

1 **APPENDIX 1: Level of neonatal care categories.**

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LEVEL OF CARE	CARE DELIVERED	CARE PROVIDERS
LEVEL I Well new born neonatology department	<ul style="list-style-type: none"> - Provide neonatal resuscitation at every delivery - Evaluate and provide postnatal care to stable term newborn infants - Stabilize and provide care for infants born 35–37 wk gestation who remain physiologically stable - Stabilize newborn infants who are ill and those born at <35 wk gestation until transfer to a higher level of care 	Pediatricians, family physicians, nurse practitioners, and other advanced practice registered nurses
LEVEL II Special care neonatology department	<p><i>Level I capabilities plus:</i></p> <ul style="list-style-type: none"> - Provide care for infants born ≥ 32 wk gestation and weighing $\geq 1500^A$ g who have physiologic immaturity or who are moderately ill with problems that are expected to resolve rapidly and are not anticipated to need subspecialty services on an urgent basis - Provide care for infants convalescing after intensive care - Provide mechanical ventilation for brief duration (<24 h) or continuous positive airway pressure or both - Stabilize infants born before 32 wk gestation and weighing less than 1500^A g until transfer to a neonatal intensive care facility 	<i>Level I health care providers plus</i> Pediatric hospitalists, neonatologist, and neonatal nurse practitioners.
Level III NICU	<p><i>Level II capabilities plus:</i></p> <ul style="list-style-type: none"> - Provide sustained life support - Provide comprehensive care for infants born <32 wks gestation and weighing <1500^A g and infants born at all gestational ages and birth weights with critical illness - Provide prompt and readily available access to a full range of pediatric medical subspecialists, pediatric surgical specialists, pediatric anesthesiologists, and pediatric ophthalmologists - Provide a full range of respiratory support that may include conventional and/or high-frequency ventilation and inhaled nitric oxide - Perform advanced imaging, with interpretation on an urgent basis, including computed 	<i>Level II health care providers plus:</i> Pediatric medical subspecialists, pediatric anesthesiologists, pediatric surgeons, and pediatric ophthalmologists.
LEVEL IV Regional NICU	<p><i>Level III capabilities plus:</i></p> <p>Located within an institution with the capability to provide:</p> <ul style="list-style-type: none"> - Surgical repair of complex congenital or acquired conditions - Maintain a full range of pediatric medical subspecialists, pediatric surgical subspecialists, and pediatric anesthesiologists at the site - Facilitate transport and provide outreach education 	Level III health care providers plus: Pediatric surgical subspecialists

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4 ^{A:} In the Netherlands, level II facilities provide care to infants born at ≥ 32.0 weeks gestation and weighing ≥ 1200 grams. Level II post
5 intensive care/high care department provide convalescent care to infants [39]
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19 **APPENDIX 2: Complete list of tested variables associated with Length of Stay at the NICU and total**
20 **duration of hospitalization**

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GA (days) at birth
Sex
Birthweight percentile
Small for gestational age (% < 3rd percentile)
Small for gestational age (% <10th percentile)
Multiple pregnancy
Antenatal corticosteroids
Cesarean section
Inborn
Apgar score at 5 minutes
Intraventricular hemorrhage grade III and/or cerebral venous infarction (grade IV IVH)
Posthemorrhagic ventricular dilatation
Cystic periventricular leukomalacia
Necrotizing enterocolitis with laparotomy
Mechanical ventilation
Chronic lung disease
Medication for persistent ductus arteriosus
Surgical ligation persistent ductus arteriosus
Late onset sepsis
Retinopathy of prematurity with laser coagulation
Transfer to a PostIC/High care level II department

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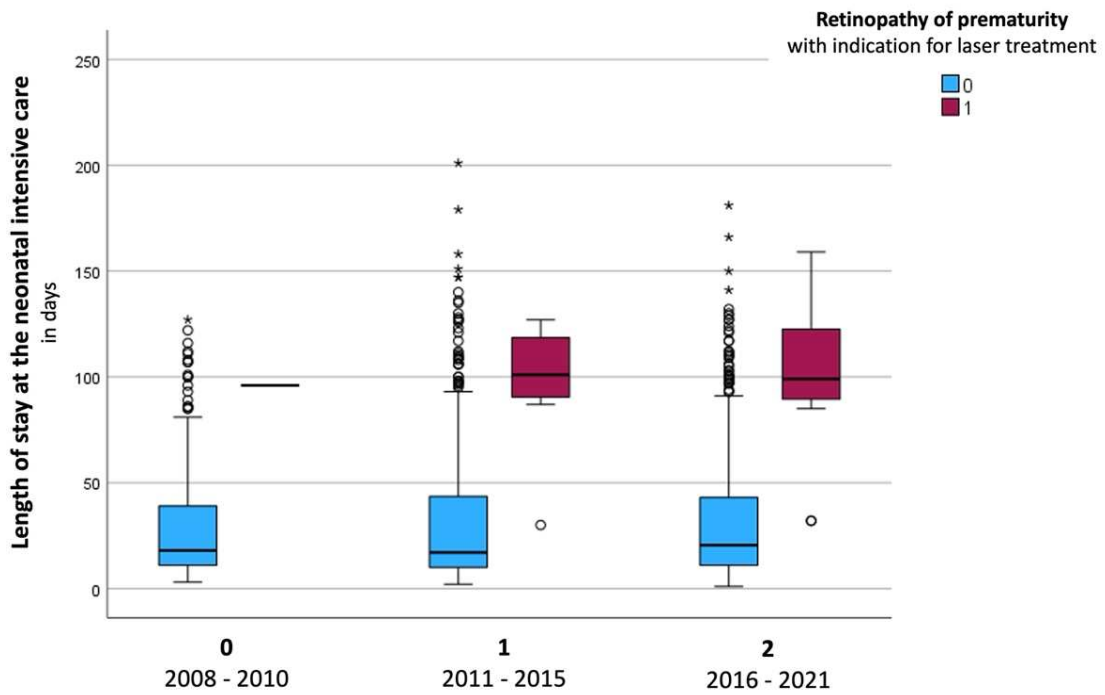
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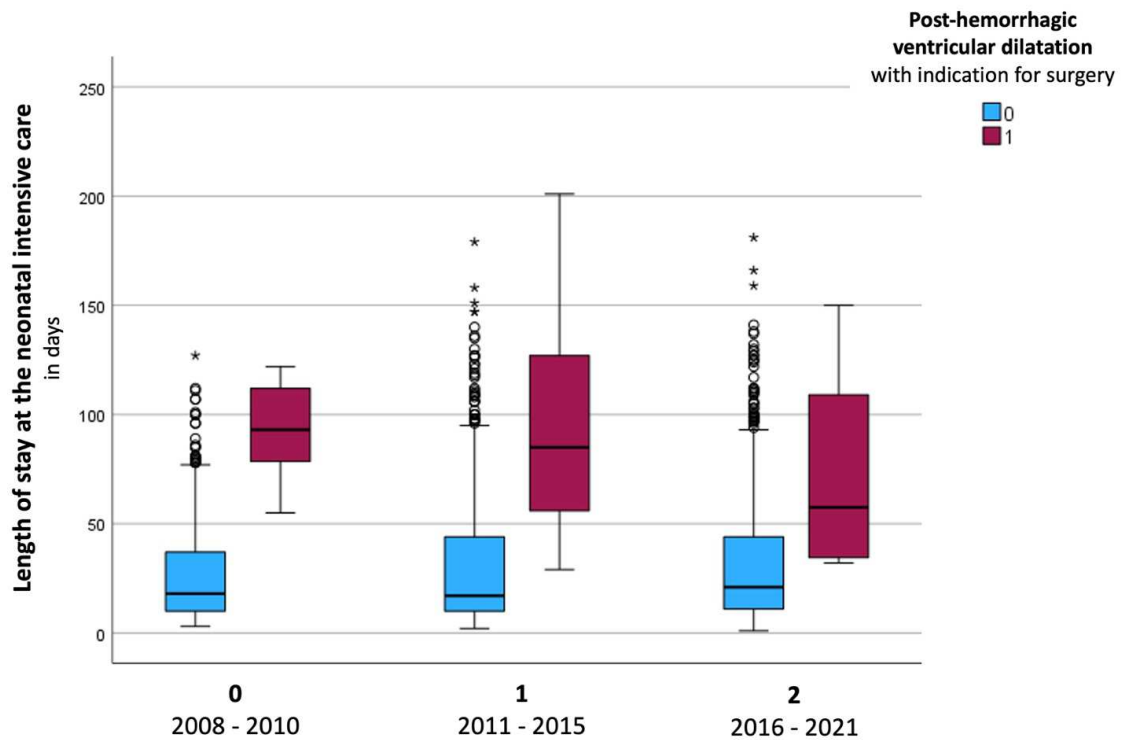
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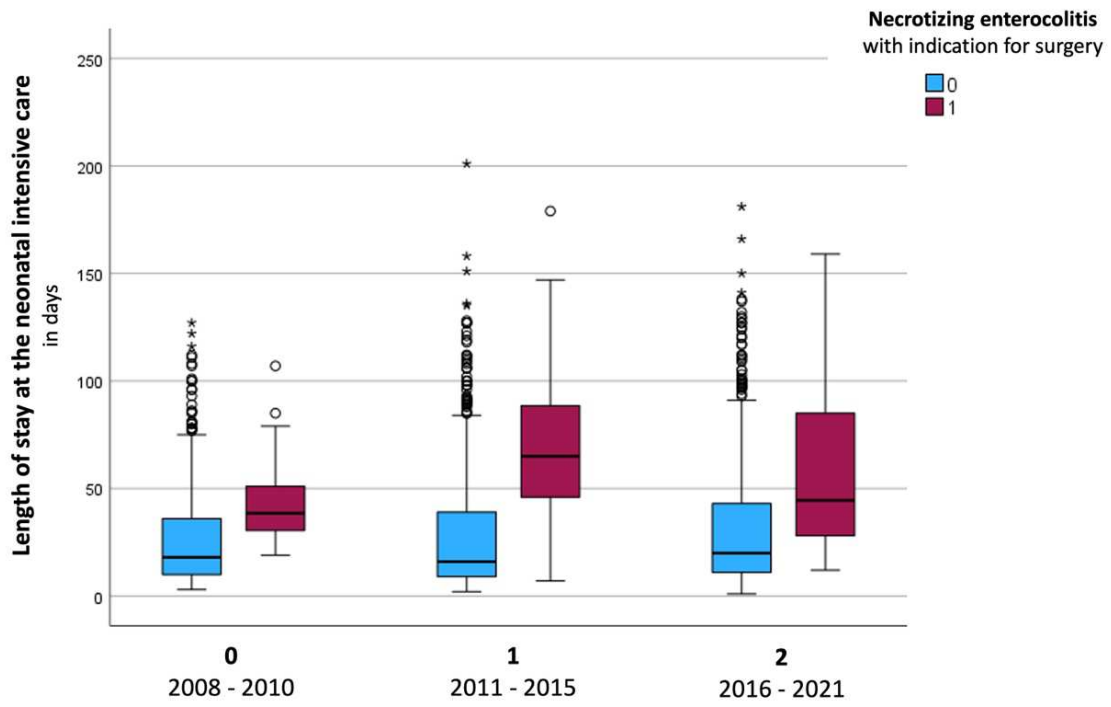
35 **APPENDIX 3: Boxplots regarding the relation between length of stay of surviving infants and various**
 36 **variables during the different time periods.**
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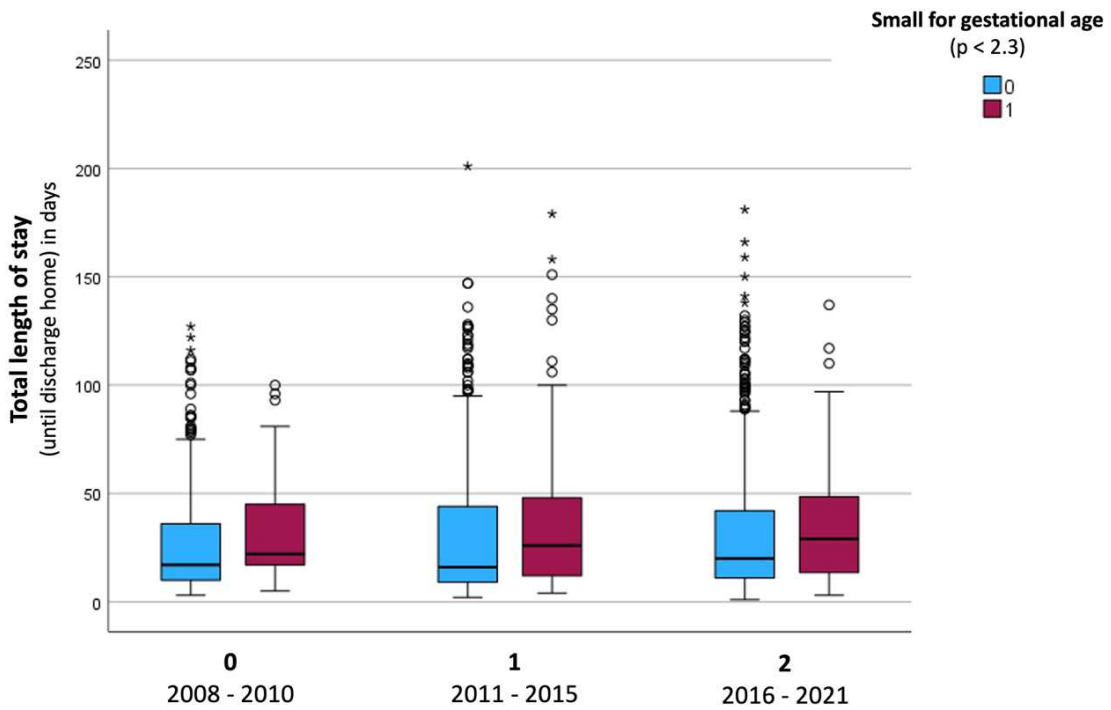
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50 **APPENDIX 4: Model most accurately describing the association between length of stay and perinatal**
 51 **variables of surviving infants excluding infants born at a gestation age below 25.0 weeks**
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	<i>MODEL: dependent variable LoS at the NICU (days)</i>		<i>MODEL: dependent variable overall LoS (days) hospital (NICU + level II)</i>	
	Coefficient of the model with 95% C.I.		Coefficient of the model with 95% C.I.	
Constant	14.9		48.3	
Factors	Additional days of admission on top of 'constant'		Additional days of admission on top of 'constant'	
SGA	2.9	1.3 – 4.5	7.7	3.2- 12.3
Multiplet	2.0	0.6 - 3.4		
Period 2	-1.2	-3.1- -0.7	1.8	-1.0 - 4.6
Period 3	1.9	-0.0 - 3.8	4.9	2.1 – 7.7
CLD	35.2	32.5 - 38.0	30.2	26.4 - 34.1
NECs**	-1.9	-11.0 - 7.3	-3.4	-14.5 - 7.7
PHVD intervention	13.5	6.8 – 20.3	9.1	1.7 – 16.6
ROP intervention	38.2	29.5 – 46.9	29.6	22.0 - 37.3
Late onset sepsis	4.8	3.1 - 6.4	4.9	2.6 – 7.2
Discharge to postIC/HC dep	-3.1	-4.5- -1.8		
Extra days CLD period 2	3.0	-0.4 – 6.5	8.1	3.4 - 12.9
Extra days CLD period 3	3.3	-0.2 – 6.8	6.2	1.3 – 11.0
Extra days NECs period 2	17.7	6.1 - 29.2	34.5	21.1 - 47.8
Extra days NECs period 3	7.6	-3.6 – 18.9	-0.3	-13.9 – 13.4
Extra days SGA period 2			-5.8	-11.4 - -0.2
Extra days SGA period 3			-7.1	-12.9 - -1.3

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