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 Childcare 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 Science 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 Provincial 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.
### Table S2 Crude and adjusted risks of mortality and morbidities for outborn infants compared with inborn infants among singletons

|                      | Crude odds ratio | Adjusted odds ratio<sup>a</sup> |
|----------------------|------------------|----------------------------------|
|                      | 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  |

<sup>a</sup>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 mortality and morbidities for outborn infants compared with inborn infants among infants <1,500 g

|                      | Crude odds ratio | Adjusted odds ratio<sup>a</sup> |
|----------------------|------------------|----------------------------------|
|                      | 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  |

<sup>a</sup>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 S4 Crude and adjusted risks of mortality and morbidities for outborn infants compared with inborn infants among infants received complete care

| Outcome                  | Crude odds ratio | Adjusted odds ratio* |
|--------------------------|------------------|----------------------|
|                          | 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    |

*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

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