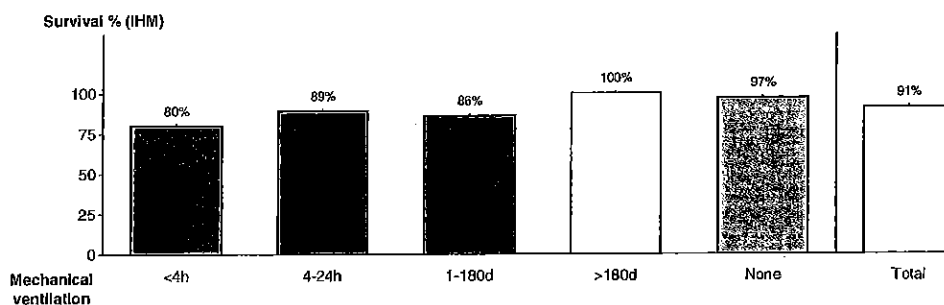


Cumulative Report
3. Caring activities in the NIC unit

3.A. Respiratory support

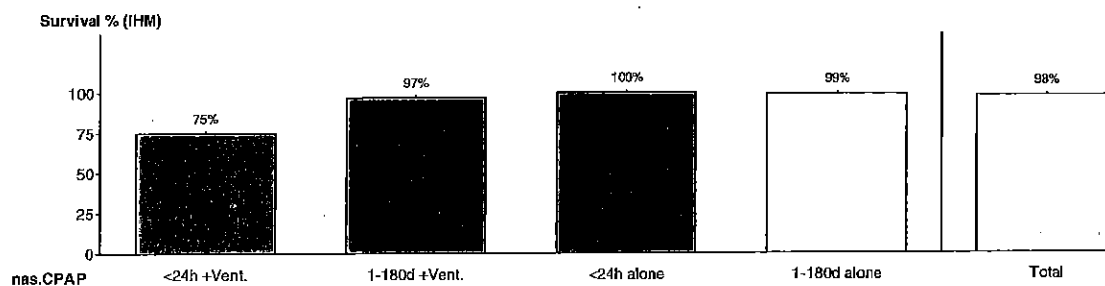
3.A.1. Mechanical ventilation

Mechanical ventilation	N	ENM survival %	LNM survival %	IHM survival %	% of total				
< 4 hours	46	9	80	0	100	9	80	1.7	46/2644
4-24 hours	104	10	90	1	99	11	89	3.9	104/2644
1-180 days	1318	109	92	79	94	188	86	49.8	1318/2644
> 180 days	2	0	100	0	100	0	100	.1	2/2644
None	1174	28	98	3	100	31	97	44.4	1174/2644
Total	2644	156	94	83	97	239	91	100	2644/2644



3.A.2. Nasal CPAP

Nasal CPAP	N	ENM survival %	LNM survival %	IHM survival %	% of total				
Nasal CPAP (<24 hours) and ventilation	40	6	85	4	90	10	75	1.5	40/2644
Nasal CPAP (1-180 days) and ventilation	1084	6	99	30	97	36	97	41.0	1084/2644
Nasal CPAP (<24 hours) alone	72	0	100	0	100	0	100	2.7	72/2644
Nasal CPAP (1-180 days) alone	566	2	100	1	100	3	99	21.4	566/2644
Total	1762	14	99	35	99	49	98	66.6	1762/2644



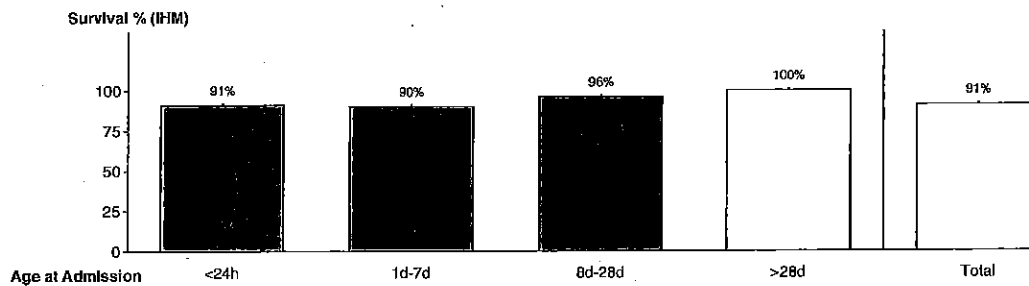


Cumulative Report
3. Caring activities in the NIC unit

3.B. Age at the time of admission

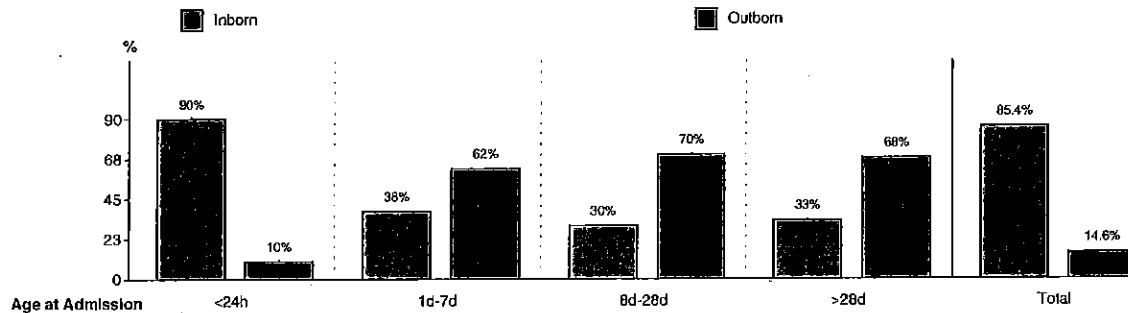
3.B.1. Age at the time of admission and survival

Age at admission	N	ENM survival %	LNM survival %	IHM survival %	% of total
Less than 24h	2443	151 94	79 97	230 91	92.4 2443/2644
Between 1 day and 7 days	68	5 93	2 97	7 90	2.6 68/2644
Between 8 days and 28 days	53	0 100	2 96	2 96	2.0 53/2644
Greater than 28 days	80	0 100	0 100	0 100	3.0 80/2644
Total	2644	156 94	83 97	239 91	100 2644/2644



3.B.2. Age at the time of admission and origin

Age at admission	N	Inborn			Outborn			% of total
		N	%	% of IB	N	%	% of OB	
Less than 24h	2443	2189	90	97 2189/2257	254	10	66 254/387	92.4 2443/2644
Between 1 day and 7 days	68	26	38	1 26/2257	42	62	11 42/387	2.6 68/2644
Between 8 days and 28 days	53	16	30	1 16/2257	37	70	10 37/387	2 53/2644
Greater than 28 days	80	26	33	1 26/2257	54	68	14 54/387	3 80/2644
Total	2644	2257	85.4	100.0 2257/2257	387	14.6	100.0 387/387	100.0 2644/2644



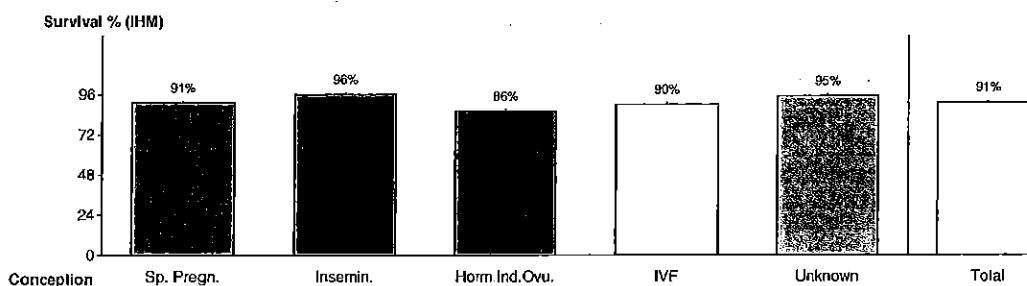


Cumulative Report
3. Caring activities in the NIC unit

3.C. Conception

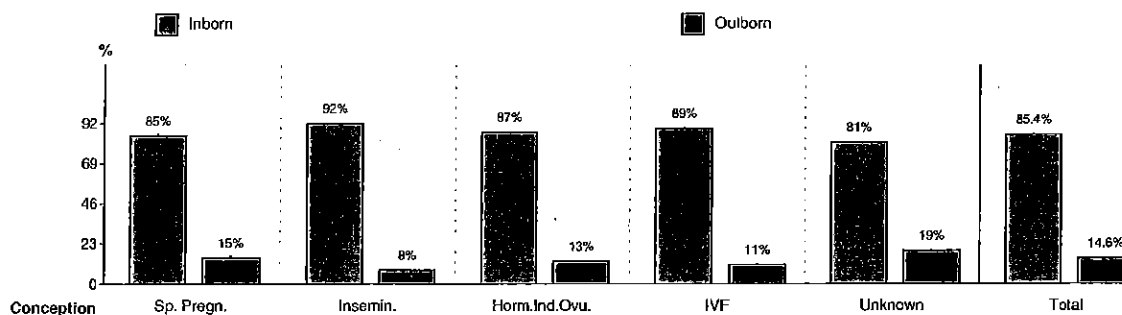
3.C.1. Conception and survival

Conception	N	ENM survival %	LNEM survival %	IHM survival %	% of total
Spontaneous pregnancy	2147	127 94	64 97	191 91	81.2 2147/2644
Insemination	49	1 98	1 98	2 96	1.9 49/2644
Hormonal induction of ovulation	114	13 89	3 97	16 86	4.3 114/2644
In vitro fertilisation	261	13 95	13 95	26 90	9.9 261/2644
Unknown	73	2 97	2 97	4 95	2.8 73/2644
Total	2644	156 94	83 97	239 91	100 2644/2644



3.C.2. Conception and origin

Conception	N	Inborn				Outborn				% of total
		N	%	% of IB	N	%	% of OB			
Spontaneous pregnancy	2147	1821	85	81 1821/2257	326	15	84 326/387	81.2 2147/2644		
Insemination	49	45	92	2 45/2257	4	8	1 4/387	1.9 49/2644		
Hormonal induction of ovulation	114	99	87	4 99/2257	15	13	4 15/387	4.3 114/2644		
In vitro fertilisation	261	233	89	10 233/2257	28	11	7 28/387	9.9 261/2644		
Unknown	73	59	81	3 59/2257	14	19	4 14/387	2.8 73/2644		
Total	2644	2257	85.4	100.0 2257/2257	387	14.6	100.0 387/387	100.0 2644/2644		



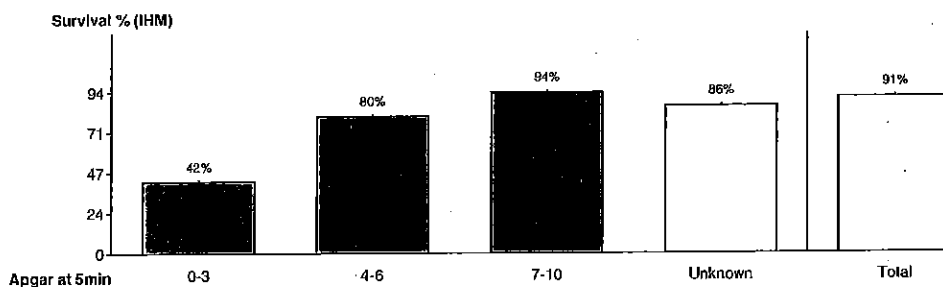


Cumulative Report
3. Caring activities in the NIC unit

3.D. Apgar score at 5 minutes

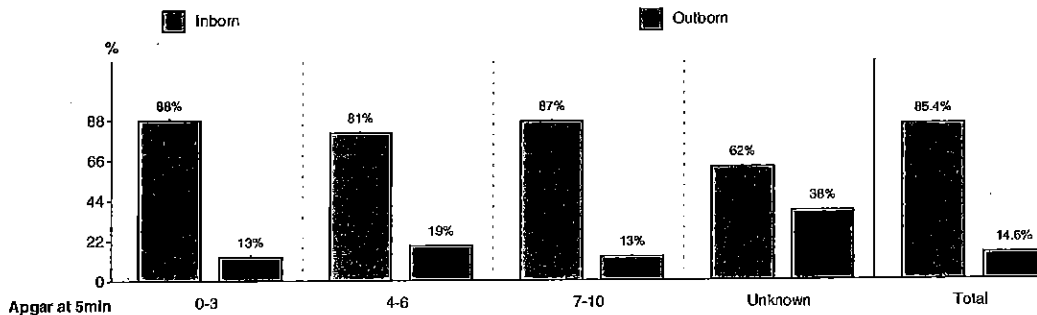
3.D.1. Apgar score at 5 minutes and survival

Apgar score at 5 min	N	ENM survival %	LNLM survival %	IHM survival %	% of total
Apgar (at 5min) 0-3	80	39	51	7	3.0 80/2644
Apgar (at 5min) 4-6	288	40	86	19	93 59 80 288/2644
Apgar (at 5min) 7-10	2211	70	97	55	98 125 94 83.6 2211/2644
Unknown	65	7	89	2	97 9 86 2.5 65/2644
Total	2644	156	94	83	97 239 91 100 2644/2644



3.D.2. Apgar score at 5 minutes and origin

Apgar score at 5 min	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Apgar (at 5min) 0-3	80	70	88	3	70/2257	10	13	3	10/387	3	80/2644
Apgar (at 5min) 4-6	288	232	81	10	232/2257	56	19	14	56/387	10.9	288/2644
Apgar (at 5min) 7-10	2211	1915	87	85	1915/2257	296	13	76	296/387	83.6	2211/2644
Unknown	65	40	62	2	40/2257	25	38	6	25/387	2.5	65/2644
Total	2644	2257	85.4	100.0	2257/2257	387	14.6	100.0	387/387	100.0	2644/2644



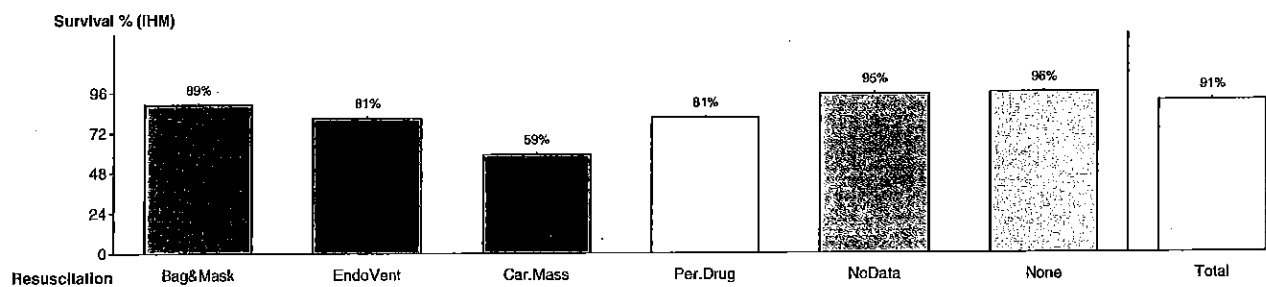


Cumulative Report
3. Caring activities in the NIC unit

3.E. Neonatal resuscitation

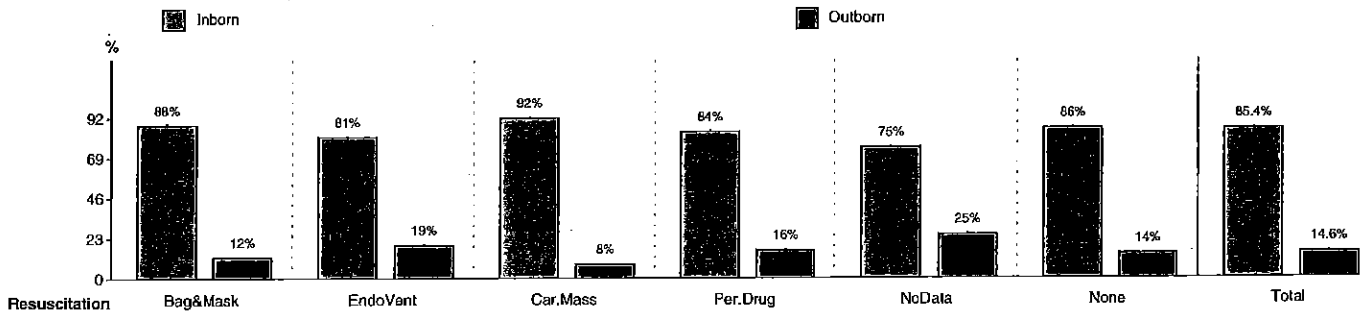
3.E.1. Neonatal resuscitation and survival

Resuscitation	N	ENM	survival %	LNМ	survival %	IHM	survival %	% of total	
Bag and Mask	1066	80	92	36	97	116	89	40.3	1066/2644
Endotracheal ventilation	897	110	88	57	94	167	81	33.9	897/2644
Cardiacmassage	61	18	70	7	89	25	59	2.3	61/2644
Perfusion and/or drugs	391	46	88	30	92	76	81	14.8	391/2644
No data	40	1	97	1	97	2	95	1.5	40/2644
None	1023	27	97	17	98	44	96	38.7	1023/2644
Total (Nb of occurrences-Nb of patients)	3478-2644	282-156	94	148-83	97	430-239	91	100.0	2644/2644



3.E.2. Neonatal resuscitation and origin

Resuscitation	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Bag and Mask	1066	938	88	42	938/2257	128	12	33	128/387	40.3	1066/2644
Endotracheal ventilation	897	728	81	32	728/2257	169	19	44	169/387	33.9	897/2644
Cardiacmassage	61	56	92	2	56/2257	5	8	1	5/387	2.3	61/2644
Perfusion and/or drugs	391	327	84	14	327/2257	64	16	17	64/387	14.8	391/2644
No data	40	30	75	1	30/2257	10	25	3	10/387	1.5	40/2644
None	1023	878	86	39	878/2257	145	14	37	145/387	38.7	1023/2644
Total (Nb of occurrences-Nb of patients)	3478-2644	2957-2257	85.4	100.0	2257/2257	521-387	14.6	100.0	387/387	100.0	2644/2644



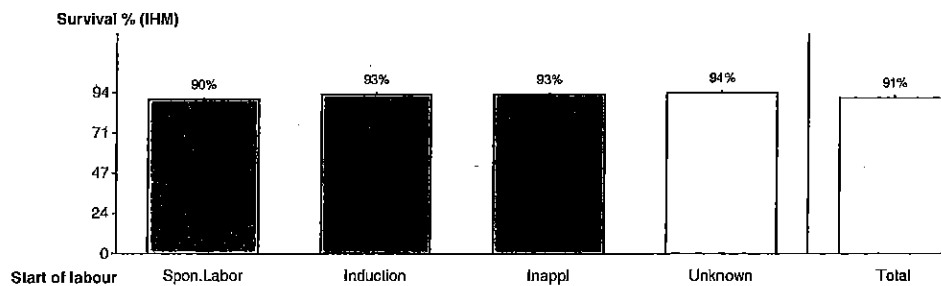


Cumulative Report
3. Caring activities in the NIC unit

3.F. Start of labour

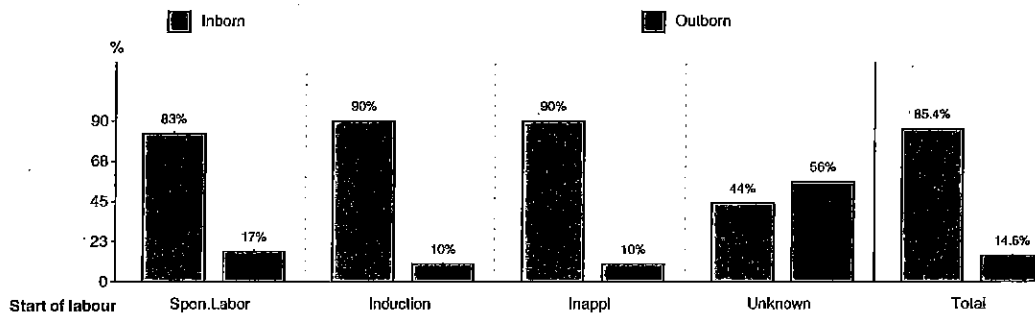
3.F.1. Start of labour and survival

Start of labour	N	ENM survival %	ENM survival %	LNM survival %	LNM survival %	IHM survival %	IHM survival %	% of total	% of total
Spontaneous labour	1522	105	93	54	96	159	90	57.6	1522/2644
Induction	146	6	96	4	97	10	93	5.5	146/2644
Inapplicable	960	44	95	25	97	69	93	36.3	960/2644
Unknown	16	1	94	0	100	1	94	.6	16/2644
Total	2644	156	94	83	97	239	91	100	2644/2644



3.F.2. Start of labour and origin

Start of labour	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Spontaneous labour	1522	1256	83	56	1256/2257	266	17	69	266/387	57.6	1522/2644
Induction	146	132	90	6	132/2257	14	10	4	14/387	5.5	146/2644
Inapplicable	960	862	90	38	862/2257	98	10	25	98/387	36.3	960/2644
Unknown	16	7	44	0	7/2257	9	56	2	9/387	.6	16/2644
Total	2644	2257	85.4	100.0	2257/2257	387	14.6	100.0	387/387	100.0	2644/2644



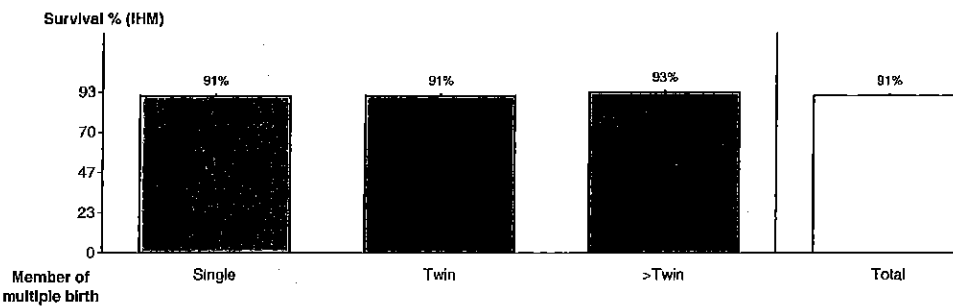


Cumulative Report
3. Caring activities in the NIC unit

3.G. Multiple pregnancy

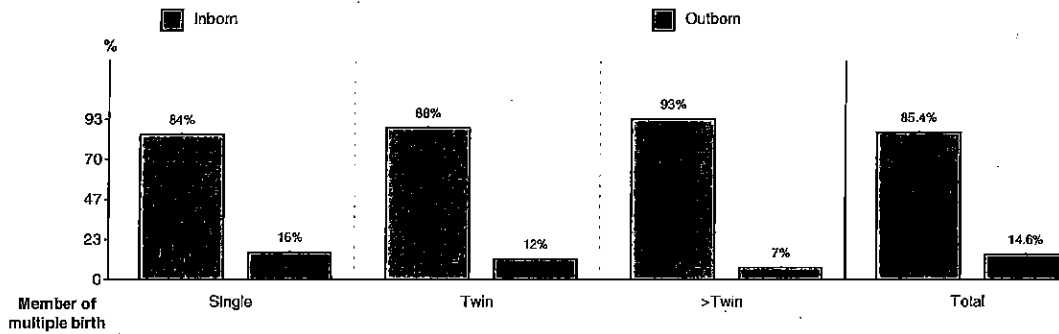
3.G.1. Multiple pregnancy and survival

Member of multiple birth	N	ENM survival %	LNM survival %	IHM survival %	% of total
Single	1794	112 94	52 97	164 91	67.9 1794/2644
Twin	781	39 95	31 96	70 91	29.5 781/2644
More than twin	69	5 93	0 100	5 93	2.6 69/2644
Total	2644	156 94	83 97	239 91	100 2644/2644



3.G.2. Multiple pregnancy and origin

Member of multiple birth	N	Inborn			Outborn			% of total
		N	%	% of IB	N	%	% of OB	
Single	1794	1506	84	67 1506/2257	288	16	74 288/387	67.9 1794/2644
Twin	781	687	88	30 687/2257	94	12	24 94/387	29.5 781/2644
More than twin	69	64	93	3 64/2257	5	7	1 5/387	2.6 69/2644
Total	2644	2257	85.4	100.0 2257/2257	387	14.6	100.0 387/387	100.0 2644/2644

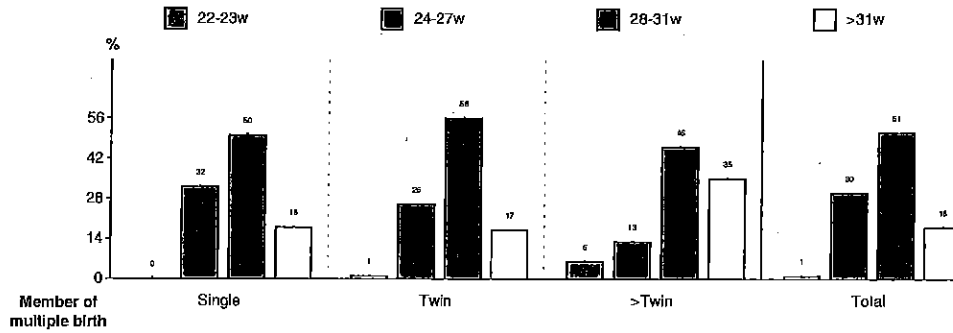




Cumulative Report
3. Caring activities in the NIC unit

3.G.3. Multiple pregnancy and GA

Member of multiple birth	N	22-23w %	24-27w %	28-31w %	>31w %	% of popul.
Single	1794	8 0	578 32	889 50	319 18	67.9 1794/2644
Twin	781	10 1	201 26	437 56	133 17	29.5 781/2644
More than twin	69	4 6	9 13	32 46	24 35	2.6 69/2644
Total	2644	22 1	788 30	1358 51	476 18	100.0 2644/2644





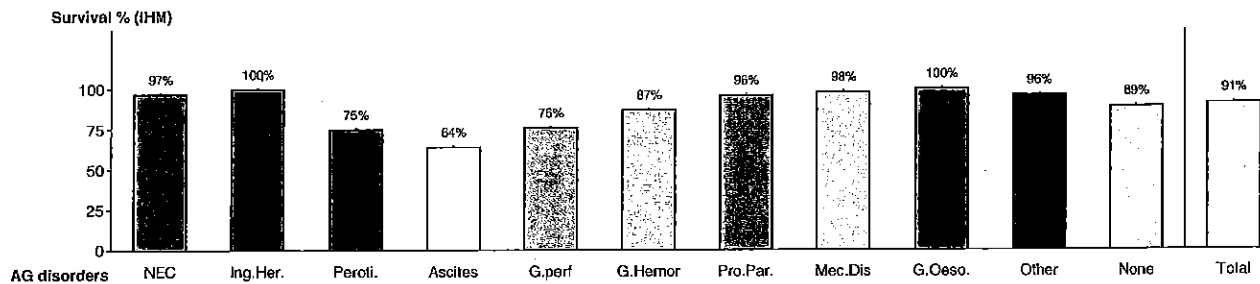
Cumulative Report
3. Caring activities in the NIC unit

3.H. Neonatal diseases

3.H.1. Acquired gastrointestinal disorders

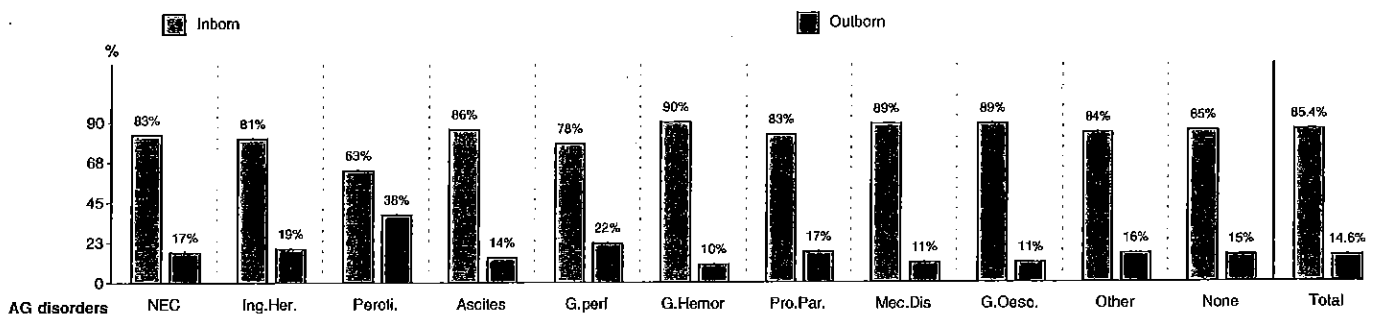
3.H.1.a. Acquired gastrointestinal disorders and survival

Acquired gastrointestinal disorders	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total
Necrotising enterocolitis	144	0	100	4	97	4	97	5.4 144/2644
Inguinal herniation	64	0	100	0	100	0	100	2.4 64/2644
Peritonitis	8	0	100	2	75	2	75	.3 8/2644
Ascites	14	0	100	5	64	5	64	.5 14/2644
Gastrointestinal perforation	46	2	96	9	80	11	76	1.7 46/2644
Gastrointestinal hemorrhage	31	1	97	3	90	4	87	1.2 31/2644
Prolonged paralytic ileus	75	1	99	2	97	3	96	2.8 75/2644
Meconium dis. preterm infant	57	0	100	1	98	1	98	2.2 57/2644
Gastro - oesophageal reflux	307	1	100	0	100	1	100	11.6 307/2644
Other	168	3	98	3	98	6	96	6.4 168/2644
None	1897	148	92	60	97	208	89	71.7 1897/2644
Total (Nb of occurrences-Nb of patients)	2811-2644	156-156	94	89-83	97	245-239	91	100.0 2644/2644



3.H.1.b. Acquired gastrointestinal disorders and origin

Acquired gastrointestinal disorders	N	Inborn		Outborn		% of total					
		N	%	N	%						
Necrotising enterocolitis	144	120	83	5	120/2257	5.4 144/2644					
Inguinal herniation	64	52	81	2	52/2257	2.4 64/2644					
Peritonitis	8	5	63	0	5/2257	.3 8/2644					
Ascites	14	12	86	1	12/2257	.5 14/2644					
Gastrointestinal perforation	46	36	78	2	36/2257	1.7 46/2644					
Gastrointestinal hemorrhage	31	28	90	1	28/2257	1.2 31/2644					
Prolonged paralytic ileus	75	62	83	3	62/2257	2.8 75/2644					
Meconium dis. preterm infant	57	51	89	2	51/2257	2.2 57/2644					
Gastro - oesophageal reflux	307	274	89	12	274/2257	11.6 307/2644					
Other	168	141	84	6	141/2257	6.4 168/2644					
None	1897	1613	85	71	1613/2257	71.7 1897/2644					
Total (Nb of occurrences-Nb of patients)	2811-2644	2394-2257	85.4	100.0	2257/2257	417-387	14.6	100.0	387/387	100.0	2644/2644





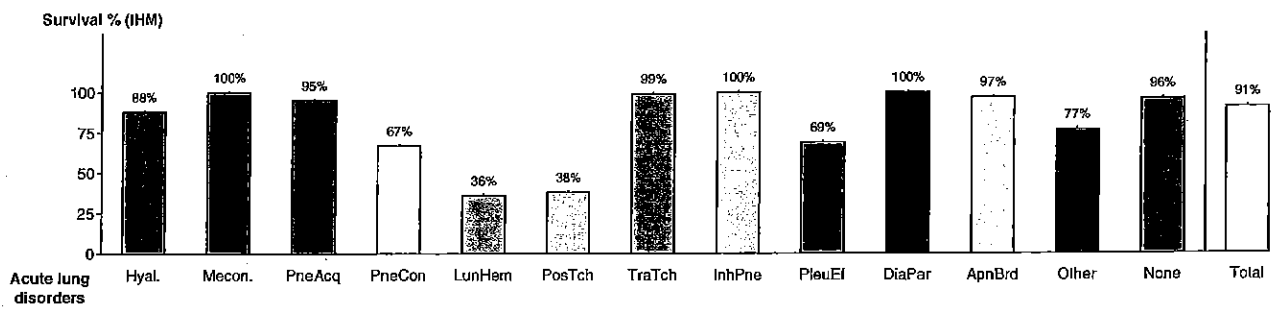
Cumulative Report
3. Caring activities in the NIC unit

3.H.2. Cardiorespiratory diseases

3.H.2.1. Acute lung disorders

3.H.2.1.a. Acute lung disorders and survival

Acute lung disorders	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Hyaline membrane disease	1677	125	93	72	96	197	88	63.4	1677/2644
Meconium aspiration syndrome	3	0	100	0	100	0	100	.1	3/2644
Pneumonia acquired	37	0	100	2	95	2	95	1.4	37/2644
Pneumonia congenital	21	7	67	0	100	7	67	.8	21/2644
Lung hemorrhage	50	27	46	5	90	32	36	1.9	50/2644
Postasphyxial lungedema	13	6	54	2	85	8	38	.5	13/2644
Transient tachypnea	210	1	100	2	99	3	99	7.9	210/2644
Inhalation pneumonitis	3	0	100	0	100	0	100	.1	3/2644
Pleural effusions	13	1	92	3	77	4	69	.5	13/2644
Diaphragmatic paralysis/eventration	1	0	100	0	100	0	100	.0	1/2644
Apnea/bradycardia syndrome	543	4	99	12	98	16	97	20.5	543/2644
Other	53	9	83	3	94	12	77	2.0	53/2644
None	613	22	96	4	99	26	96	23.2	613/2644
Total (Nb of occurrences-Nb of patients)	3237-2644	202-156	94	105-83	97	307-239	91	100.0	2644/2644

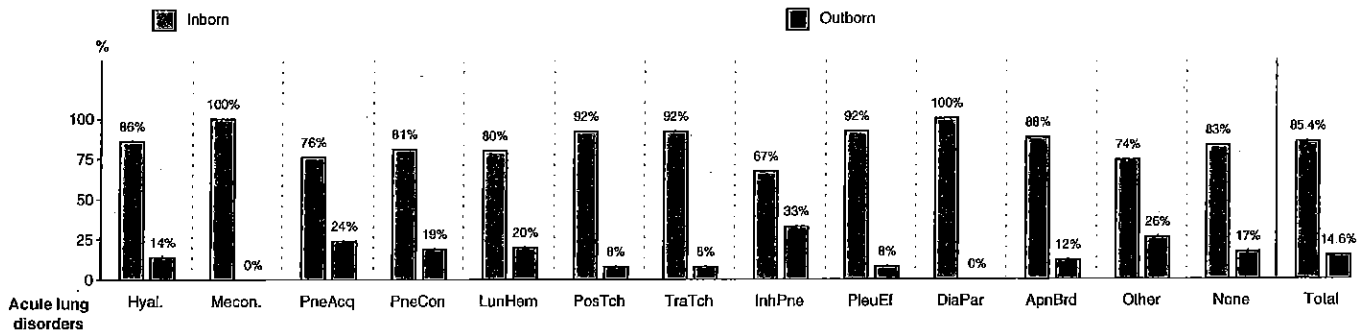




Cumulative Report
3. Caring activities in the NIC unit

3.H.2.1.b. Acute lung disorders and origin

Acute lung disorders	N	Inborn				Outborn					
		N	%	% of IB	N	%	% of OB	% of total			
Hyaline membrane disease	1677	1438	86	64	1438/2257	239	14	62	239/387	63.4	1677/2644
Meconium aspiration syndrome	3	3	100	0	3/2257	0	0	0	0/387	.1	3/2644
Pneumonia acquired	37	28	76	1	28/2257	9	24	2	9/387	1.4	37/2644
Pneumonia congenital	21	17	81	1	17/2257	4	19	1	4/387	.8	21/2644
Lung hemorrhage	50	40	80	2	40/2257	10	20	3	10/387	1.9	50/2644
Postasphyxial lungedema	13	12	92	1	12/2257	1	8	0	1/387	.5	13/2644
Transient tachypnea	210	193	92	9	193/2257	17	8	4	17/387	7.9	210/2644
Inhalation pneumonitis	3	2	67	0	2/2257	1	33	0	1/387	.1	3/2644
Pleural effusions	13	12	92	1	12/2257	1	8	0	1/387	.5	13/2644
Diaphragmatic paralysis/eventration	1	1	100	0	1/2257	0	0	0	0/387	0	1/2644
Apnea/bradycardia syndrome	543	479	88	21	479/2257	64	12	17	64/387	20.5	543/2644
Other	53	39	74	2	39/2257	14	26	4	14/387	2	53/2644
None	613	506	83	22	506/2257	107	17	28	107/387	23.2	613/2644
Total (Nb of occurrences-Nb of patients)	3237-2644	2770-2257	85.4	100.0	2257/2257	467-387	14.6	100.0	387/387	100.0	2644/2644



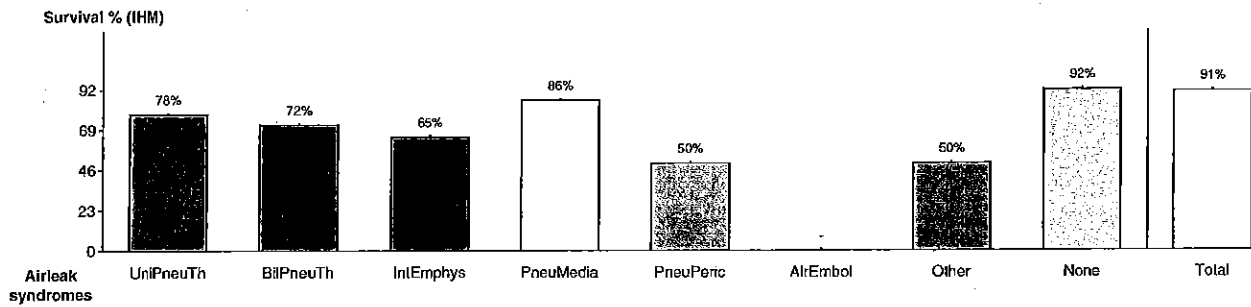


Cumulative Report
3. Caring activities in the NIC unit

3.H.2.2. Airleak syndromes

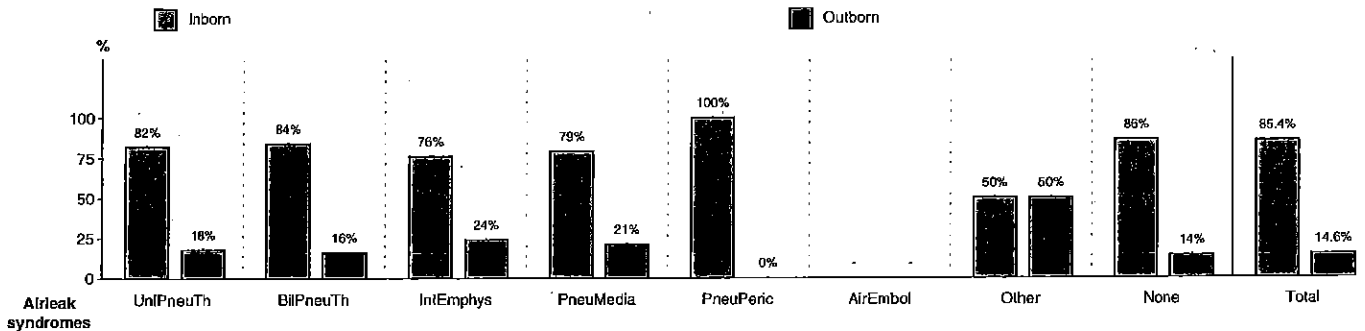
3.H.2.2.a. Airleak syndromes and survival

Air leak syndromes	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total
Unilateral pneumothorax	72	10	86	6	92	16	78	2.7 72/2644
Bilateral pneumothorax	32	5	84	4	87	9	72	1.2 32/2644
Interstitial emphysema	37	8	78	5	86	13	65	1.4 37/2644
Pneumomediastinum	14	1	93	1	93	2	86	.5 14/2644
Pneumopericardium	2	1	50	0	100	1	50	.1 2/2644
Air embolism	-	-	-	-	-	-	-	-
Other	2	1	50	0	100	1	50	.1 2/2644
None	2508	134	95	70	97	204	92	94.9 2508/2644
Total (Nb of occurrences-Nb of patients)	2667-2644	160-156	94	86-83	97	246-239	91	100.0 2644/2644



3.H.2.2.b. Airleak syndromes and origin

Air leak syndromes	N	Inborn			Outborn			% of total			
		N	%	% of IB	N	%	% of OB				
Unilateral pneumothorax	72	59	82	3	59/2257	13	18	3	13/387	2.7	72/2644
Bilateral pneumothorax	32	27	84	1	27/2257	5	16	1	5/387	1.2	32/2644
Interstitial emphysema	37	28	76	1	28/2257	9	24	2	9/387	1.4	37/2644
Pneumomediastinum	14	11	79	0	11/2257	3	21	1	3/387	.5	14/2644
Pneumopericardium	2	2	100	0	2/2257	0	0	0	0/387	.1	2/2644
Air embolism	-	-	-	-	-	-	-	-	-	-	-
Other	2	1	50	0	1/2257	1	50	0	1/387	.1	2/2644
None	2508	2149	86	95	2149/2257	359	14	93	359/387	94.9	2508/2644
Total (Nb of occurrences-Nb of patients)	2667-2644	2277-2257	85.4	100.0	2257/2257	390-387	14.6	100.0	387/387	100.0	2644/2644

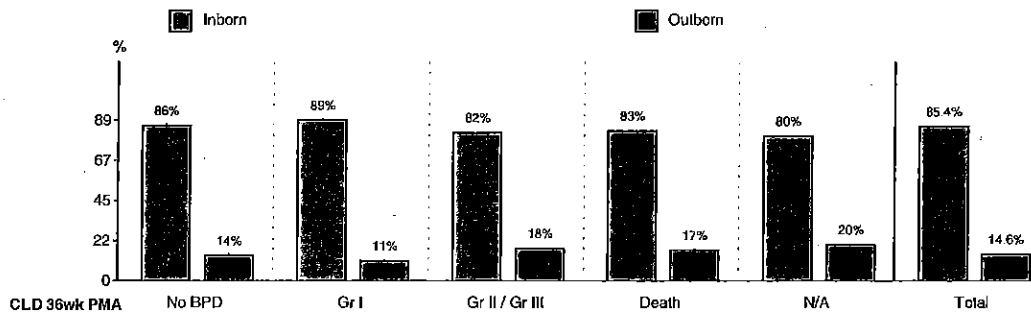




Cumulative Report
3. Caring activities in the NIC unit

3.H.2.3. CLD or death at 36 weeks PMA and origin

CLD at 36 weeks	Inborn			Outborn			% of total				
	N	N	%	% of IB	N	%			% of OB		
No BPD	2011	1737	86	77	1737/2257	274	14	71	274/387	76.1	2011/2644
Grade I	28	25	89	1	25/2257	3	11	1	3/387	1.1	28/2644
Grade II / Grade III	228	186	82	8	186/2257	42	18	11	42/387	8.6	228/2644
Death	279	231	83	10	231/2257	48	17	12	48/387	10.6	279/2644
Unknown or N/A	98	78	80	3	78/2257	20	20	5	20/387	3.7	98/2644
Total	2644	2257	85.4	100.0	2257/2257	387	14.6	100.0	387/387	100.0	2644/2644



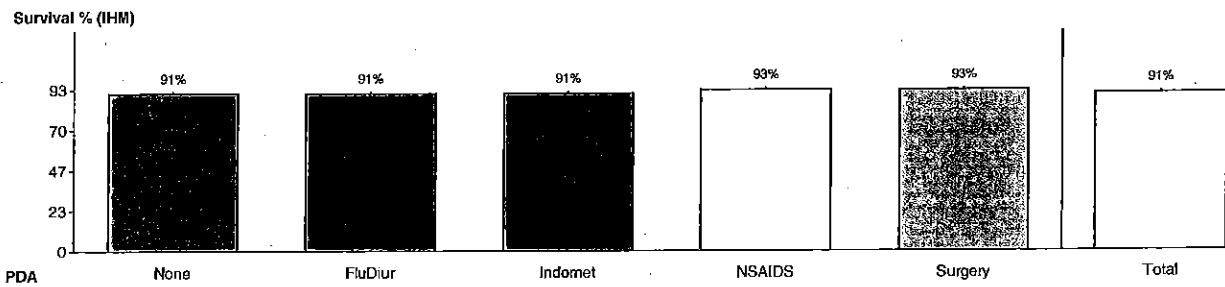


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3. Caring activities in the NIC unit

3.H.2.4. Persistent ductus arteriosus (PDA)

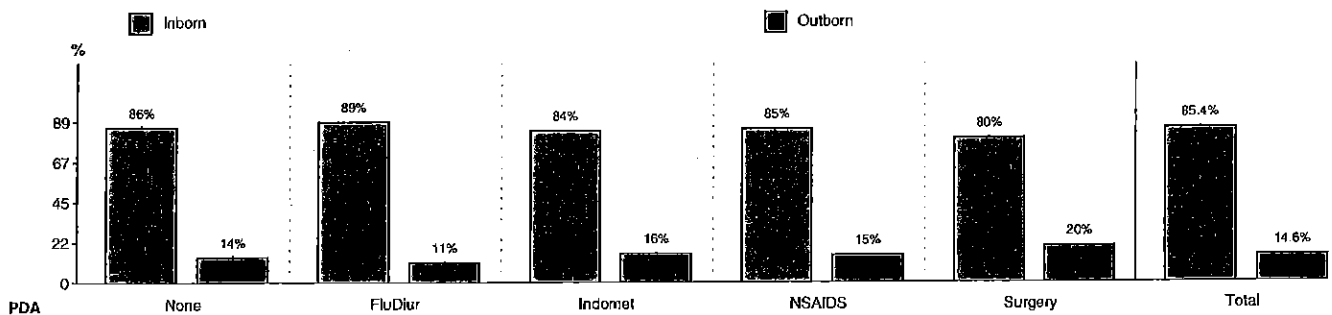
3.H.2.4.a. Persistent ductus arteriosus (PDA) and survival

Persistent ductus arteriosus (PDA)	N	ENM survival %	LNM survival %	IHM survival %	% of total
None	2025	141 93	47 98	188 91	76.6 2025/2644
Fluid restriction + - diuretics	289	9 97	18 94	27 91	10.9 289/2644
Indomethacin	161	1 99	13 92	14 91	6.1 161/2644
Other NSAIDs	336	6 98	17 95	23 93	12.7 336/2644
Surgery	118	2 98	6 95	8 93	4.5 118/2644
Total (Nb of occurrences-Nb of patients)	2929-2644	159-156 94	101-83 97	260-239 91	100.0 2644/2644



3.H.2.4.b. Persistent ductus arteriosus (PDA) and origin

Persistent ductus arteriosus (PDA)	N	Inborn			Outborn			% of total
		N	%	% of IB	N	%	% of OB	
None	2025	1742	86	77 1742/2257	283	14	73 283/387	76.6 2025/2644
Fluid restriction + - diuretics	289	258	89	11 258/2257	31	11	8 31/387	10.9 289/2644
Indomethacin	161	135	84	6 135/2257	26	16	7 26/387	6.1 161/2644
Other NSAIDs	336	286	85	13 286/2257	50	15	13 50/387	12.7 336/2644
Surgery	118	94	80	4 94/2257	24	20	6 24/387	4.5 118/2644
Total (Nb of occurrences-Nb of patients)	2929-2644	2515-2257	85.4	100.0 2257/2257	414-387	14.6	100.0 387/387	100.0 2644/2644





Cumulative Report
3. Caring activities in the NIC unit

3.H.3. Infection episodes



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3. Caring activities in the NIC unit

3.H.4. Specific congenital anomalies

3.H.4.1. Specific congenital anomalies and survival

Specific congenital malformations	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Anal imperforation	1	1	0	0	100	1	0	.0	1/2644
Limb reduction defect(s)	3	0	100	0	100	0	100	.1	3/2644
Obstructive uropathy	4	0	100	0	100	0	100	.2	4/2644
Esophageal atresia	5	1	80	0	100	1	80	.2	5/2644
Hydrocephaly	4	2	50	1	75	3	25	.2	4/2644
Congenital cardiac malformation	79	2	97	8	90	10	87	3.0	79/2644
Spina bifida	2	2	0	0	100	2	0	.1	2/2644
Intestinal atresia	4	0	100	1	75	1	75	.2	4/2644
Omphalocele	-	-	-	-	-	-	-	-	-
Gastroschisis	4	1	75	0	100	1	75	.2	4/2644
Diaphragmatic hernia	4	2	50	0	100	2	50	.2	4/2644
Karyotype anomaly	14	3	79	2	86	5	64	.5	14/2644
Cleft lip/palate	13	1	92	2	85	3	77	.5	13/2644
Anencephaly	-	-	-	-	-	-	-	-	-
Other	85	13	85	6	93	19	78	3.2	85/2644
None	2447	134	95	67	97	201	92	92.5	2447/2644
Total (Nb of occurrences-Nb of patients)	2669-2644	162-156	94	87-83	97	249-239	91	100.0	2644/2644

3.H.4.2. Specific congenital anomalies and origin

Specific congenital malformations	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Anal imperforation	1	1	100	0	1/2257	0	0	0	0/387	0	1/2644
Limb reduction defect(s)	3	2	67	0	2/2257	1	33	0	1/387	.1	3/2644
Obstructive uropathy	4	4	100	0	4/2257	0	0	0	0/387	.2	4/2644
Esophageal atresia	5	3	60	0	3/2257	2	40	1	2/387	.2	5/2644
Hydrocephaly	4	3	75	0	3/2257	1	25	0	1/387	.2	4/2644
Congenital cardiac malformation	79	49	62	2	49/2257	30	38	8	30/387	3	79/2644
Spina bifida	2	2	100	0	2/2257	0	0	0	0/387	.1	2/2644
Intestinal atresia	4	4	100	0	4/2257	0	0	0	0/387	.2	4/2644
Omphalocele	-	-	-	-	-	-	-	-	-	-	-
Gastroschisis	4	4	100	0	4/2257	0	0	0	0/387	.2	4/2644
Diaphragmatic hernia	4	4	100	0	4/2257	0	0	0	0/387	.2	4/2644
Karyotype anomaly	14	11	79	0	11/2257	3	21	1	3/387	.5	14/2644
Cleft lip/palate	13	11	85	0	11/2257	2	15	1	2/387	.5	13/2644
Anencephaly	-	-	-	-	-	-	-	-	-	-	-
Other	85	72	85	3	72/2257	13	15	3	13/387	3.2	85/2644
None	2447	2106	86	93	2106/2257	341	14	88	341/387	92.5	2447/2644
Total (Nb of occurrences-Nb of patients)	2669-2644	2276-2257	85.4	100.0	2257/2257	393-387	14.6	100.0	387/387	100.0	2644/2644

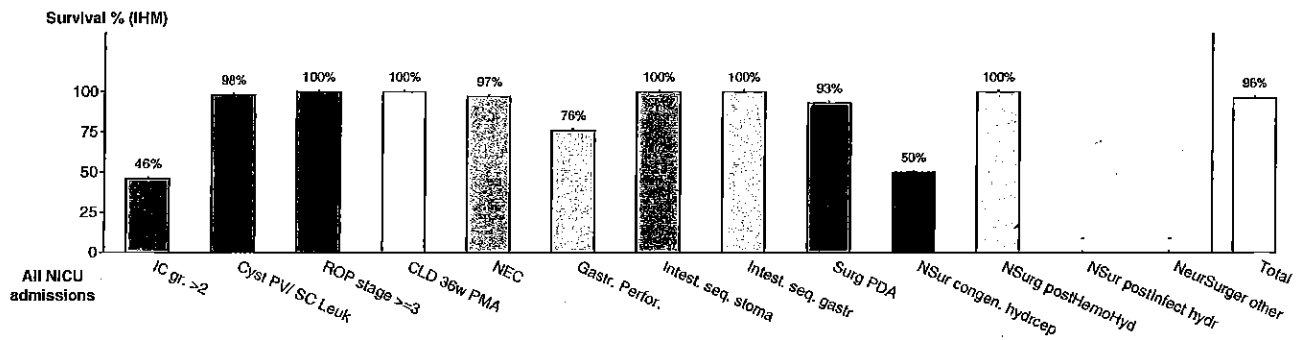


Cumulative Report
3. Caring activities in the NIC unit

3.I. Major NICU morbidity

3.I.1. Survival

All admissions	N	ENM survival %	LNM survival %	IHM survival %	% of total				
IC hemorrhage grade >2	187	70	63	31	83	101	46	7.1	187/2644
Cystic PV and/or SC leukomalacia	42	0	100	1	98	1	98	1.6	42/2644
ROP stage >=3	88	0	100	0	100	0	100	3.3	88/2644
CLD at 36 weeks PMA	245	0	100	0	100	0	100	9.3	245/2644
Necrotising enterocolitis	144	0	100	4	97	4	97	5.4	144/2644
Gastrointestinal perforation(s)	46	2	96	9	80	11	76	1.7	46/2644
Intestinal sequelae Stoma	12	0	100	0	100	0	100	.5	12/2644
Intestinal sequelae Gastronomy	3	0	100	0	100	0	100	.1	3/2644
Surgery for PDA	118	2	98	6	95	8	93	4.5	118/2644
Neurosurgery for congenital hydrocephaly	2	0	100	1	50	1	50	.1	2/2644
Neurosurgery for posthemorrhagic hydrocephaly	15	0	100	0	100	0	100	.6	15/2644
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	-
Neurosurgery for other reason	-	-	-	-	-	-	-	-	-
Total (Nb of occurrences-Nb of patients)	902-676	74-72	97	52-45	98	126-117	96	25.6	676/2644

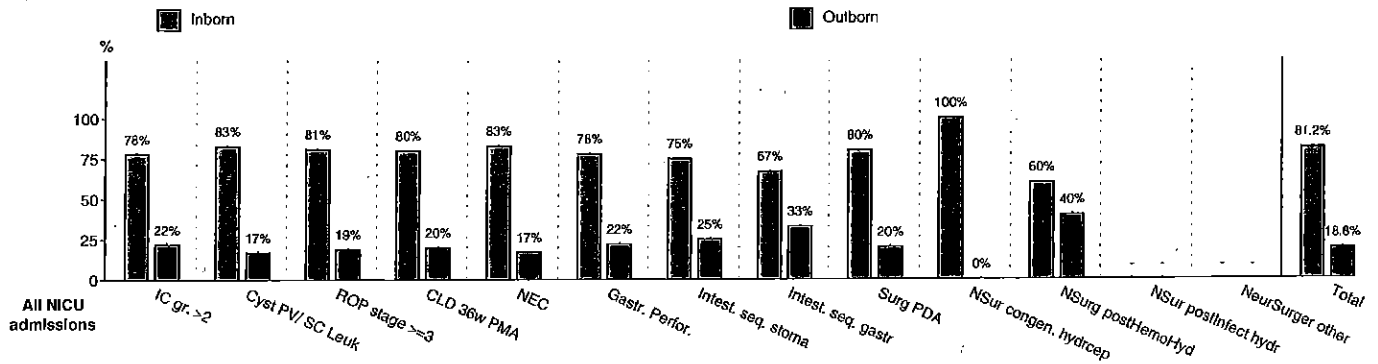




Cumulative Report
3. Caring activities in the NIC unit

3.1.2. Group by origin

All admissions	Inborn				Outborn			
	N	N	%	% of IB	N	%	% of OB	% of total
IC hemorrhage grade >2	187	145	78	26 145/549	42	22	33 42/127	7.1 187/2644
Cystic PV and/or SC leukomalacia	42	35	83	6 35/549	7	17	6 7/127	1.6 42/2644
ROP stage >=3	88	71	81	13 71/549	17	19	13 17/127	3.3 88/2644
CLD at 36 weeks PMA	245	197	80	36 197/549	48	20	38 48/127	9.3 245/2644
Necrotising enterocolitis	144	120	83	22 120/549	24	17	19 24/127	5.4 144/2644
Gastrointestinal perforation(s)	46	36	78	7 36/549	10	22	8 10/127	1.7 46/2644
Intestinal sequelae Stoma	12	9	75	2 9/549	3	25	2 3/127	.5 12/2644
Intestinal sequelae Gastronomy	3	2	67	0 2/549	1	33	1 1/127	.1 3/2644
Surgery for PDA	118	94	80	17 94/549	24	20	19 24/127	4.5 118/2644
Neurosurgery for congenital hydrocephaly	2	2	100	0 2/549	0	0	0 0/127	.1 2/2644
Neurosurgery for posthemorrhagic hydrocephaly	15	9	60	2 9/549	6	40	5 6/127	.6 15/2644
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-
Neurosurgery for other reason	-	-	-	-	-	-	-	-
Total (Nb of occurrences-Nb of patients)	902-676	720-549	81.2	100.0 549/549	182-127	18.8	100.0 127/127	25.6 676/2644





Cumulative Report
3. Caring activities in the NIC unit

3.1.3. Group by gestational age

3.1.3.1. Survival

All admissions	N	22-23w		24-27w		28-31w		>31w	
		IHM	% surv.	IHM	% surv.	IHM	% surv.	IHM	% surv.
IC hemorrhage grade >2	187	5	97	74	60	21	89	1	99
Cystic PV and/or SC leukomalacia	42	0	100	1	98	0	100	0	100
ROP stage >=3	88	0	100	0	100	0	100	0	100
CLD at 36 weeks PMA	245	0	100	0	100	0	100	0	100
Necrotising enterocolitis	144	0	100	2	99	1	99	1	99
Gastrointestinal perforation(s)	46	0	100	10	78	1	98	0	100
Intestinal sequelae Stoma	12	0	100	0	100	0	100	0	100
Intestinal sequelae Gastronomy	3	0	100	0	100	0	100	0	100
Surgery for PDA	118	0	100	6	95	2	98	0	100
Neurosurgery for congenital hydrocephaly	2	0	100	1	50	0	100	0	100
Neurosurgery for posthemorrhagic hydrocephaly	15	0	100	0	100	0	100	0	100
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	-
Neurosurgery for other reason	-	-	-	-	-	-	-	-	-
Total (Nb of occurrences-Nb of patients)	902-676	5-5	99	94-87	86	25-23	96	2-2	100

3.1.3.2. Count

All admissions	N	22-23w		24-27w		28-31w		>31w		% of popul.	
		%		%		%		%			
IC hemorrhage grade >2	187	6	3	123	66	50	27	8	4	7.1	187/2644
Cystic PV and/or SC leukomalacia	42	0	0	23	55	17	40	2	5	1.6	42/2644
ROP stage >=3	88	3	3	74	84	9	10	2	2	3.3	88/2644
CLD at 36 weeks PMA	245	3	1	140	57	95	39	7	3	9.3	245/2644
Necrotising enterocolitis	144	1	1	66	46	61	42	16	11	5.4	144/2644
Gastrointestinal perforation(s)	46	1	2	34	74	11	24	0	0	1.7	46/2644
Intestinal sequelae Stoma	12	1	8	2	17	8	67	1	8	.5	12/2644
Intestinal sequelae Gastronomy	3	0	0	0	0	0	0	3	100	.1	3/2644
Surgery for PDA	118	2	2	88	75	27	23	1	1	4.5	118/2644
Neurosurgery for congenital hydrocephaly	2	0	0	1	50	1	50	0	0	.1	2/2644
Neurosurgery for posthemorrhagic hydrocephaly	15	0	0	8	53	6	40	1	7	.6	15/2644
Neurosurgery for post-infectious hydrocephaly	-	-	-	-	-	-	-	-	-	-	-
Neurosurgery for other reason	-	-	-	-	-	-	-	-	-	-	-
Total (Nb of occurrences-Nb of patients)	902-676	17-10	1	559-396	59	285-230	34	41-40	6	25.6	676/2644

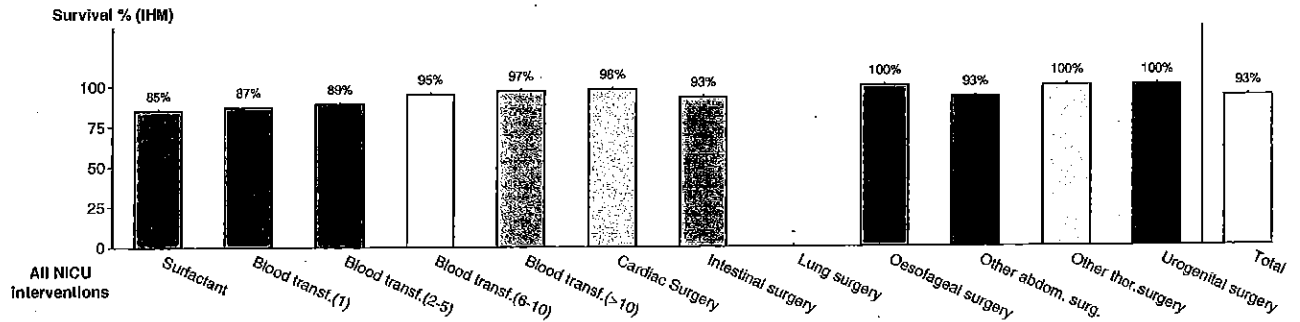


Cumulative Report
3. Caring activities in the NIC unit

3.J. Therapeutic interventions

3.J.1. Survival

All interventions	N	ENM	survival %	LNM	survival %	IHM	survival %	% of total	
Surfactant therapy	1164	107	91	70	94	177	85	44.0	1164/2644
Blood transfusions (1)	391	36	91	15	96	51	87	14.8	391/2644
Blood transfusions (2-5)	645	36	94	36	94	72	89	24.4	645/2644
Blood transfusions (6-10)	214	3	99	8	96	11	95	8.1	214/2644
Blood transfusions (>10)	77	0	100	2	97	2	97	2.9	77/2644
Cardiac surgery (PDA excl)	89	0	100	2	98	2	98	3.4	89/2644
Intestinal surgery	141	2	99	8	94	10	93	5.3	141/2644
Lung surgery	-	-	-	-	-	-	-	-	-
Oesophageal surgery	4	0	100	0	100	0	100	.2	4/2644
Other abdominal surgery	14	1	93	0	100	1	93	.5	14/2644
Other thoracic surgery	3	0	100	0	100	0	100	.1	3/2644
Urogenital surgery	12	0	100	0	100	0	100	.5	12/2644
Total (Nb of occurrences-Nb of patients)	2754-1698	185-119	95	141-78	97	326-197	93	64.2	1698/2644

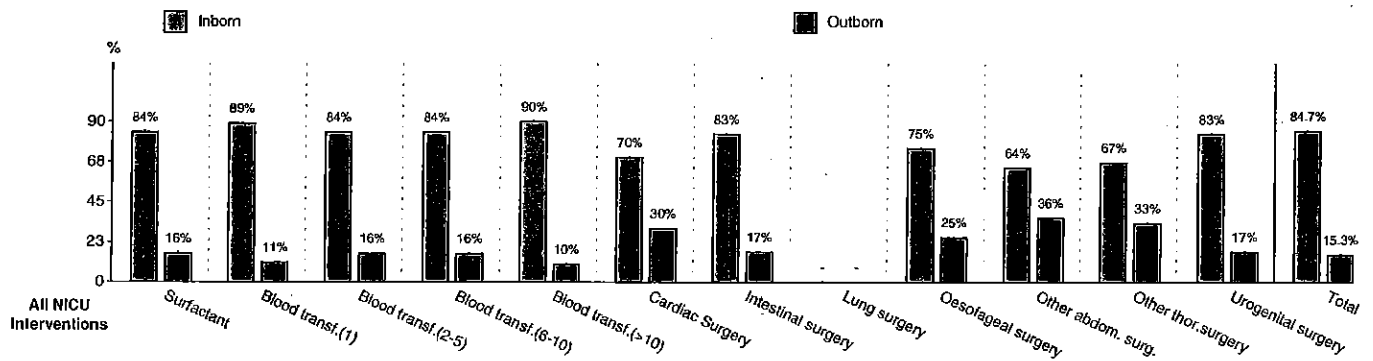




Cumulative Report
3. Caring activities in the NIC unit

3.J.2. Group by Origin

All interventions	Inborn					Outborn					
	N	N	%	% of IB	N	%	% of OB	% of total			
Surfactant therapy	1164	978	84	68	978/1438	186	16	72	186/260	44	1164/2644
Blood transfusions (1)	391	348	89	24	348/1438	43	11	17	43/260	14.8	391/2644
Blood transfusions (2-5)	645	539	84	37	539/1438	106	16	41	106/260	24.4	645/2644
Blood transfusions (6-10)	214	180	84	13	180/1438	34	16	13	34/260	8.1	214/2644
Blood transfusions (>10)	77	69	90	5	69/1438	8	10	3	8/260	2.9	77/2644
Cardiac surgery (PDA excl)	89	62	70	4	62/1438	27	30	10	27/260	3.4	89/2644
Intestinal surgery	141	117	83	8	117/1438	24	17	9	24/260	5.3	141/2644
Lung surgery	-	-	-	-	-	-	-	-	-	-	-
Oesophageal surgery	4	3	75	0	3/1438	1	25	0	1/260	.2	4/2644
Other abdominal surgery	14	9	64	1	9/1438	5	36	2	5/260	.5	14/2644
Other thoracic surgery	3	2	67	0	2/1438	1	33	0	1/260	.1	3/2644
Urogenital surgery	12	10	83	1	10/1438	2	17	1	2/260	.5	12/2644
Total (Nb of occurrences-Nb of patients)	2754-1698	2317-1438	84.7	100.0	1438/1438	437-260	15.3	100.0	260/260	64.2	1698/2644





Cumulative Report
3. Caring activities in the NIC unit

3.J.3. Group by gestational age

3.J.3.1. Survival

All interventions	N	22-23w		24-27w		28-31w		>31w	
		IHM	% surv.	IHM	% surv.	IHM	% surv.	IHM	% surv.
Surfactant therapy	1164	5	100	126	89	44	96	2	100
Blood transfusions (1)	391	2	99	36	91	10	97	3	99
Blood transfusions (2-5)	645	3	100	50	92	18	97	1	100
Blood transfusions (6-10)	214	0	100	9	96	1	100	1	100
Blood transfusions (>10)	77	0	100	2	97	0	100	0	100
Cardiac surgery (PDA excl)	89	0	100	1	99	1	99	0	100
Intestinal surgery	141	0	100	7	95	1	99	2	99
Lung surgery	-	-	-	-	-	-	-	-	-
Oesophageal surgery	4	0	100	0	100	0	100	0	100
Other abdominal surgery	14	0	100	0	100	1	93	0	100
Other thoracic surgery	3	0	100	0	100	0	100	0	100
Urogenital surgery	12	0	100	0	100	0	100	0	100
Total (Nb of occurrences-Nb of patients)	2754-1698	10-6	99	231-132	86	76-51	96	9-8	99

3.J.3.2. Count

All interventions	N	22-23w %		24-27w %		28-31w %		>31w %		% of popul.
Surfactant therapy	1164	10	1	570	49	551	47	33	3	44.0 1164/2644
Blood transfusions (1)	391	2	1	90	23	254	65	45	12	14.8 391/2644
Blood transfusions (2-5)	645	3	0	285	44	329	51	28	4	24.4 645/2644
Blood transfusions (6-10)	214	0	0	155	72	52	24	7	3	8.1 214/2644
Blood transfusions (>10)	77	2	3	64	83	10	13	1	1	2.9 77/2644
Cardiac surgery (PDA excl)	89	1	1	58	65	25	28	5	6	3.4 89/2644
Intestinal surgery	141	3	2	78	55	51	36	9	6	5.3 141/2644
Lung surgery	-	-	-	-	-	-	-	-	-	-
Oesophageal surgery	4	0	0	0	0	3	75	1	25	.2 4/2644
Other abdominal surgery	14	0	0	3	21	9	64	2	14	.5 14/2644
Other thoracic surgery	3	0	0	2	67	0	0	1	33	.1 3/2644
Urogenital surgery	12	0	0	4	33	6	50	2	17	.5 12/2644
Total (Nb of occurrences-Nb of patients)	2754-1698	21-13	1	1909-701	41	1290-874	51	134-110	6	64.2 1698/2644

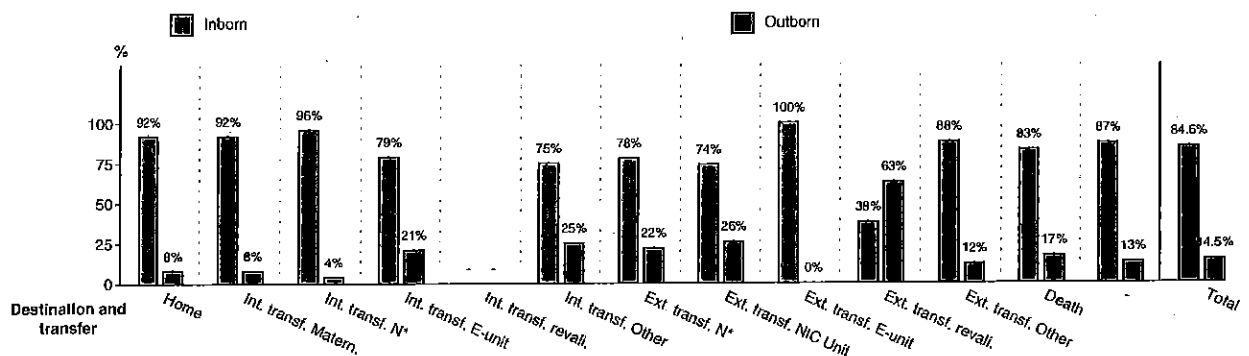


Cumulative Report
3. Caring activities in the NIC unit

3.K. Data on discharge

3.K.1. Destination at discharge

Destination transfer	Inborn				Outborn				% of total		
	N	N	%	% of IB	N	%	% of OB				
Home	1118	1025	92	46	1025/2236	93	8	24	93/384	42.3	1118/2644
Internal transfer Maternity	13	12	92	1	12/2236	1	8	0	1/384	.5	13/2644
Internal transfer N* function	102	98	96	4	98/2236	4	4	1	4/384	3.9	102/2644
Internal transfer E-unit	19	15	79	1	15/2236	4	21	1	4/384	.7	19/2644
Internal transfer Centre for revalidation	-	-	-	-	-	-	-	-	-	-	-
Internal transfer Other	4	3	75	0	3/2236	1	25	0	1/384	.2	4/2644
External transfer N* function	919	720	78	32	720/2236	199	22	52	199/384	34.8	919/2644
External transfer NIC Unit	73	54	74	2	54/2236	19	26	5	19/384	2.8	73/2644
External transfer E-unit	4	4	100	0	4/2236	0	0	0	0/384	.2	4/2644
External transfer Centre for revalidation	8	3	38	0	3/2236	5	63	1	5/384	.3	8/2644
External transfer Other	81	71	88	3	71/2236	10	12	3	10/384	3.1	81/2644
Death	279	231	83	10	231/2236	48	17	13	48/384	10.6	279/2644
-	23	20	87	1	20/2236	3	13	1	3/384	.9	23/2644
Total	2644	2257	84.6	100.0	2236/2236	387	14.5	100.0	384/384	100.0	2644/2644



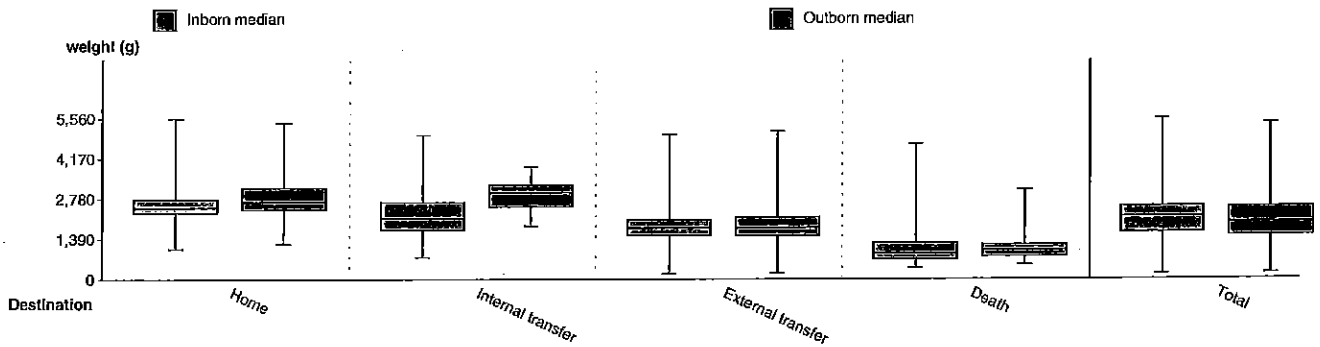


Cumulative Report
3. Caring activities in the NIC unit

3.K.2. Weight at discharge

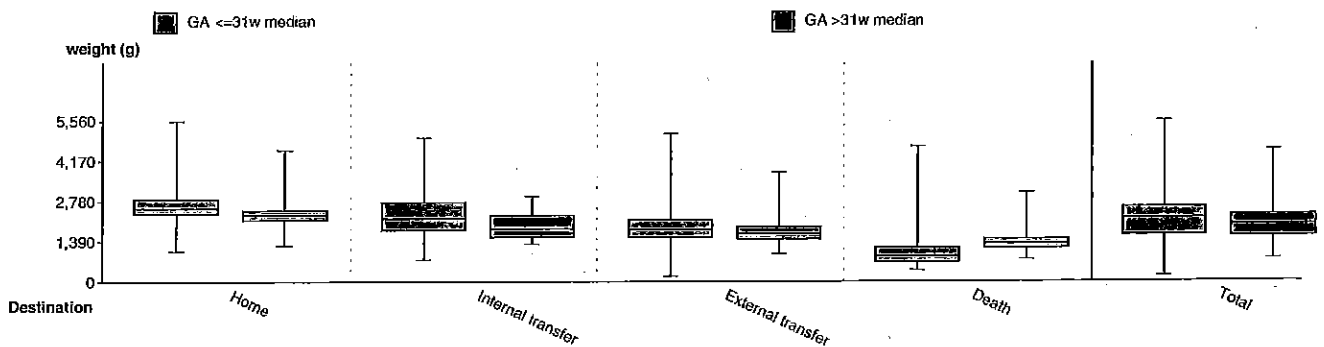
3.K.2.1. Weight (g) over origin and destination

Destination	Inborn						Outborn						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1025	1050	2304	2475	2763	5560	93	1208	2400	2671	3160	5398	1025	1050	2310	2487	2790	5560
Internal transfer	131	760	1710	2105	2660	4980	10	1840	2505	2998	3260	3880	131	760	1740	2160	2720	4980
External transfer	869	189	1514	1765	2050	5000	236	200	1506	1775	2140	5120	869	189	1510	1766	2090	5120
Death	231	385	680	880	1250	4670	48	500	780	1000	1193	3085	231	385	700	900	1240	4670
Total	2257	189	1620	2160	2520	5560	387	200	1500	1950	2490	5398	2644	189	1600	2140	2520	5560



3.K.2.2. Weight (g) over GA and destination

Destination	GA <=31w						GA >31w						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	922	1050	2350	2542	2850	5560	196	1240	2135	2310	2470	4550	922	1050	2310	2487	2790	5560
Internal transfer	112	760	1785	2185	2745	4980	29	1300	1540	1830	2295	2945	112	760	1740	2160	2720	4980
External transfer	871	189	1530	1800	2135	5120	234	960	1460	1640	1890	3785	871	189	1510	1766	2090	5120
Death	262	385	674	873	1171	4670	17	770	1150	1310	1470	3080	262	385	700	900	1240	4670
Total	2168	189	1610	2190	2580	5560	476	770	1550	1960	2300	4550	2644	189	1600	2140	2520	5560



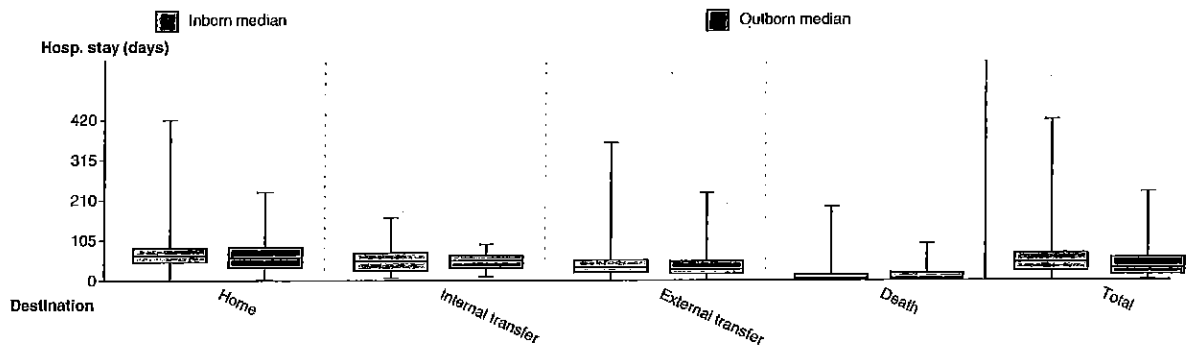


Cumulative Report
3. Caring activities in the NIC unit

3.K.3. Hospital stay (in days)

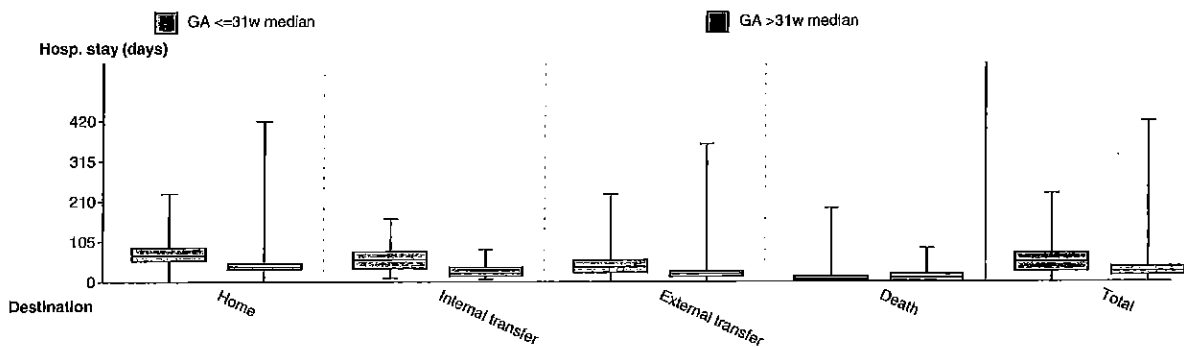
3.K.3.1. Over origin and destination

Destination	Inborn						Outborn						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	1025	0	48	65	85	420	93	2	34	60	87	231	1025	0	47	64	85	420
Internal transfer	131	6	25	50	72	164	10	10	32	52	66	94	131	6	27	50	72	164
External transfer	869	0	21	34	53	360	236	1	17	29	50	229	869	0	20	32	52	360
Death	231	1	2	5	14	193	48	1	3	6	20	96	231	1	3	5	15	193
Total	2257	0	25	47	71	420	387	1	15	32	59	231	2644	0	23	45	69	420



3.K.3.2. Over GA and destination

Destination	GA ≤31w						GA >31w						Total					
	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max	N	Min	p25	Median	p75	Max
Home	922	0	55	69	90	231	196	0	33	39	48	420	922	0	47	64	85	420
Internal transfer	112	10	35	58	79	164	29	6	15	22	38	84	112	6	27	50	72	164
External transfer	871	0	24	39	57	229	234	1	13	21	27	360	871	0	20	32	52	360
Death	262	1	3	5	14	193	17	1	2	10	20	87	262	1	3	5	15	193
Total	2168	0	27	52	75	231	476	0	17	27	39	420	2644	0	23	45	69	420





Cumulative Report
3. Caring activities in the NIC unit

3.L. Causes of death

3.L.1. Over origin

Possible death causes	N	Inborn				Outborn				% of total	
		N	%	% of IB	N	%	% of OB				
Congenital malformation	30	26	87	13	26/208	4	13	9	4/46	1.1	30/2644
Periparturient asphyxia and consequences	27	25	93	12	25/208	2	7	4	2/46	1	27/2644
Birth trauma	1	0	0	0	0/208	1	100	2	1/46	0	1/2644
Infection	59	51	86	25	51/208	8	14	17	8/46	2.2	59/2644
Intracranial hemorrhage	94	71	76	34	71/208	23	24	50	23/46	3.6	94/2644
Leukomalacia	10	8	80	4	8/208	2	20	4	2/46	4	10/2644
Immaturity (lt 26 w and/or lt 750 g)	102	86	84	41	86/208	16	16	35	16/46	3.9	102/2644
Shock	38	34	89	16	34/208	4	11	9	4/46	1.4	38/2644
Respiratory insufficiency	62	49	79	24	49/208	13	21	28	13/46	2.3	62/2644
Inborn error of metabolism	3	3	100	1	3/208	0	0	0	0/46	1	3/2644
Fetal hydrops	1	1	100	0	1/208	0	0	0	0/46	0	1/2644
Peroperative complication	3	2	67	1	2/208	1	33	2	1/46	1	3/2644
Iatrogenic cause of death	4	4	100	2	4/208	0	0	0	0/46	2	4/2644
Unexpected death	-	-	-	-	-	-	-	-	-	-	-
Unexplained death.	1	1	100	0	1/208	0	0	0	0/46	0	1/2644
Other cause	13	12	92	6	12/208	1	8	2	1/46	5	13/2644
Total (Nb of occurrences-Nb of patients)	448-254	373-208	81.9	100.0	208/208	75-46	18.1	100.0	46/46	9.6	254/2644

3.L.2. Over GA

Possible death causes	N	22-23w		24-27w		28-31w		>31w		% of popul.	
		%	%	%	%	%	%				
Congenital malformation	30	0	0	8	27	13	43	9	30	1.1	30/2644
Periparturient asphyxia and consequences	27	0	0	12	44	15	56	0	0	1.0	27/2644
Birth trauma	1	0	0	1	100	0	0	0	0	0	1/2644
Infection	59	1	2	37	63	19	32	2	3	2.2	59/2644
Intracranial hemorrhage	94	2	2	69	73	21	22	2	2	3.6	94/2644
Leukomalacia	10	1	10	6	60	1	10	2	20	4	10/2644
Immaturity (lt 26 w and/or lt 750 g)	102	12	12	82	80	8	8	0	0	3.9	102/2644
Shock	38	0	0	23	61	11	29	4	11	1.4	38/2644
Respiratory insufficiency	62	1	2	42	68	17	27	2	3	2.3	62/2644
Inborn error of metabolism	3	0	0	1	33	2	67	0	0	1	3/2644
Fetal hydrops	1	0	0	0	0	1	100	0	0	0	1/2644
Peroperative complication	3	0	0	2	67	0	0	1	33	1	3/2644
Iatrogenic cause of death	4	0	0	3	75	1	25	0	0	2	4/2644
Unexpected death	-	-	-	-	-	-	-	-	-	-	-
Unexplained death.	1	0	0	0	0	1	100	0	0	0	1/2644
Other cause	13	0	0	7	54	5	38	1	8	5	13/2644
Total (Nb of occurrences-Nb of patients)	448-254	17-12	5	293-160	63	115-66	26	23-16	6	9.6	254/2644

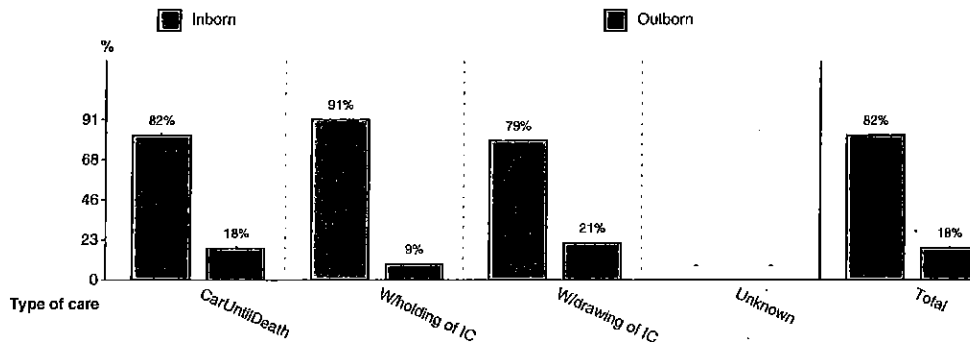


Cumulative Report
3. Caring activities in the NIC unit

3.M. Care provided at death

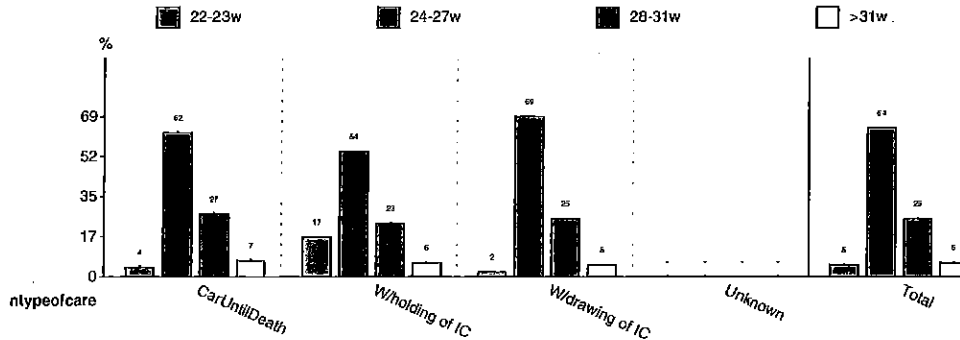
3.M.1. Care over origin

Type of care	Inborn				Outborn				% of total	
	N	N	%	% of IB	N	%	% of OB			
Care given until death	102	84	82	40 84/209	18	18	39 18/46	3.9	102/2644	
Withholding of intensive care	35	32	91	15 32/209	3	9	7 3/46	1.3	35/2644	
Withdrawing of intensive care	118	93	79	44 93/209	25	21	54 25/46	4.5	118/2644	
Unknown	-	-	-	-	-	-	-	-	-	
Total	255	209	82	100.0 209/209	46	18	100.0 46/46	9.6	255/2644	



3.M.2. Care over GA

Type of care	N	22-23w %	24-27w %	28-31w %	>31w %	% of popul.
Care given until death	102	4 4	63 62	28 27	7 7	3.9 102/2644
Withholding of intensive care	35	6 17	19 54	8 23	2 6	1.3 35/2644
Withdrawing of intensive care	118	2 2	81 69	29 25	6 5	4.5 118/2644
Unknown	-	-	-	-	-	-
Total	255	12 5	163 64	65 25	15 6	9.6 255/2644



**Flux des données collectées par le Collège Mère - Nouveau-né (Section Néonatalogie)
Intégration dans les différentes plate formes électroniques du Ministère de la Santé SPF
e Birth - e Health - Newborn College
FIABILITE ET CONFIDENTIALITE**

I. Situation actuelle de la base de données du Collège de Néonatalogie

Le Collège de néonatalogie enregistre des données néonatales concernant les prématurés d'âge gestationnel inférieur à 32 semaines ou de poids de naissance inférieur à 1500g. Trois des 40 items « historiques » ont été récemment modifiés et complétés par les items de Euroneonet. Environ 1-1.5% des naissances sont concernées par cet enregistrement (1500-1800 patients/an).

L'enregistrement actuel a fait l'objet d'une **déclaration à la Commission de la Protection de la Vie Privée (CPVP)** pour l'ensemble des Collèges introduite en 2002 par Monsieur C. Decoster, secrétaire général de l'Administration des Établissements de Soins. Une nouvelle déclaration a été introduite cette année puisque nous projetons d'y inclure des données de follow-up et que le Collège souhaitait avoir la confirmation de la conformité de sa banque de données.

Cette conformité a été confirmée par la CPVP. Toutefois, il nous a été rappelé que chaque centre doit être en règle vis-à-vis de la CPVP par rapport à la gestion de banques de données de ses propres patients. Ceci peut se faire par une déclaration de l'hôpital pour l'ensemble de ses services. Dans certains cas un service doit faire une déclaration spécifique si les données sont utilisées à d'autres fins que celles pour lesquelles l'hôpital a fait sa déclaration.

La base de données est gérée en toute confidentialité par le Président du Collège sous la responsabilité du SPF Santé Publique. Le site sécurisé actuel qui héberge les données des prématurés s'intitule « Newborn College » et est confié au service informatique du CHU Saint-Pierre. Le site permet une utilisation interactive de benchmarking et de tendances.

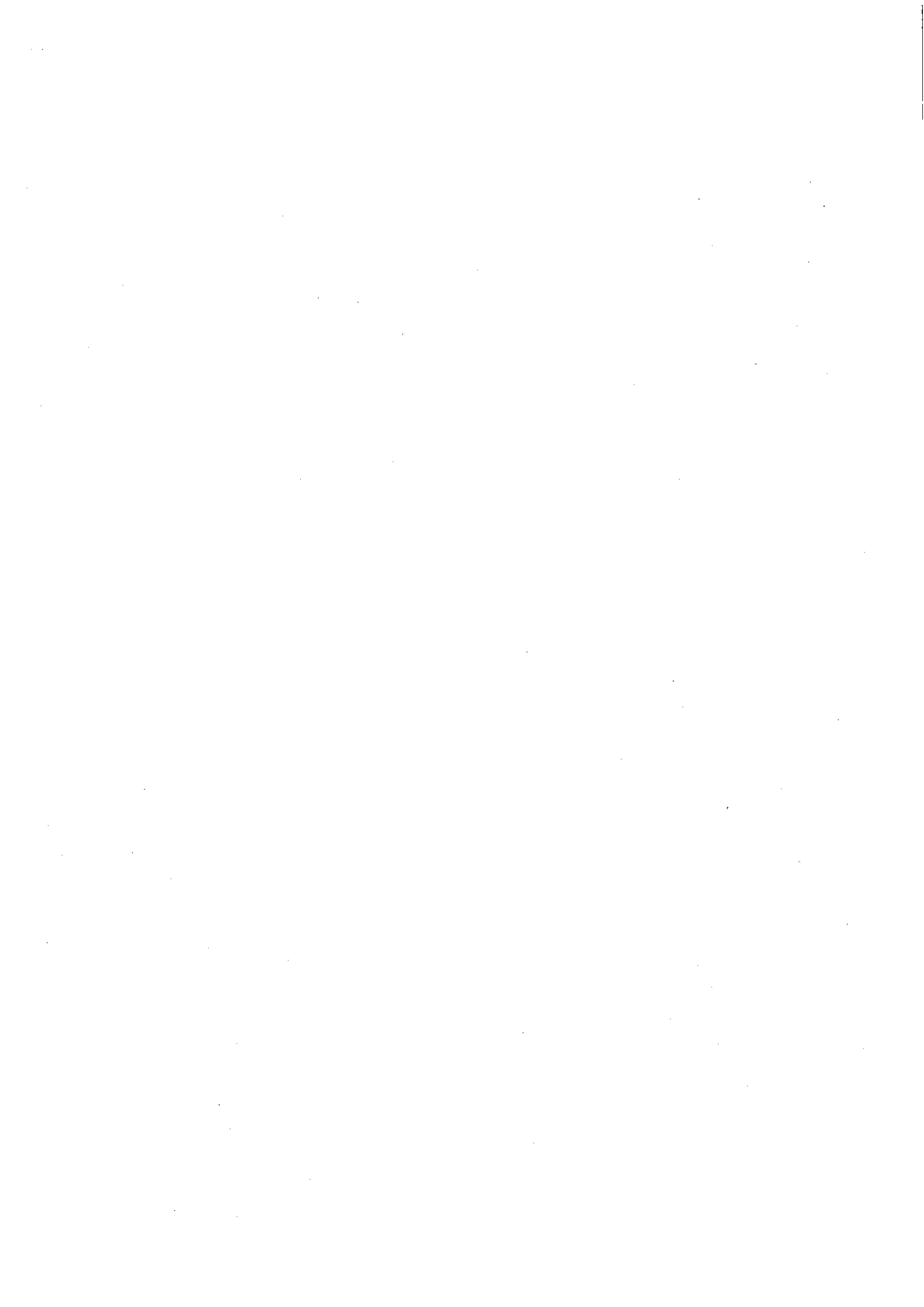
Anonymisation des données du patient

La base de données ne contient pas les données nominatives du patient à savoir le nom, prénom, l'identification de la maman, le n° de registre national.

Actuellement elle contient un n° interne qui dans le futur sera remplacé par le partus number défini dans le système eBirth.

Accès à la base de données

L'accès à l'application se fait par Internet avec le protocole d'encryptage (https). Ceci permet l'impossibilité à tout intermédiaire malveillant dans le réseau internet de pouvoir accéder à la transmission. L'utilisateur accède par un login avec mot de passe. Dans le futur, le login se fera par eHealth. L'utilisateur ne peut voir que les patients de son propre hôpital. Il lui est impossible de visualiser les données de patients d'un autre hôpital. Tout accès aux données d'un patient est enregistré dans une table d'audit.



Sécurisation de la base de données

La base de données est située dans un des serveurs de la salle des serveurs de l'hôpital CHU Saint-Pierre. L'accès à cette salle se fait par un badge et est limité aux responsables système et aux responsables de la maintenance de la salle. Tout accès à cette salle est enregistré dans un fichier journal qui permet de savoir qui et quand une personne est entrée dans la salle.

La salle des serveurs est équipée d'éléments permettant la haute disponibilité à savoir :

- Redondance électrique (courant normal, courant secours)
- Redondance de la climatisation
- Redondance des éléments du réseau
- Redondance des serveurs
- Redondance des disques de stockages.

La base de données est régulièrement sauvegardée quotidiennement sur disque et sur bande.

Base légale

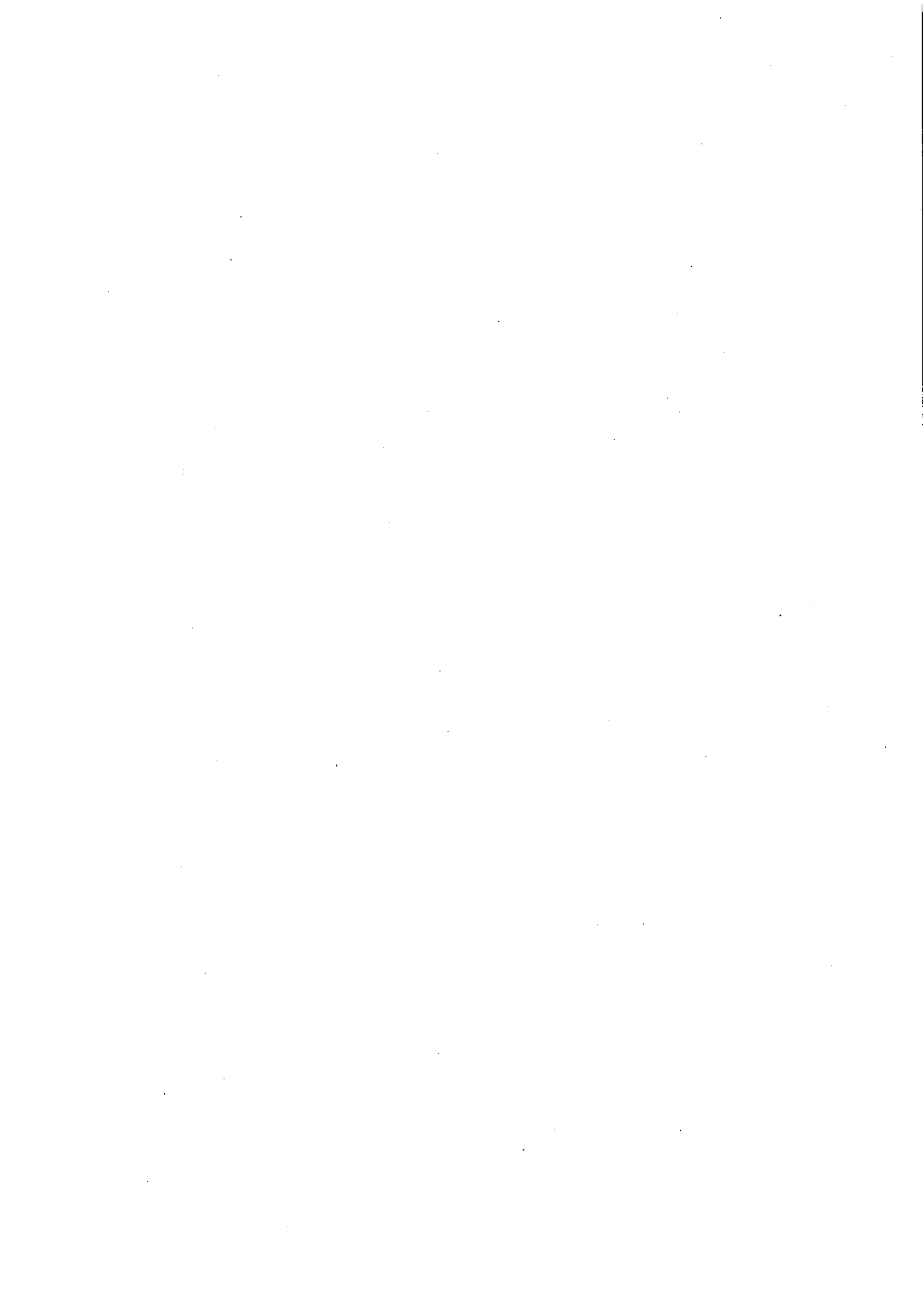
L'enregistrement s'effectue sur base volontaire par les services NIC. L'évaluation externe de la qualité par le collège est néanmoins une obligation légale (AR du 15 février 1999 relatif à l'évaluation qualitative de l'activité médicale à l'hôpital).

L'enregistrement actuel comporte 2 problèmes :

- 1. Incomplétude lié à l'absence de participation de certains services : espoir d'évolution favorable.**
- 2. Problèmes administratifs** quant à la fiabilité de la liste des patients enregistrés :
 - A. Il ne permet pas d'éviter les **doublons** car il n'existe pas de numéro unique par enfant; par ex. un enfant ayant séjourné dans 2 ou plusieurs services NIC risque d'être encodé plusieurs fois.
 - B. Il n'existe aucun contrôle sur le côté **complet** de l'enregistrement puisque celui-ci dépend exclusivement de la bonne volonté des services Nic.

II. Perspectives d'évolution de la base de données : inclusion de données de suivi

Il est prévu de compléter les données de la période néonatale par des informations sur le devenir des enfants à quelques âges clé (2 ans, 5- 6 ans et éventuellement ultérieurement). Les **personnes susceptibles d'encoder** des données de suivi n'appartiendront pas nécessairement aux services NIC et devront pouvoir utiliser un login différent de la période néonatale. Il est souhaitable que le login des différents soignants soit personnalisé. Les informations récoltées sont de nature sensibles puisque ayant pour but d'évaluer l'impact de la prématurité sur le **développement** moteur, cognitif, neurosensoriel et comportemental. Des mesures particulières concernant la **confidentialité** et le type d'accès sont nécessaires.



Dans un souci d'amélioration de l'exactitude des données et de la protection de l'anonymat il nous semble utile de faire évoluer cet enregistrement en utilisant les développements informatiques récents des différentes plateformes électroniques du Service public Fédéral Santé Publique.

1. Proposition de construction d'une base de données fiable grâce à la plateforme Birth

Dans un avenir proche toutes les naissances déclarées seront centralisées de manière temporaire par e-Birth pour envoi à la maison communale et aux communautés. Les enfants sont identifiables par un **partus number**. Celui-ci comprend l'année de naissance, le code de la maternité et un numéro attribué par la salle d'accouchement. Le partus number est unique pour chaque enfant.

Nous proposons que e Birth effectue une **sélection des naissances** qui correspondent aux critères d'inclusion de la base du Collège Newborn, c.à.d. les enfants d'âge gestationnel inférieur à 32 semaines ou de poids de naissance inférieur à 1500g. Cette sélection de patients sera transférée sur le site « Newborn Collège ». Leur identifiant unique sera le partus number. Ceci évite toutes les difficultés d'utilisation du numéro national .

Les services NIC accueillent d'une part les enfants de leur propre maternité qui seront aisément identifiables grâce au code de l'hôpital qui figure dans le partus number. D'autre part certains enfants auront été transférés d'une maternité sans NIC. Ceux-ci feront l'objet d'une base de données séparée que les services NIC pourront interroger grâce au partus number du bébé qui leur a été transféré. Le site Newborn College pourra également vérifier combien d'enfants répondants aux critères ne sont pas soignés en NIC.

En pratique les NIC retrouveront tous les patients sur base du partus number. Lorsque eBirth transmet les données il faudra valider l'encodage du NIC. L'exactitude des données eBirth sont très importantes.

Au cours du suivi l'encodage à distance de la période néonatale pourra se faire sans erreur grâce au partus number qui est un identifiant unique. Cette information devra faire partie du dossier néonatal dont le médecin habilité à encoder doit avoir connaissance.

2. Proposition de contrôle de la confidentialité par la plateforme e Health

Actuellement les patients sont encodés par les médecins des services Nic grâce à un login et mot de passe qui est global pour chaque unité. A l'avenir il est souhaitable d'avoir une surveillance plus personnalisée des médecins habilités à encoder des données patients, en particulier pour les données de suivi longitudinal.

L'identification des soignants via e Health donnera un accès contrôlé à la banque de données. Chaque soignant a un login et mot de passe attribué dans le cadre d'une convention avec e Health ou toutes les règles de confidentialité et de responsabilité ont été définies.



Intervenants

College et experts

President: Dr. D Haumont.

Membres: Drs L Cornette, JP Langhendries, C Lecart, K Mathé, J Rigo, H Van Hautem,
P Van Reempts.

Experts : Président du GBN-BVN: Dr. B Van Overmeire

Administration SPF

Drs A Clercx et A Perissino

W Aelvoet

e Health

L Nicolas

Fedict: e Birth

N Vercruysse

Informatique

Responsables IT site "Newborn College" : C. Nguyenba, F. Cammaerts, CHU Saint-Pierre,
Bruxelles

Collaboration connection IT: JM Guilmot, HealthConnect

Bruxelles, octobre 2010

Dataflow in de gegevensbank van het College Moeder en Pasgeborene (Sectie Neonatologie). Integratie in de verschillende elektronische systemen van de Federale Overheidsdiensten van de Volksgezondheid FOD e Birth en eHealth
FIABILITEIT EN VERTROUWELIJKHEID

I. Huidige situatie van de database van het College Neonatologie

Het College Neonatologie registreert neonatale gegevens van premature kinderen met een geboortegewicht kleiner dan 1500g en een zwangerschapsleeftijd kleiner dan 32 weken. Drie van de « historische » 40 items werden onlangs aangepast en de items van Euroneonet ingelast. Ongeveer 1-1.5% van de geboortes wordt aldus geregistreerd (1500-1800 patienten/jaar).

De huidige registratie werd door Mijnheer C. Decoster, algemene secretaris van de Administratie van de Verplegingsdiensten, aan de **Commissie voor de Bescherming van de Persoonlijke Levenssfeer (CBPL)** in 2002 samen met de andere Colleges.

Dit jaar werd een nieuwe verklaring ingediend omdat wij van plan zijn follow-up gegevens toe te voegen alsook om de conformiteit van onze database na te gaan. Deze conformiteit werd door de CBPL bevestigd. Wel herinnerde men ons eraan dat elke dienst afzonderlijk in orde moest zijn ten overstaande van de CBPL voor het beheer van de database van zijn patienten. Dit kan aan de hand van een verklaring van het ziekenhuis voor al haar diensten. In sommige gevallen moet een dienst een verklaring inbrengen wanneer de gegevens voor andere doeleinden gebruikt worden dan die de verklaring van het ziekenhuis inhoudt.

De database van het College wordt vertrouwelijk beheerd door de voorzitter van het college onder de verantwoordelijkheid van de FOD Gezondheidszorg. De huidige vertrouwelijke website die de gegevens beheert noemt "Newborn College" en is toevertrouwd aan de dienst Informatica van het UMC Sint-Pieter. De website laat een interactieve benchmarking en tendensanalyse toe.

Anonymisatie van de patientengegevens

De database houdt geen nominatieve gegevens in, zoals naam, voornaam, identificatie van de moeder of nummer van het nationaal register

De huidige interne numerisatie zal in de toekomst door het partusnummer van e Birth vervangen worden.

Toegang tot de database

Het internet-dataverkeer (https protocol) tussen gebruiker en de website wordt beveiligd door het Secure Sockets Layer systeem dat berust op een encryptieprocédé door middel van asymmetrische vercijfering.

De gebruiker heeft een login en een paswoord. In de toekomst zal de login via eHealth gebeuren. De gebruiker kan alleen zijn eigen patienten zien en nooit die van een ander ziekenhuis. Elke toegang naar patientengegevens wordt in een audit tabel geregistreerd.



Beveiliging van de database

De database bevindt zich op een van de servers van het datacenter van het UMC Sint-Pieter. De toegang hiertoe gebeurt met badge en is voorbehouden aan de verantwoordelijken van het systeem en van het systeemonderhoud. Elke toegang tot die zaal wordt automatisch in een controlebestand opgeslagen.

De serverzaal voldoet aan de normen van hoge beschikbaarheid wat betreft de opgeslagen data :

- Redundantie van de elektrische stroomtoevoer (normaal circuit, hulpcircuit)
- Redundantie van het koelingsysteem
- Redundantie van de netwerkelementen
- Redundantie van de servers
- Redundantie van de opslagsystemen.

De database wordt meerdere keren per dag weggeschreven op hard disk en magneetband.

Wettelijk kader

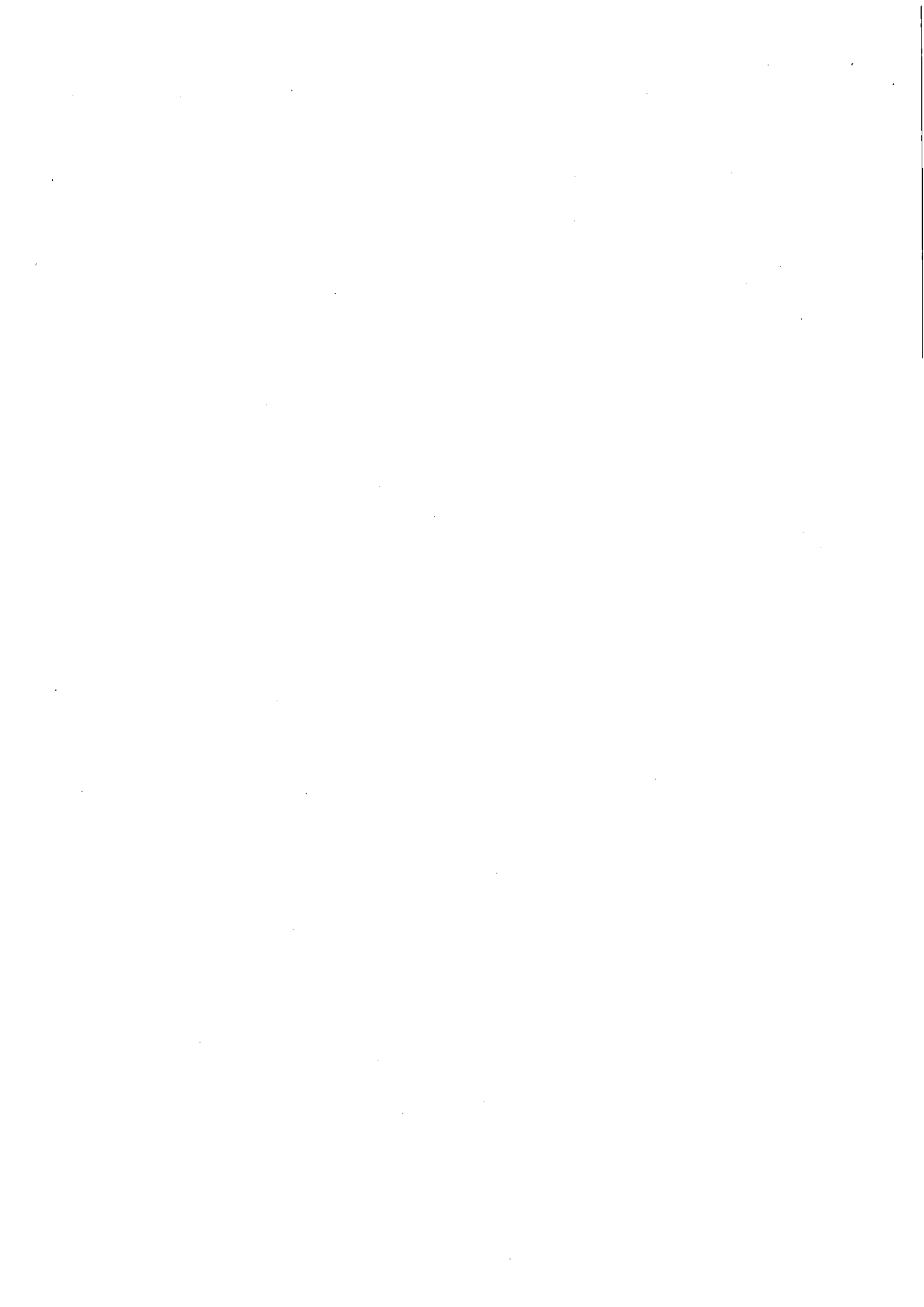
De registratie wordt op vrijwillige basis door de Nic diensten uitgevoerd. De externe evaluatie van de kwaliteit door het college is niettemin een wettelijke verplichting (KB 15 februari 1999 , kwalitatieve evaluatie van de medische activiteit in het ziekenhuis).

Er zijn 2 problemen in de huidige registratie :

- 1. De database is onvolledig omdat sommige centra niet deelnemen : we hopen een positieve evolutie hiervan**
- 2. Administratieve onjuistheden in de lijst van de patienten :**
 - A. Het is zeer waarschijnlijk dat sommige patienten **2 maal een ander identificatie nummer** krijgen en door 2 verschillende Nics worden ingebracht. Een uniek identificatie nummer is hiervoor de oplossing.
 - B. Er bestaat geen contrôle over de **volledigheid** van de ingebrachte lijst van patienten. Dit hangt alleen af van de goede wil van de Nic diensten.

II. Toekomstperspectieven van de database : inclusie van follow-up gegevens

Men voorziet de neonatale gegevensbank uit te breiden met follow-up items op latere leeftijd (2 jaar, 5-6 jaar, eventueel later). **De personen die de follow-up gegevens** zullen inbrengen behoren niet noodzakelijk tot een Nic dienst en zullen een ander login moeten hebben dan de Nics. Het is wenselijk dat de zorgverleners een persoonlijk login hebben. De geregistreerde gegevens zijn **gevoelig** vermits ze de impact van prematuriteit nagaan op motorische, cognitieve en neurosensoriële ontwikkeling alsook op het gedrag en eventuele andere medische en sociale aspecten. Specifieke maatregelen voor vertrouwelijke en beperkte toegang zijn dus noodzakelijk.



Evolutie naar een meer zuivere database en betere bescherming van de anonimiteit dankzij de recente technologie ontwikkeld in de verschillende elektronische systemen van de Federale Overheidsdiensten van de Volksgezondheid.

1. Uitbouwen van een zuivere database dankzij e Birth

In de nabije toekomst zullen al de geboorteverklaringen op het elektronisch platform eBirth terechtkomen. In een tweede stap worden de gegevens naar het gemeentehuis en de gemeenschappen, regio's doorgestuurd. De kinderen worden door een partusnummer geïdentificeerd. Dit nummer bevat het geboortjaar, de code van de materniteit en een nummer door de bevallingskamer toegewezen. Het partusnummer is uniek voor elk kind.

Wij stellen voor om aan eBirth de **selectie** te vragen van de patienten die aan onze inclusie criteria voldoen, nl. geboortegewicht minder dan 1500g of zwangerschapsleeftijd kleiner dan 32 weken. Deze selectie zal op de website « newborn college » terecht komen en het uniek patientnummer is het partusnummer. Dit vermijdt de moeilijkheden die gepaard gaan met het gebruik van het nummer van het national register.

De Nic diensten nemen kinderen op van hun eigen materniteit alsook van andere materniteiten. Met het partusnummer die de code van de materniteit inhoudt zal het gemakkelijk zijn om de kinderen terug te vinden (zowel inborn als outborn).

Dit system zal ons ook toelaten na te gaan welke kinderen nooit op een Nic beland zijn.

Wanneer e Birth de lijst van de patienten doorgeeft zal de Nic dienst dit moeten valideren.

De juistheid van de gegevens van eBirth zijn belangrijk.

Tijdens de follow-up zal men aan de hand van dit uniek partusnummer de gegevens van de juiste patient inbrengen. Het partusnummer zal dus een belangrijk kenmerk zijn van de identificatie van de pasgeborenen en maakt deel uit van zijn dossier.

2. Controle van de vertrouwelijkheid dankzij e Health

Voor het ogenblik worden de patienten ingebracht door de Nicdiensten met een login en paswoord per dienst. Het is wenselijk om in de toekomst de toegang tot de database meer persoonlijk te maken, vooral wanneer het om follow-up gegevens zal gaan.

De identificatie van de zorgverlener via eHealth zal ons toelaten de regels van vertrouwelijkheid en verantwoordelijkheid strict toe te passen.

DEELNAME**College en expert**

Voorzitter: Dr. D Haumont.

Leden: Drs L Cornette, JP Langhendries, C Lecart, K Mathé, J Rigo, H Van Hauthem,
P Van Reempts.

Expert : Voorzitter GBN-BVN: Dr. B Van Overmeire

Administratie FOD

Drs A Clercx en A Perissino

W Aelvoet

e Health

L Nicolas

Fedict: e Birth

N Vercruysse

Informatica

Verantwoordelijk web site "Newborn College" : C. Nguyenba, F. Cammaerts, UMC Sint-
Pieter, Brussel

Samenwerking IT connection: JM Guilmot, HealthConnect

Brussel, oktober 2010

Newborn-college

Product description:

Newborn-college is dedicated to:

Facilitate collecting data from European NIC centers.

- Giving online benchmarking and trend charts to all registered Nicus.

The major highlights of Newborn-college are:

- Intuitive, fast and easy to use.
- Can be adapted very quickly to new items, functionalities and projects.
- User can access database output instantly (validation to be defined).
- User can navigate in charts from top down to detail of population in drill through manner.
- Using "state of the art" technology in Web development.

Internal description

- Nic records are stored in Oracle Database as XML data.
- Copies of each Nic records are stored also in XML file.
- Intensive use of statistical and analytical functions from Oracle
- Web server is running under Apache/PHP
- Client interface use Firefox/JavaScript/Jquery/Ajax

Software characteristics:

- Database Oracle (11g V 2)
- Php (v5.2.9)
- Apache (v2.2)
- Firefox (v3.x)
- JQuery (v1.4)

Hardware:

- The Web site (Newborn-college) is actually hosted in CHU Saint-Pierre, Brussels.

Implementation

- Newborn-College.be

Proprietary

- This product belongs to:
 - ASBL Néonid.

