



The History of Maternity Care in the Maltese Islands

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Preface

It has been said that *those who forget history will have to repeat it*, since medical history by exposing the facts and results allows the development of prudence and foresight. The history of disease stretches very far back in time, for as long as man has existed he has been tormented by disease. The history of medicine considers the development of the art of healing from ancient times. The practice of medicine is in a continuous state of evolutionary progress, with today's advances being considered outdated and outmoded tomorrow. This book reviews the evolution of maternity care in the Maltese Islands since the advent of man to the archipelago and correlates this to the contemporary midwifery being practised on the mainland. By searching for the historical roots of maternity care concepts; the book hopefully facilitates a closer understanding of present practice.

The first Chapter of the book gives an overview of the maternity care being offered in Malta in the light of the developments in the speciality that were occurring in Europe. The second Chapter deals with the various maternity care services, and the professional control and training facilities of both midwives and doctors as these developed on

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the Islands. The third and fourth Chapters detail the medical and obstetrical aspects of maternity care practice in the Maltese Islands throughout the centuries; while the final Chapter looks at the social and biological influences on maternity as evident from the published obstetric statistics.

This book is dedicated to Professor Edwin S. Grech. Prof. Grech will go down in history as the person who had transformed the practice of obstetrics on the Maltese Islands to a scientific level, particularly after the 1977 dispute between the government and medical profession left a disastrous void in the professional services. His continuing endeavours prompted in me a love for the speciality leading to my specialisation. Prof. Grech has throughout the years acted as my teacher, mentor and friend, giving me a continuous support in my career and scientific excursions. In the words of the leading fourteenth century surgeon Guy de Chauliac “*We are like children standing on the shoulders of a giant, for we can see all that the giant can see*”.

I should further like to express my gratitude to the University and National Library staff who have kindly assisted me in my search for sources of information. Acknowledgements are also due to the various individuals who have reviewed the work and who have with their varied comments and outlook helped to open up new dimensions to the

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subject. I acknowledge the help of my wife who acted in a number of voluntary capacities - research assistant, critic and editor - throughout the project. Finally sincere acknowledgements are due to the sponsors who have made the publication of the book possible.

C. Savona-Ventura
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Chapter 1 Introduction

When addressing the Royal College of Physicians in London in 1944, Sir Winston Churchill remarked that "*the longer you look back, the further you can look forward*". No branch in medicine can claim a longer history than the art of midwifery. Only 93 kilometres away from Sicily and 290 km from Northern Africa, the Maltese group of islands occupies a central position in the Mediterranean. This geographical situation has made the Islands an important meeting place for the various Mediterranean cultures throughout the ages. Though history is a continuous process without clear-cut definitions between one period and another, the history of the Maltese Archipelago can be conveniently divided into five basic periods of study. 1] Prehistory ranging from the earliest times to about the ninth century BC during which time the Islands developed a unique culture typified by the oldest Megalithic free-standing buildings in the world; 2] Ancient History leading up to the ninth century AD by which time Malta had witnessed the arrival of the Phoenicians, the Carthaginians, and the Romans; 3] Medieval History leading to the sixteenth century

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that saw the Islands being incorporated under the administrative rule of neighbouring Sicily; 4] Modern History saw the arrival of the Knights Hospitallers of St. John of Jerusalem in the mid-sixteenth century and persisted until their expulsion by Napoleon Bonaparte in 1798; and 5] Contemporary History is the final phase leading to recent events when the Islands fell under British dominion until their independence in 1964. The medical history of the Maltese Islands before the mid-sixteenth century presents a general dearth of information, and any excursions into prehistory to medieval medicine must be based on archaeology. In the modern and contemporary periods, written material becomes abundantly more available allowing a deeper analysis of disease processes and developments in medical practice. Falling under the dominion of the Knights Hospitallers of St. John during the 16th - 18th centuries and under the British domain during the 19th - 20th centuries, the Islands were placed on the forefront of medical practice in Europe. The development of medical services on the Islands can therefore serve as a mirror to developments occurring in the rest of Europe, and can serve as a model for developing communities striving to address their maternity health indicators.

The Maltese archaeological record relating to items of midwifery interest is scanty, but there appears to have been a preoccupation with the reproductive process. This is evidenced in the archaeological

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survivals of Maltese Neolithic Man's culture that appears to have centred around a fertility cult in an effort to promote and encourage the reproductive cycle. Among the archaeological remains are a number of statuettes datable to about 3500-3000 BC which suggest features of a pregnant figurine¹. These figurines may have formed part of magico-religious practices aimed at warding off evil spirits during pregnancy and labour. The preoccupation of the risks encountered by women during pregnancy and the use of amulets to ward off evil spirits continued during the Punic and Roman periods. Amulets of Phoenician-Punic deities have been found in Malta, including figurines of Bes and Thoeris. These two deities were considered by Egyptian women as protectors from evil spirits during childbirth. A probable case of a death during pregnancy has been discovered during excavations at St. Agata's catacombs, while items of a late Punic pottery from Rabat c.150 BC included baby's feeding bottles and a baby's rattle².

¹ T. Zammit and C. Singer: Neolithic representations of the human form from the islands of Malta and Gozo. *J. Roy Anthropol Instit* 1924, p.76, 92, 96-97; C. Savona-Ventura: Medical Mythology in Stone Age Malta. In: *Facets of Maltese prehistory*. (eds. A. Mifsud, C. Savona-Ventura). Prehistoric Society, Malta, 1999, pp.107-116

² T.C. Gouder: Some amulets from Phoenician Malta. *Heritage*, 1978, I:311-315; T.C. Gouder: Phoenician Malta. *Heritage*, 1978, I:185; A. Bonanno: *Roman Malta: The archaeological heritage of the Maltese Islands*. World Confd Salesians, Rome, 1992, p.24

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The subsequent centuries yielded little archaeological evidence pertaining to maternity. The next archaeological record pertaining to midwifery came from the excavations performed in the 15th century medieval church at Hal Millieri. Skeleton remains from this burial site included the remains of a woman aged about 16 years buried with and lying on top of a 2½-year-old child. The burial of these two individuals was probably contemporary occurring some time before c.1480. The female showed bony evidence of a past pregnancy. It is likely that the 16-year-old female was the progeny of the infant, suggesting an early age of motherhood at most 13 or 14 years³. The early age of motherhood suggested by the archaeological evidence of the 15th century further confirms the 1568 report that women commenced their reproductive life at the age of twelve years⁴.

The majority of deliveries in the 16th century, in conformity with the times, must have been conducted in the home under the supervision of a traditional health attendant, possibly the mother of the mother-to-be, or a midwife. The first midwife known by name is the *mammane*

³ J.L. Pace and S. Ramaswamy: The Finds: Skeletal remains. In: T.F.C. Blagg, A. Bonanno, and A.T. Luttrell (eds): *Excavations at Hal Millieri, Malta: a report of the 1977 campaign conducted on behalf of the National Museum of Malta and the University of Malta*. Malta University Press, Malta, 1990, p.84-95

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Czairi Coruel who was responsible for the care of the foundlings at Santo Spirito in 1554. Another named 16th century midwife was Bernarda Micallef, who in 1598 is reported as having had to deal unsuccessfully with a case of foot presentation⁵.

The sixteenth century saw the advent of a new era in midwifery practice in Europe. Midwifery, including very often its operative branch, generally lay entirely in the hands of female midwives who often discouraged the calling-in of physicians even in difficult cases. Physician-surgeons were therefore called only, if at all, in the worst of cases and their practical expertise was greatly limited. Midwives of that day generally entered their office without any knowledge other than that which they had acquired from the mistresses to whom they had been apprenticed. Their academic education was completely ignored, an omission which severely restricted their advancement in the speciality. The midwifery practice of the physician-surgeon received a major impetus with the revival by Ambroise Pare in 1549 of podalic version, whereby the infant was turned around and delivered

⁴ *Biblioteca Vaticana: Urbinato Latino ms.833*, ff.140v-141p; A. Bonnici: *Maltin u l-Inkizzjoni f'nofs is-seklu sbatax*, K.K.M., Malta, 1977, p.48, note 87

⁵ S. Fiorini: *Santo Spirito Hospital at Rabat, Malta. The early years to 1575*. Department of Information, Malta, 1989, p.36; *Curiae Episcopalis Melitensis 78B*, fol.457; P. Cassar: *The Maltese Midwife in History*. Midwives Assoc Malta, Malta, 1978, p.11

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feet first, a procedure that enabled successful delivery in difficult cases. Pare's advocacy of podalic version was an enormous step forward and the greatest advancement in operative midwifery until the invention of the forceps. These advancements in operative midwifery practice were however intended for the physician-surgeon and could not be availed off by the female midwife who often had no recourse to academic instruction⁶.

The advancement in the midwifery practice of the physician-surgeon initiated in the 16th century continued in the subsequent one. Midwifery in the seventeenth century experienced advancement similar to but more considerable than that of Surgery. The increasing involvement of the academically trained physician-surgeon - now often referred to on the Continent as the male-midwife - contributed significantly to this advancement. In its scientific aspect it was promoted by the acquisitions of anatomy and physiology. The 17th century must also be designated the century of version since this procedure slowly became generally accepted by the medical community. The invention of the obstetric forceps and vectis by the Chamberlains' was at first of little benefit to practical midwifery since

⁶ W. Radcliffe: *Milestones in Midwifery*. J Wright Ltd, Bristol, 1967, p.20-21; J.H. Bass: *Outlines of the history of medicine and the medical profession*. Kriegger Publ Co, Huntington, original ed 1889, translated and expanded by H.E. Hanerson, 1971, vol.II, p.462-463

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it was kept secret. The French remained especially prominent as the promoters of midwifery with society permitting men to act as obstetricians in ordinary cases and not as heretofore simply in particularly bad cases requiring operative interference. The male-midwife remained the chief practitioner of operative midwifery in difficult cases⁷.

The academic advancement in the midwifery practice of the physician-surgeon had however little practical effect of the overall practice of the speciality. Many of the physician-surgeons had little practical instruction in midwifery since throughout the seventeenth century this instruction was not generally imparted to men. At most medical practitioners merely studied the theoretical aspect of the art, though in spite of this many surgeons became by their own training distinguished accoucheurs displaying scientific ability. On the other hand, no formal instruction was given to female midwives and the old method of guild instruction still prevailed for the most part, i.e. old midwives apprenticing prospective students. The sole public institution where practical instruction in midwifery was imparted was the obstetric section of the Hotel Dieu established in the sixteenth century. Here superior midwives, who not infrequently were authoresses in their field, imparted formal practical instruction for midwives. The hospital

⁷ J.H. Bass, 1889: *op.cit.*, vol.II p.521-526

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maternity wards were firmly closed to men. This century also saw in many European countries the introduction of formal control of midwifery practice by female midwives thus emulating the control of physicians, surgeons and apothecaries initiated in earlier centuries, and initiating formal recognition of these as professional paramedical practitioners. In many countries/cities, the female midwives were compelled to pass an examination set by the city physician and only then sworn into practice⁸.

There does not appear to have been any formal teaching of midwives in 17th century Malta, and it must be presumed that the guild method of training was in force. The first moves to introduce in Malta the formal teaching of the theory and practice of obstetrics to prospective midwives were only made in the late 18th century⁹. Midwifery practice was however controlled by the state. The earliest evidence of the control of midwifery in Malta goes back to the regulations published by the Protomedicus in degrees of the 2 August 1624, 19 June 1662 and 24 September 1722. These enactments were later incorporated in the legal codes of 1724 and 1784. Accordingly no woman was allowed to practice midwifery unless examined and approved by the Protomedicus - the head of the medical services. An official register

⁸ J.H. Bass, 1889: *op.cit.*, vol.II p.560-561

⁹ P. Cassar: *Medical History of Malta*. Wellcome Hist Med Libr, London, 1965, p.412

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was kept by the Castellano at the Court of Law. The Ecclesiastical authorities similarly maintained a limited control over the practice of midwifery through parish priests who were enjoined to teach and examine midwives on the proper administration of Baptism, and through the Inquisition Tribunal. As early as 1575, the first inquisitor to Malta Mgr Pietro Duzina enjoined parish priests to teach midwives the proper administration of the Sacrament of Baptism in *casu necessitatis*. These admonitions were repeated by the Maltese Synod of 1625 and by 1709 it was laid down that midwives were to be examined by the parish priests at least twice a year, on the Octave of Pentecost and Christmas¹⁰. Ecclesiastical control of midwives was further enforced by the Episcopal Court and the Inquisition Tribunal, and a number of cases dealing with abortion, and burial in unconsecrated ground are recorded. A licence from the Episcopal Curia remained a requirement to practice midwifery until 1906¹¹.

¹⁰ *National Malta Library: ms.2*, fol.601; *NML: ms.439*, fol.422; *NML: ms.429*, vol.1 fol.20; *Leggi e costituzioni prammaticali*. Malta, 1724; *Del dritto municipale di Malta*. Malta, 1784, p.296; P. Cassar, 1965: *op.cit.*, p.417, 277; *NML: ms.643*, fol.589; *Constitutiones in diocesana synodo melivetana*. Rome, 1625; *Synodus diocesana Fr. David Cocco Palmieri* Rome, 1709 p.26; P. Cassar, 1978: *op. cit.*, p.11-12

¹¹ P. Cassar 1978: *op.cit.*, p.12; F. Ciappara: *Marriage in Malta in the late eighteenth century*. Assoc News Ltd, Malta, 1988, p.88-90; P. Cassar: *The birth of monsters in the Maltese Islands in the 17th and 18th centuries*. *Mediscope*, 1983, 1:p.6-9

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Obstetrics in 17th century Malta was still practised in the main by midwives. A midwife living in Valletta by the name of Paolina Perotto submitted a petition to the Grandmaster on the 4 June 1635 asking to be granted a site in Valletta to build a house for one of her daughters. A midwife also formed part of the professional staff of the Women's Hospital at Valletta¹². In 1630 a midwife practising at Cospicua named Oliviera Gambino submitted to the Episcopal Court an account of the birth of a deformed stillborn fetus. The account was apparently written to justify the fact that the midwife herself without any religious ritual disposed the deformed offspring¹³. The contribution of the physician-surgeon or male-midwife in Malta during the seventeenth century has not been documented.

The eighteenth century in Europe saw a number of major advances in midwifery. As the 17th century was termed the century of version, the eighteenth century can be labelled as the century of the forceps. From the numerous and careful observations of the normal process of labour and the study of the contracted pelvis made by men with a scientific education, it became possible to understand the process of labour and identify the indications for instrumental or manual deliveries. Once these were established, physician-surgeons were then able to invent or

¹² *National Malta Library: Archives 1184*, fol.97, *NML: Archives 1194*, fol.220; P. Cassar, 1978: *op.cit.*, p.11

¹³ *Curiae Episcopalis Melitensis AO508 n.s.*; P. Cassar, 1983: *op. cit.*

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improve suitable mechanical aids in accordance to a preconceived plan. The forceps were re-discovered and modified in the early part of this century, while midwifery hooks and embryotomy instruments were improved. Version and the forceps proved unsatisfactory when serious contraction of the pelvis was encountered. Because of the widespread desire to avoid the frequent operation of craniotomy in these cases, attempts were made to discover alternative modes of management aiming at delivering a smaller infant by restricting the mother's diet or the induction of premature labour. Operations to widen the mother's birth canal in the form of symphysiotomy were introduced, while delivery by Caesarean section remained controversial because of the associated high maternal mortality rate. This century also saw the introduction of formal teaching of obstetrics both to female midwives and male practitioners. The first Chairs in Midwifery and lying-in institutions were established in many European cities during the early part of the century. On the whole however, with exception of a few university towns and larger cities and their vicinity, the practice of midwifery still occupied an almost medieval position¹⁴.

The socio-biological characteristics of the Maltese population in the late 18th century have been reviewed. During the period 1750-1800,

¹⁴ J.H. Bass, 1889: *op. cit.*, vol.II p.679-688, 782-783; H.R. Spencer: An address on some changes in obstetric practice since the foundation of the Medical Society of London. *Lancet*, 13 October 1923, ii:817-821

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the mean age of marriage for women approximated 22.6 years with only 5.7% of married women being aged less than 20 years. Marriage was soon followed by the birth of the first child, so that 58.8 - 66.8% of first-born children conceived in wedlock at Balzan and Siggiewi were born before the first wedding anniversary. The mean household size in various towns and villages in the Maltese Islands averaged 3.8 individuals. The mean annual number of registered baptisms during the period 1750-1800 was 3372.3 with a live birth rate in 1784 of 41.0 per 1000 population and of 37.6 per 1000 pop in 1797. The number of stillborn children is difficult to ascertain since with a few exceptions they are rarely marked out in the parish registers. Neonatal deaths buried in the first month of life at Naxxar amounted approximately to 163.8 per 1000 registered baptisms, while the infant mortality rate amounted to 283.1 per 1000 registered baptisms during the period 1750-1789¹⁵. The high infant mortality rate helped maintain a check on the population growth maintaining the mean household size to 3.8 individuals¹⁶. Abortion was also practised on occasion, even though it was at least since the seventeenth century considered illegal by both the State and the Church¹⁷. It is difficult to ascertain the frequency of

¹⁵ F. Ciappara, 1988: *op. cit.*, p.33-35, 107, 124-126

¹⁶ *Archivum Inquisitionis Melitensis - Processi 131A*, fol.155r-207r; F. Ciappara, 1988: *op.cit.*, p.90

¹⁷ *National Malta Library ms.439*, fol.307; P. Cassar, 1965: *op. cit.*, p.474; *Del Dritto.....*, *op. cit.*, p.174, 296; *Synodus diocesana.....*, *op. cit.*, p.26;

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pregnancy termination. The method used to procure abortion was apparently the administration of abortive preparations¹⁸.

Generally, Maltese mothers gave birth at home, the midwife's fees amounting to about 3 tari' while the child's necessities amounted to about 20 scudi. Children were swaddled soon after delivery, the child being placed between two pieces of board that reached from the feet to the neck and were attached to the body with rollers of linen. Children were put to sleep in rocking cradles or hammocks. They were breast-fed for a long period of time, this protecting the mothers from an early subsequent pregnancy. Those who did not breast-feed did so only because they had inappropriate quantities of milk. A number of low subsistence families found it difficult to maintain their child, and by 1518 the authorities had found it necessary to introduce a system of care for unwanted foundlings in the various hospitals. The hospital accounts of Santo Spirito Hospital at Rabat, Malta record the employment of two wet-nurses – wife of Bartholomeo Chilia and wife of Matheo Use – who were paid 4 tari 10 grani to 5 tari per month *per nutritari la pichotta*. The fees were reduced to 3 tari towards the

AAM - Edicta Labini, op. cit.; P. Cassar, 1978: *op. cit.*, p.12; F. Ciappara, 1988: *op. cit.*, p.88-90

¹⁸ *Archivum Inquisitionis Melitensis - Processi 127B*, fol.1181r-1205v; *AIM - Processi 135B*, fol.597r; *AIM -Processi 136A*, fol.188v-189r; *AIM - Process 125C*, fol.1203r-v; *Curiae Episcopalis Melitensis AO696*, fol.286r; F. Ciappara, 1988: *op.cit.*, p.88

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cessation of breast-feeding. The arrival of exposed children gathered momentum in the following decades and by 1554 the number of foundlings in the hospital amounted to 15. A contrivance, the *ruota*, aimed at depositing infants anonymously had been set up by 1615. Similar arrangements were made in the Birgu Sacra Infermeria, the Valletta Sacra Infermeria and the Hospital of St. Julian in Gozo. When sufficient wet-nurses for the foundlings in the hospitals were unavailable, the infants were fed on goat's milk. The richer families also employed wet-nurses in time of need, though the 18th century French practice of regularly employing wet-nurses to feed new-born infants may have also been introduced in Maltese high society. In 1786 Vincenza Sacchett took into her service Maria Hellul as a wet-nurse for the period of eight months. Pio Vidal on being abandoned by his wife sent his 8-month old son to a wet-nurse for 3 scudi a month¹⁹.

A few mothers delivered their child in the Women's Hospital at Valletta or in the Santo Spirito's Hospital at Rabat. During the period 1750-1800, 0.62% of all baptisms were born at the Santo Spirito

¹⁹ *Curiae Episcopalis Melitensis AO696*, fol.286r-367r; A. Anderson: *A Journal of the forces*. London, 1802, p.181; *Archivum Inquisitionis Melitensis - Processi 137*, fol.70r-97v; *CEM AO693*, fol.408r-417v; S. Fiorini, *op. cit.*, p.35-36; F. Ciappara, 1988: *op. cit.*, p.71,109; P. Cassar, 1965: *op. cit.*, p.352. A painting by Favray depicts a scene where a parturient high society mother is receiving visits from friends. The scene includes a wet-nurse nursing the child.

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Hospital, of which 893 infants (8.8% of deliveries) were from outside the Rabat area. The infants born in the Women's Hospital at Valletta were baptised in the parish of St. Paul. The women delivering in the hospitals came from various towns and villages, often delivering in the hospital to conceal their pregnancy²⁰. Delivery could be fatal either before or after delivery of the child. The high number of remarriages recorded during the late eighteenth century could be an indirect result of the maternal mortality. Remarriages amounted to a fifth of all marriages. Widowers preferred to marry unmarried mothers (10%), rather than a widow (7.1%). Some even married a third or fourth time. Marriages were neither sentimental nor romantic, but a hard and fast bargain, the widower needing someone to look after his children²¹.

In the case of a maternal death prior to the delivery of the child, the parish priests were obliged to ensure that the woman was delivered by Caesarean section and the child baptised. The first post-mortem Caesarean section recorded in Malta occurred on the 13 December 1780 on a woman of twenty-three years at eight months pregnancy who died suffering from malignant fever. The Assistant Surgeon Fedele Zammit performed the operation having been sent to the Lazaretto to attend her and be in readiness to perform the surgery

²⁰ *Parish Archives - Lib. Bapt. IV-VI*, 1716-1803; F. Ciappara, 1988: *op.cit.*, p.85-86, 104

²¹ F. Ciappara, 1988: *op.cit.*, p.58-60

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should the patient die. The male child was extracted alive but died after an hour. A number of post-mortem Caesarean section are reported during the nineteenth century, while the first section on a live woman was performed in 1891²².

The first moves to introduce in Malta the formal teaching of the theory and practice of obstetrics to prospective midwives were made in 1772 when Dr. Guiseppe Antonio Creni, a surgeon with the Order proposed to the Grandmaster a course of instruction consisting of lectures once a month or more to women intending to take up midwifery. The scheme was never initiated since the Senior Physician of the Infirmary considered this course impractical because the midwives were so academically restricted that they could in no way derive any profit from the lectures, presumable delivered in a foreign language. The official initiative to introduce the formal teaching of midwifery dates to the early nineteenth century when in 1802 Dr. Francesco Butigiec was appointed Teacher of Obstetrics at the Woman's Hospital to deliver lectures to medical students and midwives. The manuscript

²² *National Malta Library - Registri degli arrivi di bastimenti in quarantina. Arch 6531, fol.69t 11.12.1780, fol.74t 1.12.1780, fol.76 13.12.1780; P. Cassar: Clinical Case histories and post-mortem reports from the Malta Lazzaretto in the 18th century. Mediscope, 1989, 13:p.9-13; C. Savona-Ventura: Caesarean section in the Maltese Islands. Medical History, 1993, 37:37-55*

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lecture notes of Dr. Butigiec outline the midwifery practice of the late eighteenth and early nineteenth century²³.

The birth of an abnormal child during the eighteenth century has been recorded by Dr. Saverio Fenech, Principal Physician at the Gozo Hospital. The report, which dates to 1788, records the birth of a monster born to a woman at Nadur, Gozo. The child was buried in church after examination by the parish priest. The superstitious beliefs about the origins of monsters current in the 17th century had slowly abated. The Maltese physician, Dr. Salvatore Bernard in 1749 adhered to the theory that the fantasy organ of a pregnant woman communicated by means of the animal spirits with the fantasy organ of the baby so that any perception aroused in the mother's mind produced similar impression in the brain of the fetus, which impression in turn reacted upon and moulded the form of its body. He held that monsters having the shape of animals and devils were born to women who during gestation had been exposed to the sight of these creatures. These beliefs remained ingrained in Maltese mentality until relatively recent times. A special hazard of pregnancy was the emergence of

²³ P. Cassar, 1965: *op. cit.*, p.412; F. Butigiec: *Trattato dell'arte ostetrica dettato e spiegato del Perille Signor Dr Francesco Butigiec nello studio pubblico del Grand Ospedale Nazionale di' Malta. Principiato li 18 Ottobre 1804.* m.s. 1804, In P. Cassar: Teaching of midwifery in Malta at the beginning of the nineteenth century. *St Luke's Hospital Gazette*, 1973, 8(2):91-111

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longings or desires that could not be satisfied. According to popular belief, the new-born will bear the brunt of a birthmark resembling in form and colour the object of the unfulfilled desire. If a person neglects to satisfy the wishes of a pregnant woman, he/she will be punished by suffering from a sty²⁴.

The obstetric practice in Malta at the turn of the eighteenth century is outlined in manuscript notes of the lectures delivered by Dr. Francesco Butigiec to medical students. The manuscript volume contains a series of lectures delivered in Italian, and belonged to the medical student (later doctor) Salvatore Bardon who qualified in 1818. The course of lectures was spread over a period of almost twenty months commencing on the 18 October 1804 and ending 11 June 1806. The manuscript comprises sixty-five chapters totalling 250 pages. The subject matter deals with the anatomy of the pelvis and pelvic organs, the anatomy of the gravid uterus, the clinical signs of pregnancy, abortion, normal and abnormal labour, management of the puerperium, twins and superfetation, manual correction of the various malpositions, the use of instruments and Caesarean section, and the care of the new-born. Dr. Butigiec apparently was well versed in the medical literature

²⁴ S. Fenech: *Public Records Office Misc.76: Report of the birth of a monster with its sketch*, Malta, 1788; P. Cassar: The Neuro-psychological concepts of Dr S Bernard. *Scientia*, 1949, 15:p.29; P. Cassar, 1983: *op. cit.*,

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of classical times, the Middle Ages, and authors of the sixteenth to eighteenth centuries. He quotes authors from France, England, and Austria. His practice as described in the lecture notes was inevitably those of the eighteenth century²⁵. Other midwifery lecture notes were published by Prof. S.L. Pisani in 1883 and by Prof. G.B. Schembri in 1896 and 1897. Prof. Pisani wrote his textbook in the Maltese language to enable distribution to his midwife pupils at the end of the course. The book is divided into sixteen chapters and deals with anatomy and conception, changes that occur in pregnancy, antenatal care and advise, labour and its malpresentations and malpositions, postpartum care, twin births, miscarriages and molar pregnancies, and Caesarean section. Prof. Schembri prepared two textbooks for his midwifery students, one in English and a translation in Maltese. The book is divided into seven sections which deal with human anatomy and physiology, conception and fetal anatomy, pregnancy changes and abnormalities of early pregnancy, labour and its problems, and the management of the puerperium²⁶.

p.7-9; J. Cassar-Pullicino: *Studies in Maltese Folklore*. 1992, Malta University Press, Malta, p.213-215

²⁵ F. Butigiec, 1804: *op. cit.*

²⁶ S.L. Pisani: *Ktieb il Qabla*. P Debono, Malta, 1883, +105p.; G.B. Schembri: *The Midwife's Guide Book*. Government Printing Office, 1896 +111p.; G.B. Schembri: *Taghlim ghal istudenti ta l-iskola tal kwiebel ta l-Isptar Centrali, Malta*. Government Printing Office, Malta, 1897 +111p.

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The teaching of obstetrics to prospective midwives was introduced during the nineteenth century, the previous suggestion of Dr. G.A. Creni having been turned down on the basis of the potential students' lack of basic education. An official initiative to teach midwifery was undertaken in March 1802 when Dr. F. Butigiec was appointed Teacher of Obstetrics at the Women's Hospital to deliver lectures to medical students and also to hold a separate class for midwives who were taught in Maltese as they did not have a good grasp of Italian. The school of midwifery functioned very erratically and was abolished in later years with a consequent deterioration in the practice of midwifery²⁷. Fresh efforts were made to organise a School of Practical Midwifery in 1868. It was contemplated that a more respectable type of student will be selected, and that there will be the teaching of both the theory and practice of midwifery following which the candidates were to sit for a qualifying examination. The low educational and social status of the applicants remained a problem²⁸. The school was finally placed on a sound footing in 1915 when the course of midwifery was instituted under the auspices of the University leading to a Diploma of Midwife. The School of Midwifery reverted to the Medical and Health Department in 1946, the first group under this

²⁷ P. Cassar, 1965: *op. cit.*, p.413-415

²⁸ *Malta Government Gazette supplement*, 26 June 1915, p.54; P. Cassar, 1965: *op.cit.*, p.414

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scheme qualifying in 1949²⁹. Midwifery training has in recent years reverted back under the auspices of the University.

The situation with regards to the training of medical students in obstetrics was much better. The first steps to establish a chair for the study of anatomy and surgery were taken in 1676 by Grandmaster Nicholas Cottoner, but the University with a Faculty of Medicine was only established in 1771. Prior to this time prospective physicians had to pursue their studies privately with a senior physician at the Holy Infirmary in Valletta for two years and then join a medical school or university in Italy or France³⁰. A number of 18th century practitioners in Malta are known to have followed this course of studies which included also post-qualification training in midwifery practice. A Maltese doctor Giuseppe DeMarco proceeded to Montpellier in 1742 to finish his medical studies and is known to have assisted at a demonstration of the use of the forceps given by Andre Levret to the Paris Academy. At the same period Dr. Giuseppe Antonio Creni is known to have studied the art in Bologna. In 1778 Dr Saverio Micallef

²⁹ *Report on the health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency services for the year 1946*. Government Printing Office, Malta, 1947; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1949*. Government Printing Office, Malta, 1950

³⁰ P. Cassar, 1965: *op. cit.*, p.437-464

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was sent to Paris for three and a half years to study surgery including midwifery. On his return to Malta he was appointed *Professore delle operazioni chirurgiche e dell'arte ostetricia*. This appointment suggests that midwifery was at this time at least being taught to Maltese medical students. Dr. Micallef in 1786 is known to have taught obstetrics on a model similar to that of the School of Cosmos in Paris³¹. The University was abolished by Napoleon Bonaparte by the decree of 18 June 1798, but the medical studies were retained in the form of a course of anatomy, medicine and midwifery at the Central Hospital at Valletta³². In 1802 Dr Francesco Butigiec was appointed Teacher of Obstetrics to deliver lectures to medical students and midwives. The manuscript notes of Dr. Butigiec's lectures belonging to Dr Salvatore Bardon who qualified in 1818 have survived³³. The Chair of Midwifery in the University of Malta was formally instituted in 1833, the first occupant being Dr Agostino Bonnici (1833-35)³⁴.

³¹ J. Galea: Dr. Guiseppe Demarco (1712-1789). A biographical and bibliographical study based on hitherto unpublished material. *St Luke's Hospital Gazette*, 1972, 7(1):p.3-13; P. Cassar, 1965: *op. cit.*, p.413; P. Cassar: *French influence on medical developments in Malta*. Ministry of Education, Malta, 1987, p.12; *National Malta Library - Archives 1195*, fols.66,136,138

³² P. Cassar, 1987: *op.cit.*, p.17; H.P. Scicluna: Acts and Documents relating to the French occupation of Malta in 1789-1800. *Archivum Melitense*, s.a., 15:p.5,100

³³ F. Butigiec, 1804: *op. cit.*

³⁴ P. Cassar, 1965: *op. cit.*, p.450-452; *Medical & Health Archives - Minute book*, 13 September 1837 to 27 June 1843, fols.107,114; *L'Arte*, 7 July 1864

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The nineteenth century saw the development of revolutionary concepts in obstetric practice. In Great Britain, James Blundell, whose lectures were published in the *Lancet*, proposed Caesarean hysterectomy in an attempt to decrease the maternal operative mortality, and also considered the possibilities of blood transfusion. His ideas were however not very enthusiastically received. Ergot of rye was introduced into midwifery by John Stearns in 1807 and popularised in 1822. The invention of the stethoscope and the identification of the fetal heart sounds by Jean Alexandre Lejumeau enabled the diagnosis of fetal well-being and the identification of fetal position. The first forty years of this century saw also a better understanding of the mechanism of labour, both normal and abnormal. The fourth decade of the nineteenth century was probably the most momentous and the most controversial in the history of midwifery. The infective aetiology of puerperal fever was identified, while Semmelweis demonstrated that careful attention to aseptic measures by the medical staff could reduce the maternal mortality significantly. The second momentous advance was the introduction of anaesthesia in surgery and later in midwifery by James Young Simpson (1811-1870). These advances, coupled with advances in surgical techniques, enabled practitioners to undertake more freely Caesarean operation. Edwardo Porro of Pavia, Italy reported the first planned Caesarean hysterectomy on 21 May 1876

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where both mother and child survived. The Porro operation became outmoded, but not obsolete, when Max Sanger in 1882 popularised suturing of the uterus at Caesarean section. These advances continued well into the twentieth century. Caesarean section became gradually more and more freely undertaken for a variety of maternal and fetal indications. Furthermore pharmacological advances in the twentieth century enabled a better control of the antenatal and intrapartum period, while the advent of antimicrobials in 1935 enabled the introduction of effective treatment of puerperal sepsis and a marked reduction in maternal mortality. The twentieth century also saw a development of the concept of antenatal care and an increased attention to the developing fetus, with the development of investigative measures to assess fetal well being. This brought a marked reduction in the perinatal mortality rate and the development of the speciality of fetal medicine in recent years³⁵.

The medical developments of the nineteenth century on the continent were closely followed by Maltese practitioners. Ether anaesthesia was first used in Malta in March 1847 in a case of partial amputation of the hand, and the first Caesarean section on a living mother was performed on the 28 May 1891. Following the first successful Caesarean section on a live patient in Malta, the operation was only slowly accepted as an

³⁵ W. Radcliffe: *op. cit.*, p.69-85

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alternative to vaginal delivery. Thus forty-five years later in 1937-38 only about 32 deliveries were delivered by the abdominal route³⁶. Asepsis was also quickly introduced after the cause of puerperal fever became identified on the continent. Prof. S.L. Pisani in his lectures to midwives, like Dr. Butigiec in 1804, advised midwives to smear their fingers with oil or any other lubricant before performing a vaginal examination, which he advised should be kept to a minimum. He gave advice regarding the place of delivery and puerperium. The windows were to be kept open even in winter, so that no bad smells remained in the room. Any excreta were to be immediately taken out of the puerpera's room³⁷.

Professor Schembri in 1896 gave similar instruction as to the place and care during delivery. However he emphasises the use of antiseptic vaseline for lubrication of the fingers during vaginal examinations. Similar use was made earlier by Dr. G.F. Inglott in 1890 who used antiseptic vaseline when carrying out podalic version and further prescribed antiseptic irrigation of the uterus following these procedures. Prof Schembri appears to have been influential in introducing legislation towards asepsis in midwifery. During his

³⁶ G.B. Schembri: Prima operazione cesarea in Malta. *Rivista di Ostetricia e Ginecologia*, 1891, +3p. (reprint); C. Savona-Ventura, 1993: *op. cit.*, p.42-50

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tenure, detailed regulations controlling the practice of midwifery were formulated and published in the 1899 Government Gazette. These regulations determined the care a midwife had to give to her patient. The midwife, after sterilising her instruments and hands with an antiseptic solution (5% Boracic acid of Condy's fluid), was to wash the patient's perineum with soap followed by antiseptic solution. The vagina was similarly irrigated with an antiseptic solution. Vaginal examination was to be performed as seldom as possible. Similar antiseptic care was given for the first five days of the puerperium³⁸. These regulations resulted in a fall in cases of puerperal sepsis. The situation had improved by 1937 but was still far from ideal. The use of sterile gloves was still not compulsory and many vaginal examinations by district midwives were performed without them. This was not surprising since up to the first decade of the twentieth century the surgical community was still debating the usefulness of using rubber gloves during surgery. The 1918 *Regulations respecting midwives* published in the Government Gazette still did not include the provision for the use of sterile gloves. In 1937 puerperal sepsis in the hospital was prevented by placing any cases developing fever or a septic

³⁷ S.L. Pisani: *op. cit.*, p.70, 89-91; F. Butigiec, 1804: *op. cit.*; P. Cassar, 1965; *op. cit.*, p.530

³⁸ G.B. Schembri, 1896: *op. cit.*, p.65-66, 94-95; G.F. Inglott; Distocia. *La Rivista Medica*, 15 April 1890, Anno I(3):p.6; G.B. Schembri, 1897: *op. cit.*; Regulations respecting midwives, *Malta Government Gazette*, August 1899, p.774

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discharge in the Isolation Hospital. In order to minimise the risk of spray infection, all personnel who came in contact with maternity cases were screened periodically for naso-pharyngeal *Streptococcus haemolyticus* or for an inflamed throat. Staff with either was not allowed to attend maternity cases. A system of using numbered bedpans for each puerpera was also in force to prevent spread of infection. The introduction of the use of liquid Dettol or Dettol cream together with sterilised gloves for vaginal examinations in the hospital had also helped to decrease the incidence of puerperal sepsis in the hospital³⁹. Sulphanilamide (Prontosil) was first tried in Malta in 1935 with encouraging results in infections caused by haemolytic streptococcus. It did not, however, come into general use until 1937, when it was tried also in the treatment of gonorrhoea and other infections, including puerperal sepsis. Sulfapyridine appeared in 1938-39. Penicillin was first administered to a case of puerperal fever not responding to sulphonamides in August 1944. The mother survived the infection. The introduction of antimicrobials was an important landmark in the management of puerperal sepsis. However the incidence of sepsis decreased initially as a result of the preventive measures undertaken, so that the case fatality rate remained

³⁹ *Annual report...1937, op. cit.*; J. Randers-Pehrson: *The Surgeon's Glove*. Charles C Thomas Publ., Illinois, 1960, +95p.; Regulations Respecting Midwives. *Malta Government Gazette*. 25 October 1918, 6103:p.873-876

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approximately the same until after 1943-45, when the case fatality rate decreased to about a third of the figure in 1937-39⁴⁰.

Until the middle of the twentieth century the majority of confinements were conducted in the home under the supervision of a midwife or a traditional birth attendant, such as the mother of the mother-to-be, in the low socio-economic groups. Few women delivered in the hospitals, these usually being women from a very low socio-economic status. The mothers delivering at Victoria Hospital in Gozo during 1876-1893 have been shown to have a mean age of 32.26 years with a mean gravidity of 5.4 children, of which the total previous living children numbered 2.7. Nearly all the patients delivering in the hospital were non-paying and registered as paupers having an occupation of lace-workers. The spouses occupation was more varied with 73.8% being artificers and labourers and 15.5% being mariners and fishermen. The illegitimacy rate of hospital deliveries was increased accounting for 8.6% of all admissions⁴¹. A shift in attitude towards hospital confinement was noted in the late 1950's when it was noted that whereas formerly patients looked at maternity services in the

⁴⁰ C. Savona-Ventura: Reproductive performance on the Maltese Islands during the Second World War. *Medical History*, 1990, 34:p.164-177; H. Ganado: *Rajt Malta tinbidel*. Interprint (Malta) Ltd, Malta, 1977, vol.3, p.222

⁴¹ C. Savona-Ventura: A maternity unit in Gozo a hundred years ago. *Maltese Medical Journal*, 1995, 7(1):p.55-61

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government hospital with indifference, their attitude was changing. By 1963 the hospital confinement rate approximated 53%⁴². The nineteenth century also saw the introduction in the Maltese Islands of regular censuses of the population. The first regular Census in a series of decennial censuses, interrupted during the Second World War and in 1977, was carried out on 21 March 1842. The total population in 1842 was 114499 with a birth rate of 38.3 per 1000 population and a crude death rate of 34.6 per 1000 population. By 1901 the population increased to 184742 with a birth rate of 38.5 and a death rate of 28.8. The population continued to increase to the 345418 figure reported in 1985. These censuses enabled a regular check on population growth and the prevailing death and fertility rates⁴³. These population studies enabled health administrators to identify the population health and social requirements enabling the planning of strategies for better health.

⁴² *Report on the health conditions on the Maltese Islands and the work of the Medical and Health Department for the year 1955*. Government Printing Office, Malta, 1956, p.6; A.P. Camilleri: Obstetric deaths in Malta. *J Int Fed Gynaecol Obstet*, 1965, 3(3):p.179-186

⁴³ *Census '85: Vol.I - A Demographic profile of Malta and Gozo*. Central Office of Statistics, Malta, 1986, p.10

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Chapter 2 Maternity Care Services

Until the middle of the twentieth century, the majority of deliveries on the Maltese Island were conducted at home under the supervision of a traditional birth attendant - usually the mother of the mother-to-be¹, or under the supervision of a midwife. Medical assistance during pregnancy or labour was only asked for in cases of abnormality. A number of Maltese houses, even those of small dimensions, had an alcove incorporated in them. The alcove, found in both town and village residences, was a diminutive room with a floor area of about five by six feet being large enough to accommodate a double bed in which the woman gave birth. The alcove generally had no window and received air and light from the window and doors of the anteroom. It is not known when the alcove became a feature of Maltese houses. Prof. Pisani and Schembri in their lecture notes to midwives make no mention of it. Prof. Pisani advises that delivery should be conducted in a large well-illuminated room where air can enter without creating a breeze. This

¹ J. Bezzina: *Religion and Politics in a Crown Colony. The Gozo-Malta Story 1798-1864*, Bugelli Publ, Malta, 1985, p.52

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advice was a practical one since the alcove could not have been a feature of all Maltese houses. Attention was repeatedly drawn in the late nineteenth century after the cholera epidemic to the unhealthy conditions of certain dwellings, particularly those occupied by the poorer families who could only afford to pay the lowest rates of rent. The houses these families lived in were antiquated and overcrowded. In some houses in the Southern Region of the Island, the cutlery used to turn blackish through the action of sewer gas soon after being placed on the table. A call was repeatedly made to improve housing conditions and remodel the sewers system. Improvements were made only in the twentieth century. Only a little imagination is required to 'accompany' the nineteenth century midwife knocked up in the night by a relation of the woman in labour. She would travel on foot through dark and dirty streets, possibly carrying her birth chair or accompanied by a porter who carried her birth chair, and both examine and later deliver the mother in a room, which in some cases would be cold, possibly damp, and none too clean by the light of tallow candles. The use of the alcove continued well into the twentieth century².

² P. Cassar: *Pregnancy and birth in Maltese tradition*. *Chestpiece*, 1975, p.25-29; S.L. Pisani: *Ktieb il qabla*, Debono & Co, Malta, 1883, p.58, 66; G.B. Schembri: *The Midwife's guide book*, Government Printing office, Malta, 1896, p.65; *Annual Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1937*, Government Printing Office, Malta, 1938, p.23-24

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(i) District Midwifery Services

Midwifery had always been the responsibility of traditional birth attendants or midwives. The earliest recorded reference to a *mamana* Czairi Coruel employed at Santo Spirito in 1554, and an unnamed *mamana* mentioned in the Mdina Census of 1562-63³. Medical practitioners were only reluctantly called to assist in abnormal labours and deliveries. The lower income mothers in difficulty during labour and delivery generally resorted to the assistance of medical physicians employed by the State. The existence of some form of a state-sponsored District Medical Service can be traced back to the last quarter of the fifteenth century. This was formalized in 1725 when regulations were issued to provide a domiciliary medical service for poor sick women living in Valletta and the Grand Harbour towns. Two physicians and two surgeons were posted in Valletta, while Birgu, Sengela and Bormla each had a physician and a surgeon. The medical practitioners were employed and remunerated by the state, and were obliged to render free treatment to needy women. The state organized District medical service was further extended under British rule with the establishment of a number of government dispensaries in various towns and villages. The first Government Dispensary opened with the aim of restricting admissions

³ S. Fiorini: *Santo Spirito Hospital at Rabat, Malta. The early years to 1575*. Department of Information, Malta, 1989, p.36; Archives Cathedral Museum (ACM): *Mdina Census 1562/63. Misc 441 A* fols 119v (information made available by C. Cassar)

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to the Civil Hospital in 1832. Dispensaries or *albergi dei poveri* (hence *bereg*) were subsequently established in various towns and villages, being attached to the Police Station. By 1849 there were 21 physicians running these dispensaries whose duties included assisting women in difficult cases of labour⁴. Normal cases of labour were generally left to midwives. The number of midwives in each District was apparently limited. The 1842 census indicated that there were on the Islands a total of 49 midwives (one midwife per 1190 female population). In 1868 suggestions were made to create a more efficient School of Practical Midwifery with the hope that with an increase in the number of trained midwives, one or two midwives would be assigned to each police District⁵. In August 1907 Malta was divided into three Sanitary Districts, with 39 practicing midwives in the First Sanitary District and 16 midwives in the third District⁶. By the turn of the nineteenth century a scheme was under way for the assistance of pregnant patients by the Department of Public Charities. In 1901 a remuneration of four shillings was paid by Government to midwives who were called upon in

⁴ P. Cassar: *Medical History of Malta*. Wellcome Hist. Med Libr: London, 1965, p.347; P. Cassar: *The Maltese Midwife in History*. Midwives Assoc: Malta, 1978, *Malta Government Gazette supplement*, 26 November 1909, 5214:p.24-32

⁵ P. Cassar, 1978: *op. cit.*; *Malta Government Gazette*, 31 December 1842, 1551:57-59; Medical & Health Archives (M&H.Arc): *Letters to Government*, 3 May 1867 to 5 March 1869, fols.253,495,557

⁶ G. Caruana Scicluna: General Health Report for 1908-9. *Malta Government Gazette suppl*, 26 November 1909, 5214:p.24-32

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accordance with the provision contained in Art.31 of Ord.14 of 1900 to attend pauper cases in the District within which they reside. Pauper cases were defined as those whose average weekly aggregate earnings do not exceed fourteen shillings. Midwives were also re-imbursed travelling expenses if they attended women living at a distance greater than one mile⁷. In the two-year period 1903-05, 174 women received midwifery assistance in the Hospital Institutions or elsewhere, while about £stg 50 were remunerated to midwives as fees and transport expenses. Ten years later during the two-year period 1913-14, 646 women received gratuitous midwifery assistance, while £stg 132 were remunerated to midwives. The number of women benefiting from this service increased progressively so that in the two-year periods 1921-22 and 1929-30, 1099 and 1904 mothers respectively received free midwifery assistance, while remuneration to midwives increased to £stg 348 and £stg 726 respectively⁸. Following the peak in the early 1930's, the scheme for gratuitous assistance to mothers progressively declined. Thus in the two-year period 1938-39 free midwifery assistance was

⁷ Government Notice No.79/154, *Malta Government Gazette*, 21 March and 13 June 1901, p.294,557

⁸ R. Micallef: Report on the workings of the Department of Charitable Institutions for 1904-5. *Malta Government Gazette* suppl, 8 December 1905, 4854:p.2-3; *Reports on the working of Government departments during the financial year 1914-15*. Government Printing Office, Malta, 1916, L:p.1; *Reports on the working of Government departments during the financial year 1922-23*, Government Printing Office, Malta, 1925, Q:p.2-3; *Reports on the*

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granted to 1177 mothers during their confinement and puerperium, the expenditure of this service amounting to about £stg 399. Two midwives in 1938 received further subsidies of £stg 50 and £stg 30 per annum to enable them to reside at Mellieha and St Paul's Bay in Malta. The District-based midwifery service in 1937 was divided into twelve Districts in Malta and four in Gozo. At this time practically every confinement on the Islands was attended by a certified midwife and, in many cases, by a qualified medical practitioner. The number of patients who benefited from these subsidies decreased progressively in subsequent years so that by 1943-44 only 270 women benefited from the scheme, with midwifery remuneration amounting to £stg 221. By 1950-51 only 66 mothers benefited from the scheme with a cost of £stg 129⁹.

On the 7th February 1947 the Malta Memorial District Nursing Association, founded in September 1945 after an appeal for funds in Malta and the United Kingdom was launched, started offering its services to the public. In 1948 the MMDNA midwives delivered 48

working of Government Departments during the financial year 1930-31. Government Printing Office, Malta, 1932, R:p.12-13

⁹ C. Savona-Ventura: Reproductive performance on the Maltese Islands during the Second World War. *Medical History*, 1990, 34:p.164-177; *Report of the Health Conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1950.* Government Printing Office: Malta, 1951, p.ci; *Report of the Health Conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1951.* Government Printing Office: Malta, 1953, p.116

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mothers. Midwifery services in Gozo were started in 1956. In 1949 the MMDNA received an annual grant of £stg 1000 from the state, this amount was increased to £stg 2000 annually in 1952. The services of this Association (Figure 2.1) increased in popularity reaching a peak in the early 1960's, when the MMDNA midwives were delivering about 250 deliveries a year (250 in 1959, 286 in 1960). With the increasing trend towards hospital confinement noted in the 1960's the number of deliveries conducted under the supervision of MMDNA midwives declined so that by 1968 only 37 women delivered under this scheme. The MMDNA midwifery services were temporarily suspended in Malta but not Gozo in June 1968. The service was restored in 1972-73 and suspended in Gozo in 1975. By the late 1970's the MMDNA were responsible for about 4 deliveries a year (4 in 1979, 3 in 1980 and 1981, 5 in 1982). On 1 February 1983, the MMDNA took control of the Domiciliary Midwifery Service in Malta on behalf of the Department of Health becoming responsible for puerperal care of patients delivering in the hospital. In the first year alone (1983) the midwives visited 4107 mothers in the early puerperium. The service was extended to Gozo in October 1988¹⁰.

¹⁰ R. Farrugia: *personal communication in letter 10 August 1989*; Aguis MG., MMDNA - A Memorial Home Nursing Service. *Civilization*, 1989, 39:1073-1076, 40:1093-1097; *Report of the Health Conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1949*. Government Printing Office: Malta, 1950, p.lxxxv; *Report of the Health Conditions of the Maltese Islands and on the work of the Medical and*

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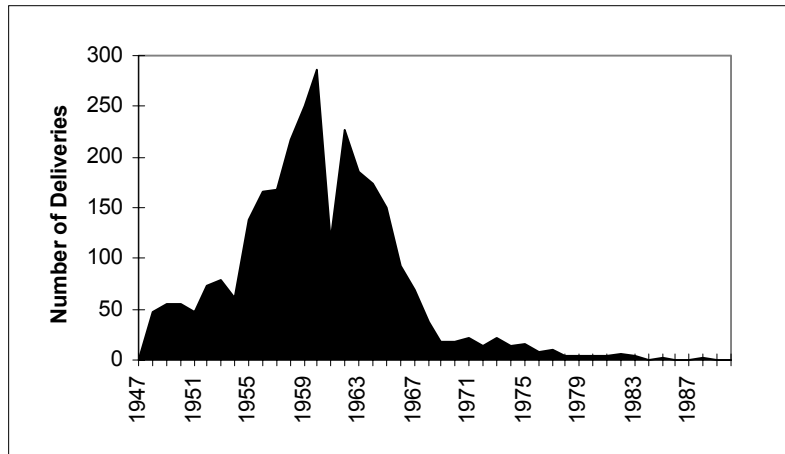


FIGURE 2.1: MMDNA NUMBER OF DELIVERIES

Throughout the centuries, traditional birth attendants or midwives in domiciliary confinements dealt with the majority of cases. The midwife's fee in 1783 amounted to about 3 tari' while the child's necessities amounted to about 20 scudi¹¹. An unsuccessful case of footling presentation is reported to have been conducted by the midwife Bernarda Micallef in 1598, while the midwife Oliviera Gambino in 1630

Health Department for the year 1952. Government Printing Office: Malta, 1954, p.107

¹¹ F. Ciappara, 1988: *op. cit.*, p.30; Curiae Episcopalis Melitensis (CEM): AO696, fols.286r-367r

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delivered a case of malformed twins¹². In 1883 midwives were allowed to deal with all cases having a longitudinal lie whether cephalic or breech, though in 1873 a midwife from Valletta was fined £5 for not asking for the help of the medical practitioner in a case of breech presentation. Midwives were further advised to call the medical practitioner in cases of abnormal presentations or cases of prolonged labour¹³. Midwives were apparently 'booked' for the confinement as evident by the seventeenth century report of the midwife Oliviera Gambino, who wrote that she had been previously seen the patient with false labour pains¹⁴. The Government promoted this practice by requiring women who wished to apply for the gratuitous assistance of midwives to submit their application as least a fortnight before confinement¹⁵. In his lectures of 1883, Prof. Pisani comments that the midwife called to attend a woman in labour should first ensure that the woman is really pregnant, unless of course she had previously known that the woman was pregnant. This comment suggests that some women booked the midwife for their confinement. Prof. Schembri in 1896 gives

¹² P. Cassar, 1978: *op. cit.*, p.11; CEM: 78B, fol.457; P. Cassar., The birth of Monsters in the Maltese islands in the 17th and 18th centuries. *Mediscope* 1983, 1:p.6-9

¹³ S.L. Pisani, 1883: *op. cit.*, p.100-102; *Sulle Levatrice. Il Barth* 22 March 1873, Anno II (13):p.260-261

¹⁴ P. Cassar, 1983: *op. cit.*; CEM: AO508

¹⁵ *MGG*, 1901: *op. cit.*

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some practical hints about antenatal advice that should be given to pregnant women¹⁶.

Pregnant women however rarely received antenatal care unless medical problems occurred. The first attempts to introduce the concept of antenatal care were undertaken in February 1919 with the establishment of the Mothers and Infants Health Association, initiated by a voluntary effort and assisted financially in part by Government. In the inaugural address Dr. A Critien C.G.M.O. commented that *'the health of the mother was intimately one with that of the unborn baby and the slightest cause of ill-health that is not removed or mitigated was bound to harm the child congenitally, and hence the welfare of the future mother should also concern us during the whole ante-natal period as well as during labour'*. The first Consultation Center was opened at Hamrun in July 1919, whereas in November a second Center was opened in Valletta. The main scope of these centers was to provide advice about infant care, but expectant mothers came for advice and many continued to attend with the baby after confinement. By 1936 the Association, to whose funds the Government made an annual contribution, maintained four infant health centers in Malta. In addition volunteer helpers visited newly confined mothers in the harbour region and its suburbs in Malta¹⁷.

¹⁶ S.L. Pisani, 1883: *op. cit.*, p.66; G.B. Schembri, 1896: *op. cit.*, p.104-106

¹⁷ *Reports on the working of Government Departments during the financial year 1919-20*. Government Printing Office, Malta, 1921, I:p.5-6; *Annual*

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In 1932 a combined scheme for antenatal and postnatal consultations was proposed. These consultations were primarily intended for the lower social classes, while private practitioners continued with giving a service to those who could afford them. It was planned that the Mothers' and Infants' Welfare Medical Officer would attend two consultations a month in each of ten Districts. This medical officer was to be a full-time employee of the Department of Health with obstetric experience, besides experience in women's and children's conditions in health and disease. Besides infant care, he was expected to carry out consultations for expectant mothers, besides visiting those mothers who expected to be confined under the care of government subsidized midwives. He was also responsible to inspect the midwifery baskets of those midwives practicing in his District. He was helped in his work by a part-time doctor in some of the Districts, a Nurse who preferably held a midwife's certificate, and a number of Health Visitors who amongst their duties visited newly confined mothers¹⁸.

report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1936. Government Printing Office, Malta, 1937, p.vi; Annual report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1938. Government Printing office, Malta, 1939, p.8-9

¹⁸ *Reports on the working of Government Departments during the financial year 1932-33. Government Printing Office, Malta, 1933, S:p.lx-lxi*

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Until the onset of the Second World War, the government-organized service for infant health care was based on the work of District Nurses spread over 16 regions on Malta and Gozo. These nurses visited homes where births occurred and worked in close association with the District Medical Officers. In addition, the government granted money to needy mothers of infants aged less than one year, the rates being fixed by the Commissioners of Charity. The Mothers' and Infants' Health Association still contributed through its four health Centers and volunteer helpers. The efforts of these health carers helped keep in check the neonatal mortality rate to a level of 44.2 per 1000 live births for the period 1937-39. With the onset of hostilities during the Second World War, the Department of Health undertook steps to augment the services. The number of District Nurses was increased to 27, the new staff being distributed among those districts that contained the greatest number of shelters and refugees. One or two clinics per week were held in each District by the acting Professor of Physiology Dr. W. Ganado who was detailed for infant welfare work. At these clinics the infants were examined and instruction given to mothers. A greater number of outpatient attendances at the Government Hospital were recorded during the war years, possibly because of the difficulty of obtaining adequate District medical antenatal care and because it enabled pregnant women to avail themselves of special rations such as tinned or powdered milk. During 1941, the District maternity services were expanded by the

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establishment in many of the villages of maternity cubicles in bomb-proof shelters. A convenient part of a rock-shelter in these villages was specially conditioned and set apart for the confinement of mothers who preferred to remain near their homes rather than go to hospital. They were allowed to come in a few days before confinement was expected and to remain for about a week after the event. They were attended by their own midwife or doctor, unless they opted for free treatment by the District Midwife or Medical Officer¹⁹. The Second World War disrupted the social structure of the population causing an alteration in priorities of health care issues. Antenatal care was one aspect that remained in the background of priorities. In 1951 it was reported that *no organized ante-natal work is so far available. Some ante-natal work is done by the Child Health Clinics, but mothers requiring advice go to their private doctor or more often to the District Medical Officer, and if they require special examination or treatment they are referred to the maternity division of the general hospital.* In 1953 antenatal care was reported to be mostly in the hands of midwives and consisted mainly in a periodic examination of urine for albumin and glucose. Blood pressure monitoring throughout the antenatal period was not routinely done²⁰.

¹⁹ C. Savona-Ventura, 1990: *op. cit.*, p.166-171

²⁰ *Report.....1951: op. cit.*, p.6; O. Zammit: Common pitfalls in obstetric practice. *Chest-piece*, 1953, 1(8):p.5

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In 1953 the local branch of the philanthropic organization "Save the Children Fund" inaugurated eight antenatal clinics in the principal towns and villages. The clinics were under the direction of a doctor with special qualifications in maternity and gynaecology, assisted by a state-registered nurse and the local Health Visitors. The clinics were held weekly and proved to be a success from the start and were quickly expanded to cover most of the principal towns and villages. The antenatal care as envisaged by Dr. J Galea C.G.M.O. in 1953 is also outlined. Dr. Galea wrote *preferably every married woman should have a thorough examination, including evaluation of the pelvic organs and the bony structures of the pelvis. When she becomes pregnant such an examination becomes essential; it serves to detect abnormal conditions which may jeopardize pregnancy and it permits the early institution of corrective measures.....At the first visit an attempt should be made to assess the obstetric patient as a whole. This requires thorough history taking, complete physical examination, urine analysis, blood picture and type and Rh determination. By tactful questioning, sympathetic listening and alert observation much useful information may be gathered and the emotional status as it affects the pregnancy can be determined.* The opening of these clinics was associated with a rather sharp drop in the early neonatal mortality rate from 29.4 per 1000 live births in 1950 to

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20.4 per 1000 live births in 1955. The rate thereafter assumed a more gradual decline (Figure 2.2)²¹.

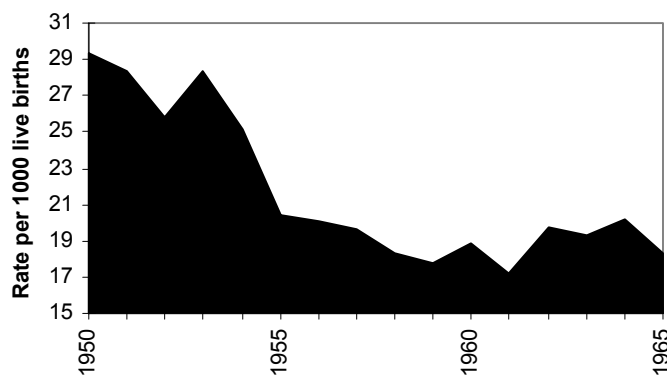


FIGURE 2.2: EARLY NEONATAL DEATH RATES

In 1961 it was estimated that only 3.4% of expectant mothers received no prenatal care. Over two-thirds of prenatal care was given by the doctor (61.7% obstetrician, 5.2% other physician) and a midwife was responsible for 29.7%. The midwife could recommend oral iron, calcium, vitamin preparations and extra milk and proteins for the prenatal patient. Group teaching of parentcraft by the midwife played

²¹ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1953*. Government Printing Office, Malta, 1954, p.6-7; C. Savona-Ventura, E.S. Grech: Perinatal Mortality in the Maltese Islands. *Int J Gynaecol Obstet*, 1985, 23:p.25-30

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little part in this care, and there was no organized group preparation given by the midwife.

The concepts of antenatal care were progressively modified and adapted to changing circumstances until the present system of care developed. The Government presently offers free antenatal care at the Government Hospitals Outpatient Clinics and in its four Polyclinics at Floriana, Paola and Mosta inaugurated in September 1982, and Gzira inaugurated in April 1985. Antenatal care has now become an accepted norm for all mothers. In 1987 the majority of pregnant mothers (98.7%) booked with the antenatal clinic at Karin Grech Hospital. Many of these were subsequently followed up at the Hospital Antenatal Clinics, the Government Polyclinics and their general practitioners²².

The education of the pregnant woman through the availability of medical educational literature in the vernacular was markedly restricted because of the level of education in the Maltese. While an Education Bill to make elementary Instruction compulsory was given its first reading in 1923, the educational levels remained generally low.

²² Study Group: F.I.G.O./I.C.M.: *Maternity care in the world: International Survey of midwifery practice and training*. Pergamon Press: Oxford, 1966, p.296-297; E.S. Grech, C. Savona-Ventura: *The Obstetric and Gynaecological Service in the Maltese Islands - 1987*. Malta, 1988, p.73-77

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The 1948 census showed that 32 per cent of males aged 10 years and over and 35 per cent of females were completely illiterate. Furthermore, half of the population had only a primary standard of education and over a quarter had only completed or left at pre-primary level²³. A move to culturally mature the population was taken up by a series of publishers who attempted to provide literature, religious and general information items in the vernacular intended mainly for popular readership. This move was initiated in the late nineteenth century by Alfons Marija Galea who during the period 1899 to 1915 published a series of 150 books in the Maltese language *Cotba tal Moghdija taz-Zmien* dealing with various aspects literature and instruction. Some books in this series dealt with infant care such as: Issue No.54 which included a section entitled *Taghlim ghall-Ommijiet fuq it-Trobbija ta' Uliedhom* by E.B. Vella (1906) published for the Pro Infantia Association; and Issue No. 110 of the series *Is-Sahha tal ulied* which had first appeared in *Is-Sebh* in 1884 and published in booklet form in 1884 as *Kelmtejn fuq is-sahha tal ulied*. This publication also included a section *Mard l Ghajnejn fit-Trabi* written by L. Manche. Alfons Maria Galea (b.1861 d.1941), a member of the most notable bourgeois families in the nineteenth century, rose to prominence mainly through his philanthropic activities. Before Galea's

²³ J. Zammit Mangion: *Education in Malta*. Studia Editions: Malta, 1992, p.41-47; *Census '85. Vol.1 - A Demographic Profile of Malta and Gozo*. Central Office of Statistics: Malta, 1986, p.77

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publishing enterprise, authors had to publish their own books when they had the means so that publications were few and far between²⁴.

The Government Press also contributed towards popular medical education including infant care, through publications issued from the Department of Health. These included a number of pamphlets or books in the vernacular addressing various aspects of public health including *Fuq il mard tat-tfal u kif nilqulu* (1885). The Government had also published lecture notes aimed at student midwives including *Ktieb il Qabla* by S.L. Pisani (1883); and *Taghlim ghal l-istudenti ta' l-Iskola tal-Kwiebel ta' l-Isptar Centrali* by G.B. Schembri (1897). It also published lecture notes in the English language for British student midwives - *The Midwife's Guide Book* by G.B. Schembri (1896)²⁵.

Alfons Maria Galea's initiative injected new blood into Maltese publishing, while it made books more easily accessible to popular

²⁴ A. Aquilina: History of Maltese Publishing. *Cotba tal Moghdija taz Zmien. Heritage. An encyclopaedia of Maltese culture and civilization*. 1993, 68:1353-1356; E.L. Vella: *Taghlim ghall Ommijiet fuk it-Trobbija ta Uliedhom*. Moghdija taz-Zmien No.54, Malta, 1906, p.1-30; F. Borg: *Is-Sahha tal ulied*. Moghdija taz-Zmien No.110; Malta, 1911, p.1-36; F. Borg: *Kelmtejn fuq is-sahha tal ulied*. Malta, 1884; L. Manche: *Mard l Ghajnejn fit-Trabi*. Moghdija taz-Zmien No. 110, Malta, 1911, p.37-40

²⁵ S.L. Pisani: *Fuq il mard tat-tfal u kif nilqulu*. Government Printing Office: Malta, 1885, +23p.; S.L. Pisani, 1883: *op. cit.*; G.B. Schembri: *Taghlim ghal l-istudenti ta' l-Iskola tal-Kwiebel ta' l-Isptar Centrali*. Government Printing Office, Malta, 1897, +114p.; G.B. Schembri, 1896: *op. cit.*

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demand. A significant proportion of the vernacular literature dealt with infant care. The high infant mortality had long preoccupied the medical Profession and a number of efforts dating to the late nineteenth century were made to attempt reduce this by attempting to educate the population in aspects of child care. The infant mortality at the time was excessively high averaging 250 per 1000 live births. The rate came down only after the Second World War. The Pro Infantia Association was founded some time before 1905 with the object of spreading practical hygienic measures to reduce the infant death rate. It published in 1907 an informative booklet about maternity and child care *It-Trobbija Tat-Tfal jeu Tuissijet għall ommijiet* written by Dr. L. Manche and translated into Maltese by Adv. E.L. Vella. The booklet dealt with marital/pregnancy problems, and infant/child care²⁶.

This cultural propagation of the Maltese language was taken up by Dr. Guze Bonnici (b.1907 d.1940) who graduated as a doctor from the University of Malta in 1931. Bonnici attempted popular instruction in the medical field. In 1932 he published a book about child-care *It-Trobbija tat-Tfal*. This was divided into three main sections dealing with the pregnant woman and delivery, the second with infant care, and the final section with child-care. *It-Trobbija tat-Tfal* was followed

²⁶ P. Cassar, 1965: op. cit, p.358-359; L. Manche: *It-Trobbija tat-Tfal jeu Tuissijet għall ommijiet*. Pro Infantia, Malta, 1907, +55p.

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by a series of articles *Taghlim fuq is-Sahha* in the vernacular newspaper *Il-Berqa* published during November 1937 and May 1938. These articles were subsequently in 1939 collected in one publication entitled *Il-Gmiel ta' Gisimna* which was the first of the series *Gabra ta' Taghlim* which was to include various aspects of knowledge and trades. *Il Gmiel ta' Gisimna* is an anatomical and physiological description of the human body utilising 55 illustrations mostly copied from a standard anatomical book published in Italy [L. Calori: *Tavole Anatomiche rappresentanti la Struttura del corpo umano*. Sassi. Bologna, 1850]²⁷.

A contemporary publisher to Guze Bonnici was Juan Mamo (b.1886 d.1941). Born at Luqa, Mamo was well aware with the social inequalities of the rural population. This awareness promoted his wish to initiate a progressive change in Maltese mentality through cultural propagation. Because of his beliefs, Mamo became a staunch follower of Manwel Dimech. To enable the propagation of knowledge, Mamo established a publishing house *Dar Hrug il-Kotba Mehtigin*. In 1939 Mamo published an informative book on midwifery practice *Obstetricia Illustrata: Tgharrif fuq it-Twelid bil-Qabla w it-Tabib*.

²⁷ A. Galea: Guze Bonnici b.1907 d.1940. *Heritage. An encyclopaedia of Maltese culture and civilization*. 1980, 33:[Portrait Gallery]; G. Bonnici: *It-Trobbija tat-Tfal*. Malta, 1932, +35p.; G. Bonnici: *Il-Gmiel ta' Gisimna*. Progress Press, Malta, 1939, +159p.

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This compendium of 64 plates contained more than 172 selected figures of modern and ancient engravers with notes in English and Maltese. The book is divided into two main sections showing illustrations from modern and ancient midwifery. Other sections include an explanation of medical terms and a translation from the Cow & Gate publication *Motherhood*. The reproductions were taken from a number of 16th to early twentieth century midwifery books. Seven illustrations are labelled as Lithograph Stephani - ex-librix Dr. Nicoloi Gulia. These have been identified as copied from an Italian midwifery book [F. Capuron: *Corso teorico-pratico di ostetricia*. Della Speranza, Firenze, 1838]. Contemporary to Mamo's obstetric book was a booklet issued by Nestle' & Anglo Swiss Milk Products Ltd in 1939 *Twissijiet lill-Ommijiet Zghazagh* which dealt with child and infant care. Further planned midwifery related publications by J. Mamo included: *Illustrated Curious Offspring* which was to be a book of plates showing 100 curiosities; and *Midwifery seen through Illustrations: Eghlim zmien It-Tqala. Is-Sinjali tat-Tqala* containing 30 selected fine plates and clear advice to the pregnant woman (64 pages). These publications listed in *Obstetricia Illustrata* were never issued because of the unexpected demise of Juan Mamo in 1941²⁸.

²⁸ O. Friggieri: *Gwann Mamo. Il-Kittieb tar-Riforma Socjali*. Mid-Med Bank Ltd, Malta, 1984; G. Mamo: *Obstetricia Illustrata. Tgharrif fuq it-Twelid bil-qabla w it-tabib*. Malta, 1939, +80p.; G.G.R.: *Twissijiet lill-Ommijiet Zghazagh*. Nestle', Malta, 1939, +46p.

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The Second World War brought about a tremendous upheaval in the social circumstances of the population with a general improvement in education. The improvements in socio-economic conditions and improvements in medical care resulted in a significant change in the disease spectrum of the population. Vernacular medical education also received an impetus with the steady publication of popular medical literature in the Maltese language in the form of book, pamphlets or leaflets published by individuals, associations or the Department of Health. The CANA Movement in 1959 published an informative booklet in Maltese dealing with various aspects of pregnancy and labour. This went through four editions within 13 years. A Patients' Handbook was published by the Dominican Sisters of St. Catherine of Sienna Hospital after maternity services were initiated in 1961. The information included however dealt with procedure followed in the hospital and the necessities of the mothers during their hospitalization. Another handbook was published in 1981 by the Department of Health at Karin Grech Hospital. This described the new maternity hospital and gave instructions about antenatal and postpartum care. Further information booklets and leaflets published by the Department of Health dealt with breast feeding, immunization of infants and against rubella. A recent maternity publication was published in Maltese by a midwife in 1992, with a subsequent re-edition in 1995. Other publications in the

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English language relating to maternity and infant care have also been published by other individuals in recent years. Regularly issued magazines dealing with maternity care are also published²⁹.

The re-setting up of the Midwifery School in 1971 saw the organization of classes in parentcraft, which formed part of the curriculum of training of student midwives. Initially these classes were irregularly organized, but became a regular feature after 1981. These classes were well attended so that while in 1981 290 expectant mothers attended, in 1986 the number increased to 1341. These classes supplemented those initiated by the CANA movement. Other Antenatal Classes are now being organized by the Midwifery Association and private individuals, including midwives and health educators. The Maternity Scheme at St. Philip's Hospital initiated in 1996 incorporates an Antenatal Physiotherapy Session of about two hours duration at around 16 weeks of pregnancy, and an individualized antenatal program of up to 7 classes presented by a midwife trained in parent education. This scheme also

²⁹ F. Bencini: *Xi grazzja se jkollna tarbija*, Empire Press, Malta, 1959, +59p.; *Maternity Wing - Patients' Handbook*. Dominican Sisters: Malta n.d, +4p.; D.O.H.: *Kumpless għall-Omm u t-Tarbija*. Government Press: Malta, 1981, +30p.; R. Borg-Xuereb: *Hajja Gdida*. Klabb Kotba Maltin: Malta, 1992, +104p.; A. Briffa: *You're Pregnant - Information booklet for Mums-to-be*. Special Delivery: Malta, n.d. [1995], +38p.

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ensures comprehensive maternity care by including three postnatal home visits³⁰.

(ii) Midwifery Hospitals

Until the middle of the twentieth century, the majority of deliveries on the Maltese Islands were conducted at home under the supervision of a traditional birth attendant or a midwife. Medical assistance during pregnancy or labour was only asked for in cases of abnormality. Hospital confinement was a rarity and usually reserved for necessitous women or difficult cases. This situation remained prevalent well until the 1950's³¹. A midwife formed part of the Professional Staff of the Woman's Hospital in Valletta in the early eighteenth century³². Nearly all the mothers delivering at Victoria Hospital in Gozo during 1876-1893 were non-paying and registered as paupers having an occupation of lace-workers. The spouses occupation was more varied with 73.8% being artificers and laborers and 15.5% being mariners and fishermen. The illegitimacy rate of hospital deliveries was increased accounting for 8.6%. During the period, only 358 deliveries occurred in the hospital

³⁰ M. Vella-Bondin: *Report on the staff deployment and routine work of the Department of Obstetrics and Gynaecology*. Malta, letter dated 26 May 1987; *St. Philip Maternity Scheme*. St. Philip Hospital: Malta, n.d. [1996], +3p.

³¹ *Reportfor the year 1951: op. cit.*, p.6

³² P. Cassar., 1965: *op. cit.*, p.72; National Malta Library (NML): *ms Treasury A 58(13); Piano per il regolamento dell'ospedale di Malta*. Malta, 1802

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with a mean annual number of 21 deliveries, accounting for about 4.4% of all deliveries occurring in Gozo during the period. The catchment area for the hospital during this period included the whole of Gozo with a few cases from Malta³³. The number of hospital confinements in Malta was so small that when the Midwifery School was re-opened in 1854, the teacher had to make use of a girl of ten years from the medical wards for clinical demonstration purposes to the great consternation of the Chairman of the Board of Charity Commissioners who threatened to report similar future occurrences to the Governor³⁴. A number of female hospitals had been opened in Malta and Gozo throughout the ages, but these until the latter part of the twentieth century served mainly medical and surgical problems and contributed only minimally to obstetric practice. This state of affairs remained until the mid-twentieth century. In 1955 it was noted that whereas formerly patients looked at maternity services in the government hospital with indifference, their attitude was changing. In 1961 it was estimated that 43.5% of mothers were delivered in hospitals with resident medical staff, 9.8% in Centers with no resident medical staff, and 46.7% in their own homes. The hospital deliveries were mainly conducted by the midwife (87.2%), while the obstetrician was the senior person present in 11.4% of cases and other

³³ C. Savona-Ventura: *A maternity unit in Gozo a hundred years ago*. Essay awarded the MAM Prize: Malta, 1991; C. Savona-Ventura: *A maternity unit in Gozo a hundred years ago*. *Maltese Medical Journal*, 1995, 7(1):55-61

³⁴ P. Cassar, 1965: *op. cit.*, p.413

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physician in 1.4%. In the Centers with no resident medical staff the obstetrician was present in 56.8% of cases, another physician in 6.2% and the midwife in 37%. In the patients' homes the midwife was the responsible person in 77% of cases, the obstetrician in 10% and another physician in 12%. A nurse (not a midwife) was present in 1% of cases. In 1980 the hospital confinement rate was 99.5%³⁵.

The concept that hospital midwifery care in Malta and Gozo was restricted to needy women or unmarried mothers followed closely the concepts practiced on the continent particularly in France. The leading training school for midwives in France during the seventeenth century was the Hotel-Dieu in Paris. The hospital, in the tradition of its religious foundation, was a charity; anyone was accepted as a patient, and in the maternity wards, no questions were asked. Many of the children were illegitimate. In 1678, some 1500 children were born. Women were admitted in the last two weeks of pregnancy. Puerperal sepsis was rife, even though visitors to the maternity wards were not allowed in without a pass. In the United Kingdom, the first lying-in institution for the relief of poor married women was only opened in 1739 by Sir. R. Mannungham in Westminster. Permanent institutions were

³⁵ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1955*. Government Printing Office, Malta, 1957, p.6; Study Group: F.I.G.O./I.C.M.: *op. cit.*, p.296-297;

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subsequently founded in the principal cities. The number of deliveries in these institutions remained low, so that in 1875 there were 394 deliveries in Queen Charlotte's Hospital, 400 in the City of London Hospital, 264 in York Road Hospital and 155 in the British Lying-in Hospital. At the beginning of the 19th century on the continent, the number of annual births in the Maison d'Accouchements (Paris) approximated 1842, while in the Hospital of St. Catherine (Milan), the number was 296³⁶.

The first recorded hospital in Malta - Hospital of St. Francis at Rabat - was already functioning by 1372 under the rectorship of a Franciscan appointed by the King. During the same period the earliest known woman's hospital in Malta - St. Peter's Hospital - was functioning at Mdina. This hospital ceased to function in 1418 when it was converted into a monastery for nuns. In 1433 the management of the Hospital of St. Francis was transferred to the Università since it was being mismanaged and its name was changed to Santo Spirito Hospital. From the middle of the fifteenth century onwards the hospital functioned normally. It is not known what the contribution of Santo Spirito Hospital

A.P. Camilleri: Obstetric deaths in Malta, *J Int Fed Gynaecol Obstet*, 1965, 3(3):179-186; E.S. Grech and C. Savona-Ventura, 1988: *op. cit.*, p.28

³⁶ W. Radcliffe: *Milestones of Midwifery*. J. Wright Ltd., Bristol, 1967, p.26-27; J. Donnson: *Midwives and medical men. A history of inter-professional rivalries and women's right*. Heinemann Educ Books Ltd., London, 1977, p.25; J.M. Munro Kerr, R.W. Johnstone, M.H. Phillips:

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towards the midwifery services on the Islands was during these early years, but the name of Santo Spirito was given to several medieval hospitals that were particularly intended for foundlings and maternity cases. The hospital in Malta is known in the early sixteenth century to have taken under its care infants who could not be cared for properly by their family, and in later years had a "ruota" a rotating-cot device for placing infants anonymously in the hospital³⁷. Santo Spirito Hospital definitely gave a contribution in later years, so that during the period 1750-1800 the hospital delivered about 0.62% of all baptisms in Malta with 843 births (8.8%) being from outside town. The hospital catchment area covered a wide range with the majority of patients coming from Valletta, Zebbug and Mosta, besides Rabat/Mdina³⁸. The hospital continued to serve maternity cases well into the nineteenth century until it was changed into a convalescent sanitarium in 1883. In 1840 a request was made unsuccessfully by the Physician Surgeon of the hospital for midwifery instruments³⁹.

Historical Review of British Obstetrics and Gynaecology 1800-1950.
Livingstone, Edinburgh, 1954, p.263

³⁷ P. Cassar, 1965: *op. cit.*, p.23-36; S. Fiorini.: *Santo Spirito Hospital at Rabat, Malta: The early years to 1575.* Dept of Information, Malta, 1989, +199p

³⁸ F. Ciappara, 1988.: *op. cit.*, p.85-86

³⁹ P. Cassar, 1965: *op. cit.*, p.532

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The Knights of St. John established themselves in the southern part of the Island and built their fortified city named Valletta in 1565. After their arrival in Malta they established a Holy Infirmary at Birgu which had provisions for taking care of foundlings including the "ruota". The Holy Infirmary in Valletta similarly had provisions for child welfare. In 1625, Catherine Scapi had set apart a small house, known as Santa Maria delle Scala, in Valletta for the care of poor infirm women, the house eventually being moved to different premises. This small hospital was closed down after the foundress died in 1655. A new Woman's Hospital, known as the "casetta", was re-established in Valletta by the Grandmaster Martin de Redin in April 1659. A further substantial bequest was made to this hospital in 1717 by Lady Flaminia Valenti, while Grandmaster Manoel de Vilhena in 1727 added two adjoining wards. The staff of this hospital by the end of the eighteenth century included a midwife. The "casetta" continued to function through the ages with extensive modifications to its organization and architecture⁴⁰. A large proportion of women delivering in the Woman's Hospital in Valletta were unwed women who went to Valletta to deliver their child and conceal their pregnancy. This in part accounts for the high illegitimacy rate of 28.9% reported for Valletta in the period 1750-1800⁴¹. In 1802 a midwife was available for normal deliveries, while

⁴⁰ P. Cassar, 1965: *op. cit.*, p.68-76,352; *Annual Report1937: op. cit.*, p.31

⁴¹ F. Ciappara, 1988: *op. cit.*

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cases of difficult labour were attended by the Senior Surgeon. In May 1831, the Lying-in Ward was transferred from the Surgical to the Medical Division. At this time, parturient women were noted to be reluctant to avail themselves of the service of doctors during labour. The medical officer in charge of this ward kept a register wherein was recorded the number of women accepting or refusing the assistance of the male practitioner. It appears that more women refused assistance from the practitioner. In 1850 the casetta was reserved exclusively for incurable disease and the Lying-in Ward was transferred to the Central Hospital at Floriana⁴². The Colonial estimates for Malta for 1896 indicate that the specific midwifery staff at the Central Hospital comprised an Accoucher and Teacher of Practical Midwifery and a midwife, these being assisted by assistant medical officers and female nurses. The situation remained similar until 1922 when the medical staff at the Hospital was augmented by the appointment of a Junior Accoucher⁴³. This hospital continued to serve as the main hospital in Malta until the onset of the Second World War. In 1938 the hospital accounted for 4.3% of all deliveries occurring in Malta. In view of war conditions, it was envisaged that a much larger population of mothers would seek admission to the hospital. An Emergency Maternity Hospital was opened at Hamrun in a newly constructed wing of the Adelaide Cini

⁴² P. Cassar, 1965: *op. cit.*, p.68-76; *Piano*, 1802: *op. cit.*

⁴³ Colonial Estimates, Malta, 1896. *Malta Government Gazette*, 20 December 1895, p.953; *Reports* 1922-23: *op. cit.*, section Q:p.1

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Orphanage increasing the number of maternity beds from 16 in the Central Hospital to 100 in Cini Hospital. The maternity services were transferred from the Central Hospital on 28 May 1940 initially to the Bugeja Technical Institute and eventually on 19 June to Cini Hospital. Cini Hospital during the war year 1941 accounted for 14.1% of all deliveries occurring in Malta. The rate of hospital confinements during the post-war period went down to the pre-war levels accounting for 4.6% of total Malta deliveries in 1943⁴⁴.

Cini Hospital continued to function as a maternity hospital until September 1949 when the Maternity Division was transferred to a newly built hospital at Gwardamangia - St Luke's Hospital. Forty-five beds were allocated for obstetric patients in this hospital in 1951, a situation that persisted well into the 1970's. In 1956, the obstetric staff at St Luke's Hospital consisted of the Senior consultant and Professor of Midwifery and gynaecology, a junior consultant, a resident clinical officer, two assistant medical officers, and eight midwives. The department had three wards accommodating 76 beds and a nursery with 20 cots. The Senior Consultant visited his wards daily, including Sundays, and was called for urgent operations and obstetric emergencies. Outpatient sessions were held three times a week, each

⁴⁴ C. Savona-Ventura, 1990: *op. cit.*, p.164-177

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session lasting about three hours⁴⁵. The hospital confinement rate remained low until 1951-52 when the hospital accounted for 5.7% of deliveries in the Maltese Islands. By 1956-57 the patients' attitudes towards hospital confinement was changing so that the hospital catered for 17.1% of all deliveries. The rate continued to increase so that by 1980-81 the hospital accounted for 93.8% of all deliveries⁴⁶. In the early 1970s an attempt was made to have a new maternity unit, together with a children's hospital, housed at the Marfa Hospital which was due to be vacated when the British left the Islands. This scheme was dropped when a memorandum was drawn up by Prof. A.P. Camilleri and others arguing that it was by far more advantageous to have both units at St. Luke's Hospital⁴⁷. On 26 November 1981 a new Maternal and Child Health complex was built in close proximity to St Luke's Hospital named Karin Grech Hospital. This complex has 26 antenatal beds, a

⁴⁵ *Report 1951: op. cit.; Report on the Health conditions of the Maltese Islands and on the Work of the Medical and Health Department for the year 1971.* Government Printing Office: Malta, 1972; L. Farrer-Brown, H. Boldero, J.B. Oldham: *Report of the Medical Services Commission.* Central Office of Information: Malta, 1957, p.15

⁴⁶ *Report.....1951: op. cit; Report 1952: op. cit.; Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1956.* Government Printing Office, Malta, 1958; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1957.* Government Printing Office, Malta, 1959; E.S. Grech, C. Savona-Ventura, 1988: *op. cit.*

⁴⁷ P. Vassallo-Agius: An outline of the development of paediatrics in Malta in the twentieth century. *Paediatric Update* (eds. Vassallo-Agius P, Parasacandolo R, Vella C). University Press: Malta, 1991, p.119

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labour ward with 12 first stage beds and 8 delivery rooms with a operating theater, and 56 postnatal beds with an adjoining nursery, besides a gynaecological ward which admits patients with problems of early pregnancy. This hospital still functions as the major maternity hospital on the Island, though it is planned that maternity services will be eventually transferred to a new hospital being built in the vicinity of the University at Msida⁴⁸.

The first woman hospital in Gozo owed its origin to a bequest made by Francesco Bonnici on 22 February 1454. The establishment dedicated to St Julian (but also known as the Hospital of St John the Evangelist and of St Cosmos and St Damian) consisted of a few dwellings near the gates of the citadel at Rabat/Victoria. The hospital was also known as Santo Spirito Hospital. On 3 May 1783 the foundation stone for a new hospital was laid at Rabat/Victoria. This new hospital named St Julian's Hospital accommodated fifty patients and received also unmarried pregnant women who sought refuge under its roof at the approach of labour. It was also provided with a "ruota". It ceased to function in 1838 when the Hospital of St John the Baptist, also at Rabat/Victoria, was opened for both sexes. This hospital changed its name to Victoria

⁴⁸ *Kumpless*....., 1981: *op. cit.*; D. Caruana-Galizia: A new Hospital for Malta - Hospital reform. *The Sunday Times [of Malta]*. 10 October 1993, p.27,30; 17 October 1993, p.14. Karin Grech Hospital was named after

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Hospital on the occasion of Her Majesty's Queen Victoria Jubilee in 1887. Structural expansion was undertaken in the last century⁴⁹. By the mid-nineteenth century at least one midwife was employed in the hospital and was responsible for all the normal deliveries there. She also often acted in the capacity of godmother to the infants born. In 1879 the midwife Maria Cremona was provisionally employed as Nurse No.1 and midwife at the Hospital of St. John the Baptist. She replaced the midwife Theresa Buhagiar who had been pensioned off. Theresa Buhagiar was subsequently re-employed during 1887-1893. Any obstetric abnormalities were dealt with by the Medical Superintendent and Resident Medical Officer of the hospital. Consultant Staff from Malta started visiting the hospital regularly after 1947, while resident obstetric staff was introduced in the 1970's. During the period 1876-1893, only 358 deliveries occurred in the hospital with a mean annual number of 21, accounting for about 4.4% of all the deliveries in Gozo. The catchment area for the hospital during this period included the whole of Gozo with a few cases from Malta. The patients delivering in the hospital came from the lower socio-economic groups with a high proportion of illegitimate pregnancies. The overall stillbirth and neonatal mortality in the hospital was significantly higher than in the rest of the

Karin Grech, the daughter of the Professor of Obstetrics and Gynaecology, who was murdered in December 1977 with a letter-bomb sent to her father.

⁴⁹ P. Cassar, 1965: *op. cit.*, p.90-92; S. Fiorini, 1989: *op. cit.*, p.11

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population⁵⁰. In 1938 the lying-in beds in this hospital numbered 10, a situation that persisted well into the 1970's. The hospital confinement rate in Gozo was always greater than that in Malta so that in 1938 22.2% of all deliveries in Gozo occurred in the hospital. The rate remained similar throughout the Second World War and decreased to 8.0% in 1944. A new hospital named Craig Hospital, subsequently renamed Gozo General Hospital in 1989, was inaugurated in Rabat/Victoria on 31 May 1975. This hospital has 11 obstetric beds and two delivery rooms besides an annexed nursery⁵¹.

Besides the government-managed hospitals described above, a number of privately managed hospitals contributed variably to the maternity services of this century. There were in addition naval and military hospitals whose main function was to provide facilities for the treatment of British servicemen and their families. These in later years expanded their services to the civil population. The first private hospital to be opened in Malta was run by the Sisters of the Little Company of Mary (Blue Sisters) and named Zammit Clapp Hospital or Blue Sisters

⁵⁰ C. Savona-Ventura, 1991: op. cit.; C. Savona-Ventura., 1995: op. cit.; *Malta Government Gazette*, 5 January 1880, 2838:p.3; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency Medical Services for the year 1947*. Government Printing Office, Malta, 1948.

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Hospital. The hospital situated at Sliema was opened after a deed of donation was made by the benefactress Zammit Clapp on 23 June 1911. This hospital initially served as a Seamen's Hospital. In November 1918, a War Memorial Ward for Children, comprising Medical and Surgical Divisions, was set up on the upper floor of this hospital. Zammit Clapp Hospital ceased to function as a Seamen's Hospital in December 1922 when the King George V Merchant Seamen's Memorial Hospital was opened. After being vacated, the hospital with only 20 beds started being used as a children's hospital. The building was expanded in 1933 and during the Second World War was taken over for use as a Casualty Hospital for the northwestern region of Malta. It also housed the Female Medical and ENT Divisions. The Children War Memorial Hospital was also incorporated in the establishment and the hospital was further expanded by utilizing the ground floor of the adjoining Sacred Heart Convent. After the end of hostilities, the hospital was returned to the management of the Sisters of the Little Company of Mary. The services offered by the Sisters continued to expand. In 1947 it started contributing towards maternity services and in 1950 the Maternity Wing was inaugurated and called "Mary Potter Wing". It continued to function in this capacity until December 1980 when it was closed down. It was the only privately run

⁵¹ *Annual Report*1938: *op. cit.*; *Report* 1971: *op. cit.*; C. Savona-Ventura, 1990: *op. cit.*; H.A. Clews: *Malta Year Book*. De La Salle Brothers Publ., Malta, 1976, p.74

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hospital well into the 1950's. In 1957, it was the only privately managed hospital of any size in the Maltese Islands with 64 adult beds and 15 maternity beds and accommodated 34 infants. During 1971-77 it accounted for about 11.8-14.5% of the total maternities which occurred in the Maltese Islands. Its contribution towards maternity services continued to progressively increase so that in 1977 and 1979 it contributed to 16.3% and 16.9% of deliveries respectively⁵². On 12 April 1959, the Dominican Sisters officially inaugurated another privately managed hospital named St Catherine of Sienna Hospital at Attard. The hospital expanded its maternity services in line with the changing attitudes of pregnant women towards hospital confinements subsequent to 1960. Maternity services in the hospital were initiated in 1961 and continued until 1980 when the hospital was converted into a nursing home. The number of deliveries during the first two years of its opening remained low accounting for about 2.3% of the total deliveries in the Maltese Islands in 1961-62. By 1966-67 the proportion rose significantly to account for 11.5% of all deliveries, further peaking at 18.3% in 1971-72. In 1977 and 1979 it accounted for 10.4% and 21.8%

⁵² P. Cassar, 1965: *op. cit.*, p.408-409; A. Bonnici: *History of the Church in Malta. Vol.III Period IV - 1880-1975*. Veritas Press: Malta, 1075, p.119,136-137; J.O.F. Davies: *Report on a Hospital Building Programme for Malta*. Central Office of Information: Malta, 1957, p.4; *Register of Deliveries in Maternity Division: Zammit Clapp Hospital, Malta* (letter from S. Crehan, 11 August 1989); C. Savona-Ventura, E.S. Grech, 1985: *op. cit.*, p.28

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respectively. A small 28-bed clinic St Dominic Clinic in Rabat/Victoria, Gozo was also run by the Dominican Sisters. This hospital, which catered also for maternity cases, opened in September 1974 and closed down its services in November 1976. During this short period of contribution the hospital delivered a total of 152 deliveries⁵³.

In the 1980's a number of small day clinics in Malta were opened to cater for deliveries, notably St. James Clinic at Zabbar and Klinika Vella at Zebbug. Both clinics were established in 1984 following the closure of the religious-run hospitals. St. James Clinic started as a small maternity clinic that expanded its services to eventually offer multi-disciplinary treatment. The maternity department offers the choice between conventional and natural birth methods. It is the only maternity department which offers water births. It was upgraded to a hospital in 1996. Klinika Vella started off a two-bed affair in line with the regulations in force at the time. During the years it expanded its services and provided single room facilities for overnight patients. It also refurbished a dedicated unit specifically for obstetric patients away from

⁵³ P. Cassar, 1965: *op. cit.*, p.409; A. Bonnici, 1975: *op. cit.*, p.136-137; *Register of deliveries in Maternity division: St. Catherine of Siena Hospital, Malta* (letter to author from E. Attard, 19 April 1989); *Register of deliveries in Maternity division: S. Dominic Hospital, Gozo* (letter to author from P. Attard, 4 March 1991); C. Savona-Ventura, Caesarean section in the Maltese Islands, *Medical History*, 1993, 37:37-55; C. Savona-Ventura, E.S. Grech, 1985: *op. cit.*

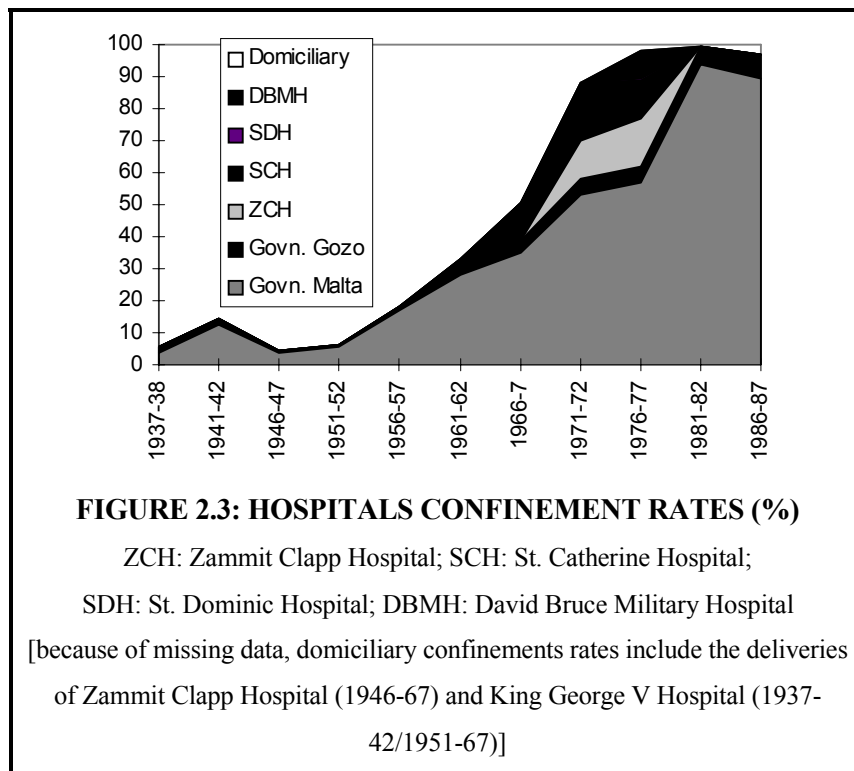
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the main surgical facilities. In 1995 a private hospital which serves maternity cases - St. Philip Hospital - was opened. St. Philip Hospital was the first purpose-built truly private-owned hospital in Malta. A letter of intent approving the project was issued by the government authorities in 1992 and a year later the Maltese company owning the hospital - Golden Shepard Group Ltd. - was formed and registered. This company brought together a group of leading Maltese enterprises together with the foreign Independent British Healthcare PLC (IBH). The “hotellier” services offered are comparable to a five-star hotel. All 75 single rooms with en-suite bathroom are air-conditioned. The maternity unit has access to 25 of the beds and is located adjacent to a state-of-the-art delivery suite and close to the operating theaters. A comprehensive antenatal, intrapartum and postnatal maternity scheme was launched in 1996. The hospital was sold to a group of Maltese doctors in 1999. A second private-owned hospital offering a comprehensive maternity scheme was opened in 1996 in the restored 19th century Capua Palace at Sliema. Work on Capua Palace Hospital was approved by the government authorities in 1994. This hospital was taken over by St. James Hospital in 2002⁵⁴. The contribution of these private maternity

⁵⁴ Anon.: A special kind of caring. *The Malta Independent*, 28 July 1996, p.4; Anon.: A ramble through St. James Hospital. *Galleria - The Malta Independent*, 17 November 1996, p.4; R. Bugeja: A purely private affair. *The Malta Independent*, 30 October 1994, p.12; *St. Philip Maternity Scheme*: op. cit., M.J. Naudi: Pioneering building techniques used in Capua

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hospitals increased progressively from about 3% of the total deliveries on the Islands in 1995 to 18% in 1997.



The British Military and Naval Hospitals in Malta also gave a small contribution to the midwifery services on the Islands. The maternity

Palace Hospital. *The Sunday Times [of Malta]*, 16 June 1996, p.44-45; *Maternity Department*. Capua Palace Hospital, Malta, [1996], +6p.

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services were until 1962 administered and staffed by the Royal Army Medical Corps, after which until 1976 the administration was taken over by the Royal Naval Medical Service. The first hospital was organized in order to treat British servicemen, but towards the end of the nineteenth century a Military Families Hospital was built on Mtarfa Hill in Malta. This was a fifty-bed hospital for the soldier's families. The hospital after the Second World War was disbanded and re-formed under the name of David Bruce Military Hospital. This continued to provide a service for soldier's families and on 13 May 1975 opened its services for the civilian population. In the period 1976-77 it delivered 9.1% of all the deliveries occurring on the Islands. The hospital closed down just before the departure of the British services from the Islands⁵⁵. Another hospital which gave an important contribution to the maternity services in Malta was King George V Hospital at Floriana in Malta. This hospital came into being in 1922 as a memorial to the men of the Merchant Navy who died in the First World War. Midwifery services were available in the hospital in 1939 but when the hospital was destroyed on the 7 April 1942 by enemy action during the Second World War, the maternity wards were transferred to Corradino Heights. King George V Hospital was rebuilt and inaugurated on 30 November 1948 when it continued to cater mainly for merchant seamen though members of Services families

⁵⁵ P. Cassar, 1965: *op. cit.*, p.93-101; C. Savona-Ventura, E.S. Grech, 1985: *op. cit.*, p.28; M.C.H. Jackson: *personal communication in letter 1 August 1989*; H.A. Clews, 1976: *op. cit.*, p.46

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and civilians were also admitted. A maternity scheme for Maltese civilian women was introduced in the late 1950's and continued to function until the hospital's closure in January 1967⁵⁶.

Prior to the last fifty years, parturition was very much a private affair being conducted in the home by either traditional birth attendant or formally trained midwives. The medical Profession was only called in when problems occurred. The social circumstances occasioned by the Second World War resulted in a change in attitudes towards maternity care with a greater emphasis towards hospital and doctor supervised confinements, an attitude that has persisted into present times. In line with this development, a number of religious or privately-owned hospitals have undertaken maternity services, while the government services have had to expand and modify themselves to these demands. The opening of the private hospitals in 1995-96 which offered safe maternity services resulted in a decrease in the proportion of deliveries conducted at the Government Maternity Hospital in Malta - Karin Grech Hospital - from 97.2% of total maternities in 1995 to 85.2% in 1996 and 82.3% in 1997. The remaining maternities were cared for in the Government Maternity Hospital in Gozo - Gozo General Hospital - and the private hospitals/clinics offering maternity services in Malta - St.

⁵⁶ P. Cassar, 1965: *op. cit.*, p.93-101; D. Micallef: Frau Trevisan. *Civilization* 1987, 33:p.904-906

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Philip Hospital, St. James Hospital, Capua Palace Hospital and Klinika Vella⁵⁷.

(iii) Control of Midwifery

Until the seventeenth century, Maltese midwives apparently had no legal recognition and were unregistered by the state. Traditionally, the state allowed the midwife freedom to pursue her activities, though the Roman Catholic Ecclesiastical authorities attempted to ensure good moral practice. During the Medieval Period until the Islands were ceded to the Knights of St. John of Jerusalem in 1530, medical practice on the Maltese Islands probably fell under the ordinances of Roger II in 1140, which were expanded by Frederick II in 1224. These regulations did not contain laws dealing with the practice of midwifery, and midwives in the Middle Ages were probably not classified among medical people⁵⁸. The Knights of St John while still at Rhodes had a code of laws designed to safeguard the health of the community. These laws were comprehensive and dealt with measures to control infectious disease, the issuing of licenses to practice medicine and surgery, and to identify the

⁵⁷ C. Savona-Ventura, L. Janulova: *The computerization of Maternity Information in a small island community. The Malta Experience 1981-1997*. Lecture presented at the WHO Fifth Workshop on Quality Development in Perinatal Care, Nof Ginosar, Israel, 29-31 October 1998.

⁵⁸ J.H. Bass, 1889: *Outlines of the history of medicine and the medical profession*. Krigler Publ Co, Huntington, original edition 1889, translated and expanded by H.E. Hanerson, 1971, vol.1, p.274-276

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responsibilities of apothecaries and medical men. No mention is made regarding the practice of midwifery⁵⁹.

The first move by the state authorities to control the practice of midwifery was made by the decree issued on the 2 August 1624 by the *Protomedicus*, or physician-in-chief⁶⁰. This decree was revised by subsequent ones issued on the 19 June 1662 and 24 September 1722, and these were later incorporated in the legal code of Grandmaster Vilhena published in 1724⁶¹. According to these regulations no woman was allowed to practice as midwife unless she had been examined and approved by the *Protomedicus* and granted the requisite licence which required renewal by every subsequent *Protomedicus*. An official register of approved midwives was kept at the Court of Law. These legal provisions controlling the practice of midwifery were renewed in the de Rohan Code published in 1784. The de Rohan Code was a landmark in the history of Maltese legislation since it was an orderly synthesis of all the municipal laws enacted by the Knights⁶².

⁵⁹ NML: *De medici physicis et chirurgis: Pragmaticae Rhodie, ms.153*, fol.71

⁶⁰ NML: *ms.2*, fol.601

⁶¹ NML: *ms.439*, fol.422; NML: *ms.429(vol.1)*, fol.20; *Leggi e costituzioni prammaticali*. G.A. Benvenuta, Malta, 1724

⁶² *Del Dritto Municipale di Malta. Nuova compilazione con diverse altre costituzioni*. G. Mallia, Malta, 1784, p.295-300

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While under French rule it was made obligatory by decree of 24 August 1798 for the doctor or midwife assisting at a birth to present certificates of the birth within 24 hours to the municipality under penalty of suspension of practice and the infliction of a fine and imprisonment. This enactment was the first attempt to introduce civil registration in Malta, registration being previously the sole domain of the ecclesiastical authorities⁶³.

The de Rohan Code remained in force with minor amendments during the nineteenth century under British rule until it was superseded by the Police Laws of 1872⁶⁴. In 1813 Teresa Falletti, a midwife from Valletta, was advertising her certification by the Civil Commissioner to allow her to practice her profession⁶⁵. In 1821 midwives, together with medical, surgical and pharmacy practitioners, were required to have a certificate of competence from the then appointed Medical Committee in lieu of the *Protomedicus* to enable them to practice their profession⁶⁶. The 1872 Police Laws were modified in 1883 in Article 143 of Chapter XIV to legislate against the use of the birth-chair. The 1894 Police Laws

⁶³ W. Hardman: *A History of Malta during the period of the French and British Occupations 1798-1815*. Longmans, London, 1909, p.94,98

⁶⁴ *Collezione di bandi prammatiche ed altri avvisi ufficiali pubblicati del Governo dell' Isola di Malta e sue dipendenze. Dal 17 Luglio 1784 al 4 Ottobre 1813*. Government Press, Malta, 1840, p.41-43; *Leggi di polizia*. Government Press, Malta, 1872, p.4

⁶⁵ Avviso. *Malta Government Gazette*, 21 July 1813, p.321

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specified that midwives were required to call in assistance in cases of difficult or protracted labour. They could not make use of any instruments including the labour chair, and could not prescribe or administer ergot of rye or other strong medication, or order blood letting⁶⁷. A detailed set of regulations to be observed by midwives was first published in 1899. These regulations detailed the care which the attending midwife was bound to give to the parturient mother, including specific instructions for asepsis. The midwife was also bound to attend the delivered woman for eight days after delivery to identify the development of puerperal sepsis⁶⁸. On 2 July 1901 the Second Sanitary Law was published as Ordinance No.XVII, repealing the previous Ord. No.VII of 1901, wherein the laws relating to the practice of Sanitary and kindred professions including midwifery were amended and consolidated. Midwives were required to obtain a licence from the Head of Government after obtaining a certificate of competence from the Medical Board. Every midwife was required to call for assistance and to report any cases of puerperal sepsis. Midwives were barred from performing any surgical procedures, and were required within five days

⁶⁶ Minute. *Malta Government Gazette*, 28 March 1821, 387:2567-2568

⁶⁷ *Police Laws for the Islands of Malta and its dependencies*. Government Printing Office, Malta, 1894, p.40-42

⁶⁸ Government Notice No.217: Regulations respecting midwives. *Malta Government Gazette*, 7 August 1899, 4150:774-775

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to notify the officer charged with drawing up the acts of birth of all the deliveries conducted by them⁶⁹.

Table 2.1: Contraventions - 1901-1910	
(period covered January 1901-March 1911)	
* Contraventions to 2nd Sanitary Law	
Art.45: failure to call for assistance.....	2
Art 48: not reporting for disinfection.....	2
Art 53: failure to report births.....	19
* Contraventions to Midwifery Regulations (1899)...	
	31

These enactments were contributory towards improving the midwifery services though the improvements were only slowly felt and introduced even in the Government Hospitals. Thus in August 1903 Dr N Tabone, then Medical Officer in charge of the Charitable Institutions in Gozo, wrote *"What the midwife in charge is expected to do is to assist any woman in labour, to give her first dressing after confinement and to entrust the further treatment of the patient to Hospital nurses. Sir, I consider this system greatly objectionable both as regards danger of infection, which might be easily conveyed from the underlying Hospital*

⁶⁹ Ordinance No.VII of 1901. *Malta Government Gazette*, 30 May 1901, 4363 (suppl):1-12; Ordinance No.XVII of 1901. *Malta Government Gazette*,

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to the Lying-in Ward and the want of practical knowledge on the part of the nurses to deal with puerperal cases. To remedy the inconvenience I feel it my duty to lay great stress on the advisability of discontinuing such a practice and beg to suggest that whilst excluding the female nurses from any duties in connection with what is expected to be performed by a trained midwife - the midwife i/c be made to abide by the regulations provided by law, which establish besides other duties that any midwife in the exercise of her profession is to visit her patients twice a day for a period of eight days from the date of confinement⁷⁰.

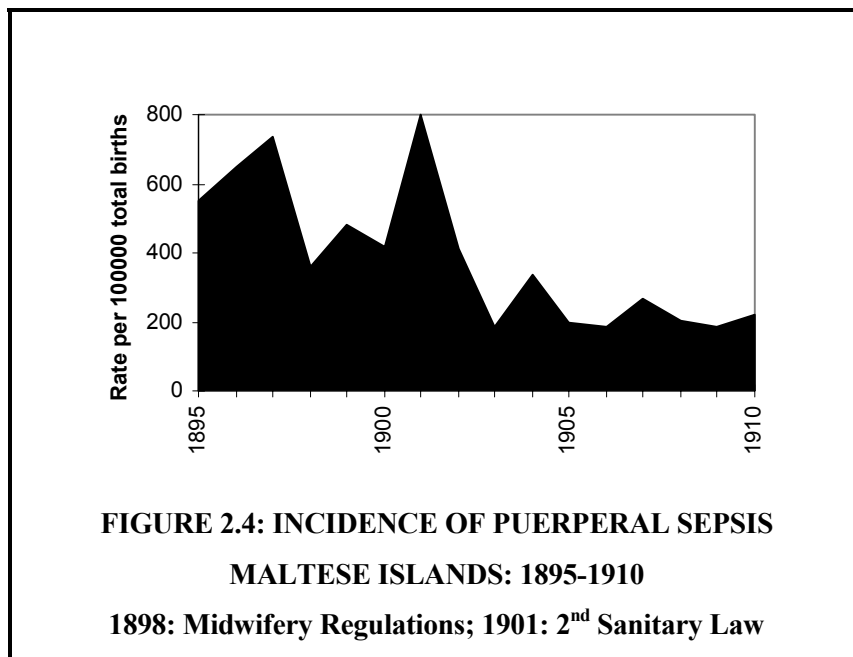
The Department of Health exercised strict vigilance in enforcing the sanitary measures stipulated by the Midwifery Regulations and the Second Sanitary Laws. In the first ten years (1901-1910) after the publication of the law, the Department prosecuted a total of 54 midwives for various contraventions (Table 2:1). Two midwives were prosecuted for not reporting to the Health Authorities for disinfection after attending cases of puerperal sepsis. During the last three years of this period (1908-1910), a total of 36 midwives attending for

2 July 1901, 4 376 (suppl):1-13

⁷⁰ *Correspondence Book for Victoria Hospital, Gozo*. Encompassing period 6 September 1893 to 20 August 1903, fol.228-229 [manuscript in author's possession]

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disinfection at the Lazaretto, while a total of 49 cases of puerperal sepsis had been reported⁷¹.



The incidence of puerperal sepsis can generally be used as an indicator of the standards of midwifery care being offered to the community.

⁷¹ *Public Health Reports for 1901-1910*. Public Health Department, Malta, 1902-1911, 11 vols.

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Unfortunately in the Maltese community which has a small number of births, interpretation of the published statistics can be difficult in the light of the natural fluctuations in virulence of the streptococcus. Figure 2.4 shows the incidence rates of puerperal sepsis during the first decades of the twentieth century. The graph suggests that the number of puerperal sepsis decreased significantly within about two years of the publication of the Second Sanitary Laws, being maintained thereafter to a level of about 2 per 1000 livebirths⁷². Practising midwives frequently occupied themselves with an alternative employment that was not always conducive to maintaining asepsis. In 1908 two midwives from the Second Sanitary District were reported to be occupying their spare time retailing groceries. The Department of Health advised that this practice should be stopped⁷³.

In 1918 the midwifery regulations published in 1899 were revised and subsequently amended in 1922. These new regulations amplified the previous ones with regard to the precautions necessary to prevent sepsis. They also listed the situations where the midwife was duty bound to call in a physician. These situations included all cases of abortion, of illness of the mother or child, or of any abnormality occurring during

⁷² *Public Health Reports ... 1901-10: op. cit.; Public Health Reports for 1896-1900.* Public Health Department, Malta, 1987-1901, 5 vols.; *Public Health Reports for 1911-1920.* Public Health Department, Malta, 1912-1921, 10 vols.

⁷³ *Public Health Reports..... 1901-10: op. cit.*

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pregnancy, labour or lying-in period. Midwives were not to follow any other occupation that was liable to be a source of infection⁷⁴. In April 1946 a committee was set up to go into the whole future of the provision of midwives for the Islands. Amendments to the Regulations for midwives were made and a new tariff of payments suggested⁷⁵. The new regulations were published on 23 October 1951. These regulations updated the previous ones without introducing any major changes in content⁷⁶.

The practice of midwifery today is regulated by the Medical and Kindred Profession Ordinance, which incorporates the various amendments to the Second Sanitary Laws of 1901. The latest important changes regarding midwifery were introduced in 1973 when the Nursing and Midwifery Board was created. This Board is a disciplinary and advisory body and is responsible for keeping a Register of Midwives licensed by the President of Malta to practice their profession⁷⁷.

⁷⁴ Regulations respecting midwives. Government notice no.390. *Malta Government Gazette*, 25 October 1918, 6103:873-876; Government Notice no.177. *Malta Government Gazette*, 4 August 1922, 6530:529

⁷⁵ *Report 1947: op. cit.*, p.81

⁷⁶ Regulations respecting midwives, 1951. Government Notice No.505. *Malta Government Gazette*, 23 October 1951, 10106:1419-1423

⁷⁷ The Medical and Kindred Professions Ordinance. *The Revised Edition of the Laws of Malta in force on 1st January 1984*. Vol.III chapter 31, art.50-64.

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The Maltese Islands very early in their ancient history were influenced by the spread of Christianity in the Roman Empire starting with the advent of the apostles Paul and Luke to the Islands circa 60 AD. The influence of the Roman Catholic Church was greatly strengthened when in 1530 Emperor Charles V of Spain ceded administration of the Maltese Islands to the Knights Hospitallers of St. John of Jerusalem who continued to rule until they were expelled from the Islands by Napoleon Bonaparte in 1798. The traditionally Catholic matrix of the Maltese population allowed the Roman Catholic Church to persist with its strong influence up to present times, an influence that permeated to all sectors of social life including midwifery. While the first legal enactment to control of midwifery dates to 1624, the Ecclesiastical authorities on the other hand influenced midwifery practices earlier.

In the late sixteenth century, the Apostolic Delegate and Visitor-General to Malta Mgr. Pietro Duzina in 1574-1575 enjoined parish priests to teach midwives the proper administration of Baptism in *casu necessitatis*⁷⁸. He also condemned the abuse of procrastination in the administration of the Sacrament. These admonitions were repeated by the Maltese Synod of 1625 convoked by Bishop Mgr. Balthassar Cagliares⁷⁹. The pastoral visit of Archbishop Cocco Palmieri to Qormi

⁷⁸ NML: ms.643, fol.589

⁷⁹ *Constitutiones in diocesana synodo melivetana*, Rome, 1625

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in 1686 records that the two midwives practising in the area - Marija Calillieri and Bartilmea Bellia - were reminded of their Christian duties by the bishop. The Synod convoked by Bishop Mgr. David Cocco Palmieri in 1703 laid down that midwives were to be examined by the parish priests at least twice a year, on the Octave of Pentecost and Christmas⁸⁰. The pastoral visit of Archbishop Paulus Alpheran de Bussan in 1744-1751 records that if midwives were not found sufficiently versed in the administration of the sacrament of baptism, the parish priest was ordained to instruct them during which time they were precluded from practising. Examinations were repeated whenever the bishop or vicar paid a pastoral visit to the parish. On such an occasion, the midwives submitted for inspection and renewal by the bishop the warrant of the *Protomedicus* and the licence of the Episcopal Curia. The midwives swore to exercise their profession with "*charity and diligence*". Fr. Archangelo Farrugia, parish priest of a rural village in Malta, testified in 1798 that Maria Calleja was an honest woman, and she answered satisfactorily questions put to her about the rites of baptism, abortions and Caesarean sections. In spite of the control exercised over midwives regarding their knowledge in the administration of baptism Archbishop Mgr Vincenzo Labini (1780-

⁸⁰ G. Cardona: Il-bini ta' San Gorg ta' Hal-Qormi bejn 1575-1684. In: J. Grima, ed.: *Il-Knisja Parrokjali ta' San Gorg Hal-Qormi*. Eagle Press, Malta, p.27-40; *Synodus diocesana Fr. David Cocco Palmieri*, Rome, 1709, p.26

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1807) on 11 October 1794 "*having been notified of the irregular manner with which midwives often christen children in difficult deliveries, not so much for their inexperience, but for the confusion in which in such circumstances they found themselves*" notified all parish priests that in order to do away with such an abuse which could be the "*cause of the eternal loss of so many poor souls*", they were to rebaptise babies *sub conditione* in the presence of two witnesses⁸¹.

The preoccupation of the bishop with the significant loss of souls is understandable in the light of the Roman Catholic beliefs relating to the salvation of souls and the high newborn mortality of the period. Neonatal deaths buried in the first month of life in a rural Maltese village during 1750-1789 amounted to approximately 163 per 1000 registered baptisms, while infant deaths amounted to 281 per 1000 baptisms. The number of stillborn children is difficult to ascertain since they were rarely marked out in the parish registers, but those who died within a few hours of their birth amounted to 2.4 percent of total burials in the village⁸². A license from the Episcopal Curia remained a requirement to practice midwifery until 1906, while in July 1983 the

⁸¹ Archiepiscopal Archives Melitensis (AAM): *ms.190 Pastoralia (1744)*, fol.5t,112,375; AAM: *VP vol.xli*, fol.100r; CEM: *AO693*, fol.115r-125v; AAM: *corr.xxiii*, fol.268r; Parish Archives (Zejtun): *Lib. Bapt.X* (unnumbered); F. Ciappara, 1988: *op. cit.*, p.107

⁸² Parish Archives (Naxxar): *Lib. Def. II (1687-1761), III (1762-1810)* (unnumbered); Cappara F, 1988: *op. cit.*, p.106-107

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Archbishop Mgr. Joseph Mercieca requested a private audience with all midwives⁸³.

The concern of the Roman Catholic ecclesiastical authorities with the baptism of newborn infant deaths reflected the controversy regarding the fate of such an infant's soul. Unbaptised infants were considered damned however light their suffering might be. As early as 1575, the ecclesiastical authorities felt the need to condemn the abuse of procrastination in the administration of the Sacrament of Baptism considered so necessary for the salvation of souls⁸⁴. The preoccupation with the administration of baptism to newborn infant deaths is further reflected in the lecture notes of Prof. SL. Pisani given to prospective midwives in 1883. In these lectures the obstetrician instructs the midwives to administer the sacrament of baptism in all cases of fetal or neonatal death, and conditionally even in all cases of miscarriage⁸⁵. Similar instructions were given in 1897 by Prof. GB Schembri in his lecture notes to Maltese student midwives, but not in the lecture notes to English students⁸⁶. Similar attitudes persisted well into the twentieth century. Information booklets about pregnancy and childbirth instructed

⁸³ AAM: *Vista pastorale (1906)*, fol.69; Midwives Association (Malta): *Archives of the Midwives Association (Malta) 1974-1993*

⁸⁴ A. Bonnici, *History of the Church in Malta. Vol.II - Period III 1530-1800*, Malta, Catholic Institute, 1968, vol.2, p.51

⁸⁵ S.L. Pisani, 1883: *op. cit.*, p.94,104-105

⁸⁶ G.B. Schembri, 1897: *op. cit.*, p.114; G.B. Schembri, 1896: *op. cit.*

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Maltese mothers to arrange their infants' baptism soon after birth and also included instructions about urgent baptism in cases of impending early neonatal death⁸⁷.

The requirement of baptism for the salvation of souls created problems in cases of mothers dying undelivered. Efforts were to be made at all costs to deliver the child to achieve its soul's salvation. On the 14 June 1788, Archbishop Labini published an edict to enforce the obligation to perform postmortem Caesarean section "*and thus endeavor, if possible, to save the temporal existence of the fetus or at least his spiritual life which is more important*". Parishioners were ordered on pain of excommunication to inform the parish priests of pregnant women who were in danger of losing their lives. Those who provided such information, or helped in any way, were granted an indulgence of forty days. Parish priests were to ensure that a Caesarean section was performed by securing the services of "*surgeon or, in his absence, a physician. a midwife, a barber or another person who wanted and knew how to carry out*" the operation. In the absence of a capable person, the parish priest was obliged to perform it himself, and had to ensure that there was at hand "*some iron or implement*" suitable for the purpose⁸⁸. The rites relating to the performance of Caesarean section were an

⁸⁷ F. Bencini, 1959: *op. cit.*

⁸⁸ AAM: *Edicta Labini ms.*, vol.12, fol.175r; *The Malta Times*, 10 October 1867, p.2; *L'Ordine*, 11 October 1867, p.3

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essential requirement for eighteenth century midwives to obtain and maintain their Episcopal Curia license⁸⁹.

The cholera epidemic of July 1867 again raised the controversy regarding postmortem sections when a police physician refused to perform postmortem section of a dead pregnant woman. As a consequence, the Archbishop Gaetano Pace Forno issued a circular to parish priests in which he reminded the clergy that it was their duty to order medical practitioners to perform Caesarean operations whenever necessary, so that no opportunity was lost of saving the offspring or at least of ensuring that it received baptism. He also reiterated that when no physician was willing to perform the operation, the clergy were bound to call in a midwife or another expert person, or to perform the operation themselves. Student midwives at the end of the nineteenth century were instructed to be prepared to perform the operation on dead pregnant women in the absence of a doctor⁹⁰, though no records exist to show that the operation was ever conducted by a non-medical person.

The Roman Catholic Church has always been concerned that the bodies of the faithful should be treated with respect and reverence, and buried

⁸⁹ CEM:AO693: *op. cit.*

⁹⁰ P. Cassar: The Church on Caesarean Section in Malta in 1867. *St. Luke's Hospital Gazette*, 1969, 4(1):48-52; S.L. Pisani, 1983: *op. cit.*, p.104-105; C. Savona-Ventura, 1993: *op. cit.*

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in a safe and becoming place. This concern is based on the doctrine of the resurrection of the body. Until the nineteenth century internment of deceased Catholics took place in churches. An Ordinance prohibiting intramural burials was only enacted in 1869. Church burial was governed by Canon Law which prescribed definite rules with regard to the internment of lapsed Catholics, excommunicated persons and suicides. The birth and death of a grossly malformed infant or monster also posed an intriguing quandary to the canonists. The officiating priest was enjoined to examine the monster to ascertain that its principal parts namely the head and chest had a human configuration. If these parts were present, the infant was baptized, but if the head was that of an animal and the limbs of a human, he was baptized *sub conditione si es homo ego te baptizo*. A case of the birth of an abnormal fetus was submitted to the Episcopal Court in 1620. It was written by the attending midwife who described the birth of a putrefied malformed fetus to justify its burial in unconsecrated ground without a religious ritual⁹¹. As late as the mid-nineteenth century canonists were still debating the religious issues raised by the birth of monsters. In their conclusions they were swayed by the conviction that monsters were generated as the result of copulation between a woman and a male beast or between a woman and the devil⁹².

⁹¹ CEM: AO508: *op. cit.*; P. Cassar, 1983: *op. cit.*

⁹² C. Savona-Ventura: The Influence of the Roman Catholic Church on Midwifery Practice in Malta. *Medical History*, 1995, 39:18-34

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Another strongly contested aspect of social life in Malta is marriage. The Catholic Church has always considered that marriage was not a personal affair that could be conducted privately by the partners, but pertained exclusively to it. Roman Catholic marriage remained the only legal marriage in the Islands until the introduction of civil marriage in 1975. With an absolute control over matrimonial matters, marriage annulments fell under the jurisdiction of the Ecclesiastical Court. Marriage without children was inconceivable, children being the prime reason for marriage. While suits for annulment were rare, one cause accepted by the Catholic Church authorities was infertility and impotence. A number of cases of annulment were brought to the Court with expert witnesses being selected from the medical profession. In 1542, a case for annulment was considered by the Ecclesiastical Tribunal, the plaintiff basing her petition on the fact that her spouse suffered from a defect in the configuration of his "*virile member*". The Ecclesiastical Court appointed two medical doctors who came to the conclusion that the abnormality (hypospadias) was not inductive of generating and begetting children, and the court ruled that the marriage was null and void. A similar case was brought before the Ecclesiastical Court in 1756. The husband was examined by four doctors who decided that his genitalia were more than sufficient to enable coitus. Eighteenth century midwives were also on occasion requested by the Ecclesiastical Court to

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confirm a woman's virginity after cases of alleged violation. In 1764 a midwife was appointed by the Court to examine a 17-year-old girl to confirm violation. A midwife was also duty bound to make the mother of an illegitimate child name the father, in order that he might not evade his duty to maintain his offspring, nor escape the punishment that could be inflicted for his offense in fathering it. In 1783, a midwife swore before the Bishop's Court that a newborn illegitimate child resembled the named father. He was fined by the Court, and made to pay for the expense of the delivery and to contribute to the child's upkeep⁹³.

Marriage was for procreation not recreation, and any form of artificial birth control was condemned by the Church. Pregnancy termination remains illegal by Maltese civil state law, thus conforming to the Roman Catholic Church's teachings which are based on the sanctity of human life. Illicit termination of pregnancy has been long practiced on the Maltese Islands, though repeatedly condemned by Maltese Ecclesiastical authorities. The Synod of 1703 warned the faithful that abortion was a sin reserved for the bishop, while in 1786 Archbishop Labini reminded that abortion was murder and incurred the penalty of excommunication. Those guilty of abortion included not only those who maliciously obtained it, but even cruel husbands who ill-treated their wives, and

⁹³ CEM: *AO672*, fol.153r-188v; F. Ciappara, 1988: *op. cit.*, p.31; P. Cassar: A medico-legal report of the sixteenth century from Malta. *Medical History*, 1974, 18:354-359; C. Savona-Ventura, 1995: *op. cit.*

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careless mothers who performed heavy work during their pregnancy, or went on long walks or dances, or did not take food, or were indiscreet in their fasts. Parish priests were to urge their parishioners to give alms to poor pregnant women to enable them to buy the necessary food or medicine. Anyone knowing somebody who was to have an abortion was encouraged to report the matter immediately, while those women who were afraid for their good name were to go secretly to their parish priest who would give them every help and consolation. A number of cases of abortion appeared before the Inquisition tribunal and the Bishop Court in the seventeenth and eighteenth century, none of these apparently involved midwives or medical men⁹⁴.

The early attempts by the civil and ecclesiastical authorities in Malta to control the practice of midwifery contrast with the situation with other countries in Europe. In the United Kingdom, in spite of pressure from a number of individuals for the training and municipal control of midwives, it was only after 1870 that a voluntary examination of proficiency in midwifery was set up. Earlier regulation introduced in the sixteenth century emphasized the moral character and religious affiliation of the midwife rather than her professional competence. The situation was different on the Continent. By the middle of the fifteenth

⁹⁴ *Synodus*: *op. cit.*; AAM: *Edica*.....: *op. cit.*; C. Savona-Ventura, 1995: *op. cit*, p.31-33

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century many cities in Germany, the Netherlands and France had introduced a system of municipal regulation whereby midwives were formally examined regarding their technical competence by physicians and/or experienced midwives. In spite of the municipal control, a license from the Bishop to practice midwifery remained a requirement for practice on the Catholic Continent until the eighteenth century, the criteria for this license being that the midwife was a good Catholic and capable of administering the sacrament of baptism when required⁹⁵.

(iv) Midwifery Teaching

The standards of midwifery are closely related on the standards of the education and training the prospective midwives obtained before being licensed to practice in the community. Prior to the nineteenth century there apparently as no formal teaching of midwifery in the Maltese Islands, and midwifery training must have been based on the guild method of apprenticeship. This method of instruction resulted in a variable range of practising midwives, some well versed in their art while some possibly were dangerous and incompetent. Some midwives were appointed by the lay and ecclesiastical authorities to act as court witnesses. Thus in 1764 the midwife Teresa Muscat was asked to examine a 17-year old woman who alleged that she had been violated. In her report the midwife described herself as "*....mamma, ben prattica*

⁹⁵ C. Savona-Ventura, 1995: *op. cit.*, p.20-23

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*in tal mestiere*⁹⁶. On the other hand Dr Giuseppe Antonio Creni in his request to initiate for the first time in Malta the formal teaching of the theory and practice of midwifery in 1772 commented that because of the unskillfulness of the practising midwives many mothers and infants frequently suffered injury and/or death. Dr Creni suggested a course of lectures delivered monthly or more frequently if necessary to prospective and practising midwives, besides practical demonstrations on an anatomical model which he had brought from Bologna where he had undergone his medical training. The request was submitted to Grandmaster Fra Don Emmanuel Pinto de Fonceca and passed on for consideration to the Senior Physicians including Dr G Imbert. The suggestion was turned down on the grounds that since the midwives did not possess any knowledge of Italian, or any fundamental concepts of human anatomy, they were unlikely to profit from any formal instruction while the lectures could only be '*scandalous and full of inconveniences*'⁹⁷. In March 1802 Dr Francesco Butigieg was appointed Teacher of Obstetrics at the Women's Hospital at Valletta. Besides imparting the obstetric art to medical students, he also held separate classes for midwives who were taught '*orally and given explanations, where needed, in the national language as best he could*'. The lectures were given in Italian, but explanations were made

⁹⁶ CEM: AO672: *op. cit.*; F. Ciappara, 1988: *op. cit.*, p.31;

⁹⁷ P. Cassar, 1965: *op. cit.*, p.412-416

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in Maltese to circumvent the problem of the midwives' bad command of Italian⁹⁸.

The school of midwifery functioned very erratically and was abolished in later years with a consequent deterioration in the practice of midwifery. In the 1842 census, 49 women registered midwifery as their profession for a population delivering 4383 births that year⁹⁹. In March 1841 the newspaper "*Il Globo*" commented that midwives were causing maternal and perinatal deaths as a result of their ignorance. It urged government to provide a course of theoretical and practical instruction for midwives who were able to read and write under the direction of the Professor of Obstetrics¹⁰⁰. Similar recommendations were made by Dr T Chetcuti and Dr N Zammit in their report on the proposed University reforms in 1842¹⁰¹. No action appears to have been taken, and on the 4 August 1853 the Commissioners of Charity deplored the fact that "*competent midwives were rapidly diminishing and that ignorant women were assuming their duties to the serious detriment of the poor population*", ascribing this state of affairs to the

⁹⁸ P. Cassar: Teaching of midwifery in Malta at the beginning of the nineteenth century. *St. Luke's Hospital Gazette*, 1973, 8(2):p.91-111; *Piano.....*, 1802: *op. cit.*, p.14

⁹⁹ *Malta Government Gazette*, 31 December 1842, 1551:p.57-59

¹⁰⁰ *Il Globo*, 4 March 1841, p.19

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abolition of the School of Midwifery and recommended the re-establishment of the school and the enactment of legal measures to allow only qualified and certified midwives to practice. It was suggested that the pupils should pay five shillings monthly and perform servant duties while residing in the hospital during their period of instruction¹⁰².

The school was eventually re-opened in 1854 with Dr G Clinquant being appointed to teach the practical part of midwifery to a number of women. However clinical material was scarce. New efforts were undertaken to reorganise the School of Midwifery, but it was realised that the practical instruction must face obstacles arising from prejudices and scruples, and the teacher was warned by the Inspector of Charitable Institutions to be careful so as "*not to arouse feelings of opposition and prejudices unless absolutely necessary*". These difficulties persisted and were augmented by the absence of any anatomical models¹⁰³. The School of Midwifery failed to provide a sufficient number of trained midwives in the community, and in 1868

¹⁰¹ T. Chetcuti, N. Zammit: *Rapporto ragionato della commissione incaricata dalla societa Medica D'Incoraggiamento di esaminare il progetto di studi reletivamente alla medicina*. Malta, 1842, p.34

¹⁰² M&H.Arc: *Commissioners of Charity Letter Book, 15 May 1851 to 4 November 1857*, fol.39,103,137; P. Cassar, 1965: *op. cit.*, p.413

¹⁰³ M&H.Arc: *Commissioners of Charity Inspectors Letter Book, 6 May 1851 to 3 October 1855*, fol.29; P. Cassar, 1965: *op. cit.*, p.413

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midwives were described as being "*mere attendants capable only of uttering ejaculations and prayers, quite of their own making, while stretching forth their arms to receive a foetus naturally expelled from the womb, an assistance which any individual knows how to afford*"¹⁰⁴.

Fresh efforts were made to organise a School of Practical Midwifery in 1868. It was contemplated that a more respectable type of student will be selected, that there will be the teaching of both the theory and practice of midwifery following which the candidates were to sit for a qualifying examination set by a properly constituted authority and the taking of an oath before being allowed to enter the profession. In order to give the scheme the widest publicity, the Comptroller of Charitable Institutions availed himself of the assistance of the parish priests and the police to inform the public of the prospective course. The course started on 24 November 1869. The lectures, delivered by Prof. SL Pisani Senior Surgeon and Accoucher, were given twice weekly in English and Italian. They covered the principles of midwifery, the nursing and treatment of puerperal disease, and the care of the infant. The students had many opportunities to assist at normal deliveries but they were unable to attend any pathological labours for lack of cases. The course lasted sixteen months but it was proposed to extend it to

¹⁰⁴ M&H.Arc: *Letters to Government, 3 May 1867 to March 1869*, fol.560; P. Cassar, 1965: *op. cit.*, p.413

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two years and to commence a course every second October. A large number of women presented themselves for admission, but many were rejected because of *"their utter deficiency in the accomplishments indispensably required to comprehend the lectures"*. Eight students, including three Englishwomen married to army sergeants, joined the course but two women were later persuaded to abandon the course because of their low educational standards. The results of this experiment were considered by the hospital authorities as satisfactory and beyond expectations¹⁰⁵.

The second course was announced on 21 July 1871, but the illiteracy of the applicants remained a serious stumbling block. The pupils came from the lowest strata of the population and lacked the most elementary of schooling. The teacher had to limit himself to a few short talks in Maltese, and after assisting passively at a few deliveries, the pupils underwent an oral examination. No practical tests were given. The low educational and social status of the applicants remained a problem¹⁰⁶. However the profession did not apparently attract women from a better class. Prof. SL Pisani on 18 February 1897 wrote *"I have tried on one occasion to produce midwives of a better class - I did not*

¹⁰⁵ M&H.Arc: *Letter to Government, 3 May 1867 to 5 March 1869*, fols.253,495,557,558; M&H.Arc: *Letters to Government, 5 March 1869 to 31 January 1872*, fols.339,445; P. Cassar, 1965: *op. cit.*, .413-414

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succeed - only one had the courage to become a midwife but after a while she gave it up and did not continue to practice. I remember having engaged her to attend on an Austrian lady, the wife of an officer in the Black Watch. At the last moment, when her services were required, she deserted me and instead of herself she had the impudence to send me an ordinary nurse"¹⁰⁷.

The medical journal "*Il Barth*" in 1871 condemned this state of affairs and suggested that midwifery pupils should possess a primary education and a working knowledge of Italian to enable them to read and follow an obstetric manual, and that suitable candidates aged 18-20 years should be sought from among orphanages inmates and girls attending elementary schools. The journal further accused midwives of being grossly incompetent, unable to recognise the foetal presenting part, and who either failed to call the medical practitioner in time or attempted to hasten delivery causing extensive perineal lacerations. Others even dared to pose as doctors prescribing medicine for dysmenorrhoea and other complaints, besides pretending to correct uterine malpositions¹⁰⁸. The subsequent course was advertised on the

¹⁰⁶ P. Cassar, 1965: *op. cit.*, p.412-413; Government Notice. *Malta Government Gazette*, 21 July 1871, 2488:p.182

¹⁰⁷ P. Cassar, 1973: *op. cit.*

¹⁰⁸ *Sulle Levatrice. Il Barth*, 5 September 1871, Anno 1(2):p.41-42; 2 December 1871, Anno 1(4):p.83-84; 22 March 1873, Anno 11(13):p.260-261

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12th April 1873. The lectures were given in the Maltese language. The course was gratuitous and six of the students, in rotation, were to be lodged and fed at public expense¹⁰⁹. The midwifery course of 1876 was suspended because of lack of accommodation for the student midwives in the Central Hospital, since their previous accommodation was given over to the clinical medical students¹¹⁰. The course was resumed the following year, ending in October 1878 when eight students underwent their final examinations. Subsequent courses were extended to two-year periods¹¹¹.

In October 1873 Prof. Pisani requested the government to publish his lecture notes for distribution to midwifery students at the end of their studies, these being published in 1883¹¹². In 1885 an artificial body was purchased by the government at the cost of £stg 10 to ensure adequate facilities for practical training¹¹³. The call for applications for the 1886 course stipulated that only women aged 20-30 years would be accepted as students. The applicants had to be able to read fluently the

¹⁰⁹ Government Notice. *Malta Government Gazette*, 12 April 1873, 2552:p.73

¹¹⁰ M&H.Arc: *Letters to Government, 31 January 1872 to 11 June 1878*, fol.587; P. Cassar, 1965: *op. cit.*, p.415

¹¹¹ M&H.Arc: *Letters to Government, 1 July 1878 to 22 March 1883*, fols.31,283; P. Cassar, 1965: *op. cit.*, p.415

¹¹² M&H.Arc: *Letters to Government, 31 January 1872 to 11 June 1878*, fols.249; P. Cassar, 1965: *op. cit.*, p.415; S.L. Pisani, 1883: *op. cit.*, +105p.

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Maltese language since lectures were to be given in this language. In 1895 students were also required to be able to write and know basic arithmetic¹¹⁴. Prof. Guiseppe Batta Schembri, following the endeavours of Lady Sym Fremantle, in 1896 initiated the Military Midwives Class held for English speaking women to provide English-speaking midwives for the women of the military personnel stationed in Malta. Prof. Schembri also published his lectures in English and Maltese in 1886-87 for use by his pupils¹¹⁵. In 1898, the medical journal "*La Salute Publica*" still considered midwives a menace to public health¹¹⁶.

In the beginning of the twentieth century Prof. S Grech pressed for reforms in the School of Midwifery, but his efforts were in vain since the Comptroller of Charitable Institutions saw no need for changing the applicants requirements which included the ability to read and write Maltese, a fair knowledge of basic arithmetic and a good moral

¹¹³ First supplementary Estimates of the Expenditure.....for the year 1885. *Malta Government Gazette*, 10 June 1885, 3083:p.224

¹¹⁴ Government Notice No. 154. *Malta Government Gazette*, 10 December 1885, 3110:p.414; M&H.Arc: *Letters to Government, 23 March 1883 to 20 April 1888*, fol.400; M&H.Arc: *Letters to Government, 10 April 1895 to 31 March 1903*, fol.54; P. Cassar, 1965: *op. cit.*, p.416

¹¹⁵ G.B. Schembri, 1896: *op. cit.*, +111p.; G.B. Schembri, 1897: *op. cit.*, +121p.

¹¹⁶ Pagina del male! Le Levatrice. *La Salute Publica*, 25 July 1898, Anno 11(31):P.1-2

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character¹¹⁷. In 1907 it was made obligatory for the students to attend the course for Hospital Attendants at the Central Hospital and to pass the prescribed examinations in general nursing before they were able to sit for the theoretical examination in midwifery¹¹⁸. The school was finally placed on a sound footing in 1915 when the course of midwifery was instituted under the auspices of the University leading to a Diploma of Midwife. The Professor of Midwifery was in charge of the studies that lasted two years, and eventually increased to three years. Candidates were admitted to the course after attending a preliminary period of training in anatomy, physiology and theoretical nursing at the Central Hospital. The course was sanctioned by the Special Council of the Faculty of Medicine and the annual examinations were conducted by an Examination Board composed of the Professor of Midwifery and two other medical men¹¹⁹. Because no Gozitan candidate attended the Courses of Midwifery held in Malta and because Maltese midwives did not find it worthwhile to go to Gozo, the number of midwives on that island had dwindled down to almost vanishing point to the extent that the Department of Health found it difficult to obtain the services of a midwife at Victoria

¹¹⁷ M&H.Arc: *Letters to Government, 1 April 1903 to 10 April 1909*, fol.213; P. Cassar, 1965: *op. cit.*, p.416

¹¹⁸ Government Notice. *Malta Government Gazette*, 15 February 1907, p.181; Government Notice No.130. *Malta Government Gazette*, 23 July 1909, 5180:p.663

¹¹⁹ *Malta Government Gazette suppl.*, 26 June 1915, p.54

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Hospital. This was only made possible by offering a special allowance above the established salary given to a midwife from Malta. To increase the number of Gozitan midwives a course for midwives was started in October 1937 at Victoria Hospital in Gozo with the final examination being held in July 1940¹²⁰.

The School of Midwifery reverted to the Medical and Health Department in 1946, the first group under this scheme qualifying in 1949. The midwives had a better comprehension of the part they played in giving advice to pregnant women, and were more capable of spotting the initial signs of cardiovascular, renal and infectious disease¹²¹. By 1958 midwives were fully qualified to render the best service. Midwifery students were accepted after a minimum of three years of secondary education having reached a minimum age of 21 years. No preliminary training in nursing was officially stipulated although some previous practical experience was usually encouraged. The students received a training allowance throughout their three years of training in the hospital and the community. For qualification, the students underwent written, oral and practical examinations. The number of applicants remained limited and only five applicants turned

¹²⁰ *Annual report.....1937: op. cit., Annual report.....1938: op. cit.*

¹²¹ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency Services*

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up for the course starting in 1958 with only one finishing successfully in 1961. This resulted in a decline in facilities for midwifery training locally and registered nurses wishing to pursue midwifery had to do so in the United Kingdom¹²². The School was re-opened at the Nursing School in the grounds of St. Luke's Hospital on 31 October 1970 under the direction of an English Midwifery Tutor, appointed through the Overseas Development Administration, with lectures given by Maltese senior medical staff. The Tutor was eventually replaced by a Maltese Midwife (Ms. Mary Vella-Bondin) who qualified in midwifery training in the United Kingdom. The course, aimed at State Registered Nurses, lasted one year with the students obtaining theoretical and practical training¹²³.

These courses were held on a regular basis helping to increase the number of midwives on the Islands (Figure 2.5), so that by 1980 the number of registered midwives had increased from the 134 figure of 1970 to 191. In spite of the increase in the number of midwives, personnel problems continued to be felt in the state hospitals, so that in

for the year 1946. Government Printing Office: Malta, 1947; *Report.....1949: op. cit.*

¹²² *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1958*. Government Printing Office: Malta, 1961, p.7

¹²³ Study Group F.I.G.O./I.C.M., 1966: *op. cit.*, p.297; P. Cassar, 1978: *op. cit.*, p.9-10

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1980 only 17 midwives were employed in the Government Hospitals. By 1990, the number of registered midwives rose to 251 with 41 being employed in state hospitals¹²⁴.

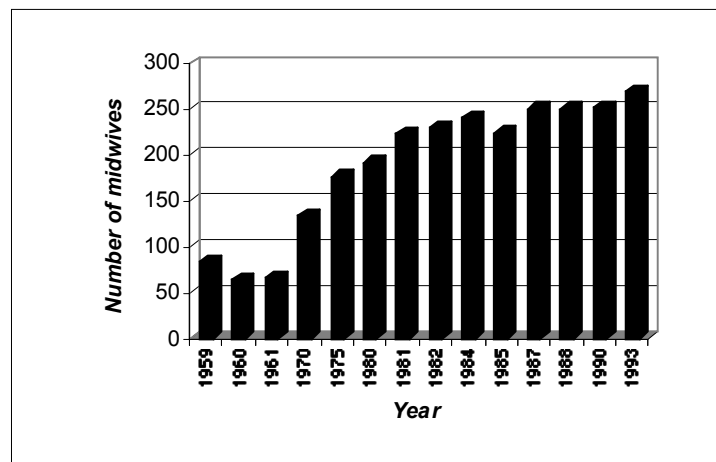


FIGURE 2.5: MIDWIVES REGISTERED IN MALTA

Nursing studies, including midwifery were in 1987 taken under the management of the University of Malta by the establishment at the Institute of Health Care which was initially housed in the Pharmacy Building at the University, but subsequently returned to the Nursing School in 1992. The main aim of the Institute is to develop and regulate Health Care Sciences courses (such as Nursing, Medical

¹²⁴ *Parliamentary Question 15213-15215*: Ministry of Social Policy, Malta, 17 January 1994

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Technology, Speech Therapy) leading to a certificate, diploma or degree. The first health care course conducted under the auspices of the Institute was the BSc Nursing Studies with the first group completing their studies in June 1992. This degree course was later followed by courses leading to a Diploma in General Nursing, a Diploma in Midwifery, a Certificate in Nursing, and a Diploma in Psychiatric Nursing. In 1991 the B.Sc. Communication Therapy Course was introduced. The first course leading to the Diploma of Midwifery under the auspices of the Institute of Health Care commenced in October 1990. Applications were open to well educated women aged 17 to 45 years with no nursing background, and with a knowledge of English, Mathematics and a Science subject. The course lasted three and a half years in all. The first eighteen months Foundation Course was shared with the nursing students, while midwifery training was imparted in the final two years. The first group of midwives under this scheme qualified in 1994¹²⁵.

In the last decades, the midwives themselves felt the need to improve their standards and continue their medical education in line with United Kingdom regulations, where “*All midwives are required to attend refresher courses at regular intervals, as long as they continue*

¹²⁵ *University of Malta - Annual Report 1991*. Malta University:Malta, 1992, p.59; *The Caring professions*. Health Care Institute, Malta, n.d. [1990], p.6-7

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in practice". In 1966 no refresher courses for midwives were available and there were no postgraduate training for administration, teaching, or supervisory posts¹²⁶. In 1974 the Midwives Association of Malta, affiliated to the International Confederation of Midwives, was founded by Ms Mary Vella-Bondin, with the official opening being held on the 13th September 1975. The primary aim of the Association was "*to promote and advance the art and science of Midwifery, to raise the efficiency of midwives, and to improve their status*". The Association, together with the Midwifery School, set out to accomplish these aims through the organisation of postgraduate lectures and demonstrations in the form of Refresher Courses, Study Days, Seminars, Meetings, Discussions, and Specialised Courses. The Association further promoted continuing medical education through the publication of regular information items in the Association's Newsletters, first appearing in the Newsletter No.2 circulated in 1974. These Newsletters took a more formal format after 1988, while in 1993 the Midwives Journal was published. The Midwives through the Midwifery School and the Midwives Association promoted public health education through regular parentcraft classes. The Midwifery School in 1979 started organising Parentcraft Classes for pregnant women. The authorities were willing to employ midwives on a part-time basis for this purpose, however the response to the call for

¹²⁶ F.I.G.O./I.C.M., 1966: *op. cit.*, p.297

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applications was poor, and the classes were run by the Midwifery Tutor and Students. These initially were often ad hoc arrangements, but were well received by the expectant mothers so that they became a regular feature after 1981. The number of attendances to these classes rose from 290 expectant mothers in 1981 to 1341 in 1986. The Midwives Association initiated Parentcraft Classes after inaugurating its own premises in June 1989¹²⁷. Other Parentcraft classes are organised on a "Private practice" basis by a number of individual midwives and the maternity departments of the private hospitals, while a parentcraft book in the vernacular has been published by a midwife. Members of the Midwifery Association also contributed a series of articles on maternity care in the local newspapers¹²⁸. The Midwifery School further helped towards the improvement of midwifery care in the Islands through the conduction of a number of related studies performed by the midwifery students as part of their training requirements, and the study on long-term attitudes towards breastfeeding conducted in 1984¹²⁹.

¹²⁷ M. Vella-Bondin: Foreword. *The Maltese Midwife in history*. Midwives Association: Malta, 1978, p.3; Midwives Assoc.: *Archives.....: op. cit.*; Formosa MA (editor): *Midwives Journal*, January 1993, 1:+32p.

¹²⁸ Midwives Assoc.: *Archives.....: op. cit.*; Borg Xuereb R, 1992: *op. cit.*

¹²⁹ M. Vella-Bondin: *Survey on the pattern of infant feeding on babies discharged from K.G. Hospital between the 1st June - 11th August 1984*. Midwifery Training School, Malta, 1984, +1p.

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Though the Midwives Association of Malta was directly contributory towards promoting the professional status of the midwife, its role was not that of a trade union for midwives. Through its intervention, the Association in 1978 was successful in obtaining an official specific appointment for all those midwives performing duties at St Luke's Hospital and in domiciliary service backdated to June 1977¹³⁰. In formal trade unionism, the midwives were among the first female members to join the General Workers Union in the mid-1940's, with the first Shop Steward being Ms Vitorin Galea¹³¹. Their trade union interests were subsequently dealt with by the various trade unions catering for the needs of the nursing profession (General Workers Union and Union Haddiema Maghqudin). In October 1990 the midwives instituted The Midwives Union to cater for their needs and aspirations. After changes in its statute aimed at enabling it to cater for nurses working in government and private hospitals, this union expanded in September 1996 to become The Malta Union of Midwives and Nurses. In August 1993, an agreement between the Malta Government and The Midwives's Union identified midwifery as a separate profession from nursing, confirming the status of 1978¹³². This agreement reflects the level of specialisation Maltese trained

¹³⁰ Midwives Assoc.: *Archives.....: op. cit.*

¹³¹ J. Fino: *B'Rihet l-Ghaqda*. Union Press, Malta, 1983, p.51

¹³² Agreement with midwives. *The Sunday Times [of Malta]*, 22 August 1993, p.4

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midwives have obtained over the years. The midwife's profession must now re-identify its role in the care of the normal pregnant woman during all the phases of pregnancy, particularly in the hospital setting where the majority of deliveries in the Maltese Islands occur.

The situation with regards to the training of medical students in obstetrics was not very much better than that for midwifery training. The first steps to establish a chair for the study of anatomy and surgery were taken in 1676 by Grandmaster Nicholas Cottoner, but the University with a Faculty of Medicine was only established in 1771. Prior to this time prospective physicians had to pursue their studies privately with a senior physician at the Holy Infirmary in Valletta for two years and then join a medical school or university in Italy or France¹³³. A number of 18th century practitioners in Malta are known to have followed this course of studies which included also post-qualification training in midwifery practice. A Maltese doctor Giuseppe DeMarco proceeded to Montpellier in 1742 to finish his medical studies and is known to have assisted at a demonstration of the use of the forceps given by Andre Levret to the Paris Academy¹³⁴. At the same period Dr. Giuseppe Antonio Creni, a surgeon in the service of the Order who proposed the

¹³³ P. Cassar, 1965: *op. cit.*, p.437-464

¹³⁴ J. Galea; Dr. Giuseppe Demarco (1712-1789). A biographical and bibliographical Study based on hitherto unpublished material. *St Luke's Hospital Gazette*, 1972, 7(1):p.3-13

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institution of the formal teaching of obstetrics to midwives, is known to have studied the art in Bologna¹³⁵. In 1778 Dr. Saverio Micallef was sent to Paris for three and a half years to study surgery including midwifery. On his return to Malta he was appointed *Professore delle operazioni chirurgiche e dell'arte ostetricia*. This appointment suggests that midwifery was at this time at least being taught to Maltese medical students. Dr. Micallef in 1786 is known to have taught obstetrics on a model similar to that of the School of Cosmos in Paris¹³⁶. The University was abolished by Napoleon Bonaparte by the decree of 18 June 1798, but the medical studies were retained in the form of a course of anatomy, medicine and midwifery at the Central Hospital at Valletta¹³⁷. In 1802 Dr. Francesco Butigiec was appointed Teacher of Obstetrics to deliver lectures to medical students and midwives. The manuscript notes of Dr. Butigiec lectures belonging to Dr. Salvatore Bardon who qualified in 1818 have survived¹³⁸. These notes suggest that Dr. Butigiec was familiar with the midwifery practices current on the continent in the eighteenth century referring to eight authorities of the 17th century and twelve authorities of the 18th century. He also refers to

¹³⁵ P. Cassar, 1965: *op. cit.*, p.412

¹³⁶ P. Cassar: *French influence on medical developments in Malta*, Ministry of Education, Malta, 1987, p.12; NML: *Archives 1195*, fols.66,136,138

¹³⁷ W. Hardman, 1909: *op. cit.*, p.94,98

¹³⁸ P. Cassar, 1973: *op.cit.*, Bardon S: *Trattato dell'arte ostetrica dettato e spiegato del Perille Signor Dr. Francesco Butigiec nello studio publico del*

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authorities from previous centuries, quoting four from classical Greek medicine, two from the early Middle Ages and a further two from the 16th century. A number of midwifery textbooks from the 18th and 19th century in use by Maltese practitioners are held in the National Library of Malta.

The Chair of Midwifery in the University of Malta was formally instituted in 1833, the first occupant being Dr. Agostino Bonnici (1833-35). At this time the teaching of obstetrics appears to have been theoretical. Prof. Saverio Arpa (1836-58) in 1839 requested the establishment of a midwifery ward for the purpose of imparting practical instruction to medical students. This request was turned down on the grounds that no accommodation was available in the hospital and that because of *'the repugnance of women to be assisted by men in their delivery is so strong and general amongst all classes that we (the Committee of Charitable Institutions) firmly believe not one of the women who are admitted in hospital for this purpose would however submit to be placed in the Clinical Ward.'* The Committee further considered that there was little to learn from normal deliveries and that the presence of the Students *'about the patient's bed could consequently be both useless and indecorous'*. Prof. Arpa was however given the

Grand Ospedale Nazionale di'Malta. Principiato il 18 Ottobre 1804.
[manuscript in the holdings of Dr. F. Vella Bardon]

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opportunity to conduct practical demonstrations to his students in cases of difficult delivery¹³⁹. Prof. Arpa was also instrumental in initiating the study of puerperal disease and disease of children at the university. He wrote a textbook on obstetrics which remained unpublished. This most likely was the text of his lectures to medical students. The University in 1838 detailed the rules as to the way Professors were to deliver their lectures. For the text of his lectures every Professor had to make use '*of a work of his own in a state ready for the press*' after its approval by the Special Council. Prof. Arpa also described a case of extra-uterine pregnancy¹⁴⁰. Practical instruction in midwifery remained limited to attendance only to cases of abnormal labour, though the Department of Anatomy in 1860 acquired papier mache models of different stages of the development of the human ovum, of the generative organs and of the abnormal forms of pelvis. Most of these models perished with the destruction of the Anatomical Theater in 1942, though some are still extant in the Anatomy Museum at the University of Malta¹⁴¹.

¹³⁹ P. Cassar, 1965: *op. cit.*, p.450-451; M&H.Arc: *Minute Book, 13 September 1837 to 27 June 1843*, fols.107,114

¹⁴⁰ P. Cassar, 1965: *op. cit.*, p.451-452; *L'Arte*, 7 July 1864; S. Arpa.: *Di un caso particolare di gravidanza extra-uterina*. G. Camilleri & Co.: Malta, 1843, +41p.

¹⁴¹ J.L. Pace: *The history of the School of Anatomy in Malta*. Royal University of Malta: Malta, 1974, p.16

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Prof. Arpa was subsequently succeeded in 1858 by Prof. Salvatore Luigi Pisani (1858-1880). Prof. Pisani graduated in medicine from the University of Malta in 1850, and subsequently qualified from the University of Edinburgh in 1853. Pisani concentrated his efforts towards the improvement in the instruction given to midwives with the publication of a book on midwifery in 1883 and another on the disease of childhood in 1885¹⁴². During his tenure, in 1868 the medical students petitioned the Comptroller of Charitable Institutions to allow them to assist or at least be present during normal deliveries during their nine-month clinical attachment. The Comptroller acceded to this request but cautioned that since many of the women were unmarried the presence of a sage-femme was essential. In 1876 the medical students were given accommodation in the Central Hospital, this accommodation having been previously been used by midwifery students. This move resulted in the suspension of the course of studies for midwives¹⁴³. Prof. Pisani relinquished the post in 1880 and in 1885 was appointed Chief Government Medical Officer. He was instrumental in ensuring the

¹⁴² S.L. Pisani, 1883: *op. cit.*; S.L. Pisani, 1885: *op. cit.*, Portrait Gallery: Prof. Salvatore Luigi Pisani. *Heritage*, n.d., no.46; P. Cassar: Professor Luigi Pisani M.D. (1828-1908). *Malta Today*, 1982, 17(3):P.14-16; C. Savona-Ventura: Pisani, Salvatore Luigi. In. M.J. Schiavone, Scerri LJ (eds.): *Maltese Biographies of the twentieth century*. PIN: Malta, 1997, p.455

¹⁴³ P. Cassar, 1965: *op. cit.*, p.415,457; M&H.Arc: *Register of References to Comptroller of Charitable Institutions*, 5:fol.74

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legislation against the use of the birth-chair in 1883¹⁴⁴. The post of Professor of Obstetrics was filled by Prof. GB Schembri (1880-1904). Prof. Schembri similarly contributed towards the advancement in the training of midwives, with the publication in 1896-97 of two midwifery texts, in English and in Maltese. He was also instrumental in the formulation of the Regulations pertaining to Midwives legislated by Government Notice in 1899. He was also the first surgeon to perform laparotomy and Caesarean section in 1890-91¹⁴⁵. He was succeeded by Prof. S Grech (1904-1909). The call for applications for the appointment of Professor of Midwifery in the University in 1904 defined the duties attached to the post. The Professor was to lecture on Midwifery and Gynaecology at the University during the third and fourth years of the Academic course, and on Clinical Midwifery and Gynaecology at the Central Hospital during the fourth year. The post was a joint one with the post of Accoucher and Teacher of Practical Midwifery at the Central Hospital. The overall remuneration amounted to £stg 160 per annum¹⁴⁶. The joint post of University Professor with the Clinical Appointment at the Central Hospital was initially proposed in 1830, but was not

¹⁴⁴ P. Cassar: Vestiges of the parturition chair in Malta. *St. Luke's Hospital Gazette*, 1973, 8(1):p.58-60

¹⁴⁵ G.B. Schembri, 1896: *op. cit.*; G.B. Schembri, 1897: *op. cit.*; P. Cassar, 1965: *op. cit.*, p.537-538

¹⁴⁶ Government Notice No.28. *Malta Government Gazette*, 28 January 1904, 4678:p.95; Government Notice No.54. *Malta Government Gazette*, 9 March

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apparently taken up until after 1867¹⁴⁷. In 1838, at the end of each year of training the medical student underwent an oral and a written examination by thesis. This arrangement continued at least until 1881. In 1882 the system of examinations was changed. Each of the examiners prepared six questions that were placed in an urn from which six questions were drawn, two by each examiner. The selected questions were then dictated to the Students who had to answer four within two hours in the presence of one of the examiners and of the Principal and Secretary of the University¹⁴⁸.

Prof. Grech was succeeded by Prof. G Debono (1909-30). Born in Gozo in 1869, Prof. Debono qualified as a doctor from the Malta University in 1892. He served as a resident Medical officer at the Malta Civil Hospital from 1893 to 1896, and subsequently was appointed Professor of Midwifery and Gynaecology in 1909. He was succeeded by Prof. Guze Ellul in 1930 (1930-51, acting 1952-54). Prof. Ellul, born in Cospicua in 1888, graduated B.Sc. (1909) and MD (1913) at the Malta University. In 1917 he was appointed to the post of Clinical Assistant to Prof. G. Debono. In 1922 he was appointed to the newly established post of Junior Accoucher at the Central Hospital. He was the first Maltese

1909, 5149:p.255; M.J. Schiavone: In. M.J. Schiavone, J.L. Scerri (eds), 1997: *op. cit.*, p.329

¹⁴⁷ P. Cassar, 1965: *op. cit.*, p.457

¹⁴⁸ J.L. Pace, 1974: *op. cit.*, p.17

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graduate to be elected a Foundation Fellow of the Royal College of Obstetricians and Gynaecologists in 1929. His term of office as professor of Midwifery and Gynaecology was marked by the hostilities of the Second World War which required a major re-organization of the health and midwifery services of the Islands. He was awarded the Order of the British Empire in 1951 on his retirement. Prof. Ellul was also active in the social field. In 1945 he was elected President of the Executive committee of the Labour Party and represented the party in the General Assembly and as Member of the Legislative Assembly. He was succeeded by Prof. V Stilon De Piro (1951-52) whose untimely death a year later left a void in the midwifery service. This void was filled provisionally by Prof. Ellul. Born in Valletta in 1898, Prof. Stilon graduated as Doctor of Medicine in 1922, after which he proceeded to Rome to further his training. In Rome he took part in scientific researches on the "*Premature detachment of placenta in the rabbit*" in conjunction with Prof. Bompiani. The results of the work were presented in the XXVI congress of the Society of Obstetrics and Gynaecology held in Rome. On his return to Malta in 1923 he was first appointed assistant to Prof. Debono, then junior Accoucher and gynaecologist in 1930. Prof. Stilon was appointed Professor and Senior Consultant in 1951¹⁴⁹.

¹⁴⁹ Biographical Notes - Malta. Debono, Professor G., M.D. *Malta and Gibraltar Illustrated* (ed. MacMillan A). Collingridge: London, 1915, p.390; C. Savona-Ventura: Debono, Giuseppe; Ellul, Joseph. In. M.J. Schiavone,

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The next appointee to the post of Professor of Midwifery and Gynaecology was Prof. Oscar Zammit. Born in 1912, Prof. Zammit was in 1936 sent to Liverpool for technical training in preparation for managing the Department of Fisheries, obtaining a Master of Science in Biology. In June 1940 he was seconded to the Medical and Health Department, and subsequently obtained his Medical Doctorate from the University of Malta. He was appointed a demonstrator in Obstetrics and Gynaecology with the Royal University of Malta. He was appointed Professor of Obstetrics and Gynaecology in January 1954 (1954-1963), and was subsequently elected a Fellow of the Royal College of Obstetricians and Gynaecologists (UK)¹⁵⁰. The death of Prof. Zammit in 1963 allowed the appointment of the Junior Accoucher at St. Luke's Hospital - Dr. Joseph Rosario Borg (1963-1964) to be appointed Senior Accoucher in January 1964. Born in 1904, Dr. Borg had obtained his Medical Doctorate from the Royal University of Malta in 1931 and proceeded abroad to further his studies in obstetrics and gynaecology. He obtained a number of specialist diplomas from Dublin and was

J.L. Scerri (eds), 1997: *op. cit.*, p.329; G. Camilleri: Portraits at the Medical School. Professor Guze Ellul (1888-1895). *Maltese Medical Journal*, 1994, 6(2):p.50; Prof. Joseph Ellul. *Chest-piece*, 1952, 1(7):p.15-16; *Times of Malta*, 31 January 1945; Biographical Sketch. Prof. Victor Stilon. *Chest-piece*, 1953, 1(8):p.16

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elected a member of the Royal College of Obstetricians and Gynaecologists by examination in 1937, eventually becoming a Fellow in 1964. In 1954 he was appointed Junior Accoucher at St. Luke's Hospital. His insistence led to the post of Junior Accoucher being given more importance elevating this to Consultant status. On his retirement Dr. Borg was replaced by Prof. AP. Camilleri in 1965 (1965-1977). Dr. Borg was awarded an Honorary Fellowship of the Malta College of Obstetricians and Gynaecologists in 1992¹⁵¹.

Born in 1927, Prof. Arthur P. Camilleri (1965-1977) obtained his Medical Doctorate from the University of Malta in 1949. He subsequently continued his postgraduate training in Liverpool and Sussex, and was successful in qualifying as DCH (1954), D.Obst. RCOG (1954), and MRCOG (1961). He was made a fellow of the Royal College of Obstetricians and Gynaecologists in 1969. He was appointed Senior Consultant and Professor of Obstetrics and Gynaecology at St. Luke's Hospital and the University of Malta in 1965. He also served as

¹⁵⁰ J.R. Borg: Professor Oscar Zammit. *Times of Malta*, 9 May 1963, p.8; C. Savona-Ventura: In. M.J. Schiavone, J.L. Scerri (eds), 1997: *op. cit.*, p.585; S. Farrugia Randon: *Fishing Industry in Malta*. PIN: Malta, 1995, p.516

¹⁵¹ *Malta Who's Who 1965. A Biographical Dictionary*. Progress Press: Malta, 1965, p.40-41; C. Savona-Ventura: *Proposal for the Award of Honorary Fellowship of the M.C.O.G. to Dr. Joseph Rosario Borg* M.C.O.G. Archives: Malta (letter dated 2 November 1991); C. Savona-Ventura: Borg, Joseph Rosario. In. M.J. Schiavone, J.L. Scerri (eds), 1997: *op. cit.*, p.131

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Dean to the Faculty of Medicine and Surgery of the University. He subsequently left his posts in Malta after the trade-unionist conflict between the doctors and the government in 1977. His post was subsequently filled by Prof. Edwin S Grech who during his tenure (1978-87) reorganized the department on a scientific and modern basis¹⁵².

The specialty status of Obstetrics and Gynaecology in Malta during the twentieth century followed the same trends as that in the United Kingdom. The Royal College of Obstetricians and Gynaecologists was set up in 1929. The Senior Specialist in Malta at the time (Prof. G. Ellul) was awarded an honorary Fellowship of the Royal College for the first time in 1929. Dr. J.R. Borg was the first specialist to become a Member of the Royal College by examination in 1937. There have since been a gradual increase in Maltese Member and Fellows of the Royal College of Obstetricians and Gynaecologists (R.C.O.G). The Malta Representative Committee of the R.C.O.G was formed in 1993. After the Second World War and the setting up of the R.C.O.G. in the United Kingdom, membership to the Royal College became the commonest

¹⁵² *Malta Who's Who 1965. A Biographical Dictionary*. Progress Press: Malta, 1965, p. 60-61; C. Savona-Ventura: Camilleri Arthur P; Grech, Edwin S. In. M.J. Schiavone, J.L. Scerri (eds), 1997: *op. cit.*, p.131,324. There have since been two other occupants to the post of Director of Obstetrics and Gynaecology at Karin Grech Hospital: Dr. E.A. Agius (acting director 1987-1991) and Prof. M.P. Brincat (director 1991 et sec).

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post-graduate specialist diploma in obstetrics and gynaecology on the Islands. In 1994 there were nine registered Fellows and 14 registered Members of the R.C.O.G. working in the Maltese Islands¹⁵³. After the Government-Medical Association trade-unionist strife of 1977 and the associated suspension of MD recognition by the General Medical Council (UK), contacts were made with the Belgian authorities to enable post-graduate training in University Hospitals in Belgium. Two medical doctors - Charles Savona-Ventura and Raymond Galea - participated in this scheme, the first completing his training at the Catholic University of Leuven (Belgium) in 1985. These individuals were also successful in obtaining membership to the Royal College of Obstetricians and Gynaecologists, the former being also successful in obtaining a DScMed from the research Institute for Mother and Child in Warsaw, Poland and a Membership from the Royal College of physicians of Ireland. In Malta, the specialist obstetricians-gynaecologists attempted to unite together to enable the organization of academic activities. The first society of specialists was the Malta Obstetrical and Gynaecological Society whose main aim was to promote and maintain high standards of obstetrics and gynaecology on the Islands. This became defunct as a result of the 1977 industrial strife. Continuing Medical Education was thus taken up by the Department of Obstetrics and Gynaecology of the

¹⁵³ R.C.O.G. *Register of Fellows and Members*. 1946-47, 1966-97. Byrne R.: Archives Assistant, R.C.O.G. in e-mail 15 Feb 1999 (registers between 1948-65 unavailable)

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University of Malta, generally through the organization of scientific meetings held in conjunction with foreign associations or universities. These included the Ulster Obstetrical and Gynaecological Society (1979), the World Health Organization (1981), the Diabetes in Pregnancy Study Group (1985), the Free University of Brussels (1985), and the European Study Group on Social Aspects of Human Reproduction (1987)¹⁵⁴. A new association - Malta College of Obstetricians and Gynaecologists - was founded in 1991. The primary objective of the M.C.O.G. is to encourage, foster and maintain the highest standards in the practice of the specialty. It has to date published two documents which deal with ethical issues of the specialty, and organized three scientific meetings¹⁵⁵.

¹⁵⁴ R.C.O.G.: *Register of Fellows and Members - 1994*. R.C.O.G.: London, 1994, p.110,191; *Statute - Malta Obstetrical and Gynaecological Society*. Malta, n.d., +7p.; W.H.O.: *Seminaire sue le role des services de cytologie et d'endocrinologie dans les soins de sante primaires et la planification familiale*. Malta 10-12 December 1981. W.H.O. ICPATH 015/1-15: Geneva, 1981; E.S. Grech, C. Savona-Ventura (eds): *Abstracts: XVI Annual Meeting of the Diabetic Pregnancy Study Group, Malta 20-22 September 1985*. University Press: Malta, 1985, +77p.; E.S. Grech, C. Savona-Ventura (eds.): *Proceedings: European Study Group on Social Aspects of Human Reproduction, Vth Annual Meeting, Malta September 1987*. Government Press: Malta, n.d. [1988], +159p.

¹⁵⁵ *Charter - Malta College of Obstetricians and Gynaecologists (M.C.O.G.)*, n.d. [1991], +18p.; M.C.O.G.: *The mode of action of the intrauterine contraceptive device*. M.C.O.G.: Malta, 1993; M.C.O.G.: *Recommendations for ethical Guidelines in Human Artificial Procreation*. M.C.O.G.: Malta, 1994; M.C.O.G.: *Congress Handbook and Abstracts: 1st Christmas Scientific Meeting: Obstetrics and Gynaecology December 1991*.

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(v) Inter-Professional Rivalries

The office of the midwife is an ancient one, and while several ancient and medieval male physicians devoted part of their written works to the subject of midwifery, it remains clear that the practical work remained the domain of women. During the thirteenth century in Europe surgical practice became increasingly the domain of the barber-surgeon. The development of the barber-surgeon guilds in Europe brought about the regulation of surgical practice, and defined that the right to use surgical instruments was reserved to the members of the guild. The barber-surgeon became thus the appropriate person to send for where natural delivery was not possible. In Malta, barber-surgeons were known to have been practising during the medieval period though their contribution to midwifery practice has not been documented¹⁵⁶. A guild confraternity incorporating physicians and barber-surgeons known as *Universitas barbitonsorum* dedicated to saints Cosmos and Damnian

M.C.O.G.: Malta, 1991, +37p.; *M.C.O.G.: Abstracts: Joint Obstetric and Gynaecological Meeting 6-7 May 1994. M.C.O.G. and B.M.O.G.S.* M.C.O.G.: Malta, 1994, +35p.; MPA/MCFD/MCOG: *Joint Seminar in Paediatrics and Obstetrics & Gynaecology 15-16 November 1996.* M.C.O.G.: Malta, 1996, +48p.

¹⁵⁶ C. Savona-Ventura: *Outlines of Maltese Medical History*. Midsea Books, Malta, 1997, p.60; G. Wettinger: *The Jews of Malta in the late Middle Ages*. Midsea Books, Malta, 1985, p.18

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was organised on the 10th October 1635¹⁵⁷. It may be relevant that the first move by the state authorities to control the practice of midwifery was also made during the early decades of the seventeenth century with a definite decree being issued by the *Protomedicus* on the 2 August 1624¹⁵⁸. The civil control of midwifery practice and the setting up of the guild may have set the stage for the onset of professional rivalry. However no evidence that this rivalry existed in Malta during the 17th and early 18th century. The proposal and implementation of the President of the *Casetta delle Donne* in the early 18th century to train maid-nurses of that institution in the duties of barber-surgeons may have contributed towards reducing any professional conflicts, at least in the state hospital. By 1728 a number of female barber-surgeons were practising this profession, but there is no evidence to suggest that these carried out midwifery work which remained the domain of the midwife employed in the hospital¹⁵⁹.

In Europe professional rivalry between midwives and medical practitioners was initiated by the developments in medical practice which commenced in the sixteenth century by the spirit of enquiry brought on by the Renaissance. These developments were to have far-

¹⁵⁷ C. Savona-Ventura, 1997: *op. cit.*, p.62. On the 3rd June 1797, the barbers set up their own confraternity dedicated to saint Ludovicus

¹⁵⁸ NML: *ms.2*, fol.601

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reaching consequences for the future of the midwife in Europe. The move towards the scientific study of various branches of medicine was taken up by several male medical practitioners and extended to the processes of childbirth. These studies made possible a greater understanding of the mechanism of labour and the consequent advances in operative obstetrics. The prestige of these new advances belonged to men, and it was this prestige which was further to encourage their entry into the field of operative midwifery, a process which started in France, but was gradually to become general throughout Europe. By the beginning of the seventeenth century a new order of male medical practitioners - the Man-Midwife - had become recognised. These men-midwives were called in to difficult cases or engaged to be present in readiness for any emergency. However, many women had strong objections to male attendance even in these circumstances. Several stratagems were therefore employed by these practitioners in deference to the woman's modesty, including working in the dark and with their hands under a sheet. While the education of the male medical practitioner progressed, no provisions were made for midwives to improve their professional competence¹⁶⁰. In Malta, definite evidence of increasing interest in midwifery practice by the medical profession is

¹⁵⁹ P. Cassar: Female employees in the Medical Services of the Order of St. John in Malta. *Melita Historica*, 1978, 793);p.227

¹⁶⁰ J. Donnison: *Midwives and Medical Men. A History of Inter-Professional Rivalries and Women's Rights*. Heinemann, London, 1977

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found in the mid-18th century. Several Maltese doctors, including Giuseppe DeMarco (1742), Giuseppe Antonio Creni (c.1770), and Saverio Micallef (1778), furthered their training in midwifery overseas¹⁶¹. The late 18th century also finds the first record of an extraction of an impacted fetus from the uterus by embryotomy carried out by a surgeon at the *Casetta*¹⁶².

No educational opportunities were made available for Maltese midwives, their training being based on an apprentice system. An attempt was made by Dr. Creni to introduce the formal education of midwives in Malta in the late 18th century. His enterprising proposal was turned down by the authorities because of the midwives' lack of educational potential¹⁶³. The reasons behind Dr. Creni's proposal may have been purely a genuine concern towards low midwifery standards. He may however have been emulating the unsuccessful attempt made by Peter Chamberlain of London in the early seventeenth century. Chamberlain

¹⁶¹ J. Galea: Dr. Guiseppe Demarco (1712-1789). A biographical and bibliographical study based on hitherto unpublished material. *St Luke's Hospital Gazette*, 1972, 7(1):p.3-13; P. Cassar, 1965: *op. cit.*, p.413; P. Cassar: *French influence on medical developments in Malta*. Ministry of Education, Malta, 1987, p.12; *National Malta Library - Archives 1195*, fols.66,136,138

¹⁶² National Malta Library [NML]: *Ms.1146*, vol 7; fol 236; P. Cassar, 1965: *op. cit.*, p.143

¹⁶³ P. Cassar, 1965, *op. cit.*, p.412; G. Bonello: The Creni saga - a tale of greed and lust. *The Sunday Times [of Malta]* 13 September 1998, p.34-35; 20 September 1998, p.46-47; 27 September p.41-42

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had proposed the setting up of a midwives' corporation with him as Governor, and with the lucrative monopoly of licensing and instructing the members and attending their calls in difficult cases¹⁶⁴. Formal education and training of midwives was initiated in the first decade of the nineteenth century, but this initiative was not kept up. The lack of adequate educational opportunities helped maintain the midwifery profession subservient to the medical profession throughout the nineteenth and early decades of the twentieth century. This was further promulgated by the revision of the legal enactments which in 1894 ensured that the midwives were required to call in medical assistance in cases of difficult or protracted labour; and that they could not make use of any instruments, ergot of rye and other strong medications, or perform venesection¹⁶⁵. Professional rivalry came to the fore whenever midwives encroached on the medical profession's domain. The midwife's position in the community was an important one. In an environment of female moral repugnance towards being examined by men and low social-economic status, many women suffering from gynaecological conditions consulted their midwife. In the 1871 the professional medical journal *Il Barth* accused midwives of posing as doctors managing gynaecological conditions by prescribing medicines

¹⁶⁴ J. Donnison, 1977: *op. cit.*, p.13-14

¹⁶⁵ *Police laws.....*, 1894: *op. cit.*, p.40-42

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for menstrual pains and other complaints, and also pretending to correct malpositions of the uterus¹⁶⁶.

The subservience on the midwifery profession to the medical profession persisted well into the twentieth century. The post-Second World War socio-cultural revolution started a process whereby the female population became generally empowered with regards to their status in society and in their place of employment. It may be significant that the midwives in the public service were among the first female members to join the General Workers Union in the mid-1940s¹⁶⁷. The 1940s also saw further empowerment in the field through the admittance for the first time of female students to the medical course of studies at the University of Malta. The midwifery profession further advanced its empowerment process with the foundation of the Midwives Association of Malta on the 13th September 1975. Affiliated to the International Confederation of Midwives, the primary aim of the Association was *"to promote and advance the art and science of*

¹⁶⁶ Sulle Levatrice. *Il Barth. Gazzetta di Medicina e Scienze Naturali*. 5 September 1871, I(2):p.41

¹⁶⁷ J. Fino: *B'Rihet l-Ghaqda*. Union Press, Malta, 1983, p.51. The 1940s also saw further empowerment in the field through the admittance for the first time of female students to the medical course of studies at the University of Malta [eg. Dr. Mary Griffiths nee Grech Marguerat, qualified M.D. (Malta) 1943]. The first Maltese female obstetric specialist [Dr. Lucia Micallef Hawkes] who subsequently practised in Malta qualified M.R.C.O.G. (U.K.) in 1984.

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Midwifery, to raise the efficiency of midwives, and to improve their status. In 1978, the government authorities identified midwifery as a separate profession from nursing, a status confirmed in August 1993¹⁶⁸. The empowerment process of the Maltese midwife was further promoted by the setting up of the Institute of Health Care under the auspices of the University of Malta, a move that facilitated the upgrading of the midwifery course and the possibility of qualified midwives seeking further postgraduate qualifications. In the strife of re-defining the modern midwife's role in the care of the normal pregnant woman, it is expected that conflicts and suspicions will arise within the relevant professions.

Maternity care services have throughout the last two centuries been given particular attention by the state and medical authorities. With the aim of introducing safer midwifery practice in the community, the authorities during the nineteenth century introduced the formal training of midwives, while the Department of Health ensured strict vigilance in enforcing the sanitary measures stipulated by the Midwifery Regulations and the Sanitary Laws formulated at the beginning of the twentieth century. These measures slowly changed the practice of midwifery from the primitive unschooled practice to a safer one - the Art of Midwifery -

¹⁶⁸ Agreement with midwives. *The Sunday Times [of Malta]*, 22 August 1993, p.4

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based on theoretical and practical instruction. The social circumstances occasioned by the Second World War resulted in a change in attitudes towards maternity care with a greater emphasis towards hospital and doctor supervised confinements, an attitude that has persisted into present times. These changes in social attitudes have complimented the medical advances in the field changing the Art of Midwifery into the Science of Midwifery.

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Chapter 3
Obstetric Problems

Before the beginning of the twentieth century disturbances during pregnancy, when they occurred, were in the main attributed to mechanical pressure exerted by the enlarged uterus, irritability of the nervous system induced thereby, and emotional disorders to which the pregnant woman was supposed to be particularly prone. During the nineteenth century many authors presented the clinical features of the different complications very clearly, but were vague and speculative with regards to aetiology and pathophysiology. Towards the end of the nineteenth century, the disease of pregnant women were considered as either exacerbations of the casual deviations from a perfectly healthy condition which thus transgress the limits of health; or incidental disease not directly due to pregnancy but whose progress is specifically modified by it; or affections of the sexual organs; or finally anomalies in the development of the fetus. The abnormalities specific to pregnancy were considered separately¹. The disease patterns during the antenatal

¹ O. Spiegelberg: *A Textbook of Midwifery*, New Sydenham Soc, London, vol.1, p.336

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period (Table 3.1) recorded in patients admitted to Victoria Hospital in Gozo during the late nineteenth century have been described. The puerperal disorders reported similarly ranged from minor symptomatology to severe disorders resulting in maternal deaths. The disorders reported included seven cases of gastric disorders, one case of bronchitis, one case of enteritis, one case of postpartum haemorrhage, four cases of sepsis and a case of puerperal collapse following a prolonged labour².

A number of remedies were employed for the different complications of pregnancy. One remedy, that of phlebotomy, appears to have been almost an obsession. Close to two-thirds of the complications of pregnancy were managed by bleeding, often free and repeated. By the mid-nineteenth century, bleeding had passed its peak as the panacea for all ills, although it was fairly freely employed well into the second half of the century. In Malta the use of leeches similarly formed the bedrock of practice, these being applied to allay pain in swollen parts, to diminish congestion in inflamed regions and to provoke menstruation by applying them to the lower abdomen³. In 1804, Dr. Butigiec condemned the routine bloodletting, to which pregnant women resorted to during the

² C. Savona-Ventura: *A maternity unit in Gozo a hundred years ago*, Essay awarded the MAM Essay Prize, 1991; C. Savona-Ventura: *A maternity unit in Gozo a hundred years ago*. *Maltese Medical Journal*, 1995, 7(1):.55-61

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seventh month of pregnancy, a procedure performed as a precaution against the development of eclampsia⁴. In 1842, leeches were described as applied in two cases of puerperal sepsis, while in 1843 Prof. Arpa described the simultaneous application of twenty-four leeches to the same part to relieve pain and swelling in a case of extra-uterine pregnancy⁵. The role of leeches applied to the patient's temples in cases of puerperal convulsions was condemned in 1871⁶. An alternative form of treatment to leeches employed was cupping. Prof. Pisani in his lecture notes to midwives published in 1883 described the use of leeches besides the preparation of a poultice and fomentations. The latter two were also common forms of non-specific therapy used in the late nineteenth and early twentieth centuries⁷.

³ P. Cassar: *Medical History of Malta*, Wellcome Hist Med Libr, London, 1965, p.528-529

⁴ F. Butigiec: *Trattato dell'Arte Ostetrica dettato e spiegato dal Perille Signo Dr. Francesco Butigiec nello Studio Publico del Grand'Ospedale de' Maltesi. Principiato li 18 ottobre 1804*. Manuscript lecture notes, +247f; P. Cassar: *Teaching of Midwifery in Malta at the beginning of the 19th century*, *St Luke's Hospital Gazette*, 1973, 8(2):p.91-111

⁵ Considerazioni teorico-pratiche sulle febbri puerperali. *Il Filocamo*, 15 February 1842, 2(2):17-23; S. Arpa: *Di un caso particolare di gravidanza extra-uterina*, G Camilleri & Co, Malta, 1843, p.7

⁶ G. Gulia: *Ostetricia: Sulle convulsioni puerperali*. *Il-Barth*, 16 October 1871, Anno I(3):p.45-48

⁷ S.L. Pisani: *Ktieb il Qabla*, P Debono & Co, Malta, 1883, p.86-88; G. Galea: *Xoghol u snajja ta' l-imghoddi*, Dept of Information, Malta, 1969, p.148-149

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The effective antenatal diagnosis of the various pregnancy or fetal complications was indirectly dependent on the introduction of routine antenatal care and the development of investigative techniques. The applications of x-rays on a large scale to the problems of obstetrical diagnosis was delayed for many years, and it was only in the 1930's that obstetric radiology ceased to be an interesting novelty and became routine. As radiography became more exact and the results more accurate, useful antenatal diagnostic assistance came to be obtained by this means in a number of conditions. These included the early diagnosis of pregnancy, the determination of the presentation and position of the fetus, the diagnosis of multiple pregnancy, the investigation of fetal bony abnormalities, signs of intra-uterine fetal death, the diagnosis of extra-uterine pregnancy, considerations of fetal maturity, and the assessment of the maternal bony pelvis. Subsequent improvements in apparatus and technique enabled the assessment of the soft tissues and development of placentography⁸. The first x-rays in Malta were apparently taken soon after their description by Rontgen in January 1896. Prof. T Zammit apparently experimented with the technique as early as August 1896 when x-ray photographs of inanimate objects were taken. X-ray photographs of the hand were taken in September 1896. An X-ray set for medical purposes was ordered by the office of Charitable

⁸ J.M.M. Kerr, R.W. Johnstone, M.H. Phillips: *Historical Review of British Obstetrics and Gynaecology*, E&S Livingstone Ltd, Edinburgh, 1954, p.239-256

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Institutions from England in May 1899, but it appears that the first X-ray equipment was installed at the Central Hospital about 1908. This was described as “*very primitive in type and not very efficient*”. Another apparatus was obtained in 1919, this being described as “*very excellent and efficient one*”. However, even as late as 1947, the surgeon Prof. P.P. Debono commented that “*It is only in comparatively recent years that improvements have been made in the apparatus supplied and in the status and remuneration of the staff*”⁹. Obstetric radiology appears to have been a relatively late introduction in Malta, and came into being with the introduction of routine antenatal care. It has been used to assess the fetus, confirm multiple pregnancy, placentography and assess the maternal pelvis. By 1953 it was suggested that “*preferably every married woman should have a thorough examination, including the bony structure of the pelvis.*” It is however not clear as to whether the examination of the bony pelvis was to be based on clinical or radiological examination. The main criteria used was generally clinical using either external or internal pelvimetry. Prof. O. Zammit in 1953 advised against the use of external pelvimetry and advocated internal examination to assess the true pelvis. He gave importance to the Essen Moller’s manoeuvre that assessed for the presence of disproportion

⁹ P. Cassar: The first 75 years of radiology in Malta, *St Luke's Hospital Gazette*, 1972, 7:108; P. Cassar: Some early x-rays photographs taken in Malta - a postscript, *Mediscope*, 1983, 4:p.14-16; P. Cassar: Professor Peter

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between the fetal head and the pelvic rim. If the Essen Moller's manoeuvre proved difficult or inconclusive, the women were then referred for x-ray pelvimetry¹⁰.

Ultrasonography has now superseded radiology in all situations except in the assessment of the maternal bony pelvis. Sonography was developed by Prof. MP Langevin during the First World War to combat the growing U-boat menace. It was introduced in obstetrics in the late 1950's and has now become an indispensable tool in obstetric practice. The first ultrasonography unit was introduced in Malta in 1972. This was a Disonograph NE4102 with three alternative display modes including an A-scan display, a cross-sectional display, and a time/position display. Electronic fetal monitoring was initially introduced in the late 1970s and the experiences of a medical student during his visit at the Royal Free Hospital (UK) were described in the local medical student journal in 1972. The main use of fetal echocardiography at this time was its ability to date the pregnancy to within one week, though it was found also useful to detect fetal distress

Paul Debono (19th June 1890 - 3rd June 1958) *The Man and his Times. St. Luke's Hospital Gazette*, 1975, 10(2):p.131-133

¹⁰ J. Galea: *Report on the Health Conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1953*. Government Printing Office, Malta, 1954; O. Zammit: Common pitfalls in obstetric practice. *Chest-piece*, 1953, 1(8):p.5; I. Donald: *Practical obstetric problems*, Lloyd-Luke Ltd, London, 1979, p.1008-1041

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and facilitate timing of delivery. Electronic fetal monitoring in Malta was only routinely accepted as a tool during labour in 1981 after a number of Corometrics Medical System Packard fetal monitors were purchased by the authorities for use at Karin Grech Hospital. Prior to this time there was only a single monitor available. The new monitors had facilities for the continuous assessment of the fetal heart rate and uterine activity, both through external and internal systems.

Ultrasonography and fetal monitoring (biophysical monitoring) slowly replaced the biochemical methods of assessment of the fetus in common use during the 1970s and 1980s. The transition between biochemical and biophysical assessments can be seen by comparing the number of ultrasound examinations and oestriol estimations over the period (Figure 3.1)¹¹. The advent of a scientific foundation of obstetrics and the adequate management of the various obstetric problems could only follow after the introduction and assessment of vital event registration.

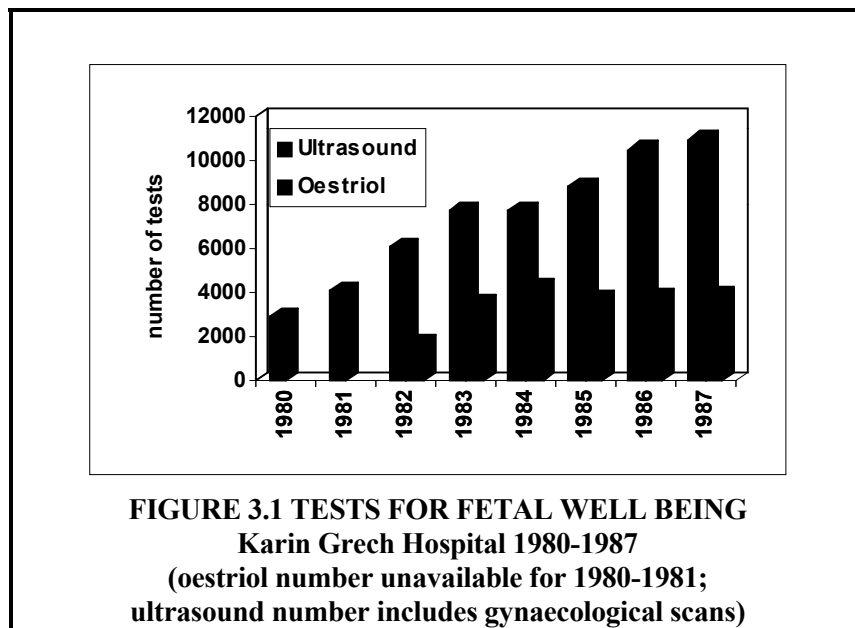
¹¹ *Malta Medical School Inventory*: Item No.M1946; R. Carachi: Monitoring the foetal heart - The foetal E.C.G. *Chest-piece*, December 1972, p.17-19; *112 Fetal Monitor Operator's Manual*. Corometrics Medical Systems, USA,

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TABLE 3.1: Medical Disorders Victoria Hospital 1876-1893	
ANTENATAL DISORDERS	No of cases
a] Deviations from health conditions	
1. Oedema, dropsy, anasarca	3
2. Varicose veins - haemorrhoids	1
3. gastric disturbances	5
4. acute gastro-lumbar pains ?cause	1
5. lumbago	3
6. debility ?cause	1
b] Incidental disease	
1. Respiratory disorders	
a] asthma	1
b] bronchitis	2
c] Phthisis pulmonaris - TB	2
d] Pneumonia	1
2. Heart disease	1
3. Renal disease - nephritis	1
4. Other	
a] ophthalmia, blindness, conjunctivitis	4
b] nevifibroma	1
c] weak mind	1
d] semiparalysis right hand	2
e] abscesses	1
c] Pregnancy disorders	
1. metrorrhagia - antepartum haemorrhage	2
2. Eclampsia	1

1978; E.S. Grech, C. Savona-Ventura: *The Obstetric and Gynaecological Service in the Maltese Islands - 1987*. Malta, 1988, p.80-81

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(i) Obstetric Vital Statistics

The concept of assessing population size and growth of a community has a long history with known population counts being recorded in Babylon, China and Egypt between 2800 and 2200 BC. These counts were aimed at assessing the strength and wealth of the country. It has been recorded that the first count of population in Malta was carried out by the Emir Yusuf-al-Futah in the year 991 for the purpose of securing certain privileges for the inhabitants, while a subsequent medieval count

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made by Abbot Gilibertus in 1241 was concerned with taxation. Counts made during the period of the Knights of St. John were conducted in connection with the importation of grain from Sicily free of export duties. The ecclesiastical authorities were also required to conduct population counts in order to know how many souls were under the Bishop's care, and the '*status animarum*' contains information about population size. The Synod of Augsburg held in 1548 prescribes four books to be kept by the parish priest "*Primum in quo baptizatorum; secundum confitentium et communicantium; tertium, in quo eorum, qui matrimonium in facie ecclesiae contraxerunt; et quartum in quo mortuorum...nomina et cognomina...descibantur.*" The formal universal prescription was extended to five parochial registers in 1614 by Paul V in the *Rituale Romanum*. The five registers included (1) Liber Baptizatorum, (2) Liber Confirmatorum, (3) Liber Matrimoniorum, (4) Liber Defunctorum, and (5) Liber de Statu Animarum. The same norm has remained unchanged, though in the 1983 revision of the *Codex Juris Canonici*, the Liber Status Animarum no longer features among the *Libri Paroeciales*. In Malta, long before the official declarations, parish priests had been keeping their own records. In fact, the Mdina Baptismal registers start from 1539, while the missing first 38 folios suggest that the original records started in 1528. The preserved records from Naxxar date to 1546, those of Birgu from 1552 and of Birmiftuh from 1556¹².

¹² *Census '85: Vol 1 - A demographical profile of Malta and Gozo*, Central

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The concept of collecting medical statistics was introduced by John Graunt of London in 1662 with his work "*National and political observations upon the bills of mortality*", wherein he showed among other things that the maternal mortality was one in two hundred and that one-third of infants perished before the age of three years. It was only in the nineteenth century that regular statistics were collected with the scope of identifying medical and social problems to enable measures to be taken to control population health. In 1837 the Registrar General's Office for England and Wales started to keep accurate records of all births, stillbirth and maternal deaths. In that same year, the Presidents of the Royal Colleges of Physicians and Surgeons asked the medical profession to submit certificates of deaths stating if possible the cause¹³. Civil registration of births was introduced in Malta by Napoleon Bonaparte by decree of 24 August 1798 which made it obligatory for the doctor or midwife assisting at a birth to present certificates of the birth within 24 hours to the municipality under penalty of suspension from practice and infliction of a fine and imprisonment. Prior to this decree, the registration of births and death events fell under the responsibility of the Ecclesiastical authorities. Regular civil registration of vital event data in Malta can be traced to 1863. Ordinance II of 1870 required that

Office of Statistics, Malta, 1986, p.3-9; S. Fiorini: Status Animarum I: A Unique source for the 17th and 8th Century Maltese Demography. *Melita historica*, 1983, viii(4):p.325-343

¹³ J.M.M. Kerr, L.W. Kerr, M.H. Phillips, 1954: *op. cit.*, p.257-260

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prior to burial in cemeteries, a certificate showing the cause of death was required. Mortality statistics by cause of death started to be published regularly by the Chief Police Physician in May 1872. These fortnightly reports gave the number of deaths by cause, sex and district. The cause of death were classified into: Zygomatic, Constitutional, Local, Developmental, and Violent Death. After April 1873, further information pertaining to age at death was also included. The first annual report on a regular basis was published in 1896 and continued throughout the twentieth century. The first regular census in a series of decennial censuses was carried out on 21 March 1842¹⁴.

Population Growth: On 21 March 1842 the first regular Census in a series of decennial censuses - interrupted during the Second World War and in 1977 - was carried out. The first population census showed that 100157 persons resided in Malta and 14342 in Gozo, the figure including servicemen and their families residing in Malta. The birth rate that year stood at 38.3 per 1000 population, while the crude death rate

¹⁴ F. Ciappara: *Marriage in Malta in the late eighteenth century*, Assoc News Ltd, Malta, 1988, p.33; P. Cassar: *Landmarks in the development of forensic medicine in the Maltese Islands*, M.U.P., Malta, 1974, p.41; Ordinance II of 1870. *Malta Government Gazette*, 26 July 1870, 2448:p.221; *Malta Government Gazette*, 31 May 1872, 2522:p.181; *Malta Government Gazette*, 31 December 1842, 1551:p.57-59; S.L. Pisani: Annual Report on the health and sanitary condition of these Islands in 1896. *Malta Government Gazette suppl.*, 27 November 1897, 3959:p.i-xv

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was at 34.6 per 1000 population¹⁵. Population growth during the next decades exhibited an accelerated trend of about 0.87% per annum during 1842-51 and 0.56% per annum during 1871-81. Following 1881 the population growth rate increased averaging between 1.02% per annum in 1881-91 and 1.45% per annum in 1901-11. The marked increase in the population estimated at 184742 in 1901 and 211564 in 1911 was a result of a drop in death rate while the birth rate maintained a steady trend. The birth rate in 1901 was estimated at 38.5 per 1000 population, while the death rate was 28.8 per 1000 population. In the period 1911-21 population growth was virtually arrested so that in 1921 the population was estimated at 212258. This arrest did not appear to be a result of an arrest in the natural growth of the population but rather by emigration¹⁶. The 1921 Census report discloses that during the period 1911-1921 no less than 11860 males emigrated abroad to the United States, Canada and Australia. The growth rate in the subsequent twenty years maintained a steady increase of about 1.3% per annum, so that the Census report of 1931 placed the population at 241621¹⁷. The birth rate until the Second World War showed little change from the figures

¹⁵ *MGG*, 1842: *op. cit.*

¹⁶ *Census 1957: The Maltese Islands. Report on population and housing*, Central Office of Statistics, Malta, 1959, p.18-21; *Malta Government Gazette*, 20 July 1891, 3472:p436-437; *Malta Government Gazette*, 10 June 1901, 4367:p.550-552

¹⁷ *Census '85.....: op. cit.*, p.10; *Malta Government Gazette suppl*, 2 June 1911, 5391:+3p.

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reported during the previous centuries, though there did seem to be a slight decrease during the First World War from the 36.12 per 1000 population in 1910 to the 29.81 figure in 1917. The post-First World War period saw a slight increase to reach a mean of 33.53 in the inter-war period. The post-Second World War period showed a marked rise in birth rates, a rise that was maintained until 1950. The world economic depression of the 1930's caused a complete halt to the Maltese migration movement, which together with the marked drop in death rates reported in the 1940's and the rise in birth rates during the post-war period contributed to a 26.6% rise in population giving a count in the 1948 census of 305991¹⁸.

After 1948, the population growth decreased dramatically to about 0.4% per annum, so that in 1957 the population was estimated at 319620. This drop in growth rate was mainly a result of the emigration process. Between 1948 and 1957, 63000 persons emigrated overseas. The birth

¹⁸ *Reports on the workings of government departments during the financial years 1900-1935*, Government Printing Office, Malta, 1905-1935, 31 vols; *Annual report on the health of the Maltese Islands for the years 1936-1940*, Government Printing Office, Malta, 1936-1942, 5 vols; *Report on the health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency Medical Service for the years 1941-1948*, Government Printing Office, Malta, 1943-1949, 8 vols; *Report on the health conditions on the Maltese Islands and on the work of the Medical and Health Department for the years 1949-1971*, Government Printing Office, Malta, 1949-1971, 22 vols.; *Demographic Review of the Maltese Islands for the years 1961-1993*, Central Office of Statistics, Malta, 1963-1994, 33 vols.

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rate as a result of the loss of families in their most reproductive years decreased to 27.6 per 1000 population in 1957, while the mortality rate maintained the steady rate of about 10 per 1000 population reached in the post-war period¹⁹. The 1960's again showed a marked efflux of the population, which contributed towards the fall in the birth rate. The death rate continued to decrease though at a reduced rate. The overall effects of the factors resulted in a stable population with a slight fall in the population to 314216 in 1967. The 1970's showed a marked decline in the emigration rate while there has been an influx of returning migrants. This in the presence of a steady higher birth and death rate ratio have contributed to a rise in population number to 345418 in 1985 and 376335 in 1995²⁰.

Maternal Mortality: Maternal mortality has been described as the yardstick of obstetric practice. Maternal deaths were an accepted feature of obstetric practice in the earlier centuries, and a number of references to deaths during pregnancy and childbirth were made, especially in relation to the performance of post-mortem Caesarean section. Remarriages, partly an indirect result of many maternal deaths, were high in the late

¹⁹ *Reports.....1900-1935: op. cit.; Annual Report.....1936-1940: op. cit.; Report.....1941-1948: op. cit.; Report.....1949-1971: op. cit.; Demographic.....1961-1993: op. cit.*

²⁰ *Reports.....1900-1935: op. cit.; Annual Report.....1936-1940: op. cit.; Report.....1941-1948: op. cit.; Report.....1949-1971: op. cit.; Demographic.....1961-1993: op. cit.*

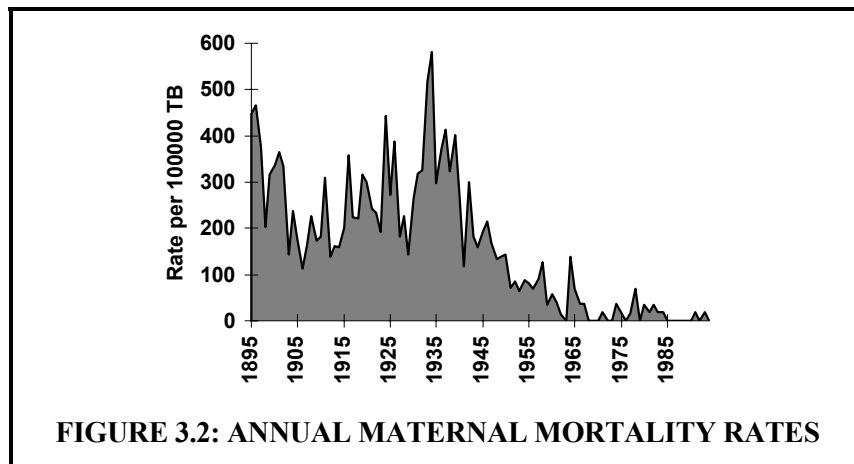
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eighteenth century accounting for a fifth of all marriages²¹. Published mortality data by cause of death is available in Malta since 1872 in the form of fortnightly reports published by the Chief Police Physician and annual reports published by the Chief Government Medical officer after 1896. Interpretations of mortality trends are difficult since cause-specific mortality is dependent on a correct diagnosis of the cause of death, while the small number involved in Malta result in wide annual fluctuations. Furthermore, since the classification of causes of death based on the International Classification of Causes of Death changed regularly, it may sometimes be difficult to follow trends in mortality rates from a particular cause of death. Maternal deaths can be the result of direct obstetric related causes or indirect/fortuitous causes. The mortality statistics can only identify direct causes of maternal deaths, and thus these exclude indirect or fortuitous causes²². The annual maternal mortality rates in the Maltese Islands show wide fluctuations resulting from the relatively small numbers of births which occur annually on the Islands (Figure 3.2).

²¹ F. Ciappara, 1988: *op. cit.*, p.58-60

²² *MGG*, 1872: *op. cit.*; A. Ghio: *Report on the mortality in Malta and Gozo for the year 1874*. Government Printing Office, Malta, 1875; S.L. Pisani, 1897: *op. cit.*; *Public Health Department: Report for 1898*. Malta Chronicle Office, Malta, 1898, +12p.; *Public Health Department: report for 1899*. Malta Chronicle Office, Malta, 1889, +12p.; *Reports....1900-1935: op. cit.*;

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The quinquina averages of maternal mortality rates during the twentieth century suggest that the mortality rate in the Maltese Islands showed an initial rise from the 28.4 per 10000 total births level in 1900-04 to a rate of 40.5 in 1930-34²³. This rise which occurred in the 1920's has been noted from a number of other European countries. Most European countries after this period saw a general tendency for maternal mortality to remain on a plateau. It was not, of course, a completely flat plateau, although it was close to one in England and Wales. In Scotland the rates rose steadily from 1900 to 1934. They also rose, but not until the late 1920s in Scandinavia, the Netherlands, Belgium, and in the cities of Paris and Amsterdam. The most notable feature of this plateau is the

Annual Report.....1936-1940: op. cit.; Report.....1941-1948: op. cit.; Report.....1949-1971: op. cit.; Demographic.....1961-1993: op. cit.

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very wide difference which was for the most part maintained throughout this period. Thus during the period 1915-19 Belgium had a maternal mortality rate of 78.9 per 10000 births. About 40% of these deaths were due to puerperal sepsis (Sweden 46%, Netherlands 34%, Belgium 46%, England and Wales 37%). The situation was similar in the Maltese Islands where sepsis accounted for 37.5% of maternal deaths²⁴. In the Maltese Islands, the incidence of puerperal sepsis rose from the 42.8 per 10000 total births in 1900-04 to 60.0 in 1930-34. The specific maternal mortality from sepsis correspondingly rose from 15.8 per 10000 total births in 1900-04 to 16.4 in 1930-34. Deaths from haemorrhage and other causes related to pregnancy also showed a rise (Figure 3.3). The maternal mortality rate started to fall in the late 1930's reaching 17.1 in 1945-49 and 8.0 in 1955-59. This pattern of decline has been identified from other countries. The international improvement in maternal mortality rates which occurred after 1935 has been attributed to a number of factors which were also operative on the Maltese Islands. These factors included the improvement in the general health of the population in the post-war period, the improvement in maternal care,

²³ *Reports....1900-1935: op. cit.; Annual Report.....1936-1940: op. cit.*

²⁴ I. Loudon: Maternal mortality: 1880-1950. Some regional and international comparisons. *Soc Hist Med*, 1988, 1(2):p.183-228; C. Savona-Ventura: Reproductive performance on the Maltese Islands during the First World war. *JR Army Med Corps*, 1995, 141:p.107-111

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and the introduction of antimicrobials and blood transfusion²⁵. The decrease correlated with a decrease in deaths from puerperal sepsis and haemorrhage initially followed by a decrease in deaths from eclampsia. The maternal mortality in the last decade has averaged 0.4 per 10000 total births.

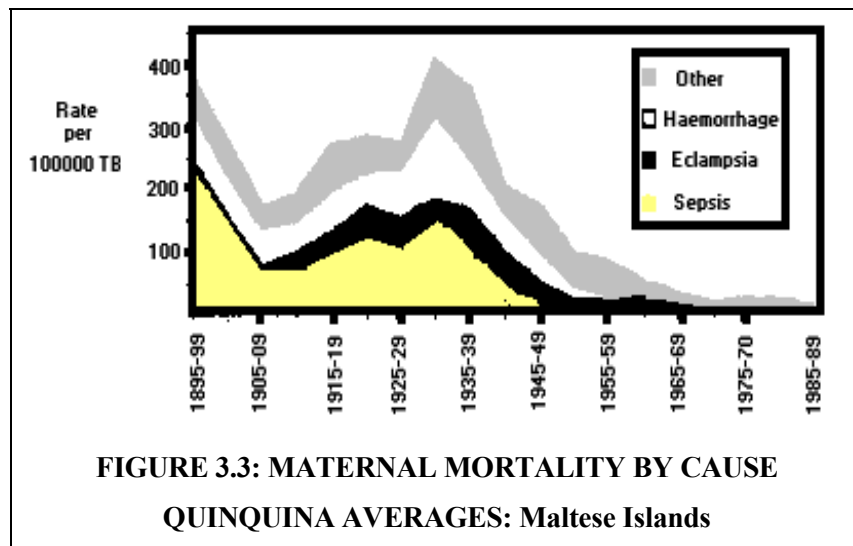
The drop in maternal mortality rates in the Maltese Islands after the Second World War in the Maltese Islands has been associated with a decrease in birth rates, parity and pregnancies in elderly women. However better antenatal, intrapartum, and postpartum care have also played an important role in decreasing maternal mortality and morbidity²⁶. The quinquina specific mortality rates suggest that the initial fall in maternal mortality which occurred in the late 1930's was largely the result of the control of infection and haemorrhagic shock. The control of maternal deaths from sepsis was primarily that of prevention with better intrapartum care using aseptic techniques, and the isolation of infected cases. The use of antiseptic cream and sterilised gloves was in 1937-38 made mandatory in hospital practice, but was not a regular feature in domiciliary care. The onset of the Second World War decreased the domiciliary confinement rates enabling better

²⁵ C. Savona-Ventura: Reproductive performance on the Maltese Islands during the Second World War, *Medical History*, 1990, 34:p.164-177

²⁶ C. Savona-Ventura, E.S. Grech: Maternal mortality in the Maltese Islands, *Int J Gynaecol Obstet*, 1987, 25:p.283-290

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intrapartum-supervised management. The role of antibiotics and better management of established cases was felt later after the war, when the case fatality rate from sepsis dropped from 15.5% in 1937-39 to 5.7% in 1943-45. Sulphanilamide was first tried in Malta in 1935 but only came into general use in 1937. Penicillin was first administered to civilians in 1944²⁷.



Deaths from haemorrhage maintained an approximately steady trend during the first third of the twentieth century. The specific mortality rate

²⁷ C. Savona-Ventura, 1990: *op. cit.*; C. Savona-Ventura: First Use of

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from haemorrhage fell during the Second World War from a level of 9.9 per 10000 total births in 1937-39 to 7.2 in 1940-42. There were two reasons for this decline. On the one hand, increased supervision of labour and delivery enabled earlier diagnosis of obstructed labour preventing uterine rupture. In 1937 Professor Ellul wrote that there were far too many cases of complete rupture of the uterus. This tragic complication though inevitable in some cases, might be prevented in many others, as in instances of neglected pendulous abdomen, version without complete anaesthesia, the application of high forceps, forcible extraction of the fetus before complete dilatation on the cervix, and of the abuse of ecbolics, especially pituitrine, before admission to the hospital. Two memoranda on this subject had been circulated to the District Medical Officers. The increasing safety of Caesarean section increased its use, thus enabling safer management of cases of obstructed labour. Besides the greater supervision of pregnancy and labour, a more important factor in reducing the specific mortality rate from haemorrhage was the easier availability of blood for transfusion. In 1939, a scheme to make blood available was proposed, but failed for lack of donors. At the beginning of the war in 1940, a blood bank was established, and dried blood plasma was made available²⁸.

penicillin in Malta. *The Sunday Times [of Malta]*, 5 April 1998, p.58

²⁸ C. Savona-Ventura, 1990: *op. cit.*

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The specific mortality rates from toxæmia show a marked fluctuation during the earlier years of the century, though this may have been the result in reporting criteria. Eclampsia accounted for 1.2 per 10000 total births during the period 1905-09, this increasing to 4.7 in 1925-29. In the latter part of the century, there has been a decrease in the deaths caused by eclampsia, though the decrease has been gradual, being only significantly noted in the late 1940's when the specific mortality rate was reported at 2.8 for the period 1945-49. The specific mortality rate only reached significantly low levels of 0.37 per 10000 total births in the 1970's. The slower decrease in deaths from hypertensive disease is probably attributable to a late realisation of the value of thorough antenatal care and the rather insidious progression of the disorder²⁹.

Infant Mortality: Infant mortality rates remain one of the main indicators of health care in the community. The infant mortality rate in the Maltese Islands during the first part of the twentieth century maintained a high level of about 253 per 1000 live births prior to the Second World War. These rates approximated those reported in the parish registers in late 18th century Malta estimated at 281 per 1000 registered baptisms at Naxxar, while the neonatal death rate approximated 163. The number of stillborn children is difficult to ascertain since they are rarely indicated in the parish registers, however

²⁹ C. Savona-Ventura, E.S. Grech, 1987: *op. cit.*

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those infants dying within a few hours of birth amounted to 30.4% of infant deaths. Privately baptised infants amounted to 2.4% of total burials in the village. In the late nineteenth century, infant mortality remained high while neonatal mortality showed a marked improvement, possibly as a result of the advances made in the midwifery practice during the nineteenth century. Thus in 1895 the infant mortality rate amounted to 229 per 1000 births, while stillbirths and neonatal mortality rates amounted to 25.7 and 33.0 per 1000 births respectively³⁰. The pre-war years had seen the initiation of a gradual fall in infant mortality rates attributed to various factors including the organisation of infant health services at the time. During this period, the main cause of death in the infant aged less than one year appears to have been diarrhoeal disease, where social circumstances played an important role in prevention and management. Infant health care was prior to the war based on two complimentary systems - a government-organised service run by District Nurses and grants given to needy mothers, and the service provided by the Mother's and Infant's Health Association. In spite of active efforts, the Second World War saw a marked rise in infant mortality from diarrhoeal disease and congenital debility. The cessation of hostilities saw a marked change in infant death rates with a sharp drop in mortality,

³⁰ Parish Archives (Naxxar): *Lib. Def. II (1687-1761), III (1762-1810)*; F. Ciappara, 1988: *op. cit.*, p.106-107; S.L. Pisani: Return of deaths in Malta and Gozo. *Malta Government Gazette* nos:3738-94, 1895-96, fortnightly

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mainly from deaths caused by diarrhoea. The post-war decline was attributed to a lower incidence of infectious disease, the employment of sulphonamides, and the intensive work of the health visitors. The main factors however were the increasing prosperity of some classes of the population, better nutrition, and the greater care bestowed in general on the requirements of health. In addition, the post-war marriage boom resulted in a greater proportion of births being first-born infants allowing better infant care from the mothers³¹. The infant mortality rates continued to fall progressively to reach a figure of about 10 per 1000 live births, the majority of which are early (first week) neonatal deaths³².

Published information about first month neonatal deaths is available since 1935, while first week neonatal deaths were considered separately only after 1951. The latter are better indicators of obstetric care. The neonatal death rates show a gradual fall that started in the post-war period coinciding with the fall in infant deaths, though the fall was more gradual since diarrhoeal disease accounted for a smaller proportion of neonatal deaths. The reasons for this fall were mainly attributed to those that were attributed to have caused the fall in infant mortality rates³³. The early neonatal death rate exhibited a sharp drop in 1953, thereafter

reports; C. Savona-Ventura: The influence of the Roman Catholic Church on Midwifery practice in Malta. *Medical History*, 1995, 39:p.22

³¹ C. Savona-Ventura, 1990: *op. cit.*

³² *Demographic...: op. cit.*

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assuming a more gradual decline to an average of 10 per 1000 live births. The year 1953 is a landmark in obstetric care in the Maltese Islands, because that year saw the opening in Malta of a number of antenatal clinics in eight principal towns and villages. These clinics provided a service aimed to serve pregnant women from the lower socio-economic group. Frequent check-ups of these women helped identify earlier the insidious disorders of pregnancy that contributed to chronic placental insufficiency and corresponding fetal anoxia. Antepartum and intrapartum anoxias were estimated in 1957-1966 to account for 40.6% of all perinatal deaths undergoing post-mortem³⁴. The two major causes of death that had taken a progressive downward trend were conditions associated with delivery giving rise to hypoxia and deaths associated with low birth weight infants. The specific mortality rate from delivery complications decreased from 14.3 per 1000 live births in 1950-54 to 5.6 in 1965-69 and 1.8 in 1985-89. Deaths caused by low birth weight decreased similarly from 11.2 per 1000 LB in 1950-54, to 8.0 in 1965-69 and 1.4 in 1985-89. This decrease in deaths is attributable to better antenatal, intrapartum and neonatal care of the

³³ C. Savona-Ventura, 1990: *op. cit.*

³⁴ C. Savona-Ventura, E.S. Grech: Perinatal mortality in the Maltese Islands, *Int J Gynaecol Obstet*, 1985, 23:p.25-30; H.M. Sultana, F. Calleja: Perinatal mortality: necropsy findings 1957-1966, *St Luke's Hospital Gazette*, 1967, 2(1):p.38-41

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infants, compounded with betterment in the social circumstances of the population³⁵.

Stillbirth rates are available throughout the twentieth century. The first part of the century showed a rise in stillbirth rates from 28.9 per 1000 total births in 1903 to 41.5 in 1931. This rise may be partly attributed to registration practices. There was subsequently a gradual fall in stillbirth rates³⁶. The first marked drop in stillbirth rates occurred just after the Second World War when the rate decreased from 37.4 in 1937 to 23.2 in 1948. This decline has been attributed to the greater antenatal supervision that was initiated by war conditions and the increase in the proportion of supervised hospital confinements³⁷. Another sharp fall in stillbirth rate occurred after 1963. This drop has been correlated to the decrease in birth rate that occurred during this period. The relative decrease in births decreased the load on antenatal services provided allowing for better-supervised pregnancies³⁸.

³⁵ *Demographic.....: op. cit.*; E.S. Grech., C. Savona-Ventura: Analysis of perinatal deaths occurring in Malta, In. *Mortalita' e Morbosita' Perinatale* (L. Zichella, A. Santoro, M. Valente, eds.), Monduzzi Editore, Bologna, 1986, p.105-114

³⁶ *Reports....1900-1935: op. cit.*

³⁷ C. Savona-Ventura, 1990: *op. cit.*

³⁸ C. Savona-Ventura, E.S. Grech, 1985: *op. cit.*

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(ii) The Haemorrhages

Severe haemorrhage, prior to the advent of blood transfusion, was attendant with a high mortality and morbidity. The concept of "auto-transfusion", i.e. binding of the limbs with bandages if grave loss of blood had occurred was used by William Smellie in the late eighteenth century. A number of authors mentioned the possibility of blood transfusion throughout the nineteenth century, but its employment was not put upon a scientific and practical basis until well into the twentieth century. For many years prior to its general use, normal saline solution was employed. Blood transfusion at the Central Hospital in Malta was only regularly used after the Second World War. In 1937, a scheme to make blood available was proposed, but failed for lack of donors: students occasionally gave blood, but in most cases the patients's relatives were reluctant. In 1938 one case of postpartum haemorrhage is reported to have died through lack of donors. Auto-transfusion was attempted in this case. At the beginning of the war in 1940, a blood bank was established in view of the expected casualties. In addition dried blood plasma was made available³⁹. The specific maternal mortality rate from haemorrhage during the period 1895-99 approximated 8.3 per 10000 births, a figure similar to the specific mortality rate for the period 1943-45 when the rate was reported to be 7.2 per 10000 total births.

³⁹ C. Savona-Ventura, 1990: *op. cit.*, p.164-177; *Annual report1936-37: op. cit.*, p.106-127

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Subsequent years showed a gradual fall in the specific maternal mortality rate from haemorrhage to 4.3 and 2.6 per 10000 total births for the periods 1946-48 and 1949-51 respectively⁴⁰.

Abortion as a medical complication of pregnancy rarely occupied the attention of medical practitioners. It however received indirect attention through the civil and ecclesiastical concerns regarding pregnancy termination. Termination of pregnancy was and remains illegal and immoral, and during the eighteenth century it was illegal not only to procure or counsel abortion, but also to cultivate abortive plants. A number of cases of procured abortion during this century are described⁴¹. In 1788 Bishop Labini in an edict against abortion gives an insight into the situations which were believed to predispose to abortion. Thus he considered that, they were guilty of abortion not only those who maliciously obtained it, but even cruel husbands who ill-treated their wives; and careless mothers who during pregnancy did heavy work, went for long walks, did not taste food, went dancing, and were indiscreet in their fasts. Parish priests were to urge their parishioners to give alms to poor pregnant women, since poverty often was the cause of abortion, either because women could not have the necessary food, or

⁴⁰ C. Savona-Ventura, 1990: *op. cit.*; *Reports1900-1935: op. cit.*

⁴¹ A. Bonnici: *Maltin u l-Inkizzjoni f'nofs is-seklu sbatax*, K.K.M., Malta, 1977, p.102-104, 199-200; P. Cassar, 1974: *op. cit.*, p.41; C. Savona-Ventura:

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because they could not buy the required medicine. Dr. Butigiec in 1804 expressed similar views, quoting ancient authors such as Hippocrates and Avicenna. He thus advises the pregnant woman not to take a bath, not to wear tight clothes nor ride on a caleche or engage in undue exertions such as moving and lifting heavy objects. She was also advised to avoid rough roads and shun strong purgatives such as hellebore, scammony and colocynth. He further believed that irritability of the nervous system is communicated to the uterus producing convulsions in this organ and sometimes abortion⁴².

Hairless cotton	<i>Gossypium herbaceum</i> L.	cultivated
Wild celery, Smallage	<i>Apium graveolens</i> L.	endemic & cultivated
Fools water-cress, Marshwort	<i>Apium nodiflorum</i> (L)	endemic
Wild parsley	<i>Petroselinum crispum</i> (Mill)	cultivated & naturalised
Pennyroyal	<i>Mentha pulegium</i> L.	endemic
Yarrow, Milfoil	<i>Achillea millefolium</i> L.	cultivated
Ligurian yarrow	<i>Achillea ligustica</i> All.	Cultivated
Feverfew	<i>Tanacetum parthenium</i> (L.)	cultivated
Wormwood	<i>Artemisia absinthium</i> L.	cultivated
Yellow aloe	<i>Aloe vera</i> (L.)	Cultivated

TABLE 3.2: PLANTS WITH ABORTIFACIENT PROPERTIES GROWN IN MALTA

Family Planning in a Roman Catholic community. *Planned Parenthood in Europe*, 1995, 24(1):p.20-22

⁴² F. Ciappara, 1988: *op. cit.*, p.88; P. Cassar, 1973: *op. cit.*

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A 1592 inventory of a Maltese medieval pharmacy list a number of preparations useful to promote the onset of menses. These include [1] *Pille deserapin* made of the gum of *Sapapenum officinale*, *Calamus aromaticus*, colocynth and aloes; [2] *Antidotu emagogu* that included cassia, black hellebore, liquorice and anise; and [3] *Calomo aromatico* made up of the roots of *Acorus calamus*. Folklore also attributes abortifacient properties to the seeds of the Vervain (*Verbena officinalis* L., maltese: Buqixrem). While this plant has been attributed with several medicinal uses, it is not generally listed as an abortifacient. Another plant of the same family - the Chaste tree (*Vitex agnus-castus* L., maltese Sagra tal-Virgi) - was supposed to have properties of decreasing sexual desires. A number of endemic and introduced plants associated with abortion are listed in Table 3.2⁴³.

In the second part of the nineteenth century, the views pertaining to aetiology of abortion were similar. During the period 1858-72 Dr. Gaetano Laferla collected a series of 98 abortion/preterm deliveries, 17 of which occurred in the first two months of pregnancy, 63 in the second to fourth month, and 18 in the fifth to seventh month. A large proportion

⁴³ P. Cassar: Inventory of a sixteenth century pharmacy in Malta. *St. Luke's Hospital Gazette*, 1976, 11(1):26-34; G. Lanfranco: *Hxejjex medicinali u ohrajn fil-Gzejjer Maltin*. Media Center, Malta, 1993; T. Zarb: *Folklore of An Island*. PEG Publ., Malta, 1998, p.37

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of these abortions were recurrent with 4 being the second, 8 the third and 5 the fourth. They occurred in women aged 18-30 years of age, during the period of wisdom tooth eruption. The recorded causes for the abortions included hysteria - 41, strong moral impressions - 7, syphilis - 4, obesity - 4, fatty degeneration of the placenta - 5, chloranaemia - 2, spinal irritation - 1, plethora - 2, placenta praevia - 4, typhoid fever - 6, tuberculosis - 1, cholera - 2, smallpox - 1, blows to the abdomen - 5, and excessive burden - 3. In addition pharmacologically induced accidental abortions may also have been caused by inadvertent administration of drugs by the pharmacist. Hysteria was apparently considered a strong predisposing cause. Dr Laferla strongly believed in the use of the resinous gum *asa foetida* to prevent abortions or preterm deliveries⁴⁴.

Prof. Pisani in 1883 similarly believed that abortion was caused by undue mental excitement; trauma to the abdomen; undue physical exertions such as jumping, long walks, or carriage drives; uterine disease; and maternal illness. For this reason he mentions that pregnant women could be exempted from attending court, and that in previous years a criminal who held on to a pregnant woman was not arrested. He refers to a case of a pregnant woman who was not hanged because of her

⁴⁴ G. Gulia: Considerazioni cliniche sullo aborto. *Il Barth*, 10 June 1872, I(8):p.149-152; 6 August 1872, I(9):p.170-171; 9 October 1872, II(10):p.193-194; G. LaFerla: *Sull' uso della gomma-resina d'asa foetida adoperata per*

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pregnancy. He emphasises the need for conditional baptism in cases of miscarriages⁴⁵. Prof. Schembri in 1896 considered that causes predisposing to abortion could be maternal or fetal. The most common amongst the maternal causes were a severe shock sustained by a fall, a long railway journey or carriage drive, riding or any other hard bodily exertion, a chill, an indigestion from excess of eating and drinking, abuse of wine, fevers, cholera, nervous shocks, convulsions, irritability of the womb, general debility, consumption, heart or kidney disease, uterine disease, and the use of strong aperients or drugs such as ergot, quinine and others. He advises his student midwives to call a doctor when a patient's miscarriages. In the meantime the midwives were advised to plug the vagina. The plug made from medicated cotton wool, besides the advantage of checking the haemorrhage, had also that of rousing uterine contractions by pressure on the cervix thus favouring expulsion of the pregnancy products. The plug was kept in from 24 to 30 hours, after which the vagina was to be washed and disinfected⁴⁶. In 1938 cases of incomplete abortion were treated by hot vaginal irrigations and pituitrine injections and if this proved unsuccessful, by cleaning the

prevenire la morte del feto nelle gravidanze morbose cagionate da inerzia dell' utero, S.G. Vassalli, Malta, 1855, +29p.

⁴⁵ S.L. Pisani, 1883: *op. cit.*, p.21-22,40-41,102-103

⁴⁶ G.B. Schembri: *The Midwife's Guide Book*, Government Printing Office, Malta, 1896, p.98-100, 105

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womb and injecting sterilised glycerine with acriflavin into the uterine cavity. One case proved fatal with this therapy⁴⁷.

Molar pregnancy was referred to by Dr. Butigiec in 1804 quoting Aristotle in his belief that moles were caused by absence of heat and the opposite view of Avicenna who believed the cause to be excessive heat. He also referred to Paolo Zacchia who believed that a mole was the result of conception and therefore its presence in an unmarried woman was a sign of violated chastity⁴⁸. The condition was also mentioned by Profs. Pisani and Schembri. These authors identified two forms of mole - the fleshy and the hydatid moles. They comment that at the time of delivery, the condition particularly required the attention of a medical man since all the molar tissue had to be removed and the cavity thoroughly disinfected to prevent septicaemia⁴⁹. In 1937 at the Central Hospital in Malta there were out of 162 abortions, 16 carneous moles and one hydatiform mole⁵⁰.

Extra-uterine gestations were first described at post-mortem in 1730 by William Giffard, but it was only in 1883 that Robert Lawson Tait attempted surgery to manage a ruptured ectopic pregnancy. In the

⁴⁷ *Annual report...1936-40: op. cit.*

⁴⁸ P. Cassar, 1973: *op. cit.*

⁴⁹ S.L. Pisani, 1883: *op. cit.*, p.103-104; G.B. Schembri, 1896: *op. cit.*, p.53-55

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Maltese Islands Dr. Butigiec in 1804 mentioned extra-uterine pregnancy, presumably at term, as an indication for Caesarean section⁵¹. A detailed case of extra-uterine gestation which developed into a full term intra-abdominal pregnancy is described by Prof Arpa in 1843. The management of this case appears to have been conservative with the use of leeches in early pregnancy. The case involved a twin pregnancy - one intra-uterine and one intra-abdominal. The former delivered normally at term, the latter was expelled per rectum after a very severe puerperal infection and degeneration of the fetus. The mother survived to become pregnant later. In his discussion of the possible differential diagnosis of the case described Arpa also gives a detailed description of the condition⁵². Subsequent mention of extra-uterine gestations was made by Profs. Pisani and Schembri in 1883 and 1896 who described the ovarian, tubal and abdominal pregnancies. Prof. Schembri further mentions that the condition was fatal to the woman and generally causes death from bursting of the ovum at or about the fourth month. When detected in time it necessitated abdominal operation to remove the tube or ovary with its contents⁵³. Prof. Schembri is known to have embarked on abdominal operation for the first time in Malta in 1890 with the

⁵⁰ *Annual report ... 1936-40: op. cit.*, 1938:p.119-126

⁵¹ P. Cassar, 1973: *op. cit.*

⁵² S. Arpa, 1843: *op. cit.*

⁵³ S.L. Pisani, 1883: *op. cit.*, p.28; G.B. Schembri, 1896: *op. cit.*, p.44

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performance of an oophorectomy for cystic adenoma⁵⁴. Prof. J. Ellul presented two papers to the Camera Medica dealing with ectopic pregnancy. The first read in 1923 was entitled "*Gravidanza ectopica bilaterale contemporanea*". This described the clinical course of an ectopic pregnancy in a 35-year-old woman admitted in the Civil Hospital. The case was managed initially by a posterior cul de sac colpotomy that confirmed the diagnosis. She was subsequently operated and a subtotal hysterectomy was performed. The second paper, read after 1930, was entitled "*Note clinice su Parto addominale o gradivanza ectopica primaria a termine?*". In 1937 there were at the Civil Hospital in Malta ten cases of ectopic gestations, of which three were very severe with intraperitoneal flooding and marked collapse and anaemia. These were operated on. One case was interstitial and required hysterectomy. The non-operated cases included two intraligamentous ectopics with rather marked haematomata, three tubal abortions with a small pelvic haematocele, and one interstitial pregnancy that finally became intrauterine. The latter cases were treated medically and kept under continuous observation. All cases recovered⁵⁵.

⁵⁴ V. Vella: Lapartomia in Malta, *Rivista di Ostetricia e Ginecologia*, 1891, +3p. (reprint)

⁵⁵ J. Ellul: *Application of Joseph Ellul B.Sc. M.D. Junior accoucher and Gynaecologist - Central Civil Hospital*. Malta, 1930; J. Ellul: *Gravidanza ectopica bilaterale contemporanea*. *Rivista Medica*, June 1923, 1(4):p.84-87; *Annual report.....1936-40: op. cit.*

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Phantom pregnancies occupied the attention of most authors. Dr. Butigiec quotes Francois Mauriceau of Paris and Richard Manningham of London in the course of a discussion on the causation of false pregnancy stating that false pregnancy is produced by accumulation of air and water in the abdomen⁵⁶. Profs. Pisani and Schembri both refer to the condition of false or phantom pregnancy. Prof. Schembri remarks that phantom pregnancy was observed in extremely hysterical women, especially in the married who have a craving for child bearing without ever having conceived. Such symptoms were noted to wither away with a whiff of chloroform⁵⁷.

Antepartum haemorrhage was first clearly described by Edward Rigby in 1775 in the classic work "Essay on the Uterine Haemorrhages which precede the delivery of the full-grown fetus". Rigby argued that there were two kinds of antepartum haemorrhage, one inevitable, where the placenta is attached over the os uteri so that it separates as the lower segment of the uterus dilates in labour, and the other accidental, where a placenta, normally situated at or near the fundus of the uterus, becomes separated from some other cause, such as injury or some morbid conditions. He also realised that the treatment of these two varieties must be quite different. In the inevitable or true placenta praevia, the

⁵⁶ P. Cassar, 1973: *op. cit.*

⁵⁷ S.L. Pisani, 1883: *op. cit.*, p.66-67; G.B. Schembri, 1896: *op. cit.*, p.44-45

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haemorrhage must continue until the patient is safely delivered, whereas in the accidental he treated it by rupture of the membranes, rest and expectancy. Treatment of these conditions was not greatly advanced during the first half of the nineteenth century, and the development which appreciably decreased maternal mortality was Braxton-Hicks version in 1860, and subsequently the suggestion by Lawson Tait for Caesarean section in cases of placenta praevia⁵⁸.

In Malta, the seriousness of antepartum haemorrhage was long recognised. Dr. Butigiec in 1804 quoted the eighteenth century authors Gerhard van Swieten of Vienna and Andre Levret of Paris in that uterine bleeding was one of the most dreaded complications of pregnancy giving rise to fatal results⁵⁹. Prof. Pisani in 1883 makes only passing reference to antepartum haemorrhage in relation to placenta praevia as an indication for the midwife to call the medical practitioner. He further advised the midwives to place the delivered placenta in very hot water until the arrival of the doctor. The doctor was also to be informed of any woman who during the course of her pregnancy complained of bleeding⁶⁰. Prof. Schembri in 1896 gave more detailed attention to antepartum haemorrhage. He distinguished the clinical states of external

⁵⁸ J.M.M. Kerr, R.W. Johnstone, M.H. Phillips, 1954: *op. cit.*, p.17-19,59-65,104-110

⁵⁹ P. Cassar, 1973: *op. cit.*

⁶⁰ S.L. Pisani, 1883: *op. cit.*, p.101

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and internal blood loss. He considered serious haemorrhage after the sixth month to be almost always a consequence of a placenta praevia - unavoidable haemorrhage. In relation to external haemorrhage he also mentions the intrapartum bursting of a thrombus at the cervix or vagina or external genital organs. It could also proceed from a disease of the womb such as cancer, fibroids, etc., or it may be due to disease of its lining membrane more especially to fungosities (fungoid endometritis). External haemorrhage could also be the consequence of a premature detachment of the after-birth. With regards to therapy, Prof. Schembri advised his students to manage the condition by bed rest and immediate recourse to medical help. A vaginal plug could be used until the arrival of the medical practitioner. The vaginal plug was made from several pieces of cotton wool separately tied with a thread. The lumps of cotton wool were used to plug the vaginal canal completely, the threads being left hanging outside the vulva. To avoid turning an external into an internal haemorrhage, an abdominal binder made of crumpled napkins was bandaged over by a tight bandage⁶¹. J. Mamo depicts placenta praevia with figures taken from the wood lithographs prepared by Stefani. Three cases of placenta praevia complicated by massive postpartum haemorrhage were described by Prof. J. Ellul in 1928. These cases were managed by tamponage and internal or Braxton-Hicks version, followed by delivery within two days. All the infants were born

⁶¹ G.B. Schembri, 1896: *op. cit.*, p.96-101

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alive. The cases were complicated by postpartum haemorrhage, two associated with cervico-uterine lacerations, and were eventually managed by Henkel's method. One mother was saved, while two died subsequently from the effects of severe haemorrhage and sepsis⁶².

In 1938 Prof. Ellul described the management of placenta praevia in use at the time. *"The routine treatment is to perform the classical tamponage when the cervix is closed; Caesarean section is preferred in certain primipara with a closed cervix and severe haemorrhage when there is an interest in saving the baby's life. In lateral and marginal cases rupture of the membranes is performed and a pressure bandage applied over the abdomen. These cases are often delivered spontaneously. In other cases when bleeding continues the pulling down of a leg with a 2 lb. weight (after internal or Braxton-Hicks version) or the use of Willet's forceps on the caput have been found very satisfactory."* Accidental haemorrhage was generally managed by allowing spontaneous delivery, though internal version with the application of weight was occasionally used. Prof. Ellul commented that with the current management many mothers were being saved, but the perinatal mortality remained high. That year there had been 12 cases of placenta praevia delivered in the hospital. Five of these were more or less central, two marginal and five

⁶² J. Mamo: *Obstetricia illustrata*, Malta, 1939, p.44; J. Ellul: *Three cases of intractable PostPartum haemorrhages treated after the Henkel Method*, St Joseph Institute Printing Press, Malta, 1928, +16p.

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lateral. None of the cases were delivered by Caesarean section. Four of the central placenta praevia were complicated by puerperal sepsis and are described in the report. Three of these cases were delivered by internal version and breech extraction, while one case was managed by Braxton-Hicks version and the application of a weight to the foot. Two cases of lateral and one marginal placenta praevia were similarly complicated by sepsis. There were no maternal deaths from placenta praevia in the hospital, but five infants were stillborn and two died a short time after birth. There were also 16 cases of accidental haemorrhage, most of which suffered from slight detachment of the placenta. Only two had severe haemorrhage. Many had associated albuminuria. Most of the deliveries were spontaneous. One was delivered after internal version and the application of a weight to the foot. All mothers survived but there were eight perinatal deaths⁶³.

The post-war period saw a gradual increase in the undertaking of Caesarean section for a variety of indications including placenta praevia. Thus in 1951-52, nine cases of placenta praevia were delivered at St. Luke's Hospital by Caesarean section accounting for 12.0% of all sections performed. During the same period, three cases of placenta praevia were delivered by the application of Willet's forceps to the scalp, while the application of weights to the leg after internal version was

⁶³ *Annual report....1936-40: op. cit.*

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reportedly used four times. Two maternal deaths followed haemorrhagic complications from placenta praevia, while there were 13 fresh stillbirths and two neonatal deaths. There were a further 18 stillbirths and three neonatal deaths caused by accidental haemorrhage⁶⁴. A number of methods, other than Caesarean section, were available to the obstetrician to control haemorrhage and accelerate delivery in cases of placenta praevia. These methods remained in use long after Caesarean section became a reasonably safe alternative in the management. These methods included classical tamponage (first mention by Prof. Schembri in 1896, and considered to be the routine treatment whenever the cervix was closed in 1938); continuous traction on the fetal head using Willet's forceps and the attachment of 1-2 lb. weights (described in use in 1938 and continued in the 1950's); continuous traction on the leg after version with the attachment of weights (described in use in 1938 and subsequently in the 1950's). The application of weights was done by the use of a special modified chair which allowed the use of a pulley system⁶⁵.

Postpartum haemorrhage prior to the twentieth century extracted a high death toll. This is not surprising in view of the fact that the nineteenth century obstetricians fell heirs to a confusion of policies with

⁶⁴ C. Savona-Ventura: Placenta praevia - management in the last century, *Mediscope*, 1991, 14:5-8

⁶⁵ C. Savona-Ventura, 1991: *op.cit.*

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regards to the management of the third stage of labour ranging from immediate removal of the placenta following the birth of the child to trusting entirely to nature. Ergot of rye was introduced into midwifery by John Stearns in 1822 being used not only in lingering labours but also for the treatment and prevention of postpartum haemorrhage. Another advance in the management was the introduction of blood transfusion by James Blundell. By 1849, 24 cases of blood transfusion for postpartum haemorrhage had been recorded, of which 19 were successful. Considering that at the time there was no knowledge of blood incompatibilities, this seems a remarkable achievement. A form of management used to control postpartum haemorrhage was the use of vaginal douching with cold water or astringents. It was not until 1853 that A. Trousseau suggested douching with hot water as the better haemostatic agent⁶⁶.

In Malta, postpartum haemorrhage similarly extracted a high death toll, and the obstetricians of the time were concerned about this complication of the third stage of labour. They repeatedly gave instruction for the management of the third stage and the management of postpartum haemorrhage. Dr. Butigiec in his lectures to medical students in 1804 advised that when the placenta was late in descending from the uterus, the infant still attached to the cord was placed on a feather pillow or a

⁶⁶ W. Radcliffe: *Milestones in Midwifery*, Bristol, J Wright & sons Ltd, 1967

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water filled leather bottle with tiny holes in its sides in such a way that the cord was stretched tight. The infant's weight flattened the pillow or bottle exerting gentle traction onto the placenta. When delivery could not be achieved, the practitioner was to introduce his hand into the uterus to detach the placenta adherent to the fundus⁶⁷.

In 1871 a case of postpartum haemorrhage resulting from retention of the placenta in the third stage was described. The case was managed by manual removal of the placenta, but was complicated by puerperal sepsis. Prof. Pisani in 1883 advised his midwifery students that once the infant was born they were to ensure that the uterus had contracted and that there was no excessive haemorrhage. He further advises that if the uterus was found to be relaxed, the midwife was to rub and squeeze it by abdominal palpation. If the placenta fails to deliver, the midwife was to check whether it was still adherent to the uterus. If found in the vagina the midwife was to extract it, otherwise if delivery was not achieved in two hours the medical practitioner was to be called. He warns that haemorrhage could be revealed or concealed, and that both situations were lethal to the parturient woman. In this circumstance, the midwife was to call the medical practitioner urgently. In the meantime, she was to make efforts to contract the uterus by rubbing the hypogastrium, putting ice-cold and boiling hot cloths on the lower abdomen, and by

⁶⁷ P. Cassar, 1973: *op. cit.*

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squeezing the uterus⁶⁸. Prof. Schembri in 1896 advised his students to deliver the placenta in the third stage by using continuous cord traction or using Crede's method of suprapubic pressure. If this fails the midwife was to ascertain whether the placenta was in the vagina in which case it was hooked by the fingers and pulled out, or whether it remained in the uterus where the medical practitioner was to be called in. He emphasised the need to ensure total delivery of the membranes since these could be the cause of bleeding, or severe afterpains, or even blood poisoning. Haemorrhage following delivery was considered to be almost always caused by inertia of the womb. The emergency management advised was to grasp and knead the uterus to provoke a contraction. The medical practitioner was to be called at once. Mention was also made of secondary inertia in the puerperium and of subinvolution of the uterus. The predisposing factors for postpartum haemorrhage were extreme dilatation sustained by the womb in twin pregnancy, dropsy of the amnion, in the case of a hydatid mole, etc.; a hurried labour which stuns the womb; a long and tedious labour which exhausts the contractile power of the uterus; a naturally sluggish and torpid womb especially met with in delicate and sickly women; the presence of fragments of the after-birth, membranes or clots which prevent the uterus from contracting permanently⁶⁹. Prof. Schembri is

⁶⁸ G. Gulia: *Uso die Solfiti in un caso di setticemia puerperale. Il Barth*, 16 October 1871, Anno I(3):p.63-64; S.L. Pisani, 1883: *op. cit.*, p.82-83

⁶⁹ G.B. Schembri, 1896: *op. cit.*, p.73,101

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known to have been familiar and had prescribed ergot for menorrhagia and presumably for postpartum haemorrhage⁷⁰.

Three cases of intractable postpartum haemorrhage following delivery of pregnancies complicated by placenta praevia were described by Prof. Ellul in 1929. These cases, two of whom were associated with cervico-uterine lacerations, were managed initially by very hot intrauterine douching, pituitrine and ergotine administration, trachelorrhaphy, and vaginal plugging., besides supportive measures to revive the patients. These measures proved unsuccessful in these cases and recourse was made of Henkel's method of clamping per vaginam the uterine vessels. This method was reported to have been successful in all three cases, but two mothers died as a result of the severe haemorrhage and subsequent sepsis. In 1938, postpartum haemorrhage resulting from atony of the uterus was managed by injections of pituitrine and ergot, together with manual compression of the aorta. Very hot douches in the vagina and occasionally in the uterus were often considered efficacious. Cases of retained placenta were first treated by Crede's method, and if this failed, sterilised water was injected into the umbilical vein. Manual removal under general anaesthesia was performed as a last resort. Sterilised flavin in glycerine was injected inside the uterus as a preventive to

⁷⁰ P. Cassar: Two centuries of medical prescription in Malta 1683-1882, *St. Luke's Hospital Gazette*, 1969, 4(2):p.111

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infection. There were seven cases of postpartum haemorrhage, two of which were traumatic and required trachelorrhaphy. One case died through lack of donors for blood transfusion. Manual removal of the placenta was performed in four cases, one case being removed by the application of Willet's forceps and morphia injections⁷¹.

Ruptured uterus remained a major problem of labour well into the twentieth century. In the first half of the nineteenth century, obstetric authorities were concerned with the identification of the cause of uterine rupture and noting the circumstances and conditions when it occurred. The state of the knowledge of the period was reviewed by J.D. Trask in 1848, but it was only in 1875 that L. Bandl associated uterine rupture with obstructed labour and the development of a contraction ring. This 'Bandl ring' enabled the obstetrician to identify a threatening rupture and gave him some chance of saving his patient from the brink of disaster. Treatment for the condition developed into either preventive with induction of premature labour or craniotomy, and the diminution of the force of contractions by venesection, tartar emetic or chloroform; or active measures to deliver the child by forceps, craniotomy or version. The turn of the 19th century saw the use of plugging of the uterine rent per vaginam with gauze as a means of controlling haemorrhage. Gastrotomy was considered a desperate procedure, since the mother

⁷¹ J. Ellul, 1928: *op. cit.*; *Annual report.....1936-40: op. cit.*

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invariably died. It was only later in the nineteenth century that obstetricians began to treat rupture of the uterus by laparotomy - first by mere opening and drainage, but later by Caesarean hysterectomy⁷².

In Malta the first reference to ruptured uterus was made by Dr. Butigiec in 1804, who advised laparotomy for the delivery of the fetus extruded into the abdominal cavity following uterine rupture⁷³. Subsequent mention was made by Prof. Schembri in 1896 when describing internal haemorrhage which he considered to be a consequence of uterine inertia resulting from a ruptured uterus or the bursting of a blood vessel within the broad ligament⁷⁴. The first part of the twentieth century saw little change in attitudes towards the prevention of ruptured uterus, though when it occurred efforts were made to undertake surgery. In 1937-38 Prof. Ellul wrote that there were far too many cases of complete rupture of the uterus. This tragic complication, though inevitable in some cases, might be prevented in many others, as in instances of neglected pendulous abdomen, version without complete anaesthesia, the application of high forceps, forcible extraction of the fetus before complete dilatation of the cervix, and of the abuse of ecbolics, especially pituitrine, before admission to the hospital. Two memoranda on this subject had been circulated to the District Medical Officers. There were

⁷² J.M.M. Kerr, L.W. Johnstone, M.H. Phillips, 1954: *op. cit.*, p.66-67

⁷³ P. Cassar, 1973: *op. cit.*

⁷⁴ G.B. Schembri, 1896: *op. cit.*, p.97

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in 1938 six cases of uterine rupture, two were incomplete and both mothers survived. These cases were due to the application of forceps in an incompletely dilated cervix in one case and to an impacted brow presentation in the other. The remaining four were complete with the fetus and decidua in the peritoneal cavity. Of these only one survived in spite of active treatment. These cases were due to a failed high forceps (2 cases), internal version of a macrosomic fetus in a case of a pendulous abdomen and contraction ring, and impaction in a case of mentoposterior brow presentation. These cases were managed by Porro's operation. The management of uterine rupture was whenever possible limited to suturing the rupture followed by cleaning and drainage of the peritoneal cavity, and the administration of anteperitonitic serum. Subtotal hysterectomy was limited to those cases of extensive laceration of the uterus with severe haemorrhage. Only one mother survived⁷⁵. The incidence and mortality of ruptured uterus only came down with the increasing safety of operative procedures, the availability of antimicrobials and blood for transfusion, and the increasing supervision during labour.

(iii) Puerperal Sepsis

Puerperal fever was by far the biggest problem that medical practitioners had to contend with particularly in institutions. At times it reached

⁷⁵ *Annual report....1936-40: op. cit.*

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epidemic proportions, and there were some doctors who considered it incurable. The cause of the disease remained a complete mystery and was a matter for the wildest speculations. The history of puerperal sepsis during the nineteenth century was one of tragedy since while it was becoming plain that the medical attendant during delivery was often the unconscious agent for transmitting the disease, yet no effort was made to control the transmission. After 1870, there was the gradual development of medical bacteriology that brought on an enlightenment as to the aetiology of puerperal sepsis, and established the means of controlling the disease. This contributed to the decline in maternal mortality rates noted in various countries in Europe at the turn of the twentieth century. Further major developments date to 1935 with the introduction of sulphonamides and subsequent other antimicrobials essential for the modern management of established cases⁷⁶.

The developments on the continent were closely followed in Malta. Dr. Butigiec advised midwives to cut their nails short and remove all rings from their fingers before conducting the delivery. The puerpera was not allowed out of bed before eight to nine days and she was advised to ensure that the air in her room was '*neither too cold nor too hot*'. The curtains of her bed were not to be pulled shut except when the windows of her room were opened to renew the air. This advice which was

⁷⁶ J.M.M. Kerr, L.W. Johnstone, M.H. Phillips, 1954: *op. cit.*, p.202-225

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current medical teaching in the eighteenth century shows an attempt to control the incidence of puerperal sepsis, however full understanding of the problem only occurred very many years later. Dr. Butigiec further advised the lubrication of hands and instruments with butter or some other type of lubricant before being introduced into the genital parts⁷⁷. In 1843, the Maltese medical journal "*Il Filocamo*" carried an article discussing the epidemiology of puerperal fever, noting the epidemic form of the disease but failed to make any connection with the medical/paramedical attendants. Two cases of puerperal sepsis were presented. The first occurred in a 29-year-old multiparous woman who delivered her fetus at the sixth month of pregnancy but had a retained placenta for five days. The second case occurred in a 27-year-old terzagravida patient who had had a protracted labour. Both were admitted to the Central Hospital with puerperal sepsis. The cases were managed successfully by repeated venesection, the application of leaches and with mercurial inunctions, laxatives and prussic acid. In 1843 Prof. S. Arpa described the management of a case of a term extrauterine pregnancy complicated by puerperal sepsis. This was managed by *'larghe deplezioni sanguigne locali..., bevande refrigeranti, calomelano internamente e cataplasme ammollienti,.....Al metodo praticato si aggiunse...l'unguento mercuriale unito all'estratto di belladonna, e solfato di morfina per frizione da praticarsi sull'addome, e*

⁷⁷ P. Cassar, 1973: *op. cit.*

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*particolarmente sul tumore (infected intra-abdominal pregnancy).....,de clisteri ammolienti e delle dosi d'olio di ricino, che si alternavano col calomelano: tali mezzi sembravano molto efficaci per abbattere lo stato infiammatorio*⁷⁸. In 1871 the use of sulphates in the management of puerperal sepsis was described. By 1883 there appeared to have been little advance in the midwifery teaching regarding the prevention of puerperal sepsis. Prof. S.L. Pisani in his lectures to midwives⁷⁹, like Dr. Butigiec, advised midwives to smear their fingers with oil or any other lubricant before performing a vaginal examination, which he advised should be kept to a minimum. He gave advise regarding the place of delivery and puerperium. The windows were to be kept open even in winter, so that no bad smells remained in the room. Any excreta was to be immediately taken out of the puerpera's room. The thermometer appears to have been introduced in Maltese medical practice by 1866, and Pisani gives detailed instructions for its use by midwives⁸⁰.

Professor Schembri in 1896 gave similar instruction as to the place and care during delivery. However he emphasises the use of antiseptic vaseline for lubrication of the fingers during vaginal examinations. Similar use was made earlier by Dr. GF Inglott in 1890 who used antiseptic vaseline when carrying out podalic version and further

⁷⁸ *Il Filocamo*, 1842: *op. cit.*; S. Arpa, 1843: *op. cit.*, p.16-17

⁷⁹ G. Gulia, 1871: *op. cit.*; S.L. Pisani, 1883: *op. cit.*, p.70

⁸⁰ S.L. Pisani, 1883: *op. cit.*, p.89-91; P. Cassar, 1965: *op. cit.*, p.530

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prescribed antiseptic irrigation of the uterus following these procedures⁸¹. Prof Schembri appears to have been influential in introducing legislation towards asepsis in midwifery with the publication of Regulations relating to midwifery practice in 1899. These regulations determined the care a midwife had to give to her patient. The midwife, after sterilising her instruments and hands with an antiseptic solution (5% Boracic acid of Condy's fluid), was to wash the patient's perineum with soap followed by antiseptic solution. The vagina was similarly irrigated with an antiseptic solution. Vaginal examination was to be performed as seldom as possible. Similar antiseptic care was given for the first five days of the puerperium⁸². These regulations resulted in a fall in cases of puerperal sepsis so that while in 1902 31 cases of sepsis were reported from Malta and Gozo, the subsequent year 1903 only 14 cases were reported⁸³. However the regulations were not widely practised and in 1903 the Medical Officer in charge of the Hospital in Gozo remarked that puerperal women in Victoria Hospital were being attended to by general nurses who took care of other hospital patients rather than the midwife⁸⁴. The specific mortality rate from puerperal sepsis in 1895-99 stood at 24.9 per 10000 births, while in 1911-14 the

⁸¹ G.B. Schembri, 1896: *op. cit.*, p.65-66, 94-95; G.F. Inglott: Distocia. *La Rivista Medica*, 15 April 1890, Anno I(3):p.6

⁸² Regulations respecting midwives, *Malta Government Gazette*, August 1899, p.774

⁸³ *Reports.....1900-1935: op. cit.*

⁸⁴ C. Savona-Ventura, 1991: *op. cit.*; C. Savona-Ventura, 1995: *op. cit.*

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rate was 6.8⁸⁵. The situation had improved by 1937 but was still far from ideal. The use of sterile gloves was still not compulsory and many vaginal examinations by district midwives were performed without them. This was not surprising since up to the first decade of the twentieth century the surgical community was still debating the usefulness of using surgical rubber gloves. The 1918 "*Regulation respecting midwives*" published in the Malta Government Gazette still failed to include the provision for the regular use of sterile gloves, this provision being only introduced in the 1951 revision. In 1937 puerperal sepsis in the hospital was prevented by placing any cases developing fever or a septic discharge in the Isolation Hospital. In order to minimise the risk of spray infection, all personnel who came in contact with maternity cases were screened periodically for naso-pharyngeal *Streptococcus haemolyticus* or for an inflamed throat. Staff with either was not allowed to attend maternity cases. A system of using numbered bedpans for each puerpera was also in force to prevent spread of infection. The introduction of the use of liquid Dettol or Dettol cream, together with sterilised gloves for vaginal examinations in the hospital, had also helped to decrease the incidence of puerperal sepsis in the hospital. Established cases of sepsis were managed by intra-uterine injections of flavine in glycerine, the administration of sulphonamides,

⁸⁵ *Reports... 1900-1935: op. cit.*

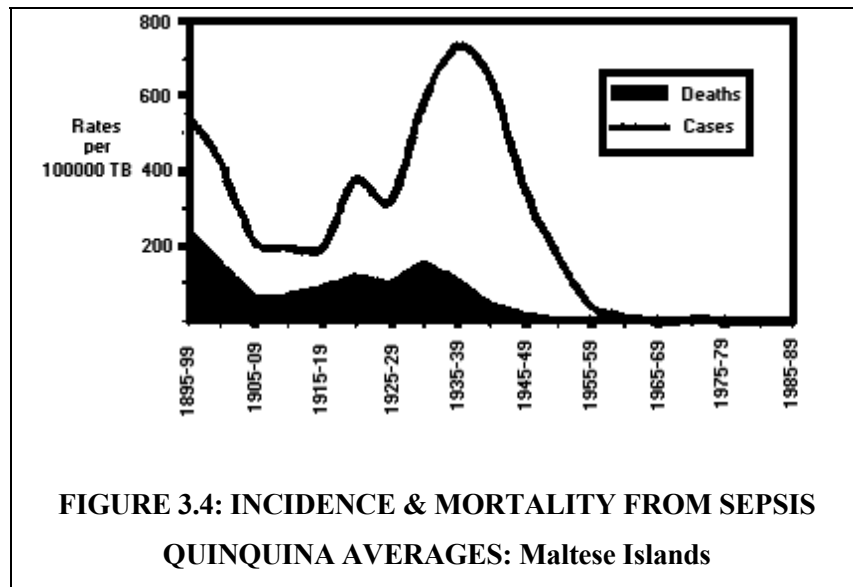
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and the use of anti-gas gangrene serum in selected cases⁸⁶. Sulphanilamide (Prontosil) was first tried in Malta in 1935 with encouraging results in infections caused by haemolytic streptococcus. It did not, however, come into general use until 1937, when it was tried also in the treatment of gonorrhoea and other infections, including puerperal sepsis. Sulphapyridine appeared in 1938-39. Penicillin was first administered to a case of puerperal fever not responding to sulphonamides for the first time in Malta in August 1944. The mother survived the infection. The introduction of antimicrobials was an important landmark in the management of puerperal sepsis. However the incidence of sepsis decreased initially as a result of the preventive measures undertaken, so that the case fatality rate remained approximately the same until after 1943-45, when the case fatality rate decreased to about a third of the figure in 1937-39⁸⁷.

⁸⁶ *Annual Report.....1936-1940: op. cit.*; J. Randers-Pehrson: *The Surgeon's Glove*. C. Charles Thomas Publ, Illinois, 1960, +95p.; Regulations respecting midwives. *Malta Government Gazette*. 25 October 1918, 6103:p.873-876; Regulations respecting midwives. *Malta Government Gazette*. 23 October 1951

⁸⁷ C. Savona-Ventura, 1990: *op. cit.*; H. Ganado: *Rajt Malta Tinbidel*, Interprint Ltd, Malta, 1977, vol.3 p.222

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(iv) Eclampsia

Until the middle of the nineteenth century, little was known about the dreaded and alarming condition of 'Convulsions'. In 1781, Professor A. Hamilton of Edinburgh described the condition emphasising the high maternal and fetal mortality. The management consisted of bleeding the patient, laxative administration, and effecting speedy delivery if there are symptoms of labour. It was only in 1843 that JCW Lever of Guy's Hospital associated convulsions with albuminuria⁸⁸. In Malta, Dr. Butigiec in 1804 mentions the problem of convulsions quoting Thomas Sydenham in connection to the sinister significance of the appearance of

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convulsions during pregnancy. He condemned the routine bloodletting to which pregnant women resorted to during the seventh month of pregnancy, this being in part a precautionary measure against the development of eclampsia⁸⁹. This management was based on the universal belief which lasted until the third quarter of the last century that pregnancy was associated with a condition analogous to plethora, which was held to explain symptoms like headache, palpitation, singing in the ears and shortness of breath. Venesection remained part of the regimen for the management of eclampsia described by H. Tweedy in 1896⁹⁰. In 1871 a number of cases of eclampsia were described. The first occurred in a 22-year-old primigravida at the end of her pregnancy. The fits were followed by the onset of labour that was complicated by further convulsions. These were managed by chloroform inhalation, while labour was augmented by rupture of membranes and followed by a forceps delivery. The mother suffered from further puerperal fits in spite of being administered potassium bromide. She was subsequently managed by opium extract. The puerperium was further complicated by renal failure that was managed by diuretics. The patient made a slow complete recovery. The second case described occurred in a 32-year-old multipara at eight months of pregnancy. She delivered a dead infant, and was subsequently managed by chloroform inhalation and venesection.

⁸⁸ J.M.M. Kerr, L.W. Kerr, M.H. Phillips, 1954: *op. cit.*, p.158-167

⁸⁹ P. Cassar, 1973: *op. cit.*

⁹⁰ J.M.M. Kerr, L.W. Kerr, M.H. Phillips, 1954: *op. cit.*, p.10

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The alternate management regimens for eclampsia are discussed and included, besides chloroform and venesection, the application of leeches to the temples, and the use of antispasmodics such as zinc oxide and potassium bromide. The author comments that in general venesection including the application of leeches to the patient's temples was dangerous in cases of eclampsia. Albuminuria and uric acid crystals on microscopy were noted features in cases of eclampsia⁹¹.

Prof. Schembri in 1896 made reference to the condition of eclampsia. He mentions that this complication, which could occur at any time during the first or second stage of labour, was not uncommon and was always the consequence of a morbid condition of the kidneys that caused albuminuria. He also mentions that the condition could be previously suspected in the course of pregnancy by oedema of the legs, eyelids and anasarca, acute headache and sickness. The midwife could confirm the diagnosis by warming urine in a spoon, when albumin would coagulate. The convulsions were apt to provoke abortion or premature labour, and were often associated with maternal and fetal mortality. The accoucher was to be called at once⁹².

⁹¹ G. Gulia, 1871: *op. cit*

⁹² G.B. Schembri, 1896: *op. cit.*, p.44

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The mortality from eclampsia was high. The specific maternal mortality rate cannot be identified until after the first decade of the twentieth century, since the term eclampsia was used to cover a wide range of disorders some effecting males. With better understanding and management the rate came down so that in the period 1911-14 the specific mortality rate was 3.0 per 10000 births, a figure which was approximately maintained into the 1940's⁹³. In the Central Hospital in Malta during 1937 there were 13 cases of eclampsia or pre-eclampsia, of whom three patient died. Tweedy's treatment was adopted for severe cases of hypertension, including venesection, luminal, calcium, and acceleration of labour. The specific mortality rate in 1937-39 stood at 4.4 and rose to 6.3 per 10000 births during the Second World War. Marked improvements were only made after the introduction of antihypertensive drugs and adequate methods of inducing labour. The post-war fall in the specific mortality rate from hypertensive disease in pregnancy occurred at a rate much slower than those of other causes of maternal mortality⁹⁴.

(v) Medical Disorders

A number of medical disorders are known to adversely effect the pregnant woman. **Respiratory disease** may be affected by pregnancy

⁹³ *Reports.....1900-1935: op. cit.*

⁹⁴ *Annual Report.....1936-1940: op. cit.*; C. Savona-Ventura, 1990: *op. cit.*; C. Savona-Ventura, E.S. Grech, 1987: *op. cit.*

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and labour. Amongst acute disease, true pneumonia before the advent of antibiotics in the nineteenth century was a highly dangerous complication. Women showed a greater mortality from the disease than do males, and this mortality was particularly high during pregnancy. Pregnancy was not infrequently interrupted naturally. Induction of preterm labour was to be avoided. Medicinal treatment was the same as that used in the non-puerperal state, digitalis having a special value, while venesection being practised when threatening symptoms were present. The latter could bring on collapse and onset of labour. Tuberculosis had been previously considered to be a minor disease during pregnancy, but the lying-in condition was noted to have a more injurious influence where the disease was already present and it often accelerated a fatal end. Although pregnancy usually reached full term in spite of progressive tuberculosis, it was not rare for labour to come on some weeks too early; abortion could also take place, and was as injurious to the phthisical woman as was the lying-in period after a premature or a full-term labour⁹⁵. Tuberculosis appears to have been not an uncommon disease in the Maltese Islands in the 18th century especially towards its close. Towards the mid-nineteenth century poverty, bad housing conditions and overcrowding were certainly favourable for the spread of the disease. The improvements in the economic state of the island and the introduction of sanitary reforms at

⁹⁵ O. Spiegelberg, 1887: *op. cit.*, p.361-363

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the beginning of the last quarter of the century were accompanied by a reduction in the general death rate. The mortality from phthisis showed a parallel decline from 1 per 1000 population in 1874 to 0.8 in 1876 constituting 3.6% of the total amount of deaths⁹⁶. Three cases of maternal deaths resulting from respiratory disease occurring at Victoria Hospital, Gozo at the end of the nineteenth century have been described. Other medical conditions that terminated in a bad perinatal outcome during the same period at the hospital included mothers with Heart disease and Renal disease⁹⁷.

Women suffering from **chronic disease of the heart** may be greatly imperilled by pregnancy and the lying-in condition, since the changes compensatory of the cardiac lesion, which are sufficient for the ordinary state of things, no longer suffice for the pressure relations when altered by pregnancy, and often very suddenly so by parturition. While the adverse relationship between heart disease and pregnancy were well documented in the nineteenth century, **pyelitis** in pregnancy was only recognised as a clinical entity at the close of the nineteenth century. A case of retention of urine complicating a four month gestation retroverted gravid uterus in a 25 year old multiparous woman was described in 1871. This was managed by catheterisation and manual

⁹⁶ P. Cassar, 1965: *op. cit.*, p.218-219

⁹⁷ C. Savona-Ventura, 1995: *op. cit.*

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correction of the retroversion. The mother was kept in the supine position to prevent recurrence of retroversion. The case was complicated by urinary tract infection. In 1937 at the Central Hospital in Malta amongst the different complications of pregnancy, glucosuria, pernicious anaemia, pyelonephritis and heart disease were the most frequent. There were 46 cases of albuminuria, 14 cases of cystitis/pyelonephritis and four cases of nephritis with no mortality. Heart disease was reported in ten patients, four of whom died. Respiratory disease (Tuberculosis and bronchial asthma) affected two mothers with no reported mortality. Cases of albuminuria were managed by bed rest, strict dieting and proper nursing. Cases of pyelonephritis were given strong doses of potassium citrate and sometimes anticoli vaccine. Induction of labour was sometimes resorted to. Cases of heart disease were kept at rest and digitalized near term, while the second stage was helped⁹⁸. Cases of pernicious **anaemia** were frequent with seven cases being reported in 1937. These cases were managed with strong doses of iron and hepatex-ventriculin. The clinical histories of four cases admitted to the Medical Ward at Central Hospital in 1941 were described by Prof JE Debono. These severe cases, in one with a red cell count of 750000 and haemoglobin of 20%, were managed by blood transfusion as a preliminary measure, followed by massive doses of

⁹⁸ G. Gulia: *Ostetricia. Il-Barth*, 27 July 1871, Anno I(1):p.11-13; *Annual Report.....1936-1940: op. cit.*

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Hepatex-T and yeast extract. All the cases improved, but one died of puerperal sepsis⁹⁹.

Diabetes Mellitus was similarly frequent in 1937, with glucosuria being reported in 13 mothers, one of whom died. These cases as a rule responded well to dieting and insulin, but had a high perinatal mortality. Diabetes remains one of the major health problems in the Maltese population. Medical practitioners in Malta have long shown a special interest in the disease with the earliest evidence of interest going back to the 17th century. The local management of the disease from the 1880's onwards was moulded upon British, Italian and French thought with diet being the sheet anchor of treatment. Insulin therapy appears to have been introduced in Malta during 1922-23. Until this time diabetics simply did not get pregnant or if they did so, both mother and child faced bleak prospects¹⁰⁰. Diabetes mellitus complicating pregnancy was first mentioned in 1937 when glycosuria was reported to be one of the most frequent complication of pregnancy accounting for 3.2% of all hospital deliveries that year. Retrospective studies since have suggested that the incidence of diabetes mellitus in the hospital pregnant population in the

⁹⁹ *Annual Report.....1936-1940: op. cit.; Report 1941-1948: op. cit.*

¹⁰⁰ *Annual Report.....1936-1940: op. cit.*; P. Cassar: *Historical development of diabetes in Malta*, Ministry of Health, Malta, 1982, +27p.; C. Savona-Ventura: Diabetes in the Maltese pregnant women. *Times [of Malta]*, 1 September 1989, p.3; C. Savona-Ventura: Diabetic disorders in the Maltese population. *The Times [of Malta]*, 14 November 1995, p.20-21

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1970s-1990s ranged from 0.4 - 2.2%, the rate depending on the degree of screening. Of these 0.25% were patients with pre-existing diabetes. Prospective studies with laboratory screening of the population have suggested the problems of gestational impairment of carbohydrate to account for about 14% of the population. Diabetic mothers have been shown to have a higher perinatal mortality rate¹⁰¹.

Hyperemesis gravidarum was in 1937 reported in eight patients. Hyperemesis was mentioned by Prof. Schembri in 1896 who told his midwife students to advise champagne, soda, ice, light and digestible food changing if necessary the hour of meals. Hyperemesis was frequently considered by physicians to have a partly psychosomatic aetiology. **Mental problems** associated with pregnancy, in line with attitudes on the continent, received little attention from obstetricians and midwives. The subject was completely ignored in lectures given to Maltese and English student midwives during the late nineteenth century, and the condition was also ignored in the teaching program of mental nurses in the mid-twentieth century¹⁰². Puerperal psychosis was a regular complication of pregnancy with regular admissions to the mental

¹⁰¹ C. Savona-Ventura: *The clinical significance of gestational impaired glucose tolerance in the Maltese population*. DScMed thesis, Research Institute of Mother and Child, Warsaw, Poland, 1997

¹⁰² S.L. Pisani, 1883: *op. cit*; G.B. Schembri, 1896: *op. cit.*; G.B. Schembri, 1897: *op. cit.*; P. Cassar: *Taghlim fuq il-mard mentali għall-infermieri*. Government Printing Office, Malta, 1950

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hospital. The annual incidence of severe puerperal psychosis reflected by mental hospital admissions during the first half of the twentieth century varied from 0 to 0.83 per 1000 live births¹⁰³.

Uterine Fibroids complicating pregnancy were mentioned by Prof. S. Arpa in his discussion on the case of a term extra-uterine pregnancy. Prof. J. Ellul, in papers presented to the Camera Medica, also referred to two cases of uterine fibroids complicating pregnancy, the first was a cervical fibroid which obstructed labour necessitating a Portes Caesarean operation, while the second referred to a uterine fibroid delivered four weeks in the puerperium after a period of sepsis¹⁰⁴.

(vi) Fetal Problems

Fetal malformations have attracted attention since antiquity and have been related to the mythological, moral and religious concepts of various cultures. Probably the earliest man-recorded congenital malformations in Malta are cases of abnormalities of the hand, one with three digits and one with six digits. These representations were

¹⁰³ *Reports...1905-1935: op. cit.; Annual Report...1936-1940: op. cit.* [actual mental hospital admissions: 1905 – 2 admissions (0.24 per 1000 live births); 1911 – 6 (0.83); 1912 – 0 (0); 1913 – 1 (0.14); 1915 – 2 (0.30); 1919 – 3 (0.44); 1922 – 4 (0.50); 1930 – 4 (0.50); 1937 – 2 (0.23); 1938 – 2 (0.23); 1939 – 1 (0.11); 1940 – 0 (0); 1941 – 0 (0)]

¹⁰⁴ *Annual Report...1936-1940: op. cit.*; G.B. Schembri, 1896: *op. cit.*, p.105; S. Arpa, 1843: *op. cit.*; J. Ellul, 1930: *op. cit.*

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recorded by Neolithic man in the form of an incised decoration from Gzibbu Tombs at Zebbug (Malta) and a statuette from Hagar Qim (Malta)¹⁰⁵. The skeletal remains excavated from Brochtorff Circle at Xaghra (Gozo) have further identified congenital skeletal malformations and non-pathological anomalies. The malformations include a case of a sacral spina bifida in Tarxien Phase material¹⁰⁶. Further skeletal remains showing congenital anomalies were excavated from Roman tombs. This included a non-pathological anatomical variation of the sacrum. Here the transverse process of the first sacral vertebra was not fused with the rest of the bone. In addition two adult skulls from St. Agata Catacombs show features of non-union of the frontal bones¹⁰⁷. The archaeological skeletal record has also described a number of late medieval/early modern congenital anomalies from excavations of burials in Maltese churches. These skeletal anomalies included a number of sacral anomalies including a case of spina bifida and other minor anatomical variations¹⁰⁸.

¹⁰⁵ T. Zammit, C. Singer: Neolithic representation of the human form from the Islands of Malta and Gozo. *J Roy Anthropol Inst*, 1924, LIV:p.81; J.L. Pace: *The Anatomical features of Prehistoric Man in Malta*. The University of Malta, Malta, 1972, p.14

¹⁰⁶ C. Sampedro: What the bones tell us of the physical characteristics of the temple builders. *Lecture: Brochtorff Circle Seminar - The Archaeological Society, Malta, 10 September 1994*

¹⁰⁷ P. Cassar, 1965: *op. cit.*, p.8-9

¹⁰⁸ S. Ramaswamy, J.L. Pace: The Medieval skeletal remains from St. Gregory's Church at Zejtun (Malta). Part 1. Paleopathological Studies. *Arch Ital Anat Embriol*, 1979, LXXXIV(1):p.43-53; J.L. Pace, S. Ramaswamy:

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The written record of the hospitaller period furnishes a number of descriptions of congenital malformations which appeared either before the Episcopal court, the Inquisitional Tribunal or the Civil Courts. The first congenital malformation described in Malta dates to 1542, this being a case of severe male genital malformation - hypospadias - which appeared before the Episcopal Court as a case for marriage annulment. Another case of severe hypospadias was described in 1744. This case came before the Legal courts for the legal change of sex registration¹⁰⁹. In 1630 a description of an abnormal infant was submitted by the midwife Oliveria Gambino to the Episcopal Court to justify why a stillborn was not buried in consecrated ground. The description suggests that the parturient mother gave birth to two macerated monsters - one with human and the other with avian features. Another case is described in 1788 by Dr Saverio Fenech. The report records the birth of a monster born to a woman at Nadur, Gozo. The child had a head and ears like those of a cat. The upper limbs were human-like but without articulations, the hands being similar to those

The Finds: Skeletal remains. *Excavations at Hal Millieri, Malta: a report of the 1977 campaign conducted on behalf of the National Museum of Malta and the University of Malta* (eds. T.F.C. Blagg, A. Bonanno, A.T. Lutrell). University press, Malta, 1990, p.84-95

¹⁰⁹ P. Cassar: A medico-legal report of the sixteenth century from Malta. *Medical History*, 1974, 18:p.354-359; P. Cassar: Change of sex sanctioned by a maltese law court in the eighteenth century. *BMJ*, 1954, 2:p.1413

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of a cat. The genital parts were also similar to those of a female cat¹¹⁰. Further cases were described during the nineteenth century. A case describing the internal and external features of conjoined twins with one head was described in 1816, while further cases of malformed babies born in Malta were published in the 1840s¹¹¹. A case of obstructed labour resulting from fetal malformation causing gross enlargement of the liver was described in 1891. The infant also had a cervical spina bifida and extra digits. The paper comments that extra digits were rather rare in Malta, though a Maltese family was described to have a genetic predisposition to having twenty-four digits¹¹². Prof Giuseppe Schembri in 1896 refers to malformations that may occur, including conjoined twinning with head fusion, union by the chests, or by the pelvis giving rise to two complete trunks with two or four legs. He also lists a number of malformations that could be met with by midwives, including atresia of the rectum, ears, and urethra; hypospadias; harelip and cleft palate; congenital protrusion of bowels within the naval string; conjoined or supernumerary fingers or toes;

¹¹⁰ P. Cassar: The birth of monsters in the Maltese Islands in the 17th and 18th century. *Mediscope*, 1983, 1:p.6-9

¹¹¹ *An account of a monstrous fetus born in Malta in 1816*. No place or date of publication; *Il Portafoglio Maltese*, 13 April 1840, p.851; 5 June 1843, p.2247; *Storia della societa' medica d'incoraggiamento di Malta*. 1845, p.xxxiv,6,52,255

¹¹² G. Gulia: Di un caso di distocia per volume esagerato del fegato fetale - Monstruosita' ed anomalia del bambino. *La Rivista Medica*, 30 September 1891, Anno II(14):p.8

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club foot; spina bifida situated at the neck and the lumbar region; hydrocele; port-wine stains, mother's marks, moles, and tongue tie¹¹³. There is evidence of a three-legged conjoined twin who lived in Malta for some time in the early twentieth century. Photographs taken in Malta of a seven to nine year old child with this anomaly have been found among the belongings of Prof Rosario Busuttil. The origins of this child remain unknown, and it has been suggested that the child may have been the same three-legged Francisco Lentini who was born in Sicily in 1889 and who later emigrated to America joining a number of circuses¹¹⁴.

Further to the list given by Prof. Schembri in his lecture-notes to midwives in 1896, there is to date no further identifiable historical material that deals with the epidemiology of abnormalities including chromosomal abnormalities as Down Syndrome. While a number of studies had been undertaken by individual clinicians on specific congenital disorders, epidemiological study of congenital malformations in Malta was seriously initiated in the early 1980s. In 1983, a computer-based database was initiated by the Department of Obstetrics and Gynaecology to allow the registration of all the births that occurred in Karen Grech Hospital. This database allowed a

¹¹³ G.B. Schembri, 1896: *op. cit.*, p.76

¹¹⁴ C. Mizzi: Il-misteru dwar it-tifel bi tliet saqajn. *It-Torca*, 15 April 1990, p.14-15; 22 April 1990, p.14-15,24

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number of epidemiological studies to be initiated. Malformations were shown during 1983-1886 to occur in about 3.5% of all births, with minor malformations accounting for about 77% of all malformations. While minor malformations were shown to be approximately the same in all age groups, the major malformation rate increased with increasing maternal age (Table 3.2)¹¹⁵. A further database was initiated after 1986 by the Departments of Genetics and Obstetrics-Gynaecology in conjunction with the EUROCAT Project. This project is a concerted action of the EEC in the field of the epidemiology of congenital anomalies. These databases allowed for a better understanding of the problem of lethal and non-lethal congenital abnormalities in the Maltese Islands and other European countries. The EUROCAT database initiated in 1978 has suggested that the malformation rates in Europe should range from a minimum of 0.9% to a maximum of 4.6%. The EUROCAT project has further shown that the incidence of anomalies caused by chromosomal problems in Europe varied in incidence from 9.4 - 22.3 per 10,000 total births. Of all the registered cases, approximately 74% were Down Syndrome¹¹⁶.

¹¹⁵ E.S. Grech, C. Savona-Ventura, eds: *Proceedings: European Study Group on Social Aspects of human Reproduction. V Annual meeting, Malta, September 1987*. Government Press, Malta, n.d., [1988]

¹¹⁶ P. De Wals; H. Dolk, J.A.C. Weatherall, et al: Prevalence of congenital anomalies in 19 EUROCAT countries, 1979-1982. In: *Registration of congenital anomalies in EUROCAT Centres 1979-1983* (P. De Wals, J.A.C. Weatherall, M.F. Lechat, eds). Cabay, Belgium, 1985, p.146-202

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In Malta during the period 1983-87, the prevalence of chromosomal abnormalities was estimated at 22.0 per 10,000 births or a frequency at 1:434. The prevalence of Down Syndrome in Malta was estimated at 18.8 per 10,000 births (frequency 1:532) or 85.5% of chromosomal anomalies diagnosed. The frequency of Down Syndrome was markedly higher in older mothers. The lowest risk of occurrence appears to be in the 25-34 year age group, it is about three times higher in mothers below 20 years and 25-30 times higher in the 40-45 years age group (Table 3.2)¹¹⁷. Genetic counselling was introduced in Malta in 1983

Table 3.2: MALFORMATIONS IN MALTA BY MATERNAL AGE			
MATERNAL AGE	MINOR MALFORMATION RATE [%]	MAJOR MALFORMATION RATE [%]	DOWN SYNDROME RATE [per 1000]
<17 years	1.7	-]
18-19 years	2.5	0.6] 2.7
20-24 years]]	1.25
25-29 years] 2.8] 0.7	0.64
30-34 years	2.4	0.7	0.58
35-39 years	3.0	1.5	4.76
>40 years	2.9	1.5	30.52
TOTAL	2.7	0.8	1.88

¹¹⁷ A. Cuschieri: Registration of congenital anomalies in Malta. *EURCAT Report 2: surveillance of congenital anomalies years 1980-1984* (De wals P, Lechat MF, eds). Catholic University of Leuven, Belgium, 1987, p.243-248;

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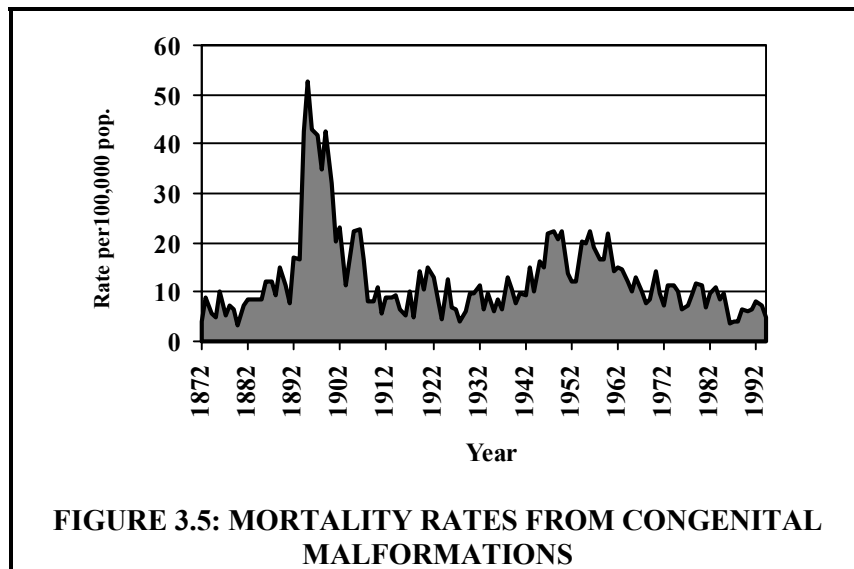
There are no literature sources that give an indication of the incidence of congenital malformations in the Maltese population throughout the twentieth century, however mortality statistics can be used to identify possible trends of certain obvious severe lethal abnormalities. Interpretations of mortality trends are difficult since cause-specific mortality is dependent on a correct diagnosis of the cause of death, while the small numbers involved in Malta result in wide annual fluctuations. Cause-specific mortality rates for the Maltese Islands are available since the start of the twentieth century, though detailed breakdown by specific causes is unavailable for certain years. The mortality rates from congenital malformations during the twentieth century are shown in Figure 3.5.

In 1896 malformations accounted for a total of 76 deaths resulting in a specific mortality rate of about 43.1 per 100,000 population. All these deaths occurred in children under five years of age. The number of deaths from malformations apparently decreased in the first decade of the twentieth century to eventually maintain an annual fluctuation around 8.5 per 100,000 population in the 1920s. The specific mortality rate from congenital malformations started to rise just prior to the Second World War to peak to a value of about 18 per 100,000

A. Cuschieri, S. Gauci: A Survey of Chromosomal Anomalies in Malta. *Maltese Medical Journal*, 1988/89, 1(1):p.38-43

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population in the 1950s. Since a number of congenital malformations have been associated with environmental factors including nutritional deficiencies, the post-War rise could however also have been contributed to by the severe nutritional deficiencies suffered by the population during the war blockade.



This rise could also have been contributed to by a increase in the identification of congenital disorders. Haemophilia, thalassaemia major, coeliac disease, and gangliosidosis were identified by Maltese clinicians only during the 1950-70s. After the 1950s, the specific mortality rate fell progressively to reach mean values of about 7 per

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100,000 population in the 1980s. The majority of these deaths occurred in childhood so that the annual childhood mortality rate from congenital malformations during 1981-85 was 54.2 per 10,000 total births. The larger proportion of these deaths throughout the years was caused by congenital heart lesions, with the second commoner group of malformations being abnormalities of the central nervous system including hydrocephalus and spina bifida¹¹⁸.

The published data fails to identify the number of stillbirths caused by congenital malformations. In reviewing the stillbirths for the period 1981-85, a total of 29 deaths with associated congenital malformations were identified, giving an annual cause-specific stillbirth rate of 10.3 per 10,000 total births. This suggests that the overall mortality caused by congenital malformations in the 1980s approximated 64.5 per 10,000 births¹¹⁹. Since the overall incidence of major congenital

¹¹⁸ S.L. Pisani, 1897: *op. cit.*; *Report for 1898*, 1898: *op. cit.*; *Report for 1899*, 1889: *op. cit.*; *Reports....1900-1935: op. cit.*; *Annual Report.....1936-1940: op. cit.*; *Report.....1941-1948: op. cit.*; *Report....1949-1971: op. cit.*; *Demographic.....1961-1993: op. cit.*; P. Vassallo-Agius: An outline of the development of paediatrics in Malta in the twentieth century. *Paediatric Update* (ed. P. Vassallo-Agius, R. Parascandolo, C. Vella, eds.) University press, Malta, 1991, p.110-112

¹¹⁹ The stillbirths associated with congenital abnormalities for the period 1981-1985 were identified from the *Minutes of the Perinatal Mortality Meetings of the Department of Obstetrics and Gynaecology coupled with the post-mortem reports issued by the Department of Pathology* during the period. During this five-year period, there were a total of 253 stillbirths

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anomalies in Malta during 1983-86 has been estimated at 80 per 10,000 total births, it appears that approximately 80% of infants born with a major malformation still die from their disorder. If all malformations are considered, then about 18% of infants born with any form of major or minor malformation die from their disorder¹²⁰.

Congenital malformations in the various cultures and religions were often looked at as a punishment from the gods. With the advent of Christianity to the Islands, fetal anomalies were believed to originate on biblical lines by copulation between a woman and a male beast or between a woman and the devil. The birth and death of a grossly malformed infant or monster posed an intriguing quandary to the canonists. The officiating priest was enjoined to examine the monster to ascertain that its principal parts, namely the head and chest, had a human configuration. If they did, the infant was baptised, but if the head was that of an animal and the limbs those of a human, the creature was baptised *sub conditione si es homo ego te baptizo*. As late as the mid-nineteenth century canonists were still debating the religious issues raised by the birth of monsters. In their conclusions

reported from the Maltese Islands. Of these 249 (98.4%) occurred in Karin Grech Hospital. The post-mortem rate for stillbirths in the hospital during this period was high varying from 76% to 91% making the data representative of the total Maltese population. Congenital malformations were identified in 29 (11.5%) cases.

¹²⁰ E.S. Grech, C. Savona-Ventura, 1987: *op. cit.*

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they were swayed by the conviction that these deformed beings were the result of copulation between a woman and a male beast or devil¹²¹. The belief was current in 17th century Malta that consort with the devil in an assumed form was possible. In 1647, 17-year old Gertrude Navarre accused herself before the Inquisitional Tribunal of having over the previous six years had carnal relations with men and animals brought to her by the devil. She became pregnant and procured abortion on several occasions. In 1676, a Maltese physician's wife accused herself of having invoked the devil and invited him to have sexual relations with her if he destroyed her husband¹²². In the 1749, the Maltese physician Dr. Salvatore Bernard adhered to the theory that the fantasy organ of the pregnant woman communicated by means of the animal spirits with the fantasy organ of the baby so that any perception aroused in the mother's mind produced a similar impression in the fetal brain, which impression in turn reacted upon and moulded the form of its body. He held that monsters having the shape of animals and devils were born to women who during gestation had been exposed to the sight of these creatures¹²³. These beliefs remained ingrained in Maltese mentality until relatively recent times and many

¹²¹ C. Savona-Ventura: The influence of the Roman Catholic Church on Midwifery Practice in Malta. *Medical History*, 1995, 39(1):p.25-26

¹²² A. Bonnici: *Maltin u l-Inkizzjoni f'nofs is-seklu sbatax*. Klabb Kotba Maltin, Malta, 1977, p.102-104,199-200; P. Cassar, 1983: *op. cit.*

¹²³ P. Cassar: The Neuro-psychological concepts of Dr. S. Bernard. *Scientia*, 1949, 15:p.29

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congenitally malformed individuals were kept hidden away from view by their families. A special hazard of pregnancy was the emergence of longings or desires that could not be satisfied. According to popular belief, the new-born will bear the brunt of a birthmark resembling in form and colour the object of the unfulfilled desire. If a person neglects to satisfy the wishes of a pregnant woman, he/she would be punished by suffering from a sty¹²⁴. Dr. Francisco Butigiec in 1804 did not share the notion that “*in an alteration of imagination which affected the fetus in such a way as to produce a defective baby or a monstrosity*”¹²⁵.

Multiple pregnancies are a regular feature eliciting no special comments. Dr. Butigiec in 1804 quotes William Harvey's theory on the conception of twins¹²⁶. A case of twin pregnancy, one intra-uterine and one-extrauterine, was described by Prof. S Arpa in 1843¹²⁷. Both Prof. Pisani and Prof. Schembri in 1883 and 1896 give advice about the management of multiple births. Prof. Pisani describes the antenatal and intra-partum features for making the diagnosis of a twin pregnancy. He further warns that in a multiple pregnancy, intrapartum complications

¹²⁴ J. Cassar Pullicino: *Studies in Maltese Folklore*. University Press, Malta, 1992, p.213-215; P. Cassar: *Pregnancy and birth in Maltese tradition. Chestpiece*, 1975, p.25

¹²⁵ F. Butigiec, 1804: *op. cit.*; P. Cassar, 1973: *op. cit.*

¹²⁶ F. Butigiec, 1804: *op. cit.*; P. Cassar, 1973: *op. cit.*

¹²⁷ S. Arpa, 1843: *op. cit.*

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were more likely to occur, particularly puerperal complications such as bleeding or sepsis¹²⁸. Prof. Schembri detailed further the types of twin births possible, not only regarding presentation, but also with regards to zygosity. He also makes reference to conjoint twinning and twin-to-twin transfusion¹²⁹. During the period March 1876 to April 1893 at Victoria Hospital in Gozo, there were a total of six cases of twin pregnancies, with a twin rate of 16.8 per 1000 deliveries. The majority of these infants survived. Two cases were associated with a bad perinatal outcome. One patient delivered a stillborn twin after a manual delivery for a hand prolapse in a transverse lie of the second twin. The second case delivered prematurely and both infants died in the early neonatal period. The hospital twin pregnancy rate is very much in excess to that reported in the Maltese Islands in the twentieth century with a rate of 10.2 per 1000 maternities¹³⁰. In the nineteenth century twins were reported to be common but triplets were so rare that not one instance had been heard of by medical men for at least 30 years previous to 1821¹³¹. The first recorded quadruplet pregnancy in Malta was born without complications on 19 January 1826 as evidenced by an ex-voto on the

¹²⁸ S.L. Pisani, 1883: *op. cit.*, p.99-103

¹²⁹ G.B. Schembri, 1896: *op. cit.*, p.52-53

¹³⁰ C. Savona-Ventura, 1990: *op. cit.*, C. Savona-Ventura, 1995: *op. cit.*; C. Savona-Ventura, E.S. Grech: Multiple pregnancy in the Maltese Islands, *International J Gynaecol Obstet*, 1988, 26:p.41-50

¹³¹ P. Cassar, 1965: *op. cit.*, p.356

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wall of the sacristy of Tal-Hlas Church at Qormi¹³². Prof GB Schembri in his lectures to midwives in 1896 makes a passing remark to triplet pregnancies and their management¹³³. The incidence of triplet pregnancies in Malta has been estimated at 0.1 per 1000 maternities, this being higher in elderly patients¹³⁴.

The decrease in obstetric mortality may be attributed to the better antenatal, intrapartum and postpartum management of the mother and child. However advances in medical management only contributed partly to the improvement. More important contributors were made by the bettering of the social circumstances of the population and the introduction of a better organised health service for the lower socio-economic groups. These advances were introduced with difficulty by politicians who attempted to raise the standard of living in the post-Second World War period. This improvement was further contributed to by a steady gradual increase in specialists in the fields of obstetrics and paediatrics. Thus the number of paediatricians, defined as a hospital consultant in paediatrics or doctor with an MRCP(Paediatrics) or equivalent, rose from three in 1960-64 to 15 in 1990-94. The number of

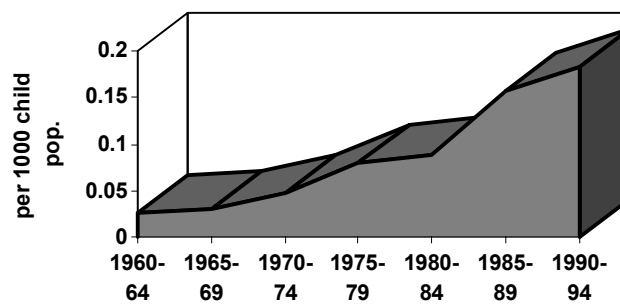
¹³² C. Bianchi, P. Mizzi: Wayside Chapels: Tal-Hlas in Qormi, *Heritage*, n.d. [1984], 57:p.1129-1135

¹³³ G.B. Schembri, 1896: *op. cit.*, p.52-53

¹³⁴ C. Savona-Ventura, A. Zammit: High order multiple births in the Maltese population. *Maltese Medical Journal*, 1992, 4(1):p.11-17

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paediatricians thus increased from 0.03 to 0.18 per 1000 childhood population (Figure 3.6).



**FIGURE 3.6: PROPORTION OF PAEDIATRICIANS
THE MALTESE ISLANDS: 1960-1994**

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Chapter 4
Intrapartum Management

The problems inherent with obstetric practice have long been known and while in the past a high foeto-maternal mortality and morbidity was accepted, birth attendants attempted to help those mothers with intrapartum problems by developing obstetric aids for delivery. In ancient literature there are numerous allusions to obstetric intrapartum aids. The parturition chair has been in use by various cultures, some of whom may have influenced Maltese midwifery in ancient and medieval times. Many of the instruments devised were used for extracting dead babies only, a situation which persisted well into the sixteenth century. Extraction of the living child up to this time were done by version or unaided hands. By the nineteenth century, a number of instruments had been devised to help delivery in difficult cases with the aim of preserving the child. The advances on the continent were closely followed in Malta. During the eighteenth century a number of practitioners from Malta ventured abroad to Bologna, Marseilles, and Paris to familiarise themselves with obstetric practice on the continent. While the medical profession was apparently familiar with the obstetric

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advances on the continent, the same could not be said for the midwives practising on the Islands. In spite of a number of attempts during the nineteenth century to initiate the formal teaching of midwives, a regular course of studies was only placed on sound footing in 1915¹. The situation in the Civil Hospital in Malta during the nineteenth century was similarly far from ideal. The specific midwifery staff in the Government medical service in 1896 included only an Accoucher and Teacher of Practical Midwifery and a midwife, both with duties at the Central Hospital in Malta. Routine obstetrical work was performed by the resident medical officers at the hospitals and the district medical officers, private practitioners and midwives in the community². Private practitioners were employing the obstetrical forceps, but when a requisition for midwifery instruments was made out for the hospital in July 1833 it was turned down for no apparent reason by the Permanent Committee. A similar request in 1840 for Santo Spirito Hospital was similarly turned down on the basis that surgeons never had such things that were probably not absolutely necessary. In April 1841 there was only one set of obstetrical tools at the hospital, though in 1855 more midwifery and gynaecological instruments were obtained from England

¹ P. Cassar: *The Maltese Midwife in history*. Midwives Association Malta, Malta, 1978, p.6-9

² Colonial Estimates, Malta, 1896. *Malta Government Gazette* 20 December 1895, p.953

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for use at the Central Hospital³. The use of these instruments remained the mainstay well into the twentieth century being gradually supplemented and replaced by abdominal delivery, so that at present only variations of the forceps and the ventouse tractor are used.

Great progress had been made in the clarification of the mechanism of labour before 1800. Discussion during the first half of the nineteenth century turned on the relative frequency of the four positions. In the second half of the nineteenth century the physics of the mechanism of labour was scrutinised, and terms like synclitism, levelling and the axis of the pelvis became the commonplaces of debate and obstetrical authors revelled in geometrical diagrams and statistical tables⁴. The mechanism of labour and the fetal positions are discussed in detail in the lecture notes of Prof SL Pisani in 1883 and Prof GB Schembri in 1896-97. The two authors being contemporary show no differences in their

³ Medical & Health Archives (M&H Arch): *Resolution of Permanent Committee, Book encompassing period 3 March 1831 to 23 June 1834*, fol.126; (M&H Arch): *Letter book, Book encompassing period 2 January 1838 to 28 April 1842*, fol.65, 127; (M&H Arch): *Charitable Institutions Book, no.39*, fol.159; (M&H Arch): *Hospitals, Books encompassing periods 12 January 1849 to 31 December 1850 and 22 January 1851 to 20 June 1856*, fol.25, 133; (M&H Arch): *Dispensaries, Book encompassing period 18 January 1849 to 29 October 1856*, fol.19; Camenzuli G: *Sull'ufficio di medico dei poveri*. Malta, 1848, p.18; P. Cassar: *Medical History of Malta*. Wellcome Hist Med Libr, London, 1965, p.532

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teaching which followed the concepts prevalent on the continent. Labour was divided into the three stages, each of which is described in detail. The mechanism of labour is described in six movements that included adaptation, descent, rotation, expulsion, rotation of the second part and expulsion of the second part. Four fetal presentation are described, each of which had four positions⁵. The management of labour was mainly supportive, showing little difference from the concepts described in the beginning of the century. Dr F Butigiec in his lectures to medical students in 1804 commented in his introductory lecture that in most instances the process of birth is a function of nature and is effected in accordance to its laws, and all the midwife need to do is to wait until the baby slips safely from the maternal passages into her hands. Intervention was only needed when complications ensued⁶. Similar attitudes were taken by the later teachers. Both Profs Pisani and Schembri comment that during the first stage of labour there is very little if anything that was to be done in aid of the patient besides supportive measures to make

⁴ J.M.M. Kerr, R.W. Johnstone, M.H. Phillips: *Historical review of British Obstetrics and Gynaecology 1800-1950*, Livingstone, Edinburgh, 1954, p.13-14, 53-56

⁵ S.L. Pisani: *Ktieb il qabla*, Debono & Co, Malta, 1883, p.41-45; G.B. Schembri: *The Midwife's guide book*, Govn Printing Office, Malta, 1896, p.29-35, 56-65

⁶ F. Butigiec: *Trattato dell'arte ostetrica dettato e spiegato del Perille Signor Dr Francesco Butigiec nello studio pubblico del Grand Ospedale Nazionale de'Maltesi. Principiato li 18 Ottobre 1804*, manuscript [private holding] +250p.; P. Cassar: Teaching of midwifery in Malta at the beginning of the nineteenth century. *St Luke's Hospital Gazette*, 1973, 8(2):91-111

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the mother comfortable. The whole attention of the midwife became necessary in the latter stage of the second part of labour when the presenting part was pressing on the perineum to avoid lacerations⁷. Midwives were allowed to deal with cases of longitudinal presentations, whether cephalic or breech, and were advised to call the medical practitioner in abnormal presentations or cases of prolonged labour⁸. The practitioner's intervention varied according to the circumstances and followed the obstetric teaching of the times. The turn of the nineteenth century saw the introduction of the concept of the forces of uterine contractions and the gradual development of external tocometry, using mechanical instruments such as the Lorand Patent 716 TOKOMETER made by Elektroimpex, Budapest. The 1980s saw the introduction of electronic internal and external tocometers for regular use in the labour ward⁹.

(i) Intervention during labour

The eighteenth century saw a number of advances in the management of intrapartum problems. One method that was described in England was **Induction of premature labour** in the management of the severely contracted pelvis. The method that was first described in 1801 remained an essentially British operation meeting with little favour on the

⁷ G.B. Schembri, 1896: *op. cit.*, p.67-68

⁸ S.L. Pisani, 1883: *op. cit.*, p.100-102

⁹ J.M.M. Kerr et al, 1954: *op. cit.*, p.99-101

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European continent and America¹⁰. In 1880 Dr GF Inglott was recommending Caesarean section on the living woman in preference to the induction of premature labour in cases of pelvic abnormalities¹¹, suggesting that the practice of induction may have been in use locally. At the end of the 19th century the methods for inducing labour included pharmacological means using ergot, quinine or pilocarpine; direct excitation of the uterus using fundal friction or electrical stimulation; reflex excitation of the uterus using baths, breast stimulation, vaginal plugging, vaginal douching, cervical dilatation using sponge tents, india-rubber bags or metallic dilators, or intra-uterine stimulation using a hydrostatic bag or boogie; and artificial rupture of membranes¹². Dr G La Ferla in 1855 proposed the use of asafoetida, a resinous gum used in medicines noted for its noxious odour, to prevent fetal death caused by uterine inertia causing abortions or preterm labour. In the 18th century a special beverage was given to help the mother during labour. It was called *Comnata* and consisted of wine, spice honey, cinnamon and cloves heated over a fire. In an effort to augment labour Prof GB Schembri advised midwives in 1896 to use stimulants such as brandy,

¹⁰ H.R. Spencer: An address on some changes in obstetric practice since the foundation of the Medical Society of London. *Lancet*, October 13 1923, p.817-821

¹¹ G.F. Inglott: *L'aborto ostetrico nel suoi rapporti colla medicina ecolla morale cattolica*, A Puglisevich, Malta, 1880, p.17-28; P. Cassar, 1965: op. cit., p.538

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whisky, etc. and to perform artificial rupture of membranes to rouse uterine contractions. When secondary arrest in cervical dilatation occurred, the midwife was advised to use warm water vaginal irrigations and if unsuccessful to send for the accoucher¹³. Prof Pisani in 1883 does not appear to be in favour of the administration of spirits, though he condones a small amount of wine especially if prescribed by the medical practitioner. He refers to medicaments available to the medical practitioner to augment labour. Artificial rupture of membranes was condoned in the second stage, since if the membranes ruptured earlier labour was prolonged¹⁴. Prof Schembri in 1891 is known to have prescribed tincture of ergot for bleeding of uterine pathology and potassium iodide for leucorrhoea, besides to augment the second stage of labour¹⁵. The induction method at the Central Hospital in 1938 was Watson's method described in 1913 using pituitary extract. The routine involved the administration of one ounce of castor oil, followed an hour

¹² O. Spiegelberg: *A text book of midwifery*, New Sydenham Soc., London, 1888, vol.2, p.488-505

¹³ G.B. Schembri, 1896: *op. cit.*, p.82; G. LaFerla: Sull'uso della gomma-resina d'asa foetida adoperata per prevenire la morte del feto nelle gravidanze morbose cagionate de inerzia dell'utero. S.G. Vassalli, Malta, 1855, +29p.; J. Cassar Pullicino: *Studies in Maltese Folklore*. University Press, Malta, 1992, p.218

¹⁴ S.L. Pisani, 1883: *op. cit.*, p.49,75-76

¹⁵ P. Cassar: Two centuries of medical prescription in Malta 1683-1882. *St Luke's Hospital Gazette*, 1969, 4(2):p.111; G. Gulia: Di un caso di Distocia per volume esagerato del fegato fetale - Monstruosita` ed anomalia del bambino. *La Revista Medica*, 30 September 1891, Anno II(14):p.8

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later by 10gr quinine and a warm enema, and an hour later by 3ml pituitary extract repeated at half hourly intervals until labour was established or until six doses had been given. Watson's method was reported to fail in more than half the cases. When it failed, it was aided by means of tube induction. Three tubes were used, these being inserted between the membranes and uterus after instrumental dilatation of the cervix, while the vagina was packed with flavin gauze. This surgical method hardly ever failed. In 1938 induction of labour was undertaken nine times at the Central Hospital, this being indicated at about the 36th week of pregnancy in cases of a generally contracted pelvis of a minor degree or in cases of macrosomia. Other indications included maternal distress from asthma and progressive pyelonephritis. The use of Watson's method was apparently not restricted to hospital practice alone and was held to be responsible for some cases of uterine rupture admitted to the hospital. Vaginal tamponage was apparently restricted to induce patients with placenta praevia when the cervix was found to be closed. The Drew Smythe catheter for hindwater rupture originally described in 1931 was apparently not yet in use in 1938, though the instrument became available later as evidenced by its presence in the St. Luke's and Gozo General Hospitals Old Instruments Collections. In 1950, oxytocic drugs recommended for the augmentation of labour included oestrogens (Dimenformon), acetylcholine, quinine, and posterior pituitary extract (Pitocin), The latter was considered to be the

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most powerful oxytocic but was considered dangerous since it could provoke violent contractions causing uterine rupture. It was recommended that it should not be given unless the cervix was fully dilated and the head low in the vagina. Ergometrin was indicated for cases of inevitable abortion or retained placenta. Other procedures used to stimulate contractions included kneading of the uterus and ironing the perineum. Buccal pitocin was introduced in 1964 after a clinical trial performed by Prof. A.P. Camilleri confirmed this to be “*a veritable boon to modern obstetric practice*”. Intravenous oxytocin (syntocinon) became the mainstay of induction of labour, combined with artificial rupture of membranes, in the 1970s. Automatic infusion pumps to control syntocinon administration became available in the hospital labour suite in 1981. The prostaglandins - dinoprost for intravenous use and dinoprostone for oral, extra-amniotic and intravenous use - were introduced to hospital practice in the early 1980s being initially used for cervical ripening prior to induction of labour and induction of missed abortions, hydatidiform moles, and intrauterine deaths. The early 1990s saw the introduction of prostaglandin vaginal tablets for induction of labour. These were subsequently replaced by vaginal/cervical prostaglandin gel in the mid-1990s¹⁶.

¹⁶ L. Ellul: Report on the maternity and gynaecological departments, Central Hospital. *Annual Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1938*, Malta Government Gazette suppl, 1939, 154:p.106-109; O. Azzopardi: The

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Accouchement force was not a distinct operation, but merely a combination of various procedures. The term was applied to the rapid evacuation of the uterine cavity at a time at which the cervical os was as yet insufficiently dilated to allow the head to enter freely. The technique of dilating the cervical os was generally that of manual dilatation of the cervix as described by PA Harris in 1894 which involved the introduction of the thumb and forefinger into the external os and by a movement similar to that used in snapping the fingers, the cervix was slowly stretched. Additional fingers were then introduced and manipulated in a like manner. The procedure was still being recommended in 1951¹⁷. Dilatation from below was carried out by the fingers, but as they usually were not strong enough, artificial fingers were invented by Bossi and others in the form of expanding metal dilators. The danger of these mechanical dilators was the risk of cervical lacerations involving the fornices and adjacent structures. Such dilators used in the Gozo Government Hospital form part of the Gozo General

parturient with delay in Delivery. *Chest-piece*, 1950, 1(4):10-17; O. Zammit: Common pitfalls in obstetric practice. *Chest-piece*, 1953, 1(8):6-9; A.P. Camilleri: Buccal pitocin. A small clinical trial. *St. Luke's Hospital Gazette*, 1966, 1(2):50-52; E.S. Grech: Introduction of the use of infusion pumps in the Labour Suite. *Circular: Department of Obstetrics and Gynaecology*, 12 August 1981; Drug Information Unit [D.I.U.]: *Formulary Government Pharmaceutical Services*. Department of Health, Malta, 1986

¹⁷ A.C. Beck: *Obstetrical practice*, Williams & Wilkins Co, Baltimore, 5th ed, 1951, p.870-876

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Hospital Old Instruments Collection. When necessary, one or more incisions in the cervix were performed as described by A Duhrsson in 1890. These cervical incisions were made with scissors. By the middle of the twentieth century, the operative cervical dilatation techniques during labour were being recommended only for prolonged labour resulting from uterine inertia¹⁸. At St. Luke's Hospital in 1951, incision of the cervix was performed five times in 537 deliveries¹⁹. The active management of labour using oxytocics has now relegated these procedures to midwifery history being only very rarely indicated. The description of bipolar version by Braxton Hicks in 1864 where version was accomplished by the combined manipulations of one hand through the abdominal wall and two fingers within the uterus enabled intervention in the first stage of labour without the technique of cervical manual dilatation or incisions. The procedure was performed in one case of placenta praevia in 1938²⁰.

The active extraction of the infant required the dilatation of the vagina to allow the operator's hand to be introduced. The use of instruments to dilate the vagina had fallen in disrepute by the 19th century. Dr. Butigiec in 1804 listed the *Speculum matricis* in his obstetric armamentarium,

¹⁸ A.C. Bech, 1951: *op. cit.*; O. Azzopardi, 1950: *op. cit.*, p.17

¹⁹ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1951*, Government Printing Office, Malta, 1953, p.92-93

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which he however used to examine the condition of the vagina and uterus²¹. The Medical School Collection contains a number of old specula, some of which may have been used in obstetrics. When describing operative procedures, Dr Butigiec includes manual vaginal dilatation as a prelude to performing the operative delivery. He introduced his hand forward very slowly into the vagina and dilated the passages very gradually with his index and middle fingers²². Vaginal dilatation as a prelude to operative delivery was still being recommended in midwifery textbooks of the mid-twentieth century, when the procedure described by EB Piper of 'ironing out' of the perineum to allow a folded fist to be admitted was being advocated. In 1953, ironing of the perineum was recommended for dilating the ostium vaginae to obviate or minimise an extensive tear. It was not recommended for use to stimulate a uterine contraction since the contractions elicited were often ineffective²³.

The care of the perineum during the second stage of labour occupied the attention of the midwives and obstetricians throughout history. Prof. GB Schembri comments that *'the integrity of the perineum is the life of the woman. Many of the complaints of the woman in her genital sphere are*

²⁰ J. Ellul, 1939: *op. cit.*

²¹ P. Cassar, 1973: *op. cit.*

²² P. Cassar, 1973: *op. cit.*

²³ A.C. Bech, 1951: *op. cit.*, p.882; O. Zammit, 1953: *op. cit.*, p.7-8

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due to previous lacerations, so that the greatest care and attention is to be paid to avoid a similar accident'. He advocated the application of hot fomentations with cotton wool against the perineum while this was being stretched, together with the application of vaseline to the inner surface of the perineum during the intervals of the pains. He also describes the support of the perineum during delivery of the infant's head, and advocates episiotomy when perineal tears appear inevitable²⁴. Prof. Pisani advocated similar advice of perineal support, though he makes no mention of hot fomentations or Vaseline²⁵. Similar advice had been given previously by Dr Butigiec ninety years previously. The midwife was advised to apply hot fomentations by placing the woman over a hot receptacle containing hot water, and anointing the vagina with fresh butter²⁶. The problem of perineal lacerations was still an important one in the twentieth century. In 1938 there were 23 cases of perineal lacerations, of which only four were episiotomies, two bilateral. Three of the spontaneous lacerations were third degree tears. During that same year there were six cases of genital fistulae following difficult labour seen at the hospital²⁷. In 1951 the episiotomy rate in the hospital rose from 1.1% in 1938 to 7.5%. The gynaecological division in 1951

²⁴ G.B. Schembri, 1896: *op. cit.*, p.68-69

²⁵ S.L. Pisani, 1883: *op. cit.*, p.78-80

²⁶ P. Cassar, 1973: *op. cit.*

²⁷ J. Ellul, 1939: *op. cit.*

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operated one case of vesico-vaginal fistula and three cases of recto-vaginal fistula²⁸.

The **Intra-partum position** has varied throughout the ages in various cultures. The history of the parturition chair in Malta has been previously reviewed²⁹. It is not known when the birth chair was introduced in the Maltese Islands but its use may date back to ancient times³⁰. Dr Butigiec in 1804³¹ mentions that '*various forms and shapes of labour chairs (sedie de traveglia) called selle have been devised by obstetricians. Some of these have been found to be uncomfortable, troublesome and dangerous for the patient as they have been responsible for tearing of the vagina and the perineum and are therefore to be avoided. Others, however, may be recommended such as that designed by GW Stein and the one produced by H van Deventer and modified by L Heister so that it approaches the shape of that used in the Kingdom of Naples and Sicily.*' He advocated the modification of this seat to allow the woman to open her thighs wider. In 1852 Dr G Clinquant designed an obstetrical bed which could be converted into a birth chair '*adapted to every sort of parturition for the use of lying-in*

²⁸ Report....1951: *op. cit.*

²⁹ P. Cassar: Vestiges of the parturition chair in Malta. *St Luke's Hospital Gazette*, 1973, 8(1):p.58-60

³⁰ C. Savona-Ventura: Reflections on Ancient Midwifery in Malta. *Newsletter. The Midwives Association Malta*, 1989, 2:p.5-8

³¹ P. Cassar, 1973: *op. cit.*

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women'. He exhibited this apparatus at the Central Hospital where he demonstrated its use to midwives and obstetricians³². Prof SL Pisani in 1883 repeatedly warned midwives against using the chair in view of the risk of perineal lacerations resulting from difficulty in abducting the thighs sufficiently. He mentions that in contravention to the law, midwives were being forced by women to use the birth chair. Some families had constructed their own chair, or delivered sitting on two chairs tied together³³. The use of the chair was made illegal by Art 143 Chapter XIV of the Police Laws of 1883³⁴. It appears that in spite of the law, the chair continued to be used until about the First World War³⁵. Juan Mamo in his collection of old obstetric illustrations published in 1939 illustrated the obstetric chair according to D Lavrentii (1749) and Bigeschi (1855), while he also depicted the dorsal position support of Schauta (1898)³⁶.

The abolition of the birth chair promoted a move towards delivery in the supine position. Prof Pisani advocated delivery in the supine position, which was availed of as soon as the waters broke. In the first stage the woman was encouraged to move about. He comments that Maltese women delivered on their back while English women preferred the left

³² *The Malta Mail*, 26 November 1852, p.4; P. Cassar, 1973: *op. cit.*, p.59

³³ S.L. Pisani, 1883: *op. cit.*, p.70-71,78-79

³⁴ *Police Laws*, Malta, 1883, p.41; P. Cassar, 1973: *op. cit.*, p.60

³⁵ P. Cassar, 1973: *op. cit.*, p.60

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lateral position³⁷. Prof. Schembri in his lectures to midwives³⁸ advised that '*in the second stage, as soon as the waters break, the woman must be put to bed especially if she is a multipara; she may be placed either on her back (dorsal decubitus) or on her left side with her pelvis to the edge of the bed; in this last case, her knees are drawn forwards; and towards the end of this stage, a folded pillow is placed between the knees, to allow sufficient space for the child to be expelled.*' The supine position was however observed to interfere with the direction of forces particularly during the second stage of labour in multiparous women with a pendulous abdomen. This problem was corrected by means of a wide towel passed around the abdomen with its ends held tight together over the back by an assistant. By the 1950's specially designed abdominal binders were being marketed³⁹. An underwater birth service started being offered at St. James Health Centre at Zabbar in 1987 with the first birth occurring on the 15th November 1987. The centre was inaugurated officially by Dr. Michael Odent, the French doctor who introduced underwater births in Europe on 4th June 1988. The 1000th underwater birth was recorded on the 25th July 1994⁴⁰.

³⁶ J. Mamo: *Obstetricia illustrata*, Malta, 1939, p.57,61,72

³⁷ S.L. Pisani, 1883: *op. cit.*, p.78

³⁸ G.B. Schembri, 1896: *op. cit.*

³⁹ A.C. Beck, 1951: *op. cit.*, p.356-357

⁴⁰ Anon.: 1000th underwater birth. *The Sunday Times [of Malta]*, 7th August 1994, p.2

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(ii) Operative vaginal interventions

Embryotomy procedures have been resorted to when obstructed labour ensues. Destructive instruments for obstetric use are known to date from about the second century BC, so that the embryotomy group of instruments were the first available to the obstetrician and continued in use many years before the forceps were accepted and Caesarean section attained its importance. Even to this day, these instruments of destruction are included in the armamentarium of some maternity hospitals for occasional use, if anyone around knows how. The only instruments used previous to the middle ages were knives and daggers for opening the cavities of the body and detaching limbs, or else sharp hooks and forceps for extracting the mutilated fetus. Extraction of an impacted fetus from the uterus by division of the baby's body was recorded as successfully attempted in the eighteenth century at the Holy Infirmary in Malta⁴¹. A number of these destructive instruments are mentioned by Dr Butigiec in 1804⁴². He includes Levret hooks that could be sheathed, the tire-tete of Mauriceau for the extraction of the fetal head after craniotomy, the trocar to empty the cranium and the abdomen of the baby, the perforator, and the toothed forceps. Embryotomy procedures were apparently still performed towards the end of the nineteenth century, since Dr GF Inglott in 1880 preferred

⁴¹ National Malta Library [NML]: *Ms.1146*, vol 7; fol 236; P. Cassar, 1965: *op. cit.*, p. 143

⁴² P. Cassar, 1973: *op. cit.*

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Caesarean section which could result in happy outcome to both mother and child to methods such as craniotomy and embryotomy which invariably killed the child. He makes specific mention of the craniotome (perforator), cranioclast, and cephalotribe. Prof Pisani in reference to Caesarean section in the live woman mentions that the operation could be performed by the medical practitioner in cases of severe contraction of the pelvis '*when delivery could not occur without cutting up the baby*'. He also made reference to the possible need of embryotomy in cases of impacted breech deliveries. It is unlikely that Prof Pisani ever did a Caesarean section on a live woman himself, though he is known to have performed at least one post-mortem section⁴³. A case requiring embryotomy managed in 1891 was described by G. Gulia. The case was one of prolonged labour and difficulty in delivering the child using forceps. The dystocia was caused by an enlarged fetal liver. Embryotomy was resorted to after the death of the child. The 38-year-old mother died subsequently from puerperal sepsis⁴⁴. These embryotomy procedures slowly fell into disuse so that in 1938⁴⁵ it was noted that the indications for destructive operations at the Central

⁴³ G.F. Inglott, 1880: *op. cit.*; S.L. Pisani, 1883: *op. cit.*, p.92,105; *Il Portafoglio Maltese*, 9 October 1867, p.2; *The Maltese Observer*, 14 October 1867, p.3; *L'Ordine*, 18 October 1867, p.3; P. Cassar: The Church on Caesarean section in Malta in 1867. *St Luke's Hospital Gazette*, 1969, 4(1):p.48-52

⁴⁴ G. Gulia, 1891: *op. cit.*

⁴⁵ J. Ellul, 1939: *op. cit.*

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hospital in Malta were rapidly disappearing, being performed only on a dead fetus. During that year there were out of 354 deliveries, six destructive procedures. Craniotomy was performed twice on obstructive brow presentation, once on hydrocephalus, and once on obstructed labour due to juxta-minor pelvis and tetanus uteri in a neglected case of shoulder presentation. Craniotomy with cleidectomy was performed twice on macrosomic fetuses. In 1951 craniotomy was performed once in the Central Hospital in Malta⁴⁶. Destructive surgery on the fetus to facilitate delivery involved either the perforation and extraction of the head of the fetus, or embryotomy operations involving the mutilation of the body of the fetus. A number of instruments have been devised for these purposes, a number of which can be found in the Medical School Old Instruments Collection.

Perforation of the fetal head is a very old operation that is referred to in the writings of Hippocrates. Indeed for centuries it remained the only recourse in difficult cases; and although in the earliest obstetrical writings it is expressly limited to dead children, yet this rule was soon abandoned. In 1888⁴⁷ it was noted that when no prospect remained of saving the child, it should be looked upon as dead, and the unpleasant sensation of destroying a living child must not be considered for a

⁴⁶ *Report.....1951: op. cit.*

⁴⁷ O. Spiegelberg, 1888: *op. cit.*, vol.2:p.581-582

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moment. This line of treatment was based on the assumption that perforation, especially in the case of a living child, is a conservative operation as regards the mother. The procedure can be performed either with scissors or perforators, or with the trephine. A number of instruments have been devised by a number of obstetricians, specimens of which can be found in the Medical School Old Instruments Collection. In modern obstetrics, perforation is indicated to drain the hydrocephalic head. Cranioclats were powerful bone forceps, consisting of two arms that could be united like those of the obstetric forceps. The two blades were gently curved on their broad aspect. The blade that is destined for the cranial cavity was massive and grooved on the side which will be directed towards the bone, while the second blade destined to lie on the outer side of the head was fenestrated. The cranioclast was simply a traction instrument, and would therefore be more appropriately called a craniotractor. The use of the cranioclast followed perforation of the fetal head. The cephalotribe was constructed like a heavy pair of forceps with a compression screw adjustment on its handles. Like the forceps it was applied to the outside of the child's head, which after compression would reduce the size of the head. The basiotribe was a three-bladed instrument consisting of a central part for introduction into the skull and two heavy curved fenestrated blades for application over the occiput and face respectively. All three parts were connected with a compression screw. The basiotribe incorporated the

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features of the perforator, cranioclast and cephalotribe in one instrument⁴⁸.

Hooks and crotchets were used to perform embryotomy procedures. Decapitating hooks were either of the blunt (Braun's hook) or of the sharp variety (Levret's hook). The hook was passed along the palm of the hand and carried over the anterior surface of the neck until its point was above the neck. The point was then rotated posteriorly and pulled down so that the spinal column was within the grasp of the hook. Traction with rotation on the hook divided the vertebral column. When the blunt hook was used the soft parts were severed by scissors. William Smellie c.1754 described the use of the blunt hook to assist the extraction of the head after perforation of the cranium, introducing a small hook along the ear to above the jaw. He also describes the use of a larger hook to assist the extraction of a breech presentation. The crotchets were small sharp hooks that were used in difficult labours to impale the head of the dead fetus, usually in conjunction with craniotomy, or to rip open the fetal abdomen preliminary to evisceration. Smellie's curved and double-articulated crotchet was a great improvement over the single straight instrument. The double crotchet increased the power of the instrument while diminishing the risk of its slipping and lacerating the

⁴⁸ O. Spiegelberg, 1888: *op. cit.*, vol.2:p.579-601; A.C. Beck, 1951: *op. cit.*, p.961-969

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soft tissues of the mother or the operator. Evisceration consists in the removal of the abdominal and thoracic viscera for the purposes of reducing the size of the fetal trunk. The procedure could also be performed with embryotomy scissors that were blunt pointed heavy curved scissors. This instrument was also useful to perform cliedectomy in cases of shoulder impaction⁴⁹.

Another instrument which found its way into the armamentarium of the past obstetrician was the Gigli's saw. With the collaboration of Hartel, an instrument maker in Breslau, Leonardo Gigli in 1893 embarked on a series of experiments on cadavers to perfect a string saw for facilitating symphysiotomy. The wire or Gigli saw was subsequently modified for use in embryotomy procedures when decapitation was indicated. The Blond-Heidler thimble and saw consisted of a wire saw with a protective covering everywhere except near its middle where the cutting was to be done. At each free end there was a large metal bead that fitted onto the handgrip which was attached to the saw after it had been passed round the neck of the fetus. In order to apply the saw to the neck there was a metal thimble that fitted on the thumb of the introducing hand and this had a slot into which one end of the saw could be fixed. The thimble had a linked ring attached to its dome into which the operator's middle finger curving round the neck would be inserted to disengage the thimble from

⁴⁹ O. Spiegelberg, 1888: *op. cit.*, vol.2:p.601-607

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the thumb and draw it with the attached saw over the neck and out of the vagina. When the saw had been applied, the metal handles were attached to each end and with short to-and-fro movements the neck was divided⁵⁰.

The man-midwife called to a case of obstructed labour prior to the advent of safe Caesarean section often favoured 'turning' or **internal version and breech extraction** aided by the use of a fillet or breech hook. The operation of internal version and breech extraction was popularised by Ambroise Pare in 1549 who advised this method of delivery not only for certain malpresentations such as transverse and shoulder presentations, but also for minor degrees of contracted pelvis and to hasten delivery in cases of antepartum haemorrhage. Pare's advocacy of podalic version was an enormous step forward and the greatest advance in midwifery until the invention of the forceps. Consistent with the introduction of version, the management of the breech delivery was improved by the description of a number of important manoeuvres aimed at preventing or dealing with the complications that may occur during the delivery of the breech. Jacques Guillemeau in the second edition of his midwifery book in 1621 refers to the difficulty of extracting the aftercoming head in breech deliveries,

⁵⁰ S.G. Clayton, D. Fraser, T.I.T. Lewis: *Obstetrics by Ten Teachers*, E. Arnold (Publ) Ltd, London, 1972, 12th ed, p.572-576

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and the technique is described for the first time of putting one finger into the mouth of the child to prevent the head from being extended. Francois Mauriceau further perfected the technique. J Lovset in 1937 described his technique of delivering the upper limbs⁵¹. Dr Butigiec in 1804 quotes Pierre Dionis manoeuvre of turning prolapse of the hand by podalic version and then effecting delivery, while he recommended the use of the fillet to exert traction on the foot. Cases of dystocia from shoulder presentation and hand prolapse were described by G.F. Inglott in 1890. The first case referred to a multiparous 39 year old woman who was found to have a shoulder presentation. Efforts to correct the malpresentation were unsuccessful. The case was managed by awaiting spontaneous evolution, with normal delivery of a live and health infant. The second case referred to a 29-year-old secondagravida woman with a hand prolapse. Chloroform anaesthesia could not be administered, but the hand was replaced and podalic version performed after subcutaneous morphine injection. The infant was born asphyxiated but recovered⁵². In 1938 internal version was performed 12 times, one for failed forceps on an unengaged head, one for severe anteverted uterus, four for transverse presentations, three for shoulder presentations and three for mento-

⁵¹ W. Radcliffe: *Milestone in Midwifery*, J Wright & sons Ltd, Bristol, 1967, p.21,23,25,98

⁵² P. Cassar, 1973: *op. cit.*, p.98,109; G.F. Inglott: Dystocia. *La Rivista Medica*, 31 March 1890, Anno I(2):p.4-5; 15 April 1890, Anno I(3):p.6

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posterior face presentations⁵³. In 1951 internal version still remained an important procedure at St. Luke's Hospital being performed in 30 instances⁵⁴. In modern obstetrics, version and breech extraction is only indicated in the management of problems with the second twin in multiple births. The problems that may occur with a breech delivery have long been known. Until relatively recent times the attending midwife performed breech delivery. The first report of a breech delivery in Malta dates to 1598, when the midwife Bernarda Micallef is reported to have dealt unsuccessfully with a case of foot presentation⁵⁵. Both Prof. Pisani (1883) and Prof. Schembri (1896) dealt specifically with breech and other longitudinal presentations that could be managed by the midwives. Both emphasise the necessity to maintain flexion of the infant, while Pisani advises against haste and undue traction during delivery. Schembri details the management of the breech delivery and the management of possible complications. After delivery of the legs by hooking and pulling them down, the midwife was advised to ensure that the cord is pulled down to form a loop and prevent undue traction. If difficulty was encountered with the delivery of the anterior arm, Schembri describes a manoeuvre similar to Lovset's manoeuvre: "*..... if however any difficulty is met with in getting this arm (anterior) free*

⁵³ J. Ellul, 1939: *op. cit.*

⁵⁴ *Report.....1951: op. cit.*

⁵⁵ Cathedral Archives [Cath. Arch.]: *Curiae Episcopalis Melitensis Ms.78B*, fol.457; P. Cassar, 1978: *op. cit.*, p.11

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owing to the resistance of the pubis, the trunk is turned on its own axis in such a way that the released arm comes to be the anterior one and the hidden arm becomes posterior in front of the perineum, whence it can be easily withdrawn like the first one." Delivery of the head was conducted using the Mauriceau-Smellie-Veit technique⁵⁶. A case of breech presentation that terminated in a stillbirth conducted by the Resident Medical Officer at Victoria Hospital in Gozo on 30 July 1887 has been described⁵⁷. The attending doctor commented that he had required help since the necessary *"....operazione ostetrica, come principio fondamentale non die giacumai essere eseguita da un solo pratico, ma questi die essere accompagnato se non da 2, almeno da un altro ostertrico."* The comments suggest that the breech delivery was conducted using the method advocated by Francois Mauriceau in 1740 which required an assistant to pull on the legs. The practitioner appeared unfamiliar with the single-handed method advocated by William Giffard in 1734.

⁵⁶ S.L. Pisani, 1883: *op. cit.*, p.56-57; G.B. Schembri, 1896: *op. cit.*, p.70-71

⁵⁷ *Correspondence Book for Victoria Hospital, Book encompassing period 9 February 1886 to 26 February 1889*, p.145,149-156,158-161 [manuscript: author's collection]; C. Savona-Ventura: 19th Century Disciplinary Enquiry at Victoria Hospital, Gozo. *Maltese Medical Journal*, 1994, 6(1):p.44-49; C. Savona-Ventura: A maternity unit in Gozo a hundred years ago. *Maltese Medical Journal*, 1995, 7(1):p.55-61

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To exert traction during a breech extraction, the obstetrician made use of **traction instruments**. The fillet was a bandage that was cast around the limbs or the head of the child and is doubtless the most ancient instrument employed in obstetrics. It was made of a strong but very pliant material so as not to injure the infant's skin. Muslin, linen or soft leather was often employed. A fillet of thin whalebone was also recommended, especially in cephalic presentations, a specimen of which is in the Medical School Collection. Dr. Butigiec in 1804⁵⁸ described the fillet or lack as a cord or ribbon-like loop used for tying the baby's feet in breech presentations to enable the application of traction. This application continued well into the twentieth century, when at St. Luke's Hospital the application of a fillet to apply traction on the leg after internal version was reportedly used four times in 1951-52⁵⁹. The Whalebone fillet used for extracting the head, a specimen of which is held by the Medical School Old Instruments Collection, had fallen in disuse by 1888 though it was still being used in England especially by general practitioners. The application of traction onto the fillet was sometimes applied for a prolonged period of time in cases of placenta praevia and other situations where labour required augmentation. This was facilitated by the **traction chair** found presently in the Maternity

⁵⁸ P. Cassar, 1973: *op. cit.*

⁵⁹ Malta Hospital Archives [M.Hosp.Arch]: *Register of Deliveries in Labour Ward: St. Luke's Hospital, Malta, Books encompassing period 5 June 1950 to 26 January 1953*, 3 vols labelled B,C,1.

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Ward of the Gozo General Hospital. This chair enabled the application of traction on the presenting part using a pulley and weight system⁶⁰.

The blunt hook, like the fillet, was much employed in ancient times in conjunction with embryotomy instruments. Its use was however restricted in the 19th century to breech presentations, when *"the hook, conducted by the finger of the free hand, is first of all passed into the genital canal; then, guarded by the finger, is slipped over the outer side of the thigh into the flexure of the groin, care being taken to avoid injuring the generative parts, especially in boys. The instrument must not be pulled on, until its point is felt to be free between the thighs"*⁶¹.

The fillet was often recommended as a substitute to the blunt hook, since it was considered less likely to cause injury to the groin. Dr. Butigiec in 1804⁶² apparently preferred the fillet in these circumstances since his list of instruments only included the sharp-edged hook of Levret used for embryotomy procedures. In 1938 at least one case of an impacted breech with extended legs was delivered by hook traction in the groin after failure of manual delivery. The hook was also at least in one case used to help delivery of the shoulders⁶³.

⁶⁰ C. Savona-Ventura: Placenta praevia - Management in the last century. *Mediscope*, 1991, 14:5-8

⁶¹ O. Spiegelberg, 1888: *op. cit.* vol.2:p.542-545

⁶² P. Cassar, 1973: *op. cit.*

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Willet's forceps were described in 1925 to enable continuous traction to be applied to the fetal scalp in cases of placenta praevia. These forceps grasped a fold of the scalp tissues, without necessitating full cervical dilatation, drawing the head down onto the placental site. Small weights could be applied to allow for continuous traction. Willett's forceps appear to have quickly gained favour in Malta, so that by 1938 their application to the caput was described as one of the standard methods of managing placenta praevia. They were also found useful to extract retained placentas using morphine analgesia and attaching a one pound weight⁶⁴. Their use for placenta praevia continued until the 1950's so that in 1951-52, three cases of placenta praevia were delivered after the application of these forceps⁶⁵.

After the sixteenth century there was a gradual and progressive move towards the development of instruments designed to correct malpresentations of the fetal head and to augment the forces of uterine action in the second stage using traction onto the presenting fetal parts with the aim of delivering a live child. The initial popularity of these instruments varied from obstetrician to another but by the nineteenth

⁶³ J. Ellul, 1939: *op. cit.*, p.119,122

⁶⁴ J. Ellul, 1939: *op. cit.*; C. Savona-Ventura, 1991: *op. cit.*

⁶⁵ C. Savona-Ventura, 1991: *op. cit.*; *Report....1951: op. cit.*; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1952*, Government Printing Office, Malta, 1954, p.82-84

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century they had become clearly established tools in the obstetrician's armamentarium. A Maltese doctor Giuseppe DeMarco is known in 1747 to have assisted at a demonstration of the use of the forceps given by Andre Levret to the Paris Academy⁶⁶. By 1804, Dr Butigiec included the use of the vectis and the forceps described by Levret and Smellie in his clinical teaching, but apparently preferred the older vectis⁶⁷. Christian Kielland first demonstrated his rotational forceps in Copenhagen in 1910 a full description was published in 1916. In Malta, these forceps were introduced by Dr. (later Prof.) J. Ellul in 1929 to the Camera Medica by a paper entitled "*Il Forcipe Kjelland*". Juan Mamo in his publication of 1939 depicting old midwifery plates includes diagrams showing the application of forceps⁶⁸. By 1938, forceps applications were attempted in 34 deliveries at the Central Hospital in Malta with a high perinatal mortality rate (14 stillbirths). There were no maternal deaths, though six patients had puerperal sepsis. Forceps were applied for a variety of reasons which included prolonged labour or secondary inertia with fetal distress (7 cases), arrest of the head or face on the perineum (7 cases),

⁶⁶ J. Galea: Dr. Guiseppe DeMarco (1712-1789). A biographical and bibliographical study on hitherto unpublished material. *St. Luke's Hospital Gazette*, 1972, 7(1):p.3-13

⁶⁷ P. Cassar, 1973: *op. cit.*

⁶⁸ B.M. Hibbard: *The Obstetric Forceps. A short history & descriptive catalogue of the forceps in the museum of the Royal College of Obstetricians & Gynaecologists*. R.C.O.G., London, (1987), +69p.; J. Ellul: *Application of Joseph Ellul B.Sc. M.D. Junior accoucher and Gynaecologist - Central Civil Hospital*. Malta, 1930; J. Mamo, 1939: *op. cit.*, p.94-97

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persistent occipito-posterior position (7 cases), juxta-minor pelvis (5 cases), progressive maternal distress (3 cases), antepartum haemorrhage, pyelonephritis, eclampsia (6 cases), prolapse hand (1 case), and brow presentation (1 case). The majority of applications were low cavity forceps with only one case being high cavity and seven cases middle cavity. Forceps applications were apparently not limited to hospital deliveries but were also used for domiciliary confinements sometimes being responsible for uterine rupture. The majority of cases in which premature application of forceps at home failed were delivered spontaneously or by application of low forceps after a period of rest and sedation in the hospital. One was delivered after internal version. Six of these patients developed puerperal sepsis, while five of them had severe genital lacerations. There were three maternal deaths in the hospital following failed forceps at home⁶⁹. In 1951 there were 59 deliveries performed in the hospital using forceps⁷⁰.

The Vectis, tractor or lever was a long narrow steel instrument with a handle at one end and a triangular shaped blade with a cephalic curve at the other. This single blade forceps was apparently invented by the Chamberlains of England, who also devised the obstetric forceps. The vectis was known prior to the discovery in 1813 of the Chamberlain box

⁶⁹ J. Ellul, 1939: *op. cit.*

⁷⁰ *Report.....1951: op. cit.*

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of instruments, and was being used in Holland by Rogier van Roonhuysen who described it in 1753. Dr Butigieg in 1804 was full of praise for the instrument which he ascribed to Van Roonhuysen⁷¹ and describes its use. *"The lever is made of box-wood and has a curved extremity.....He then pulls out the lever secretly from his sleeve and introduces its curved extremity inside the vagina pushing it up between the pubic bones and occiput of the fetus. Then he lifts the other end of the instrument until it reaches the union of the pubic bones, moves it forward, backward and laterally to free the head and allow its descent naturally."* The lever was also recommended in the various forms of face presentations when manual correction proved ineffective. By the end of the 19th century, the vectis had fallen out of favour with most obstetricians. Two specimens Lever's pattern and Lounde's pattern - are found in the Medical School Old Instruments Collection.

The possibility of delivering the living child by forceps was first suggested by Jacob Rueff in 1554, but his instrument was poorly designed to deliver the living child. He was not known to ever use the forceps for the delivery of a live child. It was shortly before 1598 that a practical midwifery forceps for the extraction of the living child was invented by Peter Chamberlain (1560-1631). Confusion and secrecy pervades the history of the forceps. The Chamberlain's secret was sold to

⁷¹ P. Cassar, 1973: *op. cit.*

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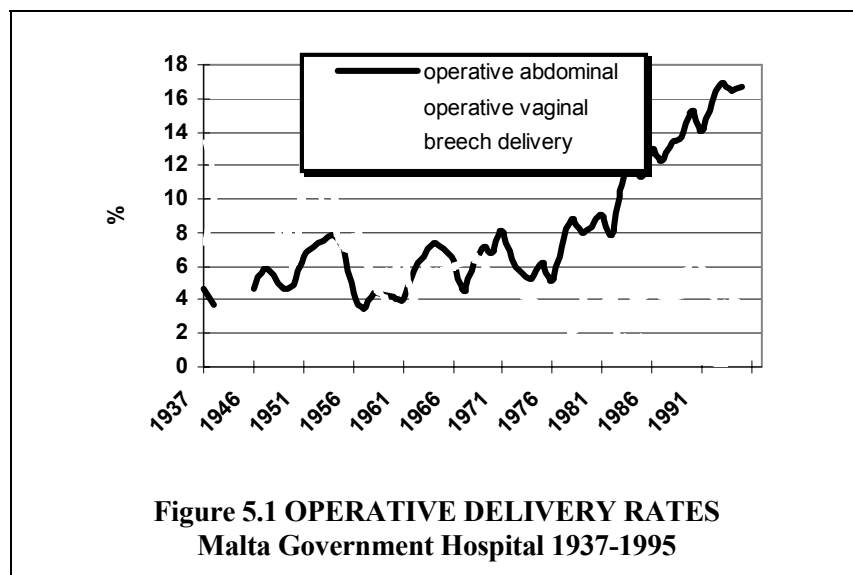
Van Roonhuysen in 1688 by Hugh Chamberlain (1664-1728). After the forceps were publicised, a number of modifications were made, the important of which was the introduction of the pelvic curve described independently in 1751 by Andre Levret of France (1703-1780) and William Smellie of England (1697-1763). These two forceps were recommended by Dr. Butigieg for the extraction of the malpositioned fetus after attempts at manual correction or the use of the vectis had failed⁷². The forceps with its many modifications remains the most important obstetric instrument in present day practice.

The vacuum extractor or ventouse to assist delivery was first reported by J. Yonge in 1704, but it was not until 1848 that James Young Simpson produced the suction tractor, the first practical apparatus for this purpose. Although he was able to report a number of successful deliveries, his instrument had several defects and he soon abandoned it in favour of his forceps. A considerable number of authors subsequently presented instruments which were basically modifications of that of Simpson, but it was only in 1953 when T Malmstrom presented the first version of his vacuum extractor that an instrument became available. This extractor was subsequently modified and improved by Malmstrom in 1957 and it was this form that became popular. The Malmstrom extractor was introduced in St. Luke's Hospital, Malta in March 1966

⁷² P. Cassar, 1973: *op. cit.*

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and slowly gained in popularity so that by 1968, 74 infants were born by ventouse accounting for 54.8% of operative vaginal deliveries. The ventouse extractor became unavailable at St. Luke's Hospital during late 1977 and 1978. In 1980 it accounted for 3.0% of all deliveries occurring in the hospital, while the forceps accounted for 1.9%⁷³. A further modification to the instrument was introduced by Geoffrey Bird in 1969. The national operative vaginal delivery rates in 1995-1997 amounted to 3.7% of all deliveries with a forceps to ventouse ratio of 1:5.3



⁷³ M.Hosp.Arch.: *Register of Deliveries in Labour Ward: St. Luke's Hospital, Malta, Books encompassing period 10 March 1966 to 5 April 1968*, 8vols. labelled No.36-43; E.S. Grech, C. Savona-Ventura: *The Obstetric and Gynaecological service in the Maltese Islands: 1987*. Malta, 1988 p.33

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(iii) Surgical obstetric interventions

Symphyseotomy was first performed by Jean Rene Sigault of Paris in 1777, while the first operation in England was performed in 1782 by Welchman. The initial enthusiasm for the operation died down on the continent, while in England it was looked upon with disfavour. It was only in Italy that the operation continued to be performed with regular revivals by Morisani in 1881 and Pinard in 1900⁷⁴. Gigli in 1893 developed his wire saw for the purpose for facilitating the operation, but with the increasing lack of enthusiasm for the procedure in the twentieth century, the Gigli saw found more useful implementation to facilitate embryotomy. The only mention of symphysiotomy in Malta was made by Dr. Butigiec in 1804. We do not know whether Butigiec ever performed the operation himself but he detailed the procedure. *"The operation commences with the introduction of a syringe in the urinary bladder of the patient so as to maintain the neck of this viscus away from the pubis to prevent injuring it during the incision of the symphysis....Having cut the skin, one must look out for the external pudental artery which....has sometimes been accidentally severed"*. The muscles, ligaments and the cartilage are cut. The pubic bones are then separated from each other thus permitting the exit of the fetus through the enlarged outlet. After the birth, the mother is kept in bed resting on her back with the lower limbs extended and held close together. The cut

⁷⁴ H.R. Spencer, 1923: *op. cit.*, p.818

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ends of the pubic bones are then approximated and kept in place by bandaging the pelvis⁷⁵.

The first recorded **Caesarean section** on a live mother in Malta was performed in 1891 on a woman with cephalopelvic disproportion⁷⁶. The operation was by of means unknown but was apparently limited to instances in which the parturient woman died before giving birth to the infant⁷⁷, though as early as 1804 Dr. F. Butigiec recommended Caesarean section on the living woman in an effort to save both mother and child. He also advised the operation for cases of extra-uterine pregnancies, tumours of the uterus, and extrusion of the fetus into the abdominal cavity following uterine rupture⁷⁸. Post-mortem Caesarean section occupied the attention of the medical profession and of the ecclesiastical authorities in Europe during the 18th century, so that both the state and church authorities enacted degrees enforcing the performance of the operation to save the life of the fetus and ensure its baptism. In Malta, Archbishop Fra Vincenzo Labini of Bitonto, Italy (1780-1807) published on the 14th June 1788 an edict inculcating the

⁷⁵ P. Cassar, 1973: *op. cit.*

⁷⁶ G.B. Schembri: Prima operazione cesarea in Malta. *Rivista di Ostetricia e Ginecologia*, 1891, +3p. (reprint)

⁷⁷ L. Bernard: *Sull'utilita` e necessita` delle chirurgia*, Malta, 1866, p.6; G. LaFerla, 1855: *op. cit.*, p.22; P. Cassar, 1969: *op. cit.*

⁷⁸ P. Cassar, 1973: *op. cit.*

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obligation to perform post-mortem Caesarean section⁷⁹. Parishioners were enjoined on pain of excommunication to inform the parish priests of the existence of pregnancy in women who were in danger of losing their lives. Parish priests were to insist on the performance of the operation securing the services of "*a surgeon or, in his absence, a physician, a midwife, a barber or another person who wanted and knew how to carry out*" the operation. The parish priest was obliged to perform the operation himself in the absence of a capable person. In 1802, the regulations of the Civil Hospital at Valletta (Malta) made it obligatory upon the Principal or Senior Surgeon "*to render his assistance in difficult deliveries and to perform the Caesarean operation when required*"⁸⁰. It is uncertain whether the operation was to be performed on the living or only on the dead. In his series of lectures to medical students dated 1804, Dr Francesco Butigiec⁸¹ describes the operation as being undertaken to save both mother and child. The operative procedure is also described. The uterus was incised anterolaterally avoiding injury to the Fallopian tubes, the round ligaments and the main branches of the adjoining blood vessels. After extraction of the fetus and placenta, the uterus was left unsutured but the abdominal wall incision was closed by six or eight stitches of waxed

⁷⁹ Archiepiscopal Archives Melitensis [AAM]: *Edicta Labini*, ms. vol.12, f.175r; P. Cassar, 1973: *op. cit.*

⁸⁰ *Piano per il regolamento dell'ospedali di Malta*. Malta, 1802, p.13

⁸¹ P. Cassar, 1973: *op. cit.*

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thread which were tied over with "a small pad of waxed taffeta". It is not known whether Dr. Butigiec ever carried out the operation himself.

An instance of a post-mortem Caesarean section is recorded as being performed on a woman passenger of 23 years at 8 months pregnancy suffering from malignant fever on the 13 December 1780 at the Lazaretto (Malta). The operation was performed by Fedele Zammit, the assistant Surgeon. A male child was born alive but died after an hour⁸². Another instance is recorded during the plague of 1813 when a Senior Health Guard at the Lazaretto "opened the body of a dead pregnant woman, under the direction of the physician, to enable the infant to be baptised"⁸³. During the cholera epidemic of 1837 Dr. GM Stilon "never neglected" to perform Caesarean section on dead pregnant women⁸⁴, while Dr. T Chetcuti records the extraction by Caesarean section of three living fetuses "who were immediately baptised by the chaplain". Another instance of post-mortem section was described by Dr. G La Ferla in a grand multipara with a very bad obstetric history where her previous pregnancies had all terminated in stillborn premature infants.

⁸² National Malta Library[NML]: *Registri degli arrivi di bastimenti in quarantina. Arch 653I*, fol69t 11.12.1780, fol74t 11.12.1780, fol76t 13.12.1780; P. Cassar: Clinical case histories and post-mortem reports from the Malta Lazaretto in the 18th century. *Mediscope*, 1989, 13:p9-13

⁸³ W.H. Burnell: *Appendice va ad secondo rapporto sulla quarantina*, London, 1855, p.49

⁸⁴ G.M. Stilon: *Sul cholera morbus*, Malta, 1839, p.6

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The mother died during her ninth pregnancy. At birth the infant had signs of life but died soon after⁸⁵.

The cholera epidemic of July 1867 brought controversy when the Police Physicians of Valletta (Malta) declined to perform Caesarean section as he adhered to a school of thought which held that in cholera cases the fetus pre-deceased the mother⁸⁶. In view of this case the Archbishop Mgr. Fra. Gaetano Pace Forno (1857-1875) issued a circular to parish priests on the subject, wherein he reminded the clergy that it was their duty to enjoin medical practitioners to perform Caesarean section whenever the occasion presented itself in order that no opportunity was lost of saving the offspring, or at least ensure that it received baptism. When no physician was willing to perform the operation, the clergy were bound to call in a midwife or other expert person, to perform the operation themselves⁸⁷. Following the circular post-mortem Caesarean section on mothers succumbing to cholera were performed by medical practitioners. Within eight days three Caesarean sections were recorded with the extraction of live infants⁸⁸. There are no specific instances

⁸⁵ T. Chetcuti: *Notizie storiche-patologiche sul cholera*, Malta, 1838, p.18; G. LaFerla, 1855: *op. cit.*

⁸⁶ *Il Portafoglio Maltese*, 7 September 1867 p.2; 9 October 1867, p.2; *The Malta Times*, 3 October 1867, p.2

⁸⁷ *L'Ordine*, 4 October 1867, p.3; *The Malta Times*, 10 October 1867, p.2

⁸⁸ *Il Portafoglio Maltese*, 7 September 1867, p.2; 9 October 1867, p.2; 12 October 1867, p.2; *The Maltese Observer*, 14 October 1867, p.3; *L'Ordine*, 11

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where Caesarean sections were performed by midwives, parish priests or lay people, though it is recorded that there were, besides doctors, curates and midwives capable of performing the operation successfully in accordance with the rules of surgical art⁸⁹. As late as 1883 Prof. SL Pisani in his lectures to student midwives told his class that they had to be prepared to perform the operation on dead pregnant women in the absence of a doctor. He also mentions that the operation was indicated in severe disproportion on a live woman as an alternative to fetal embryotomy. He comments that a number of cases had been performed with a happy outcome, but does not qualify whether he is referring to cases performed in Malta⁹⁰. It is not known whether Prof Pisani ever performed the operation on a live woman, but he is recorded to have performed a post-mortem section during the 1867 cholera epidemic on a woman who had succumbed to cholera while in the 4th month of pregnancy; "*the fetus outlived the mother for seven minutes and received baptism*"⁹¹.

The first recorded Caesarean section on a live mother in Malta was performed by Prof GB Schembri on the 28th May 1891 on a woman

October 1867, p.3; 18 October 1867, p.3; *The Malta Times*, 24 October 1867, p.1

⁸⁹ *Il Portafoglio Maltese*, 12 October 1867, p.2

⁹⁰ S.L. Pisani, 1883: *op. cit.*, p.104-105

⁹¹ P. Cassar, 1969: *op. cit.*; C. Savona-Ventura: Caesarean Section in the Maltese Islands. *Medical History*, 1993, 37(1):p.37-55

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who had cephalopelvic disproportion resulting from a rachitic pelvis. Both mother and child survived the surgery⁹². Professor GB Schembri occupied the Chair of Midwifery at the University of Malta (1880-1904). He had in November 1890 performed under chloroform anaesthesia the first two laparotomies in Malta⁹³. The patient undergoing the first Caesarean operation was a dwarfish primigravida of 35 years. Her last menstrual period was on the 25th August 1890. The patient's doctor, Dr Zammit, called Prof Schembri in consultation early in the morning of the 28th May. Prof Schembri examined the patient to find "*.....ventri voluminoso estendendosi in alto fine al processo ensiforme, e pendenti in basso fino alle cosire; mizione difficile, pero normali i costituenti dell' urina; oedema alle gambe per ostacolato circolo entro il baccino, polzo rapido, sostenuto, tibia arcuate all' inferiori (manifestazione rachitica), bacino ristretto; la coniugata di pollici 2 1/4, osteo uterino completamente dilatato; membrana a budello; la presentazione dell bambino era la prima posizione sinistra del vertice OISA, riposante sullo stretto superiore; movimenti attivi del feto distinti*

⁹² G.B. Schembri, 1891: *op. cit.*; G.B. Schembri: Prima operazione cesarea, madre e bambino vivi. *La Rivista Medica*, 15 October 1891, Anno II(15):p.1-3

⁹³ V. Vella: Laparotomia in Malta. *Rivista di Ostetricia e Ginecologia*, 1891, +3 p. (reprint); *La Rivista Medica*, 29 November 1890, p.10; T. Zammit: Adenoma dell'ovaio sinistro - Laparotomia-guarigione. Sarcoma fusocellulare intraaddominale - Laparotomia-guarigione. *La Rivista Medica*, 15 January 1891, Anno I(21):p.1-2; P. Cassar: History of anaesthesia in Malta. *Acta Anaesth Melitensia*, 1984, 1(2):p13-18

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come pure i battiti del cuore foetale, specialmente al quadrante inferiore sinistro." He thus arranged the transfer of the patient to the Central Hospital at Floriana and at 2000 hours after consultations with Drs Bonnici, Manche and Tabone decided in favour of a Caesarean section. Dr Cassar anaesthetised the patient. The operation was performed by first "feci il primo taglio lungo la linea alba e attraverso tutta la spessore di circa due pollici da pube verso l'ombellico e costeggiando questo a sinistra arrivai a circa due pollici dispo alla cicatrice ombellicale, questa incisione di circa 8 pollici metteva a nudo il peritoneo. Non vi furono rotture di vasi, verso il centro del sacco peritoneale feci una bottoniera e completai il taglio del sacco in alto e in basso col taglienta quidato su di una sonda; l'utero comparva di una tinta rosso bruna, molto attorcigliato sull' assa, talmente che le appendici sinistra uterine comparirono al di sotto del labbro sinistro della incisione e massolo in sito a dal Prof Bonnici mantenuti i bordi della incisione contro l'utero si oviava cosi all fuoruscita della intestine ae alla introduzione di corpi eterogenai nel cavo addominale; proceddetti allora alla sezionestrato per strato della pareti dell' utero lungo la sua linea mediana per l'estenzione di circa 6 pollici evitando il fondo e la porzione sopravaginale del collo. A mezza via di questo taglio si constitui una bottoniero attraverso la quali passai la sonda scanellata prima in basso e poi in alto e sulla stessa completai il taglio ponendo allo scoperto il bambino che era r avvolto nel suo sacco e nella

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posizione diagnosticata, squarciai il sacco ed estrassi per la spalla destra una bambina che era semi-asfittica del peso di 8 libbre e che il dott. Vella fece riavera.... Suture - sei punti di sutura interrotta di seta sulla parte profonda della incisione uterina e altee quattro superficiali e frapposti. L'utero si sentiva contrarre nel praticare questo suture. Lavato il cavo addominale si rimise l'utero in sito e si passo a nove suture di seta addominale interrotte e profonde e cinque superficiali interposte." The patient's postoperative period was complicated by a pyrexia of 103° F which settled by the 6th day. The sutures were removed on the 8th day and the patient was discharged home after four weeks⁹⁴.

Following the first successful Caesarean delivery on a live patient close to the turn of the twentieth century, the operation was only slowly accepted as an alternative to vaginal delivery. Even though J. Mamo in his publication of old obstetric plates depicts the Caesarean operation⁹⁵, in 1937-38 only 32 deliveries conducted in the Central Hospital in Malta were delivered by the abdominal route accounting for 4.4% of all the deliveries occurring in the hospital, or 0.2% of all maternities in the Maltese Islands. No Caesarean sections were performed in Victoria Hospital in Gozo during this two-year period. The other hospitals gave

⁹⁴ G.B. Schembri, 1891: *op. cit.*; R. Farrugia Randon, Notes on the history of Caesarean section. *Chestpiece*, 1969, 2(11):p37-39

⁹⁵ J. Mamo, 1939: *op. cit.*, p.39

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only a minimal contribution to maternity services. Nearly all the bad maternity cases were sent to the government-managed hospitals some in a moribund state after attempts at operative vaginal delivery at home. The incidence of complete rupture of the uterus was much too high and many were admitted following mismanagement prior to hospital admission⁹⁶.

The indications for undertaking section were all related to problems in delivery. Faults in the birth canal or abnormal fetal position accounted for 24 cases (75.0%), while ruptured uterus accounted for 7 cases (21.9%). One case was a post-mortem section performed on a mother who died following complications of eclampsia. The fetus was macerated. The classical section was the most frequent operation performed (18 cases: 56.3%), while the lower segment approach was performed in 3 cases (9.4%). Porro Caesarean hysterectomy was performed in 9 cases (28.1%), while Portes operation was used in 2 cases (6.3%). Portes operation, involving exteriorisation of the uterus after a classical section, was usually limited to those cases where sepsis was advanced or where the uterine rupture was a small one and it was desirable to preserve the uterus. The procedure facilitated repeat surgery

⁹⁶ J. Ellul, 1939: *op. cit.*; J. Ellul: Report on the Maternity and Gynaecological Departments. Central Hospital. *Annual report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for*

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with hysterectomy if complications ensued. There were ten maternal deaths associated with surgery (excluding one case of post-mortem section) giving an overall mortality rate of 31.3%. The maternal deaths included seven cases that died following complications of ruptured uteri, one case of postoperative tetanus, and two cases who died of postoperative cardiac insufficiency⁹⁷. A case of obstructed labour caused by a cervical fibroid managed by exteriorisation of the internal genital organs for a period of two months was described in 1930-31 by J. Ellul in a clinical report presented to the *Camera Medica*⁹⁸.

During the post-war period 1946-47, only 4.3% of all deliveries were conducted in the government-managed hospitals in Malta and Gozo. No information is available for the other hospitals offering maternity services. The Caesarean section rate at the government-managed hospital in Malta in 1946-47 was 5.3% (47/879 deliveries). No sections were performed at Victoria Hospital in Gozo. The national Caesarean section rate remained at about 0.2% of total maternities⁹⁹. At Malta

the year 1937. Government Printing Office, Malta, 1938, p.119-121; C. Savona-Ventura, 1993: *op. cit.*

⁹⁷ C. Savona-Ventura, 1993: *op. cit.*

⁹⁸ J. Ellul, 1930: *op. cit.*

⁹⁹ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency Medical Services for the year 1946*. Government Printing Office, Malta, 1947; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department including the Emergency Medical Services*

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Hospital the majority of Caesarean sections were classical and lower segment, these accounting for 66.0% of all operations. One Caesarean section was a post-mortem operation. Porro's Caesarean hysterectomy was performed in 2 cases (4.2%), while Portes operation was used in 14 cases (29.8%). The increasing use of Portes operation in preference to Porro's Caesarean hysterectomy probably reflects a more conservative approach in the management of cases complicated by sepsis and uterine rupture. This conservative approach to surgery was brought about by the availability of antimicrobials and the associated fall in maternal mortality from puerperal sepsis, and the easier access to blood transfusion reducing maternal mortality from haemorrhage. The active efforts to introduce the concept of widespread use of aseptic techniques especially in domiciliary confinement in the 1940's resulted in a drop in the incidence of puerperal sepsis from 751.4 per 100000 births in 1937-39 to a rate of 362.0 in 1946-48. The drop in maternal mortality rate from puerperal sepsis was even more marked from 116.7 per 100000 total births in 1937-39 to 25.9 in 1946-47. The case fatality rate in 1937-39 was 15.5% while in 1946-48 the case fatality rate was 7.1%. The fall in case fatality rate was a result of the freer availability of antimicrobials in the use of puerperal sepsis. Sulphanilamide was first tried in Malta in

for the year 1947. Government Printing Office, Malta, 1948; Gozo Hospital Archives [G.Hosp.Arch]: *Register of Admissions to Maternity Ward: Victoria Hospital, Gozo. Book encompassing period 31 March 1943 to 20 June 1948.* 1 vol.

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1935 with encouraging results in infections caused by haemolytic streptococcus. It however did not come into general use until 1937, when it was used also in the management of puerperal sepsis. Sulphapyridine appeared in 1938-39, while penicillin was first used on civilians in a case of puerperal sepsis on 19th August 1944¹⁰⁰.

The early 1950's saw little change in patient's attitude towards hospital confinement, so that generally speaking mothers remained at home for their confinements and very few of them went to hospital for normal labour. Thus during the period 1951-52, 6.5% of the total births occurred in the government-managed hospitals in Malta and Gozo. Three other hospitals in Malta - Zammit Clapp Hospital, David Bruce Military Hospital, and King George V Hospital - were contributing to maternity services in Malta, but no data is available as to their relative contribution¹⁰¹. The Caesarean section rate at St. Luke's Hospital in Malta rose slightly to 6.8% with marked changes in the type of surgery performed. The national Caesarean Section rate also rose to about 0.4% of total maternities. There were a total of 75 abdominal deliveries with the lower segment approach being the commoner operation (48 cases:

¹⁰⁰ C. Savona-Ventura: Reproductive performance on the Maltese Islands during the second World War. *Medical History*, 1990, 34:p.172-173; C. Savona-Ventura, 1993: *op. cit.*

¹⁰¹ *Report....1951: op. cit.; Report.....1952: op. cit.*, p.82-84; G.Hosp.Arch: *Register of Admissions to Maternity Ward: Victoria Hospital, Gozo. Book including years 1951-1952; M.Hosp.Arch.: op. cit.*

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64.0%), while the classical Caesarean section was performed in 15 cases (20.5%) - two post-mortem - and Porro's Caesarean hysterectomy in 12 cases (16.0%). No cases were delivered using Portes' operation. The mortality associated with surgery (excluding the two post-mortem cases) was limited to two giving a mortality rate of 2.7%. One mother died following complications of a spontaneous rupture of the uterus, while the second mother died from cardiac failure complication acute myocarditis which followed a lower segment section for failed forceps delivery¹⁰².

The indications for undertaking Caesarean section showed marked changes from fifteen years previously (1937-38). Thus in 1951-52, while problems in delivery (54.7%) and ruptured uterus (16.0%) remained important causes for undertaking abdominal delivery, fetal and maternal indications accounted for 13.3% respectively. An important maternal indication for undertaking Caesarean section was placenta praevia (9 out of 10 sections performed for maternal indications). Caesarean section for placenta praevia in 1938 was only undertaken in certain primipara with a closed cervix and severe haemorrhage when there was an interest in saving the baby's life. The routine treatment then was to perform tamponage when the cervix was closed. In lateral and marginal cases rupture of the membranes was performed and a pressure bandage

¹⁰² C. Savona-Ventura, 1993: *op. cit.*

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applied over the abdomen. In other cases when bleeding continued the pulling down of a leg with a 2 lb. weight after internal or Braxton-Hicks version, or the application of Willet's forceps onto the caput was resorted to. In 1938 there were 12 cases of placenta praevia delivered at the government-managed hospital in Malta; five of these were more or less central, two marginal and five lateral. None of the cases were delivered by Caesarean section. Four of the central, two of the lateral and one of the marginal placenta praevia were complicated by puerperal sepsis. There were no maternal deaths from placenta praevia in the hospital, though four deaths attributed to complications of placenta praevia were reported from the Maltese Islands for 1937-38 accounting for 4.9% of all registered maternal deaths with a specific mortality rate of 21.95 per 100000 maternities. The perinatal mortality associated with placenta praevia in 1938 was high with five stillbirths and two early neonatal deaths. In 1951-52, 9 cases of placenta praevia were delivered by Caesarean section accounting for 12.0% of all sections performed at St. Luke's Hospital. During the same period, 3 cases of placenta praevia were delivered after the application of Willett's forceps to the scalp, while the application of weights to the leg after internal version was reportedly used four times. Two maternal deaths followed haemorrhage complications of placenta praevia accounting for 16.7% of the maternal deaths occurring in the hospital. There were 13 fresh stillbirths and 2

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neonatal deaths following complication of placenta praevia accounting for 6.7% of perinatal deaths occurring in the hospital¹⁰³.

TABLE 5.1: DEVELOPMENTS IN CAESAREAN SECTION

YEAR	DESCRIPTION
1780	First recorded post-mortem section performed by assistant surgeon F. Zammit on woman dying from ‘malignant fever’.
1788	Mgr V. Labini edict inculcating obligation to perform post-mortem section.
1802	Civil Hospital regulations: oblige the Senior Surgeon to perform the operation when indicated.
1804	F. Butigiec lectures that section may be indicated to save both mother and child. Operation described: classical section with anterolateral incision, uterus left unsutured.
1813	Post-mortem section during plague epidemic performed by the senior health guard under direction of physician to enable baptism of child.
1837	Post-mortem sections during cholera epidemic by Dr. G.M. Stilon
1855	Post-mortem section in a grand multipara.
1867	Post-mortem sections during cholera epidemic. Medico-ecclesiastical controversy.
1880	GF Inglott preferring section to premature induction or embryotomy procedures.
1883	SL Pisani lectures to midwives that operation may be indicated in severe disproportion. Post-mortem section to be performed even by the attending midwife.
1891	First recorded section on a live mother with a happy outcome to infant and mother. Classical section, uterus sutured in two layers.
1937-38	32 sections performed in the main hospital in Malta accounting for about 0.2% of total maternities.

¹⁰³ C. Savona-Ventura, 1991: *op. cit.*; C. Savona-Ventura, 1993: *op. cit.*

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Another important indication which appeared in 1951-52 was malpresentation accounting for another 12.0% of all sections performed at the hospital. In the previous index years 1937-38 no sections were undertaken for malpresentation. This complication of labour in 1937-38 was managed by internal version and breech extraction (6.4%) or by forceps delivery (8.6%). Destructive operations on the fetus had been practically abolished (1.0%). In 1951-52, internal version was performed in 5.8% of deliveries in the hospital, forceps in 10.8%, and destructive surgery in 0.1% of all deliveries. Repeat Caesarean sections were performed in 13.3% of all sections in 1951-52, while fetal indications for section included elderly primigravida (5 cases), bad obstetric history (3 cases), cord prolapse (1 case) and breech presentation (1 case)¹⁰⁴.

In the mid-1950s the mothers' attitude towards hospital confinement changed so that in 1955 it was noted that whereas formerly mothers looked at maternity services with indifference, sometimes even with diffidence, they started to very willingly avail themselves of it and enjoy its benefits¹⁰⁵. This change in attitude is reflected by the increase in the number of patients delivering in the government-managed hospitals in Malta and Gozo so that in 1956-57, 18.1% of total births occurred in

¹⁰⁴ J. Ellul, 1938: *op. cit.*; J. Ellul, 1939: *op. cit.*; *Report....1951: op. cit.*; *Report....1952: op. cit.*; C. Savona-Ventura, 1993: *op. cit.*

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these two hospitals. The number of abdominal deliveries increased nearly two-fold at St. Luke's Hospital from 75 in 1951-52 to 125 cases in 1956-57, though the incidence of abdominal delivery decreased from 6.8% to 4.2% as a result of the increasing number of normal deliveries that occurred in the hospital. At Victoria Hospital in Gozo, eight sections (4.8%) - one Caesarean hysterectomy - were performed. The national Caesarean section rate rose to 0.8%¹⁰⁶.

The Caesarean sections performed in St. Luke's Hospital in 1956-57 were all lower segment approaches except for 8 cases (6.4%) which were Caesarean hysterectomies. The Classical Caesarean section with its long-term risks appears to have been abandoned in the previous five years when in 1951-52 20% of sections were of the Classical approach. There was only one mortality associated with surgery in 1956-57, this occurring in a 44-year-old diabetic mother who died of post-operative

¹⁰⁵ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1955*, Government Printing Office, Malta, 1957

¹⁰⁶ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1956*, Government Printing Office, Malta, 1958; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1957*, Government Printing Office, Malta, 1959; M.Hosp.Arch: *Register of Deliveries in Labour Ward: St. Luke's Hospital, Malta. Books encompassing period 7 December 1955 to 2 April 1958*, 6 vols labelled 7-12; G.Hosp.Arch: *Register of Deliveries in Labour Ward: Victoria Hospital, Gozo. Book*

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shock. The mortality rate from surgery was thus 0.8%. Maternal indications for undertaking surgery continued to receive increasing importance so that in 1956-57 this indication accounted for 29.6% of all sections performed. Besides placenta praevia which accounted for 12.8% of indications, eclampsia or severe hypertensive disease of pregnancy increased markedly in importance accounting for 16.0% of indications. In 1951-52 only one section was performed for this indication (1.3%). The number of operations undertaken for ruptured uterus fell markedly from 16.0% in 1951-52 to 7.2% in 1956-57, even though the incidence of ruptured uterus was reported to be unacceptably high. Problems with delivery and fetal indication accounted for 48.0% and 8.8% of cases respectively. Problems with delivery in 1956-57 featured for the first time with indications such as inertia (3 cases - 2.4%) and failed induction (3 cases- 2.4%) reflecting probably a more active intervention in the light of increased hospital supervision to safeguard the mother and infant. Fetal distress was the indication for undertaking surgery in 5 cases (4.0%). Breech presentation accounted for a further five cases (4.0%) a rise from the 1.0% in 1951-52¹⁰⁷.

The increasing rate of hospital deliveries continued so that in 1963 the hospital confinement rate was reported to be 53%, with 30.4% of all

encompassing period 9 January 1956 to 5 April 1960, 1 vol.; C. Savona-Ventura, 1993: op. cit.

¹⁰⁷ C. Savona-Ventura, 1993: *op. cit.*

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births in 1961-62 occurring at the government managed hospitals in Malta and Gozo¹⁰⁸. The number of abdominal deliveries at St. Luke's Hospital increased from 125 in 1956-57 to 212 in 1961-62 resulting in an abdominal delivery rate of 4.9%. The lower segment approach was the main method used (209 cases: 98.6%) with only three cases of Caesarean hysterectomy being performed. There was only one maternal death associated with surgery (rate 0.5%), the mother dying from complications of severe pre-eclampsia and a concealed accidental haemorrhage. At Victoria Hospital in Gozo, 5 patients were delivered by Caesarean section resulting in a section rate of 1.4%, while at St. Catherine Hospital in Malta - a religious-run hospital opened in 1961 - 45 patients underwent Caesarean section with an operative rate of 13.0%. The national Caesarean section rate approximated 1.0%. The Caesarean section rate at the private hospital is markedly in excess to the rates in the government-managed hospitals, this being attributed to the fact that maternity services at the private hospital were only initiated in 1961 while surgical facilities were available in 1959. The high section rate probably reflected elective sections in preference to normal deliveries. The Caesarean section rate in this hospital decreased in

¹⁰⁸ A.P. Camilleri: Obstetric deaths in Malta. *J Int Fed Gynaecol Obstet*, 1965, 3(3):p.179-186

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subsequent years with an increase in the number of normal deliveries conducted in the hospital¹⁰⁹.

TABLE 5.2: CAESAREAN SECTION INDICATIONS

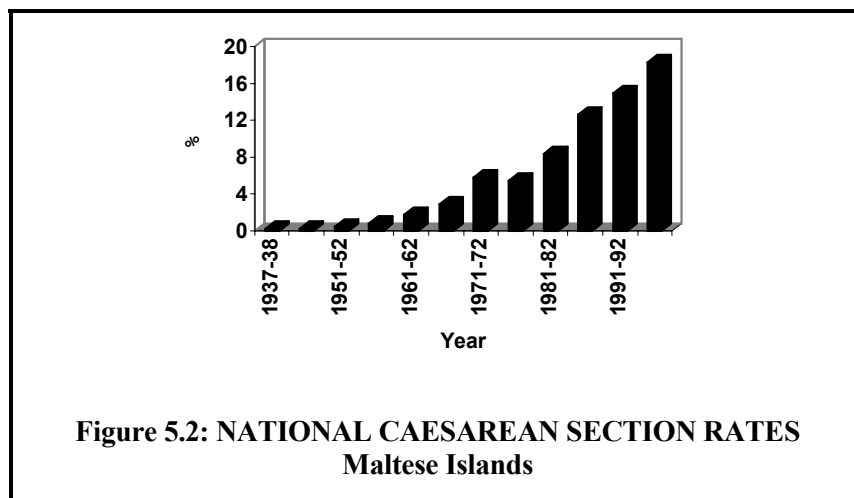
INDICATIONS	1937-38	1951-52	1956-57	1961-62
Post-mortem	3.1%	2.7%	0%	0%
Ruptured Uterus	21.9%	16.0%	7.2%	1.9%
Delivery Problems	75.0%	54.7%	48.0%	44.3%
Maternal Indications	0%	13.3%	29.6%	23.1%
Fetal Indications	0%	13.3%	8.8%	29.2%
Unspecified	0%	0%	6.4%	1.4%

The indications for undertaking Caesarean section at St. Luke's Hospital in 1961-62 showed a further rise in sections for fetal indications, particularly fetal distress and cord prolapse. There was a remarkable drop in the incidence of ruptured uterus from 21.9% in 1937-38 to 1.9%

¹⁰⁹ *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1961*, Government Printing Office, Malta, 1968; *Report on the Health conditions of the Maltese Islands and on the work of the Medical and Health Department for the year 1962*, Government Printing Office, Malta, 1969; M.Hosp.Arch: *Register of Deliveries in Labour Ward: St. Luke's Hospital, Malta. Books encompassing period 25 November 1961 to 5 March 1963*, 4 vol labelled 22-25; G.Hosp.Arch: *Register of Deliveries in Labour Ward: Victoria Hospital, Gozo. Book encompassing period 10 April 1960 to 8 April 1969*, 1 vol.; E. Attard: *Register of deliveries in Maternity division: St. Catherine of Sienna Hospital, Malta*, letter; C. Savona-Ventura, 1993: *op. cit.*

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in 1961-62 reflecting the greater awareness by general practitioners of the dangers of home intervention in cases of prolonged labour and a greater willingness of patients to deliver themselves in hospital if complications were identified. The 1970's saw not only an increase in the hospital delivery rates reaching a domiciliary confinement rate in 1976-77 of only 2.4%, but also a rise in the Caesarean section rate which escalated in the 1980's (Figure 5.2)¹¹⁰. The Caesarean section rates continued to increase progressively throughout the subsequent years reflecting the increasing safety of the operation and changing attitudes towards indications (Table 5.2).



¹¹⁰ C. Savona-Ventura, 1993: *op. cit.*

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Cord presentation and prolapse is one indication for emergency Caesarean section in modern obstetrics. Since the complication carries no adverse morbidity to the mother, it was previously managed conservatively, though attempts to replace the cord were advocated. In the nineteenth century a number of cord repositories were devised to assist replacement of a cord prolapse, such as the Michaelis and Murphy patterns. These were unlikely to be available to the attending midwife. In his lectures Prof Schembri advised midwives to replace the prolapsed cord at once into the cavity of the womb during the intervals of the pains by taking hold of it with two fingers or with the entire hand if necessary, pushing it into the uterus and whirling it round the body or the limbs of the child to prevent its refalling. If this attempt was unsuccessful, the cord was gently secured to a piece of tape whose ends were then knotted together into a loop. The distal end of this loop was passed into the side slit of an elastic catheter that had a central wire (stylet). The wire was made to run through the loop whilst passing it up into the catheter, thus fixing the prolapsed cord to the catheter. The cord was then pushed up into the uterus using the catheter during the intervals of the contractions high up into the womb, and kept in this situation until the presenting part comes down into the pelvic cavity. By withdrawing the wire, the loop with the cord gets free within the uterine cavity and the catheter can be removed. If the manoeuvre was unsuccessful the midwife was advised

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to call in the accoucher. The medical practitioner frequently resorted to internal version if manual manipulation failed and the infant was alive. Two cases of cord prolapse occurring at St. Luke's Hospital in 1938 were managed successfully in this way¹¹¹.

(iv) Obstetric Analgesia and anaesthesia

The history of **obstetric analgesia and anaesthesia** was initiated with James Young Simpson who first administered ether on an obstetric patient undergoing version and extraction for a flat pelvis in January 1847. Later that year in November, Simpson discovered the anaesthetic effects of chloroform. Chloroform analgesia was eventually introduced for the management of normal labour and delivery. Prior to that year every obstetric operation had to be carried out without the help of any effective agent for the relief of pain, though in the late eighteenth century William Smellie was advocating the use of opium in false pains, in after pains, and in haemorrhage¹¹². The advances on the continent were closely followed by Maltese practitioners. Ether anaesthesia was first used in Malta in March 1847 in a case of partial amputation of the

¹¹¹ O. Spiegelberg, 1888: *op. cit.*, vol.2:p.330-344; G.B. Schembri, 1896: *op. cit.*, p.86; J. Ellul, 1939: *op. cit.*, p.110

¹¹² Kerr JMM et al, 1954: *op. cit.*, p.226-238; A.H. McClintock: *Smellie's Treatise on the theory and practice on midwifery*. New Sydenham Soc, London, 1878, vol.3.

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hand, while the discovery of chloroform was reported in Malta only twenty-five days after Simpson reported his findings¹¹³.

Since the majority of deliveries were conducted by the midwife and not the practitioner, it is unlikely that any form of intrapartum analgesia was introduced for normal labours. Narcotics in the form of opium and later its purified form morphine were the mainstay of pain relief in the management of complicated pregnancies and abnormal labours throughout the nineteenth century. Morphine was reported in use in Malta during 1843 to manage cases of severe puerperal sepsis. Opium was described as useful in 1871 in cases of eclampsia. The use of morphine as an analgesic for intrauterine obstetric manipulation was recorded in 1890. Morphine continued to be used to facilitate obstetric manipulations even during the twentieth century¹¹⁴.

By 1938 anaesthesia and sedation were widely available in St. Luke's Hospital. Luminal was used to sedate patients suffering from eclampsia, while morphia was used in cases of pulmonary oedema. Morphia was also administered to women undergoing Willett's forceps removal of placentas, while general anaesthesia was used for manual removal.

¹¹³ P. Cassar, 1984: *op. cit.*

¹¹⁴ S. Arpa: *Di un caso particolare di gravidaza extra-uterina*. Camilleri, Malta, 1843, p.16-17; G. Gulia: *Ostetricia. Sulle convulsioni puerperali. Il Barth*, 16 October 1871, Anno 1(3):p.45-48; G.F. Inglott, 1890: *op. cit.*

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General anaesthesia was also used in cases of reduction of a prolapsed hand and for other intrauterine manual manipulations. Deep general anaesthesia was advocated for cases undergoing internal version. Sedatives were administered to allow labouring women to rest during prolonged labour especially in those cases in which forceps were prematurely applied at home. Morphia and hyoscine were administered to relax a tetanic uterus resulting from prolonged labour¹¹⁵. Morphine however affects uterine activity reducing tone, thus interfering with progress of labour and limiting the use of this narcotic as an obstetric analgesic in normal labour. Pethidine was described in 1939 being discovered during a search for atropine-like smooth muscle relaxants. It eventually was found to have little effect on uterine muscle function and started being widely used in normal obstetric practice. Respiratory depression in the newborn as a complication of pethidine administration was described in the late 1950s and the antagonist levallorphan was added to the opiate and marketed as Pethilorfan. Both pethidine and pethilorfan gained popularity in Malta and were widely used in the 1970s and 1980s. In 1983 narcotic use in the Labour Ward included 67.3g of Pethidine and 221g of Pethilorfan, while in 1985 more pethidine was used (161g) in contrast to pethilorfan (82g). Pethilorfan use was subsequently discontinued with systemic analgesia being based on pethidine in combination to promazine. In 1990 the estimated annual

¹¹⁵ J. Ellul, 1939: *op. cit.*

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consumption of narcotics in the Labour Ward included 325g of pethidine. In addition the Labour Ward Theatre used 1.2g of fentanyl citrate, 150mg of morphine, 200mg of papaveratum, and 65.5mg of alfentanil HCL¹¹⁶.

Inhalation anaesthesia was probably similarly not routinely used during normal labours during the nineteenth century, though the use of ether anaesthesia may however have been introduced early in the management of abnormal labours. Dr. A.J. Burmester, who with Dr. T. Spencer Wells helped introduce ether anaesthesia in Malta in 1847, is known to have held consultations in all cases connected with medicine, surgery including ophthalmic, and midwifery. Prof Pisani in his lectures to midwives advises a form of supportive psychoprophylaxis for intrapartum pain¹¹⁷.

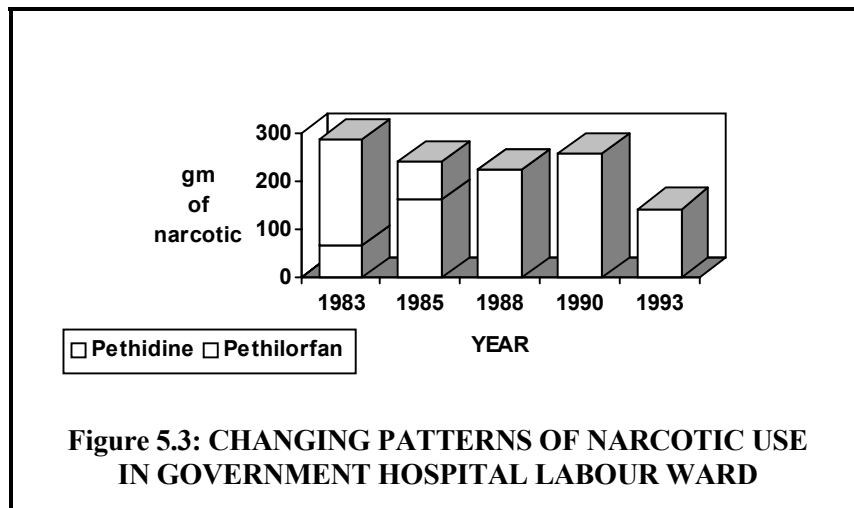
Chloroform was in 1890 used to induce anaesthesia in cases requiring intra-uterine manipulations, though these were sometimes performed after morphine administration. The first Caesarean section on a live woman was performed by Prof Schembri in 1891, probably under

¹¹⁶ C. Savona-Ventura., The use of analgesia and anaesthesia during labour at St. Luke's Hospital, Malta. *Acta Anaesthesiologica Melitensia*, 1984, 1(2):p.63-68; C. Savona-Ventura: Drug usage in Maltese pregnant women. *Midwives Journal*, 1993, 2:p.10-19; M.Hosp.Arch: *Labour Ward Dangerous Drugs Registers, Karin Grech Hospital, Malta, 1983,1985,1990.*

¹¹⁷ P. Cassar, 1965: *op. cit.*, p.550; S.L. Pisani, 1883: *op. cit.*, p.74-75

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chloroform anaesthesia since the same surgeon performed two laparotomies a few months previously under the influence of this drug. Prof. Schembri also mentions the use of chloroform in his lectures to midwives as a method of removing the symptoms of phantom pregnancy¹¹⁸.



In the 1960s midwives were allowed on their own responsibility to administer nitrous oxide and air, and/or triline and air mixtures during labours. Any other drugs were given under the doctor's orders. Trilene inhalation analgesia (Trichloroethylene) using the Tecota mark IV

¹¹⁸ G.F. Inglott, 1890: *op. cit.*; P. Cassar, 1984: *op. cit.*, G.B. Schembri, 1896: *op. cit.*, p.45

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inhaler remained available throughout the 1970s and 1980s, but this was subsequently replaced in 1992 by piped nitrous oxide - oxygen mixtures, a facility that reduced narcotic use in the Labour Ward. Local anaesthesia in the form of lignocaine found widespread use not only to perform and repair episiotomies and vaginal tears, but also for regional pudendal and paracervical blocks using long needles such as the Ferris needle. Epidural analgesia for Caesarean section was first performed at St. Luke's Hospital on the 20 May 1980, while it was used to relieve intrapartum pain on 18 April 1982¹¹⁹.

The progress in antenatal and intrapartum care over the last century especially has been aimed at different levels of attention. Until the first half of the twentieth century the main concern was the high maternal mortality rate and serious efforts were made to reduce this. Once this reached acceptable levels, attention was shifted to the perinatal mortality rate until this too was significantly reduced. Now the attention is towards the psychosocial aspects of labour. Mothers now have been released from the fear of death to themselves or their child and want to enjoy the experience of labour. This has resulted in a surge

¹¹⁹ FIGO/ICM: Maternity care in the World. Pergamon Press, Oxford, 1966, p.296; C. Savona-Ventura, 1984: op. cit.; N. Boskovski, E.S. Grech: Epidural anaesthesia for elective Caesarean section. *Acta Anaesthesiologica Melitensia*, 1983, 1(1):p.43-44

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in alternative care systems that still require evaluation and organisation to ensure correct standards of maternal and infant health.

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Chapter 5 ***Social Aspects***

In most developed countries, the perinatal, infant and maternal mortality rates declined significantly in the two decades after the Second World War, a phenomenon that was closely associated with socio-economic progress and improvements in the basic health and social services. Multivariate analysis of the findings of the British Perinatal Mortality Survey of 1958 has confirmed that a number of social and biological characteristics of the mother have a major influence on perinatal mortality, and that the risk of a perinatal death is high in the underprivileged classes. The risk decreases as the family's social and economic circumstances improve. A similar correlation has been identified for maternal mortality¹. Similar correlations between obstetric mortality and socio-biological characteristics have been directly or indirectly identified in the Maltese population.

¹ N.R. Butler, D.G. Bonham: *Perinatal mortality, first report of the 1958 British Perinatal Mortality Survey*. Livingstone: Edinburgh, 1963; A.C. Turnbull, V.R. Tindall, G. Robson, I.M.P. Dawson, E.P. Cloake, J.S.A. Ashley: *Report on Confidential Enquiries into maternal deaths in England and Wales 1979-1981*. HMSO: London, 1986

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(i) Demographic characteristics

Perinatal mortality rates have generally taken a variable but definite downward trend in most developed countries between 1956 and 1966. This same gradual trend in perinatal death rates was also observed in the Maltese Islands and correlated in part to the decreasing birth rates reported for that period. A similar correlation was noted for maternal mortality rates (Figure 4.1)². The crude birth rate in the Maltese Islands had fallen considerably during this period, reaching its lowest value of 15.8 per 1000 population in 1969. It subsequently increased to reach the 17.2 figure of 1980. The decrease in birth rate was the result of a number of factors. During this period, a large number of the population, mainly young people in their most fertile years, emigrated overseas. This emigration was compounded with the rundown of the British Forces. Both forms of emigration were particularly heavy during the post-Second World War and the 1963-65 periods. The second important cause for the decreasing birth rates was a decrease in family size resulting from changes in socio-economic factors and the introduction of the concept of family control. The mean number of live

² C. Savona-Ventura, E.S. Grech: Perinatal mortality in the Maltese Islands. *Inter J Gynaecol Obstet*, 23:25-30, 1985; C. Savona-Ventura, E.S. Grech: Maternal Mortality in the Maltese Islands. *Inter J Gynaecol Obstet*, 25:283-290, 1987

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births per marriage cohort has decreased from 7.38 in 1912-1923 to 3.83 in 1947-59³.

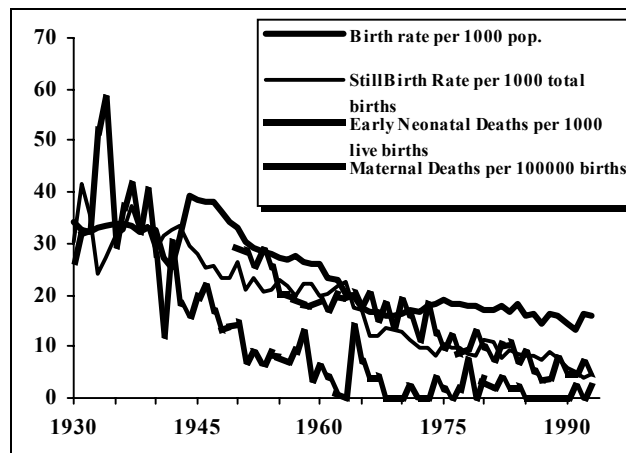


FIGURE 4.1: TRENDS IN OBSTETRIC MORTALITY AND BIRTH RATES: Maltese Islands 1930-1994

There is little information about the methods of birth control used by the Maltese population prior to the mid-twentieth century. Abnormal intercourse of various forms was probably practised. An Augustian friar in the late eighteenth century made it a point to ask his penitents whether their husbands had had abnormal intercourse with them. Abnormal intercourse was also condemned during the late nineteenth

³ *Census '85: Vol 1 - A demographical profile of Malta and Gozo*. Central Office of Statistics, Malta, 1986

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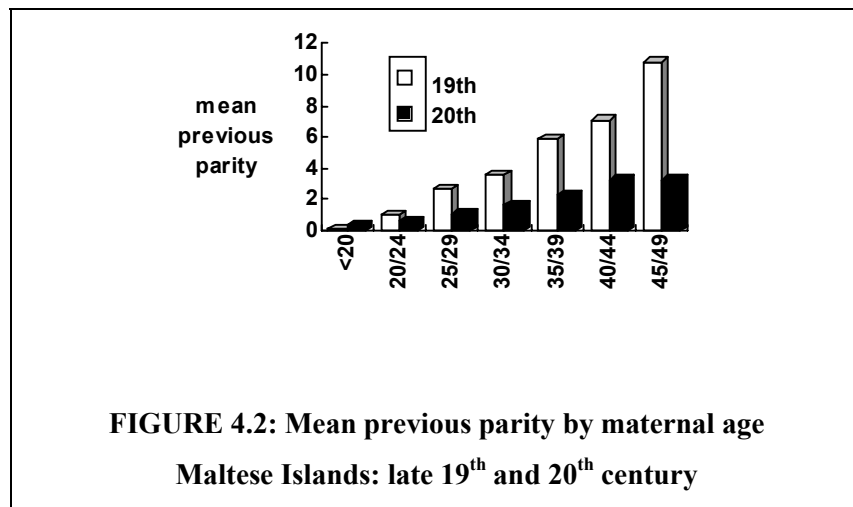
century by the Maltese Professor of Midwifery in his lecture-notes to student midwives basing his objections on medical grounds stating that midwives should be *firm in dissuading young married women, from making use of such means often spoken of by their friends to avoid contraception, and must try to impress on their mind, the amount of harm they do themselves by such practice; a gradual and increasing congestion of the womb is the result of these reported habits, which cause many ailments of the internal genital sphere, and which, in time, lead to invalidism.* Other individuals resorted to abortion as a means of fertility control, even though termination of pregnancy was repeatedly condemned by the Maltese ecclesiastical and civil authorities⁴.

While the historical records suggest that some forms of family control may have been used by the population, it is unlikely that these practices were widespread. The previous parity structure by age of women delivering in one of the state hospitals on the Maltese Islands in the late nineteenth century suggests that the lower social strata was unlikely to have practised any form of contraception other than a prolonged lactation period. The pattern of previous parity in women

⁴ Archivum Inquisitionis Melitensis [AIM]: *Processi 131A*, fols. 155r-207r; G.B. Schembri: *The Midwife's Guide Book*. Government Press, Malta, 1896, p.104-105; C. Savona-Ventura: Family Planning in a Roman Catholic community. *Planned Parenthood in Europe*, 24(1):20-22, 1995a; C. Savona-Ventura: The influence of the Catholic Church on Midwifery practices in Malta. *Medical History*, 39(1):p18-34, 1995b

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delivering in the late nineteenth century is markedly different from that of women delivering in the late twentieth century (Figure 4.2)⁵.



The elucidation of the physiology of the menstrual cycle by K. Ogino of Japan and H. Knaus of Austria in the early 1930s afforded a method of contraception - the safe method - acceptable to the Roman Catholic church. In the late 1950s, a survey carried out among Maltese married couples showed that while 82% of the couples knew of the existence of

⁵ C. Savona-Ventura: A maternity unit in Gozo a hundred years ago. *Maltese Medical Journal*, 7(1):p.55-61, 1995c; E.S. Grech, C. Savona-Ventura: *The Obstetric and Gynaecological Service in the Maltese Islands - 1987*. Malta, 1988

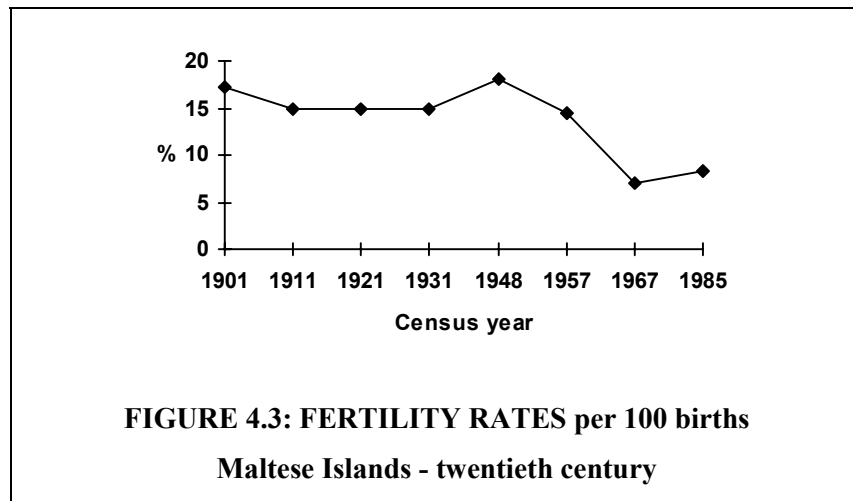
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the rhythm method of contraception, only 27% knew how to use it. Subsequent to this study, the Maltese Catholic authorities in 1962 introduced free family planning clinics run under the direction of the Cana Movement. These clinics manned by volunteer doctors promoted only the rhythm method of contraception. In the first two years of operation these clinics dealt with over 1325 cases. The Movement also published a number of information booklets on the subject of the rhythm method of contraception. In the subsequent decades the awareness about the need of family size control increased with a subsequent decrease in fertility rates and the number of births per marriage cohort. In a 1971 survey of 321 women under 45 years of age, some form of family control was practised by 87%. About one-fourth of those practising contraception used the rhythm method alone, the remainder using methods not approved by the Church, with coitus interruptus being the most used. The trend slowly changed in the following decades after the introduction of state-managed family planning clinics in 1982 following pressure by a women's group *Min-naha tan-Nisa*. In these clinics all methods of contraception, except termination of pregnancy that remained illegal, were promoted and made available freely. These clinics increased not only the awareness of the need of family size control, but also the awareness of the available methods of contraception⁶.

⁶ A. Gerada, A. Galea, F.F. Fenech (eds): *The Catholic Doctor and his*

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The decrease in fertility rates coincided with the marked downward trend in the perinatal and maternal mortality rates. Increasing parity has been associated worldwide with an increased risk of maternal and perinatal mortality and morbidity.



Maternal and perinatal deaths increase with birth order because many complications of pregnancy, and childbirth rise sharply among third and later births. In part, the affect of parity is related to the increased

apostolate within the family. Proceedings of the First European Congress of Catholic Doctors. MAM, Malta, 1966; R.G. Milne: Family Planning in Malta. Population studies, 27(2):p.373-386, 1973; C. Savona-Ventura, 1995a: op. cit.

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age of the grand-multipara. However, the English Perinatal Mortality Survey of 1958 has shown that at any given age, the risk of perinatal death was lowest for the second and third pregnancies and highest for the fourth and subsequent pregnancies; the risk for the first pregnancy was intermediate between these two levels⁷. A comparison of the obstetric outcome of the grand-multipara (women having their tenth or more child: para 10+) with women of para 5-9 who delivered at St. Luke's Hospital in 1963-64 showed that the grand-multipara had definite higher risks of obstetric problems which give rise to an adverse perinatal outcome. A review of perinatal deaths of women delivering at Karin Grech Hospital during the early 1980s showed perinatal mortality to be statistically greater in women having their first child and those having their fourth or more child⁸.

Maternal age is one factor that has repeatedly been shown in many countries to influence obstetric mortality. The British Perinatal Mortality Survey of 1958 confirmed that perinatal mortality was below the national average in women aged 20-30 years, while women aged

⁷ N.R. Butler, D.G. Bonham, 1963: *op. cit.*; A.C. Turnbull et al, 1986: *op. cit.*

⁸ T. Busuttil: The Grande Multipara. *St. Luke's Hospital Gazette*, 1(1):p.31-34, 1966; E.S. Grech, C. Savona-Ventura: Analysis of perinatal deaths occurring in Malta. *Simposia Internazionale Mortalita' e Morbosita' Perinatale. Cetraro, 14-16 October 1984* (eds. L. Zecchella, A. Santoro, M. Valente, eds). Monduzzi, Bologna, 1986, p.105-114

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less than 20 years and those more than 30 years had a higher perinatal mortality rate than the national average. The rate rose progressively with increasing age. Similar observations were reported from many other developing or developed countries⁹. A similar statistically significant difference was reported in the Maltese Islands (Figure 4.4)¹⁰. The perinatal mortality rate in the Maltese Islands increased progressively with increasing age, particularly in women aged more than 35 years. The higher mortality rates in this group of women has been correlated to a higher incidence of disease which affect placental function and fetal growth, and the higher incidence of congenital malformations in this group. The elderly women also had a higher incidence of premature deliveries and multiple pregnancies¹¹. The advent of family control practices has reduced the number of deliveries in elderly women. Thus in 1960 these women accounted for 17.7% of all deliveries in the Maltese Islands, the figure reaching 10.7% in 1980. This demographic change resulting from family planning attitudes may have contributed towards the decreasing perinatal mortality rates

⁹ N.R. Butler, D.G. Bonham, 1963: *op. cit.*; D. Maine: *Family planning: Its impact on the Health of Women and Children*. Centre for Population & Family Health, New York, 1981, +51p.

¹⁰ E.S. Grech, C. Savona-Ventura, 1986: *op. cit.*; E.S. Grech, C. Savona-Ventura, 1988: *op. cit.*

¹¹ C. Savona-Ventura, E.S. Grech: Risk factors in Elderly Patients. *Proceedings: E.S.S.A.R. V Annual Meeting, Malta, September 1987*. (E.S. Grech, C. Savona-Ventura, eds). Government Press, Malta, n.d. [1988a], p.41-54

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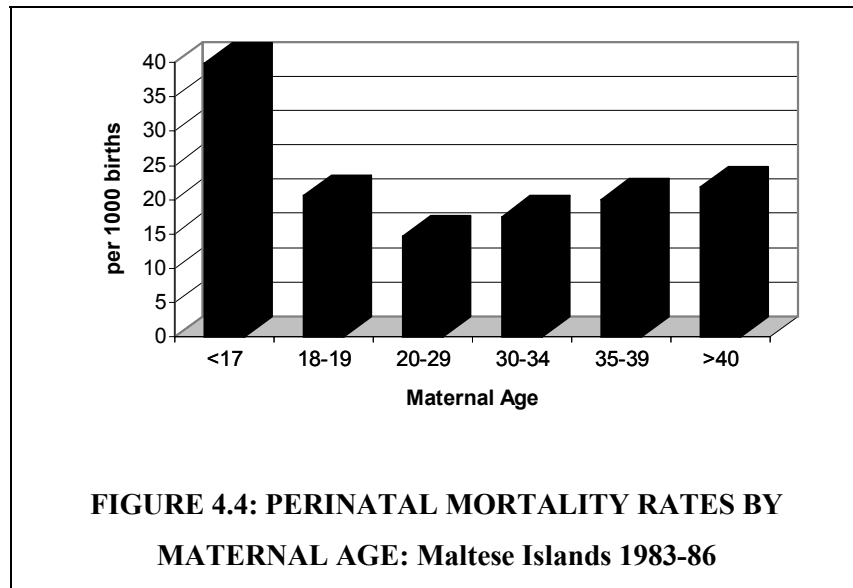
reported for Malta in the last fifty years. Perinatal death rates were also higher in women aged less than 20 years, these apparently increasing with decreasing age. The reasons for this increase in perinatal deaths in the younger woman was apparently related to a higher incidence of premature births, possibly contributed to by a lower socio-economic status of these mothers¹².

Maternal mortality has similarly been shown to follow a similar pattern in many developed and developing countries, with mortality rates increasing progressively with increasing maternal age. The maternal mortality rate was also higher in women aged less than 20 years. A similar pattern of maternal deaths has been reported from the Maltese Islands for the period 1960-1984. Thus women aged 40-44 had a 3.1 times increased risk of dying during their pregnancy as compared to the national average, while those aged more than 45 years had an 11.7 times risk. This increased risk of maternal death with increasing age has been correlated to the increasing risk of medical disorders of pregnancy¹³.

¹² C. Savona-Ventura, E.S. Grech: Teenage Pregnancies in the Maltese Islands. *Proceedings: E.S.S.A.R. V Annual Meeting, Malta, September 1987*. (E.S. Grech, C. Savona-Ventura, eds). Government Press, Malta, n.d. [1988b], p.26-40; C. Savona-Ventura, E.S. Grech: Risks in pregnant teenagers. *Inter J Gynaecol Obstet*, 32(1):p.7-13, 1990

¹³ A.C. Turnbull et al, 1986: op. cit.; D. Maine, 1981: op. cit.; C. Savona-Ventura, Micallef I, E.S. Grech: Trends in Maternal Mortality and

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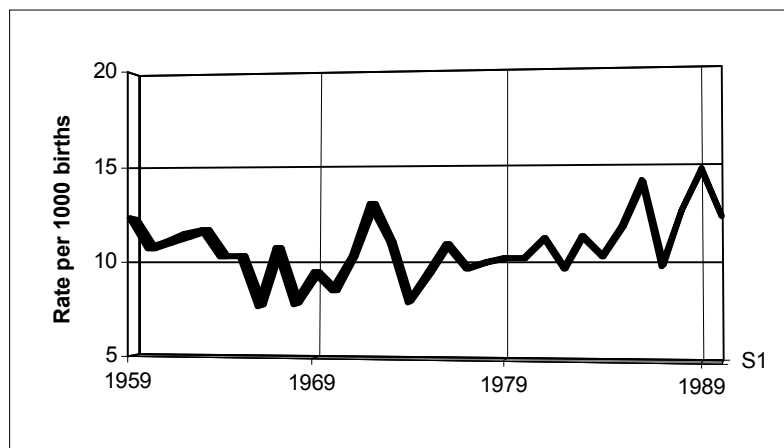


The proportion of elderly mothers in the population is contributory to the incidence of multiple pregnancies. Thus the national incidence of multiple pregnancy in the Maltese Islands appeared to peak at 30-40 years of age. Triplet maternity rates similarly increased progressively with increasing age. The shifting attitudes towards fertility control and the noted decrease in the proportion of pregnancies in elderly women

Morbidity in the Maltese Islands. *Proceedings: E.S.S.A.R. V Annual Meeting, Malta, September 1987*. (E.S. Grech, C. Savona-Ventura, eds). Government Press, Malta, n.d. [1988], p.109-118

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contributed to a downward trend in the multiple pregnancy rates during the period 1959-82. An increase in multiple pregnancy rates was subsequently reported in the 1980s and 1990s (Figure 4.5). This rise in multiple pregnancy rates may be related to the increasing use of ovulation induction agents during the 1980s resulting in an increase in the number of twin and higher order births¹⁴.



**FIGURE 4.5: MULTIPLE PREGNANCY RATES
Maltese Islands 1959-1994**

¹⁴ C. Savona-Ventura, E.S. Grech: Multiple pregnancies in the Maltese population. *Inter J Gynaecol Obstet*, 26:P.41-50, 1988; C. Savona-Ventura, A. Zammit: Higher order multiple births in the Maltese population. *Maltese Medical Journal*, 4(1):p.11-17, 1992

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(ii) Social and economic factors

The risk of a maternal and perinatal death is high in the underprivileged classes. During the nineteenth and first half of the twentieth century, the majority of confinements delivered in the government hospitals were women from the lower socio-economic classes. The hospital confinements occurring in Victoria Hospital in Gozo during the period 1876-93 were generally restricted to needy women from the lower socio-economic strata. The women delivering in the hospital were generally elderly with a mean maternal age of 32.3 years and multiparous with 44.8% having had more than 5 previous pregnancies. A large proportion (8.6%) of births were illegitimate. The prematurity rate and multiple pregnancy rates were both elevated at 27.9% and 1.68% respectively. The lower socio-economic status of these mothers, together with the fact that these mothers were more likely to have significant medical and/or obstetric problems, resulted in higher perinatal and maternal mortality rates than those reported for the general population in Gozo and Malta during the same period¹⁵.

Both increasing maternal age and multiparity, shown to be associated with higher perinatal and maternal mortality rates, are indirect correlates to the social circumstances of the family. The lower socio-economic classes were more likely to have large families continuing

¹⁵ C. Savona-Ventura, 1995c: *op. cit.*

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their reproductive performance into the later reproductive period. In 1966, the prevalence of grand multipara (Para 7+) delivering in St. Luke's Hospital in Malta was reported to be 15.7% of all admissions. This high prevalence was attributed to the fact that the larger proportion of women admitted to the hospital at the time were from a lower socio-economic strata. Women from the higher socio-economic group were more likely to deliver in one of the paying religious-run hospitals functioning in Malta at the time. The grand multipara were shown to have higher adverse obstetric and perinatal outcome, while their antenatal care was often erratic¹⁶. Women from the lower socio-economic group were in the 1950s shown to have also a higher risk of premature deliveries. The incidence of prematurity at Blue Sisters Hospital - the only paying religious-run hospital at the time - in the period 1947-54 was reported to be 4.4%. In contrast the incidence of prematurity in St. Luke's Hospital during the period 1954-55 was reported to be 9.5%. Premature births have been described as being commoner at the two extremes of reproductive life¹⁷. In spite of the apparent association in the described studies between prematurity and low socio-economic status, a pilot study of 407 primipara delivering at

¹⁶ T. Busuttil, 1966: *op. cit.*

¹⁷ E.A. Cachia: Prematurity in Malta. *Chest-piece*, 1(2):p.12-16, 1956; C. Savona-Ventura, E.S. Grech, 1988a: *op. cit.*; C. Savona-Ventura, E.S. Grech, 1988b: *op. cit.*; C. Savona-Ventura, E.S. Grech, 1990: *op. cit.*

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St. Luke's Hospital in 1974 failed to show any definite influence of social class to maternal age and duration of gestation¹⁸.

The problem of illegitimacy on the Maltese Islands has been a perennial one. One of the first hospitals in Malta - Santo Spirito Hospital at Rabat - is known to have provided the humanitarian service to the community by taking under its care infants who for a variety of reasons could not be cared for properly in their own family. The first definite reference to foundlings in the hospital dates to 1518, while in later years - at least by 1615 - a rotating cot device or "ruota" was constructed for the placing of infants anonymously in the hospital. In spite of the material care given to these infants by the hospital, the mortality was high so that in 1547-48 six out of 25 arrivals (25%) died in the early months. This high mortality rate should not reflect badly on the standard of hospital care, since the infant mortality in the general population probably reached these figures. The infant mortality rate at Naxxar in the late eighteenth century approximated 27%. The infants that survived their fifth birthday were integrated into society through fostering or adoption. The reasons why infants were abandoned by their mothers must have been diverse, but

¹⁸ A.P. Camilleri, T. Micallef: Birth-Weight and Socio-Economic factors. A Pilot Study. *St. Luke's Hospital Gazette*, 11(1):p.57-61, 1976

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prominent among them must have been the social pressures brought to bear on unmarried mothers¹⁹.

Santo Spirito Hospital continued to offer its services of taking care of foundlings in the late eighteenth century. It was also contributing towards the maternity services on the Islands, when during 1750-1800 it accounted for approximately 0.62% of all births in Malta. Of these 8.8% were from outside town. The Women's Hospital in Valletta offered similar services accepting 418 foundlings during 1787-89. The mortality rate of these infants at this hospital was excessively high approximating 62.7%²⁰. The services offered by this hospital may in part account for the high illegitimacy rates recorded from the Porto Salvo parish of Valletta (25.7%) for the period 1750-1800. The foundlings at this hospital came from diverse localities in Malta. During 1776-1786, out of 134 illegitimate offspring, 62 (46.3%) belonged to women from outside

¹⁹ S. Fiorini: *Santo Spirito Hospital at Rabat, Malta: The Early years to 1575*. Dept of Information, Malta, 1989, p.3-11, 35-38 [The hospital at Rabat (Malta) was already founded by 1372, but the name of Santo Spirito was first referred to in 1467. The hospital in Gozo founded in 1454 was also initially known by this name. This hospital also had a "ruota". The name of Santo Spirito was given to several medieval hospitals which specialised in the care of foundlings and maternity cases.]; P. Cassar: *Medical History of Malta*, Wellcome Historical Medical Libr, London, 1965, p.26-27; F. Ciappara: *Marriage in Malta in the late eighteenth century*, Assoc News Ltd, Malta, 1988, p.84,107 [Figures are based on the parish archives at Naxxar for the years 1750-1790 - 1010 infant deaths (1750-89) average annual 25, 4665 baptisms (1750-1800) average annual 93.]

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Valletta, suggesting that unwed women from outside Valletta went there for the delivery to conceal their pregnancy. A similar relative high illegitimacy rate (4.3%) is recorded from Rabat, Gozo²¹.

The illegitimacy rate for the Maltese Islands during the second part of the eighteenth century amounted to 4.7% of all baptisms, there being a wide range of illegitimacy rates from the various towns and villages in Malta and Gozo. The overall illegitimacy rate in Malta was 5.1%, while in Gozo the rate was 2.1%. It appears that whereas the illegitimacy rates were high in the capital city parishes (Valletta 3.2 - 25.7%), main towns and harbour villages (Mdina/Rabat, Balzan, 2.4 - 3.1%; Birgu, Senglea, Cospicua 2.6 - 6.0%), the rates were generally low in the outlying villages ranging 0 - 1.6%. The pattern is similar in Gozo with Rabat having a rate of 4.3%, followed by Nadur with a rate of 1.2% and the other villages with rates in the region of 0.3 - 0.5%²².

While this may suggest more rigid attitudes towards virtue in the outlying villages particularly in Gozo, it more likely reflects a hurried marriage in the presence of an illegitimate pregnancy. While ideally sex was permissible only within marriage, it appears that during the late

²⁰ F. Ciappara, 1988: *op. cit.*, p.85-86,110

²¹ F. Ciappara, 1988: *op. cit.*, p.84-86

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eighteenth century engaged couples were not expected to remain chaste before marriage. For the period 1750-98, 26.8% of couples who applied for marriage dispensations had pre-marital sex. Pre-marital pregnancy rates for Balzan (1700-97) and Siggiewi (1748-78) were reported at 4.9 and 5.8% respectively. While these rates are lower than those reported from Protestant England (10.2-46.2%) and Catholic France, they are similar to some towns in France²³. The illegitimacy rates throughout the late eighteenth century maintained a generally increasing trend with a sharp rise during the final years of the century (Figure 4.6) attributed to the social upheaval caused by the uprising against the French²⁴.

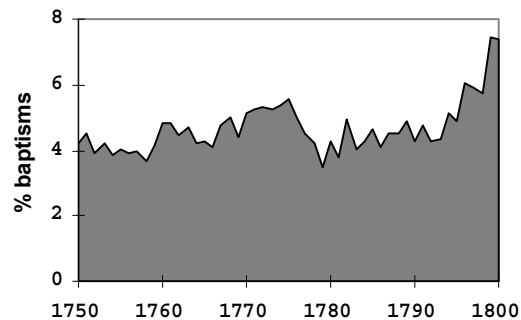


FIGURE 4.6: ILLEGITIMACY RATES
Maltese Islands: 18th century

²² F. Ciappara, 1988: *op. cit.*, p.84 [Illegitimacy rates:- 1751-1760 4.11%; 1761-1770 4.59%; 1771-1780 4.81%; 1781-1790 4.39%; 1791-1800 5.49% total baptisms]

²³ F. Ciappara, 1988: *op. cit.*, p.76-80

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The nineteenth century saw a change in attitudes towards pre-marital sex and illegitimacy, so that the illegitimacy rates were reported at about 1.2 - 1.6% total births during the period 1871-1900 (Figure 4.7)²⁵. The Victorian era heralded a prudish attitude towards sex, particularly pre-marital sex. The attitudes were transmitted to colonial Malta. Pre-marital intercourse or cohabitation was considered by the Roman Catholic Church a reserved sin with the penalty of excommunication. Amorous adventures were perhaps not uncommon, but any mischief arising was many times remedied by a hasty marriage, this being more so in Gozo and the outlying villages. Unmarried girls sometimes even sought a pregnancy to force a marriage unwanted by the parents. A large proportion of unmarried mothers delivered their infants in the hospitals. In 1868 more than one-half of the maternity cases at the Central Hospital at Floriana were unmarried young women²⁶.

In Gozo foundlings were rare, though St Julian's Hospital had facilities to receive them. Fathers, from motives of conscience, generally

²⁴ F. Ciappara, 1988: *op. cit.*, p.125-126,128

²⁵ The birth element in population growth. *Malta Review*, 14:p.12-17, 1963. [Illegitimacy rates:- 1871-1881 1.6%; 1881-1891 1.4%; 1891-1901 1.2%; 1901-1911 0.95%; 1911-1921 1.1% of total births.]; C. Savona-Ventura: Illegitimacy in the Roman Catholic Community of Malta. *Planned Parenthood in Europe*, 22(2):p.30-32, 1993

²⁶ P. Cassar, 1965: *op. cit.*, p.457

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maintained their unwanted or illegitimate children. The illegitimacy rate in Victoria Hospital in Gozo was during the period 1876-93 apparently higher than in the general population. A study of the sociological aspects of women admitted to the Lying-in ward of that hospital during this period, showed that in 8.6% of instances the father was unknown. These women were generally unmarried, but a few were widowed (11.8%) or married (8.8%). There were only 11 of the admissions to the ward that reported that their father or their husband's father was unknown, suggesting an overall illegitimacy rate of 1.7%. Bastardy may have been recurrent in families. The mean age of the unmarried mothers was 25.6 years with the youngest being 15 years and the oldest 40 years. This mean age was lower than the mean for all the mothers admitted to the hospital computed at 32.26 years. Six of the 34 mothers delivering illegitimate infants came from Malta, three of whom were admitted by the Comptroller's or the Assistant Secretary to Government's authority. Two of these mothers were the only paying patients admitted to the hospital during the period²⁷. Gozo had a higher birth rate than the parent Island but apparently fell slowly throughout the first part of the nineteenth century. The decline in illegitimate births was apparently faster than the fall in the birth rate²⁸.

²⁷ C. Savona-Ventura, 1995c: *op. cit.*

²⁸ J. Bezzina: *Religion and politics in a Crown Colony. The Gozo-Malta story 1798-1864*. Bugelli Publ, Malta, 1985, p.40,51-52

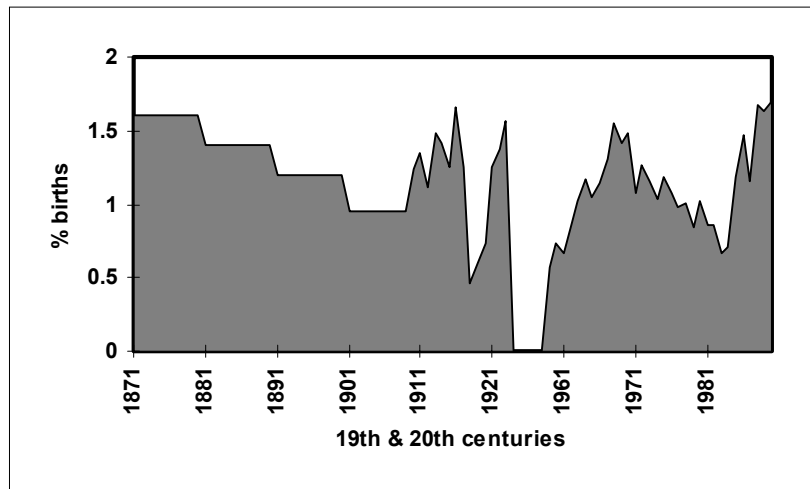
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Illegitimacy in the twentieth century in the Maltese Islands continued to decrease progressively in the early years, so that the average 1.6% total births rate for the years 1871-1880 reached the 0.98% level in 1901-1910. The social upheaval of the First World War did not appear to affect the illegitimacy rate adversely²⁹. The illegitimacy rates at the beginning of the 1960's averaged 0.7% live births (1959-1962). The 1960's saw a steady rise in the rate to reach a peak of 1.56% in 1968, thereafter the rate subsequently decreased slowly until 1984 reaching the 0.7% level. The late 1980's again saw a sharp rise in illegitimacy rates averaging 1.67% in 1988-1990 (Figure 4.7). The majority of illegitimate births are accounted for by teenage mothers³⁰.

²⁹ Malta Review, 1963: *op. cit.*; C. Savona-Ventura, 1993: *op. cit.*; C. Savona-Ventura: Reproductive performance on the Maltese Islands during the First World War. *J.R. Army Med. Corps*, 141:p.107-111, 1995d

³⁰ C. Savona-Ventura, 1993: *op. cit.*

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**FIGURE 4.7: ILLEGITIMACY RATES:
Maltese Islands: 19-20th centuries**

The advent of war in any country heralds a total upheaval in the social and demographic characteristics of the community. The changes in the social circumstances of the population affect variably the obstetric performance of the community. During the First World (1914-18), the Maltese Islands were only indirectly affected by the hostilities, but the war was followed by a period of economic deterioration. The war years saw a slight decrease in the crude birth rate of the population, this being more marked in Gozo, reaching its lowest level in 1917. This decrease was followed by a slight post-war boom to reach a maximum in 1922. The fall in birth rate is not surprising in view of the disturbance to family life brought on by the calling up of a large

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number of men to the services. This disruption to family life and the presence of a large number of foreign soldiers in the Islands did not appear to affect the illegitimacy rates during the war years, reflecting the strong Roman Catholic moral standards in force. The stillbirth (including late abortions) rate showed a rise during the war years peaking in 1917. This peak was maintained during the post-war period. This gradual increase may reflect the marked deterioration in the social circumstances of the population during the war years and subsequently. The infant and maternal mortality rates showed similar rise during the war period³¹. The Second World War showed different changes since the Islands were then directly involved in the conflict. The birth rate decreased dramatically during the war years, while the neonatal and infant mortality rate increased mainly as a result of a greater incidence of diarrhoeal disease and congenital debility. The stillbirth rate during the war years was overall better than the pre-war period, possibly reflecting better antenatal and intrapartum supervision. The hospital confinement rate increased significantly during the war years. The maternal mortality rate showed a decrease mainly as a result of a decrease in the incidence of puerperal sepsis and deaths from haemorrhage, again reflecting the better supervision of confinements³².

³¹ C. Savona-Ventura, 1995d: *op. cit.*

³² C. Savona-Ventura: Reproductive performance on the Maltese Islands during the Second World War. *Medical History*, 34:p.164-177, 1990

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The obstetric mortality parameters including stillbirth, early neonatal mortality and maternal mortality rates have made very significant improvements in the last five decades. The decrease in obstetric mortality is often correlated to the advances in antenatal, intrapartum and postpartum supervision that have occurred throughout this period, coupled with advances in medical therapeutics and technology. However, the improvement in obstetric mortality has also been influenced by a betterment of the social circumstances of the population predisposing to better overall health and control of personal reproductive performance.