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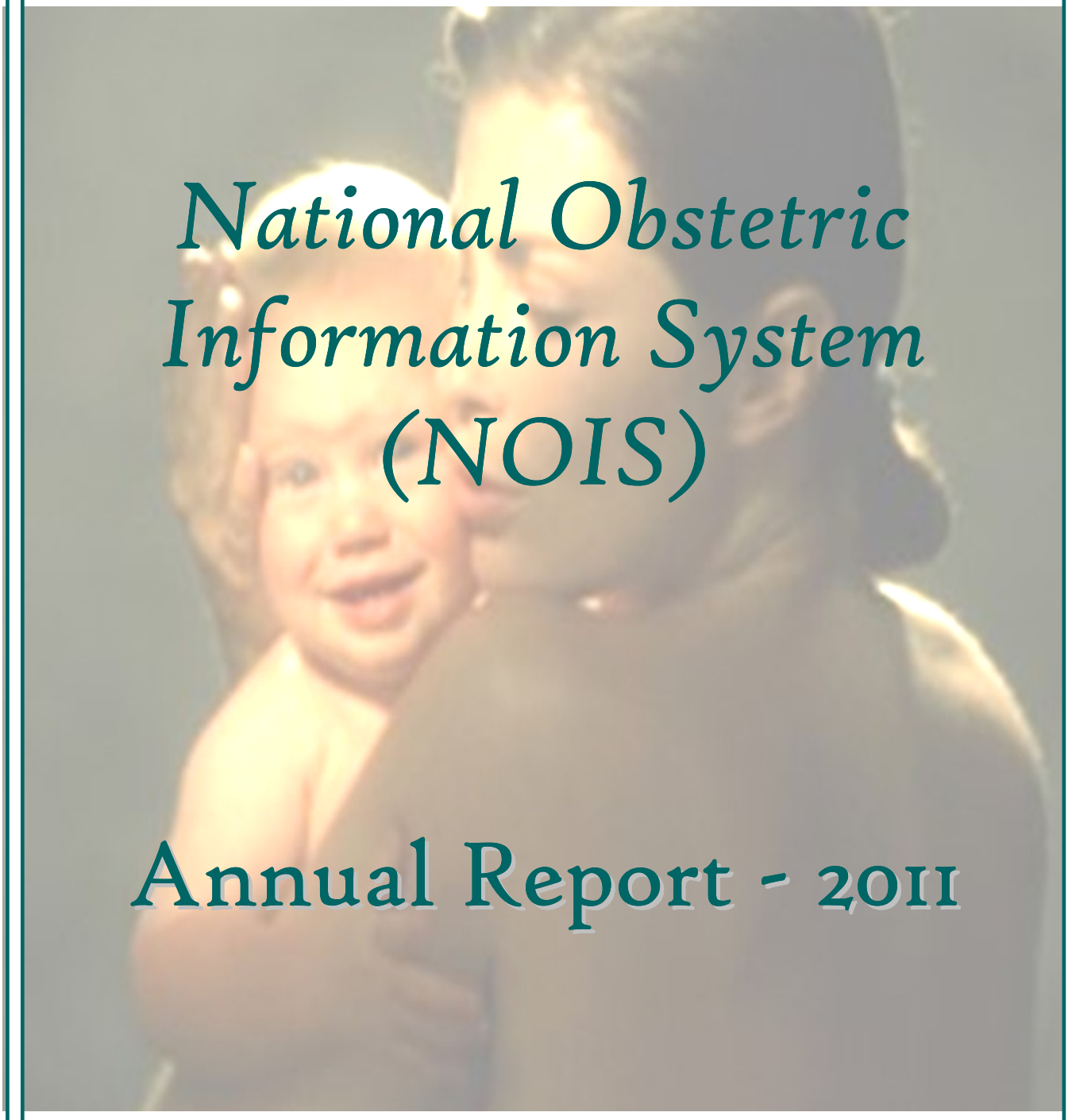

National Obstetric Information System (NOIS)

Annual Report - 2011

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Comments

The accuracy of information contained in this document may be limited by factors beyond the author's control. Some data in this document may be subject to interpretation.

Data presented in this report is based on data which has been made available to the Department of Health Information and Research from the collaborating hospitals. Accuracy and completeness of data is the responsibility of the hospital providing data.

Users should always acknowledge the source in all works based on information supplied in this document.

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COMMENTARY

The National Obstetric Information System (NOIS) is responsible for the compilation and analysis of obstetric and perinatal data from both public and private hospitals in Malta and Gozo. Case-based data for all births is compiled at the participating hospitals and regularly sent to the Department of Health Information and Research where the data is validated, coded and inputted into a central database.

The data is analysed routinely with a special interest in the early detection of new trends so as to be able to inform policy makers, researchers and health care providers of the evolving perinatal health status of the country. Regular reports are disseminated and full versions of these reports can be found online[1].

4226 recorded deliveries on the Maltese Islands in 2011

4311 total births including **4283** live births **(99.4%)** and **28** still births

69 twin and **7** triplet deliveries

99.8% of deliveries occurred in a hospital.

Key facts

There was an increase of 275 total births in 2011 as compared to the previous year. The total number of deliveries for 2011 stood at 4226 with a total number of 4311 births. This figure includes 4283 live births (99.4% of total births) and 28 still births. Of the total deliveries, 93.4% took place in Malta and the remaining 6.6% occurred in Gozo. The vast majority of deliveries (99.8%) took place within a hospital setting.

Maternal characteristics

2011 showed the highest percentage of deliveries to mothers of non-Maltese nationality (11.3%). This level has risen slowly over the last decade from 4.5% in 2001.

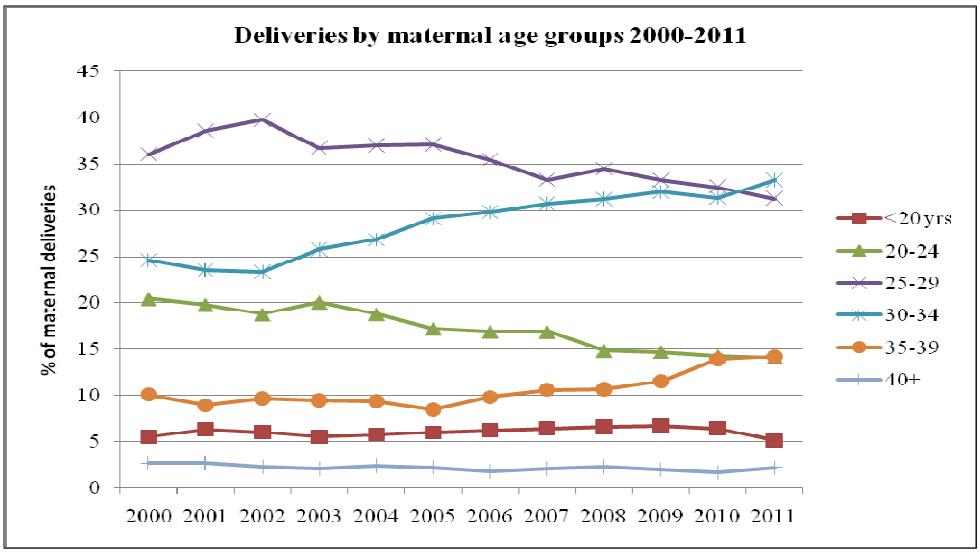
Maternal level of education is documented to be related to perinatal outcome[2]. In 2011 maternal education level was reported for 73% of mothers. Of those mothers with reported educational level 61% had completed their secondary education and 39% had completed tertiary education.

In 2011, 71.3% of all mothers were reported to be married; around a quarter were reported as single (24.3%), whilst 4.3% were reported as being widowed, separated or divorced.

As regards lifestyle factors associated with pregnancy, 325 mothers were reported to have smoked at least one cigarette daily during the pregnancy. In addition, 9 mothers reported to consume some alcohol during their pregnancy whilst 25 mothers reported current illicit drug abuse during their pregnancy.

In 2011, the most common maternal age group at delivery was 30-35 years (33.2%), as opposed to previous years where the 25-29 year group was the most frequent. Deliveries to teenage women totalled 217, a decrease from the previous 255 and 277 seen in 2010 and 2009 respectively. This is the first time since the establishment of NOIS in 1999 that most deliveries occurred to mothers in the 30-35 year age group and reflects the trend of increasing maternal age at delivery. The graph below shows the variation in the trends for maternal age over the last decade and most significantly how the age group 30-34 has superseded the age group 25-29 in the number of deliveries.

[1] https://ehealth.gov.mt/HealthPortal/strategy_policy/healthinfor_research/registries/births.aspx
[2] Arntzen, A. et al. (2008) Neonatal and post neonatal mortality by maternal education, a population based study of trends in the Nordic countries 1981-2000. Eur J Public Health, 18:245-251.



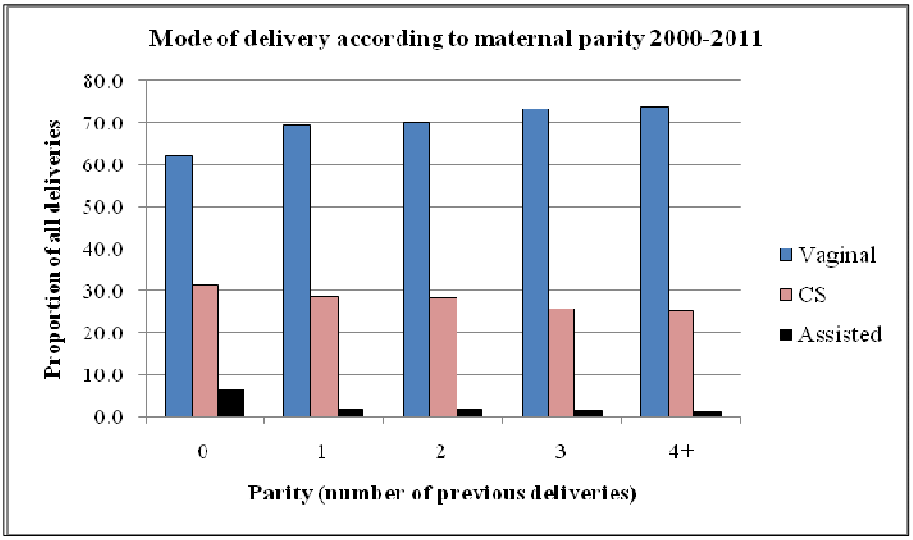
Pathology during pregnancy

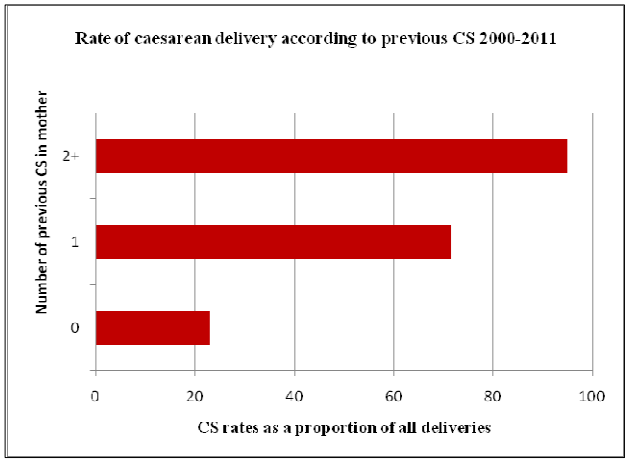
The commonest specific pathology reported during pregnancy in 2011 was once again gestational hypertension affecting 240 mothers (5.7% of all deliveries) followed closely by suspected IUGR (intrauterine growth retardation) affecting 232 mothers (5.5% of all deliveries). In addition, in 2011 there were 16 mothers who were reported as being Insulin Dependent Diabetics prior to the pregnancy and 5 mothers who were Non-Insulin Dependent diabetic before pregnancy. A further 153 mothers were reported as having gestational diabetes but all were controlled without the use of insulin.

Mode of delivery

Of the 4311 infant/ fetal births registered in 2011, 2611 (60.6%) were delivered as a vertex delivery, 1516 (35.2%) were delivered by Caesarean Section (CS) and 184 (4.3%) by assisted vaginal delivery (including forceps, ventouse or breech). The major mode of delivery was by far vaginal, the CS operation rate (as a percentage of all deliveries) was 34% in 2011. This was an increase from the previous 29.0% and 31.7% in 2009 and 2010 respectively. Of the caesarean sections performed in 2011, 55 % were performed in primigravidas and 45% were performed in multigravidas.

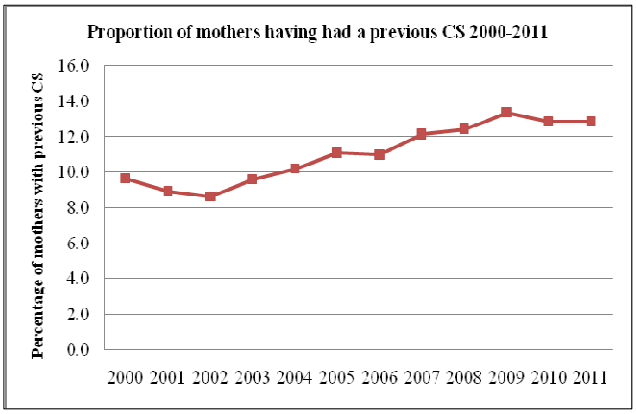
As may be noted in the graph below, between 2000 and 2011 there were higher rates of caesarean section in primiparous women (first-time mothers) when compared to multiparous women.

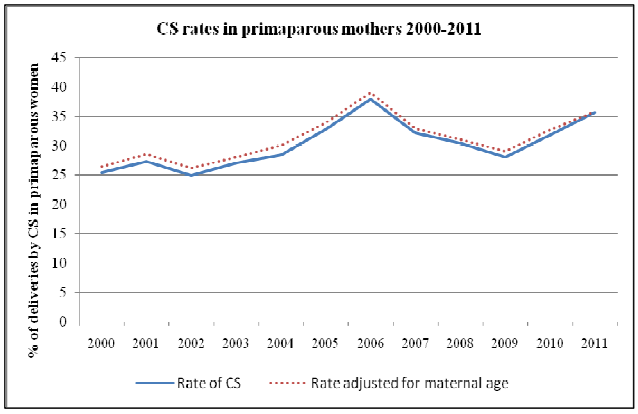




The overall CS rate is known to be affected by the number of previous caesareans performed in the mother[3]. The adjacent graph shows the proportion of CS performed according to the number of previous caesarean deliveries for the years 2000-2011. In those mothers who had not had a CS the rate of CS was 23%, in those who had had one previous CS the rate was 72% and in those mothers who had had 2 or more previous CS the subsequent delivery was nearly invariably (95%) by CS.

Data for deliveries between 2000 and 2011 shows that the proportion of mothers having had a previous CS is steadily rising. Furthermore, the CS rate in primaparas is also seen to be gradually increasing, even when adjusted for maternal age. These trends are depicted in the graphs below.





Infant birth weight & gestational age

In 2011, 3931 (91.2%) of total births were within the normal weight range of 2500g-4499g. There were 288 births in the low birth weight range of 1500g-2499g (6.7%). In addition there were 60 births (1.4%) of very low birth weight in the range between 500g-1499g.

During this year there were 3700 babies (92.1%) born at term (37-41 weeks gestation) or post-term (beyond 42 weeks), 72 (1.7%) babies were extremely preterm (22-27 weeks) or very preterm (28-31 weeks) whilst 268 (6.2%) babies were moderately preterm (32-36 weeks).

Overall CS operation rate in 2011 was **34%** of all deliveries.

Between 2000 and 2011, the caesarean rates according to parity 0, 1 and 2 were 31.2%, 28.7% and 28.4% respectively.

In primaparous women (2000-2011) the rate of CS was 23.1% whilst the rate in those who had one previous CS was 71.7%. The rate in those who had two or more previous CS was 95%.

The CS rate in primaparous mothers has increased from **25.4%** in 2000 to **35.8%** in 2011.

Fetal, perinatal and neonatal mortality indicators

The death rate in fetuses 500g and over was 5.3/1000 total births in 2011. The neonatal mortality rate for this same year was 5.1/1000 live births (22 neonates including 18 early and 4 late neonatal deaths) and the perinatal mortality rate stood at 10.5/1000 total births. There were no maternal deaths reported in 2011. The full Annual Report gives details of maternal and perinatal mortality since 1999 and compares these with the EU average rates.

[3] EUROPERISTAT (2008) European Perinatal Health Report. Available from: www.europeristat.com

NATIONAL OBSTETRIC INFORMATION SYSTEM - NOIS ANNUAL REPORT - 2011

A National Obstetric Information System (NOIS) was launched in the beginning of 1999 and now covers all deliveries, to residents and non-residents, 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 Department of Health Information and Research (DHIR). At the DHIR the relevant sheets are processed and entered into the NOIS database. The system registers all infants/fetuses of 22 completed weeks gestation and more.

The maternity centres actively participating in this information system in 2011 were: Mater Dei Hospital, Gozo General Hospital, St James Hospital Sliema and Zabbar. Home deliveries which are not subsequently referred to a hospital may not captured by this system.

The updated Antenatal Booking Sheet and NOIS Data Collection Sheet implemented in 2008 continue to be used. These sheets collect extensive information for all deliveries, making data collection and reporting more comprehensive and accurate and may account for improved reporting and registration of certain exposures and conditions in pregnancy, delivery and infant outcome since 2008.

Data at the DHIR is kept in accordance with the Data Protection Act (2001) and confidentiality is protected at all times.

Report

This report analyses the national deliveries and infant/fetal births reported to the Registry that occurred in 2011 and compares it to the figures reported for previous years where appropriate. The data in this report describes statistics for all deliveries and births reported to and registered into the system.

Data is sent to the Registry from all hospitals on the Maltese Islands. Accuracy and completeness of data provided to DHIR is the responsibility of the hospital providing data.

ANALYSIS OF REPORTED DATA

There were a total of 4226 deliveries reported and registered for the Maltese Islands in 2011. These resulted in a total of 4311 infant/fetal births; this is an increase of 275 births when compared to 2010.

The table below gives the number of deliveries and births in Malta and Gozo and registered in NOIS since 1999.

Year	*Deliveries**	*Total Births***	*Livebirths*
1999	4311	4382	4349
2000	4311	4377	4361
2001	3918	3955	3935
2002	3873	3927	3906
2003	3995	4054	4036
2004	3838	3902	3887
2005	3804	3865	3857
2006	3822	3891	3880
2007	3853	3898	3886
2008	4154	4228	4199
2009	4112	4180	4152
2010	3952	4036	4018
2011	4226	4311	4283

* Deliveries refer to maternal confinements irrespective of number of infants delivered.
** Total births include all reported live and still births

Table 1 - Total births and deliveries 1999-2011

Of the registered 4226 deliveries (4311 births) in 2011, 3947 deliveries (4031 births) occurred in Malta and 279 deliveries (280 births) occurred in Gozo.

DELIVERIES

DEMOGRAPHY

Maternal Age

The maternities have been grouped into 5-year age groups and the frequency distribution of deliveries according to maternal age group is given. In 2011, the greatest number of deliveries 1404 (33.2%), occurred in the age group 30 to 34 years whilst the least number of deliveries 7 (<1%) occurred in the oldest age group 45+ years. There were no deliveries in the youngest age group less than 15 years. The minimum age at delivery of the mothers was 15 years while the maximum age was 55 years. The most frequent maternal age at delivery was 30 years and average maternal age was 29 years.

The frequency distribution of deliveries in 2011 according to maternal age group is given in the following table.

Age group (years)	*2011*		*2010*	
	Frequency	*%*	*Frequency*	*%*
<15	0	*0*	6	*<1*
15-19	217	*5.1*	249	*6.3*
20-24	593	*14.0*	562	*14.2*
25-29	1319	*31.2*	1284	*32.5*
30-34	1404	*33.2*	1237	*31.3*
35-39	599	*14.2*	548	*13.9*
40-44	86	*2.0*	64	*1.6*
45+	7	*<1*	2	*<1*
Unspecified	1	*<1*	0	*0*

Table 2 – 2011 Deliveries according to maternal age group

Marital Status

This year, 1027 (24.3%) of all deliveries occurred to mothers who were reported as never married (single); while 3012 (71.3%) of all deliveries occurred to mothers reported as married, and 183 (4.3%) were reported as being widowed, separated or divorced. 4 mothers (<1%) did not have their marital status specified.

In 2011, according to the data registered in NOIS, all mothers were reported as "having support at home to raise the infant", for one mother this was not specified.

Nationality

88.5% (3740) of all deliveries this year, occurred to women of Maltese nationality while 11.3% (479) were Non-Maltese. In the remaining 0.2% (7) did not have a nationality specified. The table below gives the number of mothers of Maltese and non-Maltese Nationality delivering on the Maltese Islands.

Nationality	Maltese		Non-Maltese		Unknown	
Year	Number	%	Number	%	Number	%
1999	4116	95.5	192	4.5	3	0.1
2000	4096	95.0	211	4.9	4	0.1
2001	3737	95.4	178	4.5	3	0.1
2002	3662	94.6	170	4.4	41	1.1
2003	3687	92.3	220	5.5	88	2.2
2004	3558	92.7	168	4.4	112	2.9
2005	3512	92.3	237	6.2	55	1.4
2006	3491	91.3	288	7.5	43	1.1
2007	3511	91.1	308	8.0	34	0.9
2008	3729	89.8	402	9.7	23	0.6
2009	3711	90.2	376	9.1	25	0.6
2010	3581	90.6	365	9.2	6	0.2
2011	3740	88.5	479	11.3	7	0.2

Table 3 – Deliveries by reported Nationality of Mother for all deliveries on the Maltese Islands

Parity

There were 52.4% (2214) of mothers who were primiparas in 2011. The following table gives a breakdown of mothers by age and previous parity (includes all previous live and still births). Parity and maternal age were specified for all mothers.

Mother's Age Group	Maternal Parity (previous livebirths and still births are included)							
	Primipara	1	2	3	4	>4th	Unknown	Total
Under 20	190	24	3	0	0	0	0	**217**
20-24	411	137	31	9	5	0	0	**593**
25-29	806	396	88	19	8	2	0	**1319**
30-34	618	602	135	30	10	9	0	**1404**
35-39	162	264	126	26	15	6	0	**599**
40-44	25	23	17	11	5	5	0	**86**
45+	2	0	4	1	0	0	0	**7**
Unknown	0	0	0	0	0	0	1	1
Total	**2214**	**1446**	**404**	**96**	**43**	**22**	**1**	**4226**

Table 4 – Parity of Mothers by age group for 2011

Educational Level reached

It is documented that maternal educational level has a bearing on outcomes of pregnancy. Since 2008 efforts have been made to improve the collection of maternal educational level data. In fact in 2007 only 10.6% of mothers had their educational level reported; in 2008 this collection increased to 65 % of mothers, and in 2011 it now stands at 73% of mothers having their educational level reported. Distribution of maternal educational level is presented in Table 5. Of the 3081 mothers whose level of education was reported 39% had a tertiary education.

Level of Education reached	*2011*	
	Number	*%*
Primary or no education	0	*0*
Secondary	1880	*44.5*
Tertiary	1201	*28.4*
Unspecified	1145	*27.1*

Table 5 –Maternal Education distribution

MATERNAL LIFESTYLES

There were 325 (7.7%) of the 4226 mothers who were reported to smoke one or more cigarettes during their pregnancy this year. 9 mothers were reported to drink some alcohol during their pregnancy, while 25 mothers were reported as being illicit drug abusers.

Details are given in Table 6 below.

Maternal Lifestyles	*2011*	*2010*
***Cigarette smoking during pregnancy*:**		
1 to 3/day	101	28
>than 3/day	224	297
Do not smoke	3896	3627
Unspecified	5	0
***Alcohol consumption during pregnancy*:**		
Up to 1 unit/day	8	11
>than 1 unit/day	1	4
None	4213	3937
Unspecified	4	0
Drug Abuse during pregnancy		
Yes	25	17
No	1497	3935
Unspecified	4	0

Table 6 – Reported smoking, alcohol and drug habits of mothers

Maternal smoking is a well-established risk factor for adverse perinatal outcomes including low birth weight (EuroPeristat, 2008). In 2011, the average birthweight of all infants born was 3192 g, with 8.2% (354) of these babies being less than 2500g.

The average birth weight of babies born to mothers reported to have smoked at sometime during their pregnancy was 3045g, with 12.9 % (42) of these babies being less than 2500g.

MATERNAL PATHOLOGY DURING PREGNANCY

In 2011 there were 68 mothers registered as having made use of assisted reproduction (ART), this includes all forms of ART namely ovulation stimulation, IVF and ICSI.

The table below gives the number of mothers reported with specific obstetric pathology during pregnancy. 5.7% of mothers were registered as having gestational hypertension.

Pathology during pregnancy	*2011*		*2010*	
	Number	*%*	*Number*	*%*
Antepartum Haemorrhage	89	*2.1*	70	*1.8*
Gestational hypertension	240	*5.7*	198	*5.0*
Pre-eclampsia	24	*0.6*	31	*0.8*
Eclampsia	0	*0*	0	*0*
Placenta praevia	58	*1.4*	49	*1.2*
Abruption of placenta	17	*0.4*	13	*0.3*
Suspected IUGR*	232	*5.5*	250	*6.3*
Cardiovascular disease	20	*0.5*	15	*0.4*

**IUGR – intrauterine growth retardation*

Table 7- Pathology during pregnancy

Diabetes in Pregnancy

In 2011 there were 16 mothers who were reported as being Insulin Dependent Diabetic before this pregnancy while there were 5 mothers reported with Non-Insulin Dependent diabetes prior to pregnancy. In addition, there were a total of 153 mothers registered with impaired glucose tolerance or gestational diabetes who were controlled without the use of insulin, and no mothers registered as having gestational diabetes treated with insulin.

SINGLETON AND MULTIPLE DELIVERIES

For this year, there were a total of 4150 (98.2%) singleton and 69 (1.6%) twin deliveries, 7 triplet and no quadruplet deliveries.

Multiplicity	*2011*	*2010*
Singleton	4150	3872
Twin	69	74
Triplet	7*	6*
Quadruplet	0	0

* For one of the triplet deliveries, the first sib was born in 2010, while the other two were born in 2011. This mother has been counted in both years.

Table 8 – Deliveries by multiplicity

SITE OF DELIVERY

In 2011 of the total 4226 deliveries registered by NOIS, 4219 (99.8%) occurred in a hospital while there were 7 deliveries that occurred at home. Three of the hospital deliveries were reported as occurring underwater.

ONSET OF DELIVERY

Of the total 4226 deliveries, 57.4% (2427) were reported as spontaneous onset of contractions, 26.9% (1135) were induced by drugs or artificial rupture of membranes and 15.7% (664) were carried out as elective caesarean sections.

DAMAGE TO THE PERINEUM

A total of 2791 women were delivered by normal or assisted vaginal delivery. 2608 (93.4%) of these women were reported to have a normal vertex vaginal delivery, while 183 (6.6%) had assisted vaginal delivery (including ventouse, forceps and breech). A total of 807 (28.9%) of these normal or assisted vaginal deliveries were reported to have sustained no damage to the perineum, while the remaining 1984 had an episiotomy, tear/laceration, or both.

Damage to perineum	*Normal Vaginal Delivery (n= 2608)*		*Assisted Vaginal Delivery** (n=183)*	
	Number	*%*	*Number*	*%*
No Damage	799	*30.6*	8	*4.4*
Episiotomy* only	521	*20.0*	96	*52.5*
Tear only	1148	*44.0*	19	*10.4*
Episiotomy and tear	140	*5.4*	60	*32.8*

Table 9 – Damage to perineum in vaginal deliveries

* Episiotomy is defined as a surgical incision through the perineum to enlarge the vagina to assist delivery
**These include ventouse, forceps and breech extraction

INFANT / FETAL BIRTHS

METHOD OF BIRTH

In 2011 there were a total of 4311 infant/fetal births. Of these 2611 (60.6%) were delivered as a vertex delivery, 1516 (35.2%) by emergency or elective Caesarean Section and 184 (4.3%) by assisted vaginal delivery (includes forceps, ventouse and breech).

*Mode of Delivery**	*2011*	*2010*
Vertex delivery	2611	2543
Elective/emergency Caesarean Section	1516	1336
Forceps	6	14
Ventouse	176	138
Breech deliveries	2	5

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

Table 10 – Mode of delivery

For 2011 there were 1516 infants/fetuses delivered by caesarean section but 1435 caesarean operations performed, this due to the fact that a number of caesareans are done in multiple birth deliveries. The Caesarean section operation rate in 2011 was 34.0% of the total 4226 maternal deliveries.

The Caesarean section operation rate has increased in all developed countries over the past years. The table below gives the reported caesarean section rates for Malta and Gozo since 1999.

Year	*Deliveries by Caesarean section*	*Caesarean section operation rate (% of all deliveries)*
1999	951	*22.1*
2000	994	*23.1*
2001	926	*23.6*
2002	914	*23.6*
2003	1039	*26.0*
2004	1048	*27.3*
2005	1165	*30.6*
2006	1329	*34.8*
2007	1243	*32.3*
2008	1263	*30.4*
2009	1194	*29.0*
2010	1252	*31.7*
2011	1435	*34.0*

Table 11 – Caesarean Section rates 1999-2011

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.

Gender	*2011*		*2010*	
	Number	*%*	*Number*	*%*
Male	2208	*51.2*	2066	*51.2*
Female	2103	*48.8*	1970	*48.8*

Table 12 – Gender distribution of infants delivered

BIRTHWEIGHT OF INFANTS/FETUSES

In 2011, there were 3931 (91.2%) of the total births that occurred in the birth weight range of 2500g to 4499g. 288 (6.7%) of the total births were in the low birth weight range of 1500g to 2499g, while 60 (1.4%) of births were of very low birth weight 500g to 1499g. This year there were 6 babies of birth weight less than 500g but 22 completed weeks gestation, while 21 babies were of birth weight 4500g and over. In 5 babies, birth weight was not recorded.

The lowest birth weight recorded this year was 134g in a 25 week gestation, macerated, antepartum stillbirth. The highest birth weight recorded was 5320g in a baby born to a mother who had gestational diabetes. The average birth weight was 3192g. All infants / fetuses of 22 weeks gestation and over are registered into the system.

Birth weight	*2011*		*2010*	
	Number	*%*	*Number*	*%*
<500g	6	*0.14*	2	*0.05*
500-999g	23	*0.5*	12	*0.3*
1000-1499g	37	*0.9*	27	*0.7*
1500-1999g	71	*1.6*	49	*1.2*
2000-2499g	217	*5.0*	216	*5.4*
2500-2999g	906	*21.0*	888	*22.0*
3000-3499g	1822	*42.3*	1685	*41.7*
3500-3999g	1032	*23.9*	962	*23.8*
4000-4499g	171	*4.0*	177	*4.4*
4500-4999g	19	*0.4*	16	*0.4*
5000+	2	*0.04*	1	*0.02*
Unspecified	5	*0.12*	1	*0.02*

Table 13 – Birth weight distribution of infants/fetuses

GESTATIONAL AGE AT DELIVERY

Prematurity is associated with adverse obstetric outcomes and long term health problems. In 2011, 340 (7.9%) of babies born were premature, having a gestational age of <37 weeks. 72 (1.7%) were born very or extremely preterm (<32 weeks).

Gestational age	*2011*		*2010*	
	Number	*%*	*Number*	*%*
Extremely preterm 22-27 weeks	28	*0.7*	16	*0.4*
Very preterm 28-31 weeks	44	*1.0*	25	*0.6*
Moderately preterm 32-36 weeks	268	*6.2*	264	*6.5*
Term 37 – 41 weeks	3964	*91.9*	3725	*92.3*
Post term 42+ weeks	7	*0.2*	6	*0.1*
Unspecified	0	*0*	0	*0*

Table 14 – Gestational age at delivery

OUTCOME OF BIRTH

The number of live births registered in 2011 was 4283, which accounted for 99.4% of the total births at a national level. The remaining 28 births were reported as stillbirths of which 23 weighed 500g or more at birth. Of the livebirths, there were 19 cases of early neonatal deaths and 4 cases of late neonatal deaths (see tables below). All births of 22 weeks and over irrespective of birth weight are registered into the system.

Outcome of Birth	*2011*	*2010*
Livebirths	4283	4018
Stillbirths	28	18

Neonatal deaths	*2011*	*2010*
Early Neonatal deaths	19	16
Late Neonatal deaths	4	2

Table 15 – Birth outcomes – livebirths, fetal, early and late neonatal deaths

INFANT FEEDING METHODS AT DISCHARGE

Infant feeding habits are recorded by hospital staff at the time of discharge from hospital, which is usually 2-5 days after delivery. Little can be said on the actual infant feeding habits as these may change soon after discharge from the birthing facilities.

Infant feeding methods at time of discharge	*2011*	*2010*
Breast only	2430	2263
Bottle only	1241	1260
Mixed (Breast & Bottle)	588	478
Other*	51	33
Unspecified	1	2

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

Table 16 – Infant feeding methods at time of discharge

MATERNAL, FETAL, PERINATAL AND NEONATAL MORTALITY INDICATORS

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

Maternal, fetal, perinatal and neonatal mortality statistics are good indicators of the quality of health care and these statistics have been 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 given by WHO ICD-10 (International Statistical Classification of Diseases and Related Health Problems – Tenth Revision). Indicators given in the tables below refer to fetuses having a birth weight 500g and over to allow for comparison with the WHO – European Health for All Database (HFA-DB): http://data.euro.who.int/hfadb/.

Year	Maternal Deaths
1999	1
2000	0
2001	2
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	1
2009	0
2010	1
2011	0

Table 17 – Maternal Deaths 1999-2011

Year	Fetal death rate 500g and over	
	Number	Rate/1000 total births
1999	27	6.2
2000	16	3.6
2001	20	5.1
2002	20	5.1
2003	16	3.9
2004	15	3.8
2005	8	2.1
2006	10	2.6
2007	11	2.8
2008	26	6.2
2009	21	5.0
2010	16	4.0
2011	23	5.3

Table 18 – Fetal Death Rates 1999-2011

Year	Neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
1999	21	4.8
2000	23	5.3
2001	12	3.0
2002	20	5.1
2003	20	5.0
2004	17	4.4
2005	17	4.4
2006	9	2.3
2007	17	4.4
2008	24	5.7
2009	17	4.1
2010	18	4.5
2011	22	5.1

Table 19 – Neonatal Mortality rates 1999-2011

Year	Early neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
1999	16	3.7
2000	16	3.6
2001	10	2.5
2002	16	4.1
2003	18	4.5
2004	12	3.1
2005	13	3.4
2006	4	1.0
2007	14	3.6
2008	21	5.0
2009	13	3.1
2010	16	4.0
2011	18	4.2

Table 20 – Early Neonatal Mortality rates 1999-2011

Year	Late neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
1999	5	1.2
2000	7	1.6
2001	2	0.5
2002	4	1.0
2003	2	0.5
2004	5	1.3
2005	4	1.0
2006	5	1.3
2007	3	0.8
2008	3	0.7
2009	4	1.0
2010	2	0.5
2011	4	0.9

Table 21 – Late Neonatal Mortality Rates 1999-2011

Year	Perinatal mortality rate (500g and over)	
	Number	Rate/1000 total births
1999	43	9.9
2000	32	7.3
2001	30	7.6
2002	36	9.2
2003	34	8.4
2004	27	6.9
2005	21	5.4
2006	14	3.6
2007	25	6.4
2008	47	11.1
2009	34	8.1
2010	32	7.9
2011	45	10.5

Table 22 – Perinatal Mortality Rates 1999-2011

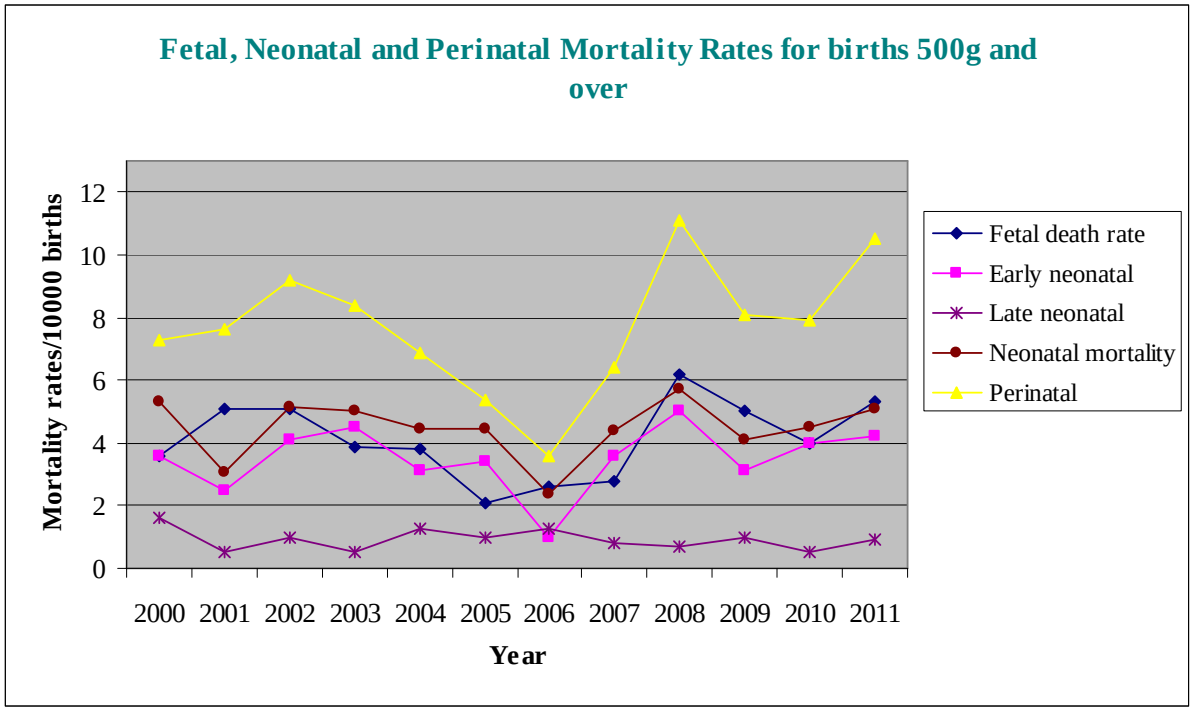


Figure 1 – Fetal, neonatal and perinatal mortality rates 1999-2011
(includes only fetuses of birth weight 500g and over)

Improved data collection systems and reporting of smaller babies (namely 22-24 weeks gestation) may account for some of the changes in mortality rates.

Annex I gives some selected comparative birth and perinatal mortality statistics for Malta and the EU.

ANNEX I

Selected comparative statistics for Malta and EU – taken from the WHO – European Health for All Database (HFA-DB): http://data.euro.who.int/hfadb/ as available at May 2012. Only data until 20-- is completed as of May 2012, data in the HFA database is continually updated as necessary.

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	10.01	10.59	9.45
2002	9.86	10.52	9.27
2003	10.12	10.57	9.32
2004	9.69	10.66	9.50
2005	9.56	10.58	9.74
2006	9.55	10.69	9.94
2007	9.50	10.74	10.14
2008	10.19	10.90	10.63
2009	10.03	10.74	10.71
2010	9.66	10.76	10.46

Table 23 – Live births per 1000 population

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	1.50	1.50	1.25
2002	1.40	1.50	1.25
2003	1.50	1.53	1.24
2004	1.37	1.56	1.26
2005	1.37	1.56	1.28
2006	1.41	1.57	1.31
2007	1.37	1.58	1.34
2008	1.40	1.61	1.38
2009	1.40	1.60	1.42
2010	1.40	n/a	1.38

Table 24 – Total Fertility Rate

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	50.83*	5.23	17.79
2002	0	5.38	14.29
2003	0	5.39	15.56
2004	0	5.62	13.85
2005	0	4.90	10.23
2006	0	5.49	9.15
2007	0	5.05	8.20
2008	23.82*	5.14	9.56
2009	0	5.60	8.95
2010	0	5.48	8.53

*There were 2 maternal deaths in 2001, and 1 maternal death in 2008.
10 year average for Malta = 7.56 Maternal Deaths per 100,000 live births

Table 25 – Maternal Deaths per 100 000 live births

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	5.06	4.38	5.40
2002	5.09	4.32	5.36
2003	3.95	4.23	5.23
2004	3.84	4.14	5.13
2005	2.07	4.03	4.99
2006	2.57	4.03	4.78
2007	3.08	3.97	4.67
2008	6.86	3.94	4.51
2009	6.70	n/a	4.45
2010	3.97	n/a	4.19

Table 26 – Fetal Deaths (500g and over) per 1000 births

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	3.05	3.11	6.13
2002	5.38	3.01	5.83
2003	5.20	2.93	5.64
2004	4.37	2.86	5.74
2005	4.41	2.74	5.20
2006	2.32	2.69	4.83
2007	5.15	2.63	4.55
2008	5.72	2.55	4.17
2009	4.34	2.53	4.06
2010	4.48	n/a	3.97

Table 27 – Neonatal Deaths per 1000 live births

n/a = not available as at June 2012

DEFINITIONS

(Following the International Statistical Classification of Diseases and Related Health Problems – Tenth Revision, Volume II ICD-10, WHO, Geneva)

Maternal Death

A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

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. Rates are usually expressed per 1000 total births.

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

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.

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

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.

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

Late Neonatal Mortality Rate

The number of deaths during the late neonatal period (ie 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.

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

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.

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

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