Supplementary

Table S1 Baseline characteristics of participating hospitals

Hospital	Inborn/ Outborn	Delivery/ Year	Teaching Hospital	NICU Beds	Intermediate/ Continuing Care Beds	Number of Neonatologists	Number of Nurses	Transport Team
Shanghai First Maternity and Infant Hospital	I	30,000	Y	38	70	30	79	Y
The Maternal and Child Health Hospital of Guangxi Zhuang Autonomous Region	I/O	16,000	N	80	80	31	136	Y
Northwest Women and Children's Hospital	I/O	24,000	Y	50	150	37	138	Y
Gansu Provincial Maternity and Child-care Hospital	I/O	21,000	N	70	150	9	101	Y
Qingdao Women and Children's Hospital	I/O	14,000	Y	80	50	13	75	N
Obstetrics and Gynecology Hospital Affiliated to Nanjing Medical University	I/O	24,626	Y	60	70	27	55	Y
The Affiliated Wuxi Maternity and Child Health Care Hospital of Nanjing Medical University	I/O	18,000	Y	20	40	20	48	N
Tongji Hospital,Tongji Medical College,Huazhong University of Scinece and Technology	I/O	6,000	Y	30	25	8	55	Y
First Affiliated Hospital of Xinjiang Medical University	I/O	6,000	Y	30	15	9	34	Y
Children's Hospital of ShanXi/Wonwen Health Center of ShanXi	I/O	8,500	N	96	56	12	104	Y
Women and Children's Hospital of Hubei Province	I/O	24,000	N	53	150	31	154	Y
Fujian Provinvial Maternity and Children's Hospital	I/O	16,000	Y	30	110	16	45	Y
The 2nd Affiliated Hospital and Yuying Children's Hospital of Wenzhou Medical University	I/O	11,820	Y	65	65	34	108	Y
The Affiliated Shenzhen Maternity and Child Healthcare Hospital of Southern Medical University	I/O	19,793	Y	60	50	13	54	Y
The First Affiliated Hospital of Anhui Medical University	I/O	6,000	Y	20	40	11	43	N
Guiyang Maternal and Child Health Care Hospital	I/O	15,000	N	70	65	40	93	N
The Third Xiangya Hospital of Central South University	I/O	4,000	Y	15	25	6	36	N
Suzhou Municipal Hospital	I/O	18,000	Y	41	70	22	76	Y

NICU, neonatal intensive care unit.

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Table S2 Crude and adjusted risks of morality and morbidities for outborn infants compared with inborn infants among singletons

	Crude odds ratio			Adjusted odds ratio[a]		
	Inborn	Outborn	P	Inborn	Outborn	P
DAMA	Reference	1.7 (1.4-2.0)	<0.001	Reference	1.7 (1.4-2.0)	<0.001
In-hospital mortality	Reference	0.9 (0.7-1.2)	0.543	Reference	0.9 (0.7-1.2)	0.511
Overall mortality	Reference	1.4 (1.1-1.6)	<0.001	Reference	1.4 (1.1-1.6)	0.001
Sepsis	Reference	1.1 (0.8-1.4)	0.661	Reference	1.0 (0.8-1.3)	0.832
BPD	Reference	1.0 (0.8-1.2)	0.771	Reference	0.9 (0.8-1.2)	0.577
IVH or PVL	Reference	1.3 (1.1-1.7)	0.015	Reference	1.3 (1.1-1.7)	0.015
NEC	Reference	0.9 (0.7-1.3)	0.570	Reference	0.9 (0.6-1.2)	0.362
Severe ROP	Reference	0.8 (0.4-1.6)	0.456	Reference	0.8 (0.4-1.6)	0.514

[a]The covariates controlled for in this model included sex, gestational age, small for gestational age infant, maternal hypertension, maternal diabetes. DAMA, Discharge against medical advice; BPD, bronchopulmonary dysplasia; IVH, intraventricular hemorrhage; PVL, periventricular leukomalacia; NEC, necrotizing enterocolitis; ROP, retinopathy of prematurity.

Table S3 Crude and adjusted risks of morality and morbidities for outborn infants compared with inborn infants among infants <1,500 g

	Crude odds ratio			Adjusted odds ratio[a]		
	Inborn	Outborn	P	Inborn	Outborn	P
DAMA	Reference	1.5 (1.3-1.7)	<0.001	Reference	1.5 (1.3-1.8)	<0.001
In-hospital mortality	Reference	1.0 (0.8-1.3)	0.748	Reference	1.0 (0.8-1.3)	0.708
Overall mortality	Reference	1.3 (1.1-1.5)	<0.001	Reference	1.3 (1.1-1.5)	<0.001
Sepsis	Reference	1.0 (0.8-1.3)	0.678	Reference	1.0 (0.8-1.3)	0.838
BPD	Reference	0.9 (0.8-1.1)	0.528	Reference	0.9 (0.8-1.1)	0.278
IVH or PVL	Reference	1.1 (0.9-1.4)	0.325	Reference	1.1 (0.9-1.4)	0.231
NEC	Reference	0.8 (0.6-1.1)	0.136	Reference	0.8 (0.6-1.1)	0.121
Severe ROP	Reference	0.7 (0.4-1.2)	0.243	Reference	0.8 (0.4-1.3)	0.345

[a]The covariates controlled for in this model included sex, gestational age, small for gestational age infant, maternal hypertension, maternal diabetes. DAMA, Discharge against medical advice; BPD, bronchopulmonary dysplasia; IVH, intraventricular hemorraghe; PVL, periventricular leukomalacia; NEC, necrotizing enterocolitis; ROP, retinopathy of prematurity.

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Table S4 Crude and adjusted risks of morality and morbidities for outborn infants compared with inborn infants among infants received complete care

	Crude odds ratio			Adjusted odds ratio[a]		
	Inborn	Outborn	P	Inborn	Outborn	P
In-hospital mortality	Reference	0.9 (0.7-1.1)	0.384	Reference	0.9 (0.7-1.1)	0.331
Sepsis	Reference	1.1 (0.9-1.3)	0.613	Reference	1.0 (0.9-1.3)	0.692
BPD	Reference	0.9 (0.8-1.1)	0.319	Reference	0.9 (0.8-1.1)	0.181
IVH or PVL	Reference	1.2 (1.0-1.5)	0.032	Reference	1.3 (1.1-1.5)	0.013
NEC	Reference	0.7 (0.4-1.6)	0.159	Reference	0.8 (0.6-1.0)	0.072
Severe ROP	Reference	1.0 (0.8-1.2)	0.842	Reference	0.8 (0.5-1.3)	0.390

[a]The covariates controlled for in this model included sex, gestational age, small for gestational age infant, maternal hypertension, maternal diabetes. DAMA, Discharge against medical advice; BPD, bronchopulmonary dysplasia; IVH, intraventricular hemorrhage; PVL, periventricular leukomalacia; NEC, necrotizing enterocolitis; ROP, retinopathy of prematurity.

Table S5 Adjusted risks of morality and morbidities for outborn infants compared with inborn infants using multi-level logistic regression model

	Adjusted odds ratio		
	Inborn	Outborn	P
DAMA	Reference	1.4 (1.2-1.7)	<0.001
In-hospital mortality	Reference	1.0 (0.8-1.2)	0.842
Overall mortality	Reference	1.2 (1.0-1.4)	0.019
Sepsis	Reference	1.1 (0.9-1.3)	0.397
BPD	Reference	1.0 (0.8-1.2)	0.776
IVH or PVL	Reference	1.1 (1.0-1.4)	0.026
NEC	Reference	0.9 (0.7-1.1)	0.291
Severe ROP	Reference	1.0 (0.6-1.7)	0.940

Multilevel mixed-effects logistic regression models were used to examine the association of outborn status and neonatal outcomes accounting for the intracluster correlation among the infants within hospitals. Hospitals were considered as independent clusters with random effects in the models. At the infant level, we controlled for sex, gestational age, small for gestational age infant, maternal hypertension, maternal diabetes. DAMA, Discharge against medical advice; BPD, bronchopulmonary dysplasia; IVH, intraventricular hemorrhage; PVL, periventricular leukomalacia; NEC, necrotizing enterocolitis; ROP, retinopathy of prematurity.

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