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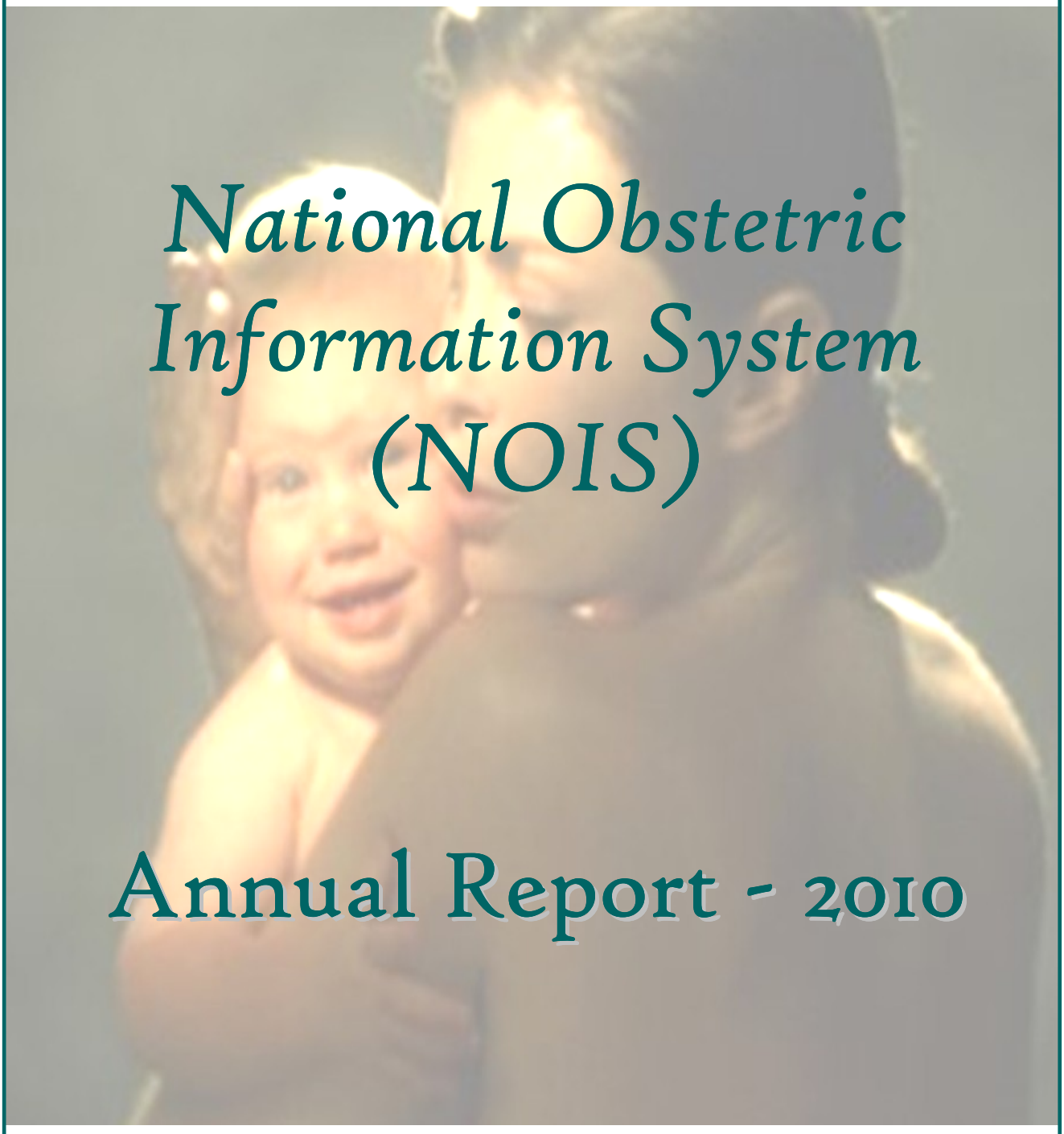

National Obstetric Information System (NOIS)

Annual Report - 2010

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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) has compiled and analysed data pertaining to all deliveries occurring in Malta and Gozo since 1999. Around 4000 records are created annually, by completing a dedicated form detailing medically relevant information for each delivery. Data collected is published in the NOIS Annual Reports.

This is the twelfth year that comprehensive national data on deliveries and births has been gathered. This information, placed in the context of evolving trends over the years, has served to monitor the dynamics of occurrences and outcomes related to deliveries, and this year's data will be useful in the continued surveillance and understanding of local patterns. It will, furthermore, continue to serve as a resource for health providers, researchers and policy makers.

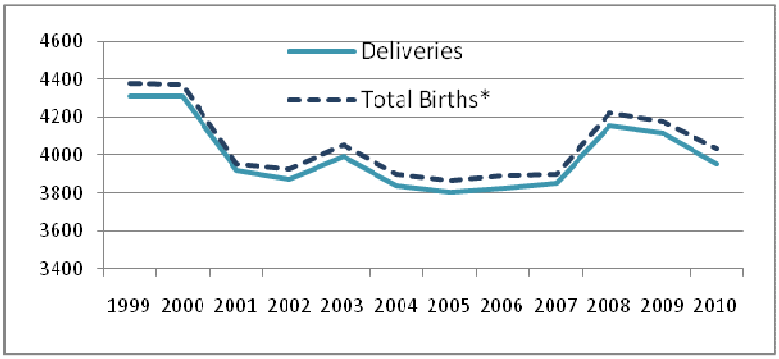
As in previous years, the document provides an array of facts and trends in a concise and accessible format. The section below outlines some of this data. *The full report is available online at* https://ehealth.gov.mt/HealthPortal/strategy_policy/healthinfor_research/registries/births.aspx

Key Facts

A total of 4,036 births were reported in 2010, down from 4,180 in 2009. Of these, 4,018 (99.6%) were live births while 18 were still births; in 2009 there were 4,180 total births including 4,152 live (99.3%) births. The total number of births has shown fluctuations over the past decade, with a steady overall decreasing trend since 1999. Hospital remains the main location of births in Malta.

- **3,952** recorded deliveries on the Maltese islands in 2010
- **4,036** total births, of which **4,018** (99.6%) were live births
- **74** twin and **6** triplet deliveries in 2010.
- A progressive increase of multiple births throughout the past decade

Deliveries and Total Births* 1999-2010



*Total births include all reported live and still births

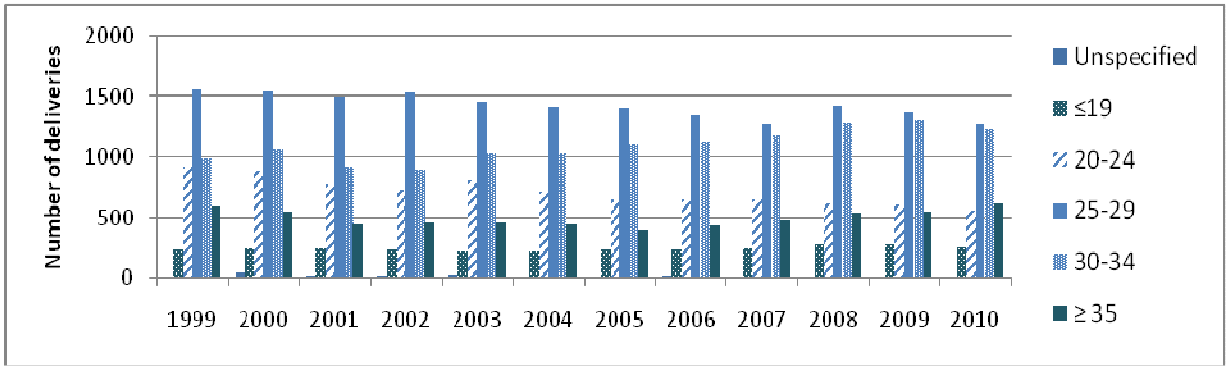
Gender distribution of infants born bore no surprises, with slightly more males (51.2%) than females (48.8%).

- **51.2%** of infants/fetuses male
- **255** deliveries to teenage mothers
- **29 years** - average maternal age at delivery
- **365 (9.2%)** mothers of non-Maltese nationality

Migration in EU-27 member states from EU and Non-EU countries has been high in recent years[1]. Non-Maltese national mothers constituted 9.2% of all deliveries in 2010, up from 4.5% in 1999. The majority (71.3%) of deliveries occurred to mothers reported as married, 24.6% occurred to women reported as single mothers (never married) while 4.1% were widowed, separated or divorced.

[1] European Commission, Demography Report 2010. Available from: http://epp.eurostat.ec.europa.eu/portal/page/portal/population/documents/Tab/report.pdf. [Accessed 10/05/2011].

Number of Deliveries by Maternal Age Group 1999-2010

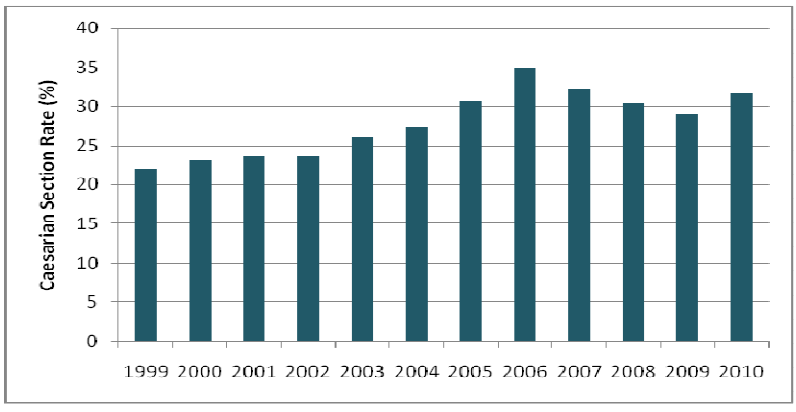


The highest number of deliveries by maternal age group remained within the 25-29 year group. Deliveries to teenage women totaled 255 in 2010, a slight decrease from the 276 and 277 seen in 2008 and 2009 respectively, though still higher than the figures for 1999-2007.

Maternal level of education has been linked to certain pregnancy outcomes.[2] In 2010, data related to educational level was successfully gathered for 74% of mothers. Of these 2921 mothers for whom educational level was recorded, 1047 (35.8%) were reported as having reached tertiary education, while 1864 (63.8%) had completed secondary education. 325 of the 3952 mothers (8.2%) reported having smoked during pregnancy, and 17 (0.4%) were reported as drug addicts.

Obstetric-specific pathological conditions occurring during pregnancy are recorded at the Registry. Gestational diabetes and hypertension are major concerns in pregnancy and are managed with diligent monitoring, regular review and treatment when necessary. In 2010, gestational diabetes was recorded in 159 women, with an additional 7 women reported to have had Type I Diabetes before the pregnancy and 2 with Type II Diabetes. 198 mothers were recorded as having gestational hypertension.

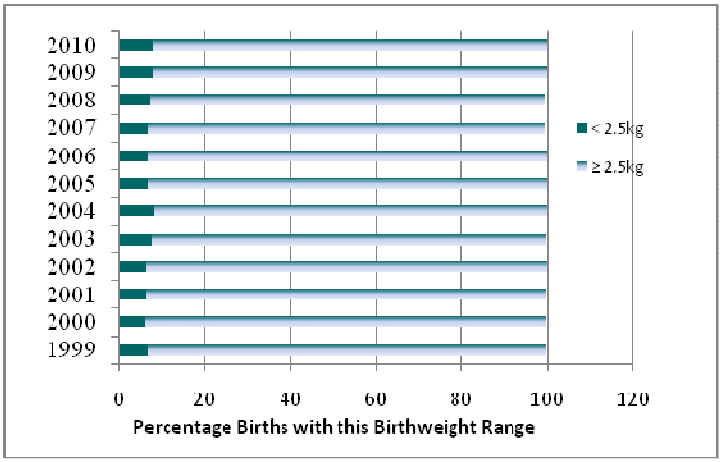
Rate of Caesarean Section as a Percentage of all Deliveries 1999-2010



Of the 3952 deliveries, 1252 were carried out by Caesarean section, 31.7% of the total. The figure above shows the Caesarean Section rate over the past 12 years. An increasing rate of Caesarean section in several countries has been noted in recent years, with this rate varying considerably between countries[3,4,5].

[2] Millar, W.J., Chen, J. (1998) Maternal Education and Risk Factors for Small-for-Gestational-Age Birth, *Health Reports Statistics Canada*, 10(2), 43-51.
[3] Europeristat (2008) *European Perinatal Health Report*. (Data from 2004). Available from: www.europeristat.com. [Accessed 10/05/2011].
[4] Notzon, F.C., Placek, P.J. et al (1987) Comparisons of national caesarean section rate. *NEJM* 316:386-389.
[5] Betran, A.P., Merialdi, M. et al (2007) Rates of caesarean section: analysis of global, regional and national estimates. *Paediatric and Perinatal Epidemiology*, 21, 98-113.

Distribution of Birth weight - low birth weight (<2.5kg) vs. birth weight >=2.5kg - 1999-2010



Gestation and birth weight have a bearing on the type of medical problems likely to be encountered in the neonatal period.[6] In Malta, most infants and fetuses delivered in 2010 weighed between 2.5 and 3.5 kg at birth. The majority of births were at Term, i.e. between 37 and 41 weeks' gestation, constituting 92.3% of births; 7.5% were born premature, which includes 1% of babies (41 in total) born at less than 32 weeks.

Exclusive breast feeding is recommended by the WHO as the optimal nutritional source for infants and should be continued for six months.[7] The NICE Guidelines on postnatal care outline the ways in which the mother should be taught and encouraged to breastfeed.[8] Breastfeeding is still the method of choice for most mothers as recorded at discharge from hospital, with 2263 babies being exclusively breastfed at the time of leaving hospital. This data does not, however, record the persistence with the feeding method beyond this time.

74 twin deliveries and 6 triplet deliveries were registered in 2010, accounting for 2% of the total number of deliveries. Of the total 164 multiple infants born, 2 were stillbirths and a further 1 died in the early neonatal period.

Number of twin, triplet/quadruplet babies born 1999-2010

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Twins	126	128	70	100	106	100	110	126	80	132	124	148
Triplets/Quadruplets	12	3	3	6	9	20	9	9	7	12	9	16
% of births which were multiple	*3.1*	*3.0*	*1.8*	*2.7*	*2.8*	*3.1*	*3.1*	*3.5*	*2.2*	*3.4*	*3.2*	*4.1*

The fetal mortality rate for fetuses 500g and over stood at 4.0 per thousand total births for 2010, while the neonatal death rate was 4.5/1000 livebirths. 16 early and 2 late neonatal deaths were recorded. Of these, 9 were preterm; 11 weighed less than 2.5 kg at birth.

In 2008, an apparent rise in fetal mortality was thought to be partially attributable to improved data collection systems and reporting of small fetuses of 22-24 weeks gestation. The annex of the Annual Report compares statistics of this and other events to those for EU countries.

- **1252** deliveries carried out by Caesarean section – 32% of all deliveries.
- Majority of babies weigh between **2.5 and 3.5 kg** at birth
- **37 – 40** weeks gestation 'Term' – the most common time at which births occur
- Breast feeding remains the most popular choice at discharge

[6] Lissauer, T and Clayden G. (2007), *Illustrated Textbook of Paediatrics*, 3rd Ed, Mosby, Elsevier.
[7] http://www.who.int/features/qa/21/en/index.html.
[8] NICE Guidelines (2006) *Routine postnatal care of women and their babies* (CG37) Available from: http://www.nice.org.uk/nicemedia/live/10988/30144/30144.pdf [Accessed 10/05/2011].

NATIONAL OBSTETRIC INFORMATION SYSTEM - NOIS ANNUAL REPORT - 2010

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) on a regular basis. 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.

The maternity centres actively participating in this information system in 2010 were: Mater Dei Hospital, Gozo General Hospital, St James Hospital Sliema and Zabbar. Home deliveries which are not subsequently referred to a hospital are not captured by this system.

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

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 2010 and compares it to the figures reported for 2009. 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 is the responsibility of the hospital providing data.

ANALYSIS OF REPORTED DATA

There were a total of 3952 deliveries reported and registered for the Maltese Islands in 2010. These resulted in a total of 4036 infant/fetal births, this is a decrease of 144 births when compared to 2009.

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

* 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 1999-2010

Of the registered 3952 deliveries (4036 births) in 2010, 3668 deliveries (3750 births) occurred in Malta and 284 deliveries (286 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. Just like 2009, in 2010, the greatest number of deliveries 1284 (32.5%), occurred in the age group 25 to 29 years whilst the least number of deliveries 2 (<1%) occurred in the oldest age group 45+ years. There were 6 deliveries in the youngest age group less than 15 years. The minimum age at delivery of the mothers was 14 years while the maximum age was 45 years. The most frequent maternal age at delivery was 28 years and average maternal age was 29 years.

The frequency distribution of deliveries in 2010 according to maternal age group is given in the following table.

Age group (years)	*2010*		*2009*	
	Frequency	*%*	*Frequency*	*%*
<15	6	*<1*	6	*<1*
15-19	249	*6.3*	271	*7*
20-24	562	*14.2*	603	*15*
25-29	1284	*32.5*	1366	*33*
30-34	1237	*31.3*	1312	*32*
35-39	548	*13.9*	474	*12*
40-44	64	*1.6*	75	*2*
45+	2	*<1*	5	*<1*
Unspecified	0	*0*	0	*0*

Table 2 – 2010 Deliveries according to maternal age group

Marital Status

This year, 971 (24.6%) of all deliveries occurred to mothers who were reported as never married (single); while 2817 (71.3%) of all deliveries occurred to mothers reported as married, and 161 (4.1%) were reported as being widowed, separated or divorced. 3 mothers (<1%) did not have their marital status specified.

In 2010, according to the data registered in NOIS, all mothers were reported as “having support at home to raise the infant”.

Nationality

90.6% (3581) of all deliveries this year, occurred to women of Maltese nationality while 9.2% (365) were Non-Maltese. In the remaining 0.2% (6) 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

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

Parity

There were 51.4% (2030) of mothers who were primiparas in 2010. 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	Total
Under 20	221	30	4	0	0	0	**255**
20-24	403	117	30	11	1	0	**562**
25-29	758	391	104	23	3	5	**1284**
30-34	497	552	138	31	13	6	**1237**
35-39	133	180	168	47	10	10	**548**
40-44	18	14	16	7	4	5	**64**
45+	0	0	2	0	0	0	**2**
Total	**2030**	**1284**	**462**	**119**	**31**	**26**	**3952**

Table 4 – Parity of Mothers by age group for 2010

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 2010 it now stands at 74% of mothers having their educational level reported. Distribution of maternal educational level is presented in Table 5. Of the 2921 mothers whose level of education was reported 35.8% had a tertiary education, 63.8% had a secondary level of education and 0.3% were reported as having only primary or no education.

Level of Education reached	*2010*	
	Number	*%*
Primary or no education	10	*0.3*
Secondary	1864	*47.2*
Tertiary	1047	*26.5*
Unspecified	1031	*26.1*

Table 5 –Maternal Education distribution

MATERNAL LIFESTYLES

There were 325 (8.2%) of the 3952 mothers who were reported to smoke one or more cigarettes during their pregnancy this year. 15 mothers were reported to drink alcohol during their pregnancy, while 17 (0.4%) mothers were reported as being illicit drug abusers.

Details are given in Table 6 below.

Maternal Lifestyles	*2010*	*2009*
***Cigarette smoking during pregnancy*:**		
1 to 3/day	28	72
>than 3/day	297	286
Do not smoke	3627	3742
Unspecified	0	12
***Alcohol consumption during pregnancy*:**		
Up to 1 unit/day	11	2
>than 1 unit/day	4	0
None	3937	4098
Unspecified	0	12
Drug Abuse during pregnancy		
Yes	17	22
No	3935	4078
Unspecified	0	12

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

MATERNAL PATHOLOGY DURING PREGNANCY

In 2010 there were 65 mothers registered as having made use of assisted reproduction (ART), this includes all forms of ART namely ovulation stimulation, IVF and ICSI.

The table overleaf gives the number of mothers reported with specific obstetric pathology during pregnancy. 5.0% of mothers were registered as having gestational hypertension.

Pathology during pregnancy	*2010*		*2009*	
	Number	*%*	*Number*	*%*
Antepartum Haemorrhage	70	*1.8*	92	*2.2*
Gestational hypertension	198	*5.0*	275	*6.7*
Pre-eclampsia	31	*0.8*	52	*1.3*
Eclampsia	0	*0*	4	*0.1*
Placenta praevia	49	*1.2*	45	*1.1*
Abruption of placenta	13	*0.3*	10	*0.2*
Suspected IUGR*	250	*6.3*	266	*6.5*
Cardiovascular disease	15	*0.4*	14	*0.3*

**IUGR – intrauterine growth retardation*

Table 7- Pathology during pregnancy

Diabetes in Pregnancy

In 2010 there were 7 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 157 mothers registered with gestational diabetes who were controlled without the use of insulin, and 2 mothers registered as having gestational diabetes treated with insulin.

SINGLETON AND MULTIPLE DELIVERIES

For this year, there were a total of 3872 (98.0%) singleton and 74 (1.9%) twin deliveries, 6 triplet and no quadruplet deliveries.

Multiplicity	*2010*	*2009*
Singleton	3872	4047
Twin	74	62
Triplet	6*	3
Quadruplet	0	0

* For one of the triplet deliveries, the first sib was born in 2010 while the other two were born in 2011

Table 8 – Deliveries by multiplicity

SITE OF DELIVERY

In 2010 of the total 3952 deliveries registered by NOIS, 3943 (99.8%) occurred in a hospital while there were 8 deliveries that occurred at home while one occurred at another site but was later referred to a hospital. Two of the hospital deliveries were reported as occurring underwater.

ONSET OF DELIVERY

Of the total 3952 deliveries, 56.2% (2221) were reported as spontaneous onset of contractions, 28.5% (1125) were induced by drugs or artificial rupture of membranes and 15.3% (606) were carried out as elective caesarean sections.

DAMAGE TO THE PERINEUM

A total of 2700 women were delivered by normal or assisted vaginal delivery. 2543 (94.2%) of these women were reported to have a normal vertex vaginal delivery, while 157 (5.8%) had assisted vaginal delivery (including ventouse, forceps and breech). A total of 804 (29.8%) of these normal or assisted vaginal deliveries were reported to have sustained no damage to the perineum, while the remaining 1896 had an episiotomy, tear/laceration, or both.

Damage to perineum	*Normal Vaginal Delivery (n= 2543)*		*Assisted Vaginal Delivery** (n=157)*	
	Number	*%*	*Number*	*%*
No Damage	795	*31.3*	9	*5.7*
Episiotomy* only	545	*21.4*	86	*54.8*
Tear only	1034	*40.7*	23	*14.6*
Episiotomy and tear	169	*6.6*	39	*24.8*

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
Note: These figures exclude one case of episiotomy and one case of tear in failed ventouse deliveries resulting in delivery by emergency CS.

INFANT / FETAL BIRTHS

METHOD OF BIRTH

In 2010 there were a total of 4036 infant/fetal births. Of these 2543 (63.0%) were delivered as a vertex delivery, 1336 (33.1%) by emergency or elective Caesarean Section and 157 (3.9%) by assisted vaginal delivery (includes forceps, ventouse and breech).

*Mode of Delivery**	*2010*	*2009*
Vertex delivery	2543	2743
Elective/emergency Caesarean Section	1336	1259
Forceps	14	16
Ventouse	138	160
Breech deliveries	5	2

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

Table 10 – Mode of delivery

For 2010 there were 1336 infants/fetuses delivered by caesarean section but 1252 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 2010 was 31.7% of the total 3952 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*

Table 11 – Caesarean Section rates 1999-2010

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	*2010*		*2009*	
	Number	*%*	*Number*	*%*
Male	2066	*51.2*	2178	*52.1*
Female	1970	*48.8*	2002	*47.9*

Table 12 – Gender distribution of infants delivered

BIRTHWEIGHT OF INFANTS/FETUSES

In 2010, there were 3712 (92.0%) of the total births that occurred in the birth weight range of 2500g to 4499g. 265 (6.6%) of the total births were in the low birth weight range of 1500g to 2499g, while 41 (1.0%) of births were of very low birth weight 500g to 1499g. This year there were 2 babies of birth weight less than 500g but 22 completed weeks gestation, while 17 babies were of birth weight 4500g and over. In one baby, the birth weight was not recorded.

The lowest birth weight recorded this year was 240g in an antepartum stillbirth. The highest birth weight recorded was 5140g in a baby born to a mother who had gestational diabetes. The average birth weight was 3206g. All infants / fetuses of 22 weeks gestation and over are registered into the system.

Birth weight	*2010*		*2009*	
	Number	*%*	*Number*	*%*
<500g	2	*0.05*	8	*0.2*
500-999g	12	*0.3*	20	*0.5*
1000-1499g	27	*0.7*	23	*0.6*
1500-1999g	49	*1.2*	48	*1.1*
2000-2499g	216	*5.4*	225	*5.4*
2500-2999g	888	*22.0*	895	*21.4*
3000-3499g	1685	*41.7*	1790	*42.8*
3500-3999g	962	*23.8*	982	*23.5*
4000-4499g	177	*4.4*	159	*3.8*
4500-4999g	16	*0.4*	20	*0.5*
5000+	1	*0.02*	4	*0.1*
Unspecified	1	*0.02*	6	*0.1*

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 2010, 305 (7.5%) of babies born were premature, having a gestational age of <37 weeks. 41 (1.0%) were born very or extremely preterm (<32 weeks).

Gestational age	*2010*		*2009*	
	Number	*%*	*Number*	*%*
Extremely preterm 22-27 weeks	16	*0.4*	23	*0.6*
Very preterm 28-31 weeks	25	*0.6*	35	*0.8*
Moderately preterm 32-36 weeks	264	*6.5*	242	*5.8*
Term 37 – 41 weeks	3725	*92.3*	3853	*92.2*
Post term 42+ weeks	6	*0.1*	27	*0.6*
Unspecified	0	*0*	0	*0*

Table 14 – Gestational age at delivery

OUTCOME OF BIRTH

The number of live births registered in 2010 was 4018, which accounted for 99.6% of the total births at a national level. The remaining 18 births were reported as stillbirths of which 16 weighed 500g or more at birth. Of the livebirths, there were 16 cases of early neonatal deaths and 2 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	*2010*	*2009*
Livebirths	4018	4152
Stillbirths	18	28

Neonatal deaths	*2010*	*2009*
Early Neonatal deaths	16	14
Late Neonatal deaths	2	4

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	*2010*	*2009*
Breast only	2263	2498
Bottle only	1260	1195
Mixed (Breast & Bottle)	478	441
Other*	33	44
Unspecified	2	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	0

Table 17 – Maternal Deaths 1999-2010

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

Table 18 – Fetal Death Rates 1999-2010

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

Table 19 – Neonatal Mortality rates 1999-2010

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

Table 20 – Early Neonatal Mortality rates 1999-2010

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

Table 21 – Late Neonatal Mortality Rates 1999-2010

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

Table 22 – Perinatal Mortality Rates 1999-2010

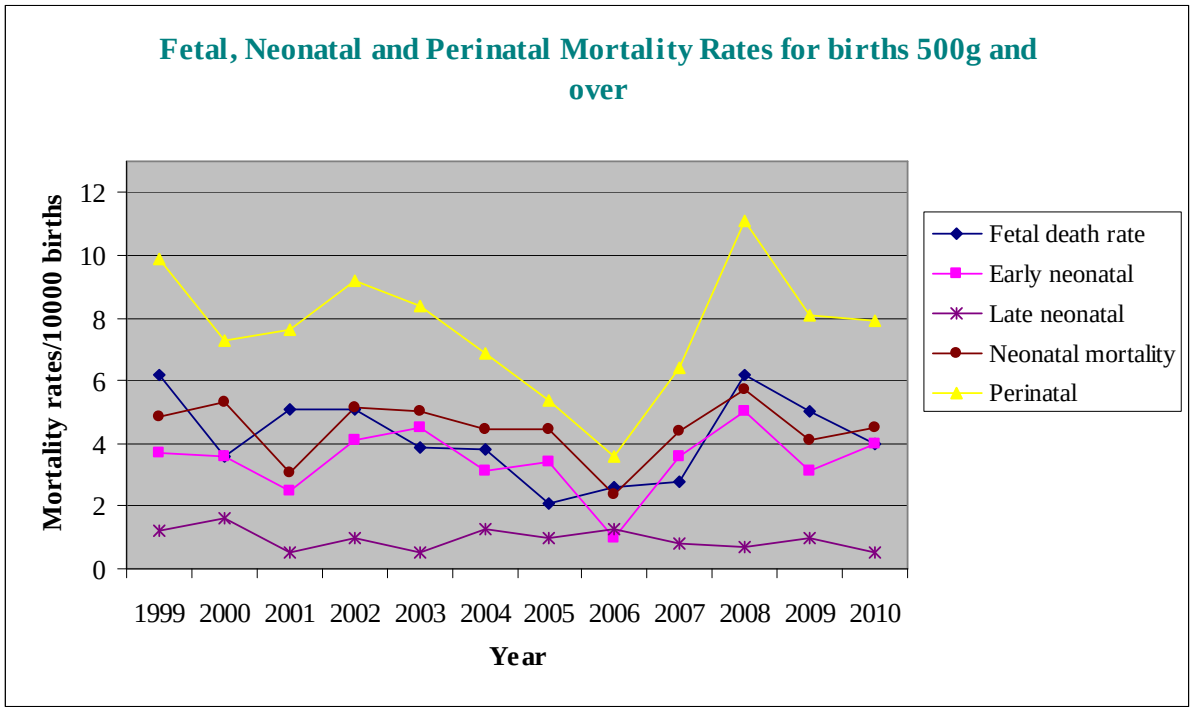


Figure 1 – Fetal, neonatal and perinatal mortality rates 1999-2010
(includes only fetuses of birth weight 500g and over)

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 2011. Only data until 2009 is completed as of May 2011, 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	10.67	9.50
2005	9.56	10.59	9.74
2006	9.55	10.69	9.94
2007	9.50	10.73	10.14
2008	10.19	10.89	10.60
2009	10.05	10.81	10.61

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	1.55	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

Table 24 – Total Fertility Rate

Year	Malta	EU members before May 2004	EU members since 2004 or 2007
2001	50.83*	5.20	17.79
2002	0	5.35	14.29
2003	0	5.37	15.56
2004	0	5.59	13.85
2005	0	4.85	10.23
2006	0	5.35	9.05
2007	0	4.88	8.39
2008	23.82*	5.03	9.49
2009	0	5.68	9.23

*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	4.37	5.40
2002	5.09	4.34	5.36
2003	3.95	4.22	5.23
2004	3.84	4.15	5.13
2005	2.07	4.05	4.99
2006	2.57	4.04	4.78
2007	3.08	3.97	4.67
2008	6.86	3.93	4.51
2009	3.97	n/a	4.43

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	2.70	4.83
2007	5.15	2.62	4.55
2008	5.72	4.55	4.17
2009	4.48	n/a	n/a

Table 27 – Neonatal Deaths per 1000 live births

n/a = not available as at May 2011

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.

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