

EMERGENCY TRANSFER IN LABOUR FROM RURAL OTAGO AND SOUTHLAND

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SUMMARY

This retrospective audit determined the main reasons for emergency transfer of women from primary or secondary maternal services to Queen Mary Maternity Service (QMMS), Dunedin, over a 5 year period. Changes in referral rates, maternal and fetal outcomes, modes of transfer, and costs of transfers are also investigated

There were 415 emergency transfers in the 5 year period of April 2003 to March 2008. Failure to progress has been the main reason for emergency transfers from primary birthing units, and Pre-Term Labour (includes preterm premature rupture of membranes) from secondary hospital. The regional annual birth rate of Southern Region is now more than 4000, and referral figures from primary birthing units although small have doubled. With number of women delivering at individual primary birthing centers being small, it is difficult to make conclusions.

Emergency transfers resulted in 355 births. Of these there were 10 peripartum deaths, 7 stillbirths and 3 neonatal deaths, a rate of 19.7/1000 stillbirths, and 8.5/1000 neonatal deaths. National rate is 7.1/1000 stillbirths, and 3.2/1000 neonatal deaths. Of the 348 live births 100 were admitted to neonatal intensive care unit (NICU). A higher than average admission rate.

INTRODUCTION

QMMS in Dunedin provide specialist tertiary care that serves a large hinterland geographically, constituting 90,000 square kms, half the South Island. In this diverse hilly terrain there are six community primary birthing centres and a secondary centre in Invercargill.

Women can commonly travel more than 2 hours to specialist care, and according to a study conducted 5 years ago at QMMS emergency transfers represent 60% of all rural transfers (Devenish, Thornton, 2004).

METHOD

Using clinical notes a research database was designed for all transfers to QMMS.

Ethics approval was obtained for this study

Table 1: Maternal, labour, birth and fetal data collected from files during this study.

MATERNAL DATA	LABOUR DATA	BIRTH & FETAL DATA
• Parity	• Main reason for transfer	• Birth outcome / Delivery method
• Gravidity	• Membranes ruptured at time of transfer	• Birth weight and gestation
• Smoking	• VBAC	• After birth admitted to NICU or post natal ward
• Ethnicity	• Partogram	• Length of stay in hospital
• Family history	• Transfer date & time	
• Any other maternal consequence	• Mode of transfer (ambulance, helicopter, own car)	
	• Post partum haemorrhage	
	• Episiotomy	
	• Perineal Lacerations (1 st /2 nd /3 rd degree)	
	• Estimated blood loss	

RESULTS

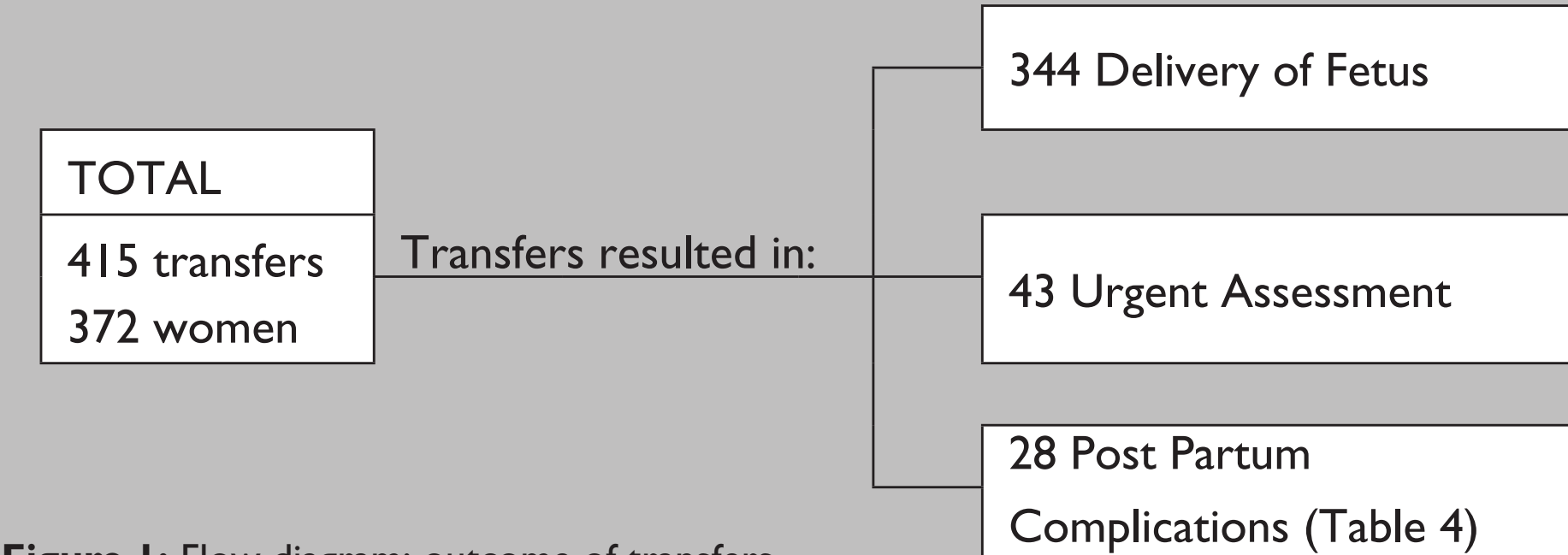


Figure 1: Flow diagram: outcome of transfers

PRINCIPLE REASON FOR EMERGENCY TRANSFER

The main reasons for emergency transfers are illustrated in Figure 2. Actual Numbers are shown in Table 2.

Table 2: Principle Reason from Emergency Transfer to DPH. Values are Numbers

	TOTAL (n=415)	Primary Birthing Centres (n=347)	Secondary Hospital (n=68)	Primipara (n=194)	Multipara (n=193)
Pre-Term Labour*	73	48 (14%)	25 (37%)	17	56
Prem Rupture of Membrane	24	22 (6%)	2 (3%)	8	16
Fetal Concerns	52	46 (13%)	6 (9%)	24	28
Bleeding	34	22 (6%)	12 (18%)	10	24
Malpresentation	16	15 (4%)	1 (2%)	3	13
Labour Dystocia	133	129 (37%)	4 (6%)	101	32
Hypertension disease	34	26 (7%)	8 (12%)	18	16
Other Reason	21	15 (4%)	6 (9%)	13	8
Post-Partum Complication	28	24 (7%)	4 (3%)		

* Includes PPROM

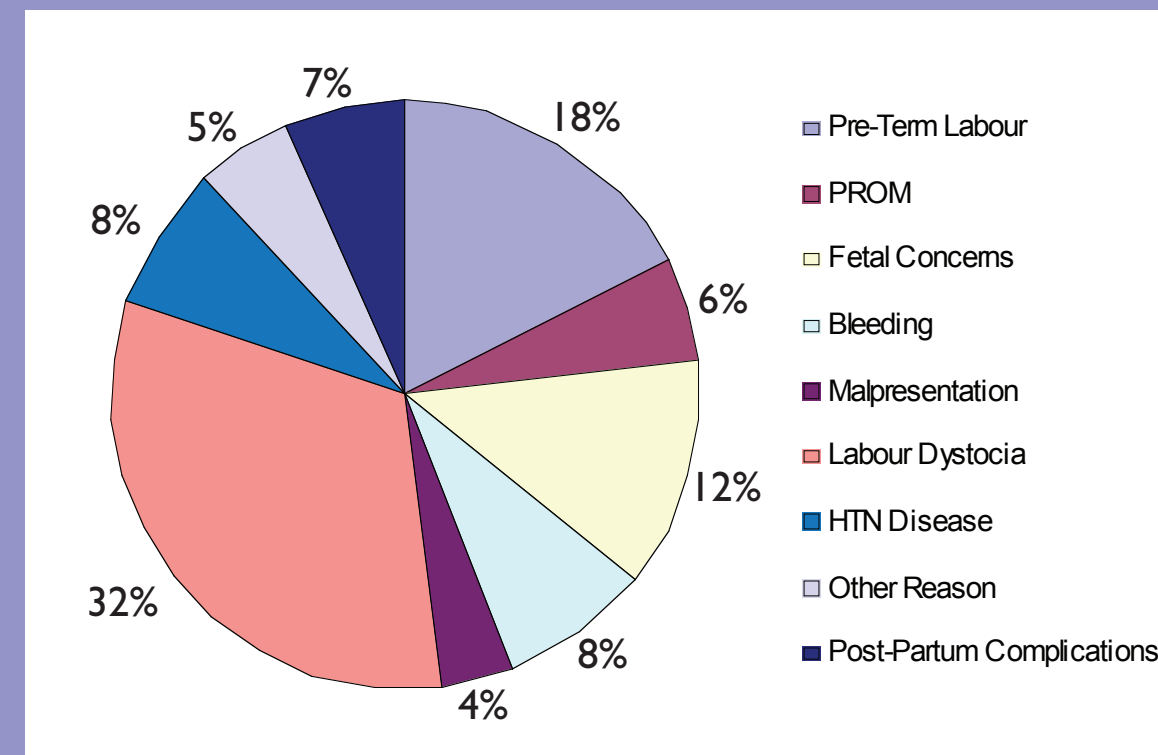


Figure 2: Principle Reason for Emergency Transfers

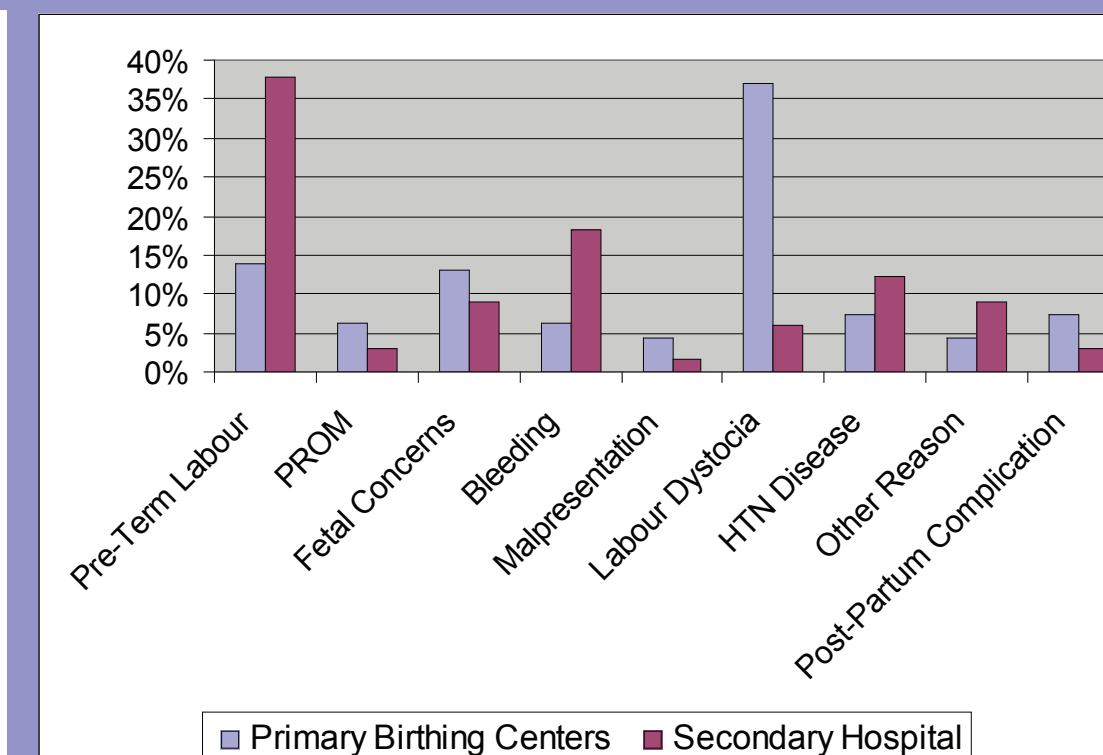


Figure 3: Proportion of transfers, primary vs. secondary birthing units. Analysed by referral reason.

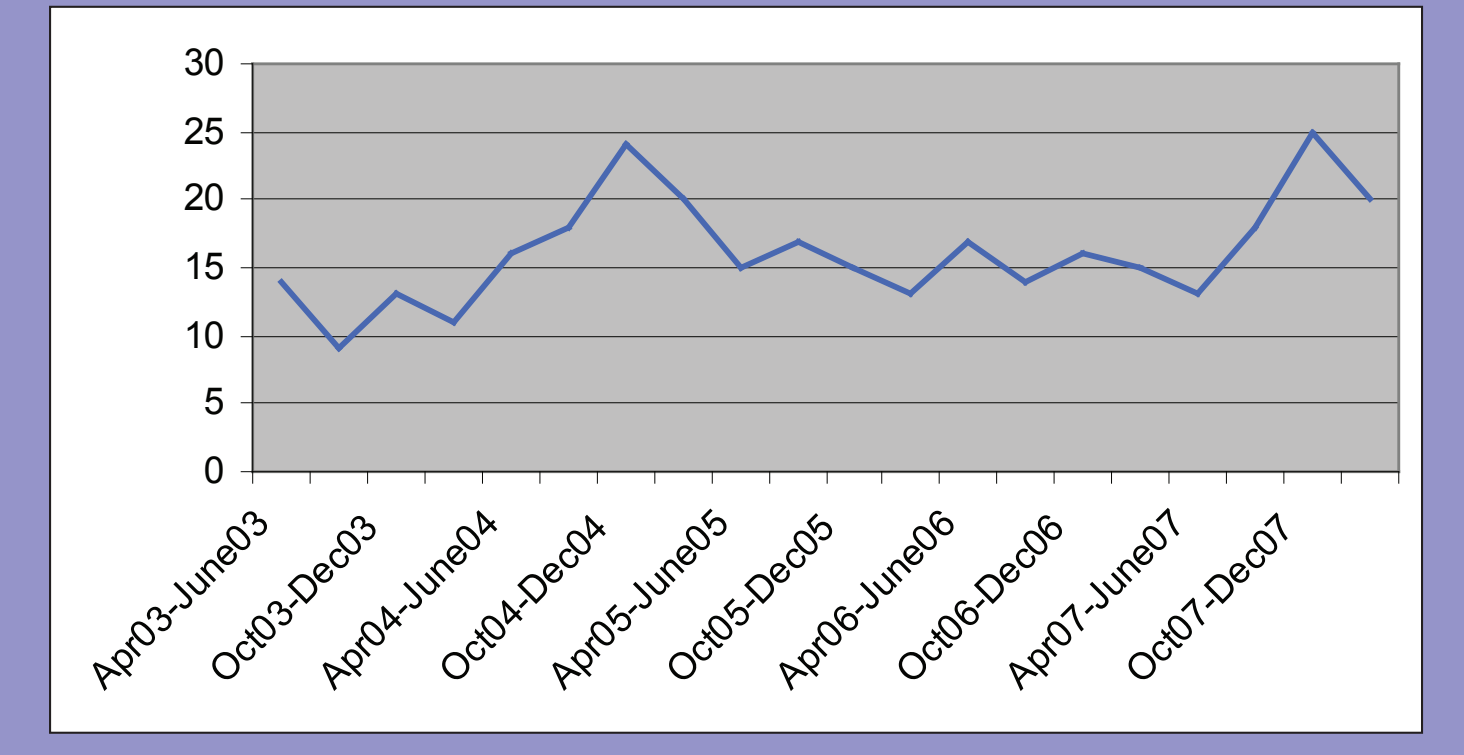


Figure 4: Total number of quarterly transfers from primary birthing units.

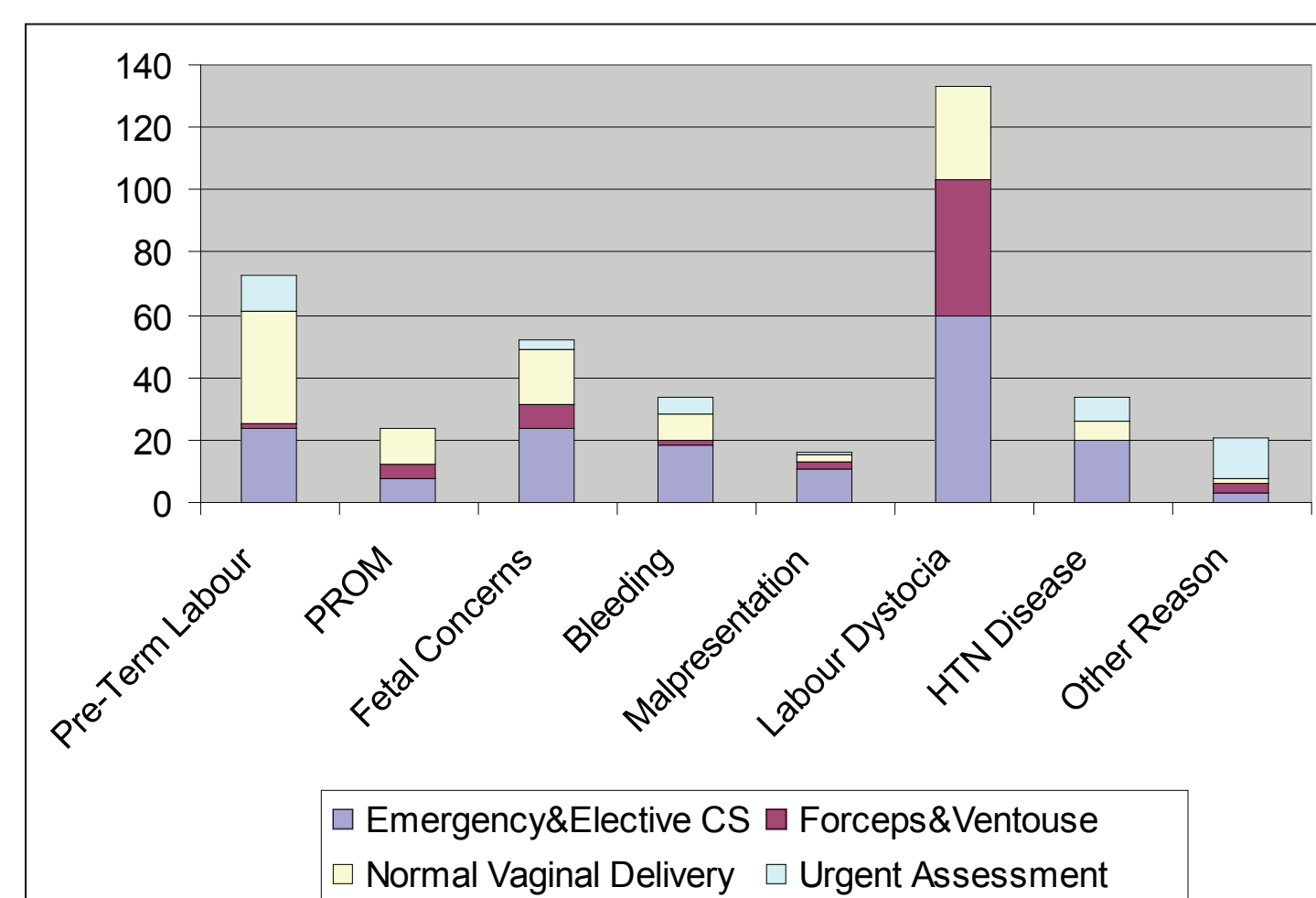


Figure 5: Mode of delivery. Analysis by referral reason.

Table 3: Mode of delivery. Analysis by referral reason.

	Emergency & Elective C/S	Forceps & Ventouse	NVD	Urgent Assessment
Pre-Term Labour	23	1	37	12
Prem Rupture of Membrane	8	4	12	
Fetal Concerns	24	7	17	3
Bleeding	18	2	8	6
Malpresentation	11	2	2	1
Labour Dystocia	60	43	30	
Hypertension Disease	20		6	8
Other Reason	3	3	2	13
TOTAL	168	62	114	43

Table 4: Post Partum complications – mode of transport during emergency transfer

Transfer Method	Total
Ambulance	23
Helicopter (or by air)	4
Own car	1
Total	28

Table 5: Reason for emergency transfer to QMMS - post-post partum complication.

	TOTAL (n = 28)
2nd or 3rd degree perineal laceration	8
Post Partum haemorrhage	5
Retained Placenta	13
Retained Placenta + 3 rd degree perineal laceration	2

Table 6: 2nd Stage failure to progress complications – mode of transport during emergency transfer

Transfer Method	Total
Ambulance	29
Helicopter (or by air)	3
Total	32

Table 7: Method of Transfer for 415 transfers, per Area.

	Alexandra	Balclutha	Oamaru	Southland	TOTAL
Ambulance	84	53	147	52	336 (81%)
Helicopter	17	2		7	26 (6%)
Own Car	12	10	22	9	53 (13%)
TOTAL	113	65	169	68	415

FETAL OUTCOMES

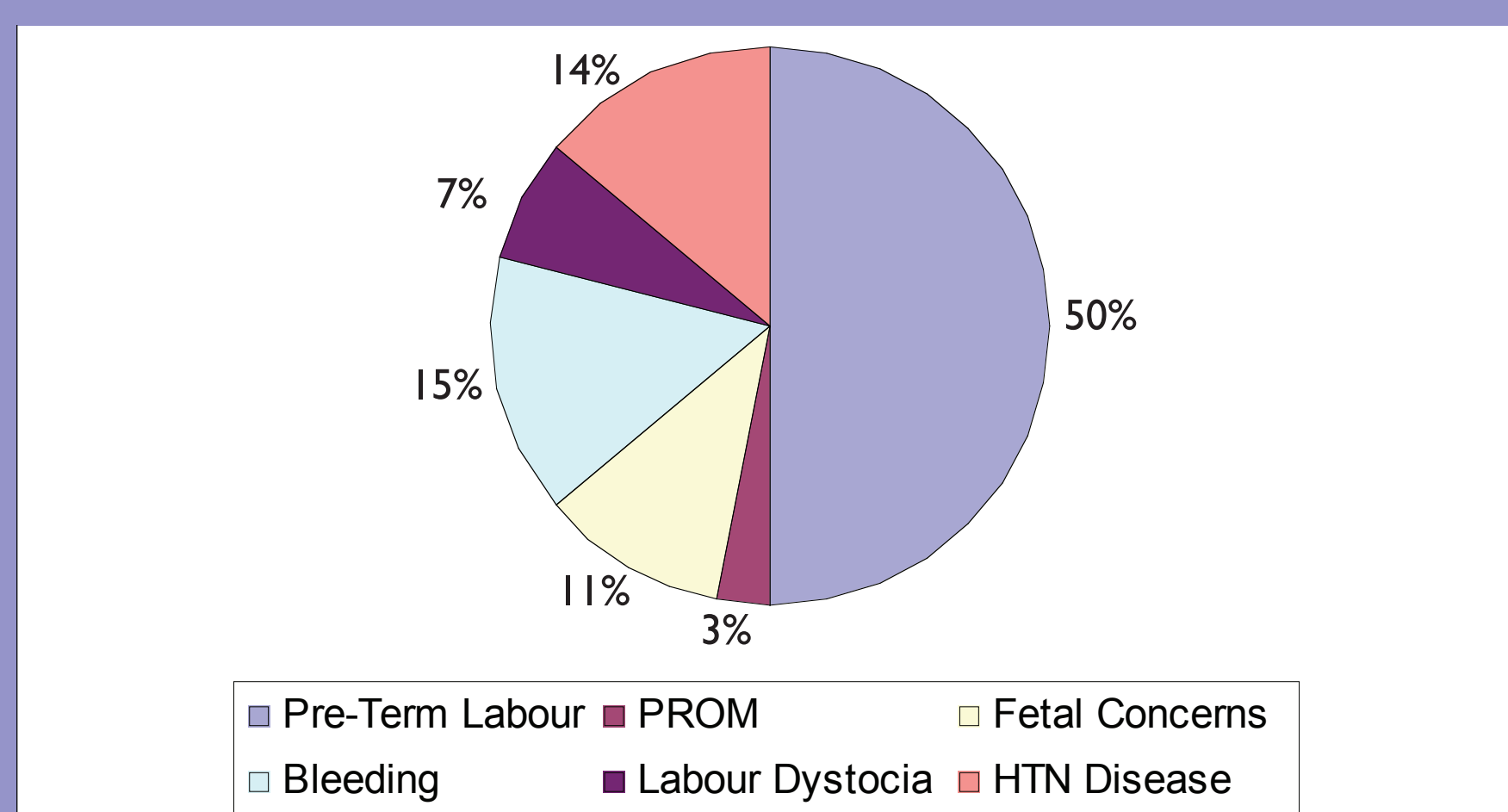


Figure 6: Primary reason for Emergency transfer, where infants were admitted to NICU

Table 8: Fetal Outcomes

Initiating reason for Transfer	Total number of fetuses	Admitted to NICU	Peripartum Deaths	
			Stillbirths	Neonatal
Pre-Term Labour	67	50 (75%)	1	1
Prem Rupture of Membrane	25	3 (13%)		
Fetal Concerns	50	11 (22%)	4	
Bleeding	31	15 (48%)	2	1
Malpresentation	15	0		
Labour Dystocia	133	7 (5%)		
Hypertensive Disease	26	14 (54%)		1
Other Reason	8	0		
Total	355	100 (28%)	7	3

CONCLUSION

We believe that ongoing audit of emergency transfers should be routinely undertaken to appropriately direct resources. Women's experience, human and economic costs, could be benefited by timely transfer. Some of our suggestions are:

- Use of partograms in all labours assist early recognition of poor progress. And timely transfer, particularly nulligravida as this is the main cause of emergency transfer for these women.
- Awareness of pre-term labour risks and need for NICU.
- Consider delivery of all multiple pregnancies in main centres given outcome statistics.
- Active management of third stage reduces need for transfer.

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