

# NATIONAL OBSTETRICS REGISTRY

## 2016-2017

### 5<sup>th</sup> Report of National Obstetrics Registry

Editors:  
Ravichandran Jeganathan  
Shamala Devi Karalasingam



A publication of National Obstetrics Registry and  
Institute Clinical Research, Ministry of Health Malaysia



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Shamala Devi Karalasingam

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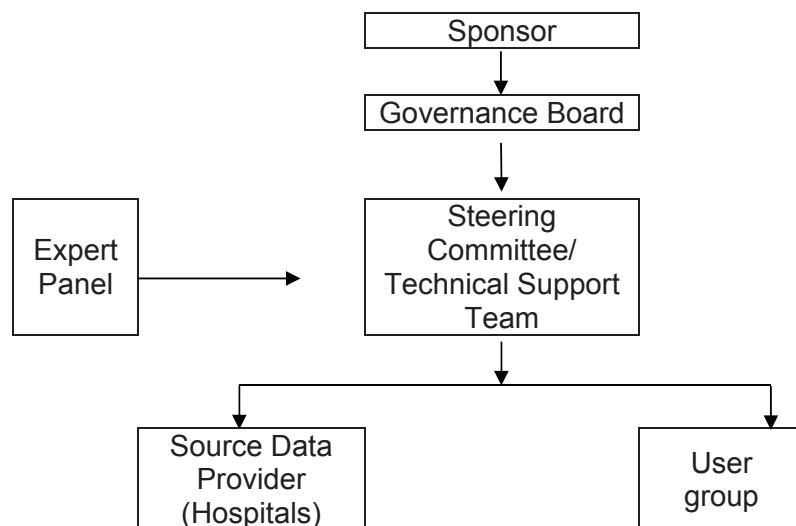
## NOR WEB APPLICATION

1. Go to [www.acrm.org.my](http://www.acrm.org.my) and click on NOR
2. Login to NOR
3. Select Patient and fill up NOR notification and relevant details.
4. Print out reports.



## ORGANIZATION OF NOR

The organizational structure for the registry is depicted below.



## **LETTER FROM THE PRINCIPAL INVESTIGATOR**

Once again, I am pleased to present to you the 5<sup>th</sup> report of the National Obstetrics Registry (NOR). It has been a trying task to complete the exercise of preparing this report given the current challenging situation of the Covid 19 pandemic that has taken each and every one of us by surprise including our nation and countries around the world. Nevertheless, our team never lost focus and persevered to complete the task successfully. The National Obstetrics Registry congratulates the Director General of health on the great leadership in steering the nation in this trying time of Covid 19. The recognition by the YDPA on bestowing the Tan Sri is indeed befitting.

NOR is proud to announce the 5<sup>th</sup> Report. This report will be from 2016 to 2017. NOR has grown in strength and stature since its inception 8 and ½ years ago in June 2009. It is now one of the largest Obstetric database in the world with more than 1.3 million datasets gleaned from 14 state and 1 district hospital. This will be the final report of NOR in its present state as we migrated to the Patient Registry Information System (PRIS-NOR) from 2018 where it will be parked in the National Data Warehouse.

NOR takes pride that it has become a reputed source of reference in the country on Obstetric performance. Postgraduate students pursuing their Masters and Ph.D. students have been using the NOR data for their dissertation and thesis and NOR has been quoted and cited in a number of local and international publications. To our credit there are 52 poster presentations at local and international conferences and 6 manuscript have been published with many more in the pipeline. In this report the focus is on a single theme “Born too soon”. Globally, prematurity is the leading cause of under 5 mortality and this is on the rise. This report will also showcase the trends of preterm deliveries from 2013-2017.

In 2020 NOR collaborated with SEACO Monash and Hospital Segamat to pilot a study on the Pregnancy and Childbirth Standard set on patient reported outcomes which will be used to benchmark performance internationally as well as locally.

A total of 472,593 deliveries were analysed in this report. The enormous task of data cleaning was undertaken by the IRC core team. I would like to thank the site coordinators, site assistants and the O&G Heads of Department of the participating hospitals for their continuous support to NOR.

My heartfelt gratitude to the Director General of Health and the Institute Clinical Research for their unrelenting guidance and backing for the National Obstetrics Registry.

Best Wishes,

Dr J. Ravichandran R. Jegannathan  
Principal Investigator NOR  
National Head O&G services,  
Ministry of Health, Malaysia.

## ABBREVIATIONS

<b>APH</b>	Antepartum haemorrhage
<b>BMI</b>	Body Mass Index
<b>CPD</b>	Cephalopelvic disproportion
<b>CH</b>	Chronic hypertension
<b>CS</b>	Caesarean section
<b>DVT</b>	Deep vein thrombosis
<b>DM</b>	Diabetes Mellitus
<b>ECV</b>	External Cephalic Version
<b>FSB</b>	Fresh Stillbirth
<b>HKL</b>	General Hospital Kuala Lumpur
<b>HPP</b>	Pulau Pinang Hospital
<b>HWKK</b>	Hospital Wanita and Kanak Kanak
<b>HRPB</b>	Raja Permaisuri Bainun Hospital
<b>HRPZ</b>	Raja Perempuan Zainab II Hospital
<b>HSNZ</b>	Sultanah Nur Zahirah Hospital
<b>HSA</b>	Sultanah Aminah Hospital
<b>HSB</b>	Sultanah Bahiyah Hospital
<b>HTAR</b>	Tengku Ampuan Rahimah Hospital
<b>HTAA</b>	Tengku Ampuan Afzan Hospital
<b>HTF</b>	Tengku Fauziah Hospital
<b>HTJ</b>	Tuanku Jaafar Hospital
<b>HUS</b>	Sarawak General Hospital
<b>HIV</b>	Human Immunodeficiency Virus
<b>IHD</b>	Ischaemic Heart Disease
<b>IUD</b>	Intrauterine Death
<b>IUGR</b>	Intrauterine Growth Restriction
<b>LCM</b>	Lethal Congenital Malformation
<b>LSCS</b>	Lower Segment Caesarean Section
<b>MO</b>	Medical Officer
<b>MSB</b>	Macerated Stillbirth
<b>NA</b>	Not Available

<b>NICU</b>	Neonatal Intensive Care Unit
<b>NOR</b>	National Obstetrics Registry
<b>NYHA</b>	New York Heart Association
<b>OA</b>	Orang Asli
<b>OI</b>	Other Indigenous
<b>O&amp;G</b>	Obstetrics and Gynaecology
<b>PE</b>	Preeclampsia
<b>PPH</b>	Postpartum Haemorrhage
<b>PPROM</b>	Prelabour Preterm Rupture of Membrane
<b>SB</b>	Stillbirth
<b>SDP</b>	Site Data Provider
<b>SGA</b>	Small for gestational age
<b>STI</b>	Sexually transmitted infection
<b>SVD</b>	Spontaneous Vertex Delivery
<b>TB</b>	Tuberculosis
<b>WHO</b>	World Health Organization

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# **PREMATURITY**

## INTRODUCTION

Premature birth is one of the leading causes of infant mortality in the world. Every year an estimated 15 million babies are born too early<sup>1</sup>. Preterm is defined as birth before 37 weeks completed weeks of gestation (259 days) as per the WHO definition. Many developed countries now officially register all deliveries with a birth weight above 500 g. More than a million babies die shortly after birth and many others suffer lifelong physical, neurological, or educational disability. A number of risk factors for preterm birth have been identified, which includes previous history of preterm birth, low birth weight, maternal obesity, maternal age (either under 17 or over 40), diabetes, hypertension, smoking, infection, genetics, multiple pregnancy and poor spacing.

### Preterm births from Malaysian Tertiary Hospitals

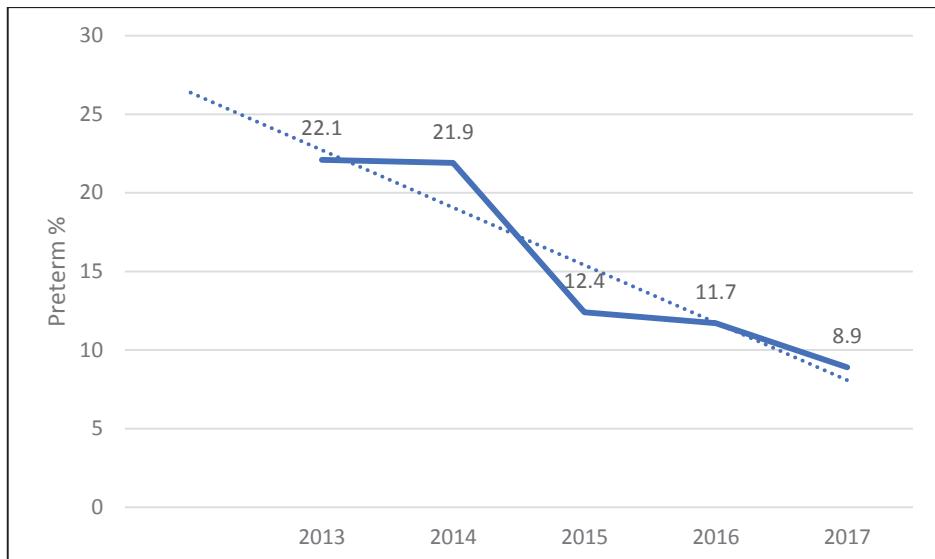
This report looks at preterm births from 2016 and 2017 from 13 tertiary State hospitals In Malaysia, 1 hospital in the Federal territory and 1 district hospital with Specialist. Preterm rates in 2016 was 11.7% and in 2017 the rates were lower at 8.9%. HKL and HTAR Selangor had the highest preterm births in 2016 at 14.8% and 14.4% respectively. Similar trend was seen in 2017 at 12.0% in HKL and 10.7% in HTAR. Lowest rate in 2016 was from HUS at 7.3% and HRPZ 11 at 6.1%.

**Table 1.1: Distribution of Preterm births by Hospitals**

SDP	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n		n	%
HSA, Johor	13,151	1,471	11.2	13,930	1,174	8.4
HSB, Kedah	12,064	1,285	10.7	12,052	890	7.4
HRPZ II, Kelantan	11,536	1,003	8.7	12,903	786	6.1
H Melaka	11,230	1,404	12.5	11,452	1,121	9.8
HTJ, N. Sembilan	10,117	953	9.4	10,831	1,064	9.8
HTAA, Pahang	8,107	859	10.6	10,161	685	6.7
HRPB, Perak	8,316	1,167	14.0	9,129	931	10.2
HTF, Perlis	4,851	557	11.5	5,117	422	8.2
HPP, Pulau Pinang	4,192	582	13.9	4,623	398	8.6
HWKK Likas, Sabah	14,488	2,073	14.3	14,463	1,423	9.8
HUS, Sarawak	9,481	689	7.3	10,940	1,003	9.2
HTAR, Selangor	10,835	1,561	14.4	10,420	1,120	10.7
HSNZ, Terengganu	11,025	1,309	11.9	11,723	941	8.0
HKL	10,097	1,490	14.8	11,262	1,354	12.0
H.Segamat	3,456	365	10.6	3,609	293	8.1
Total	142,946	16,768	11.7	152,615	13,605	8.9

Incidence of preterm is on the decline when compared to the previous NOR report published in 2017 from 22.1% in 2013 to 8.9% in 2017.

**Fig 1. 1 Trend of incidence of preterm 2013-2017**



Extreme preterm (22 weeks to 27 completed weeks) was at 4.8% in 2016 and 4.6% in 2017. Approximately 8 out of 10 babies were moderate to late preterm (32 weeks and 36 completed weeks) in 2016 and 2017.

**Table 1.2: Distribution of Preterm births 2016-2017**

Preterm	2016		2017	
	Total Delivery		Total Delivery	
	n	%	n	%
Extreme preterm	801	4.8	631	4.6
Very preterm	1,751	10.4	1,292	9.5
Moderate to Late preterm	14,216	84.8	11,682	85.9

### Colour coding and Preterm

Risk approach system using colour codes has been used in Malaysia since 1989. Women who were coded red had the highest preterm births in 2016 and 2017. Preterm births were highest among the Malays in the coded red population whereas it was those coded green among the other ethnic groups including the foreigners.

**Table 1.3: Risk levels at booking in Preterm births 2016-2017**

Risk Level at Booking	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n	%	n	%
Red	2,100	597	28.4	2,013	457	22.7
Yellow	16,782	2,925	17.4	16,897	2,253	13.3
Green	111,203	11,718	10.5	122,597	9,926	8.1
White II	1,424	112	7.9	1,411	104	7.4
White I	3,508	309	8.8	3,318	246	7.4
No Code	3,607	561	15.6	3,747	356	9.5
NA	4,322	546	12.6	2,632	263	10.0

**Table 1.4: Risk level at booking in Preterm births by Ethnicity 2016-2017**

Ethnicity	Risk Level at Booking	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Malay	Red	1,641	451	27.5	1,561	360	23.1
	Yellow	11,789	2,021	17.1	11,818	1,562	13.2
	Green	83,419	8,439	10.1	92,694	7,220	7.8
	White II	1,101	83	7.5	1,090	79	7.2
	White I	2,440	212	8.7	2,427	173	7.1
	No Code	1,817	268	14.7	1,851	180	9.7
	NA	1,833	267	14.6	1,247	117	9.4
Chinese	Red	90	28	3.0	88	13	3.0
	Yellow	995	165	4.0	1,074	116	4.0
	Green	5,925	584	14.0	6,254	479	14.0
	White II	71	3	0.0	74	5	0.0
	White I	248	10	0.0	217	20	0.0
	No Code	293	66	0.0	300	39	0.0
	NA	261	51	5.0	172	25	5.0
Indian	Red	89	27	1.0	95	24	1.0
	Yellow	1,127	180	8.0	1,244	220	8.0
	Green	4,322	578	22.0	4,716	523	22.0
	White II	38	6	0.0	32	3	0.0
	White I	111	15	1.0	93	11	1.0
	No Code	107	25	0.0	112	21	0.0
	NA	211	35	2.0	99	19	2.0
Indigenous	Red	215	74	6.0	193	42	6.0
	Yellow	2,144	429	17.0	2,095	287	17.0
	Green	12,305	1,557	35.0	13,772	1,307	35.0
	White II	146	18	1.0	134	11	1.0
	White I	459	52	2.0	380	27	2.0
	No Code	405	60	4.0	458	39	4.0
	NA	938	73	5.0	282	32	5.0
Foreigners	Red	59	16	0.0	61	16	0.0
	Yellow	611	108	4.0	549	56	4.0
	Green	4,540	479	18.0	4,581	347	18.0
	White II	60	2	0.0	71	6	0.0
	White I	220	16	0.0	178	12	0.0
	No Code	937	133	11.0	987	75	11.0
	NA	994	106	25.0	774	64	25.0

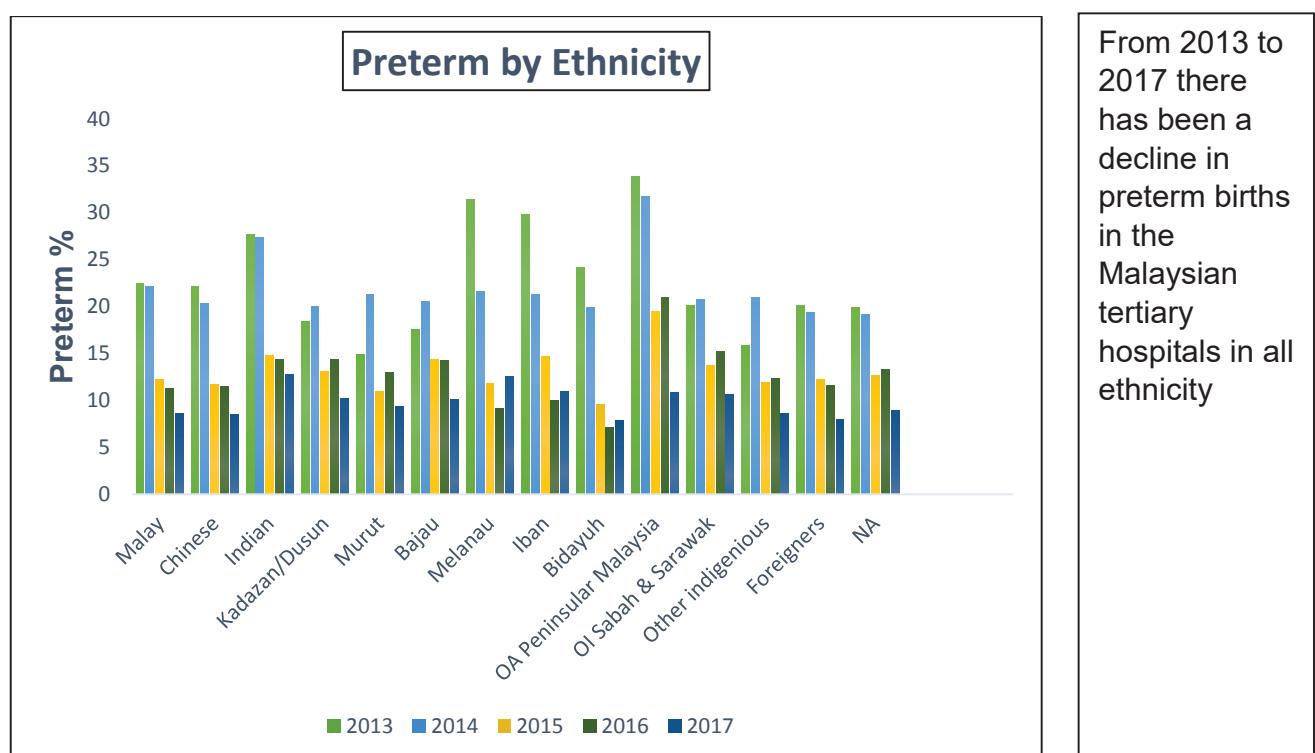
## Ethnicity and Preterm

Among the 3 main ethnic group in Malaysia, the highest prevalence of preterm births was among the Indians at 14.4% in 2016 and 12.8% in 2017. Among the indigenous women the preterm births were at 21% among the Orang Asli (Peninsular Malaysia) in 2016 and 12.5% among the Melanau women in 2017.

**Table 1.5: Distribution of Preterm deliveries by Ethnicity 2016-2017**

Ethnicity	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n		n	%
Malay	104,040	11,741	11.3	112,688	9,691	8.6
Chinese	7,883	907	11.5	8,179	697	8.5
Indian	6,005	866	14.4	6,391	821	12.8
Kadazan/Dusun	4,480	646	14.4	4,525	462	10.2
Murut	293	38	13.0	354	33	9.3
Bajau	3,215	461	14.3	3,198	323	10.1
Melanau	66	6	9.1	64	8	12.5
Iban	1,881	189	10.0	2,029	222	10.9
Bidayuh	1,615	114	7.1	1,834	145	7.9
OA Peninsular Malaysia	952	200	21.0	1,053	114	10.8
OI Sabah & Sarawak	3,527	537	15.2	3,674	388	10.6
Other Bumiputera	583	72	12.3	583	50	8.6
Foreigners	7,421	860	11.6	7,201	576	8.0

**Fig 1. 2 Trend of incidence of preterm by ethnicity 2013-2017**



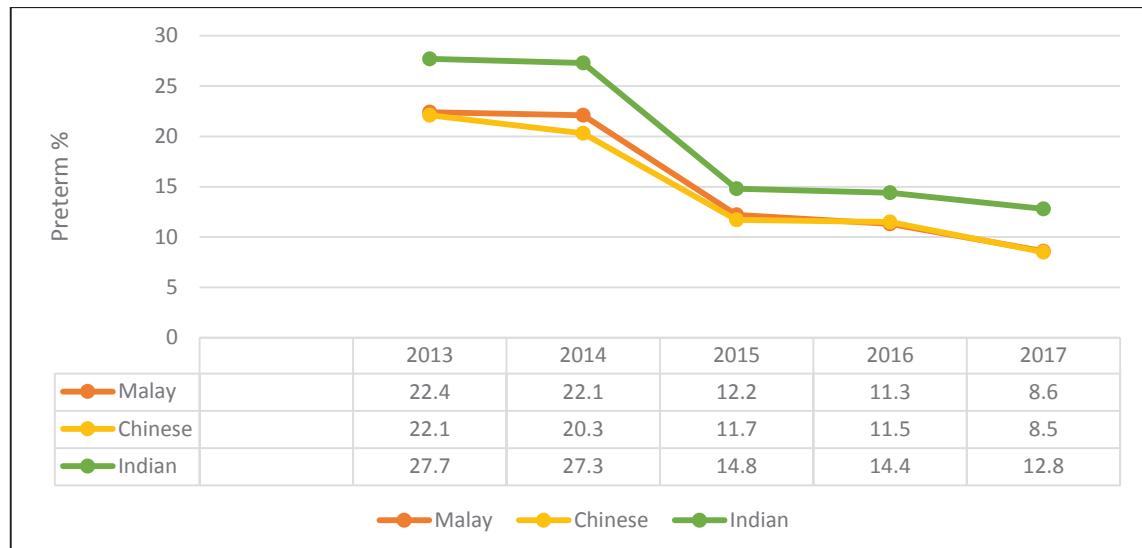
Extreme preterm rates in Malay mothers in 2016 was 4.5% and in indigenous mothers at 4.95% in 2016. Rates were slightly higher in Chinese and Indian mothers in 2016 at 6.3% and 6.5%. The rate of moderate to late preterm births was almost similar in numbers across all ethnicity.

**Table 1.6: Preterm births by Ethnicity 2016-2017**

Ethnicity	Preterm	2016		2017	
		Total Delivery		Total Delivery	
		n	%	n	%
<b>Malay</b>	Extreme preterm	533	4.5	399	4.1
	Very preterm	1,182	10.1	849	8.8
	Moderate to Late preterm	10,026	85.4	8,443	87.1
<b>Chinese</b>	Extreme preterm	57	6.3	46	6.6
	Very preterm	123	13.6	83	11.9
	Moderate to Late preterm	727	80.2	568	81.5
<b>Indian</b>	Extreme preterm	56	6.5	64	7.8
	Very preterm	93	10.7	92	11.2
	Moderate to Late preterm	717	82.8	665	81.0
<b>Indigenous</b>	Extreme preterm	107	4.7	82	4.7
	Very preterm	242	10.7	203	11.6
	Moderate to Late preterm	1,914	84.6	1,460	83.7
<b>Foreigner</b>	Extreme preterm	42	4.9	34	5.9
	Very preterm	94	10.9	59	10.2
	Moderate to Late preterm	724	84.2	483	83.9

There is reduction of preterm deliveries from 2013 -2017 but the rates are higher among the Indians when compared to the rest.

**Fig 1. 3 Trend of preterm delivery by Ethnicity 2013-2017**



### Maternal Age and Preterm

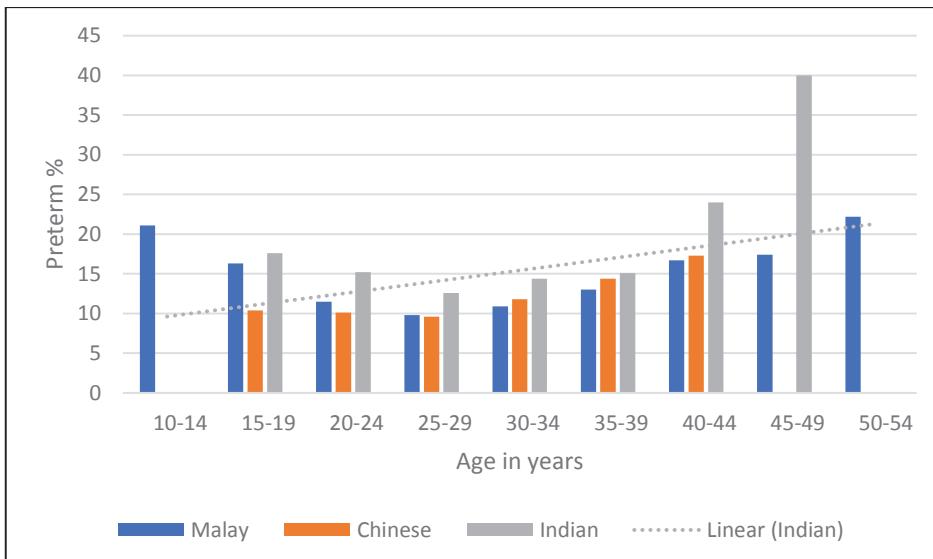
The highest prevalence of preterm was seen in women aged 10-14 years and with maternal age 35 years and above in 2016. In 2017 majority of preterm deliveries were seen in women aged 40 years and above. Among the 3 main ethnic group the incidence of preterm births was higher with advanced maternal age. In the indigenous women the incidence of preterm was highest among the adolescent and women aged 35 years and above.

**Table 1.7: Distribution of Preterm deliveries by Maternal Age 2016-2017**

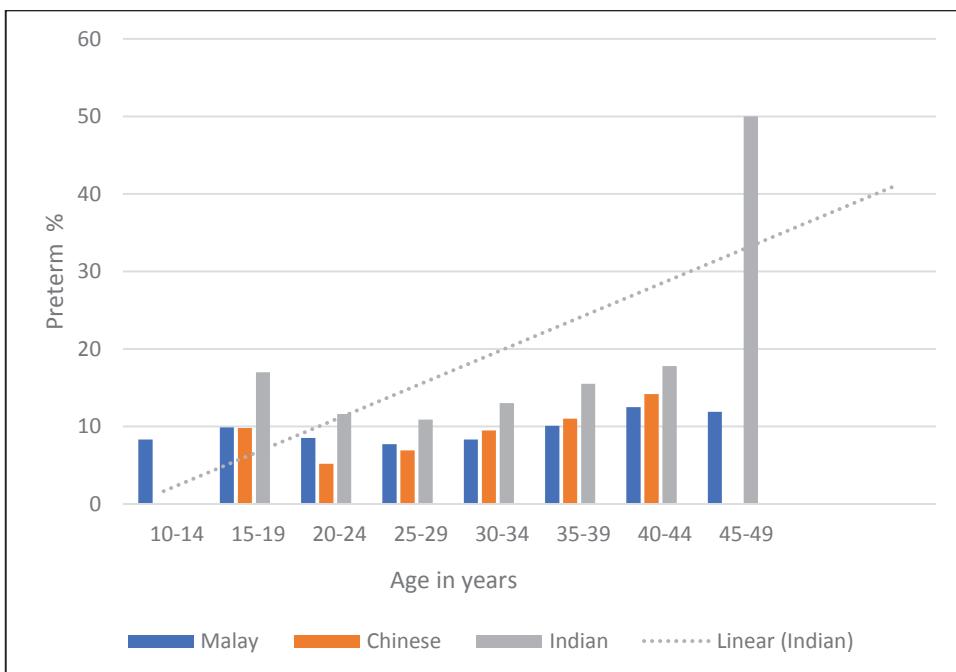
Age	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n		n	%
10-14	40	8	20.0	49	4	8.2
15-19	4,410	728	16.5	4,138	434	10.5
20-24	22,434	2,683	12.0	23,181	1,968	8.5
25-29	47,719	4,879	10.2	50,091	3,954	7.9
30-34	41,957	4,721	11.3	45,282	3,936	8.7
35-39	20,483	2,751	13.4	23,369	2,478	10.6
40-44	5,454	924	16.9	6,042	775	12.8
45-49	429	71	16.6	453	55	12.1
50-54	14	3	21.4	9	1	11.1
≥55	6	0	0.0	1	0	0.0

There is an increasing trend in prevalence of preterm deliveries in the 3 main ethnic group with increasing maternal age (Fig 1.4 and Fig 1.5).

**Fig 1. 4 Prevalence of Preterm by Maternal Age and Ethnicity 2016**



**Fig 1. 5 Prevalence of Preterm by Maternal Age and Ethnicity 2017**



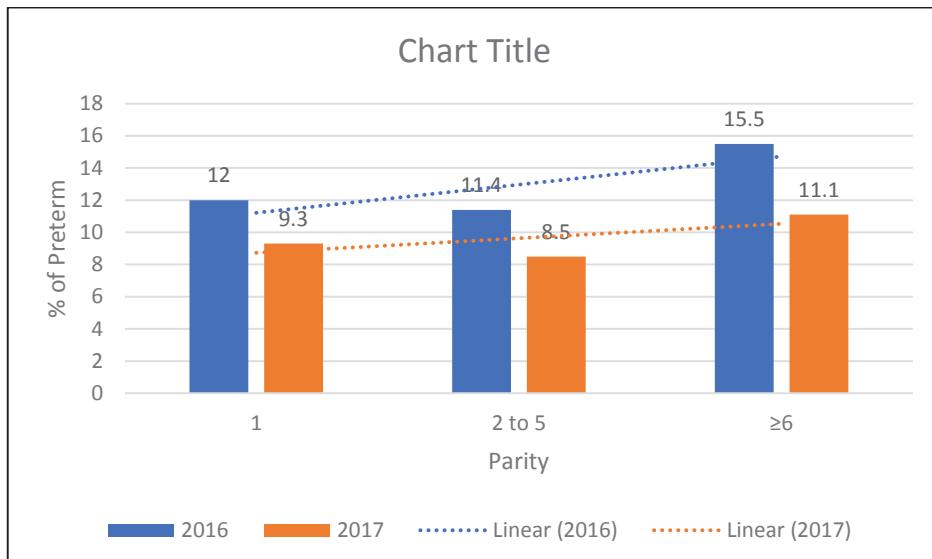
The prevalence of preterm among indigenous women was high in adolescents and older women in 2016 and 2017.

**Table 1.8: Distribution of Preterm deliveries by Maternal Age and Ethnicity 2016-2017**

Ethnicity	Age	2016			2017		
		Total Deliveries		Preterm Delivery	Total Deliveries		Preterm Delivery
		n	n	%	n	n	%
Malay	10-14	19	4	21.1	24	2	8.3
	15-19	2,462	402	16.3	2,448	243	9.9
	20-24	15,226	1,754	11.5	16,176	1,371	8.5
	25-29	36,438	3,582	9.8	38,649	2,995	7.7
	30-34	30,821	3,354	10.9	33,754	2,789	8.3
	35-39	14,804	1,931	13.0	16,866	1,696	10.1
	40-44	3,962	660	16.7	4,465	559	12.5
	45-49	298	52	17.4	302	36	11.9
	50-54	9	2	22.2	4	0	0.0
	≥55	1	0	0.0	0	0	0.0
Chinese	10-14	3	0	0.0	0	0	0.0
	15-19	268	28	10.4	224	22	9.8
	20-24	1,195	121	10.1	1,281	67	5.2
	25-29	2,187	210	9.6	2,327	161	6.9
	30-34	2,558	301	11.8	2,544	241	9.5
	35-39	1,367	197	14.4	1,488	164	11.0
	40-44	289	50	17.3	296	42	14.2
	45-49	14	0	0.0	16	0	0.0
	50-54	0	0	0.0	3	0	0.0
	≥55	2	0	0.0	0	0	0.0
Indian	10-14	1	0	0.0	2	0	0.0
	15-19	176	31	17.6	188	32	17.0
	20-24	891	135	15.2	876	102	11.6
	25-29	1,899	240	12.6	1,960	214	10.9
	30-34	2,050	296	14.4	2,184	284	13.0
	35-39	832	126	15.1	1,012	157	15.5
	40-44	150	36	24.0	163	29	17.8
	45-49	5	2	40.0	6	3	50.0
	50-54	0	0	0.0	0	0	0.0
	≥55	1	0	0.0	0	0	0.0
Indigenous	10-14	9	2	22.2	15	2	13.3
	15-19	998	188	18.8	887	100	11.3
	20-24	3,254	454	14.0	3,143	311	9.9
	25-29	4,944	620	12.5	5,018	422	8.4
	30-34	4,448	547	12.3	4,744	464	9.8
	35-39	2,206	324	14.7	2,722	338	12.4
	40-44	686	118	17.2	704	97	13.8
	45-49	64	10	15.6	80	11	13.8
	50-54	1	0	0.0	0	0	0.0
	≥55	2	0	0.0	1	0	0.0
Foreigners	10-14	7	2	28.6	7	0	0.0
	15-19	443	67	15.1	349	34	9.7
	20-24	1,647	195	11.8	1,525	105	6.9
	25-29	1,991	201	10.1	1,900	143	7.5
	30-34	1,855	192	10.4	1,830	137	7.5
	35-39	1,111	144	13.0	1,171	111	9.5
	40-44	329	55	16.7	375	41	10.9
	45-49	37	4	10.8	43	5	11.6
	50-54	1	0	0.0	1	0	0.0

Incidence of preterm was seen to be higher in primiparous and Para 6 and above.

**Fig 1. 6 Preterm births by Parity 2016-2017**



**Table 1.9: Parity in Preterm births by Ethnicity 2016-2017**

Ethnicity	Parity	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
<b>Malay</b>	1	35,671	4,006	11.2	37,702	3,394	9.0
	2-5	64,006	7,084	11.1	70,574	5,814	8.2
	≥6	3,970	617	15.5	4,323	471	10.9
	NA	393	34	8.7	89	12	13.5
<b>Chinese</b>	1	3,367	414	12.3	3,406	295	8.7
	2-5	4,408	475	10.8	4,673	396	8.5
	≥6	69	13	18.8	95	6	6.3
	NA	39	5	12.8	5	0	0.0
<b>Indian</b>	1	2,412	353	14.6	2,594	369	14.2
	2-5	3,417	485	14.2	3,650	432	11.8
	≥6	147	27	18.4	141	20	14.2
	NA	29	1	3.4	6	0	0.0
<b>Indigenous</b>	1	5,126	794	15.5	5,071	524	10.3
	2-5	10,374	1,297	12.5	11,025	1,075	9.8
	≥6	1,080	167	15.5	1,212	144	11.9
	NA	32	5	15.6	6	2	33.3
<b>Foreigners</b>	1	2,541	304	12.0	2,168	174	8.0
	2-5	4,601	520	11.3	4,718	369	7.8
	≥6	256	35	13.7	299	31	10.4
	NA	23	1	4.3	16	2	12.5

Approximately 6 out of 10 preterm babies that died in 2016 were preterm and in 2017 the incidence was slightly lower.

**Table 1.10: Status of Preterm babies 2016-2017**

Baby discharged	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n	%	n	%
Mother	104,996	7,674	7.3	110,352	6,489	5.9
Admitted to NICU	15,485	4,604	29.7	18,096	3,825	21.1
Nursery	17,161	3,172	18.5	20,869	2,472	11.8
Mortuary	1,065	687	64.5	1,237	609	49.2
NA	4,239	631	14.9	2,061	210	10.2

A quarter of the patients delivered by the Specialist had a preterm birth. 53% of all preterm births in 2016 was delivered by specialist and MO with more than 6 months experience. In 2017, 56.5% of preterm were delivered by specialist and MO with more than 6 months experience.

**Table 1.11: Distribution of Preterm deliveries by Accoucheur 2016-2017**

Accoucheur	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n	%	n	%
Specialist	3,569	935	26.2	4,313	849	19.7
MO with > 6 months O&G experience	54,764	7,971	14.6	60,194	6,842	11.4
MO with < 6 months O&G experience	788	95	12.1	1,483	134	9.0
MO with no O&G experience	4,272	628	14.7	3,366	378	11.2
Staff Nurse	54,093	4,919	9.1	59,862	3933	6.6
Community nurse	189	26	13.8	61	4	6.6
Others	1,141	105	9.2	562	33	5.9
NA	2,561	433	16.9	1,818	211	11.6

The incidence of preterm births was 24% among women with pre-existing diabetes in pregnancy in 2016 and 18.7% in 2017. A quarter of the women with pre-existing hypertension in pregnancy had a preterm birth in 2016 while in 2017 the incidence was at 18.7%. The incidence of preterm births in women with Gestational hypertension, preeclampsia and eclampsia was high in both reporting years. Women with heart disease with NYHA II and III had a higher incidence of preterm births in both years.

**Table 1.12: Possible contributing factors for Preterm deliveries 2016-2017**

Medical Disorders	2016			2017		
	Total Delivery	Preterm Delivery	%	Total Delivery	Preterm Delivery	%
<b>Anaemia</b>	<b>n</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>n</b>	<b>%</b>
Anaemia at booking	20,220	2,907	14.4	19,520	2,011	10.3
Anaemia at delivery	8,649	1,295	15.0	11,760	1,311	11.1
<b>None</b>	<b>124,414</b>	<b>13,990</b>	<b>11.2</b>	<b>129,079</b>	<b>10,930</b>	<b>8.5</b>
<b>Diabetes</b>	<b>11,402</b>	<b>1,440</b>	<b>12.6</b>	<b>14,734</b>	<b>1,460</b>	<b>9.9</b>
Pre-existing	338	81	24.0	523	98	18.7
Gestational	11,010	1,349	12.3	14,187	1,358	9.6
<b>Hypertension</b>	<b>3,728</b>	<b>1,034</b>	<b>27.7</b>	<b>4,622</b>	<b>975</b>	<b>21.1</b>
Pre-existing	728	183	25.1	973	182	18.7
Gestational	2,567	687	26.8	3,069	627	20.4
Pre-eclampsia	528	247	46.8	640	203	31.7
Eclampsia	61	33	54.1	59	24	40.7
<b>Heart Disease</b>	<b>494</b>	<b>105</b>	<b>21.3</b>	<b>569</b>	<b>90</b>	<b>15.8</b>
NYHA I	224	38	17.0	275	31	11.3
NYHA II	55	17	30.9	40	10	25.0
NYHA III	3	2	66.7	5	2	40.0
NYHA IV	1	0	0.0	1	0	0.0
<b>Others</b>	<b>4,859</b>	<b>656</b>	<b>13.5</b>	<b>6,391</b>	<b>616</b>	<b>9.6</b>
TB	43	6	14.0	56	7	12.5
Blood Disorder	1,624	219	13.5	2,281	198	8.7
Thalassemia	582	66	11.3	627	43	6.9
Collagen Disease	1	0	0.0	2	0	0.0
Asthma	1,686	220	13.0	2,153	209	9.7
Renal Disease	43	14	32.6	57	12	21.0

**Table 1.13: Possible contributing factors for Preterm deliveries by Ethnicity  
2016-2017**

Ethnicity	Medical Disorders	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
<b>Malay</b>	<b>Anaemia</b>	n	n	%	n	n	%
	Anaemia at booking	13,626	1,884	13.8	13,312	1,331	10.0
	Anaemia at delivery	6,673	972	14.6	9,286	996	10.7
	None	90,199	9,734	10.8	94,454	7,682	8.1
	<b>Diabetes</b>	8,641	1,062	12.3	11,427	1,083	9.5
	Pre-existing	259	54	20.8	413	73	17.7
	Gestational	8,335	1,000	12.0	10,996	1,006	9.1
	<b>Hypertension</b>	2,765	745	26.9	3,472	742	21.4
	Pre-existing	561	142	25.3	758	144	19.0
	Gestational	1,874	479	25.6	2,265	472	20.8
	Pre-eclampsia	366	175	47.8	477	157	32.9
	Eclampsia	42	23	54.8	36	15	41.7
	<b>Heart Disease</b>	367	73	19.9	442	66	14.9
	NYHA I	167	25	15.0	209	22	10.5
	NYHA II	37	10	27.0	34	9	26.5
	NYHA III	1	0	0.0	4	1	25.0
	NYHA IV	1	0	0.0	0	0	0.0
	<b>Others</b>	3,583	489	13.6	5,133	473	9.2
	TB	22	5	22.7	40	5	12.5
	Blood Disorder	1,101	144	13.1	1,749	140	8.0
	Thalassemia	440	47	10.7	488	29	5.9
	Collagen Disease	0	0	0.0	1	0	0.0
	Asthma	1,289	170	13.2	1,747	155	8.9
	Renal Disease	26	11	42.3	42	10	23.8
<b>Chinese</b>	<b>Anaemia</b>	n	n	%	n	n	%
	Anaemia at booking	1,081	156	14.4	1,078	113	10.5
	Anaemia at delivery	248	46	18.5	443	42	9.5
	None	6,943	779	11.2	7,057	555	7.9
	<b>Diabetes</b>	612	64	10.5	753	73	9.7
	Pre-existing	13	4	30.8	17	1	5.9
	Gestational	596	58	9.7	735	72	9.8
	<b>Hypertension</b>	160	47	29.4	219	53	24.2
	Pre-existing	30	7	23.3	50	12	24.0
	Gestational	105	32	30.5	150	33	22.0
	Pre-eclampsia	25	8	32.0	27	11	40.7
	Eclampsia	4	3	75.0	2	1	50.0
	<b>Heart Disease</b>	24	6	25.0	24	6	25.0
	NYHA I	10	3	30.0	5	0	0.0
	NYHA II	6	1	16.7	0	0	0.0
	NYHA III	7	2	28.6	17	5	29.4
	NYHA IV	7,860	901	11.5	8,157	692	8.5
	<b>Others</b>	227	28	12.3	223	28	12.6
	TB	1	0	0.0	2	0	0.0
	Blood Disorder	88	13	14.8	88	9	10.2
	Thalassemia	53	7	13.2	40	5	12.5
	Collagen Disease	1	0	0.0	0	0	0.0
	Asthma	65	7	10.8	54	5	9.3
	Renal Disease	3	0	0.0	4	1	25.0

**Table 1.13 cont: Possible contributing factors for Preterm deliveries by Ethnicity 2016-2017**

Ethnicity	Medical Disorders	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	%
Indian	<b>Anaemia</b>	n	n	%	n	n	%
	Anaemia at booking	1,612	236	14.6	1,659	221	13.3
	Anaemia at delivery	587	104	17.7	903	143	15.8
	None	5,155	697	13.5	5,261	645	12.3
	<b>Diabetes</b>	618	116	18.8	817	122	14.9
	Pre-existing	18	5	27.8	50	14	28.0
	Gestational	597	111	18.6	767	108	14.1
	<b>Hypertension</b>	86	36	41.9	121	41	33.9
	Pre-existing	8	2	25.0	20	4	20.0
	Gestational	70	28	40.0	82	30	36.6
	Pre-eclampsia	23	11	47.8	19	10	52.6
	Eclampsia	4	4	100.0	8	4	50.0
	<b>Heart Disease</b>	9	2	22.2	13	4	30.8
	NYHA I	3	0	0.0	7	3	42.9
	NYHA II	3	0	0.0	4	0	0.0
	NYHA III	5,999	866	14.4	6,378	817	12.8
	NYHA IV	0	0	0.0	2	1	50.0
	<b>Others</b>	198	31	15.7	288	39	13.5
	TB	0	0	0.0	1	0	0.0
	Blood Disorder	79	10	12.7	128	15	11.7
	Thalassemia	5	0	0.0	5	0	0.0
	Collagen Disease	0	0	0.0	0	0	0.0
	Asthma	75	13	17.3	118	19	16.1
	Renal Disease	2	1	50.0	1	0	0.0

Ethnicity	Medical Disorders	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	%
Indigenous	<b>Anaemia</b>	n	n	%	n	n	%
	Anaemia at booking	2,336	417	17.9	2,052	241	11.7
	Anaemia at delivery	644	95	14.8	511	64	12.5
	None	14,321	1,889	13.2	15,056	1,477	9.8
	<b>Diabetes</b>	1,167	142	12.2	1,264	138	10.9
	Pre-existing	40	15	37.5	31	7	22.6
	Gestational	1,126	127	11.3	1,231	131	10.6
	<b>Hypertension</b>	594	169	28.5	637	108	17.0
	Pre-existing	113	31	27.4	118	15	12.7
	Gestational	423	118	27.9	444	70	15.8
	Pre-eclampsia	93	40	43.0	88	20	22.7
	Eclampsia	7	2	28.6	7	1	14.3
	<b>Heart Disease</b>	73	17	23.3	72	12	16.7
	NYHA I	38	8	21.1	46	5	10.9
	NYHA II	9	3	33.3	2	0	0.0
	NYHA III	1	1	100.0	1	1	100.0
	NYHA IV	20	4	20.0	18	3	16.7
	<b>Others</b>	701	93	13.3	541	61	11.3
	TB	17	1	5.9	9	2	22.2
	Blood Disorder	293	44	15.0	210	27	12.9
	Thalassemia	72	10	13.9	82	7	8.5
	Collagen Disease	0	0	0.0	1	0	0.0
	Asthma	232	30	12.9	193	26	13.5
	Renal Disease	11	1	9.1	9	1	11.1

Ethnicity	Medical Disorders	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
Foreigner	<b>Anaemia</b>	n	n	%	n	n	%
	Anaemia at booking	1,379	180	13.1	1,286	98	7.6
	Anaemia at delivery	451	71	15.7	546	57	10.4
	<b>None</b>	6,884	774	11.2	6,533	509	7.8
	<b>Diabetes</b>	321	48	15.0	398	37	9.3
	Pre-existing	7	2	28.6	9	3	33.3
	Gestational	314	46	14.6	386	34	8.8
	<b>Hypertension</b>	104	32	30.8	151	26	17.2
	Pre-existing	12	1	8.3	24	6	25.0
	Gestational	83	27	32.5	114	19	16.7
	Pre-eclampsia	19	13	68.4	27	5	18.5
	Eclampsia	4	1	25.0	6	3	50.0
	<b>Heart Disease</b>	20	7	35.0	17	2	11.8
	NYHA I	6	2	33.3	8	1	12.5
	NYHA II	3	3	100.0	2	0	0.0
	NYHA III	1	1	100.0	0	0	0.0
	NYHA IV	7	0	0.0	7	1	14.3
	<b>Others</b>	136	14	10.3	166	10	6.0
	TB	2	0	0.0	4	0	0.0
	Blood Disorder	56	8	14.3	88	6	6.8
	Thalassemia	10	2	20.0	9	2	22.2
	Collagen Disease	0	0	0.0	0	0	0.0
	Asthma	22	0	0.0	30	2	6.7
	Renal Disease	1	1	100.0	0	0	0.0

17.4% of HIV positive mothers had a preterm delivery in 2016 while in 2017, 10.3% of HIV mothers had a preterm delivery. The prevalence of preterm delivery was higher compared with women who were not HIV positive. 13% of mothers who had syphilis had a preterm delivery in 2016 and much lower at 8% in 2017.

**Table 1.14: STI and Preterm deliveries 2016-2017**

STI	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n	%	n	%
<b>HIV</b>						
Reactive	115	20	17.4	117	12	10.3
Non-reactive	135,588	16,367	12.1	150,544	13,379	8.9
Indeterminate	7	3	42.9	7	0	0.0
<b>Syphilis</b>						
Yes	238	31	13.0	465	37	8.0
No	133,545	16,077	12.0	148,446	13,189	8.9

In 2016 and 2017, Indian mothers with HIV had a higher incidence of preterm births at 25% and 37.5% respectively. There were no reported cases of preterm births among Chinese mothers with HIV in 2016 and 2017. Indian mothers with syphilis had a higher incidence of preterm births at 21.4% in 2016 while indigenous mothers had an incidence of 8.9% in 2017.

**Table 1.15: STI and Preterm deliveries by Ethnicity 2016-2017**

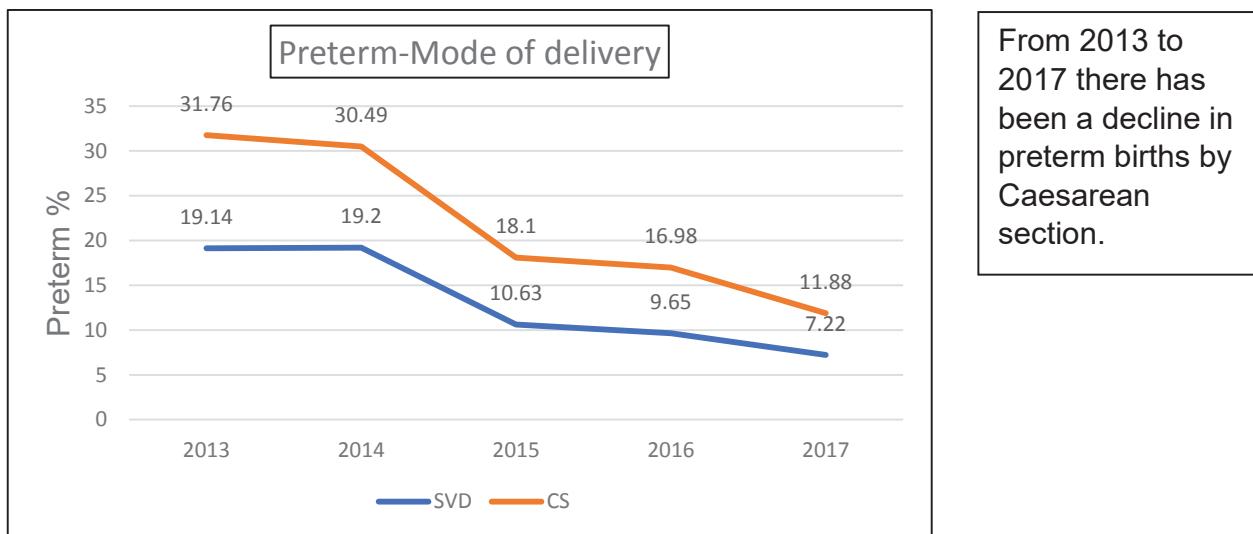
Ethnicity	Medical Disorders	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n	%	n	n	%
Malay	<b>HIV</b>						
	Reactive	68	14	20.6	74	7	9.5
	Non-reactive	100,096	11,499	11.5	111,380	9,552	8.6
	Indeterminate	4	2	50.0	2	0	0.0
	<b>Syphilis</b>						
	Yes	167	21	12.6	233	18	7.7
	No	98,594	11,303	11.5	109,852	9,413	8.6
Chinese	<b>HIV</b>						
	Reactive	10	0	0.0	8	0	0.0
	Non-reactive	7,020	877	12.5	8,009	679	8.5
	Indeterminate	853	30	3.5	159	18	11.3
	<b>Syphilis</b>						
	Yes	10	0	0.0	19	1	5.3
	No	6,904	859	12.4	7,882	663	8.4
Indian	<b>HIV</b>						
	Reactive	8	2	25.0	8	3	37.5
	Non-reactive	5,944	859	14.5	6,345	816	12.9
	Indeterminate	53	5	9.4	38	2	5.3
	<b>Syphilis</b>						
	Yes	14	3	21.4	27	2	7.4
	No	5,857	843	14.4	6,234	811	13.0
Indigenous	<b>HIV</b>						
	Reactive	15	2	13.3	5	0	0.0
	Non-reactive	14,484	2,169	15.0	16,995	1,705	10.0
	Indeterminate	1	1	100.0	1	0	0.0
	<b>Syphilis</b>						
	Yes	23	4	17.4	146	13	8.9
	No	14,338	2,128	14.8	16,799	1,684	10.0
Foreigner	<b>HIV</b>						
	Reactive	12	1	8.3	20	1	5.0
	Non-reactive	7,104	836	11.8	6,989	553	7.9
	Indeterminate	2	0	0.0	1	0	0.0
	<b>Syphilis</b>						
	Yes	23	3	13.0	34	3	8.8
	No	6,932	818	11.8	6,870	546	7.9

Seven out of ten vaginal breech delivery were preterm in 2016 while in 2017, five out of ten had a vaginal breech delivery. About 5.21% of instrumental delivery in 2016 were for preterm while in 2017 the incidence was lower at 4.01%. 16.87% of all preterm babies were delivered via a caesarean section. 9.84% of preterm was delivered vaginally in 2016. Approximately 1 in 4 preterm babies had a upper segment delivery in 2016 and 2017.

**Table 1.16: Mode of delivery in Preterm births 2016-2017**

Mode of delivery		2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Vaginal	SVD	94,859	9,151	9.65	99,978	7,223	7.22
	Breech	329	224	68.08	390	205	52.56
	NA	32	1	3.13	17	5	29.41
	Total	95,220	9,376	9.84	100,385	7,433	7.40
Instrumental	Vacuum	5,111	239	4.68	5,175	194	3.75
	Forceps	438	50	11.42	535	35	6.54
	Total	5,549	289	5.21	5,710	229	4.01
CS	LSCS	39,394	6,607	16.77	44,591	5,697	12.78
	Classical	69	27	39.13	69	24	34.78
	Hysterotomy	32	17	53.13	38	15	39.47
	Hysterectomy	144	56	38.89	133	38	28.57
	Others	55	18	32.73	56	6	10.71
	Total	39,694	6725	16.98	44,887	5780	12.87
	NA	2,453	410	16.71	1,591	189	11.88

**Fig 1. 7 Trend of preterm by mode of delivery 2013-2017**



In all groups of patients, there was a higher incidence of preterm babies delivered by Caesarean section compared to vaginal delivery in 2016 and 2017. Indian mothers had a higher incidence at 17.73% in 2016 and 14.85% in 2017 followed by indigenous women at 17.74% in 2016 and 13.17% in 2017.

**Table 1.17: Mode of delivery in Preterm births by Ethnicity 2016-2017**

Ethnicity	Mode of delivery	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
			n	n		n	%
Malay	Vaginal	SVD	70,406	6,540	9.29	74,985	5,162
		Breech	282	154	54.61	358	142
		NA	22	0	0.00	12	1
		Total	70,710	6,694	9.47	75,355	5,305
	Instrumental	Vacuum	3,569	164	4.60	3,779	138
		Forceps	306	29	9.48	407	24
		Total	3,873	193	4.98	4,186	162
	CS	LSCS	27,543	4,576	16.61	31,860	4,043
		Classical	48	19	39.58	56	21
		Hysterotomy	23	14	60.87	27	12
		Hysterectomy	86	33	38.37	100	28
		Others	39	13	33.33	45	6
		Total	27,739	4,631	16.69	32,008	4,086
		NA	1,747	215	12.31	1,128	133
							11.79

Ethnicity	Mode of delivery	2016			2017		
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
			n	n		n	%
Chinese	Vaginal	SVD	4,947	441	8.91	5,091	322
		Breech	24	13	54.17	25	13
		NA	0	0	0.00	2	1
		Total	4,971	454	9.13	5,118	336
	Instrumental	Vacuum	373	9	2.41	385	13
		Forceps	42	7	16.67	30	4
		Total	415	16	3.86	415	17
	CS	LSCS	2,397	410	17.10	2,558	335
		Classical	4	2	50.00	2	0
		Hysterotomy	2	1	50.00	3	0
		Hysterectomy	8	5	62.50	6	1
		Others	6	1	16.67	0	0
		Total	2,417	417	17.25	2,569	336
		NA	83	20	24.10	80	7
							8.75

**Table 1.17 cont: Mode of delivery in Preterm births by Ethnicity 2016-2017**

Ethnicity	Mode of delivery	2016			2017			
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery		
		n	n	%	n	n	%	
Indian	Vaginal	SVD	3,273	391	11.95	3,396	389	11.45
		Breech	21	13	61.90	23	14	60.87
		NA	1	0	0.00	2	2	100.00
		Total	3,295	404	12.26	3,421	405	11.84
	Instrumental	Vacuum	267	14	5.24	310	20	6.45
		Forceps	23	7	30.43	31	3	9.68
		Total	290	21	7.24	341	23	6.74
	CS	LSCS	2,322	415	17.87	2,565	379	14.78
		Classical	5	2	40.00	3	1	33.33
		Hysterotomy	3	2	66.67	3	2	66.67
		Hysterectomy	14	8	57.14	5	2	40.00
		Others	4	2	50.00	2	0	0.00
		Total	2,348	421	17.93	2,578	383	14.85
		NA	84	20	23.81	54	10	18.52

Ethnicity	Mode of delivery	2016			2017			
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery		
		n	n	%	n	n	%	
Indigenous	Vaginal	SVD	10,660	1,199	11.25	11,283	968	8.58
		Breech	36	21	58.33	45	22	48.89
		NA	4	0	0.00	0	0	0.00
		Total	10,700	1,220	11.40	11,328	990	8.74
	Instrumental	Vacuum	529	29	5.48	387	18	4.65
		Forceps	34	3	8.82	32	3	9.38
		Total	563	32	5.68	419	21	5.01
	CS	LSCS	4,955	880	17.76	5,319	702	13.20
		Classical	5	2	40.00	3	1	33.33
		Hysterotomy	3	0	0.00	2	0	0.00
		Hysterectomy	23	4	17.39	9	4	44.44
		Others	2	1	50.00	4	0	0.00
		Total	4,988	885	17.74	5,337	703	13.17
		NA	10,660	1,199	11.25	11,283	968	8.58

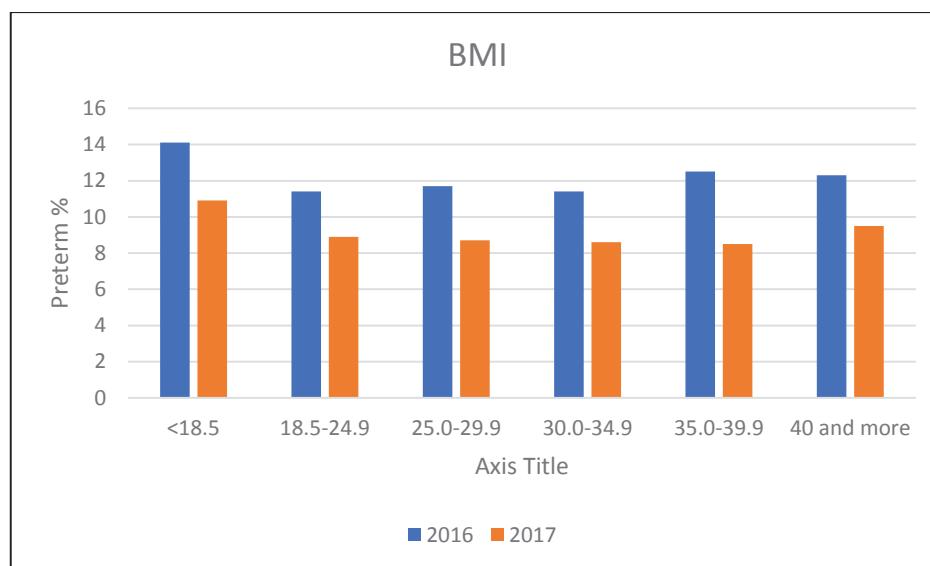
Ethnicity	Mode of delivery	2016			2017			
		Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery		
		n	n	%	n	n	%	
Foreigner	Vaginal	SVD	4,902	507	10.34	4,678	338	7.23
		Breech	47	19	40.43	46	12	26.09
		NA	5	1	20.00	1	1	100.00
		Total	4,954	527	10.64	4,725	351	7.43
	Instrumental	Vacuum	329	20	6.08	289	4	1.38
		Forceps	30	3	10.00	32	1	3.13
		Total	359	23	6.40	321	5	1.56
	CS	LSCS	1,951	282	14.45	2,036	210	10.31
		Classical	7	2	28.57	4	1	25.00
		Hysterotomy	1	0	0.00	2	1	50.00
		Hysterectomy	13	6	46.15	13	3	23.08
		Others	3	1	33.33	5	0	0.0
		Total	1,975	285	14.43	2,060	212	10.29
		NA	137	23	16.79	104	8	7.69

The incidence of preterm births is higher in women with BMI < 18.5 as well as in mothers with BMI 35 and more in 2016. In 2017, the incidence of preterm births is much higher in women with BMI < 18.5 and BMI 40 and more.

**Table 1.18: WHO and Asian BMI classifications in Preterm births 2016-2017**

BMI	2016			2017		
	Total Delivery	Preterm Delivery	%	Total Delivery	Preterm Delivery	%
WHO BMI classifications	n	n	%	n	n	%
<18.5	8,791	1,242	14.1	9,308	1,016	10.9
18.5-24.9	62,225	7,096	11.4	63,164	5,634	8.9
25.0-29.9	41,637	4,866	11.7	45,604	3,973	8.7
30.0-34.9	20,169	2,308	11.4	23,209	1,985	8.6
35.0-39.9	7,325	913	12.5	8,192	698	8.5
40 and more	2,799	343	12.3	3,138	299	9.5
Asian BMI classifications						
<16.0	1,091	182	16.7	1,148	157	13.7
16.0-18.4	7,700	1,060	13.8	8,160	859	10.5
18.5-22.9	40,833	4,706	11.5	40,682	3,752	9.2
23.0-27.4	44,993	5,125	11.4	48,094	4,097	8.5
27.5-32.5	31,153	3,621	11.6	34,993	3,036	8.7
32.6-37.5	11,864	1,411	11.9	13,476	1,175	8.7
>37.5	5,312	663	12.5	6,062	529	8.7

**Fig 1. 8 BMI (WHO classification) and Preterm deliveries 2016-2017**



**Table 1.19: WHO and Asian BMI classifications in Preterm births by Ethnicity  
2016-2017**

Ethnicity	BMI	2016			2017		
		Total Delivery	Preterm Delivery	%	Total Delivery	Preterm Delivery	%
Malay	<b>WHO BMI classifications</b>						
	<18.5	6,768	936	13.8	7,384	786	10.6
	18.5-24.9	43,714	4,767	10.9	45,617	3,865	8.5
	25.0-29.9	30,445	3,419	11.2	33,545	2,816	8.4
	30.0-34.9	15,228	1,700	11.2	17,403	1,455	8.4
	35.0-39.9	5,627	654	11.6	6,271	529	8.4
	40 and more	2,258	265	11.7	2,468	240	9.7
	<b>Asian BMI classifications</b>						
	<16.0	849	145	17.1	902	124	13.7
	16.0-18.4	5,919	791	13.4	6,482	662	10.2
	18.5-22.9	28,496	3,139	11.0	29,352	2,597	8.8
	23.0-27.4	32,347	3,534	10.9	35,063	2,843	8.1
	27.5-32.5	23,153	2,596	11.2	25,894	2,152	8.3
	32.6-37.5	9,045	1,032	11.4	10,276	898	8.7
	>37.5	4,231	504	11.9	4,719	415	8.8
Chinese	<b>WHO BMI classifications</b>						
	<18.5	558	67	12.0	508	51	10.0
	18.5-24.9	4,256	476	11.2	4,210	376	8.9
	25.0-29.9	2,028	232	11.4	2,182	192	8.8
	30.0-34.9	732	89	12.2	926	55	5.9
	35.0-39.9	231	31	13.4	264	18	6.8
	40 and more	78	12	15.4	89	5	5.6
	<b>Asian BMI classifications</b>						
	<16.0	47	3	6.4	58	6	10.3
	16.0-18.4	511	64	12.5	450	45	10.0
	18.5-22.9	2,970	325	10.9	2,897	253	8.7
	23.0-27.4	2,505	274	10.9	2,613	238	9.1
	27.5-32.5	1,333	166	12.5	1,514	119	7.9
	32.6-37.5	367	51	13.9	474	25	5.3
	>37.5	150	24	16.0	173	11	6.4
Indian	<b>WHO BMI classifications</b>						
	<18.5	487	66	13.6	505	75	14.9
	18.5-24.9	2,265	336	14.8	2,475	302	12.2
	25.0-29.9	1,736	239	13.8	1,908	255	13.4
	30.0-34.9	989	142	14.4	1,006	132	13.1
	35.0-39.9	383	61	15.9	370	43	11.6
	40 and more	145	22	15.2	127	14	11.0
	<b>Asian BMI classifications</b>						
	<16.0	101	9	8.9	111	19	17.1
	16.0-18.4	386	57	14.8	394	56	14.2
	18.5-22.9	1,484	225	15.2	1,567	186	11.9
	23.0-27.4	1,708	245	14.3	1,964	256	13.0
	27.5-32.5	1,474	199	13.5	1,548	205	13.2
	32.6-37.5	567	87	15.3	546	71	13.0
	>37.5	285	44	15.4	261	28	10.7

**Table 1.19: cont: WHO and Asian BMI classifications in Preterm births by Ethnicity 2016-2017**

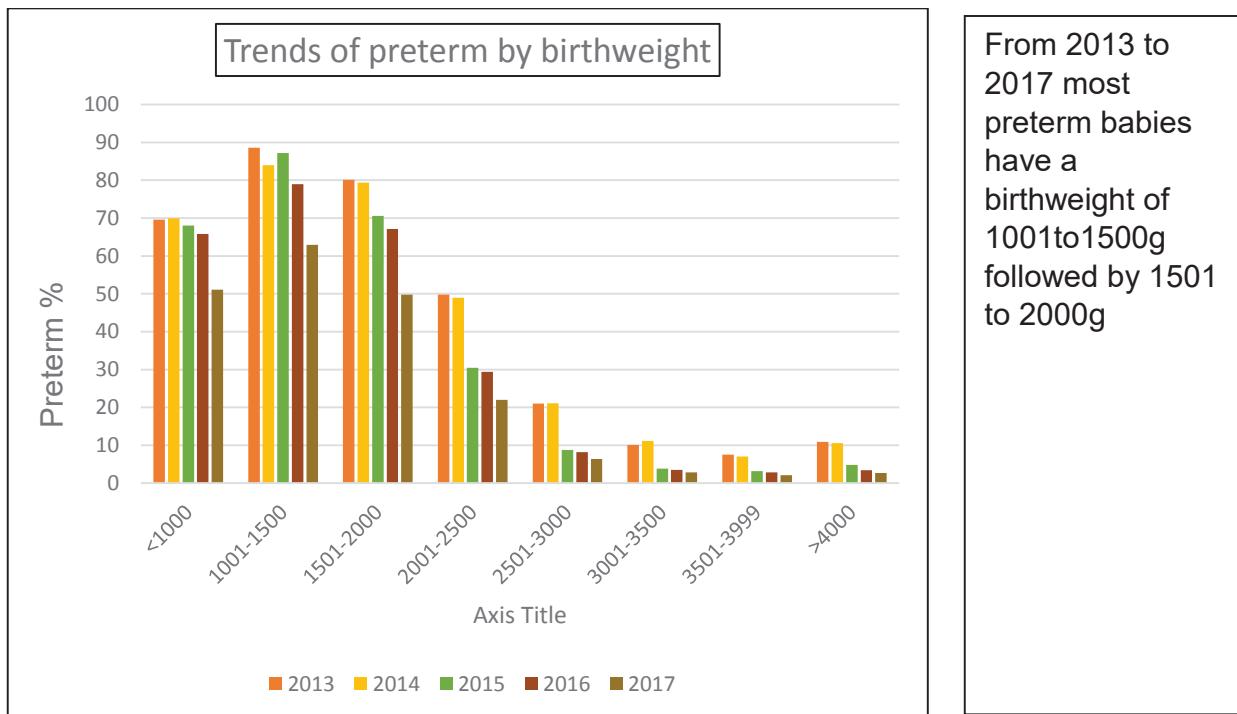
Ethnicity	BMI	2016			2017		
		Total Delivery	Preterm Delivery	%	Total Delivery	Preterm Delivery	%
Indigenous	<b>WHO BMI classifications</b>	n	n	%	n	n	%
	<18.5	578	134	23.2	536	73	13.6
	18.5-24.9	7,574	974	12.9	6,840	773	11.3
	25.0-29.9	4,985	688	13.8	5,545	513	9.3
	30.0-34.9	2,371	297	12.5	2,935	257	8.8
	35.0-39.9	860	133	15.5	1,078	95	8.8
	40 and more	244	37	15.2	380	34	8.9
	<b>Asian BMI classifications</b>						
	<16.0	60	21	35.0	47	5	10.6
	16.0-18.4	518	113	21.8	489	68	13.9
	18.5-22.9	5,028	652	13.0	4,316	487	11.3
	23.0-27.4	5,384	715	13.3	5,534	551	10.0
	27.5-32.5	3,652	501	13.7	4,414	418	9.5
	32.6-37.5	1,459	187	12.8	1,754	149	8.5
	>37.5	511	74	14.5	760	67	8.8
Foreigners	<b>WHO BMI classifications</b>						
	<18.5	341	33	9.7	325	24	7.4
	18.5-24.9	3,947	478	12.1	3,636	289	7.9
	25.0-29.9	2,148	244	11.4	2,186	173	7.9
	30.0-34.9	733	65	8.9	814	74	9.1
	35.0-39.9	196	33	16.8	177	11	6.2
	40 and more	56	7	12.5	63	5	7.9
	<b>Asian BMI classifications</b>						
	<16.0	30	3	10.0	24	1	4.2
	16.0-18.4	311	30	9.6	301	23	7.6
	18.5-22.9	2,548	321	12.6	2,292	206	9.0
	23.0-27.4	2,706	313	11.6	2,660	190	7.1
	27.5-32.5	1,351	129	9.5	1,445	125	8.7
	32.6-37.5	367	47	12.8	355	25	7.0
	>37.5	108	17	15.7	124	6	4.8

Preterm births contributed to 65.8% of babies with BW less than 1000g in 2016 and 51.1% in 2017. 7 out of 10 preterm babies had birthweight 2000g or less in 2016 while in 2017, it was lower at 5 out of 10 preterm babies.

**Table 1.20: Birthweight in Preterm births 2016-2017**

Birth weight	2016			2017		
	Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
	n	n	%	n	n	%
<1000	1,387	913	65.8	1,533	783	51.1
1001-1500	1,599	1,263	79.0	1,614	1,015	62.9
1501-2000	3,963	2,658	67.1	4,388	2,185	49.8
2001-2500	16,669	4,907	29.4	18,125	3,993	22.0
2501-3000	50,868	4,194	8.2	55,309	3,552	6.4
3001-3500	47,073	1,648	3.5	51,770	1,447	2.8
3501-3999	13,675	378	2.8	15,011	314	2.1
>4000	2,744	93	3.4	2,865	78	2.7
NA	4,968	714	14.4	2,000	238	11.9

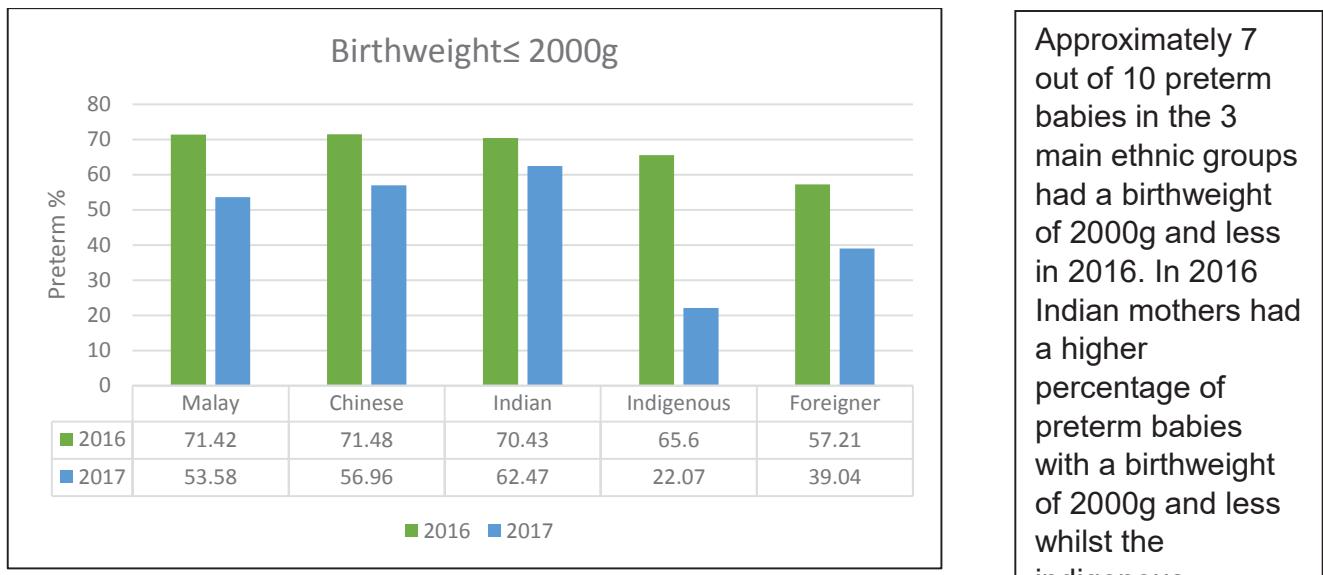
**Fig 1. 9 Trends of preterm births by Birthweight 2013-2017**



**Table 1.21: Birthweight in Preterm births by Ethnicity 2016-2017**

Ethnicity	Birth weight	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Malay	<1000	961	630	65.6	1,025	502	49.0
	1001-1500	1,037	855	82.4	1,071	691	64.5
	1501-2000	2,593	1,794	69.2	2,967	1,520	51.2
	2001-2500	11,564	3,478	30.1	12,841	2,893	22.5
	2501-3000	36,825	2,974	8.1	40,644	2,578	6.3
	3001-3500	34,791	1,209	3.5	38,885	1,047	2.7
	3501-3999	10,505	292	2.8	11,542	228	2.0
	>4000	2,125	70	3.3	2,343	62	2.6
	NA	3,639	439	12.1	1,370	170	12.4
Chinese	<1000	105	74	70.5	108	53	49.1
	1001-1500	95	73	76.8	135	87	64.4
	1501-2000	277	194	70.0	245	138	56.3
	2001-2500	835	248	29.7	938	203	21.6
	2501-3000	2,766	202	7.3	2,865	148	5.2
	3001-3500	2,695	62	2.3	2,847	44	1.5
	3501-3999	732	12	1.6	801	10	1.2
	>4000	141	3	2.1	113	4	3.5
	NA	237	39	16.5	127	10	7.9
Indian	<1000	67	52	77.6	117	88	75.2
	1001-1500	102	84	82.4	99	75	75.8
	1501-2000	247	157	63.6	253	130	51.4
	2001-2500	966	245	25.4	1,072	259	24.2
	2501-3000	2,267	209	9.2	2,533	168	6.6
	3001-3500	1,622	53	3.3	1,760	75	4.3
	3501-3999	390	21	5.4	416	13	3.1
	>4000	80	3	3.8	81	3	3.7
	NA	264	42	15.9	60	10	16.7
Indigenous	<1000	155	104	67.1	175	99	56.6
	1001-1500	248	181	73.0	211	121	57.3
	1501-2000	606	377	62.2	656	289	44.1
	2001-2500	2,332	659	28.3	2,417	490	20.3
	2501-3000	6,048	553	9.1	6,399	465	7.3
	3001-3500	5,153	200	3.9	5,502	195	3.5
	3501-3999	1,299	34	2.6	1,446	41	2.8
	>4000	242	13	5.4	184	6	3.3
	NA	529	142	26.8	324	39	12.0
Foreigners	<1000	80	44	55.0	96	39	40.6
	1001-1500	99	58	58.6	84	31	36.9
	1501-2000	202	116	57.4	240	94	39.2
	2001-2500	855	245	28.7	752	127	16.9
	2501-3000	2,621	227	8.7	2,557	173	6.8
	3001-3500	2,491	108	4.3	2,509	80	3.2
	3501-3999	677	17	2.5	725	20	2.8
	>4000	139	4	2.9	126	3	2.4
	NA	257	41	16.0	112	9	8.0

**Fig 1. 10 Percentage of Preterm with Birthweight  $\leq$ 2000g by Ethnicity 2016-2017**



Incidence of preterm births was higher in twins and triplets as compared to singleton in 2016 and 2017.

**Table 1.22: Type of pregnancy in Preterm births 2016-2017**

Type of pregnancy	2016			2017		
	Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
	n	n	%	n	n	%
Singleton	139,912	15,046	10.8	149,336	12,125	8.1
Twins	2,927	1,623	55.4	3,186	1,414	44.4
Triplets	105	99	94.3	93	66	71.0
NA	2	0	0.0	0	0	0.0

Higher order pregnancies contributed to a higher prevalence of preterm in all ethnicity in 2016 and 2017.

**Table 1.23: Type of pregnancy in Preterm births by Ethnicity 2016-2017**

Ethnicity	Type of pregnancy	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
<b>Malay</b>	Singleton	102,007	10,583	10.4	110,510	8,674	7.8
	Twins	1,961	1,089	55.5	2,136	984	46.1
	Triplets	72	69	95.8	42	33	78.6
	NA	0	0	0.0	0	0	0.0
	<b>Total</b>	104,040	11,741	11.3	112,688	9,691	8.6
<b>Chinese</b>	Singleton	7,660	766	10.0	7,916	574	7.3
	Twins	214	132	61.7	236	108	45.8
	Triplets	9	9	100.0	27	15	55.6
	NA	0	0	0.0	0	0	0.0
	<b>Total</b>	7,883	907	11.5	8,179	697	8.5
<b>Indian</b>	Singleton	5,867	782	13.3	6,237	721	11.6
	Twins	138	84	60.9	142	88	62.0
	Triplets	0	0	0.0	12	12	100.0
	NA	0	0	0.0	0	0	0.0
	<b>Total</b>	6,005	866	14.4	6,391	821	12.8
<b>Indigenous</b>	Singleton	16,221	2,037	12.6	16,865	1,570	9.3
	Twins	376	214	56.9	440	172	39.1
	Triplets	15	12	80.0	9	3	33.3
	NA	0	0	0.0	0	0	0.0
	<b>Total</b>	16,612	2,263	13.6	17,314	1,745	10.1
<b>Foreigners</b>	Singleton	7,199	764	10.6	6,981	514	7.4
	Twins	216	90	41.7	220	62	28.2
	Triplets	6	6	100.0	0	0	0.0
	NA	0	0	0.0	0	0	0.0
	<b>Total</b>	7,421	860	11.6	7,201	576	8.0

5 out of 10 babies with ambiguous genitalia had a preterm delivery in 2016 and 2017.

**Table 1.24: Baby gender in Preterm births 2016-2017**

Baby Gender	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n		n	%
Male	73,025	9,001	12.3	78,520	7,357	9.4
Female	67,406	7,312	10.8	72,423	6,010	8.3
Ambiguous	67	37	55.2	91	47	51.6
NA	2,448	418	17.1	1,581	191	12.1

In all ethnic groups, babies with ambiguous genitalia had a higher prevalence of preterm births.

**Table 1.25: Baby gender in Preterm births by Ethnicity 2016-2017**

Ethnicity	Baby Gender	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Malay	Male	53,212	6,366	12.0	57,939	5,240	9.0
	Female	49,032	5,128	10.5	53,562	4,281	8.0
	Ambiguous	44	23	52.3	68	34	50.0
	NA	1,752	224	12.8	1,119	136	12.2
Chinese	Male	4,014	494	12.3	4,231	394	9.3
	Female	3,774	390	10.3	3,861	293	7.6
	Ambiguous	5	2	40.0	4	3	75.0
	NA	90	21	23.3	83	7	8.4
Indian	Male	3,072	455	14.8	3,313	465	14.0
	Female	2,854	390	13.7	3,019	341	11.3
	Ambiguous	5	3	60.0	5	5	100.0
	NA	74	18	24.3	54	10	18.5
Indigenous	Male	8,405	1,142	13.6	8,879	915	10.3
	Female	7,821	987	12.6	8,213	798	9.7
	Ambiguous	10	6	60.0	5	2	40.0
	NA	376	128	34.0	217	30	13.8
Foreigner	Male	3,842	469	12.2	3,738	302	8.1
	Female	3,445	366	10.6	3,356	264	7.9
	Ambiguous	3	3	100.0	5	2	40.0
	NA	131	22	16.8	102	8	7.8

In 2016, 21.4% of women consuming alcohol had a preterm birth while in 2017 the prevalence was at 16.3%. In 2016, 30.2% of women on illicit drugs had a preterm birth, however in 2017 the numbers were much lower.

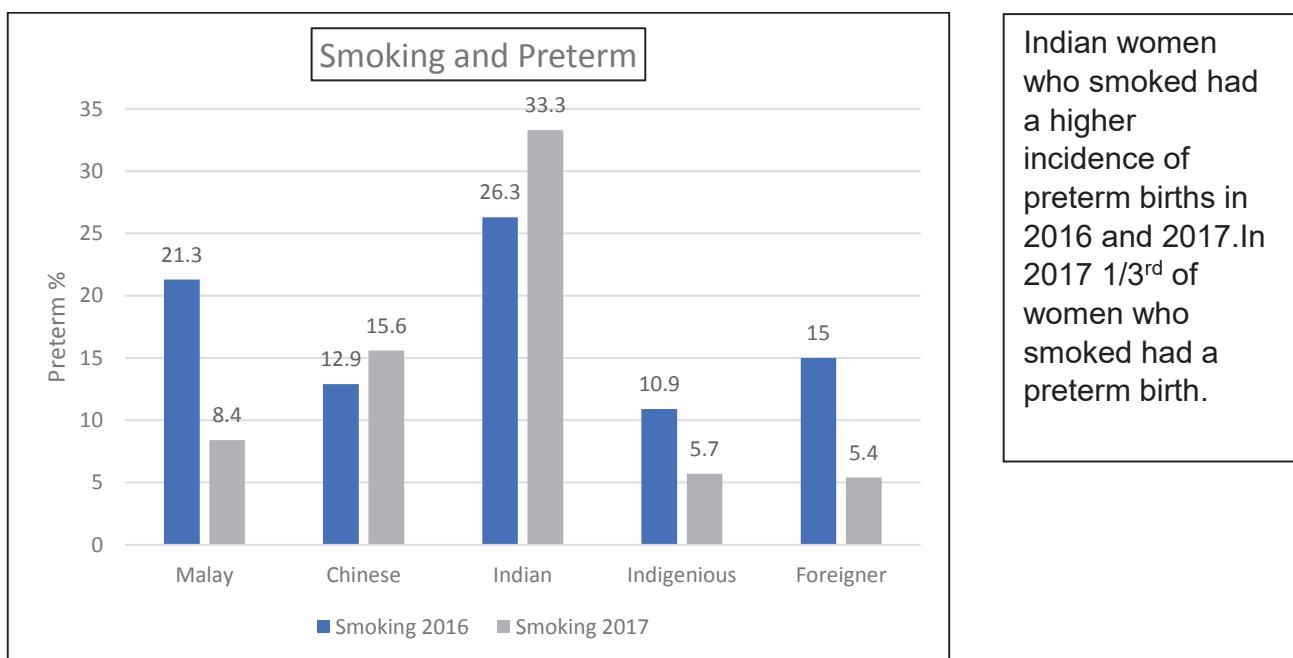
**Table 1.26: Smoking, alcohol and drugs in Preterm births 2016-2017**

Social habits	2016			2017		
	Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
	n	n	%	n	n	%
Smoking	428	82	19.2	515	48	9.3
Alcohol	28	6	21.4	43	7	16.3
Drugs	53	16	30.2	76	6	7.9

**Table 1.27: Smoking, alcohol and drugs in Preterm births by Ethnicity 2016-2017**

Ethnicity	Social habits	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Malay	Smoking	301	64	21.3	344	29	8.4
	Alcohol	13	6	46.2	25	4	16.0
	Drugs	39	14	35.9	62	6	9.7
Chinese	Smoking	31	4	12.9	45	7	15.6
	Alcohol	3	0	0.0	9	2	22.2
	Drugs	2	0	0.0	5	0	0.0
Indian	Smoking	19	5	26.3	18	6	33.3
	Alcohol	4	0	0.0	0	0	0.0
	Drugs	3	0	0.0	6	0	0.0
Indigenous	Smoking	55	6	10.9	70	4	5.7
	Alcohol	4	0	0.0	2	0	0.0
	Drugs	4	1	25.0	1	0	0.0
Foreigner	Smoking	20	3	15.0	37	2	5.4
	Alcohol	4	0	0.0	7	1	14.3
	Drugs	4	0	0.0	2	0	0.0

**Fig 1. 11 Preterm in relation to smoking and Ethnicity**



In 2016 among the IUGR babies recorded in the NOR about half were preterm. About half of the women who had APH had a preterm birth. Almost 93% of PPROM resulted in women having a preterm baby. In 2017 IUGR, APH and PPROM had higher preterm births

**Table 1.28: Complications in Preterm births 2016-2017**

Complications	2016			2017		
	Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
	n	n	%	n	n	%
SGA	25,331	1,949	7.7	22,632	1,749	7.7
IUGR	994	525	52.8	1,104	448	40.6
APH	296	154	52.0	327	118	36.1
Oligohydramnios	351	139	39.6	482	135	28.0
Cord Prolapse	231	55	23.8	219	41	18.7
PPROM	203	189	93.1	241	158	65.6

**Table 1.29: Complications in Preterm births by Ethnicity 2016-2017**

Ethnicity	Complications	2016			2017		
		Total Delivery		Preterm Delivery	Total Delivery		Preterm Delivery
		n	n	%	n	n	%
Malay	SGA	18,256	1,333	7.3	16,543	1,199	7.2
	IUGR	700	357	51.0	851	345	40.5
	APH	237	126	53.2	255	97	38.0
	Oligohydramnios	225	71	31.6	360	97	26.9
	Cord Prolapse	175	40	22.9	147	33	22.4
	PPROM	162	153	94.4	201	131	65.2
Chinese	SGA	1,254	109	8.7	1,191	109	9.2
	IUGR	59	38	64.4	47	24	51.1
	APH	12	9	75.0	18	3	16.7
	Oligohydramnios	13	8	61.5	24	8	33.3
	Cord Prolapse	8	3	37.5	10	2	20.0
	PPROM	7	6	85.7	9	7	77.8
Indian	SGA	1,503	126	8.4	1,384	128	9.2
	IIUGR	56	34	60.7	56	22	39.3
	APH	8	5	62.5	13	4	30.8
	Oligohydramnios	16	9	56.3	13	5	38.5
	Cord Prolapse	8	2	25.0	10	2	20.0
	PPROM	8	7	87.5	11	8	72.7
Others	SGA	2,846	280	9.8	2,578	238	9.2
	IUGR	149	81	54.4	118	47	39.8
	APH	25	11	44.0	20	8	40.0
	Oligohydramnios	87	44	50.6	70	21	30.0
	Cord Prolapse	23	4	17.4	32	2	6.3
	PPROM	20	17	85.0	13	10	76.9
Foreigners	SGA	1,285	84	6.5	825	70	8.5
	IUGR	23	12	52.2	28	9	32.1
	APH	9	1	11.1	20	6	30.0
	Oligohydramnios	7	5	71.4	14	4	28.6
	Cord Prolapse	16	5	31.3	16	2	12.5
	PPROM	6	6	100.0	6	2	33.3

In both reporting years the incidence of preterm in FSB and MSB were similar. In 2017 there was a decline in preterm delivery with FSB and MSB.

**Table 1.30: Congenital malformation in Preterm births 2016-2017**

Congenital Malformation	2016			2017		
	Total Delivery	Preterm Delivery		Total Delivery	Preterm Delivery	
		n	n		n	%
<b>FSB</b>	272	61	22.4	309	48	15.5
LCM present	56	31	55.4	52	29	55.8
LCM absent	114	72	63.2	145	55	37.9
<b>MSB</b>	317	78	24.6	438	74	16.9
LCM present	78	61	78.2	84	43	51.2
LCM absent	309	204	66.0	388	199	51.3

## **KEY FINDINGS**

### Preterm births by hospital

HKL had the highest incidence of preterm births in 2016 and 2017. The lowest incidence of preterm births in 2016 was from HUS, Sarawak and in 2017 from HRPZ 11, Kelantan.

### Incidence of preterm births

Incidence of preterm is on the decline in the last 5 years

## **RISK OF PRETERM BY MATERNAL CHARACTERS**

### Color coding

The highest incidence of preterm births was seen in women with color code red. Malay women had the highest incidence of preterm with color code red while all other ethnicities had a higher incidence of preterm who were color coded green

### Ethnicity

OA Peninsular Malaysia mothers had the highest incidence of preterm deliveries in 2016. Indian mothers had the highest incidence of preterm deliveries among the 3 main ethnic groups in Malaysia in 2016 and 2017. There has been a decline in preterm births in all ethnicities in the last 5 years.

### Maternal Age

The younger the maternal age or the older the maternal age, is a risk for preterm birth. This is seen in all ethnic groups.

### Parity

Preterm births were high in para 1 and higher order pregnancies. Chinese mothers Para 6 and more had a high incidence of preterm births in 2016 while Indian mothers Para 6 and more had a high incidence of preterm births in 2017.

### Maternal co morbidities

Women with pre-existing DM, pre-existing Hypertension, gestational hypertension, preeclampsia, eclampsia, cardiac disease with NYHA 11,111 and renal disease had a higher incidence of preterm births. In all ethnic groups pre-existing DM, pre-existing hypertension, gestational hypertension, preeclampsia and eclampsia contributed to preterm births. Renal disease appears to have contributed to preterm births all 3 main ethnic groups in the county.

### Maternal STI

HIV and Syphilis doesn't appear to increase the risk of preterm births in the overall population however by ethnic group, retroviral positive Indian mothers have an increase incidence in preterm births when compared to the other groups of women. Indian mothers with syphilis in 2016 had a higher incidence of preterm births compared to the other population but this pattern was not seen in 2017.

### Mode of delivery

Preterm babies were delivered by CS more than by vaginal or instrumental and seen across all ethnic groups.

### Maternal BMI

Low maternal BMI is a risk for preterm births. In Malay, and Indigenous group, low maternal BMI is a risk for preterm births in 2016. Indian and Chinese mothers in 2017 with a high BMI were at risk for a preterm birth

### Maternal social habits

Alcohol, drugs and smoking in pregnancy increased the risk of preterm births in 2016 however this finding was not convincing in 2017. Malay mothers on alcohol, drugs and smoking had increased risk of preterm births in 2016. Risk of preterm births in Indian women who were smokers and indigenous women on illicit drugs in 2016. In 2017 there was increased risk of preterm births in Chinese women who consumed alcohol and Indian women who were smokers

## **RISK OF PRETERM BY BABY CHARACTERS**

### Birth weight

About half of the preterm babies had a birthweight of 1000g and less

### Baby gender

About half of the babies with ambiguous genitalia were preterm

### Type of pregnancy

Risk for preterm births higher among multiple pregnancies. This is seen across all ethnic groups

### Complication

Higher rate of preterm births in APH, Cord prolapse, PPROM and oligohydramnios. About half of the IUGR babies were preterm. 9 out of 10 preterm in 2016 had PPROM and a reducing trend in 2016.

### Conclusion

Incidence of preterm births in Malaysian tertiary hospitals in 2016 was 11.75% and in 2017 was 8.93%. There has been a reduction in the preterm rates over the last 5 years. Further reduction is possible with pre pregnancy counselling in women in the risk groups. The issues that need attention:

- i) Avoid teenage pregnancies.
- ii) Avoid unplanned pregnancies at an advanced age.
- iii) Women in their first pregnancy should have early booking and follow up
- iv) Women with higher order pregnancies should have family planning counselling.
- v) Women with multiple pregnancy should have early and regular prenatal care.
- vi) Those with pre-existing maternal diseases like DM, Hypertension, Cardiac disease and Renal disease should have pre pregnancy counselling. The goal is to ensure women are healthy before they embark on pregnancy.
- vii) Women should have a healthy BMI when they embark on pregnancy as both underweight and obese women have a higher risk of preterm births.
- viii) Advice on cessation of smoking and consuming alcohol and illicit drugs

### Limitations

The National Obstetrics Registry only collects data from 14 tertiary hospitals and 1 district hospital in Malaysia. UTI and lifestyle factor such as stress has been associated with preterm births. This information hasn't been captured in NOR.

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2. Born to soon: The global epidemiology of 15 million preterm births. BMC Reproductive health.2013

**TYPE  
OF  
DELIVERY**

**Table 2.1: Distribution of delivery by Hospitals 2016-2017**

SDP	2016		2017	
	n	%	n	%
HSA, Johor	13,151	9.20	13,930	9.13
HSB, Kedah	12,064	8.44	12,052	7.90
HRPZ II, Kelantan	11,536	8.07	12,903	8.45
Hospital Melaka	11,230	7.86	11,452	7.50
HTJ, N. Sembilan	10,117	7.08	10,831	7.10
HTAA, Pahang	8,107	5.67	10,161	6.66
HRPB, Perak	8,316	5.82	9,129	5.98
HTF, Perlis	4,851	3.39	5,117	3.35
HPP, Pulau Pinang	4,192	2.93	4,623	3.03
HWKK Likas, Sabah	14,488	10.14	14,463	9.48
HUS, Sarawak	9,481	6.63	10,940	7.17
HTAR, Selangor	10,835	7.58	10,420	6.83
HSNZ, Terengganu	11,025	7.71	11,723	7.68
HKL	10,097	7.06	11,262	7.38
H. Segamat	3,456	2.42	3,609	2.36
Total	142,946	100.0	152,615	100.0

**Table 2.2: Distribution of Delivery type 2016-2017**

Delivery	Types	2016		2017	
		n	%	n	%
Vaginal	SVD	94,859	99.53	99,978	99.48
	Breech	419	0.44	504	0.50
	NA	32	0.03	17	0.02
	Total	95,310	66.68	,499	65.85
Instrumental	Vacuum	5,111	92.17	5,175	90.66
	Forceps	438	7.90	535	9.37
	Total	5,545	3.88	5,708	3.74
CS	LSCS	39,394	99.46	44,591	99.54
	Classical	69	0.17	69	0.15
	Hysterotomy	32	0.08	38	0.08
	Hysterectomy	144	0.36	133	0.30
	Others	55	0.14	56	0.13
	Total	39,608	27.71	44,796	29.35
	NA	2,453	1.72	1,591	1.04

**Table 2.3: Delivery Type by Maternal Age 2016-2017**

Age	Vaginal		Instrumental		CS		Others		NA		Total		
	n	%	n	%	n	%	n	%	n	%	n	%	
2016	10-14	35	0.04	1	0.02	3	0.01	0	0.00	0	0.00	39	0.03
	15-19	3,377	3.56	221	4.00	699	1.81	3	12.00	75	3.09	4,375	3.09
	20-24	16,259	17.16	1,119	20.26	4,485	11.59	3	12.00	385	15.85	22,251	15.73
	25-29	32,305	34.10	2,226	40.30	11,888	30.72	7	28.00	831	34.21	47,257	33.42
	30-34	27,174	28.68	1,333	24.13	12,230	31.60	8	32.00	697	28.69	41,442	29.31
	35-39	12,289	12.97	497	9.00	7,102	18.35	3	12.00	326	13.42	20,217	14.30
	40-44	3,042	3.21	118	2.14	2,118	5.47	1	4.00	110	4.53	5,389	3.81
	45-49	244	0.26	8	0.14	165	0.43	0	0.00	5	0.21	422	0.30
	50-54	8	0.01	0	0.00	6	0.02	0	0.00	0	0.00	14	0.01
	≥55	1	0.00	1	0.02	3	0.01	0	0.00	0	0.00	5	0.00
2017	10-14	33	0.03	5	0.09	8	0.02	0	0.00	1	0.06	47	0.03
	15-19	3,164	3.17	220	3.87	664	1.52	0	0.00	63	4.02	4,111	2.72
	20-24	16,643	16.66	1,109	19.52	4,963	11.34	6	31.58	252	16.07	22,973	15.22
	25-29	33,603	33.63	2,322	40.88	13,174	30.10	6	31.58	513	32.72	49,618	32.87
	30-34	28,949	28.97	1,408	24.79	13,919	31.80	5	26.32	433	27.61	44,714	29.62
	35-39	13,892	13.90	493	8.68	8,462	19.33	1	5.26	235	14.99	23,083	15.29
	40-44	3,403	3.41	112	1.97	2,385	5.45	1	5.26	62	3.95	5,963	3.95
	45-49	229	0.23	11	0.19	193	0.44	0	0.00	9	0.57	442	0.29
	50-54	3	0.00	0	0.00	5	0.01	0	0.00	0	0.00	8	0.01
	≥55	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00

**Table 2.4: Delivery type by Hospitals 2016-2017**

	SDP	Vaginal						Instrumental						CS			NA			Total		
		SvD			Breech			NA			Total			Vacuum			Forceps			Total		
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
2016	HSA, Johor	8,608	9.07	63	15.04	6	18.75	8,677	9.10	921	18.02	27	6.16	948	17.10	3,436	8.68	82	3.34	13,151	9.20	
	HSB, Kedah	8,417	8.87	41	9.79	2	6.25	8,460	8.88	586	11.47	28	6.39	613	11.06	2,871	7.25	118	4.81	12,064	8.44	
	HRPZ II, Kelantan	8,184	8.63	32	7.64	1	3.13	8,217	8.62	112	2.19	81	18.49	192	3.46	2,344	5.92	783	31.92	11,536	8.07	
	Hospital Melaka	7,656	8.07	9	2.15	5	15.63	7,670	8.05	124	2.43	2	0.46	126	2.27	3,244	8.19	188	7.66	11,230	7.86	
	HTJ, N. Sembilan	6,812	7.18	20	4.77	0	0.00	6,832	7.17	383	7.49	4	0.91	386	6.96	2,857	7.21	42	1.71	10,117	7.08	
	HTAA, Pahang	5,603	5.91	6	1.43	0	0.00	5,609	5.89	367	7.18	23	5.25	390	7.03	2,011	5.08	96	3.91	8,107	5.67	
	HRPB, Perak	5,241	5.53	24	5.73	4	12.50	5,269	5.53	62	1.21	11	2.51	73	1.32	2,791	7.05	183	7.46	8,316	5.82	
	HTF, Perlis	3,257	3.43	12	2.86	0	0.00	3,269	3.43	171	3.35	25	5.71	196	3.53	1,358	3.43	24	0.98	4,851	3.39	
	H. Pulau Pinang	2,454	2.59	13	3.10	1	3.13	2,468	2.59	129	2.52	30	6.85	159	2.87	1,511	3.81	53	2.16	4,192	2.93	
	HWKK Likas, Sabah	9,093	9.59	38	9.07	2	6.25	9,133	9.58	482	9.43	13	2.97	495	8.93	4,460	11.26	396	16.14	14,488	10.14	
	HUS, Sarawak	6,712	7.08	13	3.10	4	12.50	6,729	7.06	304	5.95	60	13.70	364	6.56	2,288	5.78	100	4.08	9,481	6.63	
2017	HTAR, Selangor	6,338	6.68	58	13.84	2	6.25	6,398	6.71	722	14.13	85	19.41	807	14.55	3,472	8.77	156	6.36	10,835	7.58	
	HSNZ, Terengganu	7,432	7.83	37	8.83	2	6.25	7,471	7.84	248	4.85	25	5.71	272	4.91	3,221	8.13	60	2.45	11,025	7.71	
	HKL	6,393	6.74	41	9.79	2	6.25	6,436	6.75	394	7.71	12	2.74	406	7.32	3,083	7.78	167	6.81	10,097	7.06	
	H. Segamat	2,659	2.80	12	2.86	1	3.13	2,672	2.80	106	2.07	12	2.74	118	2.13	661	1.67	5	0.20	3,456	2.42	
	HSA, Johor	9,230	9.23	70	13.89	3	17.65	9,303	9.26	890	17.20	52	9.72	942	16.50	3,627	8.10	56	3.52	13,930	9.13	
	HSB, Kedah	8,270	8.27	55	10.91	0	0.00	8,325	8.28	664	12.83	43	8.04	707	2.39	2,932	6.55	84	5.28	12,052	7.90	
	HRPZ II, Kelantan	9,484	9.49	70	13.89	1	5.88	9,555	9.51	116	2.24	83	15.51	199	3.49	2,928	6.54	221	13.89	12,903	8.45	
	Hospital Melaka	7,438	7.44	7	1.39	3	17.65	7,448	7.41	169	3.27	2	0.37	170	2.98	3,638	8.1	194	12.19	11,452	7.50	
2017	HTJ, N. Sembilan	6,933	6.93	31	6.15	1	5.88	6,965	6.93	390	7.54	32	5.98	422	7.39	3,348	7.47	96	6.03	10,831	7.10	
	HTAA, Pahang	6,554	6.56	8	1.59	0	0.00	6,562	6.53	506	9.78	32	5.98	538	9.43	2,847	6.36	213	13.39	10,161	6.66	
	HRPB, Perak	5,843	5.84	20	3.97	1	5.88	5,864	5.83	64	1.24	12	2.24	76	1.33	2,977	6.65	212	13.32	9,129	5.98	
	HTF, Perlis	3,466	3.47	17	3.37	2	11.76	3,485	3.47	75	1.45	27	5.05	101	1.77	1,498	3.34	31	1.95	5,117	3.35	
	H. Pulau Pinang	2,922	2.92	15	2.98	0	0.00	2,937	2.92	146	2.82	45	8.41	191	3.35	1,438	3.21	53	3.33	4,623	3.03	
	HWKK Likas, Sabah	9,197	9.20	57	11.31	0	0.00	9,254	9.21	291	5.62	26	4.86	317	5.55	4,670	10.43	219	13.76	14,463	9.48	
	HUS, Sarawak	7,804	7.81	18	3.57	1	5.88	7,823	7.78	296	5.72	44	8.22	340	5.96	2,680	5.98	97	6.10	10,940	7.17	
	H. Segamat	5,792	5.79	47	9.33	2	11.76	5,841	5.81	731	14.13	102	19.07	833	14.59	3,726	8.32	18	1.13	10,420	6.83	
HSNZ, Terengganu	7,864	7.87	38	7.54	2	11.76	7,904	7.86	262	5.06	26	4.86	288	5.05	3,514	7.84	17	1.07	11,723	7.68		
	HKL	6,601	6.60	41	8.13	1	5.88	6,643	6.61	396	7.65	2	0.37	398	6.97	4,156	9.28	64	4.02	11,262	7.38	
	H. Segamat	2,580	2.58	10	1.98	0	0.00	2,590	2.58	179	3.46	7	1.31	186	3.26	817	1.82	16	1.01	3,609	2.36	

**Table 2.5: Deliveries in relation to Risk level at booking 2016-2017**

Risk Level at Booking	Vaginal						Instrumental						NA			Total					
	SVD			Breech			NA			Vacuum			Forceps			Total					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%			
2016	Red	1,021	1.08	10	3.04	1	3.23	1,032	1.09	65	1.28	11	2.52	76	1.38	914	2.36	33	1.36	2,055	1.45
	Yellow	9,469	10.03	34	10.33	4	12.90	9,507	10.04	568	11.15	45	10.32	613	11.10	6,132	15.85	243	10.00	16,499	11.67
	Green	74,622	79.07	214	65.05	19	61.29	74,855	79.02	4,055	79.63	346	79.36	4,397	79.60	28,898	74.67	1,921	79.09	110,090	77.85
	White II	1,232	1.31	0	0.00	2	6.45	1,234	1.30	16	0.31	0	0.00	16	0.29	152	0.39	19	0.78	1,421	1.00
	White I	2,769	2.93	4	1.22	1	3.23	2,774	2.93	82	1.61	4	0.92	86	1.56	579	1.50	62	2.55	3,501	2.48
	No Code	2,559	2.71	24	7.29	3	9.68	2,586	2.73	144	2.83	8	1.83	152	2.75	791	2.04	45	1.85	3,575	2.53
	NA	2,702	2.86	43	13.07	1	3.23	2,746	2.90	162	3.18	22	5.05	184	3.33	1,233	3.19	106	4.36	4,270	3.02
2017	Red	999	1.00	10	2.56	1	6.25	1,010	1.01	49	0.95	6	1.13	54	0.95	900	2.06	17	1.08	1,981	1.31
	Yellow	9,275	9.32	50	12.82	2	12.50	9,327	9.33	584	11.34	47	8.87	631	11.11	6,460	14.76	163	10.40	16,586	10.99
	Green	81,160	81.56	270	69.23	13	81.25	81,443	81.51	4,205	81.62	442	83.40	4,646	81.80	34,019	77.72	1,260	80.36	121,380	80.41
	White II	1,168	1.17	1	0.26	0	0.00	1,169	1.17	24	0.47	2	0.38	26	0.46	186	0.42	21	1.34	1,402	0.93
	White I	2,608	2.62	2	0.51	0	0.00	2,610	2.61	96	1.86	9	1.70	105	1.85	556	1.27	38	2.42	3,309	2.19
	No Code	2,583	2.60	29	7.44	0	0.00	2,612	2.61	114	2.21	16	3.02	130	2.29	922	2.11	40	2.55	3,704	2.45
	NA	1,721	1.73	28	7.18	0	0.00	1,749	1.75	80	1.55	8	1.51	88	1.55	730	1.67	29	1.85	2,598	1.72

**Table 2.6: Distribution of Deliveries by Ethnicity 2016-2017**

Ethnicity	Vaginal						Instrumental						CS			NA			Total		
	SVD			Breech			NA			Total			Vacuum			Forceps			Total		
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
2016	Malay	70,056	74.23	223	67.78	227	70.97	70,301	74.21	13,557	69.85	304	69,723	3,859	69,862	27,105	70,041	1,732	71,311	103,011	72.85
	Chinese	4,923	5.22	18	5.47	0	0.00	4,941	5.22	372	7.31	42	9,63	414	7.49	2,332	6.03	83	3.42	7,770	5.49
	Indian	3,267	3.46	16	4.86	1	3.23	3,284	3.47	267	5.24	23	5,28	289	5.23	2,279	5.89	83	3.42	5,936	4.20
	Kadazan/Dusun	2,618	2.77	6	1.82	1	3.23	2,625	2.77	141	2.77	4	0.92	145	2.62	1,531	3.96	120	4.94	4,423	3.13
	Murut	186	0.20	0	0.00	0	0.00	186	0.20	11	0.22	2	0.46	13	0.24	86	0.22	6	0.25	291	0.21
	Bajau	2,140	2.27	4	1.22	0	0.00	2,144	2.26	117	2.30	3	0.69	120	2.17	842	2.18	78	3.21	3,184	2.25
	Melanau	48	0.05	0	0.00	0	0.00	48	0.05	2	0.04	1	0.23	3	0.05	14	0.04	1	0.04	66	0.05
	Iban	1,360	1.44	6	1.82	0	0.00	1,366	1.44	54	1.06	5	1.15	59	1.07	414	1.07	21	0.86	1,860	1.32
	Bidayuh	1,075	1.14	2	0.61	0	0.00	1,077	1.14	52	1.02	13	2.98	65	1.18	440	1.14	18	0.74	1,600	1.13
	OA Peninsular Malaysia	643	0.68	0	0.00	2	6.45	645	0.68	20	0.39	4	0.92	24	0.43	254	0.66	15	0.62	938	0.66
2017	Or group in Sabah & Sarawak	2,185	2.32	6	1.82	1	3.23	2,192	2.31	108	2.12	0	0.00	108	1.96	1,077	2.78	93	3.83	3,472	2.46
	Others	344	0.36	0	0.00	0	0.00	344	0.36	21	0.41	2	0.46	23	0.42	197	0.51	16	0.66	580	0.41
	Foreigners	4,862	5.15	40	12.16	4	12.90	4,906	5.18	326	6.40	30	6.88	355	6.43	1,909	4.93	133	5.48	7,309	5.17
	NA	667	0.71	8	2.43	0	0.00	675	0.71	44	0.86	3	0.69	47	0.85	219	0.57	30	1.24	971	0.69
	Malay	74,669	75.03	278	71.28	12	75.00	74,959	75.02	3,763	73.04	403	76,044	1,164	73,313	1,346	71,611	1,112	70,921	111,592	73.92
	Chinese	5,068	5.09	21	5.38	2	12.50	5,091	5.10	384	7.45	29	5.47	413	7.27	2,459	5.62	79	5.04	8,043	5.33
	Indian	3,386	3.40	16	4.10	1	6.25	3,403	3.41	309	6.00	31	5.85	340	5.99	2,515	5.75	54	3.44	6,312	4.18
2017	Kadazan/Dusun	2,683	2.70	4	1.03	0	0.00	2,687	2.69	80	1.55	3	0.57	83	1.46	1,621	3.70	64	4.08	4,455	2.95
	Murut	220	0.22	1	0.26	0	0.00	221	0.22	3	0.06	0	0.00	3	0.05	116	0.27	9	0.57	349	0.23
	Bajau	2,144	2.15	9	2.31	0	0.00	2,153	2.15	70	1.36	5	0.94	75	1.32	887	2.03	44	2.81	3,161	2.09
	Melanau	42	0.04	0	0.00	0	0.00	42	0.04	3	0.06	1	0.19	4	0.07	18	0.04	0	0.00	64	0.04
	Iban	1,475	1.48	2	0.51	0	0.00	1,477	1.48	48	0.93	0	0.00	48	0.85	465	1.06	18	1.15	2,008	1.33
	Bidayuh	1,260	1.27	1	0.26	0	0.00	1,261	1.26	48	0.93	10	1.89	58	1.02	484	1.11	16	1.02	1,819	1.20
	OA Peninsular Malaysia	676	0.68	3	0.77	0	0.00	679	0.68	38	0.74	4	0.75	42	0.74	304	0.69	12	0.77	1,037	0.69
	Or group in Sabah & Sarawak	2,350	2.36	10	2.56	0	0.00	2,360	2.36	74	1.44	6	1.13	80	1.41	1,132	2.59	49	3.13	3,621	2.40
2018	Others	363	0.36	1	0.26	0	0.00	364	0.36	21	0.41	3	0.57	24	0.42	182	0.42	2	0.13	574	0.38
	Foreigners	4,635	4.66	37	9.49	1	6.25	4,673	4.68	286	5.55	32	6.04	318	5.60	1,995	4.56	102	6.51	7,091	4.70
	NA	543	0.55	7	1.79	0	0.00	550	0.55	25	0.49	3	0.57	28	0.49	249	0.57	7	0.45	834	0.55

**Table 2.7: Distribution of Deliveries by Parity 2016-2017**

Parity	Vaginal						Instrumental						Total						
	SVD		Breech		NA		Total		Vacuum		Forceps		Total		CS		NA		
n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>2016</b>	1	29,427	31.18	96	29.18	6	19.35	29,529	31.17	3,349	65.77	331	75.92	3,677	66.56	14,843	38.35	883	36.35
	2 - 5	60,616	64.23	211	64.13	19	61.29	60,846	64.23	1,659	32.58	103	23.62	1,761	31.88	22,404	57.89	1,423	58.58
	$\geq 6$	3,937	4.17	21	6.38	4	12.90	3,962	4.18	68	1.34	1	0.23	69	1.25	1,366	3.53	98	4.03
	NA	394	0.42	1	0.30	2	6.45	397	0.42	16	0.31	1	0.23	17	0.31	86	0.22	25	1.03
<b>2017</b>	1	29,965	30.11	120	30.77	3	18.75	30,088	30,111	3,424	66.46	344	64.91	3,767	66.32	16,247	37.12	563	35.91
	2 - 5	65,142	65.46	255	65.38	13	81.25	65,410	65.46	1,668	32.38	180	33.96	1,847	32.52	25,917	59.21	948	60.46
	$\geq 6$	4,323	4.34	15	3.85	0	0.00	4,338	4.34	56	1.09	6	1.13	62	1.09	1,581	3.61	54	3.44
	NA	84	0.08	0	0.00	0	0.00	84	0.08	4	0.08	0	0.00	4	0.07	28	0.06	3	0.19

**Table 2.8: Delivery in relation to Medical problems 2016**

Medical Problems	Vaginal						Instrumental						CS			NA			Total		
	n	%	n	%	n	Total	Vacuum	Forceps	Total	n	%	n	n	%	n	%	n	%	n	%	
Pre-existing	117	0.12	1	0.30	0	0.00	118	0.12	4	0.08	0	0.00	4	0.07	209	0.54	3	0.12	334	0.24	
Gestational	6,196	6.57	23	6.99	26,456	6,221	6.57	350	6,873	7.11	381	6.90	4,167	10.77	11,164	7.810,887	7.70				
NA	32	0.03	0	0.00	0	0.00	32	0.03	0	0.00	0	0.00	0	0.00	19	0.05	3	0.12	54	0.04	
<b>Total</b>	<b>6,345</b>	<b>6.72</b>	<b>24</b>	<b>7.29</b>	<b>26,456</b>	<b>6,371</b>	<b>6.73</b>	<b>354</b>	<b>6,953</b>	<b>7.11</b>	<b>385</b>	<b>6.97</b>	<b>4,395</b>	<b>11.36</b>	<b>1225</b>	<b>5.02</b>	<b>11,275</b>	<b>7.97</b>			
Pre-existing	277	0.29	3	0.91	0	0.00	280	0.30	17	0.33	1	0.23	18	0.33	411	1.06	13	0.54	722	0.51	
Gestational	1,059	1.12	11	3.34	2,645	1,072	1.13	72	1,413	1.41	3	0.69	75	1.36	1,338	3.46	40	1.65	2,525	1.79	
-PE	166	0.18	4	1.22	0	0.00	170	0.18	13	0.26	1	0.23	14	0.25	323	0.83	8	0.33	515	0.36	
-Eclampsia	8	0.01	2	0.61	0	0.00	10	0.01	1	0.02	0	0.00	1	0.02	45	0.12	2	0.08	58	0.04	
CH with superimposed PE	114	0.12	1	0.30	0	0.00	115	0.12	9	0.18	0	0.00	9	0.16	220	0.57	3	0.12	347	0.25	
Unclassified	10	0.01	1	0.30	0	0.00	11	0.01	2	0.04	0	0.00	2	0.04	16	0.04	0	0.00	29	0.02	
NA	25	0.03	0	0.00	0	0.00	25	0.03	1	0.02	0	0.00	1	0.02	27	0.07	2	0.08	55	0.04	
<b>Total</b>	<b>1,485</b>	<b>1.57</b>	<b>16</b>	<b>4.86</b>	<b>26,451</b>	<b>1,503</b>	<b>1.59</b>	<b>101</b>	<b>1.98</b>	<b>4</b>	<b>0.92</b>	<b>105</b>	<b>1.90</b>	<b>2,012</b>	<b>5.20</b>	<b>58</b>	<b>2.39</b>	<b>3,678</b>	<b>2.60</b>		
NYHA I	130	0.14	1	0.30	0	0.00	131	0.14	13	0.26	1	0.23	14	0.25	78	0.20	0	0.00	223	0.16	
NYHA II	32	0.03	0	0.00	0	0.00	32	0.03	1	0.02	1	0.23	2	0.04	21	0.05	0	0.00	55	0.04	
NYHA III	1	0.00	1	0.30	0	0.00	2	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	3	0.00	
NYHA IV	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	1	0.00	
NA	96	0.10	0	0.00	0	0.00	96	0.10	13	0.26	1	0.23	14	0.25	57	0.15	1	0.04	169	0.12	
<b>Total</b>	<b>259</b>	<b>0.27</b>	<b>2</b>	<b>0.61</b>	<b>0.00</b>	<b>261</b>	<b>0.28</b>	<b>27</b>	<b>0.53</b>	<b>3</b>	<b>0.69</b>	<b>30</b>	<b>0.54</b>	<b>158</b>	<b>0.41</b>	<b>1</b>	<b>0.04</b>	<b>451</b>	<b>0.32</b>		
TB	28	0.03	0	0.00	0	0.00	28	0.03	2	0.04	0	0.00	2	0.04	13	0.03	0	0.00	43	0.03	
Blood Disorder	1,123	1.19	6	1.82	0	0.00	1,129	1.19	56	1.10	3	0.69	59	1.07	401	1.04	14	0.58	1,603	1.13	
Collagen Disease	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00			
Asthma	1,083	1.15	2	0.61	0	0.00	1,085	1.15	60	1.18	4	0.92	64	1.16	504	1.30	18	0.74	1,672	1.18	
Renal Disease	21	0.02	1	0.30	0	0.00	22	0.02	165	3.24	13	2.98	0	0.00	20	0.05	1	0.04	43	0.03	

**Table 2.8a: Delivery in relation to Medical problems 2017**

Medical Problems	Vaginal						Instrumental						CS			NA			Total		
	SVD			Breech			NA			Total			Vacuum			Forceps			Total		
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
Pre-existing	125	0.13	3	0.77	0	0.00	128	0.13	7	0.14	2	0.38	9	0.16	378	0.86	4	0.26	519	0.34	
Gestational	7,866	7.90	24	6.15	1	6.25	7,891	17.90	405	7.86	41	7.74	446	7.85	5,561	12.70	1066	6.76	14,004	9.28	
NA	4	0.00	0	0.00	0	0.00	4	0.00	1	0.02	0	0.00	1	0.02	19	0.04	0	0.00	24	0.02	
<b>Total</b>	<b>7,995</b>	<b>8.03</b>	<b>27</b>	<b>6.92</b>	<b>1</b>	<b>6.25</b>	<b>8,023</b>	<b>8.03</b>	<b>413</b>	<b>8.02</b>	<b>43</b>	<b>8.11</b>	<b>456</b>	<b>8.03</b>	<b>5,958</b>	<b>13.61</b>	<b>110</b>	<b>7.02</b>	<b>14,547</b>	<b>9.64</b>	
Pre-existing	337	0.34	4	1.03	1	6.25	342	0.34	23	0.45	2	0.38	25	0.44	585	1.34	10	0.64	962	0.64	
Gestational	1,383	1.39	8	2.05	3	18.75	1,394	1.40	75	1.46	9	1.70	84	1.48	1,522	3.48	27	1.72	3,028	2.01	
-PE	215	0.22	3	0.77	0	0.00	218	0.22	13	0.25	0	0.00	13	0.23	391	0.89	6	0.38	629	0.42	
-Eclampsia	9	0.01	1	0.26	0	0.00	10	0.01	1	0.02	0	0.00	1	0.02	47	0.11	1	0.06	59	0.04	
CH with superimposed PE	149	0.15	4	1.03	0	0.00	153	0.15	7	0.14	0	0.00	7	0.12	346	0.79	7	0.45	513	0.34	
Unclassified	7	0.01	0	0.00	0	0.00	7	0.01	0	0.00	0	0.00	0	0.00	11	0.03	0	0.00	18	0.01	
NA	17	0.02	0	0.00	0	0.00	17	0.02	1	0.02	1	0.19	2	0.04	23	0.05	1	0.06	43	0.03	
<b>Total</b>	<b>1,893</b>	<b>1.90</b>	<b>16</b>	<b>4.10</b>	<b>4</b>	<b>25.00</b>	<b>1,913</b>	<b>1.91</b>	<b>106</b>	<b>2.06</b>	<b>12</b>	<b>2.26</b>	<b>118</b>	<b>2.08</b>	<b>2,487</b>	<b>5.68</b>	<b>45</b>	<b>2.87</b>	<b>4,564</b>	<b>3.02</b>	
2017	NYHA I	177	0.18	0	0.00	0	0.00	177	0.18	8	0.16	0	0.00	8	0.14	85	0.19	3	0.19	273	0.18
	NYHA II	12	0.01	0	0.00	0	0.00	12	0.01	2	0.04	0	0.00	2	0.04	24	0.05	0	0.00	38	0.03
	NYHA III	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.19	1	0.02	4	0.01	0	0.00	5	0.00
	NYHA IV	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	1	0.00
	NA	122	0.12	1	0.26	0	0.00	123	0.12	14	0.27	1	0.19	15	0.26	84	0.19	0	0.00	222	0.15
	<b>Total</b>	<b>311</b>	<b>0.31</b>	<b>1</b>	<b>0.26</b>	<b>0</b>	<b>0.00</b>	<b>312</b>	<b>0.31</b>	<b>24</b>	<b>0.47</b>	<b>2</b>	<b>0.38</b>	<b>26</b>	<b>0.46</b>	<b>198</b>	<b>0.45</b>	<b>3</b>	<b>0.19</b>	<b>539</b>	<b>0.36</b>
Others	TB	38	0.04	1	0.26	0	0.00	39	0.04	2	0.04	0	0.00	2	0.04	15	0.03	0	0.00	56	0.04
	Blood Disorder	1,646	1.65	5	1.28	0	0.00	1,651	1.65	71	1.38	10	1.89	81	1.43	508	1.16	14	0.89	2,254	1.49
	Collagen Disease	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2	0.00	0	0.00	2	0.00
	Asthma	1,227	1.23	7	1.79	1	6.25	1,235	1.24	58	1.13	7	1.32	65	1.14	817	1.87	16	1.02	2,134	1.41
	Renal Disease	21	0.02	0	0.00	0	0.00	21	0.02	3	0.06	0	0.00	3	0.05	32	0.07	0	0.00	56	0.04

**Table 2.9: Apgar score in relation to Mode of Delivery 2016-2017**

Apgar score	Vaginal				Instrumental				CS				NA				Total		
	SVD	Breech	NA	Total	Vacuum	Forceps	Total	%	n	%	n	%	n	%	n	%	n	%	
<b>At 1 min</b>																			
≤7	1,409	1.49	77	18.38	0	0.00	1,486	1.56	593	11.60	42	9.59	634	11.43	2,298	5.80	15	0.61	
>7	92,498	97.51	217	51.79	30	93.75	92.745	97.31	4,490	87.85	390	89.04	4,877	87.95	36,977	93.36	144	5.87	
<b>2016</b>	<b>NA</b>	<b>952</b>	<b>1.00</b>	<b>125</b>	<b>29.83</b>	<b>2</b>	<b>6.25</b>	<b>1,079</b>	<b>1.13</b>	<b>28</b>	<b>0.55</b>	<b>6</b>	<b>1.37</b>	<b>34</b>	<b>0.61</b>	<b>333</b>	<b>0.84</b>	<b>2,294</b>	<b>93.52</b>
<b>At 5 min</b>																			
≤7	354	0.37	26	6.21	1	(3.13	381	0.40	112	2.19	6	1.37	118	2.13	403	1.02	1	0.04	
>7	93,412	98.47	256	61.10	29	90.63	93.697	98.31	4,930	96.46	421	96.12	5,347	96.43	38,615	97.49	158	6.44	
<b>NA</b>	<b>1,093</b>	<b>1.15</b>	<b>137</b>	<b>32.70</b>	<b>2</b>	<b>6.25</b>	<b>1,232</b>	<b>1.29</b>	<b>69</b>	<b>1.35</b>	<b>11</b>	<b>2.51</b>	<b>80</b>	<b>1.44</b>	<b>590</b>	<b>1.49</b>	<b>2,294</b>	<b>93.52</b>	
<b>2017</b>	<b>At 1 min</b>																		
≤7	1,503	1.50	107	21.23	0	0.00	1,610	1.60	544	10.51	54	10.09	597	10.46	2,431	5.43	1	0.06	
>7	97,478	97.50	257	50.99	14	82.35	97.749	97.26	4,615	89.18	477	89.16	5,091	89.19	93.80	51	3.21	144,925	
<b>NA</b>	<b>997</b>	<b>1.00</b>	<b>140</b>	<b>27.78</b>	<b>3</b>	<b>17.65</b>	<b>1</b>	<b>140</b>	<b>1.13</b>	<b>16</b>	<b>0.31</b>	<b>4</b>	<b>0.75</b>	<b>20</b>	<b>0.35</b>	<b>346</b>	<b>0.77</b>	<b>1,539</b>	<b>96.73</b>
<b>At 5 min</b>																			
≤7	373	0.37	40	7.94	0	0.00	413	0.41	92	1.78	6	1.12	98	1.72	408	0.91	1	0.06	
>7	98,440	98.46	306	60.71	14	82.35	98.760	98.275	5,025	97.10	518	96.82	5,542	97.09	43,781	97.73	51	3.21	
<b>NA</b>	<b>1,165</b>	<b>1.17</b>	<b>158</b>	<b>31.35</b>	<b>3</b>	<b>17.65</b>	<b>1,326</b>	<b>1.32</b>	<b>58</b>	<b>1.12</b>	<b>11</b>	<b>2.06</b>	<b>68</b>	<b>1.19</b>	<b>607</b>	<b>1.36</b>	<b>1,539</b>	<b>96.73</b>	
																		<b>3,544</b>	
																		<b>2.32</b>	

**Table 2.10: Complications in relation to Mode of Delivery 2016-2017**

Complications	Vaginal			Instrumental			CS			NA			Total				
	SVD			Breech			Vacuum			Forceps			Total				
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
2016	Prematurity	6,466	6.8	217	51.79	2	6.25	6,685	7.01	156	3.05	42	9.59	198	3.57	5,229	13.20
	Fetal Distress	0	0.00	0	0.00	0	0.00	0	0.00	4,459	87.24	317	72.37	4,774	86.10	14,109	35.62
	Retained Placenta	31	0.03	2	0.48	0	0.00	33	0.03	6	0.12	0	0.00	6	0.11	13	0.03
	PPH	291	0.31	4	0.95	0	0.00	295	0.31	55	1.08	3	0.68	58	1.05	345	0.87
	<1500 mls	266	0.28	3	0.72	0	0.00	269	0.28	50	0.98	3	0.68	53	0.96	230	0.58
	≥1500 mls	23	0.02	1	0.24	0	0.00	24	0.03	5	0.10	0	0.00	5	0.09	113	0.29
	Cord Prolapse	9	0.01	1	0.24	0	0.00	10	0.01	1	0.02	0	0.00	1	0.02	40	0.10
	IUGR	283	0.30	2	0.48	0	0.00	285	0.30	11	0.22	3	0.68	14	0.25	690	1.74
	PPROM	126	0.13	6	1.43	0	0.00	132	0.14	1	0.02	0	0.00	1	0.02	70	0.18
	Amniotic Fluid Embolism	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1	0.00
	DVT	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	2	0.00
2017	Uterine Inversion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	6	0.00
	Uterine Rupture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00
	Uterine Atony	210	0.22	3	0.72	0	0.00	213	0.22	36	0.70	3	0.68	39	0.70	320	0.81
	Thromboembolism	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Others	1,759	1.85	24	5.7	0	0.00	1,783	1.87	115	2.25	8	1.83	122	2.20	1,311	3.31
	Prematurity	7,779	7.78	257	50.99	5	29.41	8,041	8.00	255	4.93	53	9.91	308	5.40	6,147	13.72
	Fetal Distress	0	0.00	0	0.00	0	0.00	0	0.00	4,485	86.67	386	72.15	4,870	85.32	15,602	34.83
	Retained Placenta	45	0.05	1	0.20	0	0.00	46	0.05	4	0.08	0	0.00	4	0.07	22	0.05
	PPH	1,031	1.03	8	1.59	1	0.40	1,03	1.03	167	3.23	25	4.67	192	3.36	1,290	2.88
	<1500 mls	985	0.99	6	1.19	1	0.40	992	0.99	162	3.13	25	4.67	187	3.28	1,153	2.57
	≥1500 mls	42	0.04	1	0.20	0	0.00	43	0.04	5	0.10	0	0.00	5	0.09	135	0.30
	Cord Prolapse	3	0.00	1	0.20	0	0.00	4	0.00	1	0.02	0	0.00	1	0.02	46	0.10
	IUGR	312	0.31	8	1.59	0	0.00	320	0.32	10	0.19	2	0.37	12	0.21	770	1.72
	PPROM	159	0.16	3	0.60	0	0.00	162	0.16	3	0.06	2	0.37	5	0.09	73	0.16
	Amniotic Fluid Embolism	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00
	DVT	3	0.00	0	0.00	0	0.00	3	0.00	1	0.02	0	0.00	1	0.02	0	0.00
	Uterine Inversion	2	0.00	0	0.00	0	0.00	2	0.00	0	0.00	1	0.19	1	0.02	8	0.02
	Uterine Rupture	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	9	0.02
	Uterine Atony	658	0.66	7	1.39	1	0.58	666	0.66	128	2.47	19	3.55	147	2.58	1,202	2.68
	Thromboembolism	2	0.00	0	0.00	0	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Others	2,539	2.54	23	4.56	0	0.00	2,562	2.55	139	2.69	18	3.36	157	2.75	2,853	6.37

# **CAESAREAN SECTION**

**Table 3.1: LSCS rate by Hospitals 2016-2017**

SDP		Total Delivery	Total LSCS		LSCS Rates
		Elective	Emergency		
		n	n	%	
2016	HSA, Johor	12,985	509	2,826	25.68
	HSB, Kedah	11,948	837	1,970	23.49
	HRPZ II, Kelantan	11,433	497	1,802	20.11
	Hospital Melaka	11,139	927	2,250	28.52
	HTJ, N. Sembilan	10,030	728	2,068	27.88
	HTAA, Pahang	8,034	441	1,528	24.51
	HRPB, Perak	8,227	865	1,870	33.24
	HTF, Perlis	4,798	198	1,130	27.68
	HPP. Pulau Pinang	4,127	332	1,136	35.57
	HWKK Likas, Sabah	14,300	768	3,588	30.46
	HUS, Sarawak	9,397	424	1,814	23.82
	HTAR, Selangor	10,700	709	2,690	31.77
	HSNZ, Terengganu	10,885	629	2,514	28.87
	HKL	9,981	619	2,386	30.11
	H. Segamat	3,427	78	566	18.79
Total		141,411	8,561	30,138	27.37
2017	HSA, Johor	13,772	635	2,905	25.70
	HSB, Kedah	11,910	812	2,037	23.92
	HRPZ II, Kelantan	12,806	627	2,250	22.47
	Hospital Melaka	11,332	993	2,563	31.38
	HTJ, N. Sembilan	10,742	794	2,493	30.60
	HTAA, Pahang	10,069	558	2,238	27.77
	HRPB, Perak	9,031	799	2,106	32.17
	HTF, Perlis	5,070	233	1,234	28.93
	HPP. Pulau Pinang	4,569	392	1,015	30.79
	HWKK Likas, Sabah	14,246	1,068	3,480	31.92
	HUS, Sarawak	10,845	637	1,981	24.14
	HTAR, Selangor	10,297	660	2,987	35.42
	HSNZ, Terengganu	11,602	694	2,757	29.74
	HKL	11,084	766	3,255	36.28
	H. Segamat	3,585	122	682	22.43
Total		150,960	9,790	33,983	29.00

**Table 3.2: LSCS rate by Ethnicity 2016-2017**

Ethnicity		Total Delivery	Total LSCS		LSCS Rates
			Elective	Emergency	
		n	n	%	
2016	Malay	103,011	6,133	20,972	26.31
	Chinese	7,770	698	1,634	30.01
	Indian	5,936	508	1,771	38.39
	Kadazan/Dusun	4,423	284	1,247	34.61
	Murut	291	18	68	29.55
	Bajau	3,184	144	698	26.44
	Melanau	66	5	9	21.21
	Iban	1,860	67	347	22.26
	Bidayuh	1,600	73	367	27.50
	OA Peninsular Malaysia	938	48	206	27.08
	OI group in Sabah & Sarawak	3,472	179	898	31.02
	Others	580	41	156	33.97
	Foreigners	7,309	321	1,588	26.12
	NA	971	42	177	22.55
2017	Malay	111,592	6,914	24,432	28.09
	Chinese	8,043	772	1,687	30.57
	Indian	6,312	497	2,018	39.84
	Kadazan/Dusun	4,455	397	1,224	36.39
	Murut	349	26	90	33.24
	Bajau	3,161	177	710	28.06
	Melanau	64	4	14	28.13
	Iban	2,008	105	360	23.16
	Bidayuh	1,819	106	378	26.61
	OA Peninsular Malaysia	1,037	48	256	29.32
	OI group in Sabah & Sarawak	3,621	285	847	31.26
	Others	574	44	138	31.71
	Foreigners	7,091	367	1,628	28.13
	NA	834	48	201	29.86

**Table 3.3: LSCS rate by Maternal Age 2016-2017**

Age		Total Delivery	Total LSCS		LSCS Rates
			Elective	Emergency	
		n	n	%	
2016	10-14	39	0	3	7.69
	15-19	4,375	52	647	15.98
	20-24	22,251	480	4,005	20.16
	25-29	47,257	1,913	9,975	25.16
	30-34	41,442	3,176	9,054	29.51
	35-39	20,217	2,261	4,841	35.13
	40-44	5,389	633	1,485	39.30
	45-49	422	41	124	39.10
	50-54	14	2	4	42.86
	55-59	5	3	0	60.00

Age		Total Delivery	Total LSCS		LSCS Rates
			Elective	Emergency	
		n	n	%	
2017	10-14	47	0	8	17.02
	15-19	4,111	57	607	16.15
	20-24	22,973	528	4,435	21.60
	25-29	49,618	2,052	11,122	26.55
	30-34	44,714	3,652	10,267	31.13
	35-39	23,083	2,742	5,720	36.66
	40-44	5,963	715	1,670	40.00
	45-49	442	44	149	43.67
	50-54	8	0	5	62.50
	55-59	1	0	0	0.00

**Table 3.4: LSCS rate by Parity 2016-2017**

Parity		Total Delivery	Total LSCS		LSCS Rates
			Elective	Emergency	
		n	n	%	
2016	1	48,944	1,569	13,274	30.33
	2 - 5	86,446	6,677	15,727	25.92
	≥6	5,496	293	1,073	24.85
	NA	525	22	64	16.38
Parity		Total Delivery	Total LSCS		LSCS Rates
			Elective	Emergency	
		n	n	%	
2017	1	50,671	1,684	14,563	32.06
	2 - 5	94,132	7,736	18,181	27.53
	≥6	6,038	368	1,213	26.18
	NA	119	2	26	23.53

**Table 3.5: Caesarean by Risk level at booking 2016-2017**

Risk level at booking		Caesarean										Total	
		LSCS		Classical		Hysterotomy		Hysterectomy		Others			
		n	%	n	%	n	%	n	%	n	%	n	%
2016	Red	903	2.35	3	4.41	2	6.25	6	4.23	2	3.64	914	2.36
	Yellow	6,094	15.83	17	25.0	3	9.38	33	23.24	9	16.36	6,132	15.85
	Green	28,753	74.71	41	60.29	24	75.00	86	60.56	38	69.09	28,898	74.67
	White II	151	0.39	1	1.47	0	0.00	1	0.70	0	0.00	152	0.39
	White I	578	1.50	0	0.00	0	0.00	4	2.82	0	0.00	579	1.50
	No Code	784	2.04	5	7.35	0	0.00	5	3.52	2	3.64	791	2.04
	NA	1,225	3.18	1	1.47	3	9.38	7	4.93	4	7.27	1,233	3.19
<hr/>													
2017	Red	890	2.04	3	4.35	5	13.51	12	9.30	1	1.79	900	2.06
	Yellow	6,428	14.75	11	15.94	7	18.92	19	14.73	9	16.07	6,460	14.76
	Green	33,870	77.74	53	76.81	21	56.76	86	66.67	42	75.00	34,019	77.72
	White II	185	0.42	0	0.00	1	2.70	1	0.78	0	0.00	186	0.42
	White I	555	1.27	0	0.00	1	2.70	3	2.33	0	0.00	556	1.27
	No Code	919	2.11	2	2.90	1	2.70	4	3.10	0	0.00	922	2.11
	NA	723	1.66	0	0.00	1	2.70	4	3.10	4	7.14	730	1.67

**Table 3.6: LSCS rate by distribution of Medical problems 2016-2017**

Medical Disorders			Total Delivery	Total CS		CS Rates
			n	Elective	Emergency	
			%			
2016	Diabetes	Pre-existing	334	54	155	62.57
		Gestational	10,887	1,066	3,101	38.28
		NA	54	3	16	35.19
		<b>Total</b>	<b>11,275</b>	<b>1,123</b>	<b>3,272</b>	<b>38.98</b>
	Hypertension	Pre-existing	722	83	328	56.93
		Gestational	2,525	189	1,149	52.99
		-PE	515	19	304	62.72
		-Eclampsia	58	0	45	77.59
		CH with superimposed PE	347	27	193	63.40
		Unclassified	29	3	13	55.17
		NA	55	5	22	49.09
		<b>Total</b>	<b>3,678</b>	<b>307</b>	<b>1,705</b>	<b>54.70</b>
	Heart Disease	NYHA I	223	32	46	34.98
		NYHA II	55	10	11	38.18
		NYHA III	3	0	1	33.33
		NYHA IV	1	0	1	100.00
		NA	169	21	36	33.73
		<b>Total</b>	<b>451</b>	<b>63</b>	<b>95</b>	<b>35.03</b>
	Others	TB	43	2	11	30.23
		Blood Disorder	1,603	87	314	25.02
		Collagen Disease	1	0	0	0.00
		Asthma	1,672	118	386	30.14
		Renal Disease	43	5	15	46.51
2017	Diabetes	Pre-existing	519	107	271	72.83
		Gestational	14,004	1,334	4,227	39.71
		NA	24	6	13	79.17
		<b>Total</b>	<b>14,547</b>	<b>1,447</b>	<b>4,511</b>	<b>40.96</b>
	Hypertension	Pre-existing	962	130	455	60.81
		Gestational	3,028	184	1,338	50.26
		-PE	629	19	372	62.16
		-Eclampsia	59	3	44	79.66
		CH with superimposed PE	513	63	283	67.45
		Unclassified	18	2	9	61.11
		NA	43	5	18	53.49
		<b>Total</b>	<b>4,564</b>	<b>384</b>	<b>2,103</b>	<b>54.49</b>
	Heart Disease	NYHA I	273	25	60	31.14
		NYHA II	38	10	14	63.16
		NYHA III	5	3	1	80.00
		NYHA IV	1	0	1	100.00
		NA	222	35	49	37.84
		<b>Total</b>	<b>539</b>	<b>73</b>	<b>125</b>	<b>36.73</b>
	Others	TB	56	3	12	26.79
		Blood Disorder	2,254	93	415	22.54
		Collagen Disease	2	1	1	100.00
		Asthma	2,134	167	650	38.28
		Renal Disease	56	12	20	57.14

**Table 3.7: Caesarean in relation to Accoucheur 2016-2017**

Accoucheur		Caesarean										Total	
		LSCS		Classical		Hysterotomy		Hysterectomy		Others			
		n	%	n	%	n	%	n	%	n	%	n	%
2016	Specialist	2,017	5.24	29	42.65	16	50.00	65	45.77	4	7.27	2,074	5.36
	MO>6 months O&G experience	34,122	88.66	32	47.06	16	50.00	70	49.30	50	90.91	34,251	88.51
	MO<6 months O&G experience	106	0.28	0	0.00	0	0.00	0	0.00	0	0.00	107	0.28
	MO no O&G experience	2,243	5.83	7	10.29	0	0.00	7	4.93	1	1.82	2,267	5.86
2017	Specialist	2,418	5.55	34	49.28	7	18.92	50	38.76	2	3.57	2,466	5.63
	MO>6 months O&G experience	39,154	89.8	32	46.38	30	81.08	75	58.14	44	78.57	39,291	89.76
	MO<6 months O&G experience	270	0.62	0	0.00	0	0.00	0	0.00	9	16.07	280	0.64
	MO no O&G experience	1,728	3.97	3	4.35	0	0.00	4	3.10	1	1.79	1,736	3.97

**Table 3.8: Caesarean in relation to Apgar Score 2016-2017**

Apgar score		Caesarean										Total	
		LSCS		Classical		Hysterotomy		Hysterectomy		Others			
2016	At 1 min	n	%	n	%	n	%	n	%	n	%	n	%
	≤ 7	2,269	5.76	12	17.39	11	34.38	27	18.75	2	3.64	2,298	5.80
	> 7	36,805	93.43	54	78.26	15	46.88	105	72.92	50	90.91	36,977	93.36
	NA	320	0.81	3	4.35	6	18.75	12	8.33	3	5.45	333	0.84
	At 5 min												
	≤ 7	397	1.01	2	2.90	4	12.50	6	4.17	0	0.00	403	1.02
	> 7	38,424	97.54	64	92.75	18	56.25	118	81.94	52	94.55	38,615	97.49
	NA	573	1.45	3	4.35	10	31.25	20	13.89	3	5.45	590	1.49
2017	At 1 min												
	≤ 7	2,390	5.36	18	26.09	14	36.84	27	20.30	8	14.29	2,431	5.43
	> 7	41,865	93.89	48	69.57	18	47.37	98	73.68	47	83.93	42,019	93.80
	NA	336	0.75	3	4.35	6	15.79	8	6.02	1	1.79	346	0.77
	At 5 min												
	≤ 7	398	0.89	2	2.90	3	7.89	7	5.26	5	8.93	408	0.91
	> 7	43,599	97.78	63	91.30	27	71.05	115	86.47	50	89.29	43,781	97.73
	NA	594	1.33	4	5.80	8	21.05	11	8.27	1	1.79	607	1.36

**Table 3.9: LSCS rate by Complications of Delivery 2016-2017**

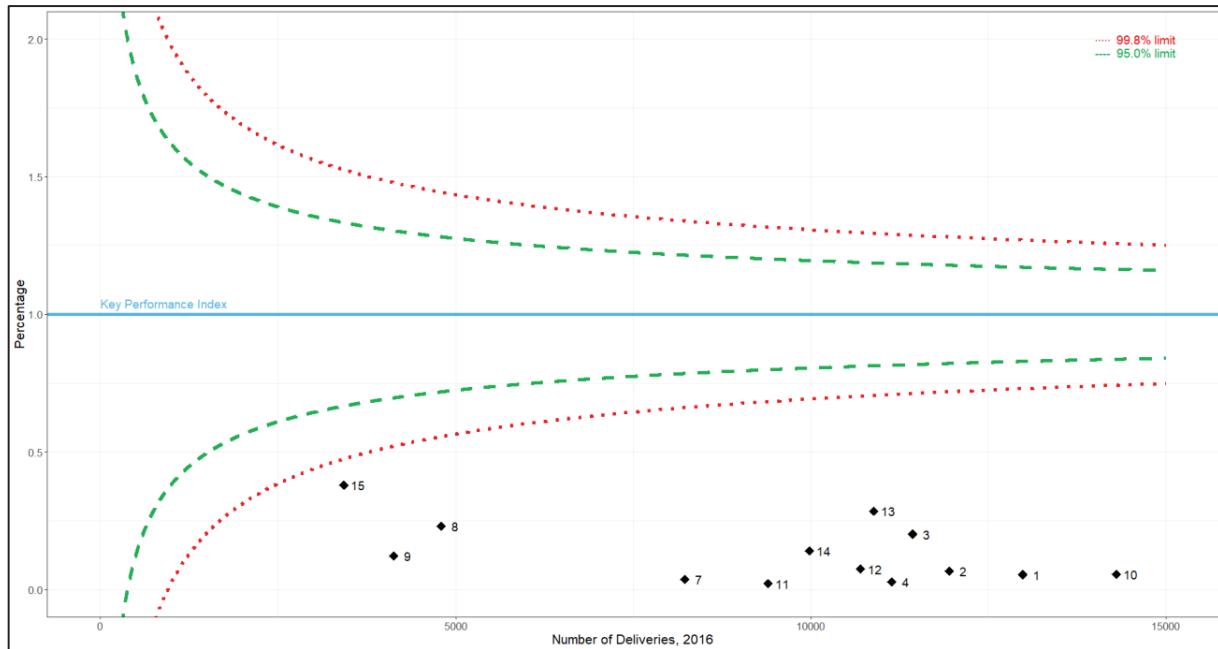
Complications	Total Delivery	Total CS		CS Rates	
		Elective	Emergency		
	n	n	n		
2016	Fetal Distress	18,883	289	13,820	74.72
	Secondary Arrest	620	27	593	100.00
	Prolonged Second Stage	369	3	366	100.00
	CPD	47	12	35	100.00
	Poor Progress	2,589	25	2,564	100.00
	Abruption Placenta	305	5	274	91.48
	Placenta Previa Major and Minor	1,407	603	804	100.00
	Maternal Request	2,297	1,265	1,032	100.00
	Failed Induction	2,062	44	2,018	100.00
	Cord Prolapse / Presentation	231	3	214	93.94
	Failed Instrumentation	89	1	88	100.00
	Severe Pregnancy Induced Hypertension	269	37	232	100.00
	Impending Eclampsia	761	39	722	100.00
	Eclampsia	188	4	150	81.91
	Macrosomia	1,790	547	1,243	100.00
	Retroviral Disease	44	26	18	100.00
	Chorioamnionitis	206	3	203	100.00
	Refused Trial of Scar	671	360	311	100.00
	Fetal Anomaly	65	19	35	83.08
2017	Polyhydramnios	55	23	32	100.00
	Oligohydramnios	351	98	253	100.00
	Preterm Labour	11,978	643	4,416	42.24
	Heart Disease	494	81	112	39.07
2017	Fetal Distress	20,472	250	15,352	76.21
	Secondary Arrest	512	6	506	100.00
	Prolonged Second Stage	454	3	451	100.00
	CPD	40	10	30	100.00
	Poor Progress	3,264	32	3,232	100.00
	Abruption Placenta	300	3	257	86.67
	Placenta Previa Major and Minor	1,531	680	851	100.00
	Maternal Request	2,818	1,490	1,327	99.96
	Failed Induction	2,179	53	2,126	100.00
	Cord Prolapse / Presentation	219	12	202	97.72
	Failed Instrumentation	63	1	62	100.00
	Severe Pregnancy Induced Hypertension	244	36	208	100.00
	Impending Eclampsia	945	51	894	100.00
	Eclampsia	278	6	224	82.73
	Macrosomia	2,071	655	1,416	100.00
	Retroviral Disease	50	26	24	100.00
	Chorioamnionitis	241	1	240	100.00
	Refused Trial of Scar	726	388	338	100.00
	Fetal Anomaly	71	28	28	78.87
	Polyhydramnios	50	23	27	100.00
	Oligohydramnios	482	114	368	100.00
	Preterm Labour	13,786	943	4,877	42.22
	Heart Disease	569	82	140	39.02

# **POSTPARTUM HAEMORRHAGE**

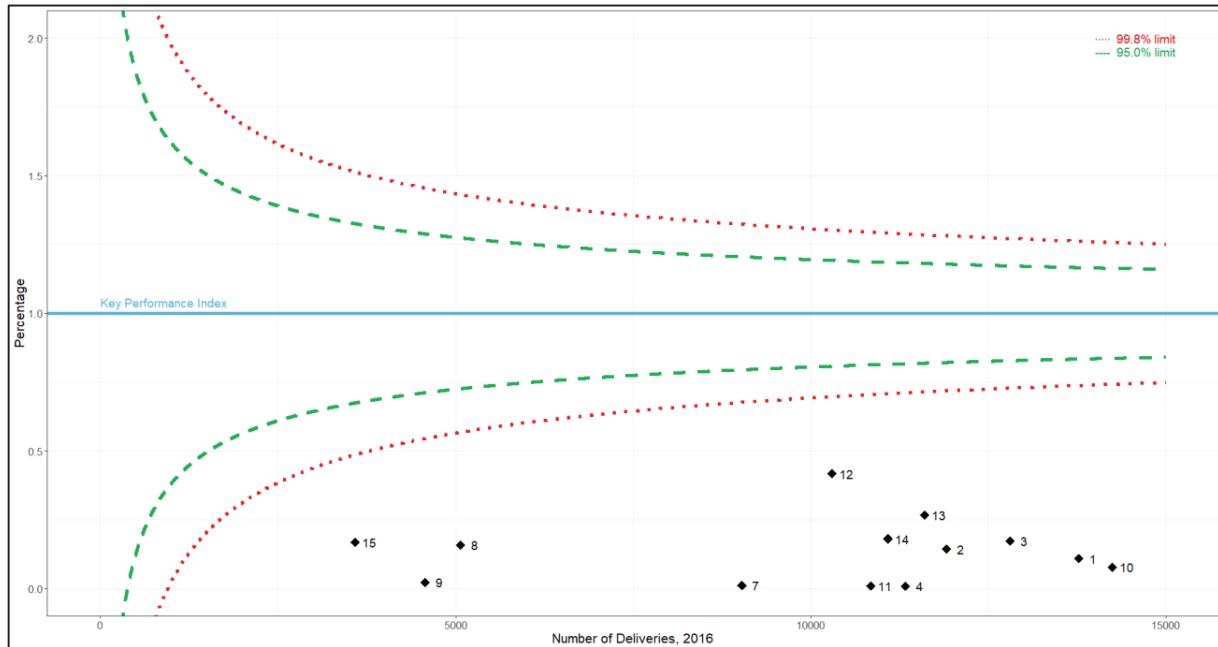
**Table 4.1: Distribution of Primary PPH by Hospitals 2016-2017**

SDP		Total Delivery		Primary PPH					
				<1500 mls		≥1500 mls		NA	
		n	%	n	%	n	%	n	%
2016	HSA, Johor	12,985	9.18	84	0.65	7	0.05	1	0.01
	HSB, Kedah	11,948	8.4	18	0.15	8	0.07	0	0.00
	HRPZ II, Kelantan	11,433	8.08	36	0.31	23	0.20	0	0.00
	Hospital Melaka	11,139	7.88	2	0.02	3	0.03	1	0.01
	HTJ, N. Sembilan	10,030	7.09	1	0.01	0	0.00	0	0.00
	HTAA, Pahang	8,034	5.68	4	0.05	0	0.00	0	0.00
	HRPB, Perak	8,227	5.82	4	0.05	3	0.04	2	0.02
	HTF, Perlis	4,798	3.39	14	0.29	11	0.23	0	0.00
	HPP. Pulau Pinang	4,127	2.92	5	0.12	5	0.12	0	0.00
	HWKK Likas, Sabah	14,300	10.11	37	0.26	8	0.06	0	0.00
	HUS, Sarawak	9,397	6.65	10	0.11	2	0.02	0	0.00
	HTAR, Selangor	10,700	7.57	1	0.01	8	0.07	0	0.00
	HSNZ, Terengganu	10,885	7.70	141	1.30	31	0.28	0	0.00
	HKL	9,981	7.06	56	0.56	14	0.14	0	0.00
	H. Segamat	3,427	2.42	127	0.71	13	0.38	0	0.00
	Total	141,411	100	540	0.38	136	0.10	4	0.00
2017	HSA, Johor	13,772	9.12	128	0.93	15	0.11	0	0.00
	HSB, Kedah	11,910	7.89	29	0.24	17	0.14	0	0.00
	HRPZ II, Kelantan	12,806	8.48	51	0.40	22	0.17	2	0.02
	Hospital Melaka	11,332	7.51	6	0.05	1	0.01	1	0.01
	HTJ, N. Sembilan	10,742	7.12	1	0.01	0	0.00	0	0.00
	HTAA, Pahang	10,069	6.67	6	0.06	0	0.00	0	0.00
	HRPB, Perak	9,031	5.9	9	0.10	1	0.01	0	0.00
	HTF, Perlis	5,070	3.36	41	0.81	8	0.16	1	0.02
	HPP. Pulau Pinang	4,569	3.03	0	0.00	1	0.02	0	0.00
	HWKK Likas, Sabah	14,246	9.44	33	0.23	11	0.08	0	0.00
	HUS, Sarawak	10,845	7.18	14	0.13	1	0.01	0	0.00
	HTAR, Selangor	10,297	6.82	1,599	15.53	43	0.42	0	0.00
	HSNZ, Terengganu	11,602	7.69	189	1.63	31	0.27	0	0.00
	HKL	11,084	7.34	36	0.32	20	0.18	2	0.02
	H. Segamat	3,585	2.37	162	4.52	6	0.17	1	0.03
	Total	150,960	100	2,304	1.53	177	0.12	7	0.00

**Fig 4. 1 Funnel plot percentage of Primary Postpartum haemorrhage, 2016**



**Fig 4. 2 Funnel plot percentage of Primary Postpartum haemorrhage, 2017**

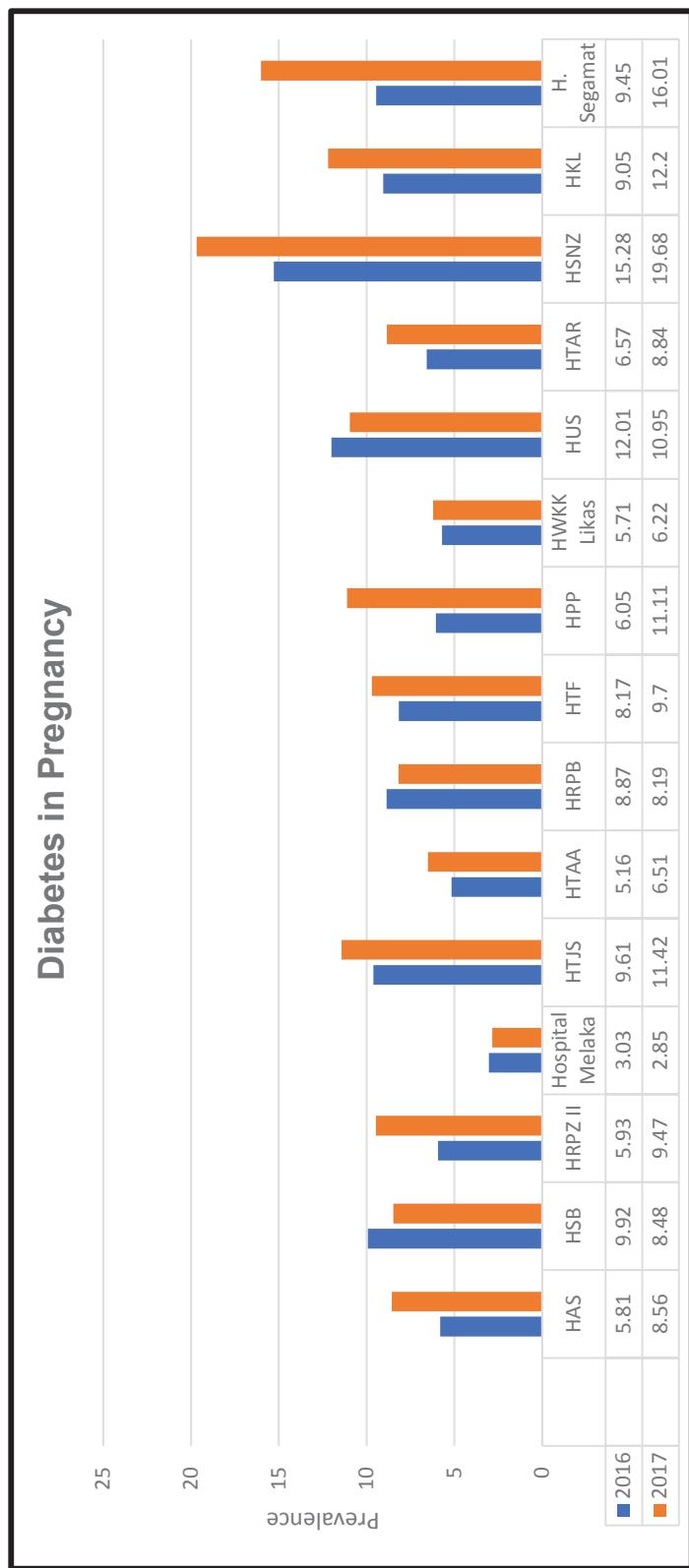


# **DIABETES IN PREGNANCY**

**Table 5.1: Incidence of Diabetes in pregnancy by Hospitals 2016-2017**

SDP		Total Delivery		Diabetes Mellitus					
				Pre-existing		Gestational		NA	
	n	%	n	%	n	%	n	%	
2016	HSA, Johor	12,985	9.18	15	0.12	749	5.77	6	0.05
	HSB, Kedah	11,948	8.45	31	0.26	1,146	9.59	9	0.08
	HRPZ II, Kelantan	11,433	8.08	46	0.40	633	5.54	0	0.00
	Hospital Melaka	11,139	7.88	10	0.09	327	2.94	1	0.01
	HTJ, N. Sembilan	10,030	7.09	12	0.12	952	9.49	0	0.00
	HTAA, Pahang	8,034	5.68	10	0.12	415	5.17	0	0.00
	HRPB, Perak	8,227	5.82	21	0.26	681	8.28	28	0.34
	HTF, Perlis	4,798	3.39	13	0.27	375	7.82	4	0.08
	HPP. Pulau Pinang	4,127	2.92	9	0.22	241	5.84	0	0.00
	HWKK Likas, Sabah	14,300	10.11	36	0.25	781	5.46	0	0.00
	HUS, Sarawak	9,397	6.65	10	0.11	1,119	11.91	0	0.00
	HTAR, Selangor	10,700	7.57	14	0.13	687	6.42	2	0.02
	HSNZ, Terengganu	10,885	7.70	66	0.61	1,596	14.66	2	0.02
	HKL	9,981	7.06	32	0.32	871	8.73	1	0.01
	H. Segamat	3,427	2.42	9	0.26	314	9.16	1	0.03
Total		141,411	100.00	334	0.24	10,887	7.70	54	0.04
2017	HSA, Johor	13,772	9.12	29	0.21	1,151	8.36	0	0.00
	HSB, Kedah	11,910	7.89	30	0.25	969	8.14	11	0.09
	HRPZ II, Kelantan	12,806	8.48	41	0.32	1,171	9.14	1	0.01
	Hospital Melaka	11,332	7.51	13	0.11	311	2.74	0	0.00
	HTJ, N. Sembilan	10,742	7.12	32	0.30	1,195	11.12	0	0.00
	HTAA, Pahang	10,069	6.67	8	0.08	647	6.43	1	0.01
	HRPB, Perak	9,031	5.98	27	0.30	710	7.86	3	0.03
	HTF, Perlis	5,070	3.36	27	0.53	464	9.15	1	0.02
	HPP. Pulau Pinang	4,569	3.03	27	0.59	481	10.53	0	0.00
	HWKK Likas, Sabah	14,246	9.44	28	0.20	857	6.02	2	0.01
	HUS, Sarawak	10,845	7.18	11	0.10	1,175	10.83	2	0.02
	HTAR, Selangor	10,297	6.82	47	0.46	864	8.39	0	0.00
	HSNZ, Terengganu	11,602	7.69	91	0.78	2,192	18.89	1	0.01
	HKL	11,084	7.34	90	0.81	1,262	11.39	1	0.01
	H. Segamat	3,585	2.37	18	0.50	555	15.48	1	0.03
Total		150,960	100.00	519	0.34	14,004	9.28	24	0.02

**Fig 5. 1 Diabetes in Pregnancy by Participating hospitals 2016-2017**



**Table 5.2: Diabetes in Pregnancy by Maternal Age 2016-2017**

Age	Total Delivery		Diabetes Mellitus						Diabetes in pregnancy		
			Pre-existing		Gestational		NA				
	n	%	n	%	n	%	n	%	n	%	
2016	10-14	39	0.03	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,375	3.09	2	0.05	54	1.23	0	0.00	56	1.24
	20-24	22,251	15.73	15	0.07	688	3.09	5	0.02	708	3.18
	25-29	47,257	33.42	58	0.12	2,847	6.02	14	0.03	2919	6.17
	30-34	41,442	29.31	100	0.24	3,724	8.99	13	0.03	3837	9.25
	35-39	20,217	14.30	119	0.59	2,644	13.08	15	0.07	2778	13.74
	40-44	5,389	3.81	35	0.65	855	15.87	7	0.13	897	16.64
	45-49	422	0.30	5	1.18	75	17.77	0	0.00	80	18.95
	50-54	14	0.01	0	0.00	0	0.00	0	0.00	0	0.00
	≥55	5	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2017	10-14	47	0.03	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,111	2.72	1	0.02	76	1.85	0	0.00	77	1.87
	20-24	22,973	15.22	27	0.12	911	3.97	1	0.00	939	4.08
	25-29	49,618	32.87	77	0.16	3,651	7.36	5	0.01	3733	7.52
	30-34	44,714	29.62	172	0.38	4,667	10.44	6	0.01	4845	10.83
	35-39	23,083	15.29	161	0.70	3,475	15.05	10	0.04	3646	15.79
	40-44	5,963	3.95	73	1.22	1,120	18.78	2	0.03	1195	20.04
	45-49	442	0.29	8	1.81	102	23.08	0	0.00	110	24.88
	50-54	8	(0.01)	0	0.00	2	25.00	0	0.00	2	25.00
	≥55	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00

**Table 5.3: Diabetes in Pregnancy by Ethnicity 2016-2017**

Ethnicity		Total Delivery		Diabetes Mellitus							
				Pre-existing		Gestational		NA		Diabetes in pregnancy	
		n	%	n	%	n	%	n	%	n	%
2016	Malay	103,011	72.85	256	0.25	8,253	8.01	47	0.05	8556	8.30
	Chinese	7,770	5.49	12	0.15	585	7.53	3	0.04	600	7.72
	Indian	5,936	4.20	18	0.30	586	9.87	3	0.05	607	10.22
	Kadazan/Dusun	4,423	3.13	14	0.32	276	6.24	0	0.00	290	6.55
	Murut	291	0.21	0	0.00	19	6.53	0	0.00	19	6.53
	Bajau	3,184	2.25	10	0.31	159	4.99	0	0.00	169	5.30
	Melanau	66	0.05	0	0.00	11	16.67	0	0.00	11	16.67
	Iban	1,860	1.32	3	0.16	189	10.16	0	0.00	192	10.32
	Bidayuh	1,600	1.13	2	0.13	160	10.00	0	0.00	162	10.12
	OA Peninsular Malaysia	938	0.66	1	0.11	47	5.01	1	0.11	49	5.22
	OI group in Sabah & Sarawak	3,472	2.46	6	0.17	216	6.22	0	0.00	222	6.39
	Others	580	0.41	4	0.69	35	6.03	0	0.00	39	6.72
	Foreigners	7,309	5.17	7	0.10	310	4.24	0	0.00	317	4.33
	NA	971	0.69	1	0.10	41	4.22	0	0.00	42	4.32
2017	Malay	111,592	73.92	410	0.37	10,876	9.75	18	0.02	11304	10.12
	Chinese	8,043	5.33	17	0.21	718	8.93	1	0.01	736	9.15
	Indian	6,312	4.18	50	0.79	759	12.02	0	0.00	809	12.81
	Kadazan/Dusun	4,455	2.95	12	0.27	305	6.85	0	0.00	317	7.11
	Murut	349	0.23	2	0.57	25	7.16	0	0.00	27	7.73
	Bajau	3,161	2.09	4	0.13	170	5.38	0	0.00	174	5.50
	Melanau	64	0.04	0	0.00	5	7.81	0	0.00	5	7.81
	Iban	2,008	1.33	3	0.15	188	9.36	1	0.05	191	9.51
	Bidayuh	1,819	1.20	0	0.00	187	10.28	0	0.00	187	10.28
	OA Peninsular Malaysia	1,037	0.69	0	0.00	53	5.11	0	0.00	53	5.11
	OI group in Sabah & Sarawak	3,621	2.40	7	0.19	239	6.60	1	0.03	247	6.82
	Others	574	0.38	2	0.35	33	5.75	0	0.00	35	6.09
	Foreigners	7,091	4.70	9	0.13	375	5.29	3	0.04	387	5.45
	NA	834	0.55	3	0.36	71	8.51	0	0.00	74	8.87

**Table 5.4: Diabetes in Pregnancy by Parity 2016-2017**

Parity		Total Delivery		Diabetes Mellitus							
				Pre-existing		Gestational		NA		Diabetes in pregnancy	
	n	%	n	%	n	%	n	%	n	%	%
2016	1	48,944	34.61	86	0.18	3,041	6.21	13	0.03	3140	6.41
	2 - 5	86,446	61.13	226	0.26	7,168	8.29	32	0.04	7426	8.59
	≥6	5,496	3.89	20	0.36	648	11.79	7	0.13	675	12.28
	NA	525	0.3	2	0.38	30	5.71	2	0.38	34	6.47
2017	1	50,671	33.57	142	0.28	3,860	7.62	2	0.00	4004	7.90
	2 - 5	94,132	62.36	345	0.37	9,278	9.86	22	0.02	9645	10.24
	≥6	6,038	4.00	32	0.53	862	14.28	0	0.00	894	14.80
	NA	119	0.08	0	0.00	4	3.36	0	0.00	4	3.36

**Table 5.5: Diabetes in Pregnancy by Mode of Delivery 2016-2017**

Mode of delivery		Total Delivery		Diabetes Mellitus					
				Pre-existing		Gestational		Diabetes in pregnancy	
2016	Delivery	Types	n	%	n	%	%		
	Vaginal	SVD	94,374	52.69	117	0.12	6,196	6.57	6.69
		Breech	329	0.18	1	0.30	23	6.99	7.29
		NA	31	0.02	0	0.00	2	6.45	6.45
		Total	94,734	52.89	118	0.12	6,221	6.57	6.69
	Instrumental	Vacuum	5,092	2.84	4	0.08	350	6.87	6.95
		Forceps	436	0.24	0	0.00	31	7.11	7.11
		Total	5,524	3.08	4	0.07	381	6.90	6.89
	CS	LSCS	38,488	21.49	208	0.54	4,147	10.77	11.31
		Classical	68	0.04	1	1.47	10	14.71	16.17
		Hysterotomy	32	0.02	0	0.00	4	12.50	12.5
		Hysterectomy	142	0.08	0	0.00	20	14.08	14.08
		Others	55	0.03	0	0.00	2	3.64	3.63
		Total	38,699	21.61	209	0.54	4,167	10.77	11.30
2017		NA	2,429	1.36	3	0.12	116	4.78	4.90
	Vaginal	SVD	99,514	51.40	125	0.13	7,866	7.90	8.03
		Breech	390	0.20	3	0.77	24	6.15	6.92
		NA	16	0.01	0	0.00	1	6.25	6.25
		Total	99,920	51.61	128	0.13	7,891	7.90	8.02
	Instrumental	Vacuum	5,152	2.66	7	0.14	405	7.86	7.99
		Forceps	530	0.27	2	0.38	41	7.74	8.11
		Total	5,680	2.93	9	0.16	446	7.85	8.01
	CS	LSCS	43,570	22.51	377	0.87	5,530	12.69	13.55
		Classical	69	0.04	0	0.00	11	15.94	15.94
		Hysterotomy	37	0.02	0	0.00	7	18.92	18.91
		Hysterectomy	129	0.07	0	0.00	10	7.75	7.75
		Others	56	0.03	0	0.00	9	16.07	16.07
		Total	43,773	22.61	378	0.86	5,561	12.70	13.56
		NA	1,568	0.81	4	0.26	106	6.76	7.01

**Table 5.6: Birthweight in relation to Diabetes 2016-2017**

Birth weight	Total Delivery		Diabetes Mellitus								
			Pre-existing		Gestational		NA		Diabetes in pregnancy		
	n	%	n	%	n	%	n	%	n	%	
2016	≤1000	1,303	0.92	8	0.61	91	6.98	1	0.08	100	7.67
	1001 - 1500	1,458	1.03	9	0.62	117	8.02	0	0.00	126	8.64
	1501 - 2000	3,594	2.54	11	0.31	229	6.37	2	0.06	242	6.73
	2001 - 2500	16,071	11.36	28	0.17	1,056	6.57	7	0.04	1091	6.78
	2501 - 3000	50,631	35.80	77	0.15	3,441	6.80	11	0.02	3529	6.97
	3001 - 3500	47,028	33.26	95	0.20	3,720	7.91	18	0.04	3833	8.15
	3501 - 3999	13,673	9.67	54	0.39	1,419	10.38	8	0.06	1481	10.83
	≥4000	2,743	1.94	39	1.42	479	17.46	2	0.07	520	18.95
	NA	4,910	3.47	13	0.26	335	6.82	5	0.10	353	7.18
2017	≤1000	1,436	0.95	15	1.04	104	7.24	0	0.00	119	8.28
	1001 - 1500	1,466	0.97	11	0.75	127	8.66	0	0.00	138	9.41
	1501 - 2000	4,006	2.65	26	0.65	322	8.04	2	0.05	350	8.73
	2001 - 2500	17,448	11.56	77	0.44	1,412	8.09	2	0.01	1491	8.54
	2501 - 3000	55,018	36.45	126	0.23	4,581	8.33	6	0.01	4713	8.56
	3001 - 3500	51,734	34.27	131	0.25	4,868	9.41	9	0.02	5008	9.68
	3501 - 3999	15,011	9.94	74	0.49	1,867	12.44	3	0.02	1921	12.79
	≥4000	2,865	1.90	51	1.78	553	19.30	2	0.07	606	21.15
	NA	1,976	1.31	8	0.40	170	8.60	0	0.00	178	9.00

**Table 5.7: Shoulder Dystocia and Birth asphyxia in relation to Birthweight 2016-2017**

Birth weight	Shoulder Dystocia						Asphyxia						
	Without DM		With DM		Total		Without DM		With DM		Total		
	n	%	n	%	n	%	n	%	n	%	n	%	
2016	≤1000	2	0.99	0	0.00	2	0.75	328	7.52	35	6.54	363	7.41
	1001 - 1500	0	0.00	0	0.00	0	0.00	346	7.93	44	8.22	390	7.96
	1501 - 2000	0	0.00	0	0.00	0	0.00	362	8.30	37	6.92	399	8.14
	2001 - 2500	2	0.99	1	1.59	3	1.13	558	12.79	68	12.71	626	12.78
	2501 - 3000	17	8.42	4	6.35	21	7.92	1,129	25.87	120	22.43	1,249	25.49
	3001 - 3500	62	30.69	13	20.63	75	28.30	1,126	25.80	132	24.67	1,258	25.68
	3501 - 3999	76	37.62	23	36.51	99	37.36	357	8.18	64	11.96	421	8.59
	≥4000	40	19.80	22	34.92	62	23.40	66	1.51	22	4.11	88	1.80
	NA	3	1.49	0	0.00	3	1.13	92	2.11	13	2.43	105	2.14
2017	≤1000	1	0.47	0	0.00	1	0.33	377	8.45	29	4.43	406	7.94
	1001 - 1500	0	0.00	0	0.00	0	0.00	381	8.54	42	6.42	423	8.27
	1501 - 2000	0	0.00	0	0.00	0	0.00	360	8.07	45	6.88	405	7.92
	2001 - 2500	1	0.47	1	1.12	2	0.66	572	12.82	89	13.61	661	12.92
	2501 - 3000	16	7.44	5	5.62	21	6.91	1,156	25.91	164	25.08	1,320	25.81
	3001 - 3500	52	24.19	23	25.84	75	24.67	1,172	26.27	178	27.22	1,350	26.39
	3501 - 3999	89	41.40	32	35.96	121	39.80	357	8.00	75	11.47	432	8.45
	≥4000	53	24.65	28	31.46	81	26.64	74	1.66	27	4.13	101	1.97
	NA	3	1.40	0	0.00	3	0.99	12	0.27	5	0.76	17	0.33

**Table 5.8: Apgar score in relation to Mode of delivery in Diabetes in Pregnancy  
2016-2017**

Mode of delivery		Apgar Score 1min ≤ 7						Apgar Score 5min ≤ 7					
		Pre-existing		Gestational		Diabetes in pregnancy		Pre-existing		Gestational		Diabetes in pregnancy	
		n	%	n	%	n	%	n	%	n	%	n	%
2016	Vaginal	4	13.33	127	27.49	131	26.63	1	16.67	30	31.91	31	31.00
	Instrumental	1	3.33	58	12.55	59	11.99	0	0.00	11	11.70	11	11.00
	Caesarean	25	83.33	277	59.96	302	61.38	5	83.33	53	56.38	58	58.00
2017	Vaginal	3	5.66	168	30.60	171	28.41	0	(0.00)	39	38.24	39	35.78
	Instrumental	5	9.43	48	8.74	53	8.80	0	(0.00)	11	10.78	11	10.09
	Caesarean	45	84.91	333	60.66	378	62.79	7	(100.00)	52	50.98	59	54.13

# BREECH

**Table 6.1: Distribution of Breech Delivery by Hospitals 2016-2017**

SDP	Total Delivery		Vaginal Breech		CS Breech		
	n	%	n	%	n	%	
2016	HSA, Johor	12,985	9.18	54	0.42	311	2.40
	HSB, Kedah	11,948	8.45	33	0.28	282	2.36
	HRPZ II, Kelantan	11,433	8.08	27	0.24	254	2.22
	Hospital Melaka	11,139	7.88	8	0.07	224	2.01
	HTJ, N. Sembilan	10,030	7.09	15	0.15	196	1.95
	HTAA, Pahang	8,034	5.68	5	0.06	196	2.44
	HRPB, Perak	8,227	5.82	13	0.16	287	3.49
	HTF, Perlis	4,798	3.39	10	0.21	122	2.54
	HPP. Pulau Pinang	4,127	2.92	10	0.24	107	2.59
	HWKK Likas, Sabah	14,300	10.11	27	0.19	340	2.38
	HUS, Sarawak	9,397	6.65	13	0.14	201	2.14
	HTAR, Selangor	10,700	7.57	40	0.37	276	2.58
	HSNZ, Terengganu	10,885	7.70	29	0.27	366	3.36
	HKL	9,981	7.06	36	0.36	266	2.67
	H. Segamat	3,427	2.42	9	0.26	32	0.93
	Total	141,411	100.00	329	0.23	3,460	2.45
2017	HSA, Johor	13,772	9.12	56	0.41	309	2.24
	HSB, Kedah	11,910	7.89	37	0.31	278	2.33
	HRPZ II, Kelantan	12,806	8.48	63	0.49	364	2.84
	Hospital Melaka	11,332	7.51	6	0.05	246	2.17
	HTJ, N. Sembilan	10,742	7.12	28	0.26	255	2.37
	HTAA, Pahang	10,069	6.67	6	0.06	250	2.48
	HRPB, Perak	9,031	5.98	14	0.16	286	3.17
	HTF, Perlis	5,070	3.36	13	0.26	125	0.47
	HPP. Pulau Pinang	4,569	3.03	11	0.24	101	2.21
	HWKK Likas, Sabah	14,246	9.44	38	0.27	361	2.53
	HUS, Sarawak	10,845	7.18	15	0.14	224	2.07
	HTAR, Selangor	10,297	6.82	35	0.34	225	2.19
	HSNZ, Terengganu	11,602	7.69	23	0.20	387	3.34
	HKL	11,084	7.34	36	0.32	344	3.10
	H. Segamat	3,585	2.37	9	0.25	55	1.53
	Total	150,960	100.00	390	0.26	3,810	2.52

**Table 6.2: Distribution of Breech Delivery by Ethnicity 2016-2017**

Ethnicity		Total Delivery		Vaginal Breech		CS Breech	
		n	%	n	%	n	%
2016	Malay	103,011	72.85	223	0.22	2,519	2.45
	Chinese	7,770	5.49	18	0.23	200	2.57
	Indian	5,936	4.20	16	0.27	145	2.44
	Kadazan/Dusun	4,423	3.13	6	0.14	108	2.44
	Murut	291	0.21	0	0.00	7	2.41
	Bajau	3,184	2.25	4	0.13	71	2.23
	Melanau	66	0.05	0	0.00	2	3.03
	Iban	1,860	1.32	6	0.32	41	2.20
	Bidayuh	1,600	1.13	2	0.13	39	2.44
	OA Peninsular Malaysia	938	0.66	0	0.00	34	3.62
	OI group in Sabah & Sarawak	3,472	2.46	6	0.17	90	2.59
	Other Bumiputera	580	0.41	0	0.00	16	2.76
	Foreigners	7,309	5.17	40	0.55	169	2.31
	NA	971	0.69	8	0.82	19	1.96
2017	Malay	111,592	73.92	278	0.25	2,794	2.50
	Chinese	8,043	5.33	21	0.26	242	3.01
	Indian	6,312	4.18	16	0.25	136	2.15
	Kadazan/Dusun	4,455	2.95	4	0.09	109	2.45
	Murut	349	0.23	1	0.29	17	4.87
	Bajau	3,161	2.09	9	0.28	67	2.12
	Melanau	64	0.04	0	0.00	1	1.56
	Iban	2,008	1.33	2	0.10	45	2.24
	Bidayuh	1,819	1.20	1	0.05	43	2.36
	OA Peninsular Malaysia	1,037	0.69	3	0.29	32	3.09
	OI group in Sabah & Sarawak	3,621	2.40	10	0.28	87	2.40
	Others	574	0.38	1	0.17	19	3.31
	Foreigners	7,091	4.70	37	0.52	189	2.67
	NA	834	0.55	7	0.84	29	3.48

**Table 6.3: Distribution of Breech Delivery by Maternal Age 2016-2017**

Age		Total Delivery		Vaginal Breech		CS Breech	
		n	%	n	%	n	%
2016	10-14	39	0.03	0	0.00	1	2.56
	15-19	4,375	3.09	14	0.32	101	2.31
	20-24	22,251	15.73	53	0.24	463	2.08
	25-29	47,257	33.42	80	0.17	1,114	2.36
	30-34	41,442	29.31	93	0.22	1,028	2.48
	35-39	20,217	14.30	70	0.35	578	2.86
	40-44	5,389	3.81	17	0.32	165	3.06
	45-49	422	0.30	2	0.47	10	2.37
	50-54	14	0.01	0	0.00	0	0.00
	55-59	5	0.00	0	0.00	0	0.00
2017	10-14	47	0.03	1	2.13	3	6.38
	15-19	4,111	2.72	16	0.39	86	2.09
	20-24	22,973	15.22	62	0.27	558	2.43
	25-29	49,618	32.87	113	0.23	1,214	2.45
	30-34	44,714	29.62	103	0.23	1,101	2.46
	35-39	23,083	15.29	71	0.31	652	2.82
	40-44	5,963	3.95	23	0.39	179	3.00
	45-49	442	0.29	1	0.23	16	3.62
	50-54	8	0.01	0	0.00	1	12.50
	55-59	1	0.00	0	0.00	0	0.00

**Table 6.4: Distribution of Breech Delivery by birthweight and Apgar score  
2016-2017**

Birth weight		Apgar Score 1min ≤ 7						Apgar Score 5min ≤ 7					
		Total Delivery		Vaginal Breech		CS Breech		Total Delivery		Vaginal Breech		CS Breech	
		n	%	n	%	n	%	n	%	n	%	n	%
2016	≤1000	299	6.89	19	6.35	12	4.01	137	15.53	13	9.49	4	2.92
	1001 - 1500	348	8.02	18	5.17	27	7.76	101	11.45	6	5.94	5	4.95
	1501 - 2000	362	8.34	8	2.21	28	7.73	75	8.50	0	0.00	5	6.67
	2001 - 2500	579	13.34	11	1.90	70	12.09	79	8.96	2	2.53	8	10.13
	2501 - 3000	1,143	26.33	11	0.96	58	5.07	220	24.94	2	0.91	6	2.73
	3001 - 3500	1,147	26.42	6	0.52	22	1.92	202	22.90	0	0.00	4	1.98
	3501 - 3999	384	8.85	1	0.26	6	1.56	52	5.90	1	1.92	0	0.00
	≥4000	79	1.82	0	0.00	2	2.53	16	1.81	0	0.00	0	0.00
2017	≤1000	350	7.57	33	9.43	8	2.29	153	16.67	21	13.73	2	1.31
	1001 - 1500	382	8.26	17	4.45	30	7.85	98	10.68	5	5.10	16	16.33
	1501 - 2000	360	7.78	16	4.44	32	8.89	81	8.82	5	6.17	4	4.94
	2001 - 2500	603	13.04	19	3.15	46	7.63	122	13.29	2	1.64	5	4.10
	2501 - 3000	1,204	26.03	11	0.91	51	4.24	209	22.77	4	1.91	3	1.44
	3001 - 3500	1,237	26.75	7	0.57	43	3.48	182	19.83	2	1.10	2	1.10
	3501 - 3999	391	8.45	3	0.77	12	3.07	57	6.21	0	0.00	2	3.51
	≥4000	98	2.12	1	1.02	3	3.06	16	1.74	1	6.25	0	0.00

**Table 6.5: ECV and Breech 2016-2017**

Presentation		Total Delivery		Vaginal Breech		CS Breech	
		n	%	n	%	n	%
2016	<b>ECV</b>						
	- Successful	882	0.62	1	0.11	13	1.47
	- Not Successful	216	0.15	3	1.39	165	76.39
	- Not Done	100,402	71.00	254	0.25	2,465	2.46
	<b>CS</b>						
	- Elective	8,561	6.05	0	0.00	1,392	16.26
	- Emergency	30,138	21.31	0	0.00	2,068	6.86
2017	<b>ECV</b>						
	- Successful	542	0.36	0	0.00	13	2.40
	- Not Successful	235	0.16	4	1.70	192	81.70
	- Not Done	108,125	71.62	300	0.28	2,675	2.47
	<b>CS</b>						
	- Elective	9,790	6.49	0	0.00	1,493	15.25
	- Emergency	33,983	22.51	0	0.00	2,317	6.82

**Table 6.6: Complications in Vaginal Breech Delivery 2016-2017**

Complications of pregnancy and delivery		Total Delivery		Vaginal Breech		CS Breech	
		n	%	n	%	n	%
2016	Congenital Abnormality	261	0.18	18	6.90	12	4.60
	Prematurity	11,698	8.27	174	1.49	509	4.35
	IUD	1,461	1.03	104	7.12	18	1.23
	Genital tract trauma	419	0.30	0	0.00	0	0.00
	Birth injuries	20	0.01	1	5.00	0	0.00
2017	Congenital Abnormality	269	0.18	21	7.81	7	2.60
	Prematurity	13,880	9.19	198	1.43	575	4.14
	IUD	1,619	1.07	132	8.15	23	1.42
	Genital tract trauma	887	0.59	0	0.00	5	0.56
	Birth injuries	49	0.03	2	4.08	3	6.12

# **STILLBIRTH**

**Table 7.1: Trends in Stillbirth by Hospitals 2016-2017**

SDP	2016					2017				
	Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	Live birth	SB Rate
	n	n	n	n		n	n	n	n	
HSA, Johor	13,151	32	63	13,056	7.28	13,930	20	72	13,838	6.65
HSB, Kedah	12,064	32	58	11,974	7.52	12,052	19	64	11,969	6.93
HRPZ II, Kelantan	11,536	18	49	11,469	5.84	12,903	19	77	12,807	7.50
Hospital Melaka	11,230	20	40	11,170	5.37	11,452	18	48	11,386	5.80
HTJ, N. Sembilan	10,117	14	46	10,057	5.97	10,831	11	58	10,762	6.41
HTAA, Pahang	8,107	19	27	8,061	5.71	10,161	13	34	10,114	4.65
HRPB, Perak	8,316	28	31	8,257	7.15	9,129	31	27	9,071	6.39
HTF, Perlis	4,851	8	12	4,831	4.14	5,117	6	23	5,088	5.70
HPP. Pulau Pinang	4,192	13	19	4,160	7.69	4,623	11	16	4,596	5.87
HWKK Likas, Sabah	14,488	32	77	14,379	7.58	14,463	56	91	14,316	10.27
HUS, Sarawak	9,481	10	8	9,463	1.90	10,940	19	11	10,910	2.75
HTAR, Selangor	10,835	27	32	10,776	5.48	10,420	30	64	10,326	9.10
HSNZ, Terengganu	11,025	8	56	10,961	5.84	11,723	21	49	11,653	6.01
HKL	10,097	33	86	9,978	11.93	11,262	42	96	11,124	12.41
H. Segamat	3,456	9	15	3,432	6.99	3,609	6	13	3,590	5.29
Total	142,946	303	619	142,024	6.49	152,615	322	743	151,550	7.03

**Table 7.2: Stillbirth rate in relation to Risk levels at Booking 2016-2017**

Risk Level at Booking	2016					2017				
	Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	Live birth	SB Rate
	n	n	n	n		n	n	n	n	
Red	2,100	4	25	2,071	14.00	2,013	10	41	1,962	25.99
Yellow	16,782	49	98	16,635	8.84	16,897	52	122	16,723	10.40
Green	111,203	191	400	110,612	5.34	122,597	178	477	121,942	5.37
White II	1,424	5	3	1,416	5.65	1,411	4	4	1,403	5.70
White I	3,508	7	11	3,490	5.16	3,318	4	14	3,300	5.45
No Code	3,607	21	26	3,560	13.20	3,747	34	38	3,675	19.59
NA	4,322	26	56	4,240	19.34	2,632	40	47	2,545	34.18

**Table 7.3: Stillbirth in relation to Risk level at Booking by Ethnicity 2016-2017**

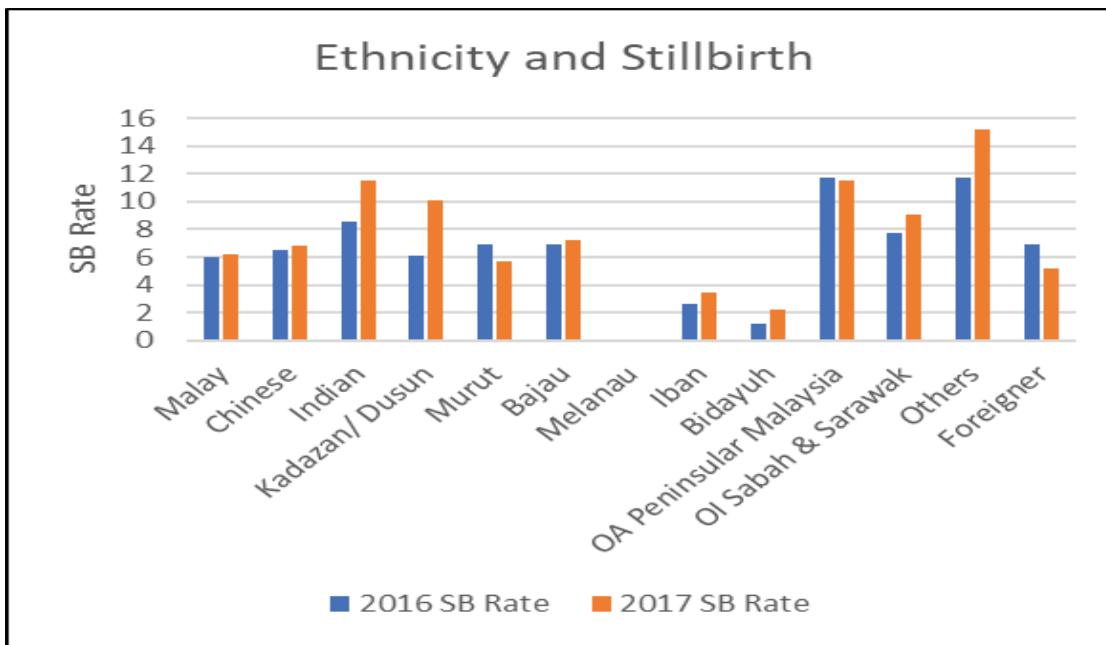
Risk Level at Booking	Malay			Chinese			Indian			Indigenous			Foreigner		
	SB	Live birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate
Red	15	1,626	9.23	4	86	46.51	1	88	11.36	8	207	38.65	1	58	17.24
Yellow	100	11,689	8.56	10	985	10.15	12	1,115	10.76	20	2,124	9.42	5	606	8.25
Green	446	82,973	5.38	27	5,898	4.58	31	4,291	7.22	59	12,246	4.82	23	4,517	5.09
White II	6	1,095	5.48	1	70	14.29	0	38	0.00	1	145	6.90	0	60	0.00
White I	14	2,426	5.77	0	248	0.00	1	110	9.09	2	457	4.38	0	220	0.00
No Code	18	1,799	10.01	2	291	6.87	0	107	0.00	4	401	9.98	22	915	24.04
NA	22	1,811	12.15	7	254	27.56	6	205	29.27	6	932	6.44	35	959	36.50

Risk Level at Booking	Malay			Chinese			Indian			Indigenous			Foreigner		
	SB	Live Birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate	SB	Live birth	SB Rate
Red	33	1,528	21.60	4	84	47.62	1	94	10.64	10	183	54.64	2	59	33.90
Yellow	112	11,706	9.57	10	1,064	9.40	18	1,226	14.68	24	2,071	11.59	7	542	12.92
Green	476	92,218	5.16	36	6,218	5.79	37	4,679	7.91	68	13,704	4.96	35	4,546	7.70
White II	1	1,089	0.92	0	74	0.00	1	31	32.26	5	129	38.76	1	70	14.29
White I	10	2,417	4.14	0	217	0.00	3	90	33.33	4	376	10.64	1	177	5.65
No Code	28	1,823	15.36	4	296	13.51	4	108	37.04	9	449	20.04	27	960	28.13
NA	32	1,215	26.34	1	171	5.85	9	90	100.00	9	273	32.97	35	739	47.36

**Table 7.4: Distribution of Stillbirth by Ethnicity 2016-2017**

Ethnicity	2016				2017					
	Total Delivery n	FSB n	MSB n	Live birth n	SB Rate	Total Delivery n	FSB n	MSB n	Live birth n	SB Rate
Malay	104,040	199	422	103,419	6.00	112,688	185	507	111,996	6.18
Chinese	7,883	25	26	7,832	6.51	8,179	15	40	8,124	6.77
Indian	6,005	17	34	5,954	8.57	6,391	29	44	6,318	11.55
Kadazan/ Dusun	4,480	7	20	4,453	6.06	4,525	13	32	4,480	10.04
Murut	293	0	2	291	6.87	354	1	1	352	5.68
Bajau	3,215	5	17	3,193	6.89	3,198	8	15	3,175	7.24
Melanau	66	0	0	66	0.00	64	0	0	64	0.00
Iban	1881	4	1	1,876	2.67	2029	4	3	2,022	3.46
Bidayuh	1,615	0	2	1,613	1.24	1,834	1	3	1,830	2.19
OA Peninsular Malaysia	952	5	6	941	11.69	1053	7	5	1,041	11.53
OI Sabah & Sarawak	3,527	6	21	3,500	7.71	3,674	15	18	3,641	9.06
Others	583	3	1	579	6.91	583	0	3	580	5.17
Foreigner	7,421	28	58	7,335	11.72	7,201	44	64	7,093	15.23
NA	985	4	9	972	13.37	842	0	8	834	9.59

**Fig 7. 1 Stillbirth rates by Ethnicity**



**Table 7.5: Stillbirth rate by Maternal Age and Parity 2016-2017**

Age	2016					2017				
	Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	Live birth	SB Rate
	n	n	n	n		n	n	n	n	
10-14	40	0	0	40	0.00	49	0	1	48	20.83
15-19	4,410	17	18	4,375	8.00	4,138	18	19	4,101	9.02
20-24	22,434	51	92	22,291	6.42	23,181	41	110	23,030	6.56
25-29	47,719	74	171	47,474	5.16	50,091	82	198	49,811	5.62
30-34	41,957	88	191	41,678	6.69	45,282	92	222	44,968	6.98
35-39	20,483	52	100	20,331	7.48	23,369	66	129	23,174	8.41
40-44	5,454	16	42	5,396	10.75	6,042	21	58	5,963	13.25
45-49	429	5	3	421	19.00	453	2	5	446	15.70
50-54	14	0	1	13	76.92	9	0	0	9	0.00
>=55	6	0	1	5	200.00	1	0	1	0	0.00
<b>Parity</b>										
1	49,455	124	234	49,097	7.29	51,206	111	268	50,827	7.46
2-5	87,398	163	353	86,882	5.94	95,172	185	436	94,551	6.57
≥6	5,561	13	30	5,518	7.79	6,114	23	36	6,055	9.74

**Table 7.6: Stillbirth in relation to Maternal Age by Ethnicity 2016-2017**

Ethnicity	Age	2016				2017			
		Total Delivery n	FSB n	MSB n	Live birth n	SB Rate n	Total Delivery n	FSB n	MSB n
<b>Malay</b>	10-14	19	0	0	19	0.00	24	0	1
	15-19	2,462	13	4	2,445	6.95	2,448	9	10
	20-24	15,226	34	60	15,132	6.21	16,176	21	69
	25-29	36,438	45	126	36,267	4.72	38,649	59	146
	30-34	30,821	62	135	30,624	6.43	33,754	48	148
	35-39	14,804	33	65	14,706	6.66	16,866	34	83
	40-44	3,962	11	29	3,922	10.20	4,465	13	45
	45-49	298	1	2	295	10.17	302	1	5
<b>Chinese</b>	50-54	9	0	1	8	125.00	4	0	4
	≥55	1	0	0	1	0.00	0	0	0
	10-14	3	0	0	3	0.00	7,883	0	0
	15-19	268	1	0	267	3.75	n	0	1
	20-24	1,195	1	5	1,189	5.05	0	2	6
<b>Indian</b>	25-29	2,187	7	6	2,174	5.98	224	1	6
	30-34	2,558	9	4	2,545	5.11	1,281	6	19
	35-39	1,367	5	8	1,354	9.60	2,327	4	7
	40-44	289	1	3	285	14.04	2,544	1	1
	45-49	14	1	0	13	76.92	1,488	1	0
	50-54	0	0	0	0	0.00	296	0	3
	≥55	2	0	0	2	0.00	16	0	0
	10-14	1	0	0	1	0.00	2	0	2
<b>Others</b>	15-19	176	1	0	175	5.71	188	0	188
	20-24	891	4	5	882	10.20	876	2	5
	25-29	1,899	5	10	1,884	7.96	1,960	4	14
	30-34	2,050	5	15	2,030	9.85	2,184	14	13
	35-39	832	2	2	828	4.83	1,012	7	10
	40-44	150	0	1	149	6.71	163	2	2
	45-49	5	0	0	5	0.00	6	0	6
	50-54	0	0	0	0	0.00	2	0	0
	≥55	1	0	1	0	0.00	188	0	188

**Table 7.6: cont. -Stillbirth in relation to Maternal Age by Ethnicity 2016-2017**

Ethnicity	Age	2016				2017				SB Rate
		Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	
	n	n	n	n	n	n	n	n	n	
<b>Indigenous</b>	10-14	9	0	9	0.00	15	0	0	15	0.00
	15-19	998	1	9	988	10.12	887	4	5	878
	20-24	3,254	6	9	3,239	4.63	3,143	6	15	3,122
	25-29	4,944	8	17	4,919	5.08	5,018	11	20	4,987
	30-34	4,448	7	22	4,419	6.56	4,744	14	19	4,711
	35-39	2,206	6	9	2,191	6.85	2,722	11	15	2,696
	40-44	686	2	4	680	8.82	704	3	5	696
	45-49	64	0	0	64	0.00	80	0	0	80
	50-54	1	0	0	1	0.00	0	0	0	0.00
	≥55	2	0	0	2	0.00	1	0	1	0.00
<b>Foreigner</b>	10-14	7	0	0	7	0.00	7	0	0	7
	15-19	443	1	5	437	13.73	349	5	3	341
	20-24	1,647	4	12	1,631	9.81	1,525	10	12	1,503
	25-29	1,991	9	11	1,971	10.15	1,900	7	12	1,881
	30-34	1,855	4	14	1,837	9.80	1,830	10	20	1,800
	35-39	1,111	5	12	1,094	15.54	1,171	10	13	1,148
	40-44	329	2	3	324	15.43	375	2	4	369
	45-49	37	3	1	33	121.21	43	0	0	43
	50-54	50-54	1	0	0	1	1	0	1	0.00
	≥55	0	0	0	0	0	0	0	0	0.00

**Table 7.7: Stillbirth in relation to Parity by Ethnicity 2016-2017**

Ethnicity	Parity	2016					2017				
		Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n		n	n	n	n	
Malay	1	35,671	87	164	35,420	7.09	37,702	70	176	37,456	6.57
	2 - 5	64,006	102	237	63,667	5.32	70,574	105	308	70,161	5.89
	≥6	3,970	9	20	3,941	7.36	4,323	8	21	4,294	6.75
Chinese	1	3,367	15	10	3,342	7.48	3,406	8	22	3,376	8.89
	2 - 5	4,408	10	16	4,382	5.93	4,673	7	17	4,649	5.16
	≥6	69	0	0	69	0.00	95	0	1	94	10.64
Indian	1	2,412	5	15	2,392	8.36	2,594	12	24	2,558	14.07
	2 - 5	3,417	12	19	3,386	9.16	3,650	16	19	3,615	9.68
	≥6	147	0	0	147	0.00	141	1	1	139	14.39
Others	1	5,126	9	18	5,099	5.30	5,071	13	22	5,036	6.95
	2 - 5	10,374	18	45	10,311	6.11	11,025	29	49	10,947	7.13
	≥6	1,080	2	6	1,072	7.46	1,212	7	9	1,196	13.38
Foreigners	1	2,541	7	24	2,510	12.35	2,168	8	23	2,137	14.51
	2 - 5	4,601	19	30	4,552	10.76	4,718	28	37	4,653	13.97
	≥6	256	2	4	250	24.00	299	7	3	289	34.60

**Table 7.8: Stillbirth rate in relation to Asian BMI classifications 2016-2017**

Asian BMI classifications		Total Delivery	FSB	MSB	Live birth	SB Rate
2016	<16.0	1,091	2	7	1,082	8.32
	16.0-18.4	7,700	15	25	7,660	5.22
	18.5-22.9	40,833	93	170	40,570	6.48
	23.0-27.4	44,993	95	186	44,712	6.28
	27.5-32.5	31,153	63	144	30,946	6.69
	32.6-37.5	11,864	27	62	11,775	7.56
	>37.5	5,312	8	25	5,279	6.25
2017	<16.0	1,148	0	7	1,141	6.13
	16.0-18.4	8,160	12	30	8,118	5.17
	18.5-22.9	40,682	92	193	40,397	7.05
	23.0-27.4	48,094	110	248	47,736	7.50
	27.5-32.5	34,993	70	158	34,765	6.56
	32.6-37.5	13,476	20	62	13,394	6.12
	>37.5	6,062	18	45	5,999	10.50

**Table 7.9: Stillbirth rate in relation to Asian BMI classifications by Ethnicity 2016-2017**

Ethnicity	Asian BMI Classification	2016				2017					
		Total Delivery	FSB	MSB	Live birth	SB Rate	Total Delivery	FSB	MSB	Live birth	SB Rate
n	n	n	n	n	n	n	n	n	n	n	
<b>Malay</b>	<16.0	849	2	3	844	5.92	902	0	6	896	6.70
	16.0-18.4	5,919	11	18	5,890	4.92	6,482	7	22	6,453	4.49
	18.5-22.9	28,496	52	99	28,345	5.33	29,352	49	118	29,185	5.72
	23.0-27.4	32,347	54	132	32,161	5.78	35,063	64	159	34,840	6.40
	27.5-32.5	23,153	51	106	22,996	6.83	25,894	39	122	25,733	6.26
	32.6-37.5	9,045	22	46	8,977	7.57	10,276	11	45	10,220	5.48
<b>Chinese</b>	>37.5	4,231	7	18	4,206	5.94	4,719	15	35	4,669	10.71
	<16.0	47	0	1	46	21.74	58	0	0	58	0.00
	16.0-18.4	511	0	0	511	0.00	450	1	3	446	8.97
	18.5-22.9	2,970	12	12	2,946	8.15	2,897	9	10	2,878	6.60
	23.0-27.4	2,505	11	7	2,487	7.24	2,613	4	15	2,594	7.32
	27.5-32.5	1,333	2	6	1,325	6.04	1,514	0	8	1,506	5.31
<b>Indian</b>	32.6-37.5	367	0	0	367	0.00	474	1	2	471	6.37
	>37.5	150	0	0	150	0.00	173	0	2	171	11.70
	<16.0	101	0	1	100	10.00	101	111	0	1	110
	16.0-18.4	386	2	1	383	7.83	386	394	1	2	391
	18.5-22.9	1,484	8	12	1,464	13.66	1,484	1,567	6	13	1,548
	23.0-27.4	1,708	3	6	1,699	5.30	1,708	1,964	10	13	1,941
<b>Indigenous</b>	27.5-32.5	1,474	3	9	1,462	8.21	1,474	1,548	8	7	1,533
	32.6-37.5	567	1	1	565	3.54	567	546	3	3	540
	>37.5	285	0	4	281	14.23	285	261	1	5	255
	<16.0	60	0	2	58	34.48	47	0	0	47	0.00
	16.0-18.4	518	1	2	515	5.83	489	2	0	487	4.11
	18.5-22.9	5,028	9	24	4,995	6.61	4,316	12	27	4,277	9.12
<b>Foreigners</b>	23.0-27.4	5,384	15	16	5,353	5.79	5,534	14	34	5,486	8.75
	27.5-32.5	3,652	4	16	3,632	5.51	4,414	14	11	4,389	5.70
	32.6-37.5	1,459	1	9	1,449	6.90	1,754	5	7	1,742	6.89
	>37.5	511	0	1	510	1.96	760	2	1	757	3.96
	16.0-18.4	30	0	0	30	0.00	24	0	0	24	0.00
	18.5-22.9	311	0	2	309	6.47	301	1	3	297	13.47
	23.0-27.4	2,548	10	22	2,516	12.72	2,292	16	24	2,252	17.76
	27.5-32.5	2,706	11	22	2,673	12.35	2,660	18	24	2,618	16.04
	32.6-37.5	1,351	3	5	1,343	5.96	1,445	9	7	1,429	11.20
	>37.5	367	3	5	359	22.28	355	0	4	351	11.40

**Table 7.10: Stillbirth rate by Birthweight 2016-2017**

Birth weight		Total Delivery	FSB	MSB	Live birth	SB Rate
2016	≤1000	1,387	111	250	1,026	351.85
	1001 - 1500	1,599	35	106	1,458	96.71
	1501 - 2000	3,963	34	76	3,853	28.55
	2001 - 2500	16,669	51	55	16,563	6.40
	2501 - 3000	50,868	32	55	50,781	1.71
	3001 - 3500	47,073	21	38	47,014	1.25
	3501 - 3999	13,675	11	16	13,648	1.98
	≥4000	2,744	1	10	2,733	4.02
2017	≤1000	1,533	120	328	1,085	412.90
	1001 - 1500	1,614	48	118	1,448	114.64
	1501 - 2000	4,388	45	96	4,247	33.20
	2001 - 2500	18,125	38	71	18,016	6.05
	2501 - 3000	55,309	46	62	55,201	1.96
	3001 - 3500	51,770	11	34	51,725	0.87
	3501 - 3999	15,011	9	18	14,984	1.80
	≥4000	2,865	2	10	2,853	4.21

**Table 7.11: Stillbirth rate by Type of Pregnancy 2016-2017**

Type of Pregnancy		Total Delivery	FSB	MSB	Live birth	SB Rate
2016	Singleton	139,912	284	575	139,053	6.18
	Twins	2,927	19	38	2,870	19.86
	Triplets	105	0	4	101	39.60
2017	Singleton	149,336	306	682	148,348	6.66
	Twins	3,186	16	60	3,110	24.44
	Triplets	93	0	1	92	10.87

**Table 7.12: Stillbirth rate in relation to Type of Pregnancy by Ethnicity 2016-2017**

Ethnicity	Type of Pregnancy	Total Delivery	FSB	MSB	Live birth	SB Rate	
		n	n	n	n		
<b>Malay</b>	2016	Singleton	102,007	187	394	101,426	5.73
		Twins	1,961	12	26	1,923	19.76
		Triplets	72	0	2	70	28.57
	2017	Singleton	110,510	173	467	109,870	5.83
		Twins	2,136	12	39	2,085	24.46
		Triplets	42	0	1	41	24.39
<b>Chinese</b>	2016	Singleton	7,660	24	25	7,611	6.44
		Twins	214	1	0	213	4.69
		Triplets	9	0	1	8	125.00
	2017	Singleton	7,916	14	35	7,867	6.23
		Twins	236	1	5	230	26.09
		Triplets	27	0	0	27	0.00
<b>Indian</b>	2016	Singleton	5,867	17	31	5,819	8.25
		Twins	138	0	3	135	22.22
		Triplets	0	0	0	0	0.00
	2017	Singleton	6,237	29	39	6,169	11.02
		Twins	142	0	5	137	36.50
		Triplets	12	0	0	12	0.00
<b>Others</b>	2016	Singleton	16,221	29	68	16,124	6.02
		Twins	376	1	2	373	8.04
		Triplets	15	0	0	15	0.00
	2017	Singleton	16,865	48	73	16,744	7.23
		Twins	440	1	7	432	18.52
		Triplets	9	0	0	9	0.00
<b>Foreigners</b>	2016	Singleton	7,199	23	50	7,126	10.24
		Twins	216	5	7	204	58.82
		Triplets	6	0	1	5	200.00
	2017	Singleton	6,981	42	61	6,878	14.98
		Twins	220	2	3	215	23.26
		Triplets	0	0	0	0	0.00

**Table 7.13: Stillbirth rate in relation to Period of Gestation 2016-2017**

Period of gestation		Total Delivery		MSB		Live birth	SB Rate
		n	n	n	n		
2016	Preterm	16,768	175	413	16,180	36.34	
	Term	112,806	80	130	112,596	1.87	
	Post term	1,518	1	4	1,513	3.30	
2017	Preterm	13,605	138	381	13,086	39.66	
	Term	95,756	58	103	95,595	1.68	
	Post term	1,791	1	1	1,789	1.12	

**Table 7.14: Stillbirth rate in relation to Period of Gestation by Ethnicity 2016-2017**

Ethnicity	Period of gestation	Total Delivery		FSB	MSB	Live birth	SB Rate
		n	n				
Malay	2016	Preterm	11,741	127	292	11,322	37.01
		Term	85,231	53	91	85,087	1.69
		Post term	1,045	0	2	1,043	1.92
	2017	Preterm	9,691	81	263	9,347	36.80
		Term	73,310	33	76	73,201	1.49
		Post term	1,308	1	0	1,307	0.77
Chinese	2016	Preterm	907	16	17	874	37.76
		Term	5,862	5	6	5,851	1.88
		Post term	86	0	0	86	0.00
	2017	Preterm	697	8	26	663	51.28
		Term	5,208	1	6	5,201	1.35
		Post term	101	0	0	101	0.00
Indian	2016	Preterm	866	11	22	833	39.62
		Term	4,714	3	10	4,701	2.77
		Post term	91	0	0	91	0.00
	2017	Preterm	821	16	32	773	62.10
		Term	4,291	7	4	4,280	2.57
		Post term	67	0	0	67	0.00
Indigenous	2016	Preterm	2,263	16	50	2,197	30.04
		Term	10,816	7	9	10,800	1.48
		Post term	167	0	1	166	6.02
	2017	Preterm	1,745	21	41	1,683	36.84
		Term	8,997	8	6	8,983	1.56
		Post term	232	0	0	232	0.00
Foreigners	2016	Preterm	860	5	26	829	37.39
		Term	5,454	12	13	5,429	4.60
		Post term	117	1	1	115	17.39
	2017	Preterm	576	12	18	546	54.95
		Term	3,501	9	8	3,484	4.88
		Post term	72	0	1	71	14.08

**Table 7.15: Stillbirth rate and Baby gender 2016-2017**

Baby gender		Total Delivery	FSB	MSB	Live birth	SB Rate
2016	Male	73,025	144	296	72,585	6.06
	Female	67,406	152	298	66,956	6.72
	Ambiguous/Indeterminate	67	4	17	46	456.52
<hr/>						
2017	Male	78,520	182	394	77,944	7.39
	Female	72,423	133	312	71,978	6.18
	Ambiguous/Indeterminate	91	6	30	55	654.55

**Table 7.16: Stillbirth in relation to Medical Disorders 2016-2017**

Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate	
	n	n	n	n		
2016	Anaemia at booking	20,220	49	93	20,078	7.07
	Anaemia at delivery	8,649	24	46	8,579	8.16
	<b>Diabetes</b>	11402	<b>29</b>	<b>67</b>	<b>11,306</b>	<b>8.49</b>
	Pre-existing	338	1	6	331	21.15
	Gestational	11,010	28	61	10,921	8.15
	<b>Hypertension</b>	3,728	<b>22</b>	<b>48</b>	<b>3,658</b>	<b>19.14</b>
	Pre-existing	728	5	10	713	21.04
	Gestational	2567	13	31	2,523	17.44
	Pre-eclampsia	528	3	11	514	27.24
	Eclampsia	61	1	1	59	33.90
	<b>Heart Disease</b>	494	<b>2</b>	<b>6</b>	<b>486</b>	<b>16.46</b>
	NYHA I	224	0	1	223	4.48
	NYHA II	55	0	0	55	0.00
	NYHA III	3	0	0	3	0.00
	NYHA IV	1	0	0	1	0.00
	<b>Others</b>	4859	<b>6</b>	<b>26</b>	<b>4,827</b>	<b>6.63</b>
	TB	43	0	0	43	0.00
	Blood Disorder	1624	2	8	1,614	6.20
	Thalassemia	582	1	5	576	10.42
	Collagen Disease	1	0	0	1	0.00
	Asthma	1686	2	7	1,677	5.37
	Renal Disease	43	0	1	42	23.81
2017	Anaemia at booking	19,520	53	116	19,351	8.73
	Anaemia at delivery	11,760	40	70	11,650	9.44
	<b>Diabetes</b>	14734	<b>24</b>	<b>87</b>	<b>14,623</b>	<b>7.59</b>
	Pre-existing	523	3	6	514	17.51
	Gestational	14,187	21	81	14,085	7.24
	<b>Hypertension</b>	4,622	<b>22</b>	<b>62</b>	<b>4,538</b>	<b>18.51</b>
	Pre-existing	973	1	9	963	10.38
	Gestational	3069	15	42	3,012	18.92
	Pre-eclampsia	640	3	11	626	22.36
	Eclampsia	59	1	4	54	92.59
	<b>Heart Disease</b>	569	<b>2</b>	<b>5</b>	<b>562</b>	<b>12.46</b>
	NYHA I	275	0	0	275	0.00
	NYHA II	40	0	1	39	25.64
	NYHA III	5	0	0	5	0.00
	NYHA IV	1	0	0	1	0.00
	<b>Others</b>	6391	<b>16</b>	<b>36</b>	<b>6,339</b>	<b>8.20</b>
	TB	56	1	1	54	37.04
	Blood Disorder	2281	7	14	2,260	9.29
	Thalassemia	627	4	5	618	14.56
	Collagen Disease	2	0	0	2	0.00
	Asthma	2153	5	5	2,143	4.67
	Renal Disease	57	0	1	56	17.86

**Table 7.17: Stillbirth rate in relation to Medical Disorders by Ethnicity 2016-2017**

Ethnicity	Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
Malay	Anaemia at booking	13,626	25	54	13,547	5.83
	Anaemia at delivery	6,673	17	26	6,630	6.49
	<b>Diabetes</b>	8,641	<b>21</b>	<b>56</b>	<b>8,564</b>	<b>8.99</b>
	Pre-existing	259	1	5	253	23.72
	Gestational	8,335	20	51	8,264	8.59
	<b>Hypertension</b>	2,765	<b>16</b>	<b>33</b>	<b>2,716</b>	<b>18.04</b>
	Pre-existing	561	4	9	548	23.72
	Gestational	1,874	9	18	1,847	14.62
	Pre-eclampsia	366	1	7	358	22.35
	Eclampsia	42	1	0	41	24.39
	<b>Heart Disease</b>	367	<b>2</b>	<b>4</b>	<b>361</b>	<b>16.62</b>
	NYHA I	167	0	1	166	6.02
	NYHA II	37	0	0	37	0.00
	NYHA III	1	0	0	1	0.00
	NYHA IV	1	0	0	1	0.00
	<b>Others</b>	3,583	<b>4</b>	<b>22</b>	<b>3,557</b>	<b>7.31</b>
	TB	22	0	0	22	0.00
	Blood Disorder	1,101	1	6	1,094	6.40
	Thalassemia	440	0	5	435	11.49
	Collagen Disease	0	0	0	0	0.00
	Asthma	1,289	2	6	1,281	6.25
	Renal Disease	26	0	1	25	40.00
2017	Anaemia at booking	13,312	23	69	13,220	6.96
	Anaemia at delivery	9,286	19	38	9,229	6.18
	<b>Diabetes</b>	11,427	<b>14</b>	<b>67</b>	<b>11,346</b>	<b>7.14</b>
	Pre-existing	413	0	5	408	12.25
	Gestational	10,996	14	62	10,920	6.96
	<b>Hypertension</b>	3,472	<b>15</b>	<b>41</b>	<b>3,416</b>	<b>16.39</b>
	Pre-existing	758	0	5	753	6.64
	Gestational	2,265	10	27	2,228	16.61
	Pre-eclampsia	477	2	8	467	21.41
	Eclampsia	36	0	2	34	58.82
	<b>Heart Disease</b>	442	<b>1</b>	<b>3</b>	<b>438</b>	<b>9.13</b>
	NYHA I	209	0	0	209	0.00
	NYHA II	34	0	1	33	30.30
	NYHA III	4	0	0	4	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	5,133	<b>10</b>	<b>27</b>	<b>5,096</b>	<b>7.26</b>
	TB	40	1	1	38	52.63
	Blood Disorder	1,749	2	8	1,739	5.75
	Thalassemia	488	2	2	484	8.26
	Collagen Disease	1	0	0	1	0.00
	Asthma	1,747	5	4	1,738	5.18
	Renal Disease	42	0	1	41	24.39

**Table 7.17cont: Stillbirth rate in relation to Medical Disorders by Ethnicity**  
**2016-2017**

Ethnicity	Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
Chinese	Anaemia at booking	1,081	4	4	1,073	7.46
	Anaemia at delivery	248	1	1	246	8.13
	<b>Diabetes</b>	612	<b>1</b>	<b>3</b>	<b>608</b>	<b>6.58</b>
	Pre-existing	13	0	0	13	0.00
	Gestational	596	1	3	592	6.76
	<b>Hypertension</b>	160	<b>2</b>	<b>3</b>	<b>155</b>	<b>32.26</b>
	Pre-existing	30	1	1	28	71.43
	Gestational	105	1	2	102	29.41
	Pre-eclampsia	25	1	0	24	41.67
	Eclampsia	4	0	1	3	333.33
	<b>Heart Disease</b>	24	<b>0</b>	<b>0</b>	<b>24</b>	<b>0.00</b>
	NYHA I	10	0	0	10	0.00
	NYHA II	6	0	0	6	0.00
	NYHA III	0	0	0	0	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	227	<b>1</b>	<b>1</b>	<b>225</b>	<b>8.89</b>
	TB	1	0	0	1	0.00
	Blood Disorder	88	0	0	88	0.00
	Thalassemia	53	0	0	53	0.00
	Collagen Disease	1	0	0	1	0.00
	Asthma	65	0	0	65	0.00
	Renal Disease	3	0	0	3	0.00
Chinese	Anaemia at booking	1,078	1	7	1,070	7.48
	Anaemia at delivery	443	1	4	438	11.42
	<b>Diabetes</b>	753	<b>1</b>	<b>5</b>	<b>747</b>	<b>8.03</b>
	Pre-existing	17	1	0	16	62.50
	Gestational	735	0	5	730	6.85
	<b>Hypertension</b>	219	<b>2</b>	<b>5</b>	<b>212</b>	<b>33.02</b>
	Pre-existing	50	0	1	49	20.41
	Gestational	150	1	4	145	34.48
	Pre-eclampsia	27	0	2	25	80.00
	Eclampsia	2	0	0	2	0.00
	<b>Heart Disease</b>	24	<b>0</b>	<b>1</b>	<b>23</b>	<b>43.48</b>
	NYHA I	5	0	0	5	0.00
	NYHA II	0	0	0	0	0.00
	NYHA III	0	0	0	0	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	223	<b>2</b>	<b>2</b>	<b>219</b>	<b>18.26</b>
	TB	2	0	0	2	0.00
	Blood Disorder	88	1	1	86	23.26
	Thalassemia	40	1	1	38	52.63
	Collagen Disease	0	0	0	0	0.00
	Asthma	54	0	0	54	0.00
	Renal Disease	4	0	0	4	0.00

**Table 7.17cont: Stillbirth rate in relation to Medical Disorders by Ethnicity**  
**2016-2017**

Ethnicity	Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
2016	Anaemia at booking	1,612	7	9	1,596	10.03
	Anaemia at delivery	587	2	9	576	19.10
	<b>Diabetes</b>	618	<b>3</b>	<b>3</b>	<b>612</b>	<b>9.80</b>
	Pre-existing	18	0	0	18	0.00
	Gestational	597	3	3	591	10.15
	<b>Hypertension</b>	86	<b>0</b>	<b>2</b>	<b>84</b>	<b>23.81</b>
	Pre-existing	8	0	0	8	0.00
	Gestational	70	0	2	68	29.41
	Pre-eclampsia	23	0	1	22	45.45
	Eclampsia	4	0	0	4	0.00
	<b>Heart Disease</b>	9	<b>0</b>	<b>0</b>	<b>9</b>	<b>0.00</b>
	NYHA I	3	0	0	3	0.00
	NYHA II	0	0	0	0	0.00
	NYHA III	0	0	0	0	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	198	<b>0</b>	<b>1</b>	<b>197</b>	<b>5.08</b>
	TB	0	0	0	0	0.00
	Blood Disorder	79	0	0	79	0.00
	Thalassemia	5	0	0	5	0.00
	Collagen Disease	0	0	0	0	0.00
	Asthma	75	0	1	74	13.51
	Renal Disease	2	0	0	2	0.00
Indian	Anaemia at booking	1,659	5	10	1,644	9.12
	Anaemia at delivery	903	7	11	885	20.34
	<b>Diabetes</b>	817	<b>5</b>	<b>8</b>	<b>804</b>	<b>16.17</b>
	Pre-existing	50	2	1	47	63.83
	Gestational	767	3	7	757	13.21
	<b>Hypertension</b>	121	<b>1</b>	<b>1</b>	<b>119</b>	<b>16.81</b>
	Pre-existing	20	0	0	20	0.00
	Gestational	82	1	1	80	25.00
	Pre-eclampsia	19	0	0	19	0.00
	Eclampsia	8	1	0	7	142.86
	<b>Heart Disease</b>	13	<b>0</b>	<b>0</b>	<b>13</b>	<b>0.00</b>
	NYHA I	7	0	0	7	0.00
	NYHA II	2	0	0	2	0.00
	NYHA III	0	0	0	0	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	288	<b>2</b>	<b>3</b>	<b>283</b>	<b>17.67</b>
	TB	1	0	0	1	0.00
	Blood Disorder	128	2	2	124	32.26
	Thalassemia	5	0	0	5	0.00
	Collagen Disease	0	0	0	0	0.00
	Asthma	118	0	1	117	8.55
	Renal Disease	1	0	0	1	0.00

**Table 7.17cont: Stillbirth rate in relation to Medical Disorders by Ethnicity**

**2016-2017**

Ethnicity	Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
Indigenous	Anaemia at booking	2,336	9	11	2,316	8.64
	Anaemia at delivery	644	2	4	638	9.40
	<b>Diabetes</b>	1,167	<b>4</b>	<b>3</b>	<b>1,160</b>	<b>6.03</b>
	Pre-existing	40	0	1	39	25.64
	Gestational	1,126	4	2	1,120	5.36
	<b>Hypertension</b>	594	<b>3</b>	<b>6</b>	<b>585</b>	<b>15.38</b>
	Pre-existing	113	0	0	113	0.00
	Gestational	423	2	6	415	19.28
	Pre-eclampsia	93	1	3	89	44.94
	Eclampsia	7	0	0	7	0.00
	<b>Heart Disease</b>	73	<b>0</b>	<b>2</b>	<b>71</b>	<b>28.17</b>
	NYHA I	38	0	0	38	0.00
	NYHA II	9	0	0	9	0.00
	NYHA III	1	0	0	1	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	701	<b>1</b>	<b>1</b>	<b>699</b>	<b>2.86</b>
	TB	17	0	0	17	0.00
	Blood Disorder	293	1	1	291	6.87
	Thalassemia	72	1	0	71	14.08
	Collagen Disease	0	0	0	0	0.00
	Asthma	232	0	0	232	0.00
	Renal Disease	11	0	0	11	0.00
Indigenous	Anaemia at booking	2,052	10	19	2,023	14.34
	Anaemia at delivery	511	9	6	496	30.24
	<b>Diabetes</b>	1,264	<b>4</b>	<b>2</b>	<b>1,258</b>	<b>4.77</b>
	Pre-existing	31	0	0	31	0.00
	Gestational	1,231	4	2	1,225	4.90
	<b>Hypertension</b>	637	<b>2</b>	<b>11</b>	<b>624</b>	<b>20.83</b>
	Pre-existing	118	0	3	115	26.09
	Gestational	444	2	6	436	18.35
	Pre-eclampsia	88	1	0	87	11.49
	Eclampsia	7	0	0	7	0.00
	<b>Heart Disease</b>	72	<b>0</b>	<b>1</b>	<b>71</b>	<b>14.08</b>
	NYHA I	46	0	0	46	0.00
	NYHA II	2	0	0	2	0.00
	NYHA III	1	0	0	1	0.00
	NYHA IV	1	0	0	1	0.00
	<b>Others</b>	541	<b>1</b>	<b>3</b>	<b>537</b>	<b>7.45</b>
	TB	9	0	0	9	0.00
	Blood Disorder	210	1	2	207	14.49
	Thalassemia	82	1	2	79	37.97
	Collagen Disease	1	0	0	1	0.00
	Asthma	193	0	0	193	0.00
	Renal Disease	9	0	0	9	0.00

**Table 7.17cont: Stillbirth rate in relation to Medical Disorders by Ethnicity**

**2016-2017**

Ethnicity	Medical Disorders	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
2016	Anaemia at booking	1,379	4	13	1,362	12.48
	Anaemia at delivery	451	2	6	443	18.06
	<b>Diabetes</b>	321	<b>0</b>	<b>2</b>	<b>319</b>	<b>6.27</b>
	Pre-existing	7	0	0	7	0.00
	Gestational	314	0	2	312	6.41
	<b>Hypertension</b>	104	<b>1</b>	<b>2</b>	<b>101</b>	<b>29.70</b>
	Pre-existing	12	0	0	12	0.00
	Gestational	83	1	2	80	37.50
	Pre-eclampsia	19	0	0	19	0.00
	Eclampsia	4	0	0	4	0.00
	<b>Heart Disease</b>	20	<b>0</b>	<b>0</b>	<b>20</b>	<b>0.00</b>
	NYHA I	6	0	0	6	0.00
	NYHA II	3	0	0	3	0.00
	NYHA III	1	0	0	1	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	136	<b>0</b>	<b>1</b>	<b>135</b>	<b>7.41</b>
	TB	2	0	0	2	0.00
	Blood Disorder	56	0	1	55	18.18
	Thalassemia	10	0	0	10	0.00
Foreigner	Collagen Disease	0	0	0	0	0.00
	Asthma	22	0	0	22	0.00
	Renal Disease	1	0	0	1	0.00
2017	Anaemia at booking	1,286	14	10	1,262	19.02
	Anaemia at delivery	546	4	9	533	24.39
	<b>Diabetes</b>	398	<b>0</b>	<b>3</b>	<b>395</b>	<b>7.59</b>
	Pre-existing	9	0	0	9	0.00
	Gestational	386	0	3	383	7.83
	<b>Hypertension</b>	151	<b>2</b>	<b>4</b>	<b>145</b>	<b>41.38</b>
	Pre-existing	24	1	0	23	43.48
	Gestational	114	1	4	109	45.87
	Pre-eclampsia	27	0	1	26	38.46
	Eclampsia	6	0	2	4	500.00
	<b>Heart Disease</b>	17	<b>1</b>	<b>0</b>	<b>16</b>	<b>62.50</b>
	NYHA I	8	0	0	8	0.00
	NYHA II	2	0	0	2	0.00
	NYHA III	0	0	0	0	0.00
	NYHA IV	0	0	0	0	0.00
	<b>Others</b>	166	<b>1</b>	<b>1</b>	<b>164</b>	<b>12.20</b>
	TB	4	0	0	4	0.00
	Blood Disorder	88	1	1	86	23.26
	Thalassemia	9	0	0	9	0.00
	Collagen Disease	0	0	0	0	0.00
	Asthma	30	0	0	30	0.00
	Renal Disease	0	0	0	0	0.00

**Table 7.18: Stillbirth in relation to STI 2016-2017**

Medical Disorders		Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
2016	<b>HIV</b>					
	Reactive	115	0	0	115	0.00
	Non-reactive	135,588	282	608	134,698	6.61
	Indeterminate	7	0	0	7	0.00
	<b>Syphilis</b>					
	Yes	238	0	2	236	8.47
	No	133,545	277	583	132,685	6.48
2017	<b>HIV</b>					
	Reactive	117	0	1	116	8.62
	Non-reactive	150,544	303	726	149,515	6.88
	Indeterminate	7	0	0	7	0.00
	<b>Syphilis</b>					
	Yes	465	1	2	462	6.49
	No	148,446	294	715	147,437	6.84

**Table 7.19: Stillbirth in relation to STI by Ethnicity 2016-2017**

Ethnicity	Medical Disorders		Total Delivery	FBS	MSB	Live birth	SB Rate
<b>Malay</b>	<b>2016</b>	<b>HIV</b>					
		Reactive	68	0	0	68	0.00
		Non-reactive	100,096	191	416	99,489	6.10
		Indeterminate	4	0	0	4	0.00
		<b>Syphilis</b>					
		Yes	167	0	1	166	6.02
	<b>2017</b>	No	98,594	189	402	98,003	6.03
		<b>HIV</b>					
		Reactive	74	0	1	73	13.70
		Non-reactive	111,380	175	496	110,709	6.06
		Indeterminate	2	0	0	2	0.00
		<b>Syphilis</b>					
<b>Chinese</b>	<b>2016</b>	Yes	233	0	1	232	4.31
		No	109,852	172	488	109,192	6.04
		<b>HIV</b>					
		Reactive	10	0	0	10	0.00
		Non-reactive	7,020	23	26	6,971	7.03
		Indeterminate	0	0	0	0	0.00
	<b>2017</b>	<b>Syphilis</b>					
		Yes	10	0	0	10	0.00
		No	6,904	22	25	6,857	6.85
		<b>HIV</b>					
		Reactive	8	0	0	8	0.00
		Non-reactive	8,009	13	40	7,956	6.66
		Indeterminate	3	0	0	3	0.00
	<b>Syphilis</b>						
		Non-reactive	6,989	38	60	6,891	14.22
		Indeterminate	1	0	0	1	0.00
		Yes	34	0	0	34	0.00
		No	6,870	36	60	6,774	14.17

Ethnicity	Medical Disorders		Total Delivery	FBS	MSB	Live birth	SB Rate
Indian	2016	HIV					
		Reactive	8	0	0	8	0.00
		Non-reactive	5,944	16	34	5,894	8.48
		Indeterminate	0	0	0	0	0.00
		Syphilis					
		Yes	14	0	0	14	0.00
	2017	No	5,857	16	31	5,810	8.09
		HIV					
		Reactive	8	0	0	8	0.00
		Non-reactive	6,345	29	43	6,273	11.48
		Indeterminate	0	0	0	0	0.00
		Syphilis					
Indigenous	2016	Yes	27	0	0	27	0.00
		No	6,234	29	42	6,163	11.52
		HIV					
		Reactive	15	0	0	15	0.00
		Non-reactive	14,484	28	70	14,386	6.81
		Indeterminate	1	0	0	1	0.00
	2017	Syphilis					
		Yes	23	0	1	22	45.45
		No	14,338	28	66	14,244	6.60
		HIV					
		Reactive	5	0	0	5	0.00
		Non-reactive	16,995	48	79	16,868	7.53
Foreigners	2016	Indeterminate	1	0	0	1	0.00
		Syphilis					
		Yes	146	1	1	144	13.89
		No	16,799	45	77	16,677	7.32
		HIV					
		Reactive	12	0	0	12	0.00
	2017	Non-reactive	7,104	24	55	7,025	11.25
		Indeterminate	2	0	0	2	0.00
		Syphilis					
		Yes	23	0	0	23	0.00
		No	6,932	22	53	6,857	10.94
		HIV					
	2016	Reactive	20	0	0	20	0.00
		Non-reactive	6,989	38	60	6,891	14.22
		Indeterminate	1	0	0	1	0.00
		Syphilis					
		Yes	34	0	0	34	0.00
		No	6,870	36	60	6,774	14.17

**Table 7.20: Stillbirth in relation to Social habits 2016-2017**

Social habits		Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
2016	Smoking Status	428	1	1	426	4.69
	Alcohol	28	0	0	28	0.00
	Drugs	53	0	0	53	0.00
<hr/>						
2017	Smoking Status	515	3	4	508	13.78
	Alcohol	43	0	1	42	23.81
	Drugs	76	1	1	74	27.03

**Table 7.21: Stillbirth in relation to Social habits by Ethnicity 2016-2017**

Ethnicity	Social Habits	Total	FSB	MSB	Live birth	SB Rate	
		Delivery					
Malay	2016	n	n	n	n		
		Smoking Status	301	1	1	299	6.69
		Alcohol	13	0	0	13	0.00
	2017	Drugs	39	0	0	39	0.00
		Smoking Status	344	2	0	342	5.85
		Alcohol	25	0	1	24	41.67
Chinese	2016	Drugs	62	1	0	61	16.39
		Smoking Status	31	0	0	31	0.00
		Alcohol	3	0	0	3	0.00
	2017	Drugs	2	0	0	2	0.00
		Smoking Status	45	0	2	43	46.51
		Alcohol	9	0	0	9	0.00
Indian	2016	Drugs	5	0	1	4	250.00
		Smoking Status	19	0	0	19	0.00
		Alcohol	4	0	0	4	0.00
	2017	Drugs	3	0	0	3	0.00
		Smoking Status	18	0	0	18	0.00
		Alcohol	0	0	0	0	0.00
Others	2016	Drugs	6	0	0	6	0.00
		Smoking Status	55	0	0	55	0.00
		Alcohol	4	0	0	4	0.00
	2017	Drugs	4	0	0	4	0.00
		Smoking Status	70	1	0	69	14.49
		Alcohol	2	0	0	2	0.00
Foreigners	2016	Drugs	1	0	0	1	0.00
		Smoking Status	20	0	0	20	0.00
		Alcohol	4	0	0	4	0.00
	2017	Drugs	4	0	0	4	0.00
		Smoking Status	37	0	2	35	57.14
		Alcohol	7	0	0	7	0.00
		Drugs	2	0	0	2	0.00

**Table 7.22: Stillbirth in relation to complications 2016-2017**

Complications		Total Delivery	FSB	MSB	Live birth	SB Rate
2016		n	n	n	n	
	SGA	25,331	91	215	25,025	12.23
	IUGR	994	2	8	984	10.16
	APH	296	17	9	270	96.30
	Oligohydramnious	351	1	0	350	2.86
	Cord Prolapse	231	2	2	227	17.62
	PPROM	203	4	1	198	25.25
2017						
	SGA	22,632	74	202	22,356	12.35
	IUGR	1,104	4	14	1,086	16.57
	APH	327	24	8	295	108.47
	Oligohydramnious	482	1	0	481	2.08
	Cord Prolapse	219	4	0	215	18.60
	PPROM	241	1	2	238	12.61

**Table 7.23: Stillbirth in relation to complications by Ethnicity 2016-2017**

Ethnicity	Complications	Total Delivery	FSB	MSB	Live birth	SB Rate
		n	n	n	n	
Malay	SGA	18,256	68	156	18,032	12.42
	IUGR	700	2	6	692	11.56
	APH	237	13	7	217	92.17
	oligohydramnios	225	1	0	224	4.46
	Cord Prolapse	175	2	1	172	17.44
	PPROM	162	3	1	158	25.32
	SGA	16,543	39	132	16,372	10.44
	IUGR	851	4	8	839	14.30
	APH	255	13	5	237	75.95
	Oligohydramnios	360	1	0	359	2.79
Chinese	Cord Prolapse	147	2	0	145	13.79
	PPROM	201	0	1	200	5.00
	SGA	1,254	7	9	1,238	12.92
	IUGR	59	0	0	59	0.00
	APH	12	1	0	11	90.91
	Oligohydramnios	13	0	0	13	0.00
	Cord Prolapse	8	0	0	8	0.00
	PPROM	7	1	0	6	166.67
	SGA	1,191	1	14	1,176	12.76
	IUGR	47	0	1	46	21.74
Indian	APH	18	0	0	18	0.00
	Oligohydramnios	24	0	0	24	0.00
	Cord Prolapse	10	0	0	10	0.00
	PPROM	9	0	0	9	0.00
	SGA	1,503	2	11	1,490	8.72
	IUGR	56	0	1	55	18.18
	APH	8	0	1	7	142.86
	Oligohydramnios	16	0	0	16	0.00
	Cord Prolapse	8	0	0	8	0.00
	PPROM	8	0	0	8	0.00
Indigenous	SGA	1,384	12	22	1,350	25.19
	IUGR	56	0	2	54	37.04
	APH	13	2	0	11	181.82
	Oligohydramnios	13	0	0	13	0.00
	Cord Prolapse	10	0	0	10	0.00
	PPROM	11	0	1	10	100.00
	SGA	2,846	8	19	2,819	9.58
	IUGR	149	0	1	148	6.76
	APH	25	3	0	22	136.36
	Oligohydramnios	87	0	0	87	0.00
2016	Cord Prolapse	23	0	0	23	0.00
	PPROM	20	0	0	20	0.00
2017	SGA	2,578	12	17	2,549	11.38
	IUGR	118	0	3	115	26.09
	APH	20	4	3	13	538.46
	Oligohydramnios	70	0	0	70	0.00
	Cord Prolapse	32	0	0	32	0.00
	PPROM	13	0	0	13	0.00

Ethnicity	Complications	Total Delivery	FSB	MSB	Live birth	SB Rate	
		n	n	n	n		
Foreigner	2016	SGA	1,285	6	18	1,261	19.03
		IUGR	23	0	0	23	0.00
		APH	9	0	0	9	0.00
		Oligohydramnios	7	0	0	7	0.00
		Cord Prolapse	16	0	1	15	66.67
		PPROM	6	0	0	6	0.00
	2017	SGA	825	10	15	800	31.25
		IUGR	28	0	0	28	0.00
		APH	20	5	0	15	333.33
		Oligohydramnios	14	0	0	14	0.00
		Cord Prolapse	16	2	0	14	142.86
		PPROM	6	1	0	5	200.00

Table 7.24: Stillbirth in relation to Past obstetrics history 2016-2017

Past Obstetrics history		Total Delivery	FSB	MSB	Live birth	SB Rate
2016	FSB	272	4	3	265	26.42
	MSB	317	1	13	303	46.20
	Miscarriage	13,590	38	81	13,471	8.83
2017	FSB	309	4	3	302	23.18
	MSB	438	2	9	427	25.76
	Miscarriage	16,250	40	93	16,117	8.25

**Table 7.25: Stillbirth in relation to Past obstetrics history by Ethnicity 2016-2017**

Ethnicity	Past Obstetric history	Total Delivery	FSB	MSB	Live birth	SB Rate	
		n	n	n	n		
Malay	2016	FSB	202	3	3	196	30.61
		MSB	238	0	10	228	43.86
		Miscarriage	10,143	26	59	10,058	8.45
	2017	FSB	226	2	2	222	18.02
		MSB	342	2	8	332	30.12
		Miscarriage	12,224	26	66	12,132	7.58
Chinese	2016	FSB	11	0	0	11	0.00
		MSB	7	1	0	6	166.67
		Miscarriage	762	2	4	756	7.94
	2017	FSB	10	0	0	10	0.00
		MSB	20	0	0	20	0.00
		Miscarriage	853	1	4	848	5.90
Indian	2016	FSB	8	0	0	8	0.00
		MSB	24	0	2	22	90.91
		Miscarriage	824	3	1	820	4.88
	2017	FSB	9	0	1	8	125.00
		MSB	19	0	1	18	55.56
		Miscarriage	810	2	5	803	8.72
Indigenous	2016	FSB	40	0	0	40	0.00
		MSB	35	0	1	34	29.41
		Miscarriage	1,158	3	8	1,147	9.59
	2017	FSB	47	0	0	47	0.00
		MSB	33	0	0	33	0.00
		Miscarriage	1,600	7	6	1,587	8.19
Foreigner	2016	FSB	11	1	0	10	100.00
		MSB	11	0	0	11	0.00
		Miscarriage	632	4	9	619	21.00
	2017	FSB	15	2	0	13	153.85
		MSB	19	0	0	19	0.00
		Miscarriage	678	4	10	664	21.08

# **ANAEMIA IN PREGNANCY**

**Table 8.1: Distribution of Anaemia at booking and delivery by Hospitals 2016-2017**

SDP	2016						2017					
	Total Delivery		Anaemia at booking		Anaemia at delivery		Total Delivery		Anaemia at booking		Anaemia at delivery	
	n	n	%	n	%	n	n	%	n	%	n	%
HSA, Johor	13,151	2,310	17.6	57	0.4	13,930	2,283	16.4	1	0.0		
HSB, Kedah	12,064	1,735	14.4	204	1.7	12,052	1,692	14.0	133	1.1		
HRPZ II, Kelantan	11,536	910	7.9	309	2.7	12,903	999	7.7	305	2.4		
Hospital Melaka	11,230	953	8.5	464	4.1	11,452	776	6.8	661	5.8		
HTJ, N. Sembilan	10,117	1,568	15.5	438	4.3	10,831	1,740	16.1	2,120	19.6		
HTAA, Pahang	8,107	1,157	14.3	56	0.7	10,161	1,235	12.2	76	0.7		
HRPB, Perak	8,316	1,562	18.8	470	5.7	9,129	1,600	17.5	535	5.9		
HTF, Perlis	4,851	846	17.4	880	18.1	5,117	769	15.0	935	18.3		
HPP, Pulau Pinang	4,192	822	19.6	566	13.5	4,623	773	16.7	603	13.0		
HWKK Likas, Sabah	14,488	2,357	16.3	659	4.5	14,463	1,964	13.6	413	2.9		
HUS, Sarawak	9,481	220	2.3	13	0.1	10,940	93	0.9	2	0.0		
HTAR, Selangor	10,835	2,076	19.2	904	8.3	10,420	1,869	17.9	1,387	13.3		
HSNZ, Terengganu	11,025	1,204	10.9	1,671	15.2	11,723	1,174	10.0	2,245	19.2		
HKL	10,097	1,915	19.0	1,673	16.6	11,262	2,030	18.0	2,123	8.9		
H. Segamat	3,456	585	16.9	285	8.2	3,609	523	14.5	221	6.1		
Total	142,946	20,220	14.1	8,649	6.1	152,615	19,520	12.8	11,760	7.7		

**Table 8.2: Distribution of Anaemia at booking and delivery by Ethnicity 2016-2017**

Ethnicity	2016						2017					
	Total Delivery		Anaemia at booking		Anaemia at delivery		Total Delivery		Anaemia at booking		Anaemia at delivery	
	n	n	%	n	%	n	n	%	n	%	n	%
Malay	104,040	13,626	13.1	6,673	6.4	112,688	13,312	11.8	9,286	8.2		
Chinese	7,883	1,081	13.7	248	3.1	8,179	1,078	13.2	443	5.4		
Indian	6,005	1,612	26.8	587	9.8	6,391	1,659	26.0	903	14.1		
Kadazan/Dusun	4,480	722	16.1	187	4.2	4,525	648	14.3	118	2.6		
Murut	293	53	18.1	15	5.1	354	52	14.7	15	4.2		
Bajau	3,215	552	17.2	152	4.7	3,198	452	14.1	124	3.9		
Melanau	66	4	6.1	2	3.0	64	0	0.0	0	0.0		
Iban	1,881	82	4.4	17	0.9	2,029	68	3.4	20	1.0		
Bidayuh	1,615	36	2.2	5	0.3	1,834	14	0.8	7	0.4		
OA Peninsular Malaysia	952	219	23.0	40	4.2	1,053	214	20.3	59	5.6		
OI group in Sabah & Sarawak	3,527	569	16.1	173	4.9	3,674	516	14.0	133	3.6		
Others	583	99	17.0	53	9.1	583	88	15.1	35	6.0		
Foreigners	7,421	1,379	18.6	451	6.1	7,201	1,286	17.9	546	7.6		
NA	985	186	18.9	46	4.7	842	133	15.8	71	8.4		

**Table 8.3: Distribution of Anaemia at booking and delivery by Parity 2016-2017**

Parity	2016						2017						
	Total Delivery	Anaemia at booking			Anaemia at delivery			Total Delivery	Anaemia at booking			Anaemia at delivery	
		n	n	%	n	n	%		n	n	%	n	%
1	49,455	6,812	13.8	2,605	5.3	51,206	6,284	12.3	3,465	6.8			
2-5	87,398	12,179	13.9	5,622	6.4	95,172	12,045	12.7	7,719	8.1			
≥6	5,561	1,151	20.7	398	7.2	6,114	1,173	19.2	568	9.3			
NA	532	78	14.7	24	4.5	123	18	14.6	8	6.5			

**Table 8.4: Distribution of Anaemia at booking and delivery by Maternal Age 2016-2017**

Age	2016						2017						
	Total Deliveries	Anaemia at booking			Anaemia at delivery			Total Delivery	Anaemia at booking			Anaemia at delivery	
		n	n	%	n	n	%		n	n	%	n	%
10-14	40	12	30.0	3	7.5	49	14	28.6	3	6.1			
15-19	4,410	1,176	26.7	308	7.0	4,138	1,017	24.6	350	8.5			
20-24	22,434	3,848	17.2	1,449	6.5	23,181	3,602	15.5	1,857	8.0			
25-29	47,719	5,945	12.5	2,743	5.7	50,091	5,574	11.1	3,590	7.2			
30-34	41,957	5,367	12.8	2,494	5.9	45,282	5,288	11.7	3,508	7.7			
35-39	20,483	2,882	14.1	1,254	6.1	23,369	3,045	13.0	1,876	8.0			
40-44	5,454	908	16.6	368	6.7	6,042	908	15.0	530	8.8			
45-49	429	79	18.4	28	6.5	453	70	15.5	44	9.7			
50-54	14	2	14.3	1	7.1	9	2	22.2	2	22.2			
≥55	6	1	16.7	1	16.7	1	0	0.0	0	0.0			

**Table 8.5: Distribution of Anaemia by Mode of Delivery 2016-2017**

Mode of delivery	2016						2017						
	Total Delivery	Anaemia at booking			Anaemia at delivery			Total Delivery	Anaemia at booking			Anaemia at delivery	
		n	n	%	n	n	%		n	n	%	n	%
Vaginal	SVD	94,859	13,407	14.1	4,982	5.3	99,978	12,793	12.8	6,851	6.9		
	Breech	419	72	17.2	30	7.2	504	83	16.5	45	8.9		
	NA	32	2	6.3	0	0.0	17	1	5.9	1	5.9		
	Total	95,310	13,481	14.1	5,012	5.3	100,499	12,877	12.8	6,897	6.9		
Instrumental	Vacuum	5,111	705	13.8	231	4.5	5,175	656	12.7	305	5.9		
	Forceps	438	53	12.1	22	5.0	535	74	13.8	42	7.9		
	Total	5,545	758	13.7	253	4.6	5,708	730	12.8	347	6.1		
CS	LSCS	39,394	5,624	14.3	3,218	8.2	44,591	5,673	12.7	4,389	9.8		
	Classical	69	14	20.3	8	11.6	69	14	20.3	15	21.7		
	Hysterotomy	32	5	15.6	3	9.4	38	9	23.7	9	23.7		
	Hysterectomy	144	28	19.4	8	5.6	133	22	16.5	15	11.3		
	Others	55	8	14.5	2	3.6	56	9	16.1	7	12.5		
	Total	39,608	5,660	14.3	3,237	8.2	44,796	5,708	12.7	4,422	9.9		
	NA	2,453	313	12.8	144	5.9	1,591	201	12.6	92	5.8		

**Table 8.6: Distribution of Anaemia by Apgar Score 2016-2017**

Apgar score	2016					2017				
	Total Delivery	Anaemia at booking		Anaemia at delivery		Total Delivery	Anaemia at booking		Anaemia at delivery	
At 1 min	n	n	%	n	%	n	n	%	n	%
< 7	4,435	700	15.8	370	8.3	4,641	663	14.3	529	11.4
≥ 7	134,765	19,027	14.1	8,063	6.0	144,925	18,447	12.7	11,002	7.6
NA	3,746	493	13.2	216	5.8	3,049	410	13.4	229	7.5
At 5 min										
< 7	903	117	13.0	86	9.5	920	129	14.0	94	10.2
≥ 7	137,841	19,542	14.2	8,311	6.0	148,151	18,916	12.8	11,384	7.7
NA	4,202	561	13.4	252	6.0	3,544	475	13.4	282	8.0

# **HYPERTENSIVE DISORDERS IN PREGNANCY**

**Table 9.1: Distribution of Hypertensive disorder by Hospitals 2016-2017**

SDP	Total Delivery	Hypertensive disorder						NA	
		Hypertension		Pre-existing		Gestational			
		n	%	n	%	n	%		
<b>2016</b>	HSA, Johor	13,151	252	1.9	63	0.5	158	1.2	
	HSB, Kedah	12,064	317	2.6	73	0.6	199	1.6	
	HRPZ II, Kelantan	11,536	260	2.3	58	0.5	182	1.6	
	Hospital Melaka	11,230	126	1.1	28	0.2	97	0.9	
	HTJ, N. Sembilan	10,117	235	2.3	44	0.4	150	1.5	
	HTAA, Pahang	8,107	190	2.3	6	0.1	158	1.9	
	HRRPB, Perak	8,316	313	3.8	57	0.7	224	2.7	
	HTF, Perlis	4,851	136	2.8	30	0.6	91	1.9	
	HPP, Pulau Pinang	4,192	81	1.9	17	0.4	59	1.4	
	HWKK Likas, Sabah	14,488	481	3.3	76	0.5	355	2.5	
	HUS, Sarawak	9,481	262	2.8	78	0.8	152	1.6	
	HTAR, Selangor	10,835	194	1.8	15	0.1	148	1.4	
	HSNZ, Terengganu	11,025	566	5.1	130	1.2	358	3.2	
	HKL	10,097	220	2.2	41	0.4	158	1.6	
	H. Segamat	3,456	95	2.7	12	0.3	78	2.3	
Total		142,946	3,728	2.6	728	0.5	2,567	1.8	
							349	0.2	
							29	0.0	
							55	0.0	

SDP	Total Delivery	Hypertensive disorder									NA	
		Hypertension			Pre-existing			Gestational				
		n	%	n	%	n	%	n	%	n	%	
2017	HSA, Johor	13,930	377	2.7	137	1.0	216	1.6	21	0.2	2	0.0
	HSB, Kedah	12,052	270	2.2	58	0.5	156	1.3	48	0.4	3	0.0
	HRPZ II, Kelantan	12,903	367	2.8	69	0.5	248	1.9	45	0.3	1	0.0
	Hospital Melaka	11,452	105	0.9	26	0.2	78	0.7	0	0.0	0	0.0
	HTJ, N. Sembilan	10,831	266	2.5	37	0.3	185	1.7	42	0.4	0	0.0
	HTAA, Pahang	10,161	277	2.7	30	0.3	193	1.9	36	0.4	2	0.0
	HRPB, Perak	9,129	328	3.6	71	0.8	231	2.5	21	0.2	2	0.0
	HTF, Perlis	5,117	147	2.9	39	0.8	81	1.6	27	0.5	0	0.0
	HPP. Pulau Pinang	4,623	72	1.6	14	0.3	52	1.1	6	0.1	0	0.0
	HW/KK Likas, Sabah	14,463	486	3.4	62	0.4	377	2.6	42	0.3	1	0.0
	HUS, Sarawak	10,940	348	3.2	75	0.7	217	2.0	54	0.5	0	0.0
	HTAR, Selangor	10,420	267	2.6	23	0.2	209	2.0	34	0.3	0	0.0
	HSNZ, Terengganu	11,723	779	6.6	191	1.6	516	4.4	64	0.5	6	0.1
	HKL	11,262	385	3.4	120	1.1	194	1.7	69	0.6	1	0.0
	H. Segamat	3,609	148	4.1	21	0.6	116	3.2	9	0.2	0	0.0
	Total	152,615	4,622	3.0	973	0.6	3,069	2.0	518	0.3	18	0.0

**Table 9.2 Distribution of Hypertensive disorder by Hospitals 2016-2017**

<b>Type of hypertensive disorder</b>	<b>2016</b>		<b>2017</b>	
	<b>n</b>	<b>%</b>	<b>N</b>	<b>%</b>
Pre-existing	728	19.5	973	21.1
Gestational	2,567	68.9	3,069	66.4
- PE	528	20.6	639	20.8
- Eclampsia	61	2.4	59	1.9
CH with superimposed PE	349	9.4	518	11.2
Unclassified	29	0.8	18	0.4
NA	55	1.5	44	1.0

**Table 9.3: Distribution of Hypertensive disorder by Ethnicity 2016-2017**

Ethnicity	Total						Type of hypertensive disorder					
	Delivery		Hypertension		Pre-existing		Gestational		CH with superimposed PE		Unclassified	
	n	%	n	%	n	%	n	%	n	%	n	%
2016	Malay	104,040	2,765	2.7	561	0.5	1,874	1.8	264	0.3	21	0.0
	Chinese	7,883	160	2.0	30	0.4	105	1.3	21	0.3	3	0.0
	Indian	6,005	86	1.4	8	0.1	70	1.2	7	0.1	1	0.0
	Kadazan/Dusun	4,480	167	3.7	32	0.7	123	2.7	10	0.2	0	0.0
	Murut	293	18	6.1	3	1.0	12	4.1	1	0.3	1	0.3
	Bajau	3,215	93	2.9	17	0.5	68	2.1	6	0.2	0	0.0
	Melanau	66	2	3.0	0	0.0	2	3.0	0	0.0	0	0.0
	Iban	1,881	77	4.1	25	1.3	45	2.4	7	0.4	0	0.0
	Bidayuh	1,615	43	2.7	9	0.6	31	1.9	3	0.2	0	0.0
	OA Peninsular Malaysia	952	38	4.0	8	0.8	28	2.9	2	0.2	0	0.0
	OI group in Sabah & Sarawak	3,527	142	4.0	17	0.5	104	2.9	19	0.5	1	0.0
	Others	583	14	2.4	2	0.3	10	1.7	1	0.2	0	0.0
	Foreigners	7,421	104	1.4	12	0.2	83	1.1	6	0.1	1	0.2
	NA	985	19	1.9	4	0.4	12	1.2	2	0.2	1	0.0
2017	Malay	112,688	3,472	3.1	758	0.7	2,265	2.0	397	0.4	15	0.0
	Chinese	8,179	219	2.7	50	0.6	150	1.8	18	0.2	0	0.0
	Indian	6,391	121	1.9	20	0.3	82	1.3	18	0.3	0	0.0
	Kadazan/Dusun	4,525	184	4.1	27	0.6	142	3.1	14	0.3	1	0.0
	Murut	354	13	3.7	4	1.1	8	2.3	1	0.3	0	0.0
	Bajau	3,198	82	2.6	11	0.3	64	2.0	7	0.2	0	0.0
	Melanau	64	2	3.1	0	0.0	2	3.1	0	0.0	0	0.0
	Iban	2,029	88	4.3	25	1.2	52	2.6	11	0.5	0	0.0
	Bidayuh	1,834	66	3.6	18	1.0	40	2.2	8	0.4	0	0.0
	OA Peninsular Malaysia	1,053	47	4.5	14	1.3	27	2.6	4	0.4	2	0.0
	OI group in Sabah & Sarawak	3,674	138	3.8	16	0.4	100	2.7	19	0.5	0	0.0
	Others	583	17	2.9	3	0.5	9	1.5	5	0.9	0	0.0
	Foreigners	7,201	151	2.1	24	0.3	114	1.6	12	0.2	0	0.0
	NA	842	22	2.6	3	0.4	14	1.7	4	0.5	0	0.1

**Table 9.4: Distribution of Hypertensive disorder by Maternal Age 2016-2017**

Parity		Total Delivery	Type of hypertensive disorder											
			Hypertension			Pre-existing		Gestational		CH with superimposed PE		Unclassified		
			n	n	%	n	%	n	%	n	%	n	%	
2016	1	49,455	1,112	2.2	194	0.4	795	1.6	84	0.2	13	0.0	26	0.1
	2-5	87,398	2,300	2.6	464	0.5	1,562	1.8	233	0.3	14	0.0	27	0.0
	≥6	5,561	308	5.5	70	1.3	202	3.6	32	0.6	2	0.0	2	0.0
	NA	532	8	1.5	0	0.0	8	1.5	0	0.0	0	0.0	0	0.0
2017	1	51,206	1,430	2.8	264	0.5	1,014	2.0	142	0.3	2	0.0	8	0.0
	2-5	95,172	2,776	2.9	611	0.6	1,796	1.9	325	0.3	15	0.0	29	0.0
	≥6	6,114	414	6.8	98	1.6	257	4.2	51	0.8	1	0.0	7	0.1
	NA	123	2	1.6	0	0.0	2	1.6	0	0.0	0	0.0	0	0.0

**Table 9.5: Distribution of hypertensive disorder by Parity 2016-2017**

Age		Total Delivery	Type of hypertensive disorder											
			Hypertension			Pre-existing		Gestational		CH with superimposed PE		Unclassified		
			n	n	%	n	%	n	%	n	%	n	%	
2016	10-14	40	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	15-19	4,410	44	1.0	11	0.2	31	0.7	2	0.0	0	0.0	0	0.0
	20-24	22,434	278	1.2	37	0.2	222	1.0	14	0.1	3	0.0	2	0.0
	25-29	47,719	772	1.6	141	0.3	555	1.2	55	0.1	8	0.0	13	0.0
	30-34	41,957	1,131	2.7	218	0.5	786	1.9	104	0.2	7	0.0	16	0.0
	35-39	20,483	1,039	5.1	217	1.1	681	3.3	118	0.6	9	0.0	14	0.1
	40-44	5,454	419	7.7	91	1.7	269	4.9	49	0.9	2	0.0	8	0.1
	45-49	429	45	10.5	13	3.0	23	5.4	7	1.6	0	0.0	2	0.5
	50-54	14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	≥55	6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2017	10-14	49	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	15-19	4,138	36	0.9	4	0.1	30	0.7	2	0.0	0	0.0	0	0.0
	20-24	23,181	329	1.4	42	0.2	257	1.1	25	0.1	0	0.0	5	0.0
	25-29	50,091	968	1.9	161	0.3	711	1.4	85	0.2	4	0.0	7	0.0
	30-34	45,282	1,416	3.1	295	0.7	952	2.1	151	0.3	7	0.0	11	0.0
	35-39	23,369	1,260	5.4	289	1.2	780	3.3	173	0.7	7	0.0	11	0.0
	40-44	6,042	553	9.2	159	2.6	308	5.1	77	1.3	0	0.0	9	0.1
	45-49	453	58	12.8	22	4.9	30	6.6	5	1.1	0	0.0	1	0.2
	50-54	9	2	22.2	1	11.1	1	11.1	0	0.0	0	0.0	0	0.0
	≥55	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

**Table 9.6: Distribution of Hypertensive disorder by Mode of delivery 2016-2017**

Mode of delivery		Type of hypertensive disorder							
		Total Delivery		Hypertension		Pre-existing		Gestational	
		n	%	n	%	n	%	n	%
2016	Vaginal	SVD	94,859	1,492	1.6	279	0.3	1,064	1.1
		Breech	419	17	4.1	3	0.7	12	2.9
		NA	32	2	6.3	0	0.0	2	6.3
	Instrumental	Total	95,310	1,511	1.6	282	0.3	1,078	1.1
		Vacuum	5,111	101	2.0	17	0.3	72	1.4
		Forceps	438	5	1.1	2	0.5	3	0.7
CS	Classical	Total	5,545	106	1.9	19	0.3	75	1.4
		LSCS	39,394	2,031	5.2	407	1.0	1,363	3.5
		Classical	69	4	5.8	1	1.4	1	1.4
		Hysterotomy	32	10	31.3	3	9.4	5	15.6
		Hysterectomy	144	8	5.6	3	2.1	5	3.5
	Others	Others	55	3	5.5	1	1.8	2	3.6
		Total	39,608	2,053	5.2	414	1.0	1,374	3.5
		NA	2,453	58	2.4	13	0.5	40	1.6
		SVD	99,978	1,904	1.9	339	0.3	1,391	1.4
		Breech	504	20	4.0	4	0.8	11	2.2
2017	Vaginal	NA	17	5	29.4	1	5.9	4	23.5
		Total	100,499	1,929	1.9	344	0.3	1,406	1.4
		Vacuum	5,175	108	2.1	24	0.5	76	1.5
		Forceps	535	12	2.2	2	0.4	9	1.7
		Total	5,708	120	2.1	26	0.5	85	1.5
	CS	LSCS	44,591	2,507	5.6	591	1.3	1,537	3.4
		Classical	69	0	0.0	0	0.0	0	0.0
		Hysterotomy	38	8	21.1	0	0.0	4	10.5
		Hysterectomy	133	7	5.3	0	0.0	2	1.5
		Others	56	7	12.5	1	1.8	6	10.7
		Total	44,796	2,524	(5.6	593	1.3	1,548	3.5
		NA	1,591	48	3.0	10	0.6	29	1.8
								7	0.4

**Table 9.7: Distribution of Hypertensive disorder by Birthweight 2016-2017**

Birth weight	Total Delivery	Type of hypertensive disorder													
		Hypertension			Pre-existing			Gestational		CH with superimposed PE		Unclassified		NA	
		n	n	%	n	n	%	n	n	%	n	n	n	%	
2016	<1000	1,387	134	9.7	28	2.0	84	6.1	20	1.4	1	0.1	1	0.1	
	1001-1500	1,599	170	10.6	34	2.1	104	6.5	30	1.9	1	0.1	1	0.1	
	1501-2000	3,963	318	8.0	49	1.2	224	5.7	36	0.9	3	0.1	6	0.2	
	2001-2500	16,669	656	3.9	98	0.6	479	2.9	67	0.4	4	0.0	8	0.0	
	2501-3000	50,868	1,137	2.2	251	0.5	745	1.5	108	0.2	11	0.0	22	0.0	
	3001-3500	47,073	801	1.7	175	0.4	555	1.2	53	0.1	7	0.0	11	0.0	
	3501-3999	13,675	281	2.1	51	0.4	208	1.5	17	0.1	2	0.0	3	0.0	
	>4000	2,744	95	3.5	21	0.8	65	2.4	8	0.3	0	0.0	1	0.0	
	NA	4,968	136	2.7	21	0.4	103	2.1	10	0.2	0	0.0	2	0.0	
2017	<1000	1,533	151	9.8	18	1.2	101	6.6	31	2.0	1	0.1	0	0.0	
	1001-1500	1,614	227	14.1	42	2.6	148	9.2	34	2.1	1	0.1	2	0.1	
	1501-2000	4,388	417	9.5	74	1.7	268	6.1	69	1.6	1	0.0	5	0.1	
	2001-2500	18,125	829	4.6	146	0.8	573	3.2	101	0.6	2	0.0	7	0.0	
	2501-3000	55,309	1,447	2.6	342	0.6	946	1.7	146	0.3	3	0.0	10	0.0	
	3001-3500	51,770	1,072	2.1	242	0.5	714	1.4	95	0.2	7	0.0	14	0.0	
	3501-3999	15,011	323	2.2	75	0.5	214	1.4	29	0.2	2	0.0	3	0.0	
	>4000	2,865	90	3.1	19	0.7	64	2.2	5	0.2	0	0.0	2	0.1	
	NA	2,000	66	3.3	15	0.8	41	2.1	8	0.4	1	0.1	1	0.1	

**Table 9.8: Distribution of Hypertensive disorder by Apgar score 2016-2017**

Apgar score	Total Delivery	Type of hypertensive disorder						NA
		Hypertension	Pre-existing	Gestational	CH with superimposed PE	Unclassified	n	
	<b>At 1 min</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>
< 7	4,435	269	6.1	50	1.1	184	4.1	31
≥ 7	134,765	3,295	2.4	645	0.5	2,272	1.7	303
NA	3,746	164	4.4	33	0.9	111	3.0	15
	<b>At 5 min</b>							
< 7	903	49	5.4	13	1.4	32	3.5	3
≥ 7	137,841	3,459	2.5	672	0.5	2,384	1.7	325
NA	4,202	220	5.2	43	1.0	151	3.6	21
	<b>At 1 min</b>							
< 7	4,641	301	6.5	66	1.4	189	4.1	42
≥ 7	144,925	4,166	2.9	883	0.6	2,781	1.9	445
NA	3,049	155	5.1	24	0.8	99	3.2	31
	<b>At 5 min</b>							
< 7	920	62	6.7	10	1.1	38	4.1	13
≥ 7	148,151	4,361	2.9	934	0.6	2,901	2.0	466
NA	3,544	199	5.6	29	0.8	130	3.7	39

**Table 9.9: Distribution of Hypertensive disorder by Fetal complications 2016-2017**

Fetal complications	Total Delivery	Type of hypertensive disorder						
		Hypertension	Pre-existing	Gestational	CH with superimposed PE	Unclassified	NA	
	n	%	n	%	n	%	n	%
2016	Prematurity	16,768	1,034	6.2	183	1.1	687	4.1
	IUGR	994	150	15.1	32	3.2	98	9.9
	FSB	272	25	9.2	10	3.7	12	4.4
	MSB	317	22	6.9	4	1.3	16	5.0
2017	Prematurity	13,605	975	7.2	182	1.3	627	4.6
	IUGR	1,104	170	15.4	38	3.4	100	9.1
	FSB	309	24	7.8	9	2.9	12	3.9
	MSB	438	29	6.6	9	2.1	15	3.4

**Table 9.10: Distribution of hypertensive disorder by Maternal complications 2016-2017**

Maternal complications	Total Delivery	Hypertensive disorder						
		Hypertension	Pre-existing	Gestational	CH with superimposed PE	Unclassified	NA	
	n	%	n	%	n	%	n	%
2016	Abruptyo placenta	305	23	7.5	6	2.0	15	4.9
	Pulmonary embolism	4	3	75.0	1	25.0	0	0.0
	PPH	699	62	8.9	14	2.0	39	5.6
	Pulmonary oedema	12	12	100.0	1	8.3	8	66.7
2017	Maternal collapse	7	2	28.6	0	0.0	0	0.0
	Abruptyo placenta	300	30	10.0	4	1.3	22	7.3
	Pulmonary embolism	6	3	50.0	1	16.7	2	33.3
	PPH	2,540	132	(5.2	23	0.9	93	3.7
	Pulmonary oedema	10	7	70.0	0	0.0	5	50.0
	Maternal collapse	15	6	40.0	2	13.3	2	13.3

**HEART  
DISEASE  
IN  
PREGNANCY**

**Table 10.1: Distribution of Heart disease by Hospitals 2016-2017**

SDP	Total Delivery	Type of heart disease										
		Heart disease			Acquired		Congenital		IHD		NA	
		n	n	%	n	%	n	%	n	%	n	
2016	HSA, Johor	13,151	37	0.28	11	0.08	16	0.12	0	0.00	10	0.08
	HSB, Kedah	12,064	59	0.49	34	0.28	19	0.16	0	0.00	6	0.05
	HRPZ II, Kelantan	11,536	25	0.22	11	0.10	10	0.09	1	0.01	4	0.03
	Hospital Melaka	11,230	18	0.16	4	0.04	12	0.11	0	0.00	2	0.02
	HTJ, N. Sembilan	10,117	6	0.06	2	0.02	3	0.03	0	0.00	1	0.01
	HTAA, Pahang	8,107	16	0.20	6	0.07	8	0.10	1	0.01	2	0.02
	HRPB, Perak	8,316	32	0.38	15	0.18	15	0.18	0	0.00	2	0.02
	HTF, Perlis	4,851	17	0.35	12	0.25	5	0.10	0	0.00	0	0.00
	HPP. Pulau Pinang	4,192	22	0.52	9	0.21	13	0.31	1	0.02	0	0.00
	HWKK Likas, Sabah	14,488	72	0.50	36	0.25	29	0.20	0	0.00	7	0.05
	HUS, Sarawak	9,481	17	0.18	12	0.13	5	0.05	1	0.01	0	0.00
	HTAR, Selangor	10,835	25	0.23	13	0.12	12	0.11	0	0.00	0	0.00
	HSNZ, Terengganu	11,025	96	0.87	70	0.63	25	0.23	1	0.01	1	0.01
	HKL	10,097	46	0.46	19	0.19	24	0.24	0	0.00	3	0.03
	H. Segamat	3,456	6	0.17	0	0.00	5	0.14	0	0.00	1	0.03
	Total	142,946	494	0.35	254	0.18	201	0.14	5	0.00	39	0.03
2017	HSA, Johor	13,930	46	0.33	18	0.13	23	0.17	2	0.01	5	0.04
	HSB, Kedah	12,052	46	0.38	21	0.17	24	0.20	0	0.00	1	0.01
	HRPZ II, Kelantan	12,903	36	0.28	22	0.17	10	0.08	3	(0.02	4	0.03
	Hospital Melaka	11,452	20	0.17	4	(0.03	9	0.08	0	0.00	7	0.06
	HTJ, N. Sembilan	10,831	5	0.05	0	0.00	5	0.05	0	0.00	0	0.00
	HTAA, Pahang	10,161	21	0.21	15	(0.15	5	0.05	0	0.00	1	0.01
	HRPB, Perak	9,129	28	0.31	14	0.15	13	0.14	1	0.01	1	0.01
	HTF, Perlis	5,117	29	0.57	23	0.45	5	0.10	1	0.02	1	0.02
	HPP. Pulau Pinang	4,623	17	0.37	7	0.15	10	0.22	2	0.04	0	0.00
	HWKK Likas, Sabah	14,463	72	0.50	52	0.36	17	0.12	0	0.00	3	0.02
	HUS, Sarawak	10,940	19	0.17	15	0.14	3	0.03	0	0.00	1	0.01
	HTAR, Selangor	10,420	43	0.41	28	0.27	15	0.14	0	0.00	0	0.00
	HSNZ, Terengganu	11,723	120	1.02	80	0.68	40	0.34	2	0.02	0	0.00
	HKL	11,262	64	0.57	43	0.38	21	0.19	1	0.01	0	0.00
	H. Segamat	3,609	3	0.08	2	0.06	1	0.03	0	0.00	0	0.00
	Total	152,615	569	0.37	344	0.23	201	0.13	12	0.01	24	0.02

**Table 10.2: Distribution of Heart disease 2016-2017**

Distribution of heart disease	2016		2017	
	n	%	n	%
Heart disease				
• Acquired	254	51.42	344	60.46
• Congenital	201	40.69	201	35.33
• IHD	5	1.01	12	2.11
• NA	34	6.88	12	2.11

**Table 10.3: Distribution of Heart disease by Ethnicity 2016-2017**

Ethnicity	Total Delivery	Type of heart disease										
		Heart disease			Acquired		Congenital		IHD		NA	
		n	n	%	n	%	n	%	n	%	n	%
2016	Malay	104,040	367	0.35	195	0.19	145	0.14	5	0.00	27	0.03
	Chinese	7,883	24	0.30	10	0.13	13	0.16	0	0.00	1	0.01
	Indian	6,005	9	0.15	1	0.02	5	0.08	0	0.00	3	0.05
	Kadazan/Dusun	4,480	28	0.63	11	0.25	15	0.33	0	0.00	2	0.04
	Murut	293	0	0.00	0	0.00	0	0.0	0	0.00	0	0.00
	Bajau	3,215	13	0.40	5	0.16	7	0.22	0	0.00	1	0.03
	Melanau	66	0	0.00	0	0.00	0	0.00	0	0.00	0	(0.00)
	Iban	1,881	1	0.05	1	0.05	0	0.00	0	0.00	0	0.00
	Bidayuh	1,615	4	0.25	1	0.06	3	0.19	0	0.00	0	0.00
	OA Peninsular Malaysia	952	2	0.21	1	0.11	0	0.00	0	0.00	1	0.11
	OI group in Sabah & Sarawak	3,527	22	0.62	15	0.43	6	0.17	0	0.00	1	0.03
	Others	583	3	0.51	3	0.51	0	0.00	0	0.00	0	0.00
	Foreigners	7,421	20	0.27	10	0.13	7	0.09	0	0.00	3	0.04
	NA	985	1	0.10	1	0.10	0	0.00	0	0.00	0	0.00
2017	Malay	112,688	442	0.39	263	0.23	161	0.14	12	0.01	18	0.02
	Chinese	8,179	24	0.29	12	0.15	10	0.12	0	0.00	2	0.02
	Indian	6,391	13	0.20	6	0.09	7	0.11	0	(0.00)	0	0.00
	Kadazan/Dusun	4,525	30	0.66	20	0.44	10	0.22	0	0.00	0	0.00
	Murut	354	2	0.56	1	0.28	0	0.00	0	0.00	1	0.28
	Bajau	3,198	21	0.66	17	0.53	3	0.09	0	0.00	1	0.03
	Melanau	64	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Iban	2,029	2	0.10	2	0.10	0	0.00	0	0.00	0	0.00
	Bidayuh	1,834	3	0.16	3	0.16	0	0.00	0	0.00	0	0.00
	OA Peninsular Malaysia	1,053	2	0.19	0	0.00	1	0.09	0	0.00	1	0.09
	OI group in Sabah & Sarawak	3,674	12	0.33	7	0.19	4	0.11	0	0.00	1	0.03
	Others	583	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Foreigners	7,201	17	0.24	12	0.17	5	0.07	0	0.00	0	0.00
	NA	842	1	0.12	1	0.12	0	0.00	0	0.00	0	0.00

**Table 10.4: Distribution of Heart disease by Maternal Age 2016-2017**

Age	Total Delivery	Type of heart disease										
		Heart disease			Acquired		Congenital		IHD		NA	
	n	n	%	n	%	n	%	n	%	n	%	
2016	10-14	40	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,410	15	0.34	6	0.14	8	0.18	0	0.00	1	0.02
	20-24	22,434	51	0.2	32	0.14	19	0.08	2	0.01	0	0.00
	25-29	47,719	155	0.32	77	0.16	72	0.15	1	0.00	6	0.01
	30-34	41,957	150	0.36	71	0.17	61	0.15	2	0.00	18	0.04
	35-39	20,483	93	0.45	52	0.25	33	0.16	0	0.00	8	0.04
	40-44	5,454	27	0.5	14	0.26	8	0.15	0	0.00	5	0.09
	45-49	429	3	0.70	2	0.47	0	0.00	0	0.00	1	0.23
	50-54	14	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	≥55	6	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2017	10-14	49	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,138	9	0.22	4	0.10	5	0.12	0	0.00	0	0.00
	20-24	23,181	66	0.28	37	0.16	26	0.11	2	0.01	3	0.01
	25-29	50,091	176	0.35	102	0.20	67	0.13	0	0.00	7	0.01
	30-34	45,282	176	0.39	110	0.2	56	0.12	1	0.00	10	0.02
	35-39	23,369	108	0.46	71	0.30	34	0.15	6	0.03	3	0.01
	40-44	6,042	29	0.48	16	0.26	12	0.20	2	0.03	1	0.02
	45-49	453	5	1.10	4	0.8	1	0.22	1	0.22	0	0.00
	50-54	9	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	≥55	1	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

**Table 10.5: Distribution of Heart disease by Parity 2016-2017**

Parity	Total Delivery	Type of heart disease										
		Heart disease			Acquired		Congenital		IHD		NA	
	n	n	%	n	%	n	%	n	%	n	%	
2016	1	49,455	150	0.30	68	0.14	71	0.14	2	0.00	11	0.02
	2-5	87,398	322	0.37	173	0.20	122	0.14	3	0.00	27	0.03
	≥6	5,561	21	0.38	12	0.22	8	0.14	0	0.00	1	0.02
	NA	532	1	0.19	1	0.19	0	0.00	0	0.00	0	0.00
2017	1	51,206	162	0.32	76	0.15	72	0.14	2	0.00	14	0.03
	2-5	95,172	378	0.40	250	0.26	121	0.13	9	0.01	7	0.01
	≥6	6,114	29	0.47	18	0.29	8	0.13	1	0.02	3	0.05
	NA	123	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

**Table 10.6: Distribution of Heart disease by Mode of delivery 2016-2017**

Mode of delivery			Total Delivery	Type of heart disease									
				Heart disease			Acquired		Congenital		IHD		
2016	Vaginal	SVD	94,859	265	0.28	148	0.16	110	0.12	3	0.00	7	0.01
		Breech	419	3	0.72	2	0.48	1	0.24	0	0.00	0	0.00
		NA	32	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Total	95,310	268	0.28	150	0.16	111	0.12	3	0.00	7	0.01
	Instrumental	Vacuum	5,111	27	0.53	13	0.25	14	0.27	0	0.00	0	0.00
		Forceps	438	3	0.68	0	0.00	3	0.68	0	0.00	0	0.00
		Total	5,545	30	0.54	13	0.23	17	0.31	0	0.00	0	0.00
	CS	LSCS	39,394	189	0.48	89	0.23	68	0.17	2	0.01	32	0.08
		Classical	69	1	1.45	0	0.00	1	1.45	0	0.00	0	0.00
		Hysterotomy	32	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Hysterectomy	144	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Others	55	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Total	39,608	193	0.49	89	0.22	72	0.18	2	0.01	32	0.08
		NA	2,453	1	0.04	0	0.00	1	0.04	0	0.00	0	0.00
2017	Vaginal	SVD	99,978	315	0.32	208	0.21	104	0.10	3	0.00	3	0.00
		Breech	504	3	0.60	2	0.40	0	0.00	0	0.00	1	0.20
		NA	17	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Total	100,499	318	0.32	210	0.21	104	0.10	3	0.00	4	0.00
	Instrumental	Vacuum	5,175	24	0.46	15	0.29	9	0.17	0	0.00	0	0.00
		Forceps	535	2	0.37	2	0.37	0	0.00	0	0.00	0	0.00
		Total	5,708	26	0.46	17	0.30	9	0.16	0	0.00	0	0.00
	CS	LSCS	44,591	221	0.50	115	0.26	86	0.19	9	0.02	20	0.04
		Classical	69	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Hysterotomy	38	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Hysterectomy	133	1	0.75	1	0.75	0	0.00	0	0.00	0	0.00
		Others	56	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Total	44,796	222	0.50	115	0.26	87	0.19	9	0.02	20	0.04
		NA	1,591	3	0.19	2	0.13	1	0.06	0	0.00	0	0.00

**Table 10.7: Distribution of Heart disease by severity 2016-2017**

Severity of heart disease	Total Delivery	Type of heart disease										
		Heart disease			Acquired		Congenital		IHD			
		n	n	%	n	%	n	%	n	%		
2016	NYHA I	224	224	100.00	118	52.68	105	46.88	4	1.79	1	0.45
	NYHA II	55	55	100.00	34	61.82	21	38.18	0	0.00	0	0.00
	NYHA III	3	3	100.00	3	100.00	0	0.00	0	0.00	0	0.00
	NYHA IV	1	1	100.00	1	100.00	0	0.00	0	0.00	0	0.00
	NA	142,663	211	0.15	98	0.07	75	0.05	1	0.00	38	0.03
2017	NYHA I	275	275	100.00	175	63.64	100	36.36	6	2.18	0	0.00
	NYHA II	40	40	100.00	24	60.00	16	40.00	1	2.50	0	0.00
	NYHA III	5	5	100.00	3	60.00	2	40.00	1	20.00	0	0.00
	NYHA IV	1	1	100.00	1	100.00	0	0.00	0	0.00	0	0.00
	NA	152,294	248	0.16	141	0.09	83	0.05	4	0.00	24	0.02

**Table 10.8: Distribution of Heart disease by Maternal and Fetal complications**

**2016-2017**

Maternal and Fetal complications		Total Deliveries	Type of heart disease									
			Heart disease			Acquired		Congenital		IHD		NA
2016	n	n	%	n	%	n	%	n	%	n	%	n
	None	136,063	420	0.31	202	0.15	184	0.14	5	0.00	34	0.02
	Anesthesia complication	10	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Failed instrumentation	89	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Preterm labour	11,978	494	4.12	254	2.12	201	1.68	5	0.04	39	0.33
	PPH<1500mls	553	3	0.54	2	0.36	1	0.18	0	0.00	0	0.00
	Pulmonary embolism	4	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Shock cardiogenic	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Thromboembolism	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2017	Uterine atony	573	2	0.35	1	0.17	1	0.17	0	0.00	0	0.00
	None	140,281	471	0.34	286	0.20	167	0.12	11	0.01	18	0.01
	Anesthesia complication	24	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Failed instrumentation	63	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Preterm labour	13,786	569	4.13	344	2.50	201	1.46	12	0.09	24	0.17
	PPH<1500mls	2,347	15	0.64	12	0.51	3	0.13	0	0.00	0	0.00
	Pulmonary embolism	6	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Shock cardiogenic	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Thromboembolism	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Uterine atony	2,027	13	0.64	11	0.54	2	0.10	0	0.00	0	0.00

# **SEXUALLY TRANSMITTED DISEASE**

**Table 11.1: Incidence of HIV and Syphilis in pregnancy by Hospitals 2016-2017**

SDP	2016						2017							
	Total Delivery	HIV in pregnancy			Syphilis in pregnancy			Total Delivery	HIV in pregnancy			Syphilis in pregnancy		
		n	n	%	n	n	%		n	n	%	n	n	%
HSA, Johor	13,151	6	0.0	19	0.14	13,930	13	0.09	28	0.20				
HSB, Kedah	12,064	10	0.08	35	0.29	12,052	10	0.08	40	0.33				
HRPZ II, Kelantan	11,536	8	0.07	5	0.04	12,903	17	0.13	17	0.13				
Hospital Melaka	11,230	6	0.05	32	0.28	11,452	6	0.05	46	0.40				
HTJ, N. Sembilan	10,117	8	0.08	13	0.13	10,831	2	0.02	7	0.06				
HTAA, Pahang	8,107	7	0.09	16	0.20	10,161	9	0.09	22	0.22				
HRPB, Perak	8,316	14	0.17	13	0.16	9,129	12	0.13	19	0.21				
HTF, Perlis	4,851	4	0.08	7	0.14	5,117	3	0.06	14	0.27				
HPP. Pulau Pinang	4,192	4	0.10	5	0.12	4,623	3	0.06	13	0.28				
HWKK Likas, Sabah	14,488	12	0.08	29	0.20	14,463	4	0.03	165	1.14				
HUS, Sarawak	9,481	8	0.08	14	0.15	10,940	4	0.04	19	0.17				
HTAR, Selangor	10,835	8	0.07	11	0.10	10,420	11	0.11	22	0.21				
HSNZ, Terengganu	11,025	7	0.06	16	0.15	11,723	5	0.04	20	0.17				
HKL	10,097	10	0.10	18	0.18	11,262	13	0.12	31	0.28				
H. Segamat	3,456	3	0.09	5	0.14	3,609	5	0.14	2	0.06				
Total	142,946	115	0.08	238	0.17	152,615	117	0.08	465	0.30				

**Table 11.2: Incidence of HIV and Syphilis in pregnancy by Ethnicity 2016-2017**

Ethnicity	2016						2017							
	Total Delivery	HIV in pregnancy			Syphilis in pregnancy			Total Delivery	HIV in pregnancy			Syphilis in pregnancy		
		n	n	%	n	n	%		n	n	%	n	n	%
Malay	104,040	68	0.07	167	0.16	112,688	74	0.07	233	0.21				
Chinese	7,883	10	0.13	10	0.13	8,179	8	0.10	19	0.23				
Indian	6,005	8	0.13	14	0.23	6,391	8	0.13	27	0.42				
Kadazan/Dusun	4,480	2	0.04	8	0.18	4,525	0	0.00	43	0.95				
Murut	293	0	0.00	0	0.00	354	1	0.28	4	1.13				
Bajau	3,215	1	0.03	3	0.09	3,198	1	0.03	34	1.06				
Melanau	66	0	0.00	0	0.00	64	0	0.00	0	0.00				
Iban	1,881	2	0.11	4	0.21	2,029	0	0.00	9	0.44				
Bidayuh	1,615	0	0.00	2	0.12	1,834	2	0.11	2	0.11				
OA Peninsular Malaysia	952	2	0.21	1	0.11	1,053	0	0.00	1	0.09				
OI group in Sabah & Sarawak	3,527	7	0.20	5	0.14	3,674	1	0.03	50	1.36				
Others	583	1	0.17	0	0.00	583	0	0.00	3	0.51				
Foreigners	7,421	12	0.16	23	0.31	7,201	20	0.28	34	0.47				
NA	985	2	0.20	1	0.10	842	2	0.24	6	0.71				

**Table 11.3: Incidence of HIV and Syphilis by Maternal Age 2016-2017**

Age	2016						2017					
	Total Delivery		HIV in pregnancy		Syphilis in pregnancy		Total Delivery		HIV in pregnancy		Syphilis in pregnancy	
	n	n	%	n	%	n	n	%	n	%	n	%
10-14	40	0	0.00	0	0.00	49	0	0.00	0	0.00	0	0.00
15-19	4,410	2	0.05	8	0.18	4,138	7	0.17	16	0.39		
20-24	22,434	28	0.12	43	0.19	23,181	17	0.07	72	0.31		
25-29	47,719	28	0.06	75	0.16	50,091	35	0.07	154	0.31		
30-34	41,957	26	0.06	74	0.18	45,282	33	0.07	136	0.30		
35-39	20,483	20	0.10	28	0.14	23,369	19	0.08	66	0.28		
40-44	5,454	11	0.20	10	0.18	6,042	6	0.10	21	0.35		
45-49	429	0	0.00	0	0.00	453	0	0.00	0	0.00		
50-54	14	0	0.00	0	0.00	9	0	0.00	0	0.00		
≥55	6	0	0.00	0	0.00	1	0	0.00	0	0.00		

**Table 11.4: Incidence of HIV and Syphilis by Parity 2016-2017**

Parity	2016						2017					
	Total Delivery		HIV in pregnancy		Syphilis in pregnancy		Total Delivery		HIV in pregnancy		Syphilis in pregnancy	
	n	n	%	n	%	n	n	%	n	%	n	%
1	49,455	39	0.08	85	0.17	51,206	41	0.08	156	0.30		
2-5	87,398	69	0.08	143	0.16	95,172	68	0.07	285	0.30		
≥6	5,561	6	0.11	7	0.13	6,114	6	0.10	24	0.39		
NA	532	1	0.19	3	0.56	123	2	1.63	0	0.00		

**Table 11.5: Incidence of HIV and Syphilis by Mode of delivery 2016-2017**

Mode of delivery	2016						2017					
	Total Delivery		HIV in pregnancy		Syphilis in pregnancy		Total Delivery		HIV in pregnancy		Syphilis in pregnancy	
	n	n	%	n	%	n	n	%	n	%	n	%
Vaginal	SVD	94,859	43	0.05	171	0.18	99,978	37	0.04	333	0.33	
	Breech	419	0	0.00	1	0.24	504	0	0.00	2	0.40	
	NA	32	0	0.00	0	0.00	17	0	0.00	0	0.00	
	Total	95,310	43	0.05	172	0.18	100,499	37	0.04	335	0.33	
Instrumental	Vacuum	5,111	2	0.04	9	0.18	5,175	0	0.00	8	0.15	
	Forceps	438	1	0.23	0	0.00	535	0	0.00	6	1.12	
	Total	5,545	3	0.05	9	0.16	5,708	0	0.00	14	0.25	
CS	LSCS	39,394	67	0.17	56	0.14	44,591	78	0.17	110	0.25	
	Classical	69	0	0.00	0	0.00	69	0	0.00	0	0.00	
	Hysterotomy	32	1	3.13	0	0.00	38	0	0.00	0	0.00	
	Hysterectomy	144	1	0.69	0	0.00	133	0	0.00	0	0.00	
	Others	55	0	0.00	0	0.00	56	0	0.00	0	0.00	
	Total	39,608	68	0.17	56	0.14	44,796	78	0.17	110	0.25	
	NA	2,453	1	0.04	1	0.04	1,591	2	0.13	6	0.38	

**Table 11.6: Incidence of HIV and Syphilis in pregnancy by complications  
2016-2017**

Complications	2016						2017							
	Total Delivery			HIV in pregnancy		Syphilis in pregnancy		Total Deliver			HIV in pregnancy		Syphilis in pregnancy	
	n	n	%	n	%	n	n	%	n	n	%	n	%	
Fetal distress	18,883	8	0.04	28	0.15	20,472	8	0.04	50	0.26				
Prolonged labour	387	0	0.00	0	0.00	446	0	0.00	0	0.00				
Abruption placenta	305	0	0.00	1	0.33	300	1	0.33	1	0.33				
Preterm labour	11,978	11	0.09	21	0.18	13,786	17	0.14	48	0.40				
PPH	699	1	0.14	1	0.14	2,540	2	0.29	5	0.72				
Genital tract trauma	423	0	0.00	0	0.00	894	0	0.00	2	0.47				

**MEDICAL  
DISORDER  
IN  
PREGNANCY**

**Table 12.1: Incidence of Medical disorders in pregnancy by Hospitals 2016-2017**

SDP	Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder		Renal disease		Mental disorder		Others				
		n	n	%	n	%	n	%	n	%	n	%	n	%		
		HSA, Johor	13,151	18	0.14	186	1.41	43	0.33	3	0.02	0	0.00	2	0.02	78
2016	HSB, Kedah	12,064	29	0.24	132	1.09	24	0.20	0	0.00	1	0.01	2	0.02	41	0.34
	HRPZ II, Kelantan	11,536	24	0.21	56	0.49	16	0.14	1	0.01	3	0.03	3	0.03	13	0.11
	Hospital Melaka	11,230	10	0.09	44	0.39	21	0.19	2	0.02	2	0.02	0	0.00	18	0.16
	HTJ, N. Sembilan	10,117	4	0.04	20	0.20	8	0.08	0	0.00	1	0.01	0	0.00	5	0.05
	HTAA, Pahang	8,107	8	0.10	38	0.47	17	0.21	1	0.01	0	0.00	0	0.00	49	0.60
	HRPB, Perak	8,316	19	0.23	47	0.57	31	0.37	3	0.04	0	0.00	2	0.02	25	0.30
	HTF, Perlis	4,851	27	0.56	97	2.00	30	0.62	1	0.02	2	0.04	1	0.02	51	1.05
	HPP. Pulau Pinang	4,192	1	0.02	66	1.57	25	0.60	2	0.05	0	0.00	1	0.02	32	0.76
	HWKK Likas, Sabah	14,488	34	0.23	161	1.11	70	0.48	0	0.00	5	0.03	7	0.05	90	0.62
	HUS, Sarawak	9,481	36	0.38	252	2.66	34	0.36	2	0.02	16	0.17	5	0.05	82	0.86
	HTAR, Selangor	10,835	14	0.13	107	0.99	17	0.16	2	0.02	2	0.02	3	0.03	84	0.78
	HSNZ, Terengganu	11,025	96	0.87	287	2.60	178	1.61	0	0.00	9	0.08	11	0.10	585	5.31
	HKL	10,097	32	0.32	151	1.50	64	0.63	2	0.02	2	0.02	3	0.03	87	0.86
	H. Segamat	3,456	3	0.09	42	1.22	4	0.12	0	0.00	0	0.00	1	0.03	22	0.64
	Total	142,946	355	0.25	1,686	1.18	582	0.41	19	0.01	43	0.03	41	0.03	1,262	0.88
2017	HSA, Johor	13,930	20	0.14	212	1.52	43	0.31	6	0.04	3	0.02	9	0.06	120	0.86
	HSB, Kedah	12,052	33	0.27	107	0.89	19	0.16	0	0.00	0	0.00	4	0.03	31	0.26
	HRPZ II, Kelantan	12,903	29	0.22	114	0.88	23	0.18	2	0.02	2	0.02	3	0.02	23	0.18
	Hospital Melaka	11,452	11	0.10	54	0.47	13	0.11	1	0.01	1	0.01	3	0.03	7	0.06
	HTJ, N. Sembilan	10,831	6	0.06	21	0.19	12	0.11	3	0.03	0	0.00	1	0.01	4	0.04
	HTAA, Pahang	10,161	17	0.17	106	1.04	29	0.29	2	0.02	1	0.01	2	0.02	109	1.07
	HRPB, Perak	9,129	13	0.14	52	0.57	12	0.13	2	0.02	2	0.02	2	0.02	6	0.07
	HTF, Perlis	5,117	21	0.41	114	2.23	36	0.70	3	0.06	0	0.00	5	0.10	27	0.53
	HPP. Pulau Pinang	4,623	6	0.13	66	1.43	25	0.54	0	0.00	0	0.00	1	0.02	13	0.28
	HWKK Likas, Sabah	14,463	32	0.22	116	0.80	76	0.53	2	0.01	3	0.02	6	0.04	41	0.28
	HUS, Sarawak	10,940	50	0.46	231	2.11	19	0.17	0	0.00	7	0.06	3	0.03	100	0.91
	HTAR, Selangor	10,420	45	0.43	179	1.72	30	0.29	5	0.05	4	0.04	8	0.08	86	0.83
	HSNZ, Terengganu	11,723	101	0.86	439	3.74	223	1.90	3	0.03	14	0.12	12	0.10	964	8.22
	HKL	11,262	69	0.61	286	2.54	53	0.47	6	0.05	18	0.16	13	0.12	71	0.63
	H. Segamat	3,609	10	0.28	56	1.55	14	0.39	0	0.00	2	0.06	3	0.08	15	0.42
	Total	152,615	463	0.30	2,153	1.41	627	0.41	35	0.02	57	0.04	75	0.05	1,617	1.06

**Table 12.2: Incidence of Medical disorders in pregnancy by Ethnicity 2016-2017**

Ethnicity	Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder				Renal disease		Mental disorder		Others	
		n	n %	n	n %	n	n %	n	n %	n	n %	n	n %		
2016	Malay	104,040	273 0.26	1,289	1.24	440	0.42	17	0.02	26	0.02	27	0.03	998	0.96
	Chinese	7,883	18 0.23	65	0.82	53	0.67	1	0.01	3	0.04	3	0.04	59	0.75
	Indian	6,005	10 0.17	75	1.25	5	0.08	1	0.02	2	0.03	1	0.02	42	0.70
	Kadazan/Dusun	4,480	12 0.27	38	0.85	42	0.94	0	0.00	1	0.02	2	0.04	26	0.58
	Murut	293	1 0.34	3	1.02	1	0.34	0	0.00	0	0.00	0	0.00	1	0.34
	Bajau	3,215	13 0.40	39	1.21	10	0.31	0	0.00	0	0.00	1	0.03	16	0.50
	Melanau	66	0 0.00	4	6.06	0	0.00	0	0.00	0	0.00	2	3.03	1	1.52
	Iban	1,881	5 0.27	48	2.55	2	0.11	0	0.00	3	0.16	1	0.05	14	0.74
	Bidayuh	1,615	8 0.50	33	2.04	0	0.00	0	0.00	3	0.19	0	0.00	14	0.87
	OAPeninsular Malaysia	952	1 0.11	1	0.11	2	0.21	0	0.00	0	0.00	0	0.00	7	0.74
	OI group in Sabah & Sarawak	3,527	6 0.17	55	1.56	14	0.40	0	0.00	3	0.09	3	0.09	29	0.82
	Others	583	0 0.00	11	1.89	1	0.17	0	0.00	1	0.17	0	0.00	2	0.34
	Foreigners	7,421	7 0.09	22	0.30	10	0.13	0	0.00	1	0.01	1	0.01	51	0.69
	NA	985	1 0.10	3	0.30	2	0.20	0	0.00	0	0.00	0	0.00	2	0.20
2017	Malay	112,688	343 0.30	1,747	1.55	488	0.43	26	0.02	42	0.04	58	0.05	1,408	1.25
	Chinese	8,179	20 0.24	54	0.66	40	0.49	2	0.02	4	0.05	5	0.06	63	0.77
	Indian	6,391	21 0.33	118	1.85	5	0.08	3	0.05	1	0.02	3	0.05	32	0.50
	Kadazan/Dusun	4,525	10 0.22	25	0.55	49	1.08	1	0.02	0	0.00	1	0.02	17	0.38
	Murut	354	0 0.00	1	0.28	5	1.41	0	0.00	0	0.00	0	0.00	1	0.28
	Bajau	3,198	6 0.19	27	0.84	7	0.22	1	0.03	0	0.00	2	0.06	6	0.19
	Melanau	64	0 0.00	2	3.13	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	Iban	2,029	13 0.64	47	2.32	3	0.15	0	0.00	2	0.10	1	0.05	14	0.69
	Bidayuh	1,834	11 0.60	39	2.13	2	0.11	0	0.00	5	0.27	1	0.05	18	0.98
	OAPeninsular Malaysia	1,053	4 0.38	4	0.38	0	0.00	0	0.00	0	0.00	0	0.00	7	0.66
	OI group in Sabah & Sarawak	3,674	13 0.35	45	1.22	14	0.38	0	0.00	2	0.05	1	0.03	13	0.35
	Others	583	2 0.34	3	0.51	2	0.34	0	0.00	0	0.00	0	0.00	2	0.34
	Foreigners	7,201	17 0.24	30	0.42	9	0.12	1	0.01	0	0.00	2	0.03	29	0.40
	NA	842	3 0.36	11	1.31	3	0.36	1	0.12	1	0.12	1	0.12	7	0.83

**Table 12.3: Incidence of Medical disorders in pregnancy by Maternal Age  
2016-2017**

Age	Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder			Renal disease		Mental disorder		Others	
		n	n	%	n	%	n	%	n	%	n	%	n	%
2016	10-14	40	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,410	2	0.05	53	1.20	12	0.27	0	0.00	2	0.05	3	0.07
	20-24	22,434	37	0.16	275	1.23	94	0.42	2	0.01	6	0.03	6	0.03
	25-29	47,719	108	0.23	539	1.13	223	0.47	8	0.02	11	0.02	10	0.02
	30-34	41,957	122	0.29	498	1.19	176	0.42	5	0.01	18	0.04	9	0.02
	35-39	20,483	64	0.31	231	1.13	60	0.29	4	0.02	4	0.02	8	0.04
	40-44	5,454	20	0.37	85	1.56	17	0.31	0	0.00	2	0.04	5	0.09
	45-49	429	2	0.47	5	1.17	0	0.00	0	0.00	0	0.00	0	0.00
	50-54	14	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	≥55	6	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2017	10-14	49	0	0.00	1	2.04	0	0.00	0	0.00	0	0.00	0	0.00
	15-19	4,138	2	0.05	49	1.18	8	0.19	3	0.07	0	0.00	1	0.02
	20-24	23,181	42	0.18	310	1.34	79	0.34	3	0.01	4	0.02	9	0.04
	25-29	50,091	137	0.27	682	1.36	220	0.44	8	0.02	20	0.04	24	0.05
	30-34	45,282	152	0.34	664	1.47	187	0.41	14	0.03	13	0.03	16	0.04
	35-39	23,369	89	0.38	342	1.46	112	0.48	4	0.02	15	0.06	19	0.08
	40-44	6,042	36	0.60	98	1.62	21	0.35	3	0.05	4	0.07	5	0.08
	45-49	453	5	1.10	7	1.55	0	0.00	0	0.00	1	0.22	1	0.22
	50-54	9	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	≥55	1	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

**Table 12.4: Incidence of Medical disorders in pregnancy by Parity 2016-2017**

Parity		Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder				Renal disease		Mental disorder		Others	
			n	n	%	n	n	%	n	n			n	n	%	n
2016	1	49,455	98	0.20	564	1.14	204	0.41	7	0.01	14	0.03	5	0.01	412	0.83
	2-5	87,398	243	0.28	1,023	1.17	367	0.42	12	0.01	29	0.03	32	0.04	792	0.91
	≥6	5,561	14	0.25	95	1.71	11	0.20	0	0.00	0	0.00	4	0.07	58	1.04
	NA	532	0	0.00	4	0.75	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
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2017	1	51,206	131	0.26	687	1.34	172	0.34	8	0.02	16	0.03	22	0.04	584	1.14
	2-5	95,172	306	0.32	1,343	1.41	429	0.45	26	0.03	36	0.04	45	0.05	956	1.00
	≥6	6,114	25	0.41	121	1.98	26	0.43	1	0.02	4	0.07	8	0.13	77	1.26
	NA	123	1	0.81	2	1.63	0	0.00	0	0.00	1	0.81	0	0.00	0	0.00

**Table 12.5: Incidence of Medical disorders in pregnancy by Gestation 2016-2017**

Gestation		Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder				Renal disease		Mental disorder		Others	
			n	n	%	n	n	%	n	n			n	n	%	n
2016	Preterm	16,768	51	0.30	220	1.31	66	0.39	3	0.02	14	0.08	9	0.05	174	1.04
	Term	112,806	276	0.24	1,246	1.10	484	0.43	16	0.01	17	0.02	27	0.02	994	0.88
	Post term	1,518	3	0.20	19	1.25	2	0.13	0	0.00	1	0.07	1	0.07	13	0.86
	NA	11,854	25	0.21	201	1.70	30	0.25	0	0.00	11	0.09	4	0.03	81	0.68
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2017	Preterm	13,605	53	0.39	209	1.54	43	0.32	10	0.07	12	0.09	10	0.07	157	1.15
	Term	95,756	281	0.29	1,324	1.38	399	0.42	17	0.02	28	0.03	29	0.03	885	0.92
	Post term	1,791	4	0.22	25	1.40	10	0.56	0	0.00	0	0.00	0	0.00	13	0.73
	NA	41,463	125	0.30	595	1.44	175	0.42	8	0.02	17	0.04	36	0.09	562	1.36

**Table 12.6: Incidence of Medical disorders in pregnancy by Fetal outcome  
2016-2017**

Fetal outcome	Total Delivery	Thyroid disease		Bronchial asthma		Haematological disorder				Renal disease		Mental disorder		Others		
		n	n	%	n	n	%	n	n	%	n	n	%	n	n	%
2016	Alive	139,390	349	0.25	1,656	1.19	570	0.41	19	0.01	41	0.03	39	0.03	1,248	0.90
	Dead	1,139	4	0.35	11	0.97	7	0.61	0	0.00	1	0.09	1	0.09	8	0.70
	NA	2,417	2	0.08	19	0.79	5	0.21	0	0.00	1	0.04	1	0.04	6	0.25
2017	Alive	149,746	456	0.30	2,127	1.42	611	0.41	34	0.02	55	0.04	73	0.05	1,593	1.06
	Dead	1,286	5	0.39	12	0.93	9	0.70	1	0.08	2	0.16	2	0.16	18	1.40
	NA	1,583	2	0.13	14	0.88	7	0.44	0	0.00	0	0.00	0	0.00	6	0.38







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