

NATIONAL OBSTETRIC INFORMATION SYSTEM (NOIS)

MALTA

ANNUAL REPORT 2004

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NATIONAL OBSTETRIC INFORMATION SYSTEMS (NOIS)

A national obstetric information system was launched in the beginning of 1999 and now covers practically all deliveries taking place on the islands of Malta and Gozo.

Data collection and Sources of Information

Systematic data collection for NOIS commences once the mother delivers her baby. Information regarding the course and outcome of each pregnancy is recorded by the relevant staff at each centre on a standard NOIS sheet. Once the data are recorded, the sheets are forwarded to the DHI on a weekly basis. At the DHI the relevant sheets are processed and entered into the NOIS database.

The maternity centres actively participating in this information system are: St. Lukes Hospital, Gozo General Hospital, St James Hospital Sliema and Zabbar and St. Philip's Hospital.

Report

This report analyses the national deliveries and infant/fetal births that occurred in 2004 and compares it to the figures reported for last year. The data in this report describes statistics for all deliveries (Maltese and non-Maltese) and births registered into the system.

Data is sent to the Registry from all hospitals on the Maltese Islands. Accuracy and completeness of data sent on the NOIS reporting sheets is the responsibility of the Hospital providing data.

ANALYSIS

There were a total of 3838 deliveries registered in the Maltese islands for 2004, which resulted in a total of 3902 infant/fetal births. The table below gives the number of deliveries and births in Malta and Gozo and registered in NOIS since 1999.

Year	Deliveries	Births
1999	4311	4382
2000	4311	4377
2001	3918	3955
2002	3873	3927
2003	3995	4054
2004	3838	3902

Of the registered 3838 deliveries (3902 births), 3571 deliveries (3633 births) occurred in Malta and 267 deliveries (269 births) occurred in Gozo.

DELIVERIES

MATERNAL AGE, MARITAL STATUS, NATIONALITY AND PARITY

Maternal Age:

The maternities have been grouped according to the standard age groupings and the frequency distribution of deliveries according to maternal age at delivery has been analysed. This year, the greatest number of deliveries 1418 (37%), occurred in the age group 25 to 29 years while the lowest number of deliveries 4 (<1%) occurred in the age group 45 years and over. There were 5 deliveries in the youngest age group <15 years. The minimum age at delivery of the mothers was 14 years while the maximum age was 46 years. The most frequent age at delivery and average maternal age was 28 years.

The frequency distribution of deliveries in 2004 according to maternal age group is given in the following table.

Deliveries according to maternal age groups:

<i>Age group (years)</i>	<i>2004</i>		<i>2003</i>	
	<i>Frequency</i>	<i>%</i>	<i>Frequency</i>	<i>%</i>
<15	5	<1	5	<1
15-19	217	6	216	5
20-24	721	19	802	20
25-29	1418	37	1465	37
30-34	1028	27	1028	26
35-39	359	9	377	9
40-44	85	2	81	2
45+	4	<1	1	<1
Unspecified	1	<1	20	1

Marital Status:

This year, 18% (697) of all deliveries occurred to mothers who were never married (single); while 81% (3101) of all deliveries occurred to mothers who were married once (married, widowed, separated). The remaining 1% (40) of deliveries had no marital status specified.

In 2004, according to the data registered in NOIS, of the 697 mothers who have never been married, 693 were reported as having 'support at home to raise the infant', 2 were registered as "not having support at home" and for another 2 mothers this data was not specified.

Nationality:

92.7% (3558) of all deliveries this year, occurred to women of Maltese nationality while 7.3% (279) were Non-Maltese. In the remaining <1% (1) nationality was not specified.

Parity:

There were 52% (1985) of mothers who were primiparas while 48% (1853) were multiparas this year.

Parity of mothers by maternal age group:

Mother's Age Group	Delivery order							
	1 st	2 nd	3 rd	4 th	5 th	>5 th	Unknown	Total
Under 20	200	22	0	0	0	0	0	222
20-24	504	173	37	6	1	0	0	721
25-29	856	430	100	26	2	4	0	1418
30-34	331	474	158	48	11	6	0	1028
35-39	79	148	91	24	8	9	0	359
40-44	13	16	26	16	5	9	0	85
45-49	2	0	2	0	0	0	0	4
Unknown	0	1	0	0	0	0	0	1
Total	1985	1264	414	120	27	28	0	3838

MATERNAL LIFESTYLES

There were 7% (276) of mothers who were reported to smoke one or more cigarettes during pregnancy this year. None were reported to drink alcohol regularly and 12 (<1%) were reported as being drug abusers.

The following table gives the reported smoking, alcohol and drug habits of mothers for 2004 and 2003.

<i>Maternal Lifestyles</i>	<i>2004</i>	<i>2003</i>
	<i>No.</i>	<i>No.</i>
<i>Cigarette smoking during pregnancy:</i>		
1 to 3/day	58	18
>than 3/day	218	105
Do not smoke	3552	3824
Unspecified	10	48
<i>Alcohol consumption during pregnancy:</i>		
Up to 1 unit/day	-	0
>than 1 unit/day	-	0
None	3830	3948
Unspecified	8	47
<i>Drug Abuse during pregnancy</i>		
Yes	12	8
No	3818	3941
Unspecified	8	46

PATHOLOGY DURING PREGNANCY

The table below gives the number of mothers for this year and last year that were reported with a specific obstetric pathology during pregnancy.

The most frequently reported pathology during pregnancy was gestational hypertension, there were in fact 6% of mothers who were registered as having gestational hypertension this year.

<i>Pathology recorded during pregnancy</i>	<i>2004</i>			<i>2003</i>		
	<i>Yes</i>	<i>No</i>	<i>Unspec.</i>	<i>Yes</i>	<i>No</i>	<i>Unspec.</i>
Antepartum Haemorrhage	39	3796	3	43	3942	10
Gestational hypertension	237	3598	3	260	3724	11
Pre-eclampsia	14	3823	1	25	3960	10
Eclampsia	5	3832	1	0	3983	12
Placenta praevia	11	3827	0	25	3960	10
Abruption of placenta	11	3827	0	13	3969	13
Suspected IUGR*	186	3650	2	171	3815	9
Assisted fertilisation	44	3793	1	35	3949	11
Cardiovascular disease	1	3829	8	3	3982	10

*IUGR – intrauterine growth retardation

DIABETES IN PREGNANCY

In 2004 there were 15 mothers who were reported as being Insulin Dependent Diabetic before this pregnancy while there were 2 mothers reported with Non-Insulin Dependent diabetes prior to pregnancy. In addition, there were a total of 69 mothers registered with gestational diabetes who were controlled without the use of insulin, and 6 mothers registered as having gestational diabetes treated with insulin.

ULTRASONOGRAPHY

1867 (49%) of the mothers were reported to have had one or two ultrasounds carried out during pregnancy while 228 (6%) had five or more scans. For 686 (18%) of mothers, the number of ultrasounds taken was unspecified or unknown. The table below gives the number and rate of ultrasound scans carried out during pregnancy.

<i>No. of Scans</i>	<i>2004</i>		<i>2003</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
1	921	24	889	22
2	946	25	1189	30
3	694	18	867	22
4	360	9	470	12
5 or more	228	6	232	6
None	3	<1	0	0
Unspecified/ unknown	686	18	348	8

CATEGORY OF MATERNITY ACCORDING TO DELIVERY

For this year, there were a total of 3782 (98.5%) singleton and 50 (1.3%) twin deliveries, 4 triplet and 2 quadruplet deliveries.

<i>Category</i>	<i>2004</i>	<i>2003</i>
Singleton	3782	3939
Twin	50	53
Triplet	4	3
Quadruplet	2	-

SITE AND ONSET OF DELIVERY

In 2004 of the total 3838 deliveries registered by NOIS, 3834 (99.9%) occurred in a hospital while there were 2 deliveries that occurred at home and another 2 that occurred at some other site. There were 14 deliveries which occurred underwater.

In 2004, of the total deliveries 3838, 48% (1825) were reported as spontaneous onset of contractions, 38% (1456) were induced by drugs or artificial rupture of membranes and 15% (557) were planned caesarian sections.

INFANT/FETAL BIRTHS

METHOD OF BIRTH

In 2004 there were a total of 3902 infant/fetal births. Of these 2647 (68%) were delivered as a vertex delivery, 1105 (28%) by emergency or elective Caesarean Section and 150 (4%) by assisted vaginal delivery (includes forceps, ventouse and breech).

<i>Method of Birth*</i>	<i>2004</i>	<i>2003</i>
Infants/fetuses delivered by:		
Vertex delivery	2647	2801
Elective/emergency Caesarean Section	1105	1091
Forceps	9	11
Ventouse	141	145
Breech deliveries	0	6

**Data analysed according to total infant/fetal births*

This year there were 1105 infants/fetuses delivered by caesarian section but 1048 caesarian operations performed, this due to the fact that a number of caesarians are done in multiple birth deliveries. The Caesarean section operation rate this year was 27% of the total 3838 maternal deliveries. The Caesarian section operation rate in 2003 was 26% of 3995 maternal deliveries.

GENDER DISTRIBUTION OF BIRTHS

The gender distribution of births is given in the table below. As usually seen, there were more male infants/fetuses delivered than female.

<i>Gender</i>	<i>2004</i>		<i>2003</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Male	2019	52	2061	51
Female	1883	48	1993	49

BIRTHWEIGHT OF INFANTS/FETUSES

In 2004, there were 3572 (91.5%) of the total births that occurred in the birth weight range of 2500g to 4999g. 271 (6.9%) of the total births were in the low birth weight range of 1500g to 2499g, while 38 (1.0%) of births were of very low birth weight 500g to 1499g. This year there were 18 babies of birth weight 4500g and over. In 3 babies, the birth weight was not recorded. The lowest birthweight recorded this year was 565g and occurred in one of a quadruplet delivery, the highest birth weight recorded was 5280g and this baby was born to a 35 year old mother weighing 94 kg prior to pregnancy (BMI 37). The average birth weight was 3213g in 2004 and 3202g in 2003.

<i>Birthweights</i>	<i>2004</i>		<i>2003</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<500g	0	0	3	0.1
500-999g	10	0.3	24	0.6
1000-1499g	28	0.7	21	0.5
1500-1999g	61	1.6	54	1.3
2000-2499g	210	5.4	197	4.9
2500-2999g	869	22.3	856	21.1
3000-3499g	1566	40.1	1765	43.5
3500-3999g	932	23.9	950	23.4
4000-4499g	205	5.3	156	3.8
4500-4999g	17	0.4	17	0.4
5000+	1	<0.1	2	<0.1
Unspecified	3	0.1	9	0.2

OUTCOME OF BIRTH

The number of live births in 2004 was 3887 which accounted for 99.6% of the total births at a national level. The remaining 15 births were stillbirths. Of the livebirths, there were 12 cases of early neonatal deaths and 5 cases of late neonatal deaths (see tables below).

<i>Outcome of Birth</i>	<i>2004</i>	<i>2003</i>
Livebirths	3887	4036
Stillbirths	15	18

<i>Neonatal deaths</i>	<i>2004</i>	<i>2003</i>
Early Neonatal deaths	12	19
Late Neonatal deaths	5	2

INFANT FEEDING METHODS AT DISCHARGE

Infant feeding habits are recorded by hospital staff at the time of discharge, little can be said on the actual infant feeding habits as these may change soon after discharge from the birthing facilities.

<i>Infant feeding methods at time of discharge</i>	<i>2004</i>	<i>2003</i>
Breast only	2130	2165
Bottle only	1218	1427
Mixed (Breast & Bottle)	501	397
Other*	32	16
Unspecified	21	51

* 'Other' - include babies who are still at hospital after 28 days and those who die before discharge

MATERNAL, FETAL, PERINATAL AND NEONATAL MORTALITY STATISTICS

(Compiled in conjunction with the National Mortality Register of the Department. of Health Information)

Maternal, fetal, perinatal and neonatal mortality statistics are good indicators of the quality of health care and these statistics are presented since 1999 when the NOIS database was started in the format it is today.

Definitions of the various rates presented are given below and follow the definitions suggested by WHO ICD-10 (International Statistical Classification of Diseases and Related Health Problems – Tenth Revision).

There were no maternal deaths during 2004.

Maternal deaths since 1999

Year	Maternal Deaths
1999	1
2000	0
2001	2
2002	0
2003	0
2004	0

Fetal death rates since 1999

Year	Fetal death rate 500g and over		Fetal death rate – 1000g and over	
	Number	Rate/1000 total births	Number	Rate/1000 total births
1999	27	6.2	18	4.2
2000	16	3.6	12	2.8
2001	20	5.1	17	4.3
2002	20	5.1	13	3.3
2003	16	3.9	8	2.0
2004	15	3.8	15	3.8

Early Neonatal mortality rates since 1999

Year	Early neonatal mortality rate 500g and over		Early neonatal mortality rate – 1000g and over	
	Number	Rate/1000 live births	Number	Rate/1000 live births
1999	16	3.7	9	2.1
2000	16	3.6	7	1.6
2001	10	2.5	3	0.8
2002	16	4.1	13	3.3
2003	18	4.5	11	2.7
2004	12	3.1	8	2.1

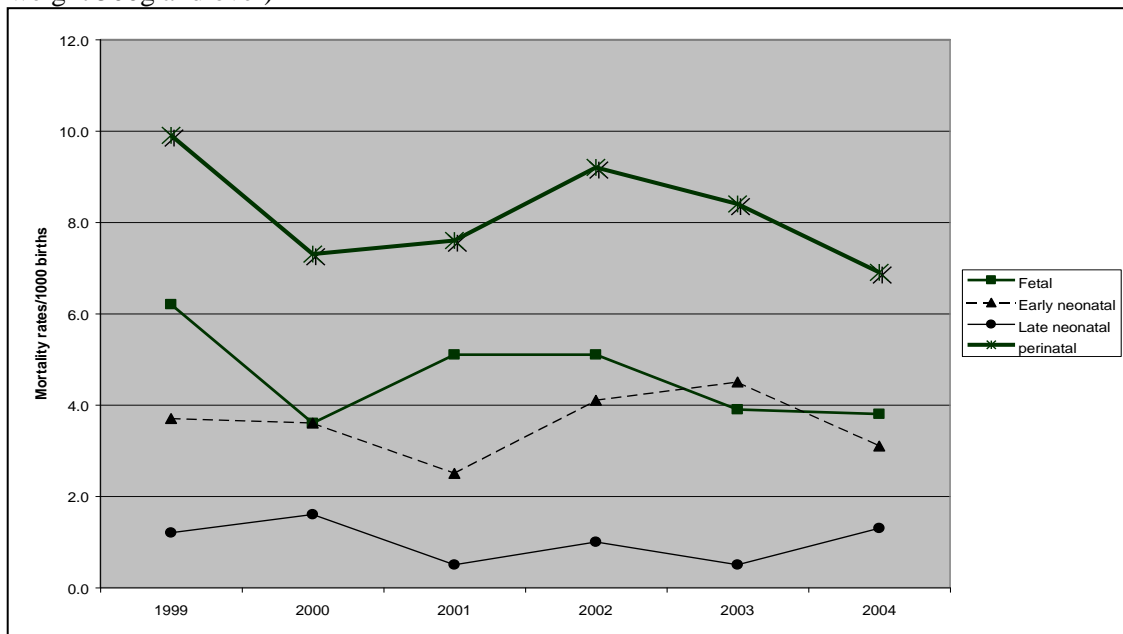
Perinatal mortality rates since 1999

Year	Perinatal mortality rate 500g and over		Perinatal mortality rate – 1000g and over	
	Number	Rate/1000 total births	Number	Rate/1000 total births
1999	43	9.9	27	6.2
2000	32	7.3	19	4.4
2001	30	7.6	20	5.1
2002	36	9.2	26	6.6
2003	34	8.4	19	4.7
2004	27	6.9	23	5.9

Late Neonatal mortality rates since 1999

Year	Late neonatal mortality rate 500g and over		Late neonatal mortality rate – 1000g and over	
	Number	Rate/1000 live births	Number	Rate/1000 live births
1999	5	1.2	3	0.7
2000	7	1.6	4	0.9
2001	2	0.5	1	0.3
2002	4	1.0	3	0.8
2003	2	0.5	2	0.5
2004	5	1.3	5	1.3

Fetal, Perinatal and Neonatal mortality rates 1999-2004 (for infants/fetuses of birth weight 500g and over)



It is seen that all mortality rates are relatively stable showing no statistically significant changing trends since 1999.

DEFINITIONS:

Birth Weight

The first weight of the fetus or newborn obtained after birth.

Low birth weight is less than 2500g (up to and including 2499g).

Very low birth weight is less than 1500g (up to and including 1499g).

Extremely low birth weight is less than 1000g (up to and including 999g)

Gestational Age

The duration of gestation is measured from the first day of the last menstrual period.

Gestational age is expressed in complete days or completed weeks.

For the purposes of calculation of gestational age from the date of the first day of the last normal menstrual period to the date of delivery, it should be borne in mind that the first day is day zero and not day one; days 0-6 therefore correspond to completed week zero;

Fetal Death

Fetal death is the death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Fetal Death Rate

The number of fetal deaths in a year expressed as a proportion of the total number of births (live births plus fetal deaths) in the same year. All fetuses with a birth weight of 500g and over are considered. Rates are usually expressed per 1000 total births.

$$\text{Fetal death rate} = \frac{\text{no. of fetal deaths in a year weighing 500g or more}}{\text{Number of live births plus fetal deaths in that year weighing 500g or more}} * 1000$$

$$\text{Fetal death rate (weight specific)} = \frac{\text{no. of fetal deaths in a year weighing 1000g or more}}{\text{Number of live births plus fetal deaths in that year weighing 1000g or more}} * 1000$$

Live Birth

Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after separation, breathes or shows any evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.

Neonatal Period

The neonatal period commences at birth and ends 28 completed days after birth. Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into early neonatal deaths, occurring during the first seven days of life, and late neonatal deaths, occurring after the seventh day but before 28 completed days of life.

Age at death during the first day of life (day 0) should be recorded in units of completed minutes or hours of life. For the second (day 1), third (day 2) and through 27 completed days of life, age at death should be recorded in days.

Neonatal Mortality Rate

The number of deaths during the neonatal period in that year expressed as a proportion of the total number of live births in the same year. Rates are expressed per 1000 live births.

$$\text{Neonatal mortality rate} = \frac{\text{no. of neonatal deaths in a year} * 1000}{\text{no. of live births in that year}}$$

$$\text{Neonatal mortality rate (weight specific)} = \frac{\text{no. of neonatal deaths in a year (1000g or over)} * 1000}{\text{no. of live births in that year (1000g or over)}}$$

Early Neonatal Mortality Rate

The number of deaths during the early neonatal period (during first 7 days of life) in that year expressed as a proportion of the total number of live births in the same year. Rates are expressed per 1000 live births.

$$\text{Early Neonatal mortality rate} = \frac{\text{no. of early neonatal deaths in a year} * 1000}{\text{no. of live births in that year}}$$

$$\text{Early Neonatal mortality rate (weight specific)} = \frac{\text{no. of early neonatal deaths in a year (1000g or over)} * 1000}{\text{no. of live births in that year (1000g or over)}}$$

Late Neonatal Mortality Rate

The number of deaths during the late neonatal period (occurring after the seventh day but before 28 completed days of life) in that year expressed as a proportion of the total number of live births in the same year. Rates are expressed per 1000 live births.

$$\text{Late Neonatal mortality rate} = \frac{\text{no. of early neonatal deaths in a year} * 1000}{\text{no. of live births in that year}}$$

$$\text{Late Neonatal mortality rate (weight specific)} = \frac{\text{no. of early neonatal deaths in a year (1000g or over)} * 1000}{\text{no. of live births in that year (1000g or over)}}$$

Perinatal Period

The perinatal period commences at 22 completed weeks (154 days) of gestation (the time when birth weight is normally 500g) and ends at seven completed days after birth.

Perinatal Mortality Rate

The number of deaths during the perinatal period in a year expressed as a proportion of the total number of births (live births plus fetal deaths) in the same year.

$$\text{Perinatal mortality rate} = \frac{\text{no. of perinatal deaths in a year} * 1000}{\text{no. of live births plus fetal deaths in that year}}$$

$$\text{Perinatal mortality rate (weight specific)} = \frac{\text{no. of perinatal deaths in a year (weight 1000g or over)} * 1000}{\text{no. of live births plus fetal deaths in that year (weight 1000g or over)}}$$

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