

Safety of twin delivery at ≥ 32 weeks - vaginal or caesarean section birth?

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Objectives

Multiple gestation accounts for around 3% of deliveries in the developed world. While its incidence increases, the evidence regarding the optimum management of delivery remains limited.

NICE guideline advises that both vaginal birth and caesarean section are equally safe for the woman and fetuses in the case of an uncomplicated pregnancy that progressed beyond 32 weeks gestation, where leading twin is cephalic, both twins are similar size, and there are no additional obstetric contraindications to labour.

The aims of this project were to:

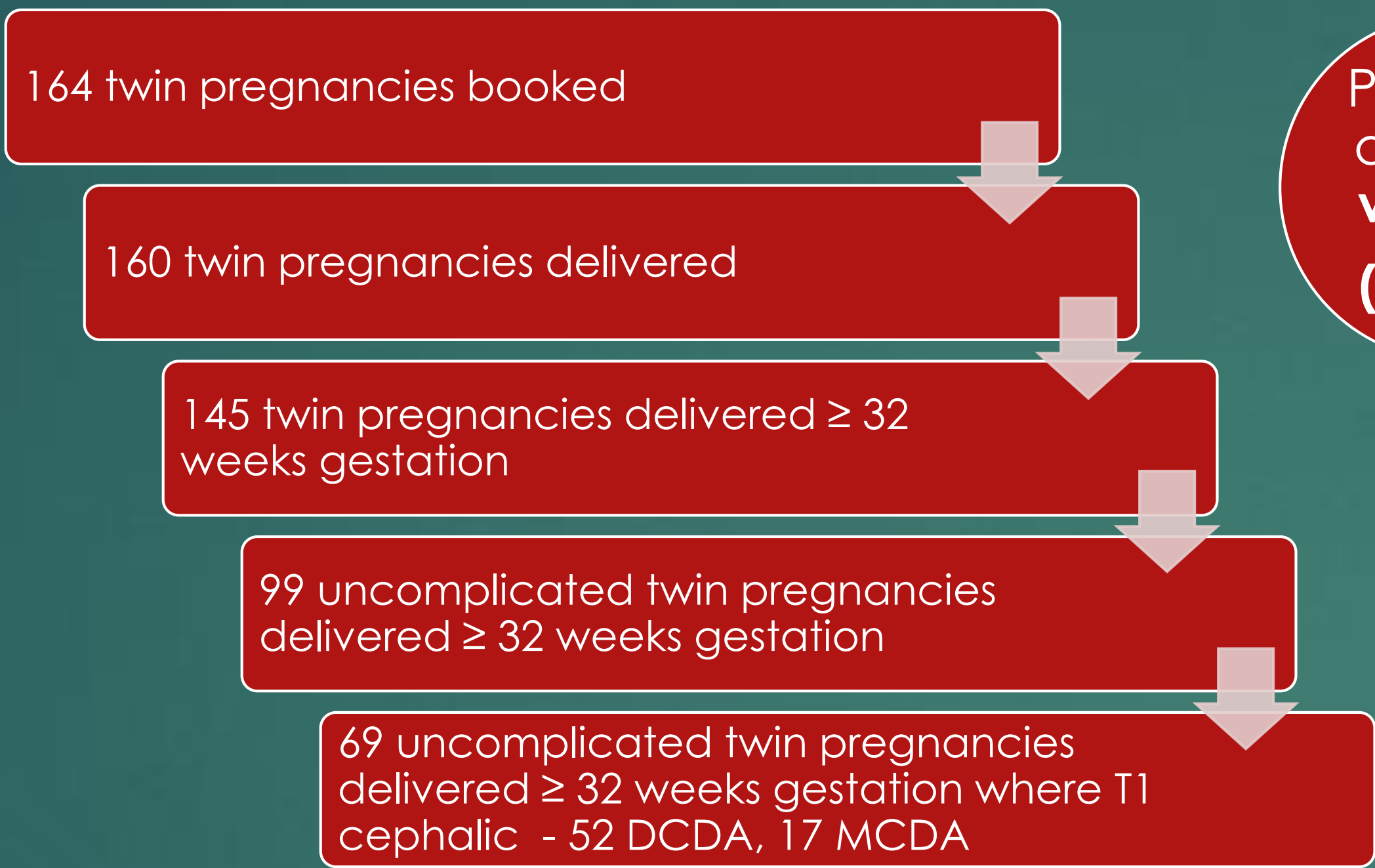
- determine gestation of planned delivery among uncomplicated DCDA and MCDA twin pregnancies that progressed beyond 32 completed weeks of gestation and where T1 was cephalic
- determine the rates of planned vaginal and caesarean section deliveries among twins ≥ 32/40 where T1 was cephalic
- determine the rates of actual vaginal and caesarean section (including for twin 2) deliveries;
- compare maternal and neonatal adverse outcomes between women who had a vaginal and caesarean section delivery in a tertiary maternity hospital in Dublin.

Methods

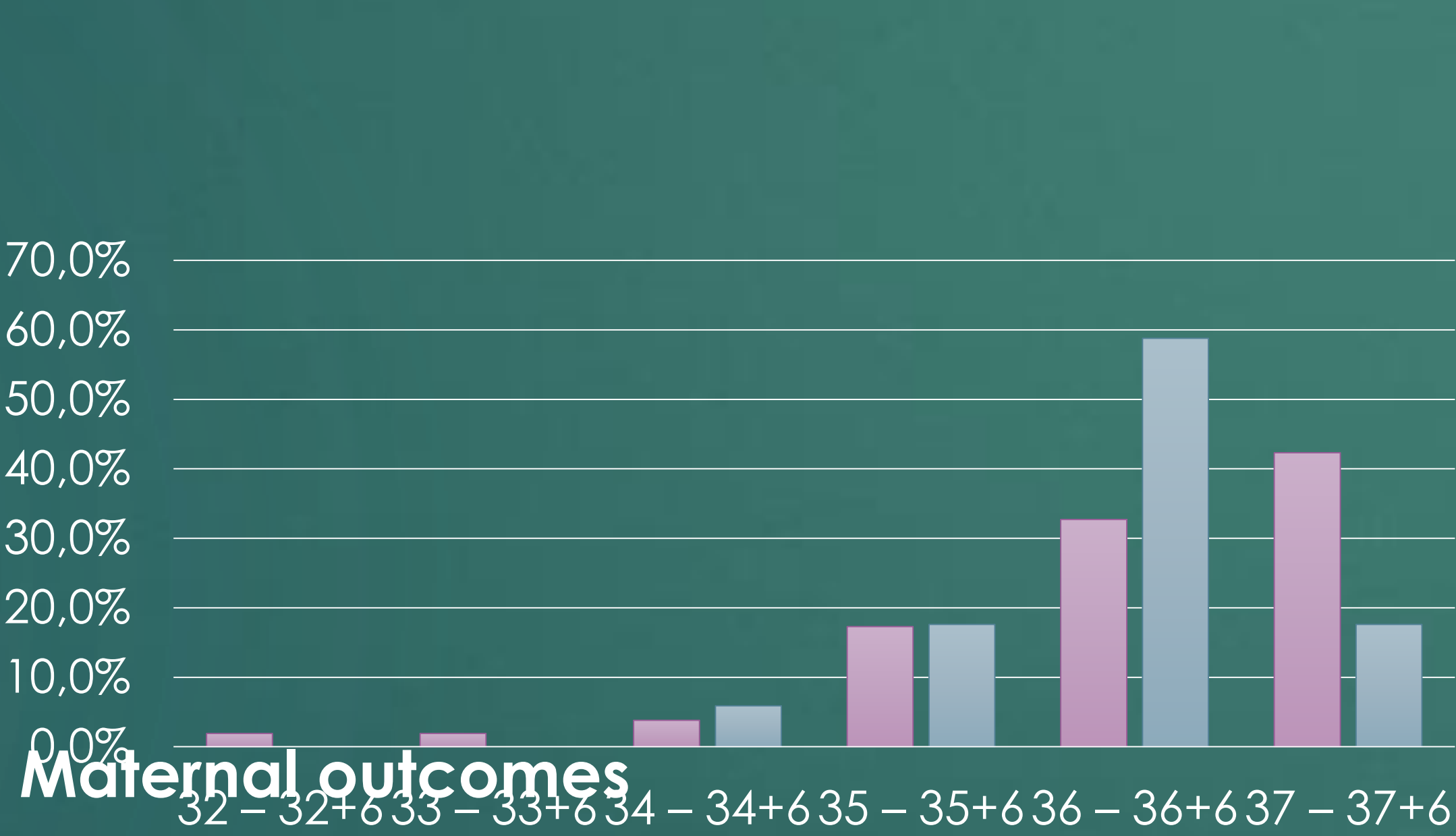
- Design: retrospective review of electronic/paper records
- Timeline: 1 January and 31 December 2020
- Inclusion criteria: women who delivered at ≥ 32 weeks gestation following an uncomplicated pregnancy, where twin 1 was cephalic
- Data: demographic and clinical data of women and fetuses from included twin gestations
- Data analysis: descriptive statistics and χ^2 test (to compare differences in adverse outcomes)

Results

Inclusion criteria



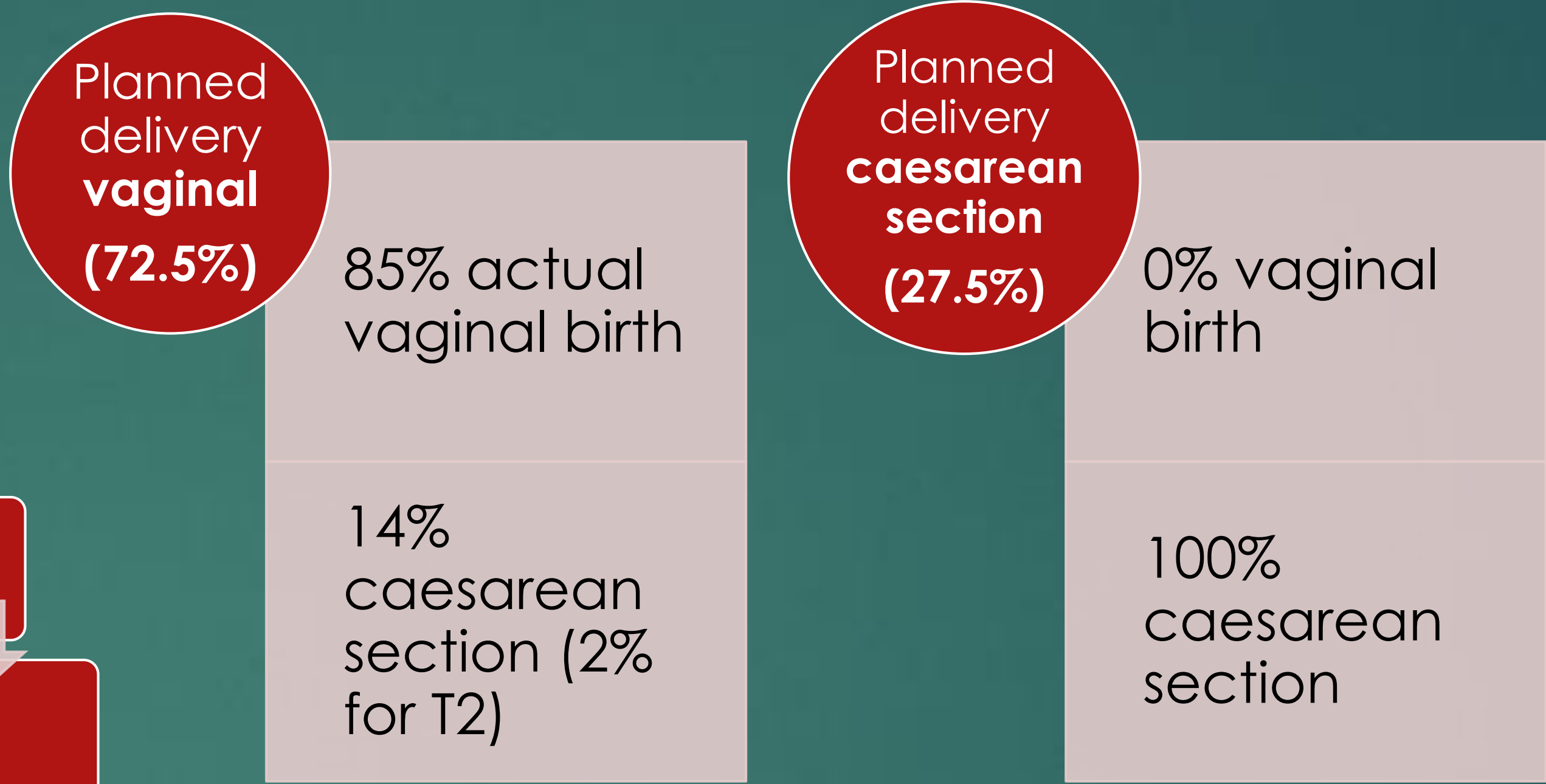
Gestation at delivery



Maternal outcomes

	Vaginal delivery (n=43)	%	Caesarean section (n=27)	%	χ^2
Maternal death	0	0	0	0	na
ICU admission	1	2.3	3	11.1	ns
Diagnosis of PE/VTE	0	0	0	0	na
Postpartum haemorrhage	10	23.3	7	30.4	ns
Blood transfusion	5	11.6	1	3.7	ns
Regional anaesthesia	39	90.7	27	100	ns
General anaesthesia	0	0	0	0	na

Mode of delivery



Vaginal birth:

- 67.4% spontaneous vaginal delivery of both twins
- 33.6% instrumental delivery for one/both twins

Neonatal outcomes

	Vaginal delivery					Caesarean section						
	T1	T2	χ^2			T1	T2	χ^2			T1/T1	T2/T2
	n	%	n	%		n	%	n	%			
Fetal death	0	0	0	0	na	0	0	0	0	na	na	na
Apgar < 7 at 5 minutes	0	0	2	4.7	na	0	0	1	3.7	na	na	ns
Apgar < 4 at 5 minutes	0	0	1	2.3	na	0	0	0	0	na	na	ns
Any cord pH < 7.2	3	7	15	34.8	$\chi^2=7.46, p=0.006$	1	3.7	2	7.4	ns	ns	$\chi^2=5.96, p=0.015$
NICU/SCBU admission	11	25.6	15	34.8	ns	6	22.2	9	33.3	ns	ns	ns
IVH grade III or IV	0	0	0	0	na	0	0	0	0	na	na	na
Any respiratory support	5	11.6	14	32.6	$\chi^2=5.47, p=0.02$	5	18.5	10	37	ns	ns	ns
Invasive ventilation	0	0	1	2.3	na	0	0	0	0	na	na	ns

T1/T2 (vaginal birth): T2 more likely to have low cord pH and need respiratory support at birth, without increased risk of NICU/SCBU admission

T1/T2 (caesarean section): no differences in observed outcomes

T1/T1 (vaginal birth compared to caesarean section): no differences in observed outcomes

T2/T2 (vaginal birth compared to caesarean section): T2 delivered vaginally more likely to have low pH (<7.2), without an increased risk of NICU/SCBU admission

Conclusions

- Gestation at delivery:** NICE guideline on multiple pregnancy advises planned birth for DCDA twins at 37 and 37+6 and for MCDA twins at 36 and 36+6 weeks gestation. In our sample the majority of MCDA twins fell within the NICE advised bracket (58.8%), and only slightly less than a half of all DCDA twins (42.3%) were delivered after 37 completed weeks gestation. **Action:** to align our management with the guideline and allow more uncomplicated DCDA twin pregnancies to progress beyond 37 weeks gestation.
- Mode of delivery:** studies quote planned caesarean section rates from 18.6% to 24.6%. Our caesarean section rate is marginally higher than the upper range cited in the literature. **Action:** reduction of planned caesarean delivery to 10-15% would contribute to an effort to prevent the consequences of caesarean section on future pregnancies and deliveries.
- Mode of delivery:** 40% caesarean section rate for women who plan vaginal birth in Twin Birth Study. In our sample the vast majority of women planning for vaginal delivery achieved it, with only 14% needing a caesarean section. **Action:** This excellent result should be used to counsel women about twin birth and its outcomes if vaginal birth is preferred.

- Maternal and neonatal outcomes:** The Cochrane review comparing both maternal and neonatal adverse outcomes for women who had vaginal or caesarean twin birth suggests that there are no significant differences in these outcomes based on the mode of delivery. Our results are reassuring for both mothers and babies. While there were significantly more second twins with low cord pH born vaginally, this did not convey a higher risk of other adverse outcomes or a need for NICU/SCBU admission. However, our rates of NICU/SCBU admission were 22.2 – 34.8%. Maternal outcomes did not differ between women who had vaginal birth or caesarean section. While overall numbers were low, women delivering by caesarean section had an 11.1% rate of IUC admission and 30.4% rate of postpartum haemorrhage. Women who had vaginal birth had a 23.3% rate of postpartum haemorrhage and 11.6% required a blood transfusion.