

## INTRODUCTION

Post partum hemorrhage (PPH) is defined as blood loss in excess of 500 mL within 24 hours post-delivery. For clinical purposes, any blood loss that has the potential to produce hemodynamic instability should be considered as PPH. However, clinical estimates of blood loss are often inaccurate. We captured primary PPH with blood loss of 500-1500ml, regardless of mode of delivery. We did not analyse massive postpartum haemorrhage in this study.

## METHODOLOGY

This is a retrospective review based on data from the National Obstetrics Registry from 1st January 2011 to 31st December 2012. A total of 260,959 deliveries were analyzed.

## RESULT

A total of 14 tertiary hospitals participating in the study. 473 cases of umbilical cord prolapse were reviewed giving the incidence of 0.2%. Interesting to note that the highest incidence of cord prolapse was Hospital Raja Permaisuri Bainun Ipoh with the rate of 0.4% followed by Hospital Sultanah Aminah Johor Bharu with the rate of 0.3%. In other hospitals the rate was 0.1% to 0.2%.

**Table 1: Shows trends of Primary PPH from all 14 tertiary hospitals**

Hospitals	2011		2012	
	n	Rate per 1000 deliveries	n	Rate per 1000 deliveries
Hospital Tuanku Fauziah, Perlis	79	19.2	61	15.4
Hospital Sultanah Bahiyah, Kedah	65	6.2	41	3.9
Hospital Pulau Pinang	12	3.5	4	1.3
Hospital Raja Permaisuri Bainun, Perak	8	1.3	3	0.7
Hospital Tengku Ampuan Rahimah, Selangor	13	1.0	42	3.4
Hospital Kuala Lumpur	101	8.5	85	7.1
Hospital Tuanku Jaafar, Seremban	5	1.0	7	1.1
Hospital Melaka	27	2.5	17	1.6
Hospital Sultanah Aminah, Johor	49	3.9	65	5.2
Hospital Tengku Ampuan Afzan, Pahang	12	1.3	2	0.2
Hospital Sultanah Nur Zahirah, Terengganu	66	5.4	89	6.9
Hospital Raja Perempuan Zainab II, Kelantan	45	3.4	21	1.9
Hospital Umum Sarawak	87	8.8	13	8.5
Hospital Likas, Sabah	1	1.0	8	0.6
<b>Total</b>	<b>570</b>	<b>4.2</b>	<b>458</b>	<b>3.7</b>

**Table 2: Age distribution of PPH cases**

Age (years)	PPH			
	2011		2012	
	n	Rate per 1000 deliveries	n	Rate per 1000 deliveries
10 - 20	40	3.9	16	1.8
21 - 30	270	3.4	237	3.3
31 - 40	239	5.4	184	4.5
41 - 50	21	6.0	21	6.9
51 - 55	0	0	0	0
<b>Total</b>	<b>570</b>	<b>4.2</b>	<b>458</b>	<b>3.7</b>

Advanced maternal age more than 40 years has highest incidence of PPH.

**Table 3: Ethnic distribution of PPH cases**

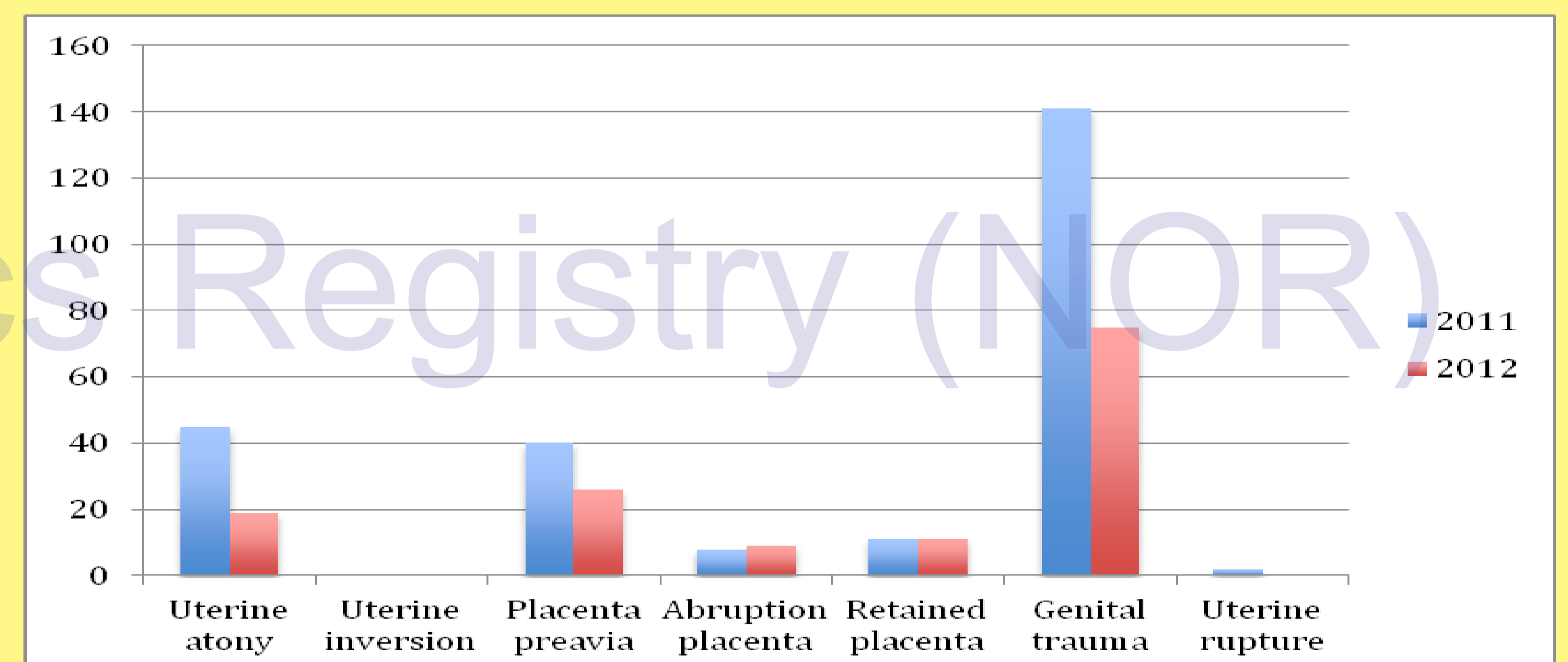
Ethnic group	PPH <1500ml			
	2011		2012	
	n	Rate per 1000 deliveries	n	Rate per 1000 deliveries
Malay	443	4.7	359	4.2
Chinese	30	3.5	36	4.8
Indian	10	1.5	11	1.8
Indigenous people of Sarawak				
Bidayuh	20	12.6	0	0
Iban	15	6.9	0	0
Foreigners	37	3.2	37	3.5

In Sarawak PPH was highest in the Bidayuh ethnic group in 2011 at 12.6 per 1000 deliveries. We are not able to comment on the trend in this group in 2012 due to poor data entry. In the Chinese ethnicity PPH rate was 4.8 per 1000 deliveries in 2012 and this was higher from the year before at 3.5 per 1000 deliveries. PPH rates among the foreigners in Malaysia remained the same during the study period.

**Table 4: Causes of PPH**

Causes	PPH <1500ml			
	2011		2012	
	n	%	n	%
Uterine atony	45	7.9	19	4.1
Uterine inversion	0	0	0	0
Placenta praevia	40	7.0	26	5.7
Abruption placenta	8	1.4	9	2.0
Retained placenta	11	1.9	11	2.4
Genital trauma	141	24.7	75	16.4
Uterine rupture	2	0.35	0	0
Others	323	56.7	318	69.4
<b>Total</b>	<b>570</b>	<b>100.0</b>	<b>140</b>	<b>100.0</b>

Genital tract trauma remained the commonest cause of PPH at 24.7% in 2011 and 16.37% in 2012 followed by uterine atony at 7.9% in 2011 and placenta praevia at 7.0%. This pattern was reversed in 2012, with placenta praevia at 5.7% and uterine atony at 4.1%. Interestingly, in the majority of PPH cases, there was no specific cause recorded and was captured as others.



**Table 5: Risk factors associated**

Risk factors	PPH <1500ml			
	2011		2012	
	n	%	n	%
Anaemia (At Booking)	160	28	114	25
Anaemia (at delivery)	110	19.3	73	15.9
Macrosomia	36	6.3	29	6.3
Multiple Pregnancy	42	7.4	26	5.7
Prolonged Labour	11	1.9	5	1.1

Anaemia at delivery, fetal macrosomia and multiple pregnancy was associated with higher incidence of PPH.

**Table 6: Mode of deliveries**

Mode of delivery	2011		2012	
	n	Rate per 1000 deliveries	n	Rate per 1000 deliveries
SVD	262	2.7	171	2.0
Instrumental deliveries	26	5.3	23	5.0
Caesarean	267	8.3	255	8.2
LSCS	265	8.3	251	8.1
Classical	0	0.00	1	7.2
Hysterotomy	1	58.8	3	136.4

Operative deliveries both Caesarean and instrumental deliveries were associated with increased rate of PPH. Hysterotomies accounted for a high rate of PPH at 136.4 per 1000 deliveries.

## DISCUSSION

About one third of patients with PPH were anaemic at booking, though the proportion of anaemic patients at delivery was about 30%. Early detection of anaemia and timely correction reduces morbidity associated with PPH. Genital tract trauma contributed to the highest number of PPH, followed by uterine atony and placenta praevia. Continuous training should be provided to all doctors and nursing staff on correct assessment of blood loss in labour and active management in the third stage, as well as delivery techniques and haemostatic measures to help lower the incidence of genital tract trauma. Clinicians and nursing staff should ensure their techniques of repair for various birth traumas are also appropriate.

## LIMITATION OF THE STUDY

Analysis was limited by the missing data. Measures should be taken to ensure data entry is complete for a comprehensive analysis.