



*National Obstetric  
Information System  
(NOIS)*

*Annual Report - 2012*



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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

For the 14<sup>th</sup> consecutive year the National Obstetric Information System (NOIS) has compiled and analysed all the obstetric and perinatal data collected from all public and private hospitals in Malta and Gozo. The data collected for all births is case-based – a dedicated form detailing medically relevant information for each delivery is completed at the participating hospital. The data is then regularly sent to the Department of Health Information and Research where it is validated, coded and inputted into the central database.

The information gathered continues to play an important role in the analysis of evolving trends over the years and serves as a useful resource to inform health care providers, researchers and policy makers with regards to the status of perinatal health in Malta and Gozo.

### Key Facts:

2012 registered a drop in the number of deliveries in the Maltese Islands – from 4226 in 2011 to 4175 in 2012. These resulted in a total of 4258 births on the islands – a decrease of 53 births when compared to 2011. Of these 4258 births, 4239 were live births (99.5%).

Of the 4175 deliveries registered in Malta in 2012, 3897 occurred in Malta (93.3%) and the remaining 278 deliveries occurred in Gozo ( 6.7%). The number of deliveries which occurred in hospital was 4155 (99.5%), 3 of these were underwater deliveries. 13 deliveries occurred at home and 7 deliveries occurred at other sites but were later transferred to hospital.

As in 2011, the number of twin deliveries in 2012 was 69 while the number of triplet deliveries was 7. As usually seen there were more male infants/fetuses delivered than female with figures standing at 51.9% male deliveries and 48.1% female.

### General information for 2012:

4175 deliveries  
4258 total births  
4239 live births

### Multiple deliveries:

Figures same as for 2011: **69** twin and **7** triplet deliveries

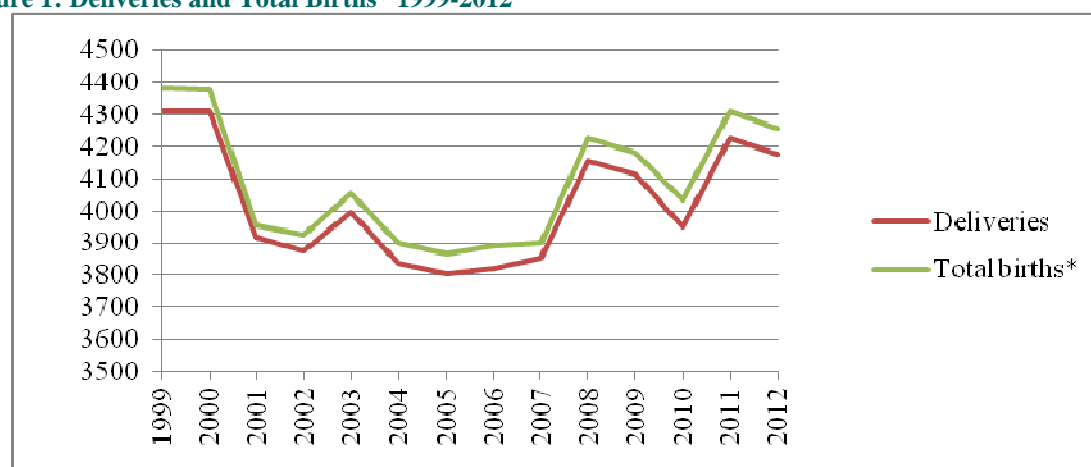
### Gender:

51.9% of infants/fetuses delivered were male

**4155 deliveries (99.5%)** occurred in hospital

**13** deliveries occurred at home but were later transferred to hospital.

**Figure 1: Deliveries and Total Births\* 1999-2012**



\*Total births include all reported live and still births

## Maternal characteristics:

### Age:

In 2012, as in 2011, the greatest number of deliveries (33.5%) occurred in the 30-34 year maternal age group. In 2012 there were 3 deliveries occurring in mothers aged <15 years and 3 to mothers aged 45+ years. The latter figure decreased from 7 deliveries to 45+ year olds in 2011. Deliveries to teenage women (<20 years) decreased slightly from 217 deliveries in 2011 to 212 deliveries in 2012.

### Marital Status:

25.7% of deliveries occurring in 2012 were registered as occurring to single mothers (never married), this figure is somewhat higher than the 24.3% single mothers reported in 2011. 70.7% of mothers were reported to be married in 2012. The number of deliveries occurring to women registered as being widowed, separated or divorced was 3.7% in 2012, slightly lower than the 4.3% registered in 2011.

### Nationality:

As has happened annually since 2004 the number of deliveries to mothers of non-Maltese nationality increased again in 2012. 12% of deliveries occurred to non-Maltese nationals, up from 11.3% in 2011.

### Maternal facts and figures for 2012:

#### Maternal age:

Commonest age group: 30-34 years  
 3 deliveries to mothers <15 years of age  
 212 deliveries to teenage mothers  
 3 deliveries to mothers aged 45+  
 Minimum age at delivery – 14 years  
 Maximum age at delivery – 46 years

#### Nationality:

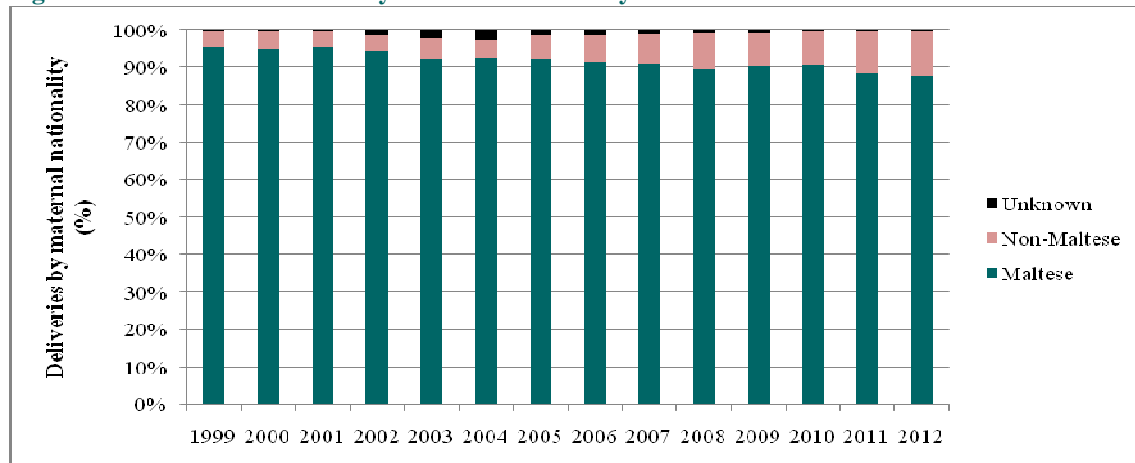
**87.9%** of all deliveries occurred to women of **Maltese** nationality  
**12%** occurred to women who were **non-Maltese**

**59** mothers registered as having made use of **assisted reproduction**.

**7.7%** of mothers smoked during their pregnancy

Commonest specific obstetric pathology:  
**Gestational hypertension (4.8%)**

Figure 2: Number of deliveries by maternal nationality 1999-2012



### Educational level:

It is widely documented that maternal educational level has a bearing on the outcomes of pregnancy and since 2008 efforts have been made to improve the collection of information regarding maternal educational level. In 2012, 96% of mothers had their educational level reported, a significant increase from the 73% reported in 2011. In 2012, 30.9% of mothers were reported as having a tertiary education.

### Maternal Lifestyle:

In 2012, 7.7% of mothers (321) were reported to smoke one or more cigarettes during their pregnancy while 5 mothers were reported to drink some alcohol and 23 mothers to make use of illicit drugs during the pregnancy. The figures varied only slightly from those of the previous year.

## Pathology during pregnancy

Gestational hypertension was once again the most common specific obstetric pathology during pregnancy, although the percentage fell from 5.7% in 2011 to 4.8% in 2012. Suspected intrauterine growth retardation, which was reported at 5.5% in 2011, was once again the second commonest pathology but the percentage fell to 3.2% in 2012.

## Diabetes in pregnancy

In 2012, 22 mothers were reported as being Insulin Dependent Diabetic and 14 mothers were non-Insulin Dependent Diabetic prior to the pregnancy. There were 179 mothers registered with impaired glucose tolerance or gestational diabetes but none required treatment with insulin.

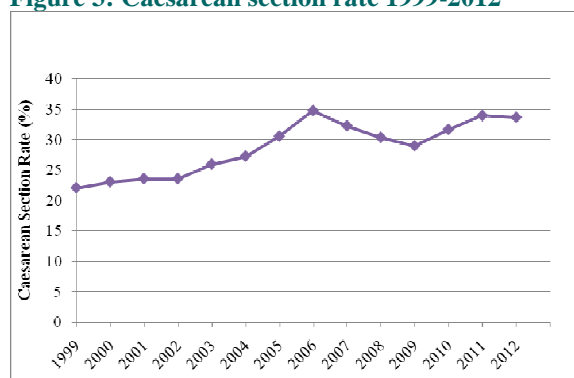
## Method of Birth:

In 2012 there were 4099 singleton deliveries, 69 twin, 7 triplet and no quadruplet deliveries. The number of twin and triplet deliveries was the same as for 2011.

Of the 4258 infant/fetal births in 2012, 2555 (60%) were delivered as a vertex delivery, 211 (5%) were delivered by assisted vaginal delivery and 1491 (35%) by Caesarean section.

The Caesarean section rate in 2012 was 33.7% of the total 4175 deliveries; this is slightly less than the 34% Caesarean section rate reported in 2011. An overall increasing trend in Caesarean section rates over the past 14 years can be seen.

Figure 3: Caesarean section rate 1999-2012

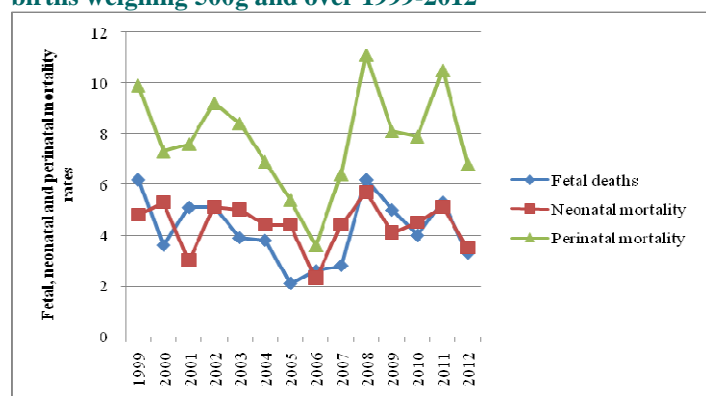


## Maternal and perinatal mortality indicators:

In 2012 there were no maternal deaths. The fetal death rate for fetuses weighing 500g and over was 3.3/1000 total births while the neonatal mortality rate stood at 3.5/1000 live births. In both cases there was a significant drop from the figures for 2011 – 5.3/1000 and 5.1/1000 respectively in 2011.

Further information and comparisons with EU figures can be found in the Annex of the Annual Report.

Figure 4: Fetal, Neonatal and Perinatal Mortality Rates for births weighing 500g and over 1999-2012



### Infant birth weight and gestational age at delivery - facts and figures for 2012:

- 10 infants/fetuses born weighing <500g but 22 weeks completed gestation
- 42 infants/fetuses born in **very low birth weight** range of 500-1499g
- 263 infants born in **low birth weight** range of 1500-2499g
- 10 infants born weighing **4500g and over**

**Lowest birth weight** – 190g in a 23 week gestation, severely malformed, antepartum stillbirth

**Highest birth weight** – 5275g in a 40 week gestation male infant

**Average birth weight** – 3211g

**333 (7.8%) babies born premature** - <37 weeks gestational age

**54 (1.3%) babies born very or extremely preterm** - <32 weeks gestational age

# NATIONAL OBSTETRIC INFORMATION SYSTEM - NOIS ANNUAL REPORT - 2012

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 2012 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 2012 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 4175 deliveries reported and registered for the Maltese Islands in 2012. These resulted in a total of 4258 infant/fetal births; this is a decrease of 53 births when compared to 2011.

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

<i>Year</i>	<i>Deliveries*</i>	<i>Total Births**</i>	<i>Livebirths</i>
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
2012	4175	4258	4239

\* 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 1999-2012***

Of the registered 4175 deliveries (4258 births) in 2012, 3897 deliveries (3978 births) occurred in Malta and 278 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 2012, the greatest number of deliveries 1397 (33.5%), occurred in the age group 30 to 34 years whilst the least number of deliveries 3 (0.1%) occurred in the youngest, less than 15 years and oldest age group 45+ years. The minimum age at delivery of the mothers was 14 years while the maximum age was 46 years. The most frequent maternal age at delivery was 30 years and average maternal age was 29 years.

The frequency distribution of deliveries in 2012 according to maternal age group is given in the following table.

<i>Age group (years)</i>	<i>2012</i>		<i>2011</i>	
	<i>Frequency</i>	<i>%</i>	<i>Frequency</i>	<i>%</i>
<b>&lt;15</b>	3	0.1	0	0
<b>15-19</b>	209	5.0	217	5.1
<b>20-24</b>	579	13.9	593	14.0
<b>25-29</b>	1260	30.2	1319	31.2
<b>30-34</b>	1397	33.5	1404	33.2
<b>35-39</b>	619	14.8	599	14.2
<b>40-44</b>	105	2.5	86	2.0
<b>45+</b>	3	0.1	7	<1
<b>Unspecified</b>	0	0	1	<1

***Table 2 – 2012 Deliveries according to maternal age group***

### Marital Status

This year, 1070 (25.6%) of all deliveries occurred to mothers who were reported as never married (single); while 2952 (70.7%) of all deliveries occurred to mothers reported as married, and 153 (3.7%) were reported as being widowed, separated or divorced. All mothers had their marital status specified.

In 2012, according to the data registered in NOIS, all mothers were reported as “having support at home to raise the infant”.

### Nationality

87.9% (3668) of all deliveries this year, occurred to women of Maltese nationality while 12.0% (501) were Non-Maltese. In the remaining 0.1% (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 since 1999.

<i>Nationality</i>	<i>Maltese</i>		<i>Non-Maltese</i>		<i>Unknown</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>1999</b>	4116	95.5	192	4.5	3	0.1
<b>2000</b>	4096	95.0	211	4.9	4	0.1
<b>2001</b>	3737	95.4	178	4.5	3	0.1
<b>2002</b>	3662	94.6	170	4.4	41	1.1
<b>2003</b>	3687	92.3	220	5.5	88	2.2
<b>2004</b>	3558	92.7	168	4.4	112	2.9
<b>2005</b>	3512	92.3	237	6.2	55	1.4
<b>2006</b>	3491	91.3	288	7.5	43	1.1
<b>2007</b>	3511	91.1	308	8.0	34	0.9
<b>2008</b>	3729	89.8	402	9.7	23	0.6
<b>2009</b>	3711	90.2	376	9.1	25	0.6
<b>2010</b>	3581	90.6	365	9.2	6	0.2
<b>2011</b>	3740	88.5	479	11.3	7	0.2
<b>2012</b>	3668	87.9	501	12.0	6	0.1

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

### Parity

There were 52.3% (2182) of mothers who were primiparas in 2012. 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.

<i>Mother's Age Group</i>	<i>Maternal Parity (previous livebirths and still births are included)</i>							<i>Total</i>
	<i>Primipara</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>&gt;4<sup>th</sup></i>	<i>Unknown</i>	
<b>Under 20</b>	191	21	0	0	0	0	0	<b>212</b>
<b>20-24</b>	380	162	26	7	3	1	0	<b>579</b>
<b>25-29</b>	792	351	82	23	7	5	0	<b>1260</b>
<b>30-34</b>	621	583	148	30	7	8	0	<b>1397</b>
<b>35-39</b>	164	271	135	27	12	10	0	<b>619</b>
<b>40-44</b>	33	23	29	12	2	6	0	<b>105</b>
<b>45+</b>	1	0	2	0	0	0	0	<b>3</b>
<b>Unknown</b>	0	0	0	0	0	0	0	<b>0</b>
<b>Total</b>	<b>2182</b>	<b>1411</b>	<b>422</b>	<b>99</b>	<b>31</b>	<b>30</b>	<b>0</b>	<b>4175</b>

***Table 4 – Parity of Mothers by age group for 2012***

### 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 2012 it now stands at 96% of mothers having their educational level reported. Distribution of maternal educational level is presented in Table 5. 30.9% of mothers were reported as having a tertiary education.

<i>Level of Education reached</i>	<i>2012</i>	
	<i>Number</i>	<i>%</i>
<b>Primary or no education</b>	108	2.6
<b>Secondary</b>	1737	41.6
<b>Post Secondary/Vocational non-tertiary</b>	882	21.1
<b>Tertiary</b>	1288	30.9
<b>Unspecified</b>	160	3.8

***Table 5 –Maternal Education distribution***

## **MATERNAL LIFESTYLES**

There were 321 (7.7%) of the mothers who were reported to smoke one or more cigarettes during their pregnancy this year. 5 mothers were reported to drink some alcohol during their pregnancy, while 23 mothers were reported as being illicit drug abusers.

Details are given in Table 6 below.

<i>Maternal Lifestyles</i>	<i>2012</i>	<i>2011</i>
<b><i>Cigarette smoking during pregnancy:</i></b>		
<b>1 to 3/day</b>	82	101
<b>&gt;than 3/day</b>	239	224
<b>Do not smoke</b>	3853	3896
<b>Unspecified</b>	1	5
<b><i>Alcohol consumption during pregnancy:</i></b>		
<b>Up to 1 unit/day</b>	5	8
<b>&gt;than 1 unit/day</b>	0	1
<b>None</b>	4170	4213
<b>Unspecified</b>	0	4
<b><i>Drug Abuse during pregnancy</i></b>		
<b>Yes</b>	23	25
<b>No</b>	4152	4197
<b>Unspecified</b>	0	4

***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 2012, the average birthweight of all infants born was 3211g, with 7.5% (315) 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 (329 babies) was 3067g, with 10.9% (36) of these babies being less than 2500g.



## MATERNAL PATHOLOGY DURING PREGNANCY

In 2012 there were 59 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. 4.8% of mothers were registered as having gestational hypertension.

<i>Pathology during pregnancy</i>	<i>2012</i>		<i>2011</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>Antepartum Haemorrhage</b>	63	1.5	89	2.1
<b>Gestational hypertension</b>	199	4.8	240	5.7
<b>Pre-eclampsia</b>	42	1.0	24	0.6
<b>Eclampsia</b>	0	0.0	0	0
<b>Placenta praevia</b>	34	0.8	58	1.4
<b>Abruption of placenta</b>	13	0.3	17	0.4
<b>Suspected IUGR*</b>	135	3.2	232	5.5
<b>Cardiovascular disease</b>	12	0.3	20	0.5

\*IUGR – intrauterine growth retardation

**Table 7- Pathology during pregnancy**

### Diabetes in Pregnancy

In 2012 there were 22 mothers who were reported as being Insulin Dependent Diabetic before this pregnancy while there were 14 mothers reported with Non-Insulin Dependent diabetes prior to pregnancy. In addition, there were a total of 179 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 4099 (98.2%) singleton and 69 (1.7%) twin deliveries, 7 triplet and no quadruplet deliveries. The number of twin and triplet deliveries in 2012 was the same as 2011.

<i>Multiplicity</i>	<i>2012</i>	<i>2011</i>
<b>Singleton</b>	4099	4150
<b>Twin</b>	69	69
<b>Triplet</b>	7	7*
<b>Quadruplet</b>	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 2012 of the total 4175 deliveries registered by NOIS, 4155 (99.5%) occurred in a hospital, 13 deliveries occurred at home and 7 deliveries occurring at other sites but later transferred to hospital. 3 of the hospital deliveries were reported as occurring underwater.

## ONSET OF DELIVERY

Of the total 4175 deliveries, 56.3% (2352) were reported as spontaneous onset of contractions, 28.1% (1174) were induced by drugs or artificial rupture of membranes and 15.5% (649) were carried out as elective caesarean sections.

## DAMAGE TO THE PERINEUM

A total of 2766 (66.3%) women were delivered by normal or assisted vaginal delivery. 2555 (92.4%) of these women were reported to have a normal vertex vaginal delivery, while 211 (7.6%) had assisted vaginal delivery (including ventouse, forceps and breech). A total of 827 (29.9%) of these normal or assisted vaginal deliveries were reported to have sustained no damage to the perineum, while the remaining 1939 (70.1%) had an episiotomy, tear/laceration, or both.

<i>Damage to perineum</i>	<i>Normal Vaginal Delivery (n= 2555)</i>		<i>Assisted Vaginal Delivery** (n= 211)</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>No Damage</b>	816	31.9	11	5.2
<b>Episiotomy* only</b>	541	21.2	114	54.0
<b>Tear only</b>	1085	42.5	46	21.8
<b>Episiotomy and tear</b>	113	4.4	40	19.0

***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 2012 there were a total of 4258 infant/fetal births. Of these 2555 (60.0%) were delivered as a vertex delivery, 1491 (35.0%) by emergency or elective Caesarean Section and 212 (5.0%) by assisted vaginal delivery (includes forceps, ventouse and breech).

<i>Mode of Delivery*</i>	<i>2012</i>	<i>2011</i>
<b>Vertex delivery</b>	2555	2611
<b>Elective/emergency Caesarean Section</b>	1491	1516
<b>Forceps</b>	11	6
<b>Ventouse</b>	196	176
<b>Breech deliveries</b>	5	2

\*Data analysed according to total infant/ fetal births

***Table 10 – Mode of delivery***

For 2012 there were 1491 infants/fetuses delivered by caesarean section but 1409 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 2012 was 33.7% of the total 4175 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.

<i>Year</i>	<i>Deliveries by Caesarean section</i>	<i>Caesarean section operation rate (% of all deliveries)</i>
<b>1999</b>	951	22.1
<b>2000</b>	994	23.1
<b>2001</b>	926	23.6
<b>2002</b>	914	23.6
<b>2003</b>	1039	26.0
<b>2004</b>	1048	27.3
<b>2005</b>	1165	30.6
<b>2006</b>	1329	34.8
<b>2007</b>	1243	32.3
<b>2008</b>	1263	30.4
<b>2009</b>	1194	29.0
<b>2010</b>	1252	31.7
<b>2011</b>	1435	34.0
<b>2012</b>	1409	33.7

***Table 11 – Caesarean Section rates 1999-2012***

## 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. In one very premature, 22-week gestation, stillbirth, gender was not specified.

<i>Gender</i>	<i>2012</i>		<i>2011</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>Male</b>	2211	51.9	2208	51.2
<b>Female</b>	2046	48.1	2103	48.8
<b>Unknown</b>	1	<0.1	0	0.0

*Table 12 – Gender distribution of infants delivered*

## BIRTHWEIGHT OF INFANTS/FETUSES

In 2012, there were 3933 (91.8%) of the total births that occurred in the birth weight range of 2500g to 4499g. 263 (6.1%) of the total births were in the low birth weight range of 1500g to 2499g, while 42 (1.0%) of births were of very low birth weight 500g to 1499g. This year there were 10 babies of birth weight less than 500g but 22 completed weeks gestation, while another 10 babies were of birth weight 4500g and over. Birth weight was recorded for all births.

The lowest birth weight recorded this year was 190g in a 23 week gestation, severely malformed, antepartum stillbirth. The highest birth weight recorded was 5275g in a 40 week gestation male infant. The average birth weight was 3211g. All infants / fetuses of 22 weeks gestation and over are registered into the system.

<i>Birth weight</i>	<i>2012</i>		<i>2011</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>&lt;500g</b>	10	0.2	6	0.14
<b>500-999g</b>	15	0.4	23	0.5
<b>1000-1499g</b>	27	0.6	37	0.9
<b>1500-1999g</b>	58	1.4	71	1.6
<b>2000-2499g</b>	205	4.8	217	5.0
<b>2500-2999g</b>	865	20.3	906	21.0
<b>3000-3499g</b>	1886	44.3	1822	42.3
<b>3500-3999g</b>	986	23.2	1032	23.9
<b>4000-4499g</b>	196	4.6	171	4.0
<b>4500-4999g</b>	9	0.2	19	0.4
<b>5000+</b>	1	0.02	2	0.04
<b>Unspecified</b>	0	0.0	5	0.12

*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 2012, 333 (7.8%) of babies born were premature, having a gestational age of <37 weeks. 54 (1.3%) were born very or extremely preterm (<32 weeks).

<i>Gestational age</i>	<i>2012</i>		<i>2011</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<b>Extremely preterm</b> 22-27 weeks	20	0.5	28	0.7
<b>Very preterm</b> 28-31 weeks	34	0.8	44	1.0
<b>Moderately preterm</b> 32-36 weeks	279	6.6	268	6.2
<b>Term</b> 37 – 41 weeks	3923	92.1	3964	91.9
<b>Post term</b> 42+ weeks	2	0.1	7	0.2
<b>Unspecified</b>	0	0	0	0

*Table 14 – Gestational age at delivery*

## OUTCOME OF BIRTH

The number of live births registered in 2012 was 4239, which accounted for 99.6% of the total births at a national level. The remaining 19 births were reported as stillbirths of which 5 weighed 500g or less at birth. Of the livebirths, there were 18 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.

<i>Outcome of Birth</i>	<i>2012</i>	<i>2011</i>
<b>Livebirths</b>	4239	4283
<b>Stillbirths</b>	19	28

<i>Neonatal deaths</i>	<i>2012</i>	<i>2011</i>
<b>Early Neonatal deaths</b>	18	19
<b>Late Neonatal deaths</b>	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.

<i>Infant feeding methods at time of discharge</i>	<i>2012</i>	<i>2011</i>
<b>Breast only</b>	2413	2430
<b>Bottle only</b>	1217	1241
<b>Mixed (Breast &amp; Bottle)</b>	590	588
<b>Other*</b>	38	51
<b>Unspecified</b>	0	1

\* '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 AND PERINATAL 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/hfad/>.

<b>Year</b>	<b>Maternal Deaths</b>
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
2012	0

***Table 17 – Maternal Deaths 1999-2012***

<b>Year</b>	<b>Fetal death rate 500g and over</b>	
	<b>Number</b>	<b>Rate/1000 total births</b>
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
2012	14	3.3

***Table 18 – Fetal Death Rates 1999-2012***

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
2012	15	3.5

***Table 19 – Neonatal Mortality rates 1999-2012***

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
2012	13	3.1

***Table 20 – Early Neonatal Mortality rates 1999-2012***

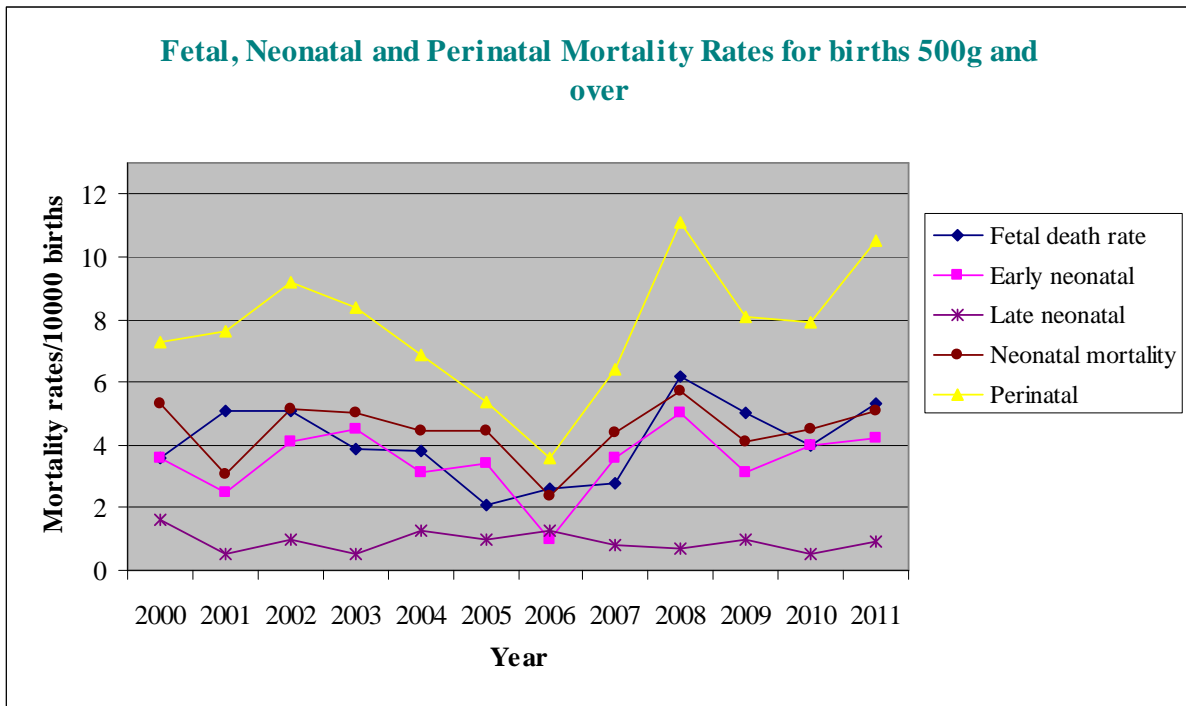


Year	Late neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
1999	5	1.2
2000	7	1.6
2001	2	0.5
2002	4	1.0
2003	2	0.5
2004	5	1.3
2005	4	1.0
2006	5	1.3
2007	3	0.8
2008	3	0.7
2009	4	1.0
2010	2	0.5
2011	4	0.9
2012	2	0.5

***Table 21 – Late Neonatal Mortality Rates 1999-2012***

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
2012	29	6.8

***Table 22 – Perinatal Mortality Rates 1999-2012***



***Figure 3 – Fetal, neonatal and perinatal mortality rates 1999-2012***  
*(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/hfad/> as available at May 2013. Only data until 2011 is completed as of May 2013, 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	10.15
2008	10.19	10.90	10.65
2009	10.03	10.71	10.71
2010	9.66	10.75	10.38
2011	10.30	n/a	10.00

*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	1.60	1.34
2008	1.40	1.63	1.38
2009	1.40	1.61	1.42
2010	1.40	1.62	1.38
2011	1.50	n/a	1.35

*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	8.30
2008	23.82*	5.14	10.27
2009	0	6.29	9.58
2010	24.89	5.50	9.30
2011	0	n/a	8.16

\*There were 2 maternal deaths in 2001, and 1 maternal death in each of 2008 and 2010.

***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	4.92	4.67
2008	6.86	5.14	4.51
2009	6.70	5.55	4.45
2010	3.97	5.49	4.19
2011	5.34	n/a	4.32

***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	2.64	4.55
2008	5.72	2.55	4.16
2009	4.34	2.53	4.06
2010	4.48	2.49	3.74
2011	5.60	n/a	3.67

***Table 27 – Neonatal Deaths per 1000 live births***

n/a = not available as at May 2013

## DEFINITIONS

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(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.

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

## **BIBLIOGRAPHY**

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