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UTS: SEMINAR
POSTPARTUM HAEMORRHAGE: TURNING THE TIDE
15 June 2006

“Approaches to third stage in caseload practice and continuity of care”
(Roz Donnellan – Fernandez: Midwifery Group Practice CYWHS)

CONTEXT

Midwifery Group Practice (MGP) is a public health service provided by CYWHS that focuses on a midwifery model of care. It is coordinated out of the WCH, a tertiary referral maternity hospital in Adelaide, SA. Unlike many international or conventional midwifery models this service has involved the implementation of an integrated ‘all risk’ caseload practice that interfaces with other services provided by the CYWHS, and is based on an ethic of access and equity for all women seeking continuity of midwifery care within a defined geographic catchment.

MGP began in early 2004 and was expanded in 2005. In early 2006 it was further expanded to having 24 full-time midwife positions working in the city and western suburbs and additional support staff. The midwives work within 4 Midwifery Group Practices and now provide nearly 1000 cases of maternity care per year, with each midwife providing care for 40 women per year, working their hours flexibly around the needs of women, with assistance provided in the community, the hospital and the home throughout the woman’s pregnancy, labour, birth, and up until 6 weeks postnatal. The service is in such demand and estimated 20 – 30 women per month within the geographic catchment are unable to access the service.

Under this midwifery led model of care an Independent Evaluation (2005) has reported high levels of both maternal and midwife satisfaction and fewer interventions such as induction of labour, epidural analgesia, reduced incidence of forceps and ventouse births, reduced elective and emergency caesarean sections, less maternal perineal trauma, and fewer women’s assessment service presentations and hospital admissions across all risk categories. At April 2006, 1368 babies had been born with MGP service. With respect to PPH rates the Independent Evaluation found the incidence was similar in Low and Moderate Risk categories for MGP and whole of hospital, and apparently less frequent in the High Risk category for the MGP group. More about this later.

<table>
<thead>
<tr>
<th>Risk Profiles of Women in MGP as compared to Other WCH Women</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>Total</th>
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<td>MGP Women</td>
<td>218</td>
<td>354</td>
<td>46</td>
<td>618</td>
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<tr>
<td>(35.3%)</td>
<td>(57.3%)</td>
<td>(7.4%)</td>
<td>(14.5%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>773</td>
<td>2211</td>
<td>564</td>
<td>3548</td>
</tr>
<tr>
<td>WCH Women</td>
<td>(21.8%)</td>
<td>(62.3%)</td>
<td>(15.9%)</td>
<td>(85.5%)</td>
</tr>
</tbody>
</table>
As well as significant demand for the service, statistics show MGP is clinically effective and fits well with the SA Government's Health reform objectives of hospital avoidance, increased care provided in the community, and effective use of health resources. It has been recognised as a model that would be applicable in a range of settings across Australia.

**Principles that underpin MGP are:**

1. Women centred care, with the focus on women's needs, expectations and aspirations;
2. Self determination, where women have the right to choice, control, and continuity;
3. Partnership, where responsibility for care is jointly negotiated between the woman and the midwife;
4. Relationships, where women receive care from a midwife they know;
5. Continuity, where the midwife follows the woman through pregnancy, labour, Birth and postnatal period across the interface between institution and the community; and
6. Collaboration, through working with medical and other colleagues, as necessary.

We plan to showcase the implementation, outcomes and evolution of the CYWHS Midwifery Group Practice Model from 2004 - 2006 at the Australasian Midwifery Expo in Adelaide in September, and at the Australian College of Midwives December Seminar: “Breathing New Life Into Maternity Care,” for those interested in hearing more.

**APPROACHES TO THIRD STAGE IN CASELOAD PRACTICE & CONTINUITY OF CARE**

The third stage of labour extends from the birth of the baby to the expulsion of the placenta & membranes. Wattis (2001) identifies that, “modern midwifery & obstetric management of the third stage varies significantly between countries, states, domains and practitioners. Care given to the birthing woman and neonate has evolved from an eclectic combination of historical, anecdotal, philosophical and research-based factors. This stage of the birth is identified as a time of great potential hazard and caregivers must make choices about whether to take an active approach, an expectant (physiological approach), or a combination of both approaches.”
Our ‘approach’ to anything, whether this is as individuals, as a profession, as an institution, a service, or a collective, is influenced by many things: beliefs, values, culture, education (including evidence), experience, accepted practice, policy, peers, and environmental context. In a caseload, continuity midwifery model such as MGP management of third stage is discussed antenatally in a process that is negotiated in partnership with the birthing woman. It is based on principles of information sharing, shared decision making, informed consent, cultural safety, flexibility contingent on the outcomes/processes of labour & birth, and an ethical/covenantal relationship where power is shared and responsibility for care is jointly negotiated between the woman and midwife, (recently articulated in the Australian context in Midwifery Preparation for Practice, Pairman, Pincombe, Thorogood, Tracy [Eds] 2006).

Thompson (2004) has described how “the ethically sensitive response to a woman’s concerns during childbirth involves more than choosing the ‘right’ or ‘wrong’ acts, as proposed by contemporary Western applied ethics and bioethics,” (pg 53). Some of the contemporary debates around ‘best practice’ in third stage management, depending on whether you are the childbearing woman (inclusive of the health interests of her newly born infant), or the birth attendant /provider, could be simplistically summarised into opposing approaches / views:

**OPTIMISTS**

“Approaches based largely on fear are not always logical or designed to work in the best interests of the mother & child.
When labour & delivery has been normal, without need of induction or acceleration with synthetic hormones or instrumental delivery, and the mother can be in an upright position, there is usually no need to induce or accelerate delivery of the placenta either. While there is no bleeding there need be no haste.”

(in, Delivering Your Placenta, AIMS 1995).

**PESSIMISTS**

“Severe bleeding is the single most important cause of maternal death worldwide. More than ½ of all maternal deaths occur within 24 hrs of delivery, mostly from excessive bleeding.”


However, it is rare that the individual human situation is ever this clear or straightforward, and depending on the context of practice you find yourself in, your view, your practice management, coupled with a fundamental principle of jurisprudence that states women have the right to autonomy and control of their own body, means that you may be required to work between the 2 applied realities of optimist and pessimist!

Considered from the perspective of multiple realities this could translate as: **NO SUCCCESS IS EVER PERMANENT, NOR IS ANY FAILURE**
(I’ll be returning to this principle a little later, in relation to some of the ramifications for clinical practice based on ‘evidence’ and ‘research’ that is ever in a state of flux).
In looking broadly at this topic, before moving to the specific, I would also invite you to consider other conundrums that are often overlooked in modern obstetric practice, where there is increasing, unquestioning reliance on the validity of the Randomised Control Trial as the most superior mechanism for determining what is currently called ‘evidence based practice, or Level 1 Evidence’: (no values ranking there!), at the expense of other knowledge and ‘ways of knowing.’ Botha in 1968 and Priya in 1992 have both considered the question “might third stage problems such as PPH & retained placenta be man – made problems?” These sorts of questions will ALWAYS be VALID considerations in any practice context, as is a questioning approach to the implications and effects of early cord clamping and cutting on both infant and mother, in an uncomplicated vaginal birth, including the ramifications for third stage and PPH risk.

Commentary on the 1998 Hinchingbrooke Trial, which, as we all know, has been the most recent, large RCT of Active verses Expectant/Physiological Management of third stage of labour, conducted by western midwives, (and performed to rule out the possibility of bias in the 1986 Bristol Third Stage Trial), confirmed the western medical view that active management reduces the risk of PPH. Subsequently, the practice of active management has become recommended as routine ‘best practice’ following normal vaginal birth in most large institutional settings where principles of western medical practice are the dominant paradigm, and enshrined in local health authority policies and institutional guidelines, including our own South Australian public health web-based Perinatal Practice Guidelines, (2005).

REVIEW: PRINCIPLES FOR ACTIVE MANAGEMENT OF THIRD STAGE LABOUR

Active management of the third stage of labour involves administration of a prophylactic oxytocic (Syntocinon is currently advocated as the oxytocic of choice) to the mother by intramuscular or intravenous injection after birth of the baby, early clamping and cutting of the baby’s umbilical cord, and application of controlled cord traction (CCT) by the birth attendant to deliver the placenta. Oxytocics induce uterine contraction and randomised case control studies in the hospital setting have shown active management to be associated with decreased maternal blood loss, decreased incidence of PPH, and decreased duration of third stage. It is also associated with increased maternal side effects such as nausea & vomiting.

Wattis (2001) asserts that, “active management of the third stage of labour is a flow on from the active management of first & second stages of labour. Induction and augmentation of labour by artificial rupture of the membranes, and/or intravenous oxytocic infusion, imposed time frames for progress of labour, medications for pain relief and sedation, CTG monitoring, forceps rotation and delivery, vacuum extraction, emergency or elective caesarean section, are examples of interventions which are all to do with control.” Consistent with these interventions is the principle “that if the first and/or second stages of a labour have been actively managed, it is entirely appropriate that the third stage should be actively managed also, because the natural physiology of the birth process has been disrupted.” (Wattis 2001). (CYWHS 2006 Nursing and Midwifery Clinical Standards Draft Policy Third Stage Management (Active and Physiological) and Placental Inspection)
Interestingly, medical commentary post Hinchingbrooke trial continued to illustrate ongoing divergence of worldviews of OPTIMIST verses PESSIMIST, even without a consideration of women’s views! Whereas Prendiville concluded: “The Hinchingbrooke Trial makes it difficult to advise expectant management of the third stage of labour under any circumstances. It is difficult to understand how a woman who has not had appropriate counselling would decide to have expectant management.” Contrast this with the view of other medical commentators such as Odent and Perez-Escamilla who noted the benefits of delayed cord clamping in improving infant haematological outcomes with expectant third stage management and invited providers of maternity services to undertake a deeper consideration of the main factors that facilitate physiologic birth of the placenta and may minimise PPH risk, (ie: adequate environmental thermoregulation at time of birth, undisturbed eye to eye and skin to skin contact between mother and baby, eliminating distracting provider practises that may stimulate catecholamine release in the mother such as early cord cutting and suggesting position changes, and enabling early breastfeeding to stimulate natural oxytocin release, uterine contraction & minimisation of blood loss during normal physiology of an uncomplicated vaginal birth), (The Lancet, 1998, pg 1659). Since publication of the Hinchingbrooke Trial some midwifery texts state that, “Physiological management of the third stage is considered unsafe,” (Stables & Rankin 2005, pg 583). However, as women explore, realise and reclaim their ability to give birth in their own power they are also challenging the impact of institutionalisation on their and their baby’s healthcare, so they also naturally challenge their caregivers to trust their ability to complete the birth process physiologically without unnecessary interference. In many Australian maternity settings there is often no choice given to birthing women about whether they’d prefer to have a physiological or active management of the third stage of their labour. Their care is dictated by hospital protocols, risk management imperatives, and provider orders.

**SUMMARY OF ISSUES FOR MIDWIVES**

1. Need to support informed choice for women and to promote the autonomy of women if acting ‘parens inter pares,’ guided by the principle of respect for a persons rights, (Thompson 2004).

2. Need to develop and maintain midwifery competence in both active and expectant management of third stage of labour.

3. Need to value and utilise providers confident in expectant management to teach & share their knowledge with others.

4. Institutional / service policy development needs to support appropriate and safe practice and skill base & updating relevant to contexts of practice, which includes standard drills and emergency management of PPH, so clinicians are confident of WHAT is appropriate practice in specific situations, (South Australian Perinatal Practice Guidelines: current online web resource; CYWHS 2006 Nursing and Midwifery Clinical Standards Draft Policy Third Stage Management (Active & Physiological) and Placental Inspection)
5. Requirement for robust mechanism for regular review of outcomes, ie: Clinical Audit of Outcomes and regular peer / case review.

REVIEW:
PRINCIPLES FOR EXPECTANT (PHYSIOLOGICAL) MANAGEMENT OF THIRD STAGE LABOUR

Underpinning the rationale for physiologic third stage management in an uncomplicated vaginal birth is the notion of ensuring respect for and promoting the integrity of the hormonal, emotional, and physiologic processes of both mother and baby, at a time of important transition for both, with short and long term consequences. Western medical descriptions of birth have artificially fragmented the process into constructs that have been articulated as ‘stages of labour,’ (ie: first, second and third stage), as if each of these processes are distinct entities, and independent of the effect of each other. This reductionist view of the human body as a machine has been a popular theme throughout human history. From another perspective, I would invite you to consider the process of birthing as an integrated whole.

Maternal Perspective

Odent (1999, 2002) outlines how as a mammalian species humans are assisted in birth by three major mammalian hormone systems, all of which play important roles in third stage. Oxytocin, the hormone that stimulates the uterine contractions that progresses labour also assists women to enact instinctive mothering behaviours, whilst endorphins, the body’s natural opiates produce an altered state of consciousness, that assists in transmuting pain. Catecholamines, the ‘fight or flight’ hormones, adrenaline and noradrenaline, (epinephrine and norepinephrine) give women the surge of energy needed to push the baby out of the birth canal.

During the ‘third stage of labour,’ strong uterine contractions continue at regular intervals under the continuing influence of oxytocin. The uterine muscle fibres shorten / retract with each contraction, resulting in a gradual decrease in the size of the uterus, assisting the placenta to shear away from its attachment site. The volume of blood flowing through the placenta in any one minute is 500 – 800mls, and as the placenta shears away from the uterus, this needs to be stopped almost immediately, (AIMS 1995).

During this phase the mother experiences peak levels of oxytocin, the hormone of love, and endorphins, hormones of pleasure for both mother and baby. Maternal oxytocin levels are further augmented by skin to skin contact and the baby’s first attempts to breastfeed. In an uncomplicated vaginal birth this strengthens uterine contractions that will help the placenta to separate, and the uterus to contract down, acting to prevent haemorrhage and to establish the close bond between mother and infant.

Third stage is complete when the placenta is birthed. At this time high adrenaline levels from birth which have kept mother and baby wide eyed and alert at their first contact will be falling and a very warm environment is required to counter the cold, shivery feelings a woman has as her adrenaline levels decrease. If the environment is not well heated or the mother worried or distracted, continuing
high levels of adrenaline counter oxytocin's beneficial effect on her uterus. In this way the risk of haemorrhage can be increased, (AIMS 1995). An important role for birth attendants is "to ensure the woman's mammalian instincts are protected and valued by ensuring unhurried and uninterrupted contact between mother and baby after birth, adjusting the temperature to accommodate a shivering mother and enabling skin to skin contact and breastfeeding and not removing the baby," (Buckley 2002). In addition to the fact that it is a quite unnatural response for a mother of any culture who has just given birth to a baby spontaneously to then immediately spontaneously sever the umbilical cord joining her and her infant, early cord clamping and cutting is not historically recorded as a routine practice in indigenous cultures.

**Infant Perspective**

The baby's transition to extrauterine life assists the mother in a physiologic third stage. Adaptation to life outside the womb is the major physiologic task for the baby during third stage. In utero oxygenated blood flow to the baby's organs is maintained by the placenta, which itself is an organ of fetal circulation. Following birth, blood flow to these organs is minimal until the baby takes a first breath, at which time significant changes begin in the organization of the circulatory system. Within the baby's body, over the course of several minutes blood becomes diverted away from the umbilical cord and placenta. As the lungs fill with air blood traverses the pulmonary circulation. The transfer of this reservoir of blood from the placenta to the baby, (an estimated 500 – 800mls per minute), happens with each third stage contraction, with some blood returning to the placenta between contractions.

Crying by the baby slows the intake of blood, which is also controlled by constriction of vessels within the cord, both of which imply the baby may be able to regulate the transfusion according to individual need. During this process each baby receives its full quota of blood, which may be as much as 40% of the circulating volume. This is important in maintaining hematocrit levels, in addition to many other short and long-term outcomes. Gravity affects the transfer of blood with optimal transfer occurring when the baby remains at or below the level of the uterus, until the cessation of pulsation indicates that the transfusion is complete. This process of 'physiologic' clamping typically takes around 3 minutes, but is highly individual, (Linderkamp). This physiologic mechanism is negated by the current practice of early clamping of the cord. (In fact early cord clamping may deprive a baby of up to half its blood volume. Clamping before the infants first breath also results in blood being sacrificed from other organs to establish pulmonary perfusion, From the mothers perspective it may also increase placental bulk, enhance formation of extra blood clots and increase the possibility of feto-maternal transfusion, thereby contributing to postpartum haemorrhage and retained placenta risk, (AIMS 1995).

In summary, the specific advantages of delayed cord clamping with physiologic third stage include:

- the placenta continues to function, carrying oxygen to the baby after birth
- the baby receives its full blood quota
• some studies have reported shorter third stage with less blood loss & more rapid separation of cord in postnatal period
• recent discovery of the amazing properties of cord blood, in particular the stem cells contained within it, heighten the need to ensure the newborn baby gets its full quota. These cells are unique to this stage of development and will migrate to the baby’s bone marrow soon after birth, transforming themselves into various types of blood making cells. The practice of cord blood harvesting currently being promoted to fill Cord Blood Banks for future treatment of children with leukaemia involves immediate clamping, and up to 100mls of this blood can be taken from the baby to whom it belongs, (Shivam Rachana 2000)

PRACTICE: PHYSIOLOGICAL THIRD STAGE

1. There is no prophylactic oxytocin given at birth.
2. The cord is left unclamped and uncut (intact) until it has stopped pulsating, and until the placenta and membranes have been expelled. (Some providers propose that as long as the cord has finished pulsating, the natural or physiologic process is not disturbed in any way, either in terms of placental separation or baby’s blood volume, and therefore the cord can be clamped and cut safely, Long 2003).
3. The woman should remain as upright as is comfortable to use gravity to aid spontaneous placental expulsion.
4. Initiate breastfeeding.
5. Do not handle the uterus or instigate CCT.
6. Observe woman’s condition, including PV blood loss and fundal contraction (post expulsion).
7. Placental inspection.

World Health Organization (1996) Care In Normal Birth: a practical guide, cautions,

“In a healthy population, postpartum blood loss up to a 1000ml may be considered as physiological and does not necessitate treatment other than oxytocics…”

In relation to routine oxytocics and controlled cord traction WHO cautions that,

“Recommendations of such a policy would imply that the benefits of such management would offset and even exceed the risks, including potentially rare but serious risks that might become manifest in the future.”

Lotus Birth: An Extension of Physiologic Third Stage?
(Slides: See Reference List)
MGP: Some Third Stage Clinical Audit Outcomes

<table>
<thead>
<tr>
<th>Year</th>
<th>Total PPH Rate</th>
<th>Low Risk</th>
<th>Mod Risk</th>
<th>High Risk</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>(NOTE: SA Rate 2004 6%)</td>
<td>MGP 11.9%</td>
<td>11.3%</td>
<td>4.4%</td>
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<tr>
<td></td>
<td>MGP 11.9%</td>
<td>WCH 10.2%</td>
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<tr>
<td>2006</td>
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<td>WCH 11.2%</td>
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Note: Third Stage Physiologic Management Rate overall for MGP was 23% in 2005, and 19% to date in 2006, as compared to WCH rate: 2% in 2005 and 2.5% to date in 2006

(Data collated from WCH Clinical Information Systems)
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