

## Outcomes of the first midwife-led birth centre in Italy: 5 years' experience

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### Abstract

**Objective** To assess the experience of the first 5 years of the first midwife-led birth centre (MLBC) in Italy.

**Study design** Data were prospectively collected to analyse the first 5 years' experience of the MLBC. MLBC is located alongside a University hospital maternity unit and it offers care to women with a straightforward pregnancy and midwives take primary professional responsibility for care. Women with maternal diseases, complicated obstetric history, height < 150 cm, maternal age > 45, or multiple pregnancy were excluded. Transfer was request in case of antenatal, intrapartum and postpartum pathological conditions.

**Results** During the 5-year period (1 January 2001–31 December 2005), 1,438 low-risk women were admitted in labour to the MLBC. Of these, 203 (14.1%) were transferred during labour to consultant care (138 because of pathologies and 65 because of request of epidural analgesia). Among the transfers, the caesarean sections were 87, corresponding to 6.1% (87/1,438) of the total of women admitted to MLBC, while the operative vaginal deliveries were 14, corresponding to 1.0% (14/1,438) of the total of women admitted to MLBC. Among women who gave birth in the MLBC, episiotomy rate was 17.1%.

**Conclusions** In Italy, in the passed 10 years, the caesarean section rate reached 60%, in some regions. According to our data, the first 5 years of activity of the first MLBC in Italy had been associated with a low rate of medical interventions during labour and birth, with high rates of spontaneous vaginal birth and without signs of complications. We hope that this experience could be taken as a model to improve the quality of maternity care in Italy.

**Keywords** Midwife-led birth centre · Midwives care unit · Straightforward pregnancy · Low-risk pregnancy

### Introduction

Over the last two decades, maternity care and childbirth across the world have increasingly become concentrated in large hospitals [1]. In the United Kingdom, birth in small midwife-led units and birth centres has decreased from 13% in 1970 to 3% in 2000 [2]. This trend has been accompanied by increased rates of caesarean section, up from 9% in 1980 to 20% in 2000 [3]. Other western countries, such as Canada, the United States, and Italy, all have caesarean rates at or above 20% [3]. In 1998 Williams et al. [4] have noted an increase in routine birth interventions in the United Kingdom, even in births recorded as being “normal”. This change in practice has generated concern from practitioners, service users, and governmental bodies across the world. Against this background, interest in midwife-led care and in the establishment of birth centres has steadily increased. Midwife-led care is usually interpreted as a model in which the woman books with the midwife. These units are characterised by an absence of routine medical staff attendance, unless there is a clinical necessity, and an orientation towards normal birth [5].

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Condensation: The experience of the first midwife-led birth centre in Italy in reducing rates of perinatal medical interventions and in increasing rates of spontaneous vaginal birth.

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The nature of birth centres appears to have evolved over time. The National Birth Centre study provided research evidence for the expansion of free-standing birth centres at the beginning of the 1990s [6]. The National Association of Childbirth Centres continues to encourage the developing and licensing of freestanding birth centres, and currently, 37 states license birth centres. However, there is currently no standard definition of either a “midwife-led unit” or a “birth centre” [7, 8]. In this manuscript, the terms “birth centre”, “midwife-led unit” and “midwife-led birth centre” will be used interchangeably. Midwife-led care systems have been instituted in several different settings, including consultant units [9]. Such units may be located in the same building or “alongside” a hospital maternity unit, or freestanding, that is, geographically separate.

There is considerable political, service and policy interest in the concept of birth centres. Service providers, managers of the maternity services, health care professionals, parents and user representatives from childbirth organisations are all involved in debating the benefits of birth centres as part of integrated, consumer-focussed and effective maternity services. Despite these considerations, in Italy the first midwife-led unit was created only at the end of 2000.

Commonly, in Italy obstetrics take primary professional responsibility for care in pregnancy and during birth while midwives are only secondarily involved. The first midwife-led unit, located alongside a University hospital maternity unit, is an institution that offers care to women with a straightforward pregnancy and where midwives take primary professional responsibility for care.

The objective of the present study was to collect data to assess the experience of the first 5 years of the first midwife-led birth centre in Italy.

## Materials and methods

In the midwife-led birth centre (MLBC) located in Genoa midwives take primary professional responsibility for care. The unit was staffed and run by a core group of midwives who worked independently in the MLBC, according to clinical needs. There was no direct input to the MLBC by obstetrics or paediatricians.

The MLBC comprised five attractively furnished and decorated bedrooms, toilet facilities, a large delivery room with a water-birthing pool for delivery in water (or more often for pain relief during labour) and a sitting room. Only women with a straightforward pregnancy are admitted.

At the first antenatal visit, for women who filled the ‘low-risk’ criteria, at 36th gestational week, the choices of antenatal care and place of delivery were discussed.

Exclusion criteria at booking are maternal diseases (hypertension, diabetes, epilepsy, cardiac or renal disease,

anaemia, severe asthma,...), complicated obstetric history (e.g. previous caesarean section, previous still birth or neonatal death, alcohol, or drug abuse,...), height < 150 cm, maternal age > 45, and multiple pregnancy.

At subsequent antenatal visits, there is a “shared care” by a midwife, supervised by an obstetrician. In case of changed clinical circumstances requiring reassessment of the risk status (hypertension, oligoamnios, pregnancy > 41 + 3 weeks,...), the eligibility for delivery in the midwife-led birth centre (MLBC) was changed.

### Eligibility for admission to the MLBC during labour

Those low-risk women whose pregnancy progressed normally were admitted to the MLBC in labour. At the time of admission in labour, a second risk assessment was conducted by a midwife with visit, cardiotocographic recording and blood pressure evaluation. Women were considered to be low risk in labour being more than 37 weeks’ gestation, single pregnancy, cephalic presentation, in spontaneous labour, spontaneous rupture of membranes with clear liquor, normal blood pressure (systolic pressure < 140 mmHg and diastolic pressure < 90 mmHg), and reactive fetal cardiotocographic tracings.

During labour in the MLBC, fetal heart rate (FHR) was auscultated at 15 min intervals with a sonicaid. If any abnormality of FHR was suspected, then the women had cardiotocographic tracings carried out.

No women were allowed to receive the opioid analgesia and were transferred to the obstetric unit for epidural block if they wished to have one.

When any adverse features developed during labour or following delivery, the midwife in charge of the case contacted the obstetric or paediatric registrar on call according to clinical need.

### Transfers from the MLBC

Transfer is request in case of

- Antenatal pathological conditions: prolonged prelabour rupture of membranes, fetal compromise
- Intrapartum pathological conditions: fetal compromise, delay in first or second stage, meconium stained liquor, request for epidural
- Postpartum pathological conditions: haemorrhage or retained placenta for more than 1 h after fetus delivery.

### Data collection

Data were collected about demographic profile. Detailed recording was made for reasons of intrapartum transfer from midwife-led birth centre and of perineal outcomes

among women who delivered in MLBC. Details were collected about reasons for transfer during labour and following delivery. A minimum data set for neonates was also agreed for each low-risk patient. APGAR scores at 1 and 5 min were noted by the midwife.

## Results

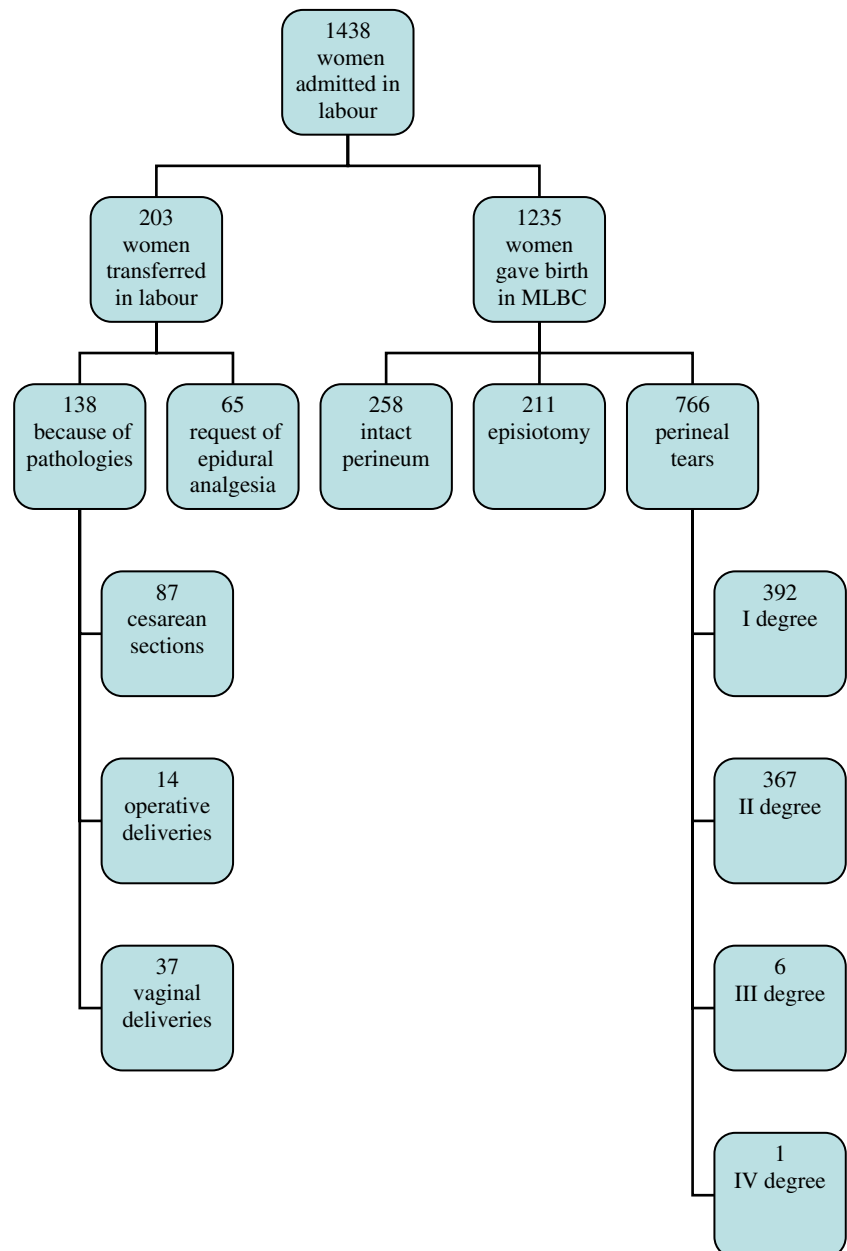
During the 5-year period (1 January 2001–31 December 2005), 1,438 low-risk women were admitted in labour to the MLBC. The median age was 32 years (range 18–46). Main results are shown in the flowchart (Fig. 1).

## Intrapartum transfers from MLBC

Of these 1,438 women admitted to MLBC, 203 (14.1%) were transferred during labour to consultant care.

Of the 203 transfers, 138 (68.0%) women were transferred because of fetal compromise or delay in first or second stage or meconium stained liquor and the other 65 (32.0%) women because of request of epidural analgesia. Of the 138 transfers because of pathologies, 127 were nulliparous and 11 were parous. Among these 138 transfers, the caesarean sections (CS) were 87 (63.0%), corresponding to 6.1% (87/1,438) of the total of women admitted to MLBC. Among the 138 transfers because of pathologies,

**Fig. 1** Flowchart: outcomes of the first midwife-led birth centre in Italy



the operative vaginal deliveries were 14 (10.1%), corresponding to 1.0% (14/1,438) of the total of women admitted to MLBC. All 65 women, who were transferred because they requested analgesia, developed in vaginal deliveries.

#### Perineal outcomes among women who delivered in MLBC

Of the 1,235 women who gave birth in the MLBC, 800 (64.8%) were nulliparous and 435 (35.2%) were parous.

Of the 1,235 women, 211 (17.1%) had episiotomy, 258 (20.9%) had an intact perineum, 392 (31.7%) had perineal tear I degree, 367 (29.7%) had perineal tear II degree, 6 (0.5%) had perineal tear III degree, and only 1 had perineal tear IV degree.

From 2003, 205 women had water delivery. Of these women only one had episiotomy, 53 (25.8%) had intact perineum and none had perineal tear III or IV degree.

#### Postpartum outcomes among women who delivered in MLBC

Of the 1,235 women who gave birth in MLBC, 30 (2.4%) were transferred in postpartum period. Twenty-nine were transferred following delivery to consultant care because of haemorrhage or retained placenta. One of the 30 women transferred, a woman was transferred to intensive care, 5 h after birth, because of intracranial haemorrhage, in a clinical context of late-onset postpartum eclampsia [10], and died 2 h after the transfer. She was an essentially healthy multigravida who developed mental obtundation after unremarkable antepartum and intrapartum course.

#### Clinical outcomes for babies in MLBC

Among the 1,235 babies who were born in MLBC, only 32 (2.6%) had an Apgar score  $\leq 7$  at 1 min after birth. Of these 32, only 7 had an Apgar score  $\leq 7$  at 5 min after birth. Of these, one had Apgar 0 at 1 min; he was reanimated and then he died 32 h after birth.

Among the 205 babies who had water birth, only 5 had an Apgar score  $\leq 7$  at 1 min after birth; and of these, only 3 had an Apgar score  $\leq 7$  at 5 min after birth.

#### Comment

It has long been recognised that there are no reliable methods of identifying low-risk women. Sensitivity of various indicators varied from 36 to 43% [11, 12]. There are now a few randomised trials published describing outcome measures in midwife-led units adjacent to consultant units [13]. In such units, intrapartum transfer is straightforward when problems develop. These studies also provide evidence on

the safety and effectiveness of midwife-led units and outcome data [13]. Operative delivery rates, need for labour augmentation, pain relief requirements, and rates of perineal tears and episiotomy appear to favour the new model of care. However, doubts persist on safety and a recent meta-analysis suggested that further, larger studies are needed [14–15]. It is of interest to note that none of the randomised studies [11, 16] of midwife-led care has published a list of exclusions of high-risk pregnancy, not suitable for midwife care. Furthermore, none of these published studies have provided any information on the extent of involvement of medical staff when there were clinical concerns during labour and after deliveries.

Pregnancy, labour and delivery involve risk of poor outcome. This is well quantified in the traditional consultant-led hospital-based obstetric unit. Understandable anxieties are raised when new models of delivering intrapartum care are being planned, particularly when the care is to be given by midwives without medical backup.

It is the duty of the provider unit to give unbiased information to women and their partners when discussing options such as home confinement, stand-alone midwife-led units and consultant-led units. The client needs robust information about the relative risks of each and knowledge of the protocols in place for the management of commonly occurring obstetric and neonatal emergencies. Local protocols should clearly elucidate under what circumstances a woman in labour or a newly born neonate will be transferred to the neighbouring unit and what will be an acceptable transport time interval from decision making.

In their review Hodnett et al. [13] concluded that when compared to conventional institutional settings, home-like settings for childbirth are associated with modest benefits, including reduced medical interventions and increased maternal satisfaction. Hodnett et al. [13] also wrote that there is a trend towards higher rates of perinatal mortality in the homelike settings. A focus on normality may have a negative impact on the ability of caregivers and childbearing women to detect, act upon, and/or receive assistance with complications. Other possible causes include poor communication between the staff in the two settings, inter-unit rivalries, and/or delays in detection and intervention. However, in the present study, there was no case of perinatal child death. Indeed, one woman died 2 h after birth (maternal mortality: 1/1,438). However, with a sample of 1,438 there is no power to make a maternal mortality rate. The perinatal mortality (1/1,438) is in accordance with other Birth Centre trials.

In Italy, in the passed 10 years, some regions reached the 60% of caesarean sections [17]. For the comprehension of our particular reality, we have also to consider that in Italy the perineal suture is considered a “surgical” act and that commonly only medical doctors could perform perineal

sutures. Against this background, we wanted to create, in Italy as in UK and the rest of Europe, a new interest in midwife-led care and in the establishment of birth centres has steadily increased. We created the first MLBC in Italy to meet the ‘expressed needs of women’ without compromising the health of the mother and the baby. There are key issues identified in this study on the provision of an “alongside midwife-led birth centre”. In the first 5 years of experience, considering all 1,438 low-risk women admitted to the MLBC, the caesarean section rate resulted to be 6.1% (87/1,438), similar to that reported in literature about alongside birth centres [18, 19].

The intrapartum transfers from our MLBC resulted to be 14.1%, lower to that (16–30%) reported by other authors about alongside birth centres [6, 19–23].

We reported only 17.1% of episiotomies, higher than in others alongside birth centres [13, 19, 21] but lower than in others Italian Hospitals, considering that, according to a recent survey, in Italy the percentage of episiotomies is 54.8% [24].

The postpartum transfers from our MLBC because of haemorrhage or retained placenta resulted to be 2.4%, lower to that (4–13%) reported by other authors about alongside birth centres [19–20, 25].

According to our data, the first 5 years of life of the first MLBC in Italy had been associated with low rates of medical interventions during labour and birth and with high rates of spontaneous vaginal birth.

Considering the specific geographic area where, according to the recent survey conducted by Donati et al. [24], there is a frequent utilisation of private antenatal care, a progressive medicalisation of birth and a rising caesarean section rate, we hope that the experience of the first MLBC in Italy could be taken as a model to improve the quality of maternity care in Italy.

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