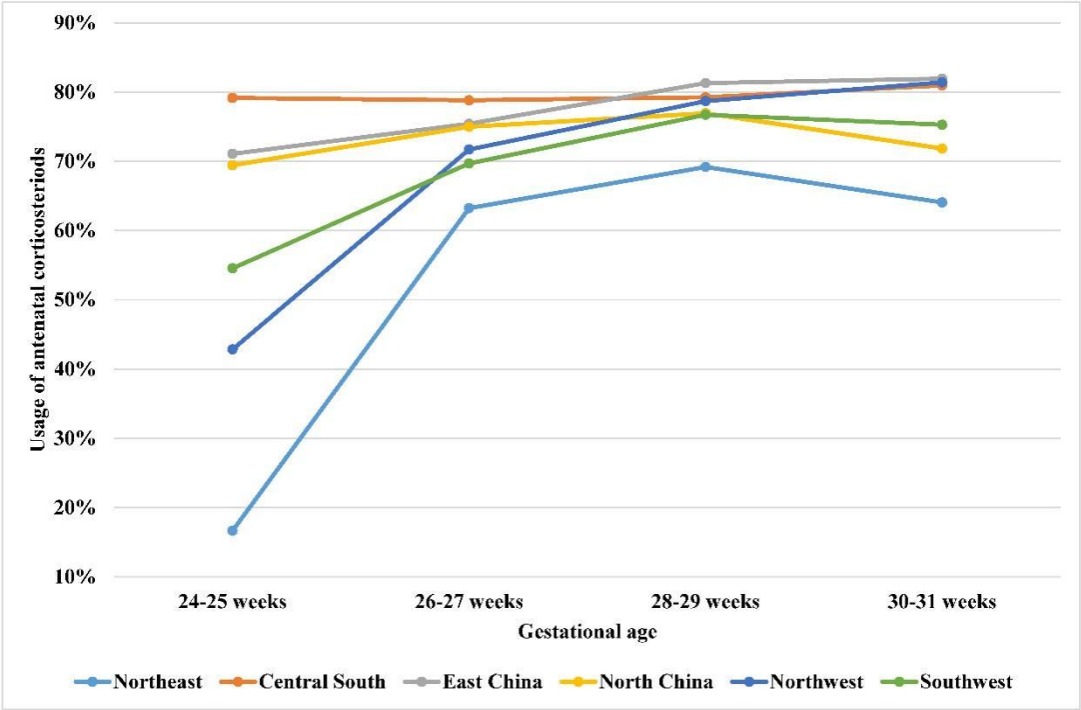
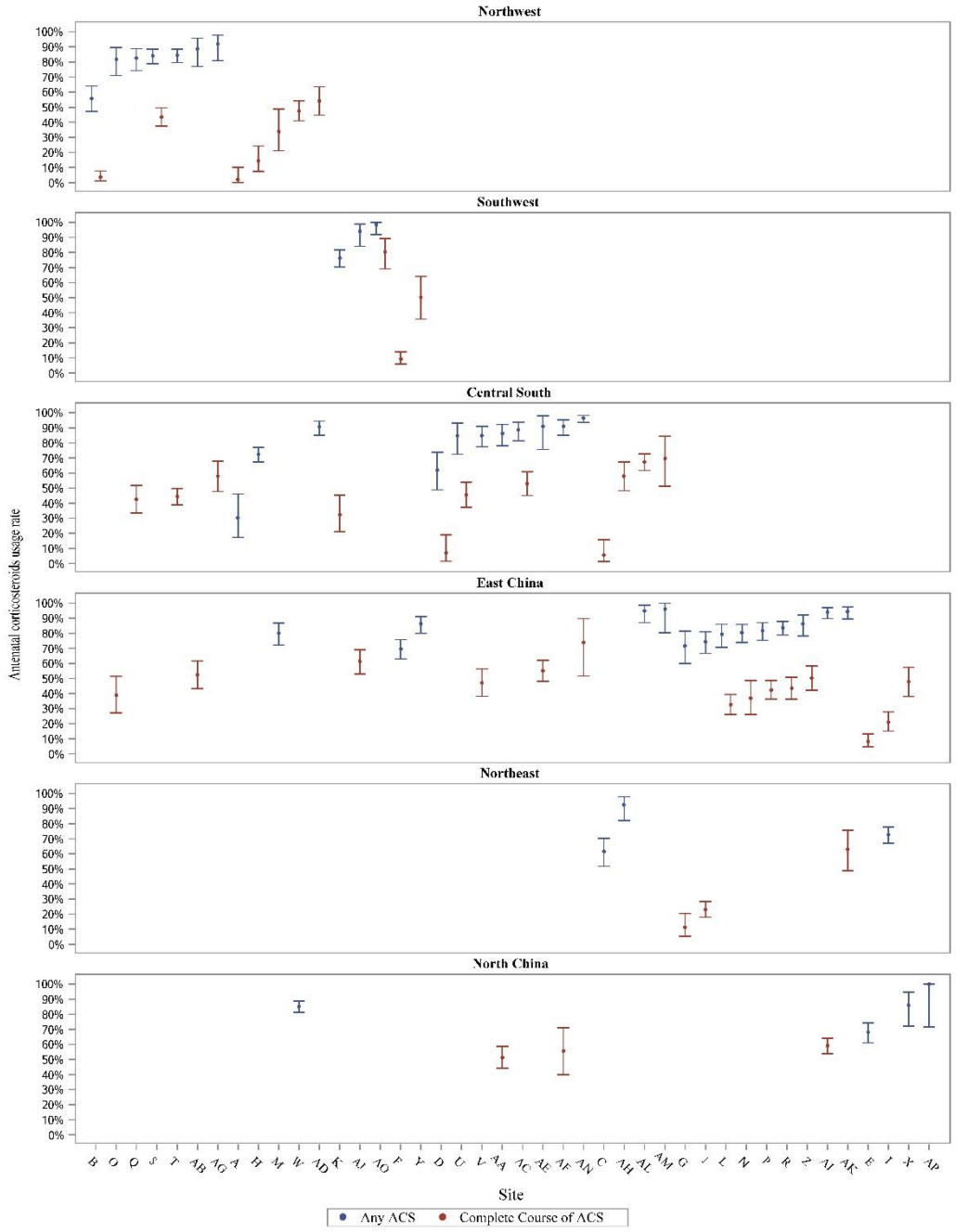


Supplementary Figure 1: Variation of any ACS use in different area of China. ACS: Antenatal corticosteroids.



Supplementary Figure 2: Site variation of ACS use in each area of China. ACS: Antenatal corticosteroids.

Supplementary Table 1: Participating sites of CHNN.

Hospital	Province	Number of Hospital
Peking Union Medical College Hospital		
Children's Hospital Affiliated to Capital Institute of Pediatrics	**Beijing**	**3**
Beijing Children's Hospital of Capital Medical University		
Tianjin Obstetrics and Gynecology Hospital	**Tianjin**	**1**
Hebei Children's Hospital	**Hebei**	**1**
Children's Hospital of Shanxi	**Shanxi**	**1**
Dalian Municipal Women and Children's Medical Center	**Liaoning**	**2**
Shengjing Hospital of China Medical University		
The First Bethune Hospital of Jilin University	**Jilin**	**1**
Shanghai Children's Medical Center		
Xinhua Hospital affiliated to Shanghai Jiaotong University School of Medicine		
Obstetrics and Gynecology Hospital of Fudan University	**Shanghai**	**6**
Children's Hospital of Shanghai		
Children's Hospital of Fudan University		
Shanghai First Maternity and Infant Hospital		
Nanjing Maternity and Child Health Care Hospital		
Suzhou Municipal Hospital affiliated to Nanjing Medical University	**Jiangsu**	**5**
Wuxi Maternity and Child Healthcare Hospital		
Children's Hospital of Soochow University		
Children's Hospital of Nanjing Medical University		
Yuying Children's Hospital Affiliated to Wenzhou Medical University	**Zhejiang**	**1**
Anhui Provincial Hospital	**Anhui**	**2**

The First Affiliated Hospital of Anhui Medical University		
Quanzhou Women and Children's Hospital		
Xiamen Maternity and Child Health Care Hospital		
Xiamen Children's Hospital	**Fujian**	**5**
Fuzhou Children's Hospital of Fujian Province		
Fujian Women and Children's Medical Center		
Jiangxi Provincial Children's Hospital	**Jiangxi**	**1**
Qingdao Women and Children's Hospital		
Qilu Children's Hospital of Shandong University	**Shandong**	**3**
The Affiliated Hospital of Qingdao University		
Henan Children's Hospital		
The First Affiliated Hospital of Zhengzhou University		
The Third Affiliated Hospital of Zhengzhou University	**Henan**	**5**
The second Xiangya hospital if Central South University		
Hunan Children's Hospital		
Shenzhen Maternity and Child Health Care Hospital		
Shenzhen Hospital of Hongkong University		
Foshan Women and Children's Hospital	**Guangdong**	**7**
Shenzhen Children's Hospital		
Guangdong Women and Children's Hospital		
Guangzhou Women and Children's Medical Center		
Zhuhai Center for Maternal and Child Health Care		
Women and Children's Hospital of Guangxi Zhuang Autonomous Region	**Guangxi**	**1**
Hainan Women and Children's Hospital	**Hainan**	**1**
Children's Hospital of Chongqing Medical University	**Chongqing**	**1**
Guizhou Women and Children's Hospital	**Guizhou**	**1**
Dehong people's Hospital of Yunnan Province	**Yunnan**	**2**
First Affiliated Hospital of Kunming Medical University		

First Affiliated Hospital of Xian Jiaotong University		
Shaanxi Provincial People's Hospital	**Shaanxi**	**3**
Northwest Women's and Children's Hospital		
Gansu Provincial Maternity and Child Care Hospital	**Gansu**	**1**
General Hospital of Ningxia Medical University	**Ningxia**	**1**
People's Hospital of Xinjiang Uygur Autonomous Region	**Xinjiang**	**2**
The First Affiliated Hospital of Xinjiang Medical University		

CHNN: Chinese Neonatal Network.

Supplementary Table 2: Infant and maternal characteristics by different courses of ACS use among infants at 24–31 weeks' gestation in CHNN.

Characteristics	No ACS	Partial course of ACS	Complete Course of ACS	Total*	χ^2	*P* value
N	1725	2039	3771	7535		
Infant characteristics						
GA, Median (P25, P75)	29.86 (28.14, 31)	30 (28.57, 31)	30 (28.57, 31)	30 (28.57, 31)	15.51	<0.01
24–25 weeks, *n* (%)	82/1725 (4.8)	71/2039 (3.5)	103/3771 (2.7)	256/7573 (3.4)	29.95	<0.01
26–27 weeks, *n* (%)	249/1725 (14.4)	220/2039 (10.8)	478/3771 (12.7)	947/7573 (12.6)		
28–29 weeks, *n* (%)	554/1725 (32.1)	726/2039 (35.6)	1249/3771 (33.1)	2529/7573 (33.6)		
30–31 weeks, *n* (%)	840/1725 (48.7)	1022/2039 (50.1)	1941/3771 (51.5)	3803/7573 (50.5)		
Birth weight, median (P25, P75)	1310 (1095, 1560)	1340 (1110, 1565)	1315 (1100, 1530)	1320 (1100, 1550)	7.59	0.03
Male, *n* (%)	974/1722 (56.6)	1150/2038 (56.4)	2091/3766 (55.5)	4215/7526 (56.0)	0.72	0.69
SGA, *n* (%)	105/1725 (6.1)	142/2039 (7.0)	280/3771 (7.4)	527/7573 (7.0)	3.26	0.2
Multiple birth, *n* (%)	480/1725 (27.8)	643/2039 (31.5)	1158/3771 (30.7)	2281/7573 (30.3)	6.76	0.03
Inborn, *n* (%)	1095/1725 (63.5)	1633/2039 (80.1)	3105/3771 (82.3)	5833/7573 (77.4)	252.23	<0.01
Apgar score ≤3 at 1 min, *n* (%)	167/1674 (10.0)	97/2026 (4.8)	160/3759 (4.3)	424/7459 (5.7)	74.86	<0.01

Apgar score ≤3 at 5 min, *n* (%)	45/1586 (2.8)	7/1986 (0.4)	27/3684 (0.7)	79/7256 (1.1)	59.36	<0.01
Maternal characteristics						
Maternal age, median (P25, P75)	30.4 (27.21, 34)	30.08 (27.56, 33.96)	31 (28.54, 34.79)	31 (28, 34)	58.00	<0.01
<20, *n* (%)	43/1717 (2.5)	16/2033 (0.8)	16/3744 (0.4)	75/7494 (1.0)	85.70	<0.01
20–30, *n* (%)	682/1717 (39.7)	884/2033 (43.5)	1360/3744 (36.3)	2926/7494 (39.0)		
30–40, *n* (%)	940/1717 (54.7)	1072/2033 (52.7)	2219/3744 (59.3)	4231/7494 (56.5)		
>40, *n* (%)	52/1717 (3.0)	61/2033 (3.0)	149/3744 (4.0)	262/7494 (3.5)		
Primigravida, *n* (%)	852/1713 (49.7)	1076/2025 (53.1)	1933/3750 (51.5)	3861/7488 (51.6)	4.29	0.12
≥1 Prenatal visit, *n* (%)	1650/1673 (98.6)	1996/2023 (98.7)	3717/3746 (99.2)	7363/7442 (98.9)	5.94	0.05
Maternal hypertension, *n* (%)	271/1708 (15.9)	340/2034 (16.7)	838/3762 (22.3)	1449/7504 (19.3)	43.01	<0.01
Maternal diabetes, *n* (%)	257/1705 (15.1)	395/2030 (19.5)	695/3762 (18.5)	1347/7497 (18.0)	13.41	<0.01
PROM, *n* (%)	831/1622 (51.2)	1287/2003 (64.3)	2450/3707 (66.1)	4568/7332 (62.3)	110.52	<0.01
Antenatal antibiotics, *n* (%)	384/1546 (24.8)	931/1861 (50.0)	2078/3525 (59.0)	3393/6932 (48.9)	501.62	<0.01
Cesarean delivery, *n* (%)	866/1717 (50.4)	1089/2038 (53.4)	2302/3761 (61.2)	4257/7516 (56.6)	67.37	<0.01

*There were 293 infants with ACS usage whose was unknown on the course of ACS usage. ACS: Antenatal corticosteroids use; CHNN: Chinese Neonatal Network; GA: Gestational age; PROM: Premature rupture of membranes; SGA: Small for gestational age.

Supplementary Table 3: Perinatal factors associated with different courses of ACS use among infants at 24–31 weeks' gestation in CHNN.

Perinatal factors	Partial Course of ACS *vs.* Non-ACS, aOR (95% CI)*	Complete Course of ACS *vs.* Non-ACS, aOR (95% CI)*
GA		
24–25 weeks	0.67 (0.47, 0.95)	0.58 (0.42, 0.80)
26–27 weeks	0.67 (0.54, 0.83)	0.86 (0.71, 1.04)
28–29 weeks	1.07 (0.92, 1.24)	1.02 (0.88, 1.17)
30–31 weeks	Ref	Ref
SGA	1.12 (0.84, 1.50)	0.98 (0.75, 1.27)
Multiple birth	1.15 (0.99, 1.34)	1.11 (0.97, 1.27)
Inborn	1.86 (1.58, 2.18)	2.09 (1.81, 2.42)
Maternal age	1.00 (0.99, 1.02)	1.03 (1.02, 1.05)
Primigravida	1.13 (0.98, 1.30)	1.15 (1.01, 1.30)
≥1 Prenatal visit	1.07 (0.58, 1.98)	1.68 (0.92, 3.07)
Maternal hypertension	1.16 (0.94, 1.44)	1.55 (1.29, 1.86)
Maternal diabetes	1.25 (1.04, 1.50)	1.11 (0.94, 1.31)
PROM	1.54 (1.33, 1.78)	1.78 (1.56, 2.03)
Cesarean delivery	0.99 (0.86, 1.15)	1.28 (1.12, 1.47)

*Multinomial logistic regressions were applied. aOR: Adjusted odds ratio; ACS: Antenatal corticosteroids use; CHNN: Chinese Neonatal Network; GA: Gestational age; PROM: Premature rupture of membranes; SGA: Small for gestational age.