



NOIS

National Obstetric Information System

Annual Report 2022

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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TABLE OF CONTENTS

LIST OF TABLES	3
KEY FACTS	5
EXECUTIVE SUMMARY	7
NATIONAL OBSTETRIC INFORMATION SYSTEM (NOIS) ANNUAL REPORT - 2021	11
ANALYSIS OF REPORTED DATA.....	12
DELIVERIES	13
DEMOGRAPHY	13
Maternal Age	13
Marital Status.....	13
Maternal Nationality.....	14
Parity.....	15
Educational Level reached	15
MATERNAL LIFESTYLES	16
MATERNAL PATHOLOGY DURING PREGNANCY.....	17
SINGLETON AND MULTIPLE DELIVERIES.....	17
SITE OF DELIVERY.....	18
ONSET OF DELIVERY	18
DAMAGE TO THE PERINEUM	18
INFANT / FETAL BIRTHS.....	19
METHOD OF BIRTH	19
GENDER DISTRIBUTION OF BIRTHS	20
BIRTHWEIGHT OF INFANTS/FETUSES	20
GESTATIONAL AGE AT DELIVERY	21
OUTCOME OF BIRTH.....	21
INFANT FEEDING METHODS AT DISCHARGE.....	22
MATERNAL AND PERINATAL MORTALITY INDICATORS.....	23
ANNEX 1	27
ANNEX II - DEFINITIONS	30
BIBLIOGRAPHY.....	32

LIST OF TABLES

Table 1. Total births and deliveries 2003-2022	12
Table 2. Deliveries according to maternal age group	13
Table 3. Deliveries by reported Nationality of Mother for all deliveries on the Maltese Islands	14
Table 4. Parity of Mothers by age group for 2022	15
Table 5. Maternal Education distribution	15
Table 6. Reported smoking, alcohol and drug habits of mothers	16
Table 7. Pathology during pregnancy	17
Table 8. Deliveries by multiplicity	17
Table 9. Damage to perineum in vaginal deliveries	18
Table 10. Mode of delivery	19
Table 11. Caesarean Section rates 2003-2022	19
Table 12. Gender distribution of infants delivered	20
Table 13. Birth weight distribution of infants/fetuses	20
Table 14. Gestational age at delivery	21
Table 15. Birth outcomes – livebirths, fetal, early and late neonatal deaths (22+ weeks gestation)	21
Table 16. Infant feeding methods at time of discharge	22
Table 17. Maternal Deaths 2003-2022	23
Table 18. Fetal Death Rates 2003-2022	23
Table 19. Neonatal Mortality rates 2003-2022	24
Table 20. Early Neonatal Mortality rates 2003-2022	24
Table 21. Late Neonatal Mortality Rates 2003-2022	25
Table 22. Perinatal Mortality Rates 2003-2022	25
Table 23. Live births per 1000 population (HFA Indicator 16)	27
Table 24. Total Fertility Rate (HFA indicator 25)	27
Table 25. Maternal Deaths per 100 000 live births (HFA Indicator 90)	28
Table 26. Fetal Deaths per 1000 births (HFA Indicator 82)	28
Table 27. Neonatal Deaths per 1000 live births (HFA Indicator 78)	29
Table 28. Perinatal deaths per 1000 total births (HFA Indicator 84)	29.

KEY FACTS

4304 deliveries

4372 total births

4351 live births

21 still births

66 twin and **1** triplet deliveries

99.7% of deliveries occurred in hospital

167 mothers registered as having made use of assisted reproduction

Mothers

Maternal Age

Commonest Age group: **30 to 34 years (39.6%)**

Range: **15 - 53 years**

Mode: **32 years**

Mean (Average): **31.4 years**

Mean age in primiparae: **30.2 years**

Nationality

69.8% mothers reported to be of **Maltese** Nationality

30.1% mothers reported to be of **non-Maltese** Nationality

Education

48.0% of mothers reported having **Tertiary Level of Education**

Infants

Gender Distribution

51.0% - Male, **49.0%** - Female

Birth weight

6 (0.14%) babies born weighing <500g but 22 weeks gestation

52 (1.2%) babies born in very low birth weight range 500-1499g

270 (6.2%) babies born in low birth weight range of 1500-2499g

20 (0.46%) babies born weighing 4500g and over

Commonest birth weight range: 3000 to 3499g – 1892 (43.3%)

Mean birth weight: **3185.1g**

Maturity

335 babies (7.7%) born preterm: <37 weeks gestational age

62 babies (1.4%) born very or extremely preterm: < 32 weeks gestational age

Mortality (500g and over)

Fetal Mortality: 3.7/1,000 total births

Neonatal Mortality: 3.7/1,000 live births

Early Neonatal Mortality: 2.5/1,000 live births

Late Neonatal Mortality: 1.1/1,000 live births

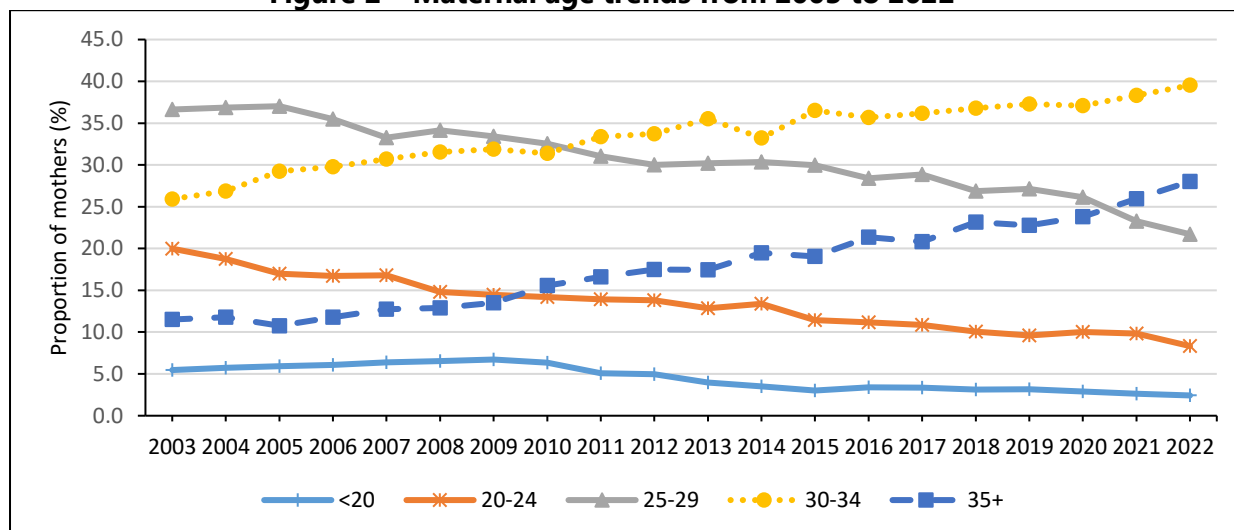
Perinatal Mortality Rate: 6.2/1,000 total births

93.1% of deliveries occurred in Malta and 6.9% in Gozo. The great majority (99.8%) of deliveries occurred in a hospital setting.

MATERNAL FACTORS

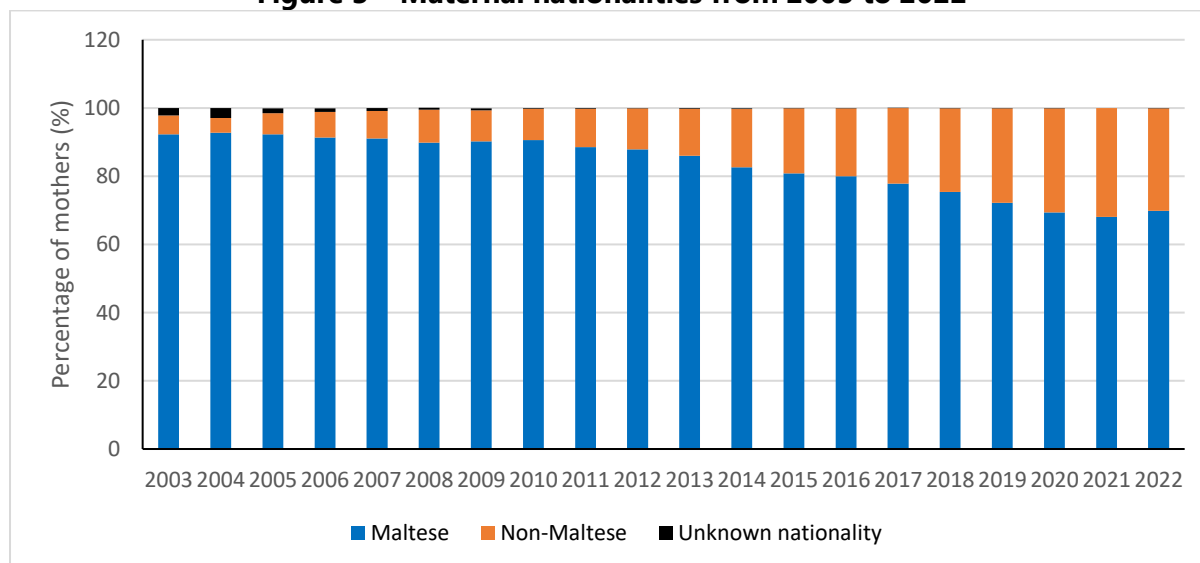
The most common maternal age group at delivery remains the 30-34 year age group. The average maternal age is 31.4 years. Older maternal age has continued to increase over the past 2 decades, with steady increases in the 30+ year old mothers and decreases in the less than 30-year-olds and (Figure 2).

Figure 2 – Maternal age trends from 2003 to 2022



The proportion of non-Maltese National mothers continues to be around a third of all deliveries, with 30.1% of mothers being of non-Maltese Nationality in 2022.

Figure 3 – Maternal nationalities from 2003 to 2022



2190 (50.9%) of the mothers delivering were primigravidae – i.e. delivering their first baby.

48.0% of mothers delivering in 2022 had a tertiary education.

A total of 167 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 pregnancy induced hypertension with 7.9% of mothers registered as having suffered hypertension in pregnancy.

13 mothers had pre-existing Type I diabetes and 15 mothers had pre-existing Type II diabetes mellitus.

In 2022, there were 66 twin deliveries and one triplet delivery.

Of the total 4304 deliveries, 52.2% were of spontaneous onset, 30.1% induced onset and 15.5% were planned elective caesarean section, the remaining 2.2% of the deliveries were carried out as an emergency caesarean section for arising pathological conditions including pre-eclampsia and antepartum hemorrhage.

A total of 67.2% of mothers delivering vaginally suffered some form of damage to the perineum.

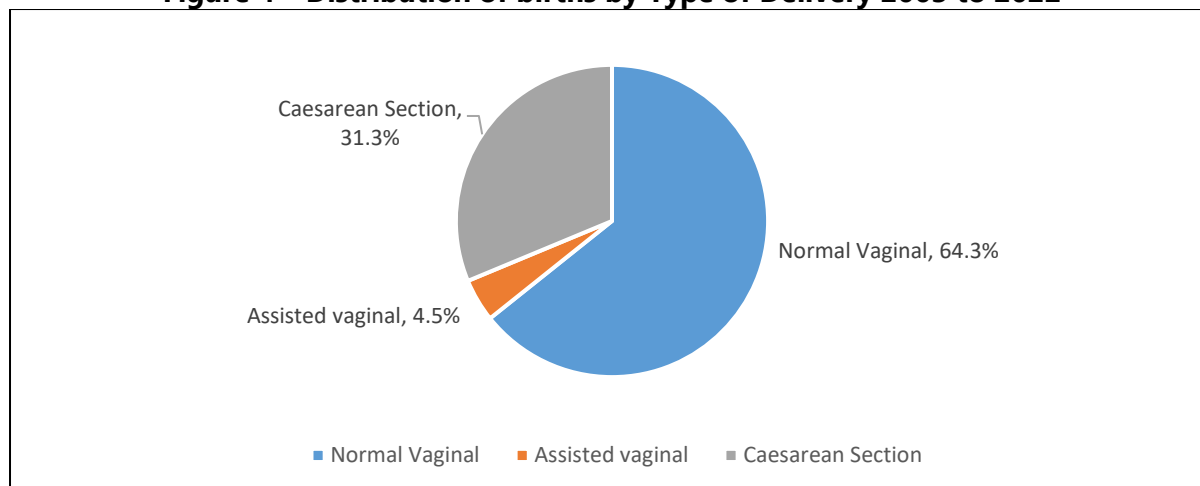
INFANT FACTORS

In 2022 there were a total of 4372 births. As normally found, there were more male births with 51.0% being males and 49.0% females.

61.4% of births in 2022 were by normal vertex vaginal delivery, 4.8% were assisted vaginal deliveries (including vacuum extraction, forceps, breech) and 33.8% were by caesarean section.

Maternal caesarean section delivery rates have fluctuated over the past two decades (2003-2022) with an overall rate of 31.3% of deliveries, the lowest rate being recorded in 2003 (26.0%) and the highest rate being seen in 2006 (34.8%) during this period.

Figure 4 – Distribution of births by Type of Delivery 2003 to 2022



The majority of infants born had a birthweight of between 2500-3999g (88.7%). In 2022, 7.5% of babies were born with low birthweight of <2500g.

92.3% of babies were born at term (37-41 weeks gestation), while 6.2% were moderately pre-term (32-36 weeks gestation) and 1.4% were born very prematurely at <32 weeks gestation.

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

In 2022, 4351 births were livebirths and 21 were stillbirths. Of the livebirths 13 suffered early neonatal death and 5 were late neonatal deaths. Total perinatal mortality over the past two decades has shown an overall decline with 8.4/1000 births in 2003 and 6.2/1000 births in 2022 (Table 22, Figure 5).

NATIONAL OBSTETRIC INFORMATION SYSTEM (NOIS) ANNUAL REPORT - 2022

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 2022 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 long term detailed maternal and perinatal health statistics and indicators may be found at: <https://healthservices.gov.mt/en/dhir/Pages/Introduction.aspx>

ANALYSIS OF REPORTED DATA

There were a total of 4304 deliveries reported and registered for the Maltese Islands in 2022. These resulted in a total of 4372 infant/fetal births; this was a decrease of 105 births when compared to 2021.

The table below gives the number of deliveries and births in Malta and Gozo and registered in NOIS over the past 20 years 2003-2022.

Year	Deliveries*	Total Births**	Livebirths
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
2022	4304	4372	4351

* 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 2003-2022

Of the registered 4304 deliveries (4372 births) in 2022, 4005 deliveries (4070 births) occurred in Malta and 299 deliveries (302 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 2022, the greatest number of deliveries 1704 (39.6%), 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 (4 mothers) while the maximum age was 53 years (1 mother). There were 30 teenage mothers of less than 18 years and 5 mothers of 50 years and over. The most frequent maternal age at delivery was 32 years and average maternal age was 31.4 years. The average age of first-time mothers was 30.2 years.

The frequency distribution of deliveries in 2022 according to maternal age group is given in the following table.

Age group (years)	2022		2021	
	Frequency	%	Frequency	%
<15	0	0	0	0
15-19	105	2.4	118	2.7
20-24	361	8.4	438	9.9
25-29	939	21.8	1028	23.3
30-34	1704	39.6	1693	38.3
35-39	960	22.3	946	21.4
40-44	219	5.1	186	4.2
45+	16	0.4	11	0.25
Unspecified	0	0	0	0

Table 2. Deliveries according to maternal age group

Marital Status

In 2022, 1352 (31.4%) of all deliveries occurred to mothers who were reported as never married (single); while 2794 (64.9%) of all deliveries occurred to mothers reported as married, and 152 (3.5%) were reported as being separated, divorced, or widowed. 6 mothers had their marital status unspecified.

Maternal Nationality

69.8% (3006 of all deliveries this year occurred to women of Maltese nationality while 30.1% (1297) were non-Maltese. One mother had her nationality unspecified. The table below gives the number of mothers of Maltese and non-Maltese Nationality delivering on the Maltese Islands since 2003.

Nationality	Maltese		Non-Maltese		Unknown	
	Number	%	Number	%	Number	%
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
2022	3006	69.8	1297	30.1	1	0.02

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

Parity

There were 50.9% (2190) of mothers who were primiparas in 2022. 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	85	17	3	0	0	0	0	105
20-24	219	104	28	8	2	0	0	361
25-29	604	239	68	19	5	4	0	939
30-34	870	642	128	33	21	10	0	1704
35-39	331	423	140	41	12	13	0	960
40-44	72	82	36	19	5	5	0	219
45+	7	1	2	0	0	1	0	11
Unknown	2	2	1	0	0	0	0	5
Total	2190	1510	406	120	45	33	0	4304

Table 4. Parity of Mothers by age group for 2022

Educational Level reached

It is documented that maternal educational level has a bearing on outcomes of pregnancy. In 2022, 95.8% of mothers had their completed level of education reported.

Distribution of maternal educational level is presented in Table 5. 48.1% of mothers were reported as having a tertiary education.

Level of Education reached	2022	
	Number	%
Primary or no education	79	1.8
Secondary	926	21.5
Post-Secondary/Vocational non-tertiary	1049	24.4
Tertiary	2068	48.1
Unspecified	182	4.2

Table 5. Maternal Education distribution

MATERNAL LIFESTYLES

There were 295 mothers who were reported to smoke one or more cigarettes through their pregnancy this year, while another 373 reported having stopped smoking early in pregnancy. Two mothers were reported to drink alcohol throughout pregnancy, while 15 mothers were reported as being illicit drug abusers. It is conceivable that mothers may under-report these known harmful lifestyles.

Maternal Lifestyles	2022	
	Number	%
Cigarette smoking during pregnancy:		
Non Smoker	3564	82.8
Stopped smoking in pregnancy	373	8.7
Smoked through pregnancy	295	6.8
Unspecified	72	1.7
Alcohol consumption during pregnancy:		
Non alcohol drinker	4231	98.3
Stopped drinking in pregnancy	17	0.4
Drank through pregnancy	2	0.05
Unspecified	54	1.3
Drug Abuse during pregnancy		
No	4243	98.5
Yes	15	0.3
Unspecified	46	1.1

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 2022, the overall average birth weight of all infants born was 3185.1g, with 7.5% (328) of these babies being less than 2500g.

The average birth weight of babies born to mothers reported to have smoked through their pregnancy (299 babies) was 3095.8g, with 8.7% (26) of these babies being less than 2500g.

MATERNAL PREGNANCY

In 2022 there were 167 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. 7.9% of mothers were registered as having pregnancy induced hypertension.

Pathology during pregnancy	2022		2021	
	Number	%	Number	%
Antepartum Haemorrhage	83	1.9	86	1.9
Pregnancy induced hypertension	341	7.9	310	7.0
Pre-eclampsia	33	0.8	23	0.5
Eclampsia	0	0	2	0.04
Placenta praevia	41	1.0	38	0.9
Abruption of placenta	16	0.4	14	0.3
Suspected IUGR*	207	4.8	212	4.8

*IUGR – intrauterine growth retardation

Table 7. Pathology during pregnancy

Diabetes in Pregnancy

In 2022 there were 13 mothers who were reported as having a past medical history of pre-existing Type I diabetes mellitus before this pregnancy while there were 15 mothers reported with Type II diabetes mellitus prior to pregnancy. There was a total of 292 mothers registered with impaired glucose tolerance or gestational diabetes during pregnancy and without a past history of pre-existing diabetes mellitus.

SINGLETON AND MULTIPLE DELIVERIES

For this year, there were a total of 4237 (98.4%) singleton, 66 (1.5%) twin deliveries and 1 triplet deliveries.

Multiplicity	2022	2021
Singleton	4237	4365
Twin	66	55
Triplet	1	0
Quadruplet	0	0

Table 8. Deliveries by multiplicity

SITE OF DELIVERY

In 2022 of the total 4304 deliveries registered by the National Obstetric Information System, 4293 (99.7%) occurred in a hospital, 8 deliveries occurred at home and 3 deliveries occurred at another site but were later transferred to hospital.

ONSET OF DELIVERY

Of the total 4304 deliveries, 52.2% (2245) were reported as spontaneous onset of contractions, 30.1% (1297) were induced by drugs or artificial rupture of membranes and 15.5% (666) were carried out as elective caesarean sections, while 2.2% (96) 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 2894 women were delivered by normal or assisted vaginal delivery. 2683 (92.7%) of these women were reported to have a normal vertex vaginal delivery, while 211 (7.3%) had assisted vaginal delivery (including ventouse, forceps and breech). A total of 950 (32.8%) of these normal or assisted vaginal deliveries were reported to have sustained no episiotomy or damage to the perineum or cervix, while 1944 (67.2%) were reported to have had an episiotomy, perineal or cervical tear/laceration, or both.

55 (2.0%) women were reported to have 3rd or 4th degree tears following a normal vaginal delivery and 18 (8.5%) following an assisted vaginal delivery.

Damage to perineum	Normal Vaginal Delivery (n= 2683)		Assisted Vaginal Delivery* (n= 211)	
	Number	%	Number	%
No Damage	936	34.9	14	6.6
Episiotomy** only	262	9.8	83	39.3
Perineal tear(s) only***	1377	51.3	77	36.5
Episiotomy and tear	108	4.0	37	17.5
Unknown	0	0	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 2022 there were a total of 4372 infant/fetal births. Of these 2683 (61.4%) were delivered as a normal vertex delivery, 1478 (33.8%) by emergency or elective Caesarean Section and 211 (4.8%) by assisted vaginal delivery (includes forceps, ventouse and breech).

99.8% of births were reported as being attended by skilled health care professionals defined as doctors, nurses, midwives or health professionals providing childbirth care.

Mode of Delivery*	2022	2021
Vertex delivery	2683	2755
Elective/emergency Caesarean Section	1478	1517
Forceps	6	4
Ventouse	203	196
Breech deliveries	2	5

*Data includes total infant/ fetal births

Table 10. Mode of delivery

For 2022 there were 1478 infants/fetuses delivered by caesarean section but 1410 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 2022 was 32.8% of the total 4304 maternal deliveries.

Year	Deliveries by Caesarean section	Caesarean section operation rate (% of all deliveries)
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
2022	1410	32.8

Table 11. Caesarean Section rates 2003-2022

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	2022		2021	
	Number	%	Number	%
Male	2228	51.0	2280	50.9
Female	2144	49.0	2197	49.1
Unknown	0	0	0	0

Table 12. Gender distribution of infants delivered

BIRTHWEIGHT OF INFANTS/FETUSES

In 2022, there were 4023 (92.0%) of the total births that occurred in the birth weight range of 2500g to 4499g. 270 (6.2%) of the total births were in the low-birth-weight range of 1500g to 2499g, while 52 (1.2%) of births were of very low birth weight 500g to 1499g. This year there were 6 babies of birth weight less than 500g but 22 completed weeks gestation, five were stillbirths and one was a very early neonatal death. There were another 20 babies of birth weight 4500g and over. Birth weight was not reported for 1 birth.

The lowest birth weight recorded this year was 250g in a 24 week premature stillbirth. The highest birth weight recorded was 5300g in a baby born to a 41year old mother. The average birth weight was 3185.1 g. All infants / fetuses delivered at 22 weeks gestation and over are registered into the system.

Birth weight	2022		2021	
	Number	%	Number	%
<500g	6	0.14	2	0.04
500-999g	21	0.5	19	0.4
1000-1499g	31	0.7	20	0.4
1500-1999g	74	1.7	46	1.0
2000-2499g	196	4.5	213	4.8
2500-2999g	1017	23.3	932	20.8
3000-3499g	1892	43.3	1961	43.8
3500-3999g	968	22.1	1082	24.2
4000-4499g	146	3.3	185	4.1
4500-4999g	17	0.4	13	0.3
5000+	3	0.07	1	0.02
Unspecified	1	0.02	3	0.06

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 2022, 335 (7.7%) of babies born were preterm, having a best estimate gestational age of <37 weeks. 62 (1.5%) were born very or extremely preterm (<32 weeks).

Gestational age	2022		2021	
	Number	%	Number	%
Extremely preterm 22-27 weeks	25	0.6	16	0.36
Very preterm 28-31 weeks	37	0.9	28	0.63
Moderately preterm 32-36 weeks	273	6.2	266	5.9
Term 37 – 41 weeks	4037	92.3	4167	93.1
Post term 42+ weeks	0	0	0	0
Unspecified	0	0	0	0

Table 14. Gestational age at delivery

OUTCOME OF BIRTH

The number of live births registered in 2022 was 4351, which accounted for 99.5% of the total births at a national level. The remaining 21 births were reported as stillbirths. Of the live births, there were 13 cases of early neonatal deaths and 5 cases of late neonatal deaths (see table below).

Outcome of Birth	2022	2021
Livebirths	4351	4464
Stillbirths	21	13

Neonatal deaths	2022	2020
Early Neonatal deaths	13	10
Late Neonatal deaths	5	2

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

INFANT FEEDING METHODS AT DISCHARGE

There were 2942 (67.3%) of liveborn babies were reported as being breast fed at delivery unit i.e. within first hour of birth.

Infant feeding habits are also 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	2022	2021
Breast only	2099	2157
Bottle only	1175	1243
Mixed (Breast & Bottle)	1059	1050
Other*	39	27
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 in this report 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
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
2022	0

Table 17. Maternal Deaths 2003-2022 (up to 42 days of delivery) as linked with Mortality Register.

Year	Fetal death rate 500g and over	
	Number	Rate/1000 total births
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
2022	16	3.7

Table 18. Fetal Death Rates 2003-2022

Year	Neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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
2022	16	3.7

Table 19. Neonatal Mortality rates 2003-2022

Year	Early neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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
2022	11	2.5

Table 20. Early Neonatal Mortality rates 2003-2022

Year	Late neonatal mortality rate (500g and over)	
	Number	Rate/1000 live births
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
2022	5	1.1

Table 21. Late Neonatal Mortality Rates 2003-2022

Year	Perinatal mortality rate (500g and over)	
	Number	Rate/1000 total births
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
2022	27	6.2

Table 22. Perinatal Mortality Rates 2003-2022

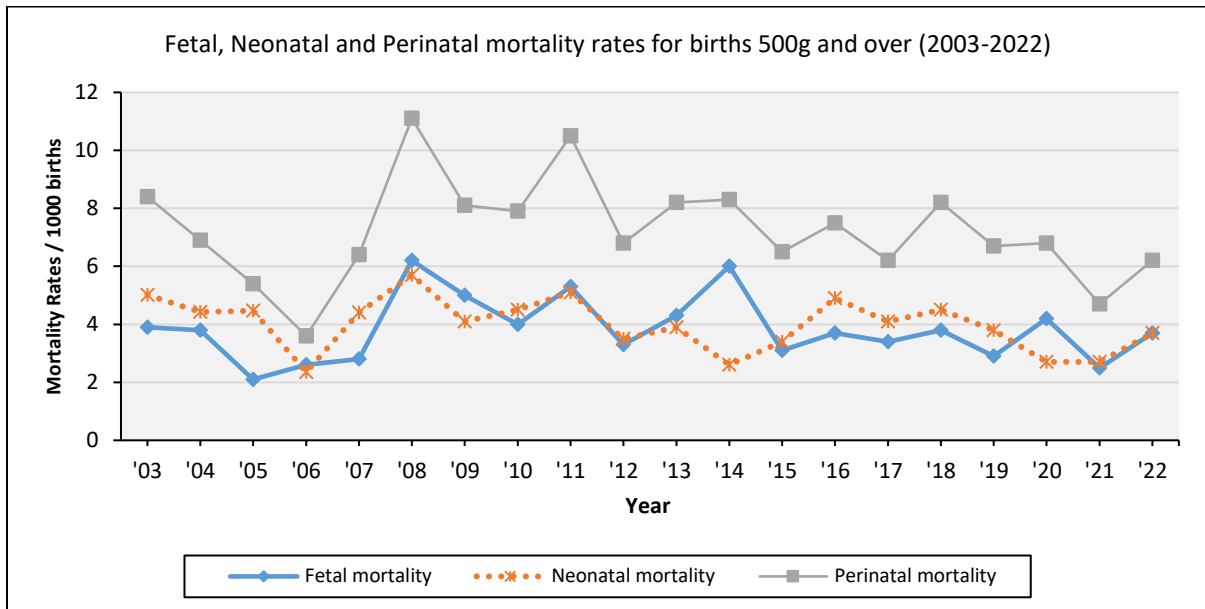


Figure 5 - Fetal, neonatal and perinatal mortality rates 2003-2022
 (fetal deaths include only fetuses of birth weight 500g and over)

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

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 November 2023.

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	10.09	10.10
2017	9.23	9.83	10.02
2018	9.49	9.57	9.71
2019	9.29	9.41	9.56
2020	8.76	9.21	9.33
2021	8.47	9.25	9.18

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	1.27
2006	1.41	1.59	1.29
2007	1.37	1.60	1.32
2008	1.40	1.65	1.40
2009	1.40	1.63	1.41
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	1.60	1.43
2015	1.37	1.60	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
2020	1.13	1.50	1.55
2021	1.13	1.52	1.53

Table 24. Total Fertility Rate (HFA indicator 25)

Year	Malta	EU members before May 2004	EU members after May 2004
2005	0	4.67	8.87
2006	0	5.48	8.43
2007	0	5.59	7.44
2008	24.92*	5.59	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	4.50	7.57
2016	0	5.05	6.43
2017	0	5.05	6.58
2018	0	5.04	5.33
2019	0	5.31	6.09
2020	0	5.39	6.92
2021	0	na	8.21

*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	5.05	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	4.76	4.10
2014	6.17	4.70	4.04
2015	3.23	4.66	3.69
2016	3.56	4.61	3.75
2017	3.46	4.64	3.49
2018	3.59	4.56	3.69
2019	2.98	4.54	3.60
2020	5.86	4.53	3.75
2021	2.95	4.58	3.88

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	5.36	1.79	2.00
2017	3.24	1.78	1.95
2018	3.15	1.79	1.94
2019	3.68	1.78	1.86
2020	2.72	1.75	1.81
2021	2.28	na	1.84

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	6.49	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	5.94	4.86
2016	4.93	5.37	4.92
2017	5.33	5.35	4.65
2018	4.73	5.86	3.91
2019	4.38	5.84	4.06
2020	4.32	5.78	4.11
2021	3.42	na	4.36

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

ANNEX II – DEFINITIONS

Definitions follow those given by 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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