

## Examining cesarean section rates in British Columbia using the Robson Ten Classification

 Table 2. Robson Ten Classification Information for British Columbia, 2011/2012<sup>^</sup>

GROUP	NUMBER OF CESAREANS	NUMBER OF DELIVERIES	RELATIVE SIZE	CESAREAN DELIVERY RATE	CONTRIBUTION TO CD RATE
<b>TOTAL</b>	<b>1</b> 13,494	<b>1</b> 42,467	100%	31.8%	100%
1 – Nulliparous women with a single vertex <sup>*</sup> pregnancy, at ≥37 weeks gestation in spontaneous labour	2,432	11,386	<b>3</b> 26.8%	<b>11</b> 21.4%	<b>14</b> 18.0%
2 – Nulliparous women with a single vertex <sup>*</sup> pregnancy, at ≥37 weeks gestation, who had labour induced or who had CD before labour	2,511	5,384	<b>3</b> 12.7%	46.6%	<b>14</b> 18.6%
3 – Multiparous women, without a uterine scar, with a single vertex <sup>*</sup> pregnancy at ≥37 weeks gestation in spontaneous labour	276	11,194	<b>4</b> 26.4%	<b>12</b> 2.5%	2.1%
4 – Multiparous women, without a uterine scar, with a single vertex <sup>*</sup> pregnancy at ≥37 weeks gestation, who had labour induced or who had CD before labour	399	3,089	<b>4</b> 7.3%	<b>5</b> 12.9%	3.0%
5 – Multiparous women, with at least one previous uterine scar with a single vertex <sup>*</sup> pregnancy at ≥37 weeks gestation	4,326	5,327	<b>6</b> 12.5%	<b>13</b> 81.2%	<b>14</b> 32.1%
6 – All nulliparous women with a single breech pregnancy	916	976	<b>7</b> 2.3%	93.9%	6.8%
7 – All multiparous women with a single breech pregnancy, including women with a uterine scar	622	708	<b>7</b> 1.7%	87.9%	4.6%
8 – All women with multiple pregnancies, including women with a uterine scar	506	733	<b>8</b> 1.7%	69.0%	3.8%
9 – All women with a single pregnancy with a transverse or other <sup>†</sup> abnormal presentation, including women with a uterine scar	222	274	<b>2</b> 0.7%	<b>2</b> 81.0%	1.7%
10 – All women with a single vertex <sup>*</sup> pregnancy at ≤36 weeks gestation, including women with a uterine scar	888	2,931	<b>9</b> 6.9%	<b>10</b> 30.3%	6.6%
99 – Women who cannot be placed into one of the above groups due to incomplete information	396	465	1.1%	85.2%	2.9%

\* Robson's classification refers to cephalic presentation; however, vertex (cephalic occipital) presentation is captured in the BCPDR.

† Cephalic non-occiput presentations such as face and brow are classified as "other" presentations in BC; these deliveries are therefore found here rather than in Groups 1-5 or 10.

<sup>^</sup> Data for 2011/2012 are preliminary and subject to revision. Births at home attended by Registered Midwives have been excluded from this table.

- 1** The total number of cesareans and deliveries should be the sum of the number of each event in Robson groups 1 to 10 combined [16].  
There were 13,098 cesareans and 42,002 deliveries in Groups 1 to 10. Once the women who could not be classified into one of the ten Groups (Group 99) are included, all deliveries in the province are captured.
- 2** Group 9 should comprise 0.2-0.6% of women with a CD rate of 100%. Other values may reflect data collection issues [20].  
In BC, Group 9 accounted for 0.7% of deliveries with a CD rate of 81.0%. This low CD rate may be due – in part – to the inclusion of face and brow presentations in this group.
- 3** Groups 1 and 2 usually account for 35-40% of all deliveries; Group 1 should be larger than Group 2.  
Groups 1 and 2 accounted for 39.5% of all deliveries in 2011/2012, and Group 1 is 2.1 times larger than Group 2.
- 4** Groups 3 and 4 usually account for 30-40% of women; Group 3 should be larger than Group 4.  
Groups 3 and 4 included 33.7% of deliveries in BC, and Group 3 is 3.6 times the size of Group 4.
- 5** The CD rate in Group 4 should be below 20% [20].  
In BC, the CD rate for Group 4 was 12.9% in 2011/2012.
- 6** Group 5 should comprise no more than 10% of women [20].  
In 2011/2012, Group 5 included 12.5% of women.
- 7** Groups 6 and 7 should include 3-4% of all women, and Group 6 is usually twice the size of Group 7 [20].  
Breech deliveries accounted for 4.0% of all women in 2011/2012 (2.3% + 1.7%). There were 35% more nulliparous than multiparous breeches.
- 8** Unless the site has an IVF program or is a referral centre, Group 8 should include 1.5-2% of women [20].  
In 2011/2012, 1.7% of women had a multiple pregnancy.
- 9** Group 10 includes approximately 5% of women. Higher proportions (6-7%) may be seen at referral centres and facilities with a high risk of preterm delivery [20].  
Women with singleton, vertex, preterm deliveries accounted for 6.9% of all deliveries in 2011/2012.
- 10** If the CD rate in Group 10 is 15-16% it suggests a high proportion of women with spontaneous onset of preterm labour. Higher CD rates (30-40%) in this Group reflect more women with CD following preterm labour induction or a cesarean delivery without labour.  
The CD rate in Group 10 for 2011/2012 was 30.3%.
- 11** A CD rate for Group 1 less than 10% is desirable [20] and below 15% is achievable (personal communication October 4, 2011).  
In BC, the CD rate for nulliparous women with a singleton vertex pregnancy at term in spontaneous labour was 21.4%.
- 12** The CD rate for Group 3 should be 2.5-3% [16]. If the CD rate exceeds 3%, inaccurate data collection should be investigated.  
The CD rate among multiparas with singleton term vertex pregnancies and no uterine scar was 2.5% in 2011/2012.
- 13** With good perinatal outcomes, a CD rate of 50-60% in Group 5 is excellent [20].  
In 2011/2012, 81.2% of multiparas with a singleton term pregnancy and a uterine scar delivered by cesarean.
- 14** Groups 1, 2, and 5 usually account for two-thirds of all cesarean deliveries.  
In BC, 68.7% of all cesareans were to women in Groups 1, 2, and 5 in 2011/2012.