Supplementary Data

eTable 1. Definitions

Event	Definitions
Major congenital anomalies	Chromosomal anomalies, syndromes likely affecting long-term outcome, major malformations requiring surgical correction during newborn period, or cyanotic heart defects
Bleeding disorder	Any genetic or congenital disorders related to a higher risk of bleeding
Major bleeding	Any of the following bleedings: – Intraventricular hemorrhage (IVH) is defined as IVH Grade 3 (extension of bleeding involving >50% of ventricular area or dilation of ventricle) or IVH Grade 4/IPE (extension of bleeding into surrounding parenchyma) [1] – Intracranial hemorrhage (non-IVH) is defined as a major bleeding if any of the following apply: neurosurgical intervention is required; radiological imaging showing a midline shift; clinical signs and symptoms of an oxygen deficit with significant derangement of laboratory investigations – Pulmonary bleeding is defined as acute fresh blood through the endotracheal tube associated with increased ventilatory requirements or the need for intubation and ventilation – Frank rectal bleeding is defined as macroscopic fecal bleed (not if only occult positive)
Sepsis	Culture-positive sepsis
NEC	At least NEC Stage III according to the Modified Bell Staging Criteria [2]
Invasive mechanical ventilation	Any form of invasive respiratory support for which the neonate is intubated, including conventional mechanical ventilation and high frequency oscillation (HFO).
Transfusion associated adverse effect	Any adverse effects that the local investigator deemed potentially associated with the preceding transfusion.

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eTable 2. Participating centers characteristics

Country	Participating centers (n (% of total)	Centers with academic status (n (%))	Centers that perform NEC surgery (n (%))	Large centers* (n (%))
Austria	2 (3)	2/2 (100)	2/2 (100)	1/2 (50)
Belgium	1 (2)	1/1 (100)	1/1 (100)	1/1 (100)
Bosnia and Herzegovina	1 (2)	1/1 (100)	1/1 (100)	1/1 (100)
Croatia	2 (3)	2/2 (100)	1/2 (50)	1/2 (50)
Czech Republic	2 (3)	2/2 (100)	1/2 (50)	2/2 (100)
Denmark	1 (2)	1/1 (100)	1/1 (100)	1/1 (100)
France	6 (9)	3/6 (50)	4/6 (67)	3/6 (50)
Germany	4 (6)	4/4 (100)	3/4 (75)	2/4 (50)
Hungary	3 (5)	3/3 (100)	1/3 (33)	3/3 (100)
Ireland	2 (3)	2/2 (100)	0/2 (0)	2/2 (100)
Italy	8 (13)	8/8 (100)	7/8 (88)	1/8 (13)
Netherlands	3 (5)	3/3 (100)	2/3 (67)	3/3 (100)
Norway	2 (3)	2/2 (100)	1/2 (50)	0/2 (0)
Poland	5 (8)	4/5 (80)	3/5 (60)	1/5 (20)
Portugal	2 (2)	2/2 (100)	2/2 (100)	0/2 (0)
Romania	3 (5)	2/3 (67)	0/3 (0)	3/3 (100)
Slovakia	2 (3)	2/2 (100)	1/2 (50)	0/2 (0)
Slovenia	2 (3)	2/2 (100)	1/2 (100)	1/2 (50)
Spain	6 (9)	6/6 (100)	5/6 (83)	3/6 (50)
Sweden	3 (5)	3/3 (100)	2/3 (67)	2/3 (67)
Switzerland	2 (3)	2/2 (100)	2/2 (100)	1/2 (50)
United Kingdom	2 (3)	2/2 (100)	1/2 (50)	1/2 (50)
Overall	**64/64 (100%)**	**59/64 (92%)**	**43/64 (67%)**	**33/64 (52%)**

*Large if center cares for more than 100 preterm infants born below 32 weeks gestation annually.

eTable 3. Patient-mix adjusted plasma transfusion prevalence

Country	**Observed plasma transfusion day prevalence rate*** Per 100 admission days (95%CI)	**Expected plasma transfusion day prevalence rate based on patient-mix**** Per 100 admission days	**Observed / expected ratio***** (95%CI)	**Patient-mix adjusted plasma transfusion day prevalence rate****** Per 100 admission days (95%CI)
Austria	0.50 (0.24-1.05)	0.46	1.06 (0.50-2.22)	0.27 (0.13-0.57)
Belgium	0.00	0.05	-	-
Bosnia and Herzegovina	0.46 (0.15-1.44)	0.31	1.44 (0.46-4.46)	0.37 (0.12-1.14)
Croatia	0.46 (0.15-1.44)	0.26	1.70 (0.55-5.28)	0.44 (0.14-1.35)
Czech Republic	0.17 (0.04-0.68)	0.32	0.50 (0.13-2.01)	0.13 (0.03-0.51)
Denmark	0.16 (0.02-1.15)	0.96	0.16 (0.02-1.16)	0.04 (0.01-0.30)
France	0.08 (0.02-0.30)	0.44	0.16 (0.04-0.64)	0.04 (0.01-0.16)
Germany	0.04 (0.00-8.27)	0.51	0.07 (0.00-15.39)	0.02 (0.00-3.93)
Hungary	0.38 (0.06-2.51)	0.84	0.44 (0.07-2.89)	0.11 (0.02-0.74)
Ireland	0.00	0.76	-	-
Italy	0.45 (0.13-1.59)	0.64	0.70 (0.20-2.45)	0.18 (0.05-0.63)
Netherlands	0.31 (0.12-0.83)	0.66	0.45 (0.17-1.21)	0.12 (0.04-0.31)
Norway	1.76 (0.95-3.28)	1.31	1.31 (0.70-2.43)	0.33 (0.18-0.62)
Poland	1.06 (0.37-3.04)	0.81	1.32 (0.46-3.77)	0.34 (0.12-0.96)
Portugal	0.00	0.26	-	-
Romania	2.13 (0.79-5.74)	0.87	2.43 (0.90-6.54)	0.62 (0.23-1.67)
Slovakia	0.00	0.54	-	-
Slovenia	0.00	0.44	-	-
Spain	0.17 (0.05-0.53)	0.44	0.37 (0.12-1.14)	0.09 (0.03-0.29)
Sweden	0.60 (0.25-1.45)	0.89	0.67 (0.28-1.61)	0.17 (0.07-0.41)
Switzerland	0.09 (0.01-1.16)	0.53	0.17 (0.01-2.13)	0.04 (0.00-0.54)
United Kingdom	2.01 (1.10-3.66)	1.55	1.29 (0.71-2.36)	0.33 (0.18-0.60)

*Observed prevalence rates were calculated using random effects Poisson models to pool transfusion day prevalence rates from the individual centers into country subgroup estimates and subsequently to derive the overall estimate. **Expected prevalence rates as predicted based on patient-mix using a logistic regression model which included the following variables: sex, gestational age at birth, birth weight, congenital malformations, major bleeding, NEC, sepsis, mechanical ventilation, surgical procedure, postnatal day. ***Observed/expected ratios were calculated by dividing the observed plasma transfusion prevalence rate per country by the expected prevalence rate per country. ****Patient-mix adjusted prevalence rates were calculated by multiplying the country observed/expected ratio with the overall observed prevalence rate (equal to 0.26 plasma transfusion days per 100 admission days).

eTable 4. Regression coefficients for the estimation of the expected prevalences

Variable	Log-odds coefficients (β)	95% CI (based on asymptotic normality)
(Intercept)	-6.35	-11.0, -1.69
Sex*	-0.33	-0.77, 0.11
Bleeding*	1.54	1.06, 2.03
Status post bleeding*	0.14	-0.91, 1.19
Postnatal age, in days	-0.03	-0.04, -0.01
Surgery*	1.42	0.80, 2.03
Status post surgery*	1.05	0.23, 1.88
Ventilation*	2.56	1.64, 3.49
Status post ventilation*	0.75	-0.20, 1.69
Sepsis*	1.01	0.36, 1.68
Status post sepsis*	0.49	-0.45, 1.48
NEC*	-0.82	-1.92, 0.27
Status post NEC*	-39.36	-40.37, -38.35
Gestational age at birth, in days	0.01	-0.02, 0.03
Congenital malformations*	0.46	-0.36, 1.29
Birth weight, in grams	-0.00	-0.00, 0.00

*Variables: sex (0=male, 1=female), bleeding (0=no, 1=yes), status post bleeding (0=no, 1=yes), surgery (0=no, 1=yes), status post surgery (0=no, 1=yes), ventilation (0=no, 1=yes), status post ventilation (0=no, 1=yes), sepsis (0=no, 1=yes), status post sepsis (0=no, 1=yes), NEC (0=no, 1=yes), status post NEC (0=no, 1=yes), congenital malformations (0=no, 1=yes). Definitions are available in eTable 1 in Supplementary Data.

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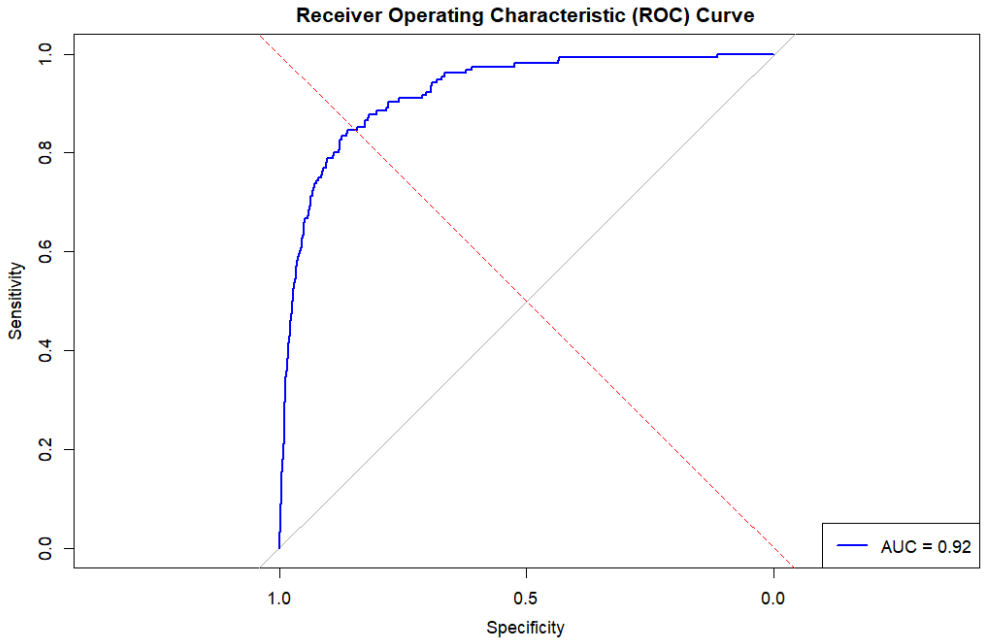
eTable 5. Model calibration

Predicted probability categories	Mean predicted probability	Mean observed probability	Count, number of days
1. <0.01	0.001	0.001	221555
2. 0.01 to <0.05	0.02	0.02	2216
3. 0.05 to <0.10	0.07	0.10	328
4. 0.10 to <0.20	0.13	0.11	222
5. 0.20 to <0.30	0.25	0.20	35
6. 0.30 to <0.40	0.34	0.25	16
7. ≥0.40	0.47	0.16	6

eFigure 1. Model discrimination



References

1. Papile LA, Burstein J, Burstein R, Koffler H. Incidence and evolution of subependymal and intraventricular hemorrhage: a study of infants with birth weights less than 1,500 gm. *J Pediatr*. 1978;92(4):529-534.

2. Bell MJ. Neonatal necrotizing enterocolitis. *N Engl J Med*. 1978;298(5):281-282.