



NOIS

National Obstetric Information System

Annual Report 2021

DIRECTORATE FOR HEALTH INFORMATION AND RESEARCH

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The accuracy of information contained in this document may be limited by factors beyond the authors' 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 Directorate for 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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KEY FACTS

4420 deliveries

4477 total births

4464 live births

13 still births

55 twin and **0** triplet deliveries

99.7% of deliveries occurred in hospital

119 mothers registered as having made use of assisted reproduction

Mothers

Maternal Age

Commonest Age group: **30 to 34 years (38.3%)**

Range: **15 - 48 years**

Mode: **33 years**

Mean (Average): **30.9 years**

Mean age in primiparae: **29.7 years**

Nationality

68.1% mothers reported to be of **Maltese** Nationality

31.9% mothers reported to be of **non-Maltese** Nationality

Education

44.2% of mothers reported having **Tertiary Level of Education**

Infants

Gender Distribution

50.9% - Male, **49.1%** - Female

Birth weight

2 (0.04%) babies born weighing <500g but 22 weeks gestation

39 (0.9%) babies born in very low birth weight range 500-1499g

259 (5.8%) babies born in low birth weight range of 1500-2499g

14 (0.3%) babies born weighing 4500g and over

Commonest birth weight range: 3000 to 3499g – 1961 (43.8%)

Mean birth weight: **3225.8g**

Maturity

310 babies (6.9%) born preterm: <37 weeks gestational age

44 babies (1.0%) born very or extremely preterm: < 32 weeks gestational age

Mortality (500g and over)

Fetal Mortality: 2.5/1,000 total births

Neonatal Mortality: 2.7/1,000 live births

Early Neonatal Mortality: 2.2/1,000 live births

Late Neonatal Mortality: 0.4/1,000 live births

Perinatal Mortality Rate: 4.7/1,000 total births

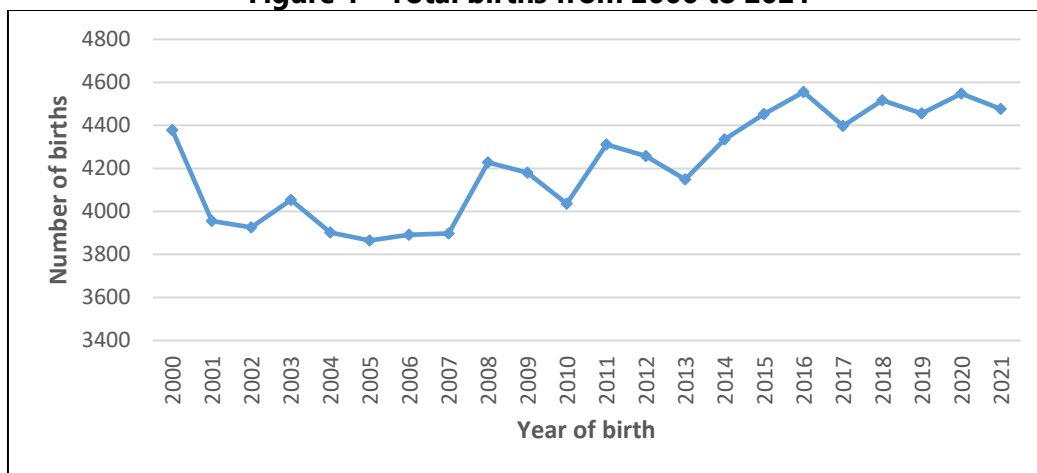
EXECUTIVE SUMMARY

For the 21st consecutive year, the National Obstetric Information System (NOIS) has compiled and analysed obstetric and perinatal health data collected from all public and private hospitals in Malta and Gozo. Information is distributed through reports, website and ad hoc requests.

In 2021, the total number of maternal deliveries stood at 4420 with a total of 4477 infant births. There was a slight decrease in births (71 births) from the previous year - 2020. 4464 births were live births (99.7%), and 13 (0.3%) were still births. The number of total births are seen to have increased gradually over the past 20 years (Figure 1).

92.6% of deliveries occurred in Malta and 6.8% in Gozo. The great majority (99.7%) of deliveries occurred in a hospital setting.

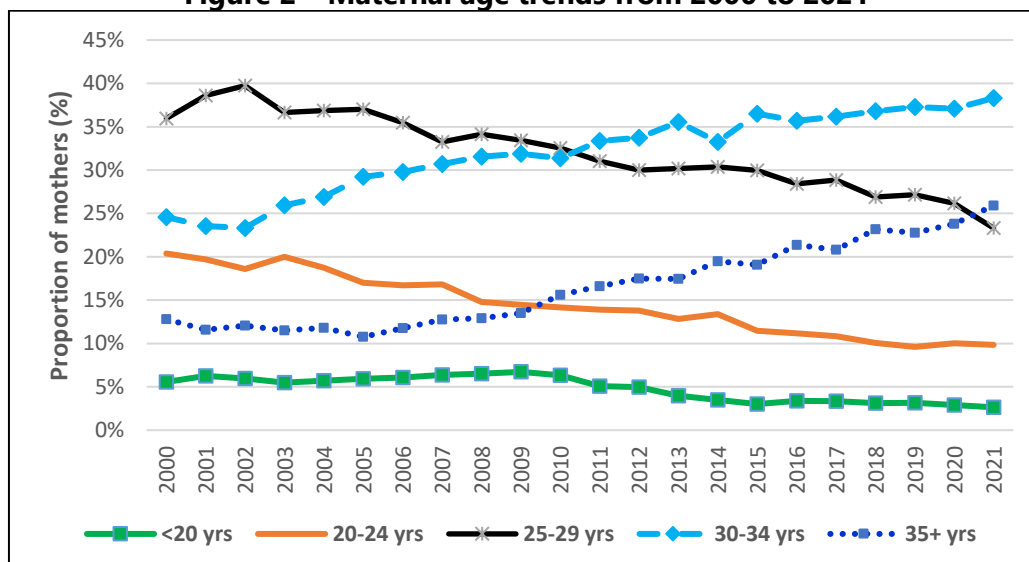
Figure 1 - Total births from 2000 to 2021



Maternal Factors

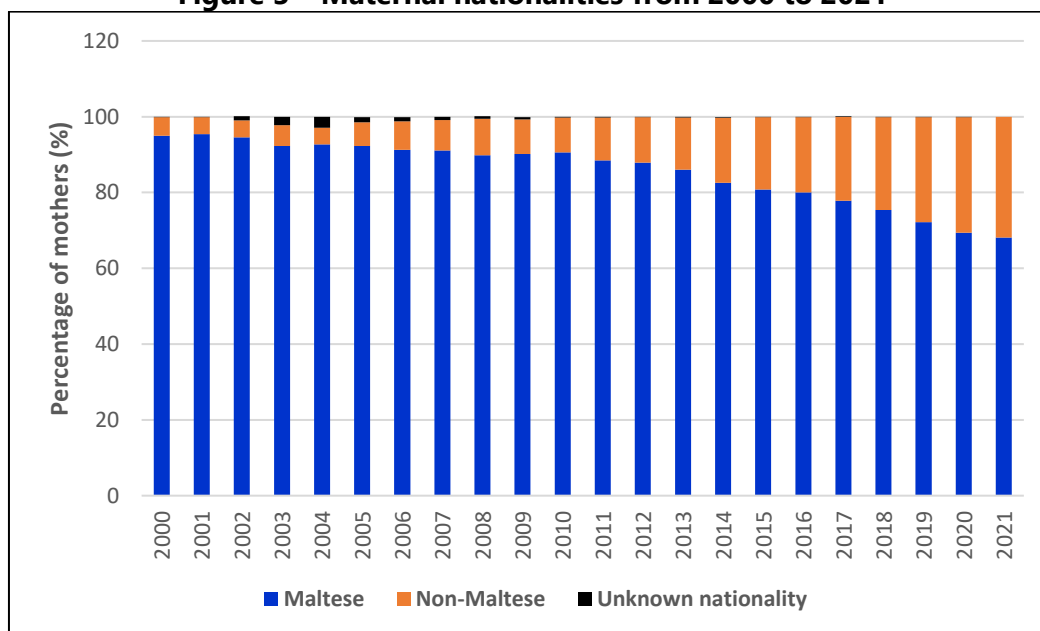
The most common maternal age group at delivery remains the 30-35 year age group with an average maternal age of 30.9 years. Older maternal age has continued to increase over the past 2 decades, with consistent decreases in the less than 30-year-olds and increases in the 30+ year olds.

Figure 2 – Maternal age trends from 2000 to 2021



The proportion of non-Maltese National mothers is also seen to continue with the increasing trend, with 31.9% of mothers being of non-Maltese Nationality in 2021.

Figure 3 – Maternal nationalities from 2000 to 2021



2210 (50%) of the mothers delivering were primigravidae – i.e. delivering their first baby.

44.2% of mothers delivering in 2021 had a tertiary education.

A total of 119 mothers were registered as having used some form of assisted reproductive technology including ovulation stimulation, IVF and ICSI.

The most common maternal pathology during pregnancy was gestational hypertension with 7% of mothers registered as having suffered gestational hypertension.

14 mothers had pre-existing Type I diabetes and 12 mothers had pre-existing Type II diabetes mellitus.

In 2021, there were 55 twin deliveries and no triplet deliveries.

Of the total 4420 deliveries, 53.9% were of spontaneous onset, 29.3% induced onset and 14.5% were planned elective caesarean section, the remaining 2.2% of the deliveries were carried out as an emergency section for arising pathological conditions including pre-eclampsia and antepartum hemorrhage.

A total of 34.9% of mothers delivering vaginally suffered some form of damage to the perineum.

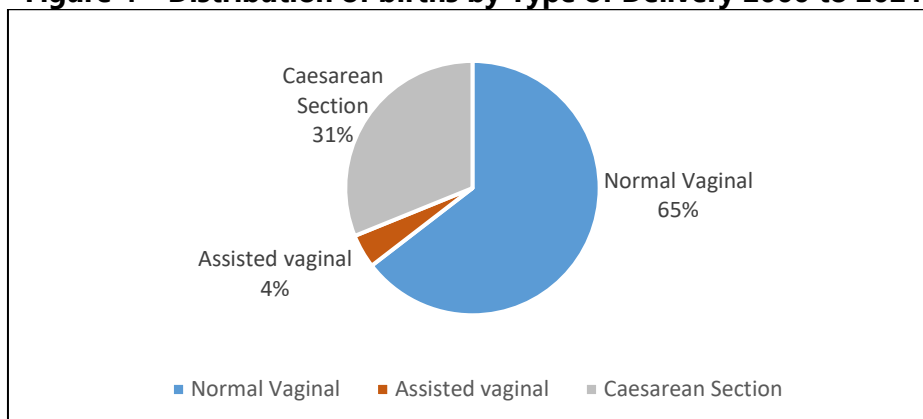
INFANT FACTORS

In 2021 there were a total of 4477 births. As normally found, there were more male births with 50.9% being males and 49.1% females.

61.5% of births in 2021 were by normal vertex vaginal delivery, 4.6% were assisted vaginal deliveries (including vacuum extraction, forceps, breech) and 33.9% were by caesarean section.

Maternal caesarean section delivery rates have fluctuated since 2000 with an overall rate of 31.1% of deliveries over the past two decades, the lowest rate being recorded in 2000 (23.1%) and the highest rate being seen in 2006 (34.8%).

Figure 4 – Distribution of births by Type of Delivery 2000 to 2021



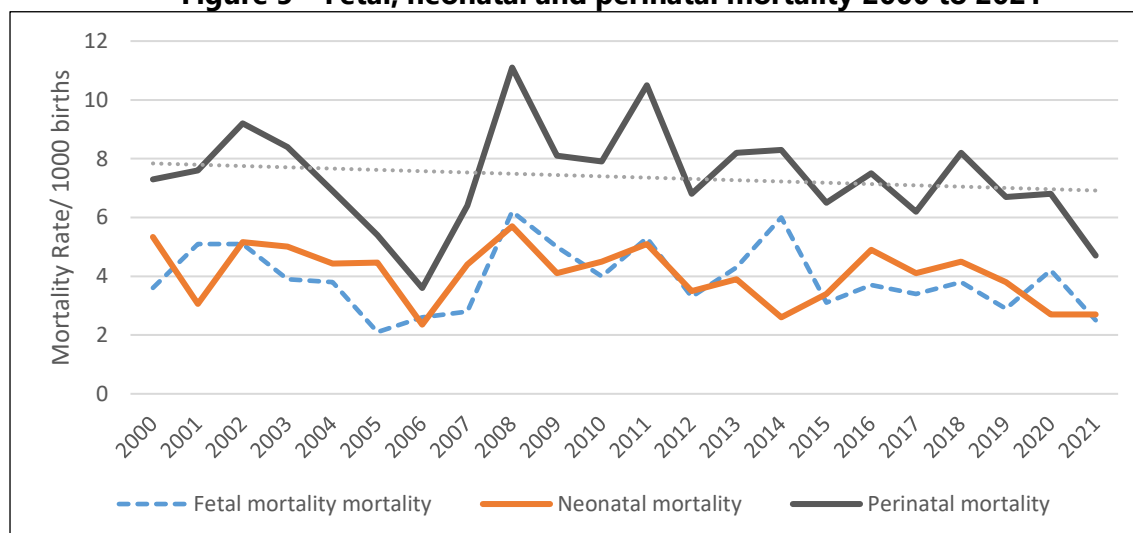
The majority of infants born had a birthweight of between 2500-3999g (88.8%). In 2021, 6.6% of babies were born with low birthweight of <2500g.

93.1% of babies were born at term (37-41 weeks gestation), while 5.9% were moderately pre-term (32-36 weeks gestation) and 1.0% were born very prematurely at <32 weeks gestation.

At the time of discharge from hospital 48.2% of infants were exclusively breast fed.

In 2021, 4464 births were livebirths and 13 were stillbirths. Of the livebirths 10 suffered early neonatal death and 2 were late neonatal deaths. Total perinatal mortality over the past 20 years has shown an overall decline with 7.3/1000 births in 2000 and 4.7/1000 births in 2021.

Figure 5 – Fetal, neonatal and perinatal mortality 2000 to 2021



NATIONAL OBSTETRIC INFORMATION SYSTEM (NOIS) ANNUAL REPORT - 2021

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 data sheet. Once the data are recorded, the sheets are forwarded to the Directorate for 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 delivered at 22 completed weeks gestation and over.

The maternity centres actively participating in this information system in 2021 were: Mater Dei Hospital, Gozo General Hospital and St James Hospital. Home deliveries, which are not subsequently referred to a hospital, may not be captured by this system.

The NOIS Data Collection Sheet is used to collect extensive and comprehensive maternal, pregnancy, delivery and infant outcome data for all deliveries and births.

Data at the DHIR is kept in accordance with existent Data Protection legislation and confidentiality is protected at all times.

Report

This report analyses all deliveries and infant/fetal births occurring on the Maltese Islands and reported to the Registry and compares figures to those reported for previous years where appropriate. The data in this report includes all births occurring irrespective of residency of the parents.

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. This report includes the latest updated data as at time of release of report.

Further information and detailed maternal and perinatal health statistics and indicators may be found at: <https://deputyprimeminister.gov.mt/en/dhir/Pages/Registries/births.aspx>.

ANALYSIS OF REPORTED DATA

There were a total of 4420 deliveries reported and registered for the Maltese Islands in 2021. These resulted in a total of 4477 infant/fetal births; this is a decrease of 71 births when compared to 2020.

The table below gives the number of deliveries and births in Malta and Gozo and registered in NOIS since 2000.

Year	Deliveries*	Total Births**	Livebirths
2000	4311	4377	4361
2001	3918	3955	3935
2002	3872	3926	3905
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
2013	4073	4149	4127
2014	4275	4335	4308
2015	4385	4453	4435
2016	4455	4555	4532
2017	4325	4398	4379
2018	4434	4516	4491
2019	4379	4455	4439
2020	4481	4548	4522
2021	4420	4477	4464

* 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 2000-2021

Of the registered 4420 deliveries (4477 births) in 2021, 4121 deliveries (4174 births) occurred in Malta and 299 deliveries (303 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 below. A decrease in deliveries is seen in the younger age groups <30 years with a corresponding increase in deliveries in the older age groups ≥30 years. In 2021, the greatest number of deliveries 1693 (38.3%), occurred in the age group 30 to 34 years while there were no deliveries occurring in the youngest age group of less than 15 years. The minimum age at delivery of the mothers was 15 years (6 mothers) while the maximum age was 48 years (1 mother). The most frequent maternal age at delivery was 33 years and average maternal age was 30.9 years. The average age of first-time mothers was 29.7 years.

The frequency distribution of deliveries in 2021 according to maternal age group is given in the following table.

Age group (years)	2021		2020	
	Frequency	%	Frequency	%
<15	0	0	1	0.02
15-19	118	2.7	130	2.9
20-24	438	9.9	453	10.1
25-29	1028	23.3	1174	26.2
30-34	1693	38.3	1661	37.1
35-39	946	21.4	885	19.7
40-44	186	4.2	170	3.8
45+	11	0.25	4	0.09
Unspecified	0	0	3	0.07

Table 2. Deliveries according to maternal age group

Marital Status

In 2021, 1416 (32.0%) of all deliveries occurred to mothers who were reported as never married (single); while 2828 (64.0%) of all deliveries occurred to mothers reported as married, and 170 (3.8%) were reported as being separated, divorced, or widowed. 6 mothers had their marital status unspecified.

Maternal Nationality

68.1% (3012 of all deliveries this year occurred to women of Maltese nationality while 31.9% (1408) were non-Maltese. All mothers had a nationality specified. The table below gives the number of mothers of Maltese and non-Maltese Nationality delivering on the Maltese Islands since 2000.

Nationality	Maltese		Non-Maltese		Unknown	
	Number	%	Number	%	Number	%
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
2012	3668	87.9	501	12.0	6	0.1
2013	3501	86.0	564	13.8	8	0.2
2014	3533	82.6	733	17.1	9	0.2
2015	3544	80.8	838	19.1	3	0.1
2016	3565	80.0	889	19.9	1	0.1
2017	3364	77.8	958	22.2	3	0.1
2018	3345	75.4	1087	24.5	2	0.1
2019	3163	72.2	1211	27.7	5	0.1
2020	3111	69.4	1368	30.5	2	0.04
2021	3012	68.1	1408	31.9	0	0

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

Parity

There were 50.0% (2210) of mothers who were primiparas in 2021. The following table gives a breakdown of mothers by age and previous parity (includes all previous live and still births).

Mother's Age Group	Maternal Parity (previous livebirths and still births are included)							Total
	Primipara	1	2	3	4	>4 th	Unknown	
Under 20	96	17	5	0	0	0	0	118
20-24	274	109	45	6	4	0	0	438
25-29	621	277	89	25	7	9	0	1028
30-34	818	676	139	35	11	14	0	1693
35-39	331	386	166	34	20	9	0	946
40-44	66	62	35	17	4	2	0	186
45+	4	4	2	0	0	1	0	11
Unknown	0	0	0	0	0	0	0	0
Total	2210	1531	481	117	46	35	0	4420

Table 4. Parity of Mothers by age group for 2021

Educational Level reached

It is documented that maternal educational level has a bearing on outcomes of pregnancy. In 2021, 93.3% of mothers had their completed level of education reported.

Distribution of maternal educational level is presented in Table 5. 44.2% of mothers were reported as having a tertiary education.

Level of Education reached	2021	
	Number	%
Primary or no education	102	2.3
Secondary	1000	22.6
Post-Secondary/Vocational non-tertiary	1067	24.1
Tertiary	1953	44.2
Unspecified	298	6.7

Table 5. Maternal Education distribution

MATERNAL LIFESTYLES

There were 324 mothers who were reported to smoke one or more cigarettes through their pregnancy this year, while another 371 reported having stopped smoking early in pregnancy. 4 mothers were reported to drink alcohol throughout pregnancy, while 21 mothers were reported as being illicit drug abusers. It is conceivable that mothers may under-report these known harmful lifestyles.

Maternal Lifestyles	2021	
	Number	%
Cigarette smoking during pregnancy:		
Non Smoker	3659	82.8
Stopped smoking in pregnancy	371	8.4
Smoked through pregnancy	324	7.3
Unspecified	66	1.5
Alcohol consumption during pregnancy:		
Non alcohol drinker	4365	98.7
Stopped drinking in pregnancy	11	0.2
Drank through pregnancy	4	0.09
Unspecified	40	0.9
Drug Abuse during pregnancy		
No	4368	98.8
Yes	21	0.5
Unspecified	31	0.7

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, 2018). In 2021, the overall average birth weight of all infants born was 3230.4g, with 6.7% (300) of these babies being less than 2500g.

The average birth weight of babies born to mothers reported to have smoked at some time during their pregnancy (706 babies) was 3152.3g, with 8.9% of these babies being less than 2500g.

MATERNAL PATHOLOGY DURING PREGNANCY

In 2021 there were 119 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. 7% of mothers were registered as having gestational hypertension.

Pathology during pregnancy	2021		2020	
	Number	%	Number	%
Antepartum Haemorrhage	86	1.9	69	1.5
Gestational hypertension	310	7.0	329	7.3
Pre-eclampsia	23	0.5	30	0.7
Eclampsia	2	0.04	1	0.02
Placenta praevia	38	0.9	20	0.4
Abruption of placenta	14	0.3	9	0.2
Suspected IUGR*	212	4.8	190	4.2
Cardiovascular disease	2	0.04	1	0.02

*IUGR – intrauterine growth retardation

Table 7. Pathology during pregnancy

Diabetes in Pregnancy

In 2021 there were 14 mothers who were reported as having pre-existing Type I Diabetes Mellitus before this pregnancy while there were 12 mothers reported with Type II Diabetes Mellitus prior to pregnancy. There was a total of 315 mothers registered with impaired glucose tolerance or gestational diabetes during pregnancy.

SINGLETON AND MULTIPLE DELIVERIES

For this year, there were a total of 4365 (98.8%) singleton, 55 (1.2%) twin deliveries and no triplet deliveries.

Multiplicity	2021	2020
Singleton	4365	4418
Twin	55	59
Triplet	0	4
Quadruplet	0	0

Table 8. Deliveries by multiplicity

SITE OF DELIVERY

In 2021 of the total 4420 deliveries registered by the National Obstetric Information System, - 4407 (99.7%) occurred in a hospital, 9 deliveries occurred at home and 4 deliveries occurred at another site but were later transferred to hospital.

ONSET OF DELIVERY

Of the total 4420 deliveries, 53.9% (2382) were reported as spontaneous onset of contractions, 29.3% (1297) were induced by drugs or artificial rupture of membranes and 14.5% (643) were carried out as elective caesarean sections, while 2.2% (98) were carried out as emergency caesarian sections for pathological conditions including antepartum haemorrhage, pre-eclampsia, fetal distress etc.

DAMAGE TO THE PERINEUM

A total of 2958 women were delivered by normal or assisted vaginal delivery. 2753 (93.1%) of these women were reported to have a normal vertex vaginal delivery, while 205 (6.9%) had assisted vaginal delivery (including ventouse, forceps and breech). A total of 1032 (34.9%) of these normal or assisted vaginal deliveries were reported to have sustained no episiotomy or damage to the perineum or cervix, while 1925 (65.1%) were reported to have had an episiotomy, perineal or cervical tear/laceration, or both.

Damage to perineum	Normal Vaginal Delivery (n= 2753)		Assisted Vaginal Delivery* (n= 205)	
	Number	%	Number	%
No Damage	1026	37.3	6	2.9
Episiotomy** only	281	10.2	85	41.5
Perineal tear only***	1361	49.4	75	36.6
Episiotomy and tear	84	3.1	39	19.0
Unknown	1	0.04	0	0

*Assisted vaginal delivery include ventouse, forceps and breech extraction

** Episiotomy is defined as a surgical incision through the perineum to enlarge the vagina to assist delivery

*** Perineal tears include cervical tears

Table 9. Damage to perineum in vaginal deliveries

INFANT / FETAL BIRTHS

METHOD OF BIRTH

In 2021 there were a total of 4477 infant/fetal births. Of these 2755 (61.5%) were delivered as a normal vertex delivery, 1517 (33.9%) by emergency or elective Caesarean Section and 205 (4.6%) by assisted vaginal delivery (includes forceps, ventouse and breech).

Mode of Delivery*	2021	2020
Vertex delivery	2755	2849
Elective/emergency Caesarean Section	1517	1460
Forceps	4	12
Ventouse	196	221
Breech deliveries	5	6

*Data analysed according to total infant/ fetal births

Table 10. Mode of delivery

For 2021 there were 1517 infants/fetuses delivered by caesarean section but 1462 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 2021 was 33.1% of the total 4420 maternal deliveries.

Year	Deliveries by Caesarean section	Caesarean section operation rate (% of all deliveries)
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
2012	1409	33.7
2013	1270	31.2
2014	1368	32.0
2015	1359	31.0
2016	1366	30.7
2017	1338	30.9
2018	1400	31.6
2019	1353	30.9
2020	1396	31.2
2021	1462	33.1

Table 11. Caesarean Section rates 2000-2021

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	2021		2020	
	Number	%	Number	%
Male	2280	50.9	2367	52.0
Female	2197	49.1	2181	48.0
Unknown	0	0	0	0

Table 12. Gender distribution of infants delivered

BIRTHWEIGHT OF INFANTS/FETUSES

In 2021, there were 4160 (92.9%) of the total births that occurred in the birth weight range of 2500g to 4499g. 259 (5.8%) of the total births were in the low-birth-weight range of 1500g to 2499g, while 39 (0.9%) 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, both were stillbirths. There were another 14 babies of birth weight 4500g and over. Birth weight was not reported for 3 births.

The lowest birth weight recorded this year was 390g in a 24-week antepartum intrauterine death. The highest birth weight recorded was 5120g in a baby born to a Type I Diabetic mother. The average birth weight was 3225.8g. All infants / fetuses delivered at 22 weeks gestation and over are registered into the system.

Birth weight	2021		2020	
	Number	%	Number	%
<500g	2	0.04	10	0.2
500-999g	19	0.4	17	0.4
1000-1499g	20	0.4	32	0.7
1500-1999g	46	1.0	61	1.3
2000-2499g	213	4.8	192	4.2
2500-2999g	932	20.8	1002	22.0
3000-3499g	1961	43.8	1981	43.6
3500-3999g	1082	24.2	1024	22.5
4000-4499g	185	4.1	201	4.4
4500-4999g	13	0.3	14	0.3
5000+	1	0.02	4	0.1
Unspecified	3	0.06	10	0.2

Table 13. Birth weight distribution of infants/fetuses

GESTATIONAL AGE AT DELIVERY

Preterm births are associated with adverse obstetric outcomes and long-term health problems. In 2021, 310 (6.9%) of babies born were preterm, having a gestational age of <37 weeks. 44 (1.0%) were born very or extremely preterm (<32 weeks).

Gestational age	2021		2020	
	Number	%	Number	%
Extremely preterm 22-27 weeks	16	0.36	30	0.66
Very preterm 28-31 weeks	28	0.63	30	0.66
Moderately preterm 32-36 weeks	266	5.9	256	5.6
Term 37 – 41 weeks	4167	93.1	4230	93.0
Post term 42+ weeks	0	0	2	0.04
Unspecified	0	0	0	0

Table 14. Gestational age at delivery

OUTCOME OF BIRTH

The number of live births registered in 2021 was 4464, which accounted for 99.7% of the total births at a national level. The remaining 13 births were reported as stillbirths. Of the live births, there were 10 cases of early neonatal deaths and 2 cases of late neonatal deaths (see table below).

Outcome of Birth	2021	2020
Livebirths	4464	4522
Stillbirths	13	26

Neonatal deaths	2021	2020
Early Neonatal deaths	10	12
Late Neonatal deaths	2	3

Table 15. Birth outcomes – livebirths, fetal, early and late neonatal deaths (22+ weeks gestation)

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 longer-term infant feeding habits as these may change soon after discharge from the birthing facilities.

Infant feeding methods at time of discharge	2021	2020
Breast only	2157	2229
Bottle only	1243	1206
Mixed (Breast & Bottle)	1050	1073
Other*	27	40
Unspecified	0	0

* '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

Maternal, fetal, perinatal and neonatal mortality statistics are indicators of quality of health care. Definitions of the rates presented are given in Annex II. Indicators for the past 20 years given in the tables below and refer to births with birth weight 500g and over.

Year	Maternal Deaths
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	1
2009	0
2010	1
2011	0
2012	0
2013	0
2014	0
2015	0
2016	0
2017	0
2018	0
2019	0
2020	0
2021	0

Table 17. Maternal Deaths 2002-2021

Year	Fetal death rate 500g and over	
	Number	Rate/1000 total births
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
2013	18	4.3
2014	26	6.0
2015	14	3.1
2016	17	3.7
2017	15	3.4
2018	17	3.8
2019	13	2.9
2020	19	4.2
2021	11	2.5

Table 18. Fetal Death Rates 2002-2021

Year	Neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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	14	3.3
2013	16	3.9
2014	11	2.6
2015	15	3.4
2016	22	4.9
2017	18	4.1
2018	20	4.5
2019	17	3.8
2020	12	2.7
2021	12	2.7

Table 19. Neonatal Mortality rates 2002-2021

Year	Early neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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	12	2.8
2013	13	3.2
2014	10	2.3
2015	11	2.5
2016	17	3.7
2017	12	2.7
2018	14	3.1
2019	14	3.2
2020	9	2.0
2021	10	2.2

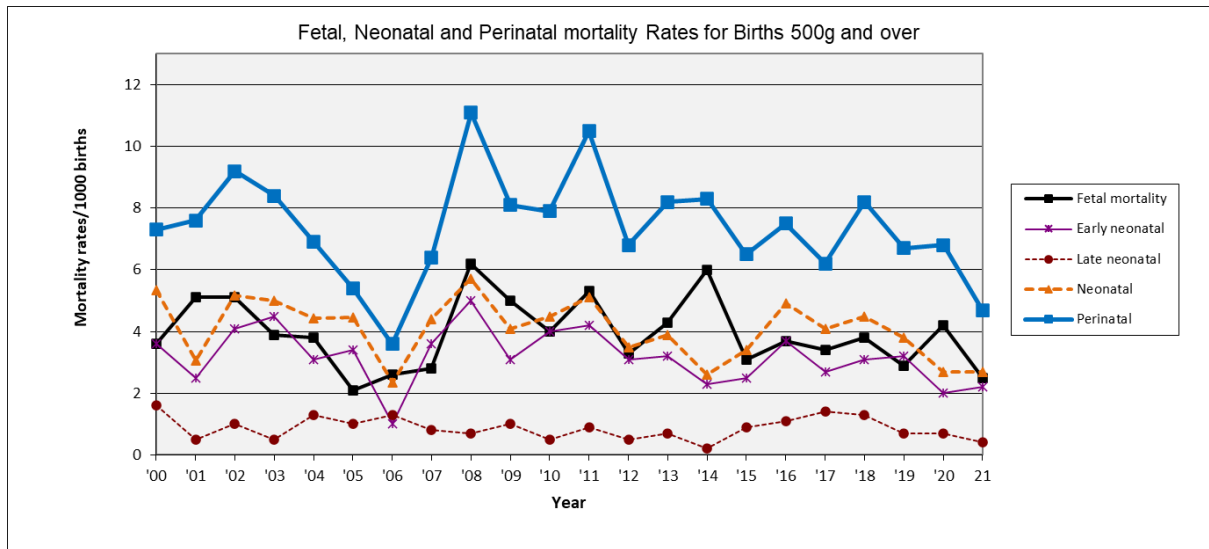
Table 20. Early Neonatal Mortality rates 2002-2021

Year	Late neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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
2013	3	0.7
2014	1	0.2
2015	4	0.9
2016	5	1.1
2017	6	1.4
2018	6	1.3
2019	3	0.7
2020	3	0.7
2021	2	0.4

Table 21. Late Neonatal Mortality Rates 2002-2021

Year	Perinatal mortality rate (500g and over)	
	Number	Rate/1000 total births
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	28	6.6
2013	34	8.2
2014	36	8.3
2015	29	6.5
2016	34	7.5
2017	27	6.2
2018	37	8.2
2019	30	6.7
2020	31	6.8
2021	21	4.7

Table 22. Perinatal Mortality Rates 2002-2021



Fetal, neonatal and perinatal mortality rates 2002-2021
 (fetal deaths include only fetuses of birth weight 500g and over)

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

Annex I gives some selected comparative birth and mortality statistics for Malta and the EU for the latest 15 years.

ANNEX 1

Comparative statistics for Malta and EU over the past 15 years – data reproduced from the WHO – European Health for All Database (HFA-DB): <https://gateway.euro.who.int/en/hfa-explorer/> as available at October 2022.

Year	Malta	EU members before May 2004	EU members after May 2004
2005	9.55	10.59	9.74
2006	9.32	10.70	9.92
2007	9.26	10.75	10.13
2008	9.80	10.90	10.61
2009	9.77	10.70	10.67
2010	9.40	10.75	10.39
2011	10.00	10.52	9.87
2012	9.84	10.37	9.89
2013	9.52	10.08	9.44
2014	10.03	10.14	9.87
2015	10.33	10.03	9.84
2016	10.67	10.10	10.10
2017	9.23	9.83	10.02
2018	9.49	na	9.71
2019	9.29	9.42	9.56

Table 23. Live births per 1000 population (HFA Indicator 16)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	1.37	1.56	1.29
2006	1.41	1.58	1.31
2007	1.37	1.59	1.34
2008	1.40	1.62	1.40
2009	1.40	1.61	1.43
2010	1.40	1.65	1.39
2011	1.50	1.63	1.33
2012	1.36	1.62	1.34
2013	1.36	1.59	1.37
2014	1.38	1.61	1.43
2015	1.37	1.58	1.45
2016	1.37	1.61	1.5
2017	1.26	1.58	1.55
2018	1.23	1.55	1.55
2019	1.14	1.53	1.55

Table 24. Total Fertility Rate (HFA indicator 25)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	0	4.79	8.87
2006	0	5.51	8.43
2007	0	5.59	7.44
2008	24.92*	6.20	8.94
2009	0	6.20	9.68
2010	25.65*	5.51	9.24
2011	0	5.22	9.21
2012	0	5.17	5.98
2013	0	5.39	6.91
2014	0	5.19	6.08
2015	0	4.54	7.57
2016	0	5.13	6.43
2017	0	5.03	6.49
2018	0	6.17	5.42
2019	0	5.14	6.17

*There was 1 maternal death in each of 2008 and 2010.

Table 25. Maternal Deaths per 100 000 live births (HFA Indicator 90)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	2.07	4.93	4.96
2006	2.64	5.00	4.76
2007	3.18	4.87	4.63
2008	7.17	5.08	4.49
2009	6.90	5.44	4.44
2010	4.09	5.08	4.20
2011	5.49	5.00	4.30
2012	3.38	4.86	4.18
2013	3.95	4.74	4.10
2014	6.17	4.71	4.04
2015	3.23	4.67	3.69
2016	3.56	4.62	3.75
2017	3.46	4.65	3.49
2018	3.59	na	3.69
2019	2.98	4.51	3.60

Table 26. Fetal Deaths per 1000 births (HFA Indicator 82)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	3.37	2.0	3.62
2006	1.06	1.93	3.41
2007	4.52	1.92	3.20
2008	5.23	1.85	2.88
2009	3.47	1.84	2.81
2010	4.10	1.78	2.64
2011	4.56	1.78	2.51
2012	4.12	1.71	2.34
2013	3.72	1.73	2.35
2014	3.58	1.72	2.26
2015	2.54	1.73	2.12
2016	6.36	1.77	2.00
2017	3.24	1.75	1.95
2018	3.15	na	1.95
2019	3.68	1.78	1.86

Table 27. Early Neonatal Deaths per 1000 live births (HFA Indicator 78)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	3.12	6.44	6.76
2006	1.80	6.46	6.28
2007	4.12	6.31	5.99
2008	6.91	6.42	5.58
2009	6.02	6.78	5.32
2010	6.22	6.37	5.16
2011	7.69	6.31	5.15
2012	3.88	6.12	4.92
2013	4.72	6.04	4.71
2014	5.72	5.98	4.57
2015	3.24	5.95	4.86
2016	4.93	5.37	4.92
2017	5.33	5.35	4.65
2018	4.73	na	3.96
2019	4.38	5.94	4.09

Table 28. Perinatal deaths per 1000 total births (HFA Indicator 84)

ANNEX II - 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.

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

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.

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

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.

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

Perinatal Period

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

Perinatal Mortality Rate

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

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

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