

**Supplementary Table S1.** Joint impact of daily volume and weekend delivery (model 2) on perinatal outcomes, controlling for operative vaginal delivery (both failed and successful) and cesarean delivery

	<b>Outcome</b>	<b>Low/average-volume weekday</b>	<b>High-volume weekday</b>	<b>Low/average-volume weekend</b>	<b>High-volume weekend</b>
<b>Model 2 (Interaction model)</b>	<i>Maternal</i>				
	Obstetric infection	Ref.	0.98 (0.94, 1.03)	<b>1.11 (1.07, 1.16)</b>	<b>1.33 (1.19, 1.48)</b>
	Hemorrhage	Ref.	<b>0.95 (0.91, 0.98)</b>	1.03 (1.00, 1.07)	<b>1.13 (1.02, 1.25)</b>
	Severe perineal laceration	Ref.	0.98 (0.94, 1.02)	1.03 (0.99, 1.08)	0.95 (0.85, 1.06)
	Prolonged LOS <sup>a</sup>	Ref.	1.03 (0.99, 1.07)	<b>1.20 (1.16, 1.24)</b>	<b>1.40 (1.29, 1.51)</b>
	Composite maternal	Ref.	0.99 (0.96, 1.01)	<b>1.11 (1.09, 1.14)</b>	<b>1.21 (1.15, 1.29)</b>
	<i>Neonatal</i>				
	Birth trauma	Ref.	0.99 (0.95, 1.04)	0.98 (0.94, 1.02)	0.98 (0.89, 1.07)
	Neonatal seizures	Ref.	<b>1.33 (1.01, 1.74)</b>	1.16 (0.86, 1.56)	1.08 (0.65, 1.79)
	Apgar score <7	Ref.	1.02 (0.94, 1.10)	<b>1.15 (1.06, 1.24)</b>	<b>1.34 (1.14, 1.57)</b>
	NICU admission	Ref.	0.98 (0.93, 1.03)	<b>1.10 (1.05, 1.14)</b>	<b>1.15 (1.05, 1.26)</b>
	Neonatal death	Ref.	0.91 (0.78, 1.07)	1.03 (0.89, 1.20)	0.73 (0.47, 1.13)
	Composite infant	Ref.	0.98 (0.95, 1.02)	<b>1.04 (1.01, 1.07)</b>	<b>1.08 (1.01, 1.16)</b>

**Bold** indicates significance at  $P < 0.05$ .

a. Prolonged LOS defined as LOS >3 days for vaginal deliveries and >5 days for cesarean deliveries

**Supplementary Table S2.** Joint impact of daily volume and weekend delivery (model 2) on perinatal outcomes, using admission day rather than delivery day as the index day to define “busy days” and weekends.

	<b>Outcome</b>	<b>Low/average-volume weekday</b>	<b>High-volume weekday</b>	<b>Low/average-volume weekend</b>	<b>High-volume weekend</b>
<b>Model 2 (Interaction model)</b>	<i>Maternal</i>				
	Obstetric infection	Ref.	<b>0.95 (0.91, 0.99)</b>	1.01 (0.98, 1.06)	<b>1.22 (1.09, 1.36)</b>
	Hemorrhage	Ref.	0.98 (0.94, 1.02)	0.99 (0.95, 1.02)	<b>1.16 (1.03, 1.29)</b>
	Severe perineal laceration	Ref.	0.99 (0.95, 1.03)	<b>1.08 (1.04, 1.13)</b>	1.05 (0.95, 1.16)
	Prolonged LOS <sup>a</sup>	Ref.	<b>1.05 (1.00, 1.09)</b>	<b>0.76 (0.72, 0.80)</b>	<b>0.78 (0.68, 0.89)</b>
	Composite maternal	Ref.	0.99 (0.96, 1.01)	<b>0.96 (0.94, 0.99)</b>	1.07 (0.99, 1.15)
	<i>Neonatal</i>				
	Birth trauma	Ref.	1.00 (0.96, 1.04)	0.99 (0.96, 1.03)	0.97 (0.87, 1.09)
	Neonatal seizures	Ref.	1.03 (0.80, 1.31)	0.96 (0.70, 1.31)	<b>1.88 (1.18, 2.99)</b>
	Apgar score <7	Ref.	1.01 (0.94, 1.08)	1.04 (0.96, 1.12)	1.06 (0.87, 1.30)
	NICU admission	Ref.	1.01 (0.97, 1.06)	<b>1.04 (1.01, 1.07)</b>	0.97 (0.88, 1.08)
	Neonatal death	Ref.	1.03 (0.87, 1.21)	1.13 (0.94, 1.35)	1.02 (0.64, 1.62)
	Composite infant	Ref.	1.01 (0.97, 1.04)	1.01 (0.99, 1.04)	0.97 (0.90, 1.04)

**Bold** indicates significance at P<0.05.

a. Prolonged LOS defined as LOS >3 days for vaginal deliveries and >5 days for cesarean deliveries