

eTable 1. Demographic variables according to timing of birth

	Term birth (n=816,693)			Preterm birth (n=48,716)		
	Weekday 9am-5pm (n=198,787)	Weekend day 9am-5pm (n=72,588)	Any day 5pm-9am (n=545,318)	Weekday 9am-5pm (n=13,190)	Weekend day 9am-5pm (n=4,639)	Any day 5pm-9am (n=30,887)
Maternal age						
<20 years	16,774 (8.4)	6,371 (8.8)	46,324 (8.5)	1,395 (10.6)	534 (11.5)	3,371 (10.9)
20-29 years	103,473 (52.1)	37,604 (51.8)	282,597 (51.8)	6,540 (49.6)	2,312 (49.9)	15,642 (50.6)
30-39 years	75,027 (37.7)	27,380 (37.7)	206,743 (37.9)	4,890 (37.1)	1,662 (35.9)	11,201 (36.3)
≥40 years	3,509 (1.8)	1,232 (1.7)	9,647 (1.8)	365 (2.8)	122 (2.6)	682 (2.2)
missing	4	1	7	0	0	0
Socioeconomic status						
SIMD1 (least deprived)	31,050 (15.7)	11,676 (16.0)	87,718 (16.1)	1,741 (13.2)	621 (13.5)	4,225 (13.7)
SIMD2	33,685 (17.0)	12,300 (17.0)	93,319 (17.2)	2,112 (16.1)	759 (16.5)	4,857 (15.8)
SIMD3	36,448 (18.4)	13,191 (18.2)	100,106 (18.4)	2,336 (17.8)	814 (17.6)	5,410 (17.6)
SIMD4	42,102 (21.2)	15,230 (21.0)	115,401 (21.2)	2,817 (21.4)	966 (20.9)	6,689 (21.7)
SIMD5 (most deprived)	54,877 (27.7)	20,122 (27.8)	147,422 (27.1)	4,142 (31.5)	1,452 (31.5)	9,617 (31.2)
missing	525	169	1,352	42	18	98
Parity						
0	89,967 (45.4)	33,345 (46.1)	256,286 (47.2)	6,847 (52.2)	2,425 (52.7)	15,682 (51.1)
1	69,149 (34.9)	25,101 (34.7)	181,899 (33.5)	3,575 (27.3)	1,279 (27.8)	8,474 (27.6)
2	26,429 (13.4)	9,468 (13.1)	71,133 (13.1)	1,608 (12.3)	538 (11.7)	3,930 (12.8)
≥3	12,483 (6.3)	4,405 (6.1)	33,782 (6.2)	1,079 (8.2)	359 (7.8)	2,602 (8.5)
missing	759	269	2,218	81	29	208
Previous therapeutic abortions						
0	177,935 (89.5)	64,979 (89.5)	488,078 (89.5)	11,563 (87.7)	4,075 (88.1)	27,031 (87.5)
≥1	20,816 (10.5)	7,588 (10.5)	57,157 (10.5)	1,625 (12.3)	553 (11.9)	3,853 (12.5)
missing	36	21	83	2	2	12
Previous spontaneous abortions						
0	160,216 (80.6)	58,626 (80.8)	441,049 (80.9)	10,113 (76.7)	3,600 (77.0)	23,786 (77.0)
≥1	38,534 (19.4)	13,940 (19.2)	104,183 (19.1)	3,075 (23.3)	1028 (23.0)	7,098 (23.0)
missing	37	22	86	2	2	12
Previous caesarean sections						
0	187,300 (94.3)	68,601 (94.6)	517,536 (95.0)	11,793 (89.5)	4,199 (90.8)	28,049 (90.9)
≥1	11,456 (5.7)	3,932 (5.4)	27,358 (5.0)	1,383 (10.5)	428 (9.2)	2,816 (9.1)
missing	131	55	424	14	3	31
Preeclampsia						
Yes	1,888 (1.0)	677 (0.9)	5,843 (1.1)	895 (6.8)	319 (6.9)	1,546 (5.0)
No	196,899 (99.0)	71,911 (99.1)	539,475 (98.9)	12,295 (93.2)	4,311 (93.1)	29,350 (95.0)
Labour induction						
Induced	50,860 (25.6)	16,337 (22.5)	151,695 (27.9)	1,825 (13.9)	546 (11.8)	5,032 (16.3)
Not induced	147,652 (74.4)	56,145 (77.5)	392,797 (72.1)	11,346 (86.1)	4,073 (88.2)	25,801 (83.7)
missing	275	106	826	19	11	63
Presentation and mode of delivery*						
Vaginal with normal cephalic presentation	144,291 (72.6)	53,879 (72.9)	395,074 (72.5)	6,556 (49.7)	2,536 (54.8)	18,192 (58.9)
Vaginal with abnormal cephalic presentation	4,058 (2.0)	1,555 (2.1)	11,582 (2.1)	202 (1.5)	88 (1.9)	566 (1.8)
Instrumental vaginal	26,025 (13.1)	9,551 (13.2)	72,127 (13.2)	954 (7.2)	341 (7.4)	2,442 (7.9)
Vaginal breech	590 (0.3)	188 (0.3)	1,430 (0.3)	238 (1.8)	79 (1.7)	607 (2.0)
Emergency caesarean section	23,758 (12.0)	8,395 (11.6)	64,979 (11.9)	5,236 (39.7)	1,586 (34.3)	9,078 (29.4)
Other	65 (0.0)	19 (0.0)	124 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

missing	0	1	2	4	0	9
Gestational age at birth (weeks)						
≤28				646 (4.9)	222 (4.8)	1,301 (4.2)
29-32				2,091 (15.9)	702 (15.2)	4,176 (13.5)
33-36				13,190 (79.2)	3,706 (80.0)	25,419 (82.3)
37	9,924 (5.0)	3,610 (5.0)	26,226 (4.8)			
38	22,867 (11.5)	7,987 (11.0)	59,626 (10.9)			
39	41,677 (21.0)	15,487 (21.3)	111,024 (20.4)			
40	67,928 (34.2)	25,434 (35.0)	187,037 (34.3)			
41	47,864 (24.1)	17,357 (23.9)	137,006 (25.1)			
42	8,527 (4.3)	2,713 (3.7)	24,399 (4.5)			
Birth weight centile						
1 to 3	6,054 (3.1)	2,115 (2.9)	16,908 (3.1)	474 (3.6)	117 (2.5)	702 (2.3)
4 to 10	14,244 (7.2)	5,084 (7.0)	39,595 (7.3)	868 (6.6)	273 (5.9)	1,769 (5.7)
11 to 20	19,977 (10.1)	7,362 (10.2)	56,517 (10.4)	1,266 (9.6)	448 (9.7)	2,721 (8.8)
21 to 80	119,880 (60.3)	43,967 (60.6)	329,401 (60.4)	7,767 (59.0)	2,822 (61.0)	18,975 (61.5)
81 to 90	19,352 (9.7)	7,028 (9.7)	51,754 (9.5)	1,403 (10.7)	465 (10.1)	3,371 (10.9)
91 to 97	13,606 (6.9)	4,965 (6.8)	36,242 (6.7)	970 (7.4)	355 (7.7)	2,374 (7.7)
98 to 100	5,620 (2.8)	2,042 (2.8)	14,739 (2.7)	422 (3.2)	143 (3.1)	934 (3.0)
missing	54	25	162	20	7	50
Sex						
Male	101,078 (50.9)	36,907 (50.8)	277,422 (50.9)	7,257 (55.0)	2,580 (55.7)	16,990 (55.0)
Female	97,709 (49.1)	35,681 (49.2)	267,896 (49.1)	5,933 (45.0)	2,050 (44.3)	13,906 (45.0)
5 minute Apgar score						
>3	196,475 (99.4)	71,764 (99.5)	538,620 (99.4)	12,551 (95.2)	4,459 (96.3)	29,498 (97.0)
≤3	1,157 (0.6)	386 (0.5)	3,287 (0.6)	402 (3.1)	118 (2.6)	912 (3.0)
missing	1,155	438	3,411	237	53	486
Hospital throughput (births/year)						
<1000	13,716 (6.9)	4,964 (6.8)	38,611 (7.1)	437 (3.3)	182 (3.9)	1,033 (3.3)
1000-1999	33,000 (16.6)	11,744 (16.2)	90,237 (16.6)	1,946 (14.8)	686 (14.8)	4,549 (14.7)
2000-2999	38,382 (19.3)	13,539 (18.7)	101,867 (18.7)	2,481 (18.8)	829 (17.9)	5,795 (18.8)
3000-3999	55,176 (27.8)	20,213 (27.9)	145,521 (26.7)	3,892 (29.5)	1,303 (28.1)	8,664 (28.0)
≥4000	58,513 (29.4)	22,128 (30.5)	169,082 (31.0)	4,434 (33.6)	1,630 (35.2)	10,855 (35.1)

Figures are numbers of events with respective percentages. SIMD = Scottish Index of Multiple Deprivation. *Note: elective caesarean sections excluded

eTable 2. Demographic variables according to additional support need at school age

	Term birth (n=816,693)		Preterm birth (n=48,716)	
	ASN (n=96,307)	No ASN (n=720,386)	ASN (n=8,949)	No ASN (n=39,767)
Maternal age				
<20 years	11,044 (11.5)	58,425 (8.1)	1,153 (12.9)	4,147 (10.4)
20-29 years	49,961 (51.9)	373,713 (51.9)	4,558 (50.9)	19,936 (50.1)
30-39 years	33,443 (34.7)	275,707 (38.3)	3,012 (33.7)	14,741 (37.1)
≥40 years	1,857 (1.9)	12,531 (1.7)	226 (2.5)	943 (2.4)
missing	2	10	0	0
Socioeconomic status				
SIMD1 (least deprived)	11,434 (11.9)	122,279 (17.0)	891 (10.0)	5,696 (14.4)
SIMD2	15,547 (16.2)	133,171 (18.5)	1,223 (13.7)	6,505 (16.4)
SIMD3	17,804 (18.5)	136,274 (19.0)	1,557 (17.5)	7,003 (17.7)
SIMD4	20,929 (21.8)	147,789 (20.6)	1,949 (21.8)	8,523 (21.5)
SIMD5 (most deprived)	30,436 (31.7)	178,984 (24.9)	3,304 (37.0)	11,907 (30.0)
missing	157	1,889	25	133
Parity				
0	40,123 (41.9)	339,475 (47.3)	4,091 (46.1)	20,863 (52.8)
1	31,824 (33.2)	244,325 (34.1)	2,476 (27.9)	10,852 (27.5)
2	14,675 (15.3)	92,373 (12.9)	1,303 (14.7)	4,773 (12.1)
≥3	9,217 (9.6)	41,453 (5.8)	997 (11.2)	3,043 (7.7)
missing	468	2,778	79	236
Previous therapeutic abortions				
0	84,994 (88.3)	645,998 (89.7)	7,765 (86.8)	34,904 (87.8)
≥1	11,294 (11.7)	74,267 (10.3)	1,181 (13.2)	4,851 (12.2)
missing	19	121	3	13
Previous spontaneous abortions				
0	75,982 (78.9)	583,909 (81.1)	6,662 (74.5)	30,837 (77.6)
≥1	20,305 (21.1)	136,352 (18.9)	2,284 (25.5)	8,917 (22.4)
missing	20	125	3	13
Previous caesarean sections				
0	90,666 (94.2)	682,771 (94.9)	7,966 (89.1)	36,075 (90.8)
≥1	5,592 (5.8)	37,054 (5.1)	977 (10.9)	3,650 (9.2)
missing	49	561	6	42
Preeclampsia				
Yes	1,495 (1.5)	7,003 (1.0)	641 (7.2)	2,119 (5.3)
No	94,902 (98.5)	713,383 (99.0)	8,308 (92.8)	37,648 (94.7)
Labour induction				
Induced	28,037 (29.2)	190,855 (26.5)	1,297 (14.5)	6,106 (15.4)
Not induced	68,122 (70.8)	528,472 (73.5)	7,643 (85.5)	33,577 (84.6)
Missing	148	1,059	9	84
Presentation and mode of delivery*				
Vaginal with normal cephalic presentation	70,019 (72.7)	522,225 (72.5)	4,789 (53.5)	22,495 (56.6)
Vaginal with abnormal cephalic presentation	2,597 (2.7)	14,598 (2.0)	178 (2.0)	678 (1.7)
Instrumental vaginal	11,318 (11.8)	96,385 (13.4)	533 (6.0)	3,204 (8.1)
Vaginal breech	264 (0.3)	1,944 (0.3)	216 (2.4)	708 (1.8)
Emergency caesarean section	12,093 (12.6)	85,093 (11.8)	3,230 (36.1)	12,670 (31.9)
Other	16 (0.0)	192 (0.0)	0 (0.0)	0 (0.0)
missing	1	2	3	12
Gestational age at delivery (weeks)				
≤28			811 (9.1)	1,358 (3.4)
29-32			1,603 (17.9)	5,366 (13.5)
33-36			6,535 (73.0)	33,034 (83.1)
37	5,816 (6.0)	33,944 (4.7)		
38	12,399 (12.9)	78,081 (10.9)		
39	20,474 (21.3)	147,714 (20.5)		

40	31,381 (32.6)	249,081 (34.6)		
41	22,478 (23.3)	179,749 (25.0)		
42	3,759 (3.9)	31,880 (4.4)		
Birth weight centile				
1 to 3	4,317 (4.5)	20,760 (2.9)	362 (4.1)	931 (2.3)
4 to 10	8,434 (8.8)	50,489 (7.0)	706 (7.9)	2,204 (5.6)
11 to 20	11,053 (11.5)	72,803 (10.1)	924 (10.4)	3,511 (8.8)
21 to 80	55,729 (57.9)	437,519 (60.8)	5,274 (59.1)	24,290 (61.2)
81 to 90	8,360 (8.7)	69,774 (9.7)	803 (9.0)	4,436 (11.2)
91 to 97	5,871 (6.1)	48,942 (6.8)	614 (6.9)	3,085 (7.8)
98 to 100	2,509 (2.6)	19,892 (2.8)	244 (2.7)	1,255 (3.2)
missing	34	207	22	55
Sex				
Male	63,126 (65.6)	352,251 (48.9)	5,996 (67.0)	20,831 (52.4)
Female	33,181 (34.5)	368,105 (51.1)	2,953 (33.0)	18,936 (47.6)
5 minute Apgar score				
>3	94,848 (99.2)	712,011 (99.4)	8,355 (95.7)	38,153 (97.3)
≤3	754 (0.80)	4,076 (0.6)	372 (4.3)	1,060 (2.7)
missing	705	4,299	222	554
Hospital throughput (births/year)				
<1000	9,181 (9.5)	48,110 (6.7)	404 (4.5)	1,248 (3.1)
1000-1999	16,435 (17.1)	118,546 (16.5)	1,359 (15.2)	5,822 (14.6)
2000-2999	16,263 (16.9)	137,525 (19.1)	1,479 (16.5)	7,626 (19.2)
3000-3999	25,698 (26.7)	195,212 (27.1)	2,575 (28.8)	11,284 (28.4)
≥4000	28,730 (29.9)	220,993 (30.7)	3,132 (35.0)	13,787 (34.7)

Figures are numbers of events with respective percentages. ASN = additional support need; SIMD = Scottish Index of Multiple Deprivation. *Note: elective caesarean sections excluded