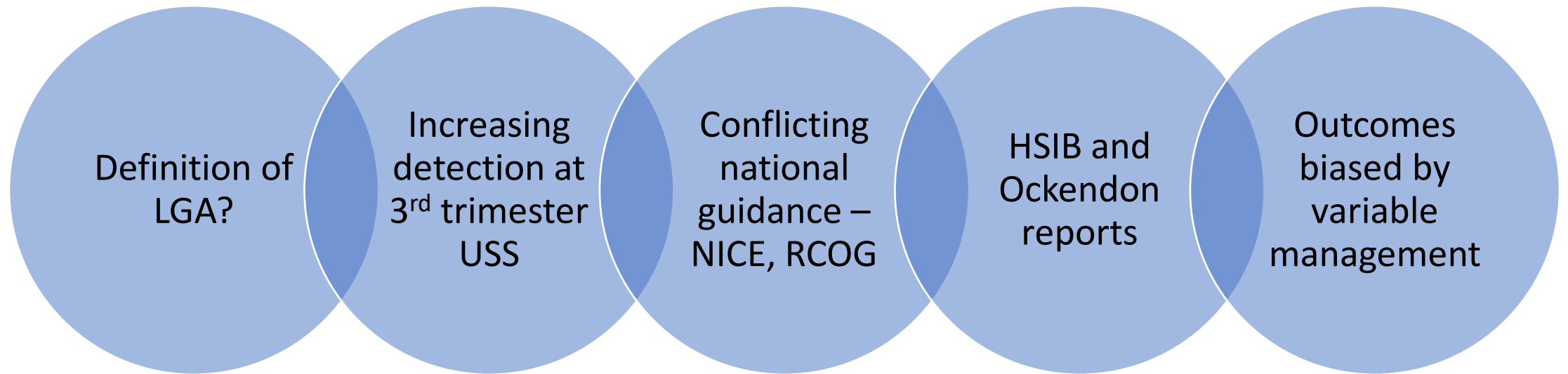


The Outcomes of Pregnancy with a Large for Gestational Age (LGA) Fetus

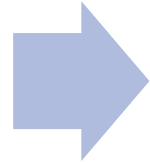
Kit Robertson – SST in MFM, OUH

Background



Study Population

Universal USS at 36 weeks
offered routinely



Screening for GDM if
AC > 95th centile

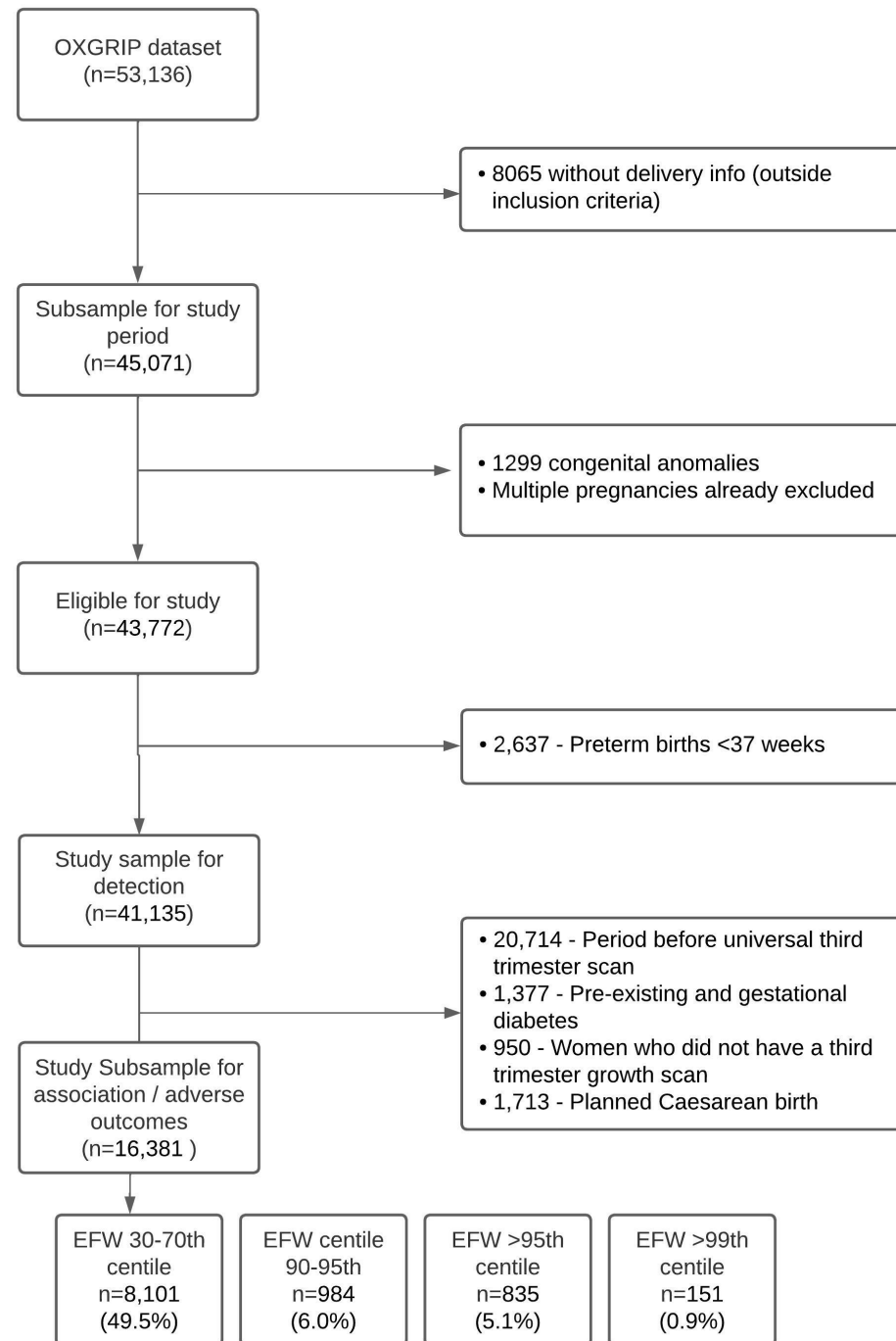
- Fasting blood glucose
- Abnormal if ≥ 6 mmol



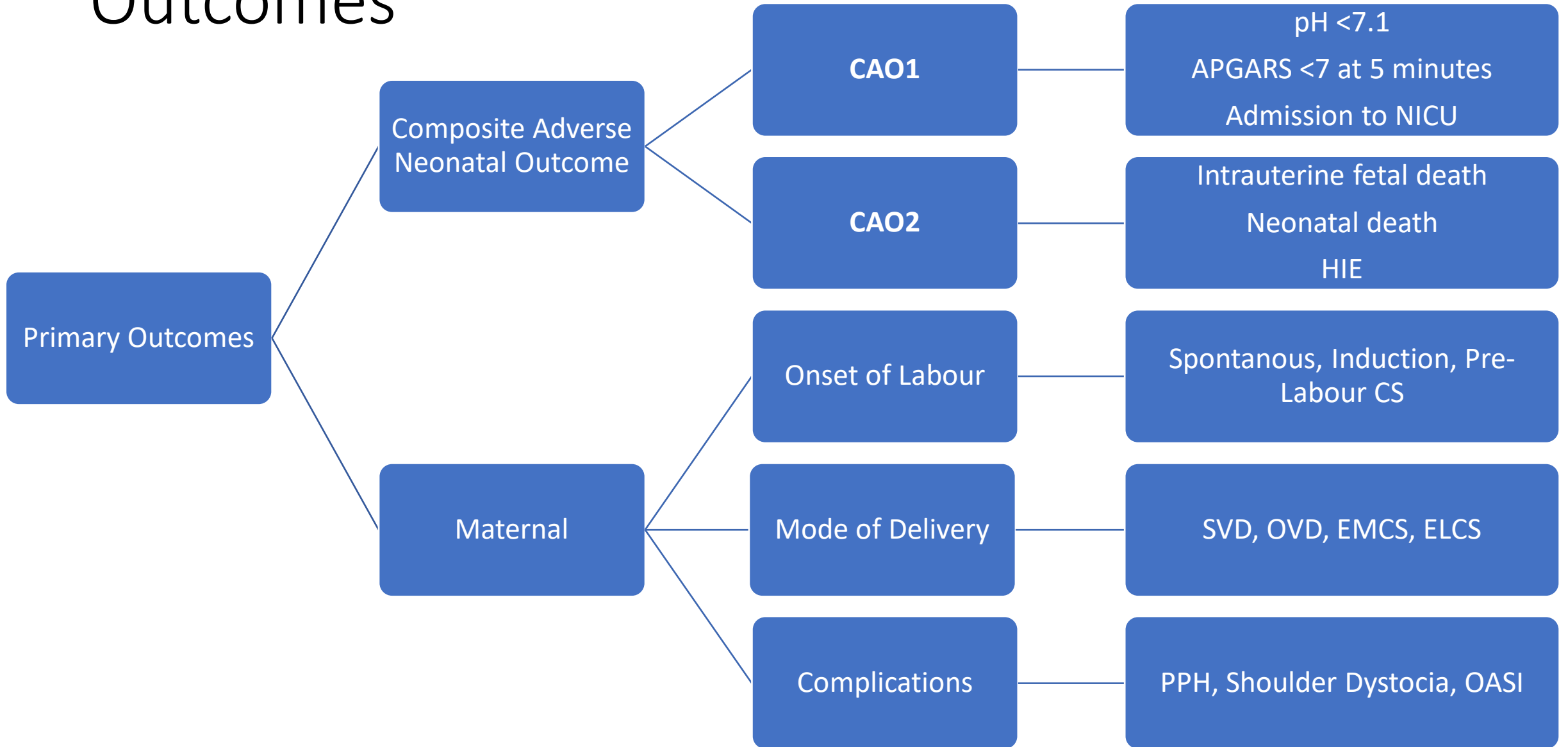
Expectant management
until 41-42 weeks

Study Population

- Detection of LGA by selective USS versus universal USS at 36 weeks
- Outcomes of predicted LGA babies in universal USS cohort
 - Multivariate logistic regression analysis
 - Compared to appropriately grown babies (30-70th centile)
 - Subdivided into
 - EFW 90-95th centile
 - EFW >95th centile
 - EFW >99th centile



Outcomes

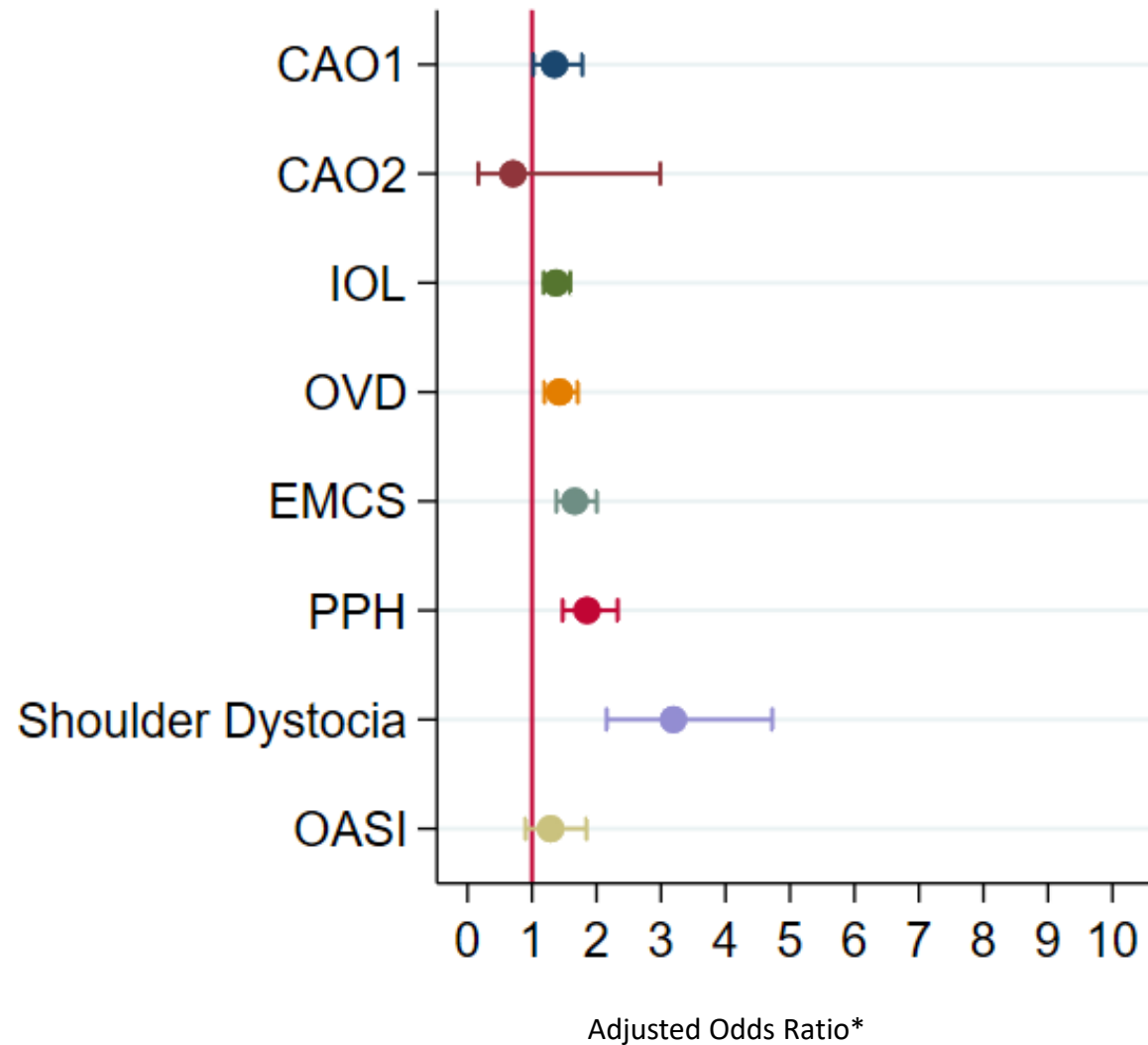


Detection of LGA – Selective vs Universal USS

Pre-OXGRIP – Selective Scan Cohort								
Outcome	Test	Test positive rate	Sensitivity (%)	Specificity (%)	Positive Predictive Value (%)	Negative Predictive Value (%)	Positive Likelihood Ratio	Negative Likelihood Ratio
Birthweight >90th centile	EFW >90 th centile	5%	25 (23 - 27)	97 (96 - 97)	42 (39 - 45)	93 (93 - 93)	7.5	0.8
Birthweight >95th centile	EFW >95 th centile	3%	26 (24 - 29)	98 (98 - 98)	39 (36 - 43)	97 (96 - 97)	13.5	0.8
Birthweight >99th centile	EFW >99 th centile	1%	33 (27 - 39)	99 (99 - 99)	39 (32 - 46)	99 (99 - 99)	53.5	0.7
OXGRIP – Universal Scan Cohort								
Outcome	Test	Test positive rate	Sensitivity (%)	Specificity (%)	Positive Predictive Value (%)	Negative Predictive Value (%)	Positive Likelihood Ratio	Negative Likelihood Ratio
Birthweight >90th centile	EFW >90 th centile	12%	52 (50 - 54)	92 (92 - 93)	40 (38 - 42)	95 (95 - 95)	6.8	0.5
Birthweight >95th centile	EFW >95 th centile	6%	44 (41 - 48)	96 (96 - 97)	36 (34 - 39)	97 (97 - 98)	11.9	0.6
Birthweight >99th centile	EFW >99 th centile	1%	35 (29 - 41)	99 (99 - 99)	36 (30 - 43)	99 (99 - 99)	44.8	0.7

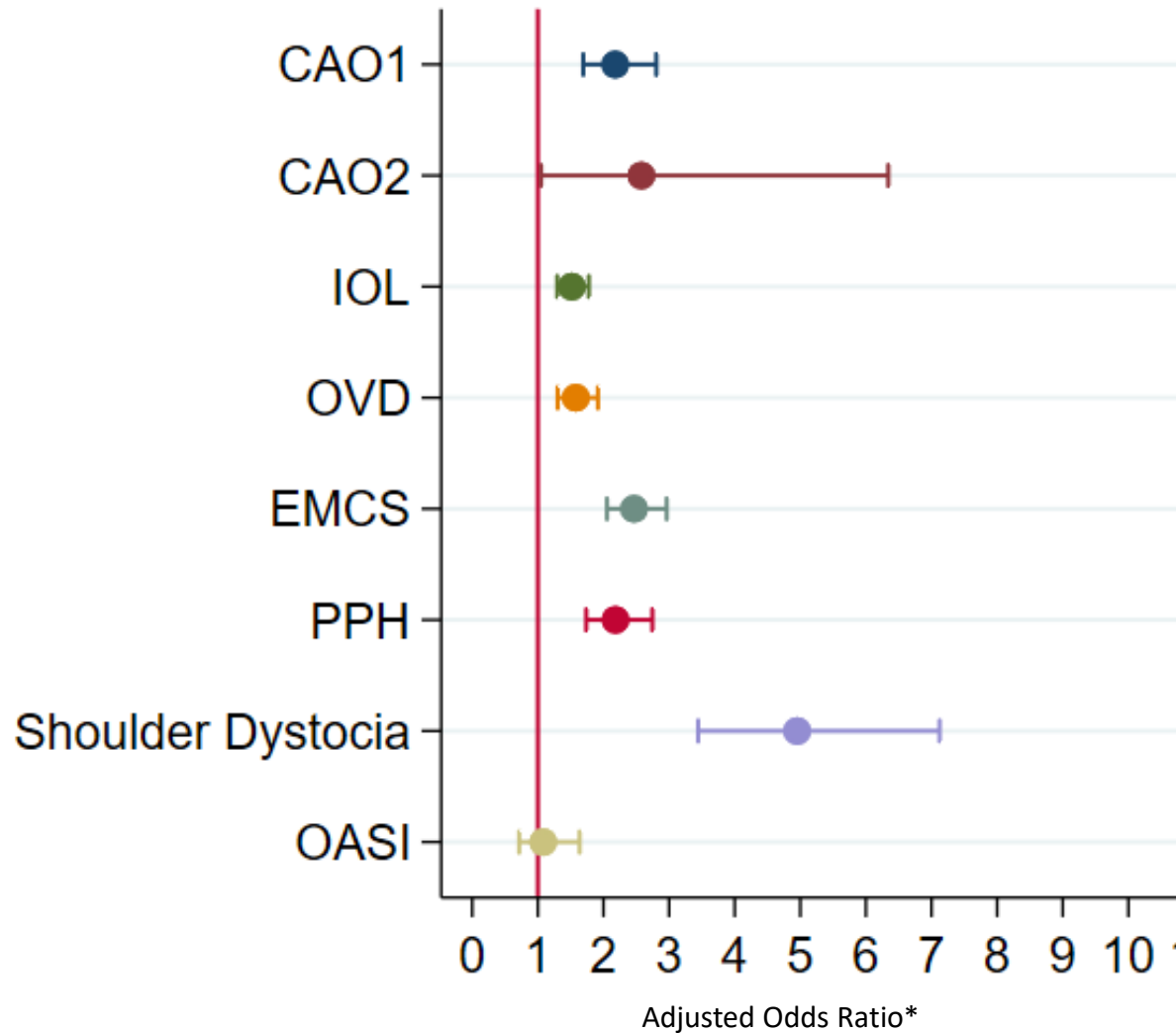
Conclusion: Universal USS increases detection of LGA but is only ~50% accurate at predicting the LGA baby

Outcomes of babies predicted to be LGA by universal USS



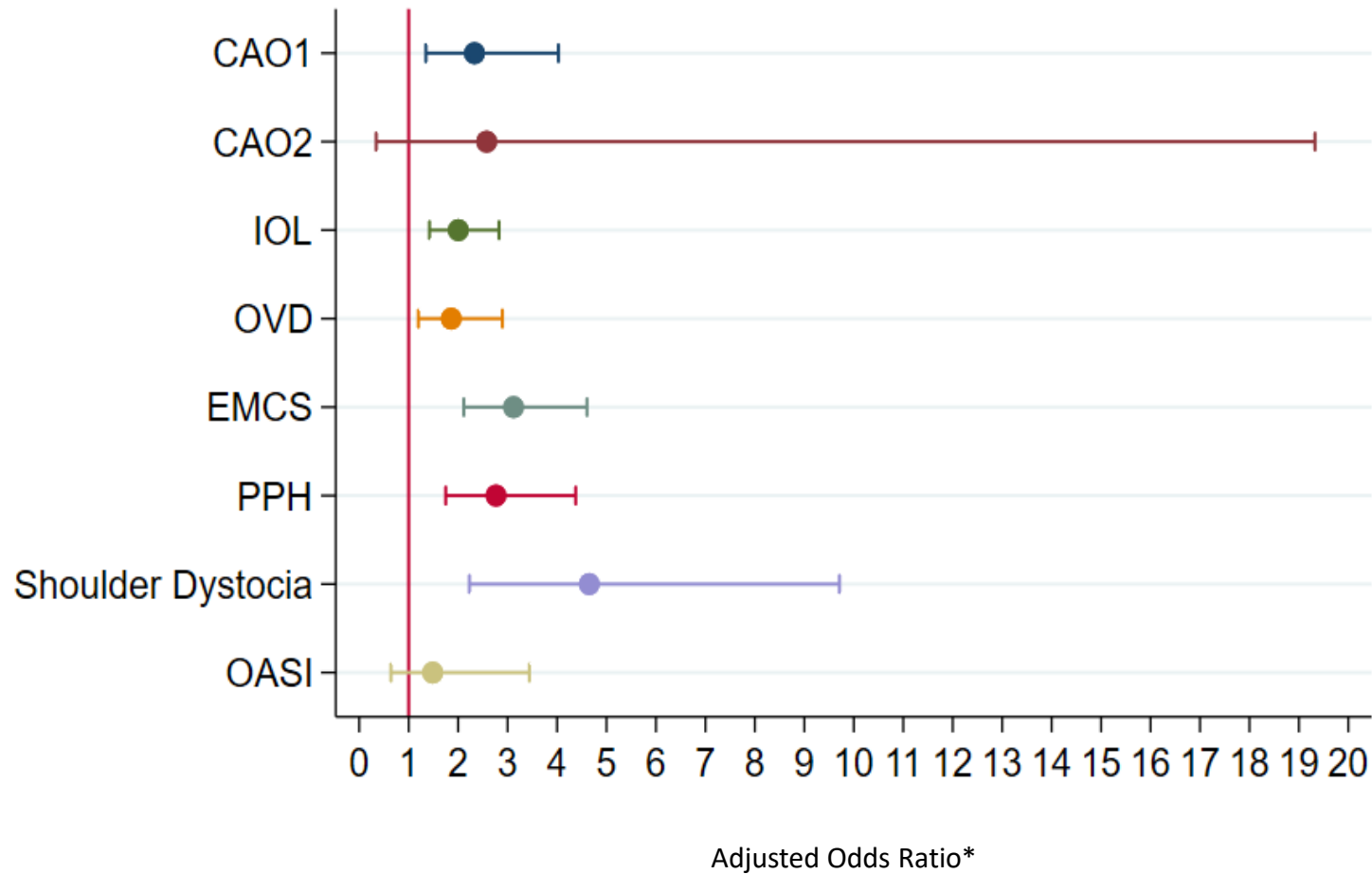
- EFW 90th-95th (n=984)

Outcomes of babies predicted to be LGA by universal USS



- EFW >95th (n=835)

Outcomes of babies predicted to be LGA by universal USS



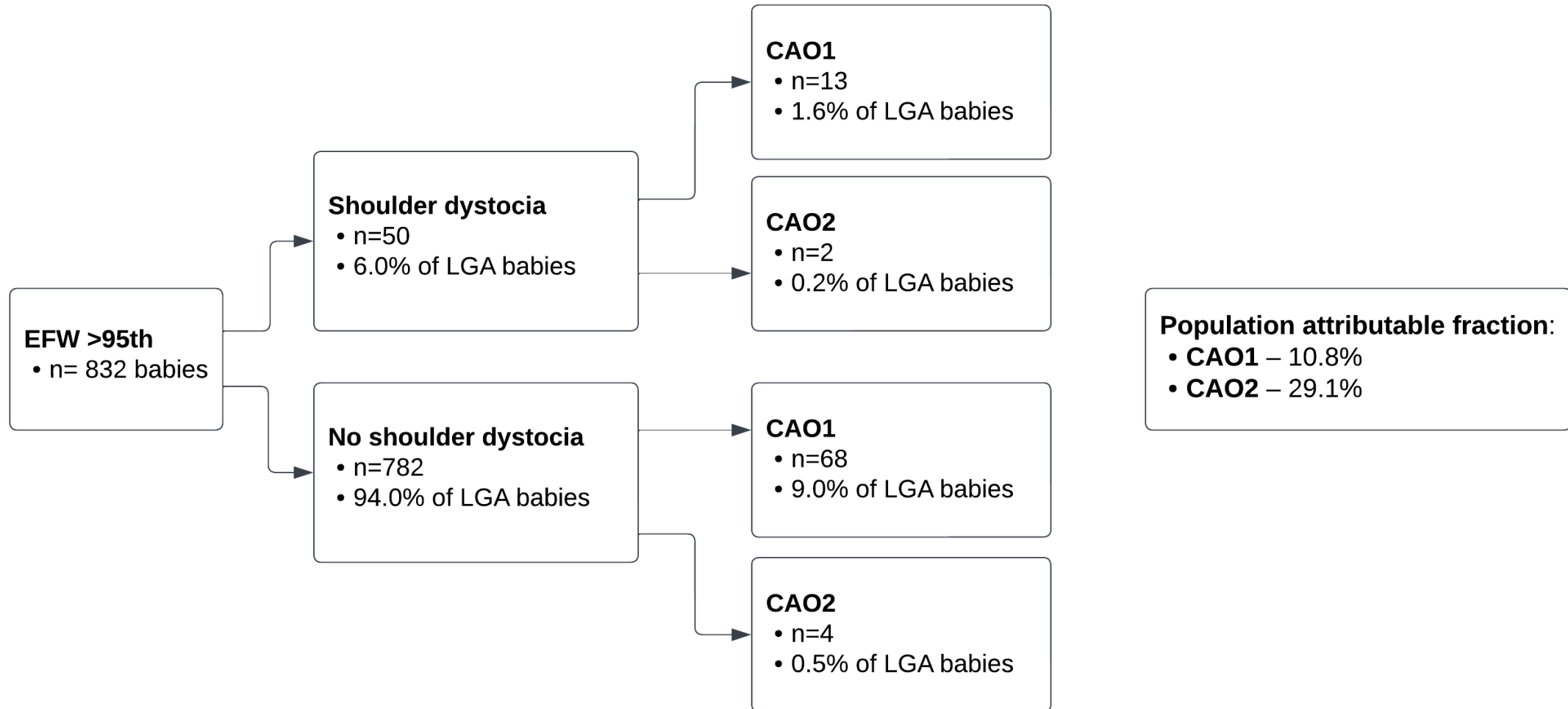
• EFW >99th (n=151)

Outcomes of babies predicted to be LGA by universal USS

	USS 30-70	EFW 90-95		EFW >95th		EFW >99th	
		Crude OR (95% CI)	Adjusted OR (95% CI)	Crude OR (95% CI)	Adjusted OR (95% CI)	Crude OR (95% CI)	Adjusted OR (95% CI)
CAO1	Control	1.33 (1.01-1.75)	1.35 (1.02-1.78)	2.12 (1.65-2.72)	2.18 (1.69-2.8)	2.17 (1.26-3.74)	2.33 (1.35-4.03)
CAO2		0.66 (0.16-2.78)	0.71 (0.17-2.99)	2.34 (0.96-5.72)	2.58 (1.05-6.34)	2.15 (0.29-16.0)	2.58 (0.34-19.3)
IOL		1.34 (1.16-1.55)	1.37 (1.18-1.59)	1.49 (1.28-1.74)	1.52 (1.30-1.92)	1.84 (1.32-2.57)	2.00 (1.42-2.83)
OVD		1.23 (1.04-1.45)	1.43 (1.19-1.71)	1.26 (1.05-1.50)	1.58 (1.30-1.92)	1.20 (0.8-1.8)	1.86 (1.2-2.89)
EMCS		1.58 (1.31-1.89)	1.66 (1.38-2.00)	2.26 (1.89-2.70)	2.47 (2.05-2.96)	2.60 (1.78-3.79)	3.12 (2.11-4.6)
PPH1000		2.01 (1.61-2.52)	1.85 (1.48-2.33)	2.52 (2.02-3.15)	2.18 (1.74-2.75)	3.16 (2.02-4.94)	2.77 (1.75-4.38)
Shoulder Dystocia		3.50 (2.39-5.14)	3.19 (2.16-4.73)	5.54 (3.9-7.88)	4.95 (3.44-7.12)	5.50 (2.72-11.1)	4.65 (2.23-9.71)
OASI		1.33 (0.93-1.89)	1.29 (0.9-1.84)	1.13 (0.76-1.70)	1.08 (0.71-1.64)	1.4 (0.61-3.20)	1.49 (0.64-3.44)

Conclusion: Although there is a significant increase in the risk of shoulder dystocia with increasing EFW >90th centile, this is only accompanied by an increase in risk of severe morbidity and mortality in fetuses with EFW >95th centile.

Outcomes of babies predicted to be LGA by universal USS



Conclusion: Shoulder dystocia is not the primary mechanism of harm in LGA babies. Even if all shoulder dystocias were prevented in infants with an EFW >95th, 70% of severe morbidity and mortality would remain

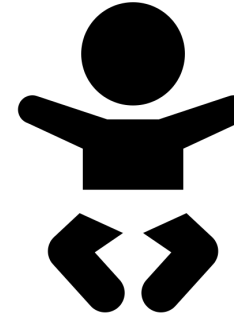
Information for women predicted to have a larger baby on scan



All pregnant women are offered a scan of their baby in the third trimester at OUH. **For 1 in 10 women, this scan may show a larger baby.**



Scans predict the estimated weight of the baby by centile. This means the largest 10% of babies are above the 90th centile for weight.



However, scans can be inaccurate for larger babies. **Only half of babies predicted to be >90th centile on scan are large at birth.**

- Studies have shown that larger babies and their mothers are at higher risk of birth complications, although the overall risk is small. Here is some information on these risks to help you plan for your birth. This information is based on 16,381 women who had a third trimester scan who were aiming for vaginal birth at Oxford University Hospitals.

	Scan predicts average size baby 30 th to 70 th centile	Scan predicts larger baby 90 th to 95 th centile	Scan predicts larger baby above 95 th centile	Scan predicts larger baby above 99 th centile
Unassisted vaginal birth	72 in 100 women	63 in 100 women	57 in 100 women	55 in 100 women
Instrumental birth	17 in 100 women	20 in 100 women	21 in 100 women	20 in 100 women
Emergency Caesarean section	11 in 100 women	16 in 100 women	22 in 100 women	25 in 100 women
Obstetric anal sphincter injury (OASI)	3 in 100 women	4 in 100 women	3 in 100 women	4 in 100 women
Shoulder dystocia	1 in 100 women	4 in 100 women	6 in 100 women	6 in 100 women
Neonatal unit admission	3 in 100 women	5 in 100 women	8 in 100 women	8 in 100 women
Serious adverse outcome for baby *	3 in 1000 women	2 in 1000 women	7 in 1000 women	7 in 1000 women

* - Any of stillbirth, neonatal death or hypoxic ischaemic encephalopathy

Conclusions



Universal third trimester ultrasound increases the detection of the LGA baby

Although shoulder dystocia increases where the EFW is above the 90th centile, it is only where the EFW is above 95th centile that severe adverse neonatal outcomes increase

Most severe adverse outcomes are not related to shoulder dystocia

This study should aid antenatal counselling for women with a baby predicted to be LGA

Acknowledgements: Matias Costa Vieira. Lawrence Impey