NEW ZEALAND COLLEGE OF MIDWIVES (INC)

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NEW ZEALAND COLLEGE OF MIDWIVES (INC)

Philosophy of the Journal
Promote women's health issues as they relate to childbearing women and their families.

Promote the view of childbirth as a normal life event for the majority of women, and the midwifery profession's role in effecting this.

Provoke discussion of midwifery issues.

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contents

Midwifery practice wisdom

The Editorial Board would like to launch a **new column** entitled **Midwifery Practice Wisdom**. Therefore we invite you to send us stories from your practice which will help to share practice wisdom with other midwives. Stories offer a legitimate fund of knowledge and a 'way of knowing'. We are also aware that midwives are writing reflective stories about their practice as part of the competency-based practising certificate process, which is predicted to come into effect for the 2003-2004 year. So why not share some of these stories with other midwives?

It is often through our stories and experiences that we generate clinical questions or problems and begin to explore or articulate midwifery knowledge. We hope that the publication of stories can offer insights about practice, or generate research questions, or provoke correspondence from other readers who have had similar or differing experiences. Correspondence, which shares practice wisdom using clinical examples/stories, could be a valuable part of this column.

So, please, send your case study, exemplar, anecdote, or frequently observed scenario to Rhondda Davies (rhondda.d@clear.net.nz) whose role on the Board includes the development of this column. Stories and related correspondence should be approximately 500-1000 words. There will be one story published per issue and selection will be by Editorial Board decision.

EDITORIAL BOARD COMMENT

Welcome to the October issue of the New Zealand College of Midwives Journal. This issue of the journal is the first since the 7th Biennial New Zealand College of Midwives Conference in Dunedin in July of this year. It was exhilarating to see so many midwives, midwifery students, and women gathered together in one place, united in their passion and commitment to midwifery.

The historic Dunedin Town hall echoed with the buzz and energy of close to 500 delegates. The workshops and sessions provided a lively mix of topics and skill development opportunities. The food was good and the entertainment complemented the sessions revealing other talents and a strong sense of fun among the delegates. The sun shone too, proving once and for all that Dunedin winter weather is unfairly maligned. Midwives came from all corners of New Zealand, from Australia, the UK, and the Netherlands. There were midwives young and old, new and experienced, from a wide variety of practice situations.

The conference had a very positive feel as we did in fact celebrate *'unity in diversity'*. The theme was woven through the programme with the exploration of all areas of midwifery practice and issues for service user groups spiced up with the energetic contributions from students. An international perspective was provided by our keynote speakers Wendy Savage and Beatrijs Smulders. Their contribution was inspiring and challenging in the current climate of increasing intervention in birth. It was great to be there.

Included in this edition of the Journal is a special section sampling some of the presentations from the conference, some of which have a focus on aspects of core midwifery. Contributing to this section is **Elaine McLardy** with her presentation on the boundaries between home and work. Then **Deborah Earl**, **Eileen Gibson**, **Trish Isa, Judith McAra-Couper**, **Betty McGregor** and **Helen Thwaites** discuss some of the tensions facing core midwives. **Anne Barlow, Anne Hardie, Dawn Holland**, **Marion Hunter**, **Judith McAra Couper** and **Sue Berman** present the findings of the research, they began collecting data for at the last Biennial conference, on the midwifery management of the third stage of labour. Included also is a poem by **Kate Spenceley** entitled *Whenua*. The April 2003 issue will carry further presentations from the conference which have a community focus. This includes Rural Report from **Chris Hendry** and experiences from *Otaki Birthing Centre - He Whare Kohanga Ora* presented by **Jane Stojanovic**.

Conferences such as this are a wonderful occasion for celebrating our achievements, raising issues and engaging in debate. They provide excellent opportunities for learning as we share with each other; our stories, our experiences, our research, our ideas and we network and compare notes with our colleagues. Thinking about midwifery, exploring evidence, engaging in research, talking with others and telling stories are all important activities that contribute to developing the profession and practice of midwifery.

This issue introduces **Rhondda Davies** hosting a new forum titled Midwifery Practice Wisdom. The aim of this forum is to advance our knowledge and practice by sharing practice stories and encouraging comment and debate. The internet has also provided opportunities for us to share ideas with colleagues, particularly through discussion lists. **Sarah Stewart** continues her surfing safari, searching for email and discussion lists concerned with midwifery.

In our peer reviewed section **Suzanne Miller** walks us through some of the realities of fatigue - a common experience for midwives in practice. In grappling with the issue of whether or not to screen women routinely for group B Streptococcus, **Celia Grigg** explores the research evidence and presents a synthesis of her findings. **Carol Soutter** shares her experience, practice wisdom and research skills, drawing together literature, research evidence and experiential knowledge in her article on the management of shoulder dystocia.

GUEST EDITORIAL

New Zealand midwifery and the rising Caesarian Section Rate (CSR)

Dr Wendy Savage MBCh, MSc (Public Health), Hon DSc

FRCOG Honorary Professor at Middlesex University, London; Honorary Senior Lecturer in Obstetrics and Gynaecology, Medical School of St Bartholomew's and The Royal London Hospitals, Queen Mary Westfield College, and retired Honorary Consultant in Obstetrics and Gynaecology at Barts and the London NHS Trust. Keynote Speaker, New Zealand College of Midwives 7th Biennial National Conference, July 2002, Dunedin, New Zealand.

I worked in NZ from 1973 to 1976 and then returned to Gisborne to do a locum in the spring of 2001. Prior to my appointment in the 1970s, Winston McKean, the medical superintendent at Cook Hospital, had seen the need for a publicly funded obstetric service and also agreed to set up open access venereal disease and family planning clinics when I arrived. Childbirth was in the hands of General Practitioners (GP) and the main role for midwives was running antenatal classes and looking after women in labour when the GP was called to catch the baby on the perineum. All 18 GPs took part in antenatal care with caseloads ranging from 50 to less than 5. The obstetric unit run by myself and Dr Shirley Robertson took referrals of high risk women and we also established a perinatal review committee. During my time there the perinatal mortality rate fell from 26 to 9 per thousand births and the birth rate also fell as female sterilisation, family planning and abortion services were set up.

I have kept in touch with the changes in midwifery practice through regular visits to NZ and Joan Donley, and when I returned to do the locum last year I was able to see how things had changed. There was a core of hospital midwives who worked well with the independent midwives some of whom worked as a group attached to a GP practice and some of whom had midwifery-only practices. Only three GPs were still involved in caring for women. Two had quite a big practice and were competent to care for women having a trial of scar and do vacuum or forceps deliveries. The third I did not meet and was told the practice was small. The obstetricians ran a weekly antenatal clinic for high-risk women and where midwives could bring women to discuss any problems that had arisen or to discuss puerperal sterilisation. I was impressed by their friendly relationship with the women and the midwives, the continuity of care given to the women and the high standard of practice of all practitioners.

Having worked closely in London with GPs and midwives in the community, I was happy to leave women in the care of their midwives. However,

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not all obstetricians are willing or able to do this once they have been consulted and given an opinion. I think this is one reason that midwives, despite their close involvement with women, are unable to make any impact on the rising CSR. This was shown clearly in the One-to-One Midwifery service run in West London by Professor Lesley Page. Women appreciated the care of the midwives but the culture in the hospital where most of them had their babies was one of high intervention rates. Strong midwifery leadership and care alone was unable to change this. However, a culture where relationships between various practitioners are based on respect and the focus of care is on the woman may make more impact.

In Gisborne the independent midwives were encouraged to attend the monthly perinatal meeting and to discuss, on an ad hoc basis, cases with the hospital midwives and obstetricians on labour ward. This is probably easier in a small unit (Gisborne now has about 800 births a year rather than the 1200 when I came in 1973) than in those delivering over 4000 a year. Protocol development was being led by hospital midwives, with input from other professional groups. This process has the potential for enhancing or destroying good midwifery care if it is led by hospital based obstetricians who know nothing about home birth and good community based midwifery and GP care. Midwives need to be involved in producing these.

Whilst in NZ last year I carried out a study using a postal questionnaire to see why obstetricians and senior midwives thought the CSR was rising and to try and find out what it was in 2000. I estimated it to be 22%, at least twice as high as I believe is reasonable for a developed country with well-nourished women. The response rate of the survey was poor (midwives 34% figures and 16% opinions, obstetricians 16% both), but both doctors and midwives gave litigation as the leading reason for the rise. Obstetricians gave 'women asking for caesarian section (CS) ' and midwives gave 'use of epidurals' as second most important reason. In a similar study of obstetricians done in the UK in 1990, litigation was given as the leading reason. However, as Dr Marsden Wagner, who was the World Health Organisation Director of Maternal and Child Health for Europe in the 1990s, says 'It is a chilling thought that your doctor will pull or cut the baby out because he is frightened of being sued'.

The National Caesarian Section Sentinel Audit (NCSSA) carried out in the UK in 2000 and published in 2001 (www.rcog.org.uk/resources/pdf/nscs_audit.pdf) asked a sample of pregnant women and obstetricians to respond to the statement '*birth was a natural process that should not be interfered with unless necessary*'. Eighty per cent of consultants said they agreed with this statement compared with only 63% of women questioned in the antenatal period. Maybe women were being realistic about their experiences of birth, but I think it shows how far women's perception of birth has been changed in recent years and that is an important factor in any attempt to reduce the CSR. Media coverage of pop stars having elective CS and the push to make it 'every woman's right to choose a CS' on the part of some British obstetricians has changed the climate. Cherie Blair's successful trial of scar and care by midwives during labour as a 40+ mother was a welcome counterbalance to this.

The CSR seems to be rising inexorably in all developed countries. In my view it is a public health problem. Caring for a newborn baby and trying to breast-feed after a major surgical operation is not ideal for either the mother or the baby. Unnecessary surgery in any field is not good for patients, in this case women, is expensive for the health service, affects the training and attitudes of younger doctors training to be obstetricians and risks destroying midwifery skills.

So what can we do to reduce the CSR? The following strategies should be considered:

The clinical approach

The Scottish audit of CS showed that we need to reduce the number of primigravid women having a CS for failure to progress, with or without fetal distress, and increase the proportion of women having a trail of scar after a first CS. Women at term who go into spontaneous labour and have no complications should not have a CSR of more than 5% in primparous women and 1% in multiparous women. Individual hospitals need to conduct these sorts of audits on their own outcomes.

The public health approach

Women should be encouraged to have their babies before they are 35, to lose weight, stop smoking and eat a healthy diet before they become pregnant. The risk of becoming infertile because of sexually transmitted disease needs to be spelled out to teenagers of both sexes and good screening for chlamydia and treatment facilities are needed to reduce the need for in-vitro fertilization (IVF). Most women pregnant by IVF are delivered by CS. Women need good information about labour - to understand that it is hard work. They need to be discouraged from having epidurals unless really necessary. Probably only about 10% of women who have either an occipito-posterior position or a low pain threshold actually need an epidural.

Education and publicity

A publicity campaign conducted by public health doctors in conjunction with women's organizations needs to be undertaken so that young women have a clearer idea of what birth is all about. In the NCSSA only 5% of women said they wanted to have a CS but 9% said they had been given no choice about having one. Women need unbiased information about the pros and cons of having a trial of labour. We need to look at what children are seeing in schools about birth and if films are used, replace technological hospital births with those showing normal birth at home. Women who had had babies normally (even today the majority!) can speak to school children and medical students about the process of birth in a positive way. TV programmes are needed to counterbalance the way that birth is portrayed in soap operas and films which is on the whole negative.

The organizational approach

Organization of services seems the most promising approach to reducing the CSR. Healthy pregnant women should remain under the care of midwives and deliver in birth centres or at home rather than being cared for by obstetricians who are trained to deal with abnormal pregnancy and birth. The skills needed are different and complementary, but better separated in time and place. The successes of places like the Albany Practice in South East London, the Edgeware Birth Centre, and the midwifery unit in Bournemouth and similar birth centres in the USA need to be brought to the attention of government and the public.

The government approach

It cannot be right that one woman in 5 is being delivered by CS in NZ and the UK, almost approaching the 1 in 4 reached in the USA. Public health doctors did set targets in the USA to reduce the CSR which has fallen modestly from its' peak in the 1990s. The NZ Ministry of Health (MOH) is now collecting statistics on a regular basis. A campaign to inform MPs of this problem and push for targets to be set by the MOH on the basis of evidence and from a public health perspective might be fruitful. Policy about the place of birth and organisation of services must also be developed at this level.

Let us hope that in this new century we can put birth back where it belongs - at home where the woman and her partner can be fully involved and prepared for the responsibilities of parenthood in a supportive way.

How safe is a tired midwife?

Strategies to enhance the provision of effective care in situations of sleep deprivation

Suzanne Miller, RM, PG Cert Health Science (Midwifery)

Suzanne registered as a midwife in 1991, and following six months at Kenepuru Maternity Hospital she moved into independent practice, spending two years in Wellington and nine in Auckland. She recently returned to Wellington where she maintains a small homebirth caseload, in addition to looking after her young family and planning to build a sustainable house.

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Editorial comment

This article has developed from study for a Postgraduate Certificate in Midwifery at Auckland University of Technology (AUT). During that time Suzanne explored the issue of sleep deprivation in midwifery practice. To expand the understanding of the effect this can have on caring for women, she sought a consumer standpoint perspective with comments from 6 women who had experienced a long and complex labour. The context of the work was exploration of a topic related to midwifery practice and it followed the information and consent processes required by AUT ethics committee. All women, whose comments are included in this article, have consented for their words to be quoted in a publication.

Setting the scene

It's late. Actually, it's early… whatever the time is, your time with this woman and this birthing has been long. You're tired, so is she and so are her companions. The steady ebb and flow of this labour is beginning to unravel, your trust in this woman's process begins to erode, some new decisions are needing to be made. She and the little one, all of you in fact, are wrapped in the protective cocoon of your relationships with one another but as the hours unfold and a crisis develops, how safe are your decisions?

This paper will explore some of the tensions which emerge when midwives attempt to strike the balance between maintaining the continuity we promise (and the woman and her family have come to expect) and providing safe care in a situation where we are sleep deprived. There is much research in the field of how sleep loss affects performance in a variety of ways and I will use this research as a basis to describe some strategies for ensuring that we meet our obligations both to the families we care for, and to ourselves as safe and effective practitioners. I will uncover some of the ethical dimensions involved in this subtle interplay between the discourses of continuity and our need to sometimes acknowledge that enough is enough, and I will explore the impact on partnership inherent in this interplay.

As midwives we have all encountered situations where we know we are too tired to keep going. Each of us will have a different threshold, and different ways of knowing when we've had enough. For some it is when the documentation begins to look like a poorly written prescription, barely legible and certainly not protective of us if called to account. Maybe it is being unable to properly read the expiry date on the syntocinon ampoule, or being unable to communicate effectively with other people. Maybe it is feeling uncharacteristically tearful at some comment from the registrar, or not being able to work out why the damned alarm on the IV pump will not stop ringing. Or forgetting to document the advice given when a woman phones you with a query, or having a telephone consultation when you know that you should actually see the woman but you were up all last night and all you can contemplate is sleep.

Considerations of partnership

Whenever we enter that place of feeling really stretched, as midwives we feel an enormous sense of conflict. We know that this woman has chosen our care because of her belief that together, in partnership, we can create a space and an emotional environment in which she can truly find her strength and ability to emerge as mother. We make our commitment to be there, and for both of us it is important to be there, together, at the end of her journey.

The partnership model which underpins independent midwifery practice in Aotearoa has been ably articulated by Guilliland and Pairman (1994) and as a theory has undergone reflection and review to evolve into a discourse which informs our practice reality. Fundamental to the building of a midwifery partnership is continuity of care: a relationship of trust and knowing which grows and flourishes with time and which is protective of all parties within the relationship, not just between the woman and the midwife but with any other persons whom the woman defines as being significant for her.

We know that the continuous presence of a known and trusted caregiver in labour results in fewer interventions, less use of analgesia and enhanced satisfaction for both the woman as consumer and the midwife (Enkin, Kierse, Renfrew & Neilson, 1995). Our commitment to providing continuity means seeing the woman through, the implication being that there is no time limit. We know that it matters to be there at the end, and that our relationship of partnership protects us both. But this relationship of partnership may be fragile in a situation where something goes awry. If your decision-making has been impaired by tiredness, the woman and her family may not thank you for your continuous presence if they feel that a different person could have made a 'safer' decision.

As Guilliland and Pairman (1994, p.5) describe *"each person in the partnership brings a different dimension, and the negotiated outcomes will therefore be different between the different midwifery partnerships*". This implies that the steps to decision-making are not only in the context of a given clinical situation (in which a given sequence of events or interventions 'should' occur) but that this woman negotiates her care and management according to her own reality. Where more than one practitioner becomes involved in the process *"both practitioners have equal status and responsibility and are equally involved in all decision-making with the woman remaining as the primary decision-maker"* (Guilliland & Pairman, 1994, p.6).

Part of the tension which exists is that in acknowledging the woman's right to be central in informed decision-making there are times when all parties to the decision are potentially impaired by sleep. Making sense of a situation which may be becoming increasingly complex may be difficult for everyone. The addition of a new face into this situation (e.g. a 'fresh' perspective from a back-up midwife) has the potential to impact the partnership in many ways. We make decisions based on many variables. Our past experiences can be very influential in determining the range of options we offer. Guidelines for best practice are considered and perceived safety issues always underpin any proposed course of action. What is actually happening with this woman, and this labour will impact on the decisions we make, as may fear of litigation or jeopardy to our reputation. In addition, the decision to involve another person may have

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How safe is a tired midwife?

an economic implication for the midwife, or an emotional one for the woman and her family.

So even though our belief in our partnership with the woman will, in most situations, not present any dilemmas for us, there are times when the milieu becomes very complex. The balance is necessarily tipped away from 'together, to the end at all costs' and leans more to 'it is vital that the best decision is made and I may no longer be the *best* person to assist you to make it'.

Considerations of ethics

In this context a number of ethical considerations come into play. Partnership is articulated as an ethical stance and a standard for practice; principles embodied in the New Zealand College of Midwives Code of Ethics and Standards for Practice (1993). These documents define for us a set of "*beliefs which direct the behaviour of midwives in their relationships with individuals, institutions and the world*" (Pelvin, 1992, p.6). Among other things, midwives "*accept that the woman is responsible for decisions which affect herself, her baby and her family/whanau*" and along with having a "*responsibility not to interfere with the normal process of pregnancy and childbirth*" we are charged with ensuring that "*no act or omission… places the woman at risk*" (NZCOM Code of Ethics, 1993, p.10).

In addition to our obligations under the Code of Ethics, midwives must also adhere to the Code of Health and Disability Services Rights of Consumers. These rights encompass a vast array, but specifically ensure that consumers can expect services to be provided with 'reasonable care and skill', the absence of coercion and that they will be based on informed choice and informed consent (Health and Disability Commissioner, *Your Rights when Receiving a Health or Disability Service Pamphlet*). So, although women are fully protected by the umbrella of these Codes, guidelines for midwives are self-imposed in the situation of a prolonged attendance at a birth. Service specifications may suggest a twelve to sixteen hour 'limit' on time spent with a woman in labour, but in the final analysis it is the individual midwife who makes a judgment about her own safety to practise.

This situation is somewhat unique to midwifery; most other occupations that involve high levels of responsibility (and concomitantly, stress) do impose time restrictions on continuous performance. Air traffic controllers, police, medical staff and even truck drivers specify upper limits of number of hours worked as part of their quality control measures. While not suggesting midwives do the same, I believe we need to foster a culture in our practice that acknowledges tiredness. To move away from the current idea that we just continue to cope and towards the idea where we can have a generosity of spirit for each other and seek and offer help as needed.

Some thought should be given to the components of ethical reasoning involved. Midwives strive at all times to respect and protect a woman's personal autonomy – that is her right to self-determination and choice. Coupled with this, is the concept of beneficence or 'doing good', perhaps even of actively preventing harm. There is necessarily a delicate balance between these two ideas. The woman often trusts that the midwife knows what is 'best'; the midwife trusts the woman to be able to make an informed choice. The midwife brings her knowledge, skills and experience to meet the woman's self-knowing, her intuition and her own experience. The balance can be easily shifted – if we accept the woman 'handing over' her power for us to make the decision we deny her autonomy and in doing so increase our own vulnerability. The pendulum swings – if we promote her autonomy to the extreme she no longer needs a caregiver and our partnership self-destructs.

The ethical principle of non-maleficence is another consideration. A tired midwife must ensure that when presenting a range of options to assist the woman to make an informed choice, each option should include a fundamental desire to do no harm. Sharp (1998, p.238) argues that this is becoming increasingly difficult in an environment where technological advances sometimes impose on women an added "*stress … to comply with health choices that are believed to be of benefit to them … but are incompatible with their strongly held philosophies of non-intervention*". Sometimes the 'doing good' for the woman may involve potential harm to her unborn baby. The application of a foetal scalp electrode, for example, may enable a more satisfactory trace to be obtained. This may 'save' the woman from caesarean section (or indeed only allay the anxiety of the practitioner) but it may also expose her baby to the risks of infection, pain and the requirement for the membranes to be ruptured.

In some situations it could be considered ethical to have a sleep whilst attending a labouring woman. If she is at home, in early labour with good family support, a nap on her couch *might* be appropriate. Often though, the time when the midwife needs to withdraw in order to keep the woman safe, is after many hours of vigilant "being with". The woman may by now be in hospital, with the addition of all kinds of technological hardware into her journey. Sharp (1998, p.236) describes a tension which can exist between what she calls the "*expressive*" and "*instrumental*" roles of midwifery. The expressive role is easily identifiable to us as the guiding, supporting, educative and caring aspect of what we do. The instrumental role is more concerned with diagnosis, monitoring and treating. (If you like the qualitative and quantitative dimensions of the midwifery role.) Usually when we care for a woman in labour, we offer a blend of the two. The balance between them however can be seen to waver over the course of a long wearying labour. Whilst initially it may be the expressive role to the fore as we guide the woman to that place inside herself where she can tap the resources she needs to carry on, once a labour becomes complicated by the addition of technology (specifically syntocinon augmentation and epidural anaesthesia) a midwife's instrumental role may emerge as the dominant mode.

As the midwife becomes more and more tired, she is usually easily able to remain emotionally available to the woman but may no longer be able to function effectively in her monitoring and analysing capacity. It is appropriate for her at this point to seek the assistance of a midwife colleague to assume the responsibility for the instrumental role to enable her to rest. At this juncture, the woman is often encouraged to rest also, and thus her requirement for expressive midwifery from the 'new' midwife is diminished. When the time draws near for the baby to be born both midwives can be present and offer safe and effective midwifery care.

Evidence for decision-making performance

So what does research have to offer us in the way of guidance for the management of decision-making in situations where sleep loss affects our practice? It is clear that some of the most disastrous environmental and social calamities of the late twentieth century were caused because those responsible for decision-making were too tired to function. The Exxon Valdez accident, nuclear accidents at Three Mile Island and Chernobyl fit into this category, as does the decision to proceed with the launch of the Space Shuttle Challenger despite knowing that there was a fault with the seal on one of the rocket boosters (Cohen, 1996). It behoves us to assiduously apply ourselves to ensuring that we are not participants in, or indeed contributors to, some family's personal disaster.

Sleep deprivation studies are numerous, although equivocal about precisely what effects any given length of time awake will have. Indeed for every study highlighting an aspect of decreased performance in one particular area, it is possible to find another describing an opposite effect (Leung &

Becker, 1992). Studies have most often been performed using male college students, junior ranks of the armed services, male medical interns and house officers. To extrapolate from these studies to midwives who bear neither age nor gender resemblances is possibly not very useful. What we do know is that even relatively short periods of sleep deprivation (i.e. the day following only one night's sleep loss) lead to disturbances to endocrine and metabolic function (Speigel, Le Proult & van Cauter, 1999). Clearly measurable effects on neurobehavioural markers of alertness (fatigue, mood disturbance, stress and performance deficits) have been noted. (Dinges, Pack, Williams et al., 1997). Most significantly for midwives, impairment to higher cognitive function was reported, especially in the areas of decision-making involving the unexpected, innovation, assimilation of new information and effective communication (Harrison & Horne, 2000).

Prolonged periods of wakefulness are also characterised by the presence of 'microsleeps' – periods of sleep which may last from a few seconds to a minute - where the person appears to be wide awake, but whose electrical brain activity actually tells us they are asleep. This has very serious implications for safety of practice for obvious reasons. Sleep inertia – or one's ability to function immediately upon being awoken from sleep - reduces decision-making ability for at least thirty minutes with the greatest impairments being found within the first three minutes of waking where performance may be as low as 51% of the optimum (Bruck & Pasani, 1999). Those middle of the night phone calls to report vaginal bleeding could result in some very poor assessments in this state.

Two British sleep researchers recently conducted a major review of studies concerning the impact of sleep deprivation on decision-making (Harrison & Horne, 2000). They raised the concern that few studies involve realism or high-level decision-making, and pointed out that most laboratory-based studies do not measure performance which relates to real world tasks. They summarised that complex tasks that are essentially rule-based and interesting to the participant are not overly sensitive to sleep loss. However, real-world decision-making can also involve unique and unfamiliar circumstances, necessitating a wide range of other complex skills. These include *"having to appreciate a difficult and rapidly changing situation; assess risk; anticipate the range of consequences; keep track of events – update the big picture; be innovative; develop, maintain, and revise plans; remember when events occurred; control mood and uninhibited behaviour; show insight into one's own performance; communicate effectively; and avoid irrelevant distraction*" (p.237). They note that there is increasing evidence from recent studies that even one night's loss of sleep can lead to significant deterioration in these skills. What seems clear is that all of these skills contribute significantly to the making of sound midwifery judgements.

Interestingly, there is also some good news from the research! Several studies have demonstrated a clear benefit of taking even a very short nap (as short as fifteen minutes though thirty is considered preferable) in order to enhance one's level of functional capacity following sleep loss. Gillberg , Keckland, Axelsson and Akerstedt (1996) noted that a thirty minute nap during a day in which participants had received only four hours' sleep the previous night will return one's vigilance performance almost to baseline levels and significantly decrease one's subjective sleepiness rating. Similarly, Takaheshi and Mito (2000) found significantly fewer errors in logical reasoning tasks and increased alertness following a fifteen minute nap in subjects who had enjoyed only four hours' sleep the night before. So for the flagging midwife being able to slope off for a nap during those long haul births may well enable her to return a safer midwife.

Hearing their voices; what the women say:

As an adjunct to looking at some theoretical concepts around the issue, I sought and obtained consent from six women who had experienced long and complex labours to share their insights about how tiredness impacted on what occurred for them. Four dominant themes emerged from their stories, and I was interested to note the level of consistency of each woman's description of these themes.

The message which was clear from their stories was that *while they were actually in labour* it did not occur to them to be concerned at all about their midwife's level of tiredness, that they all felt completely safe and trusted their midwife to know her own 'boundaries of safety'.

"At the time I did not consider whether my midwife's decision-making ability was altered… the over-riding factor was my own tiredness…"

"I was totally surprised when [mw] said she needed to rest… I was only concerned about my own tiredness and it never occurred to me to think about the needs of others around me."

"I felt 100% sure and safe and loved and nurtured and quite frankly I didn't give a damn if [mw] was tired or not… it was no longer my care."

"I never doubted my midwives' decision-making abilities… I completely trusted them to make the call… and trusted that they knew what their own safety boundaries were."

They all expressed a desire for their lead maternity carer (LMC) midwife to be present with them at the time of delivery, even if she had been absent for part of their labour having gone off for a rest.

"I was confident in my body's ability to give birth naturally so my biggest fear was that she wouldn't be there to get me through it. It was really important for her to be there – we had built up a really good relationship."

"It was vital for me to know I would have someone with me who knew me."

"It was important for me to receive continuous care from my own midwife… I wouldn't be able to communicate my concerns, beliefs etc if I was to meet a new person at the time of childbirth."

They all said that it was really important that they had met their back-up midwife, that they trusted her, and that she shared a similar philosophical approach and style of practise to their "own" midwife.

"I had met [mw] on a couple of antenatal visits – this was really important to me… there was good chemistry between us."

"…it was important that I had met [mw] and knew she worked in a similar philosophical way…"

"when [mw] went home for a rest I didn't actually mind… because I had met [mw2] and I liked and trusted her."

"I think I probably would have been quite distressed to be left with someone I hadn't met".

Two women referred to 'the kind of continuity' that enabled them to be supported in their own decision-making when they knew their decisions conflicted with what other hospital staff were wanting to happen. They both felt that they would have been less able to articulate their needs in the absence of their known caregivers.

I have included the final comments because they speak volumes to me about the level of partnership women and midwives have come to achieve through our years of listening to one another and reflecting on each others' needs:

"I could see that they were looking after each others' needs [mw1 and mw2] as well as mine and that felt great."

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How safe is a tired midwife?

"I believe that the relationship is two –way. I had a strong and loving support team from my family. They also took care of me which would have taken some pressure off the midwife. They ensured that she shared food and drink with us. Perhaps being able to rely on the family for this level of support also helps midwives maintain their energy and strength through these long haul births."

"I'm sure that having a good relationship with her [the mw] and discussing as many possibilities beforehand made a big difference – I knew that if she was exhausted it wouldn't help me, my baby, or her, and I'm really glad she was able to leave and have a rest, and also be with us at the very end."

Implications for best practice and strategies for survival

How can we use this knowledge of the ways in which tiredness affects our capacity to make decisions to inform best practice? First, let us take a look at what we consider to be 'good' decision-making in a clinical context. We must be ethical, and I have already outlined the components of ethical reasoning previously. We could avail ourselves of the opportunity to study the plethora of models for bioethical decision-making which exist in the literature. One suspects that if we could find a framework which suited our purpose on enough occasions, we could internalise that model for utilisation when our ability to think creatively is reduced. We can all chant the mantra of airway, breathing, circulation in a crisis no matter how shocked or tired we are, so perhaps there is scope to incorporate a framework for ethical decision-making into our repertoire of multi-use mnemonics.

We can look at the anatomy of a decision and unpack from it some knowledge which proves true in every situation. McConnell (2000) argues that the amount of effort applied in any decision situation should be consistent with the potential consequences of the decision. Generally you will have a range of alternatives and options available to you. Each option may have a different outcome. Each option may carry a degree of risk. Your task includes gathering enough information to analyse, and from your analysis selecting and implementing an action. You must then evaluate your action, to see if you have met your objective. Did what you want or expect to happen, actually happen? On a practical level, however, sometimes time is not on your side, and this level of analysis becomes impossible. I believe midwives are very skilled at teasing out the crucial points for consideration and acting quickly to prevent a situation from deteriorating.

What else is involved in quality decision-making? We must acknowledge the experiences, skills and expertise of all parties to the decision, most especially the woman and her family. We must ensure that all options and their expected outcomes are well understood by those who will be most affected. We must adhere to the principles of informed choice. When everyone is tired we should factor this in too and recognise that the decision-making skills of all of us may be impaired, and try to be precise and gentle with our discussions. We must be prepared to accept our limitations and seek assistance in the interests of keeping everybody safe.

In conclusion, then, we can strive to embody the *"spirit of safe practise"* as described by Smythe (2000, p.19) in her excellent article looking at what it means to be safe in childbirth. She identifies the following features of how concern for a woman's well-being manifests as mindfulness, watching, anticipating and doing. She talks of knowing when to leap in, and when to leap ahead to restore decision-making to the woman. We can take steps to change the current climate of being expected to continue to cope when tiredness and outside pressures impact our judgment, and lead to a *"semblance of safe practice"* (Smythe, 2000, p.20).

Some insights emerge which can give us direction if we want to change what is, into what should be. While acknowledging that some of these strategies may be unrealistic for midwives practising in rural settings, those who practise in towns and cities may be able to incorporate them more easily. While caring for women antenatally, we can discuss scenarios in which we might want to call in a second midwife. We might use a second midwife to spell us for a few hours if the complexity of a woman's labour means spending a very long time with her. This can enable us to return fresh and provide a higher degree of safety in decision-making. We can reassure the woman that where humanly possible, her original LMC will return for the birth of her baby, facilitating closure for all parties and acknowledging that it is important for both of you to be together at the end.

We can ensure that we maintain flexible and supportive organisational arrangements within our midwifery practices to keep personal financial loss to a minimum and to maximise continuity for the women in our care. We could remain willing to meet with the clients of our colleagues antenatally so that in the event of being called in to assist, we are already known to the woman and perhaps even to her support people.

Lastly, we can acknowledge the complexities around the provision of continuity of care and develop relationships with our midwife partners which support continuity but which allow for gaps in continuous caregiving, and actually *get* that it's okay to leave for a while if a situation is becoming unsafe.

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Is routine antenatal screening for Group B Streptococcus appropriate for women in New Zealand? A review of the evidence.

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Introduction

The management of Group B beta-hemolytic Streptococcus (GBS) has become a practice issue for New Zealand midwives in recent years, as hospitals have implemented protocols for 'risk factor' screening in an attempt to reduce the incidence of Early Onset GBS Infection (EOGBSI). These protocols have been developed in an informal, ad hoc way and vary from hospital to hospital within New Zealand. Consequently, the prospect of routine antenatal screening for GBS colonisation motivated this review of research about GBS carriage patterns, sensitivity, effectiveness and cost of screening. Recommendations for practice and policy are offered which are based on evidence rather than fear, anecdote and a potentially misplaced belief in the efficacy of screening in this context.

Group B Streptococcus

GBS is a relatively common lower intestinal tract flora, colonising approximately 30% of the adult population (Feldman, 2001). It is considered normal flora and is usually harmless. GBS is only considered a pathogen intrapartally or if it causes specific infection; it is not normally considered nor treated as a pathogen (Langley, 2000). It is the capacity of GBS to cause aggressive neonatal infection that makes it of significance for midwives and women giving birth. It also occasionally causes urinary tract and wound infections, septicaemia and endometritis (Krohn et al., cited in Langley, 2000).

Intrapartal (IP) vaginal colonisation is a prerequisite for EOGBSI. The bacteria ascend into the amniotic fluid once membranes are ruptured, and enter the epithelium of the lungs, causing pneumonia (evidenced most commonly by respiratory distress syndrome) or bacteremia (Feldman, 2001). In approximately 15% of cases, it invades the meninges causing meningitis, and 15-30% of babies with meningitis will incur permanent neurological damage (Glantz & Kedley, 1998).

EOGBSI begins in utero, with 70% of babies symptomatic at birth and 95% within the first 24 hours of birth (Morbidity Mortality Weekly Review (MMWR), 1996). Table 1 outlines the signs of EOGBSI. While signs of infection are often nonspecific and individually not uncommon, *"persistence of abnormal signs and the presence of two or more signs increase the likelihood of infection"* (Bromberger, Lawrence, Braun, Saunders, Contreras & Petitti, 2000, p.248).

Table 1:
Signs of Neonatal GBS Infection

- poor apgar scores
- poor temperature control – fever or hypothermia
- poor feeding and/or vomiting
- respiratory distress, apnoea or cyanosis
- impaired consciousness
- pale or blotchy skin

and, where meningitis is involved

- shrill/moaning cry or whimpering
- dislike of being handled
- tense of bulging fontanelle
- stiff/floppy body, seizures

(Source: Langley, 2000, p. 3)

All current serotypes of GBS are sensitive to the antibiotic [1] penicillin, although resistance to erythromycin and clindamycin, the alternatives used for women allergic to penicillin, is growing (Grimwood, Darlow, et al., 2002; Pearlman, Pierson & Faix, 1998).

While EOGBSI is unpredictable, some situations are known to pose greater risks to babies. The 'risk list' presented in Table 2 identifies conditions of greatest risk identified in the literature. The list is not definitive and the parameters of individual and combined risks are not established from sound empirical evidence. Benitz, Gould & Druzin (1999a) carried out a critical literature review of risk factors and concluded that *"many questions remained unanswered … Although prematurity/low birth weight, intrapartum fever, and prolonged rupture of membranes (PROM) each increase the risk for GBS infection, available data do not reveal threshold values for these factors"* (p.14). It is important to note that only approximately 60% of the mothers of babies with EOGBSI will have any of these risk factors as currently defined.

Routine Antenatal Screening for GBS

The aim of routine screening is to identify pregnant women colonised with GBS in order to then identify those at greater risk of having babies affected by EOGBSI; that is, women with IP vaginal colonisation. Currently, there is no intrapartal test available that can reliably identify the presence of GBS in time to appropriately treat those at greatest risk. Therefore, antenatal screening has been proposed as an option by some obstetricians and paediatricians. There is no empirical data as to efficacy, cost benefit ratio, the numbers needed to treat to prevent one case, negative consequences, or incidence rates above or below which antenatal screening may be appropriate (MMWR, 1996). In order for a screening test to be effective it would need to have a high positive and negative predictive value [2] (PPV/NPV), be cost and clinically effective, and achieve high compliance from consumers and providers of care, with accompanying low risks of negative consequences

Table 2: Primary Risk Factors for EOGBS Infection

GBS colonisation - heavier associated with increased risk
GBS Bacteriuria in pregnancy - indication of heavy colonisation, measure varies
Previous child of the woman had EOGBS infection - colonisation & bad experience
Chorioamnionitis - maternal fever and two or more of the following - fetal tachycardia, offensive amniotic fluid, uterine tenderness, maternal leukocytosis
Maternal intrapartum fever - range in values used >37.5 °C - >38°C
Rupture of membranes - Prelabour or prolonged - currently set at >18 hours before birth
Preterm labour and birth - <37 weeks gestation - premature and low birth weight

(Sources used to compile table: Benitz et al. 1999a, Langley, 2000; MMWR, 1996)

The Evidence

While extensive literature on EOGBSI has been published, the quality of the data is variable and difficult to analyse, because GBS colonisation is common but variable, intermittent and unpredictable. Further, EOGBSI is rare and the known risk factors are not well defined or definitive. In addition, incidence, morbidity, mortality and clinical management practice varies considerably around the world. The majority of research on this topic comes from the United States of America, which has markedly different EOGBSI rates to New Zealand's (Benitz et al, 1999a; Grimwood, Darlow et al., 2002). The databases searched for evidence were: MIDIRS, Cochrane, Proquest, Medline and CINAHL. The search terms included 'group B

streptococcus', 'group B streptococcal infection', 'Early onset group B strep* infection', 'neonatal GBS infection' ; 'antenatal/prenatal AND group B strep*'; and the above combined with 'AND screen*'. Reference lists of key articles were used to identify and then search for further materials. For the purposes of this article clinical trials and comprehensive literature reviews were of most relevance, and form the majority of material cited here. The data considered relevant to screening falls into four areas

1 - carriage patterns – incidence, predictability, sites
2 - screening sensitivity – data to date, predictive values
3 - screening effectiveness – effect on incidence
4 - screening costs – costs per case prevented, risks and potential negative consequences.

1 – Carriage Patterns

Knowing GBS colonisation rates and understanding the nature and pattern of GBS colonisation are important factors to consider prior to implementing any screening programme. The evidence relating to carriage patterns includes data from studies by Anthony, Okada & Hobel (1977); Dillon, Gray, Pass & Gray (1982); Easmon, Hastings, Neill, Bloxham & Rivers (1985); and the comprehensive work of Boyer, Gadzala, Kelly, Burd & Gotoff (1983).

A recent New Zealand survey of 240 women (1998-9) found rectovaginal colonisation at 35-37 weeks gestation to be 22% (Grimwood, Stone et al., 2002). This rate is similar to other data over a number of years from the USA (Boyer et al., 1983; Dillon et al., 1982; Yancey, Schuchat, Brown, Ventura & Markenson, 1996; Katz, Hibbard, Ranganathan, Meadows & Ismail, 1999) and the UK (Easmon et al., 1985), but greater than recent Swiss data, reporting a rate of 10.6% (Stan, Boulvain, Bovier, Auckenthaler, Berner & Irion, 2001). Vaginal colonisation alone has been found to be approximately 50% that of rectal or rectal/vaginal rates (Dillon et al., 1982; Boyer et al., 1983; cited in Benitz et al., 1999a). GBS colonisation is variable and proposed risk factors include; ethnicity, maternal age, parity, marital and socio-economic status, education, smoking and number of sexual partners. However, the relationship between these factors and GBS appears inconsistent and has not yet helped identify high risk women (Benitz et al., 1999a).

The transient nature of GBS colonisation is illustrated in Dillon et al.'s (1982) findings. Serial swabs of 2,540 pregnant women were gathered over a three year period (although numbers of swabs taken from each woman and timing of swabs are not reported). The authors reported rates of 18% rectal, 4% vaginal and 13% combined rectal/vaginal colonisation, with an overall rate of 35% of women colonised with GBS. However, only 17% of the 754 women who were tested in both second and third trimesters were carriers during both trimesters (ibid, p. 796). Similarly, Easmon et al.'s (1985) sample of 1457 pregnant women found GBS colonisation more often the more they tested - with 23% positive with one swab, and 33% positive when four swabs were taken. Colonisation decreased during pregnancy, and *"of 131 GBS carriers swabbed three times during pregnancy, 55 (42%) were positive on each occasion"* (p.198). Further, they report that *"neither rectal or vaginal swabs detected total GBS carriage"* (ibid). These data illustrate the intermittent nature of GBS colonisation, and the consequent limitations of any antenatal screening policy.

2 – Screening Sensitivity

For an antenatal screening policy to be of any value, antenatal colonisation must accurately predict vaginal intrapartal presence, since GBS is a risk to the neonate once a woman has ruptured membranes. Only four of the studies reviewed here considered the sensitivity or predictive value of antenatal swabs. Their results varied markedly, and are presented in Table 3.

Of note are the marked differences in predictive values between Stan et al. (2001) and Yancey et al. (1996) of 33% and 87% respectively. One contributing factor is likely to be the different carriage rates found in their respective populations. Yancey et al. (1996) noted that when there are high rates of colonisation the positive predictive values will also be higher, and the negative predictive values will be lower. Their own data produced a PPV of 87% and a NPV of 96%.

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Table 3: Comparison of four studies reporting predictive value of antenatal swabbing for GBS.

(Source: articles as detailed below)

	Stan et al. (2001)	Yancey et al. (1996)	Boyer et al. (1983)	Easmon et al. (1985)
Sample Size (No. of women)	209	826 (393 i/p)	393	895 (151 i/p)
Swab site(s)	Rectal/vaginal	Rectal/vaginal	Rectal, Vaginal and Rectal/vaginal	Rectal/vaginal
Gestation at time of swabbing	35-37 weeks	≥6 wks before birth 35-36 wks	Late 1st trimester 15-28 weeks Early 3rd trimester	Booking (No.- 818) 28 weeks (231) 36 weeks (177) Labour (151)
Culture medium	Selective broth	General nutritive broth	Selective broth	General and then selective broth
Carriage Rate	10.6% a/n 7.8% i/p	26.5%	22.8%	23% - 1 swab 33% - 4 swabs
Positive Predictive Value (PPV)	33%	≥6 wks before birth - 50% 35-36 wks - 87%	67.2%	Bking, 28&36- 64% 36 wks - 84% 28&36 wks - 92%
Negative Predictive Value (NPV)	95%	≥6 wks before birth - 81% 35-36 wks - 96%	91.5%	36 wks - 87% 28&36 wks - 92%

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Is routine antenatal screening for Group B Streptococcus appropriate for women in New Zealand?

They estimated PPV of 71% and NPV of 99% if there was a 10% colonisation rate in a population (ibid). All of the studies that took multiple swabs found that PPV reduced as the duration between when the swabs were taken and labour onset increased, with a poor PPV when duration exceeded five weeks. For example, Yancey et al. (1996) found an 87% PPV at one to five weeks before delivery reduced to only 50% six or more weeks before birth.

Table 4 presents figures calculated by Benitz et al. (1999a), who combined the data available at the time and based on a 22.8% rectal vaginal colonisation rate predicted a PPV of 58.6% from rectal vaginal swabs taken at 36 weeks gestation, and only 48.7% PPV from 28 week swabs,. This means that even late antenatal swabbing is likely to predict only 60% of those women who may be colonised with GBS intrapartally, which is not a sensitive screening test.

3 – Screening Effectiveness

Table 4: Screening for Intrapartal Vaginal colonisation

Values based on 14.5% vaginal & 22.8% rectal/vaginal . PPV different from sensitivity due to variability in carriage patterns

Screening Test (%)	Sensitivity	Specificity	Positive Predictive Value(PPV)	Negative Predictive Value(NPV)
Rectal/Vaginal Culture at 28 wks	75.5%	86.3%	48.7%	95.3%
Rectal/Vaginal Culture at 36 wks	90.8%	88.9%	58.6%	98.2%

(Source: Benitz et al., 1999a).

The evidence regarding the effect of routine screening followed by treatment of colonised women, on the incidence of EOGBSI is predominantly from the USA, where rates were 3/1000 (Benitz et al., 1999a) which are six times that of New Zealand's 1998/99 levels of 0.5/1000 (Grimwood, Darlow et al., 2002). The research published to date is almost exclusively retrospective observational time series, which means that the data has been gathered from medical records at two different time frames with two different treatment protocols. This means a number of biases could have influenced the results independently of the screening protocol. For example, differences in populations, documentation, protocol compliance, staff knowledge and skills, treatment regimes, culturing techniques, and timing and sites of antenatal swabs.

In 1999 Benitz, Gould & Druzin (1999b) conducted another comprehensive critical literature review and decision analyses, which identified some of the inherent weaknesses in earlier published work. They found that *"reductions in EOGBS rates predicted … were smaller than those previously estimated for the strategies proposed by the American Academy of Pediatrics (AAP) in 1992 (32.9% vs 90.7%), the American College of Obstericians and Gynecologists (ACOG) in 1992 (53.8% vs 88.8%), and the Center for Disease Control and Prevention (CDC) in 1996 (75.1% vs 86%)"* (p.1). These figures are significant because the efficacy of screening predicted by AAP and ACOG has been the rationale for the introduction of screening protocols around the world which have been based on the figures produced by these eminent establishments. Benitz et al. (1999b) report that *"there have been no clinical trials of any of the strategies"* (p.2).

Table 5 offers the most comprehensive decision analysis model available (Benitz et al. 1999b). It is based on incidence of 3/1000, 22.8% rectal vaginal antenatal colonisation, and takes into consideration numerous factors not addressed by individual research trials or previous projected figures.

There appears to be a misplaced belief amongst some researchers as to the efficacy of proposed EOGBSI prevention strategies. Gosling, Stone & Grimwood (2002) suggest that *"women at high-risk of delivering affected infants can be identified by either detecting GBS carriers or by recognition of certain obstetric factors"* (p.106). This is not supported by New Zealand's recent data (Grimwood, Darlow et al., 2002), or by overseas evidence identified here. In all this research, a significant proportion of the mothers of babies infected with EOGBS have had no identified risk factors, whether there was an antenatal screening protocol or not (for example, Katz et al., 1999, Volumenie, Fernandez, Vial, Leburn & Frydman, 2001; Gilson, Christensen, Romero, Bekes, Silva & Qualls, 2000; Lin et al., 2001). Table 5 shows that no prevention strategy has been able to identify *all* 'high risk' women.

The clinical research reviewed in this paper is of variable quality. Available evidence to support the notion of screening effectiveness is compromised by the retrospective nature of the work and by small sample sizes (the rarity of EOGBSI means large numbers of births need to be studied to record reliable and valid changes in incidence rates, and even greater numbers required for differences in morbidity and mortality to be tested). Katz et al. (1999) had a large total sample of 25,402 women, but the findings are compromised by screening at 28 weeks, direct plate agar culturing

Table 5: Proposed Strategies for Prevention of Early-onset Neonatal Group B Streptococcal Infection *(Source: Benitz et al., 1999b – adapted, NZ$ added at 45c NZ: $1 US exchange rate, 2002)*

Prevention Strategy	AAP, 1992	ACOG, 1992 & CDC-AAP-ACOG 1996 (Option 2)	CDC-AAP-ACOG 1996 (Option 1)	Universal Intrapartum Prophylaxis
Screening for GBS colonisation	Rectovaginal culture 28 wks	None	Rectovaginal Culture 35-37 wks	None
Criteria for intrapartum prophylaxis	GBS screen + & EGA < 37 wks or RF +	EGA <37 wks or RF +	GBS screen + or EGA < 37 wks or RF + and GBS status unknown	All parturients
Patients treated per 1000 births	37	171	307	1000
Patients treated per case prevented	38	106	136	415
EOGBSI cases prevented (%)	32.9	53.8	75.1	80.2
Cost per case prevented	US$22,251 NZ$48,873	US$3067 NZ$6747	US$11925 NZ$26,235	US$12,049 NZ$26,507

Abbreviations: AAP, American Academy of Pediatrics; ACOG, American College of Obstetricians and Gynecologists; CDC, Centers for Disease Control and Prevention; +, positive; wks, weeks; EGA, estimated gestational age.
RF, risk factor – Prolonged rupture of membranes >18 hours or intrapartum fever >38°C.

technique and screening of only 56% of the appropriate population. Other research, including Jeffrey & Moses Lahra (1998), Volumenie et al., (2001), Gilson et al., (2000) and Towers, Suriano & Asrat (1999) and Lin et al. (2001) have various methodological weaknesses that make it inappropriate to base any recommendations on their individual findings, and differences between them make meta-analysis difficult.

The best research comparing antenatal screening (S) with risk factor (RF) treatment reviewed is Locksmith, Clark and Duff (1999). They retrospectively reviewed different cohorts under different treatment regimes at different times, and compared 7917 (RF) with 4453 (S) women (a third group of 7810 women had received another treatment regime, prior to the introduction of the two protocols of interest here). The authors identified the sample as too small for reliable comparison (ibid). They screened 83% of S women at 35-37 weeks, taking one or two swabs (low vaginal and perianal), and used selective broth culture medium. They treated 21% of screened women in labour, compared with 12% under the RF protocol, but *"were unable to document a statistically significant improvement in neonatal outcome under the universal screening protocol"* (ibid, p.416). They found that *"despite the ability of universal screening to find more women at risk for GBS transmission, half of the neonatal infections under this protocol occurred when the mothers were not considered candidates for prophylaxis"* (ibid).

The question of antibiotic effectiveness is of interest because antibiotics were found to be ineffective in 13% of the RF group and 17% in the S group, as evidenced by EOGBSI in neonates (ibid, p.420). Lin et al. (2001) had similar findings. Other issues relating to prophylactic antibiotic use merit serious consideration, but have received only fleeting attention from authors to date. These include allergic reactions, bacteria developing antibiotic resistance, the potential for colonisation with other more harmful organisms, the impact of intrapartal intravenous antibiotics on the normal labour process, and the general effect of antibiotics on the systems of well women and their babies. One issue of particular concern deserves mention - the risk of fatal anaphylaxis from intravenous antibiotic administration is generally quoted as being 1 in 100,000 (Isaacs, 1998). No data is available for anaphylaxis rates in New Zealand. Given New Zealand's EOGBSI fatality rate of 1 in 112,402 (1.8%) (Grimwood, Darlow et al., 2002), there is a serious possibility of the risk to a baby's life being transferred to a woman's life.

There are several other factors that have the potential to influence the efficacy of a screening regime. The so called "compliance" issues relating to women and care providers include the offering and timing of screening, the taking of swabs, the knowing and remembering the reported GBS status of each woman, the offering and appropriate administration of IP antibiotics. For women in New Zealand there would be a need for information to enable them to make choices about their "compliance" with protocols. Laboratories would require standardised culturing and reporting systems to ensure results are available at any time. Whilst these issues are beyond the scope of this paper, they must be addressed by policy makers considering a GBS screening programme.

The information published to date is not convincing of the merits, or the cost and clinical effectiveness of screening in the context of New Zealand

4 – Screening Costs

Any screening programme needs to meet certain criteria, and one of these is its cost effectiveness. Once again, all the data available is from overseas. The Locksmith et al. (1999) study is the only one to cost its screening protocol, estimating the cost of screening to add US$20,985 per case prevented above the risk factor protocol cost, which was not given (p. 421). The infection rate in their population was 1.5/1000 births (ibid), whereas New Zealand's infection rate is 0.5/1000. With one third of the incidence rate here, the cost per case prevented is potentially much higher.

Table 5 illustrates clearly that different strategies incur different costs and benefits. A direct conversion of costs per case from American to New Zealand dollars is not particularly valid given that costs of equipment and practice vary between countries. However, a conversion using the 2002 exchange rate indicates possible trends in cost differences if New Zealand adopted particular strategies. In addition, New Zealand's rate of 0.5/1000 would increase the cost per case prevented significantly above NZ$26,235 under a screening protocol. At the upper end of estimated costs is Stan et al.'s (2001) recent decision analysis, with an estimated cost of £105,140 per case prevented (based on an incidence of 0.4/1000, and the highest PPV figures available of 87% (Yancey et al.'s 1996 data)) – would mean, on a 2002 exchange rate conversion, a massive NZ$315,420 per case prevented!! If the Ministry of Health works on the "cost of a life" to be worth $20,000 (Roake, personal communication, April 2002), the New Zealand 1.8% EOGBSI case fatality rate reported by Grimwood, Darlow et al. (2002) would result in a huge cost per life saved. It would seem antenatal screening to prevent EOGBSI is not economically rational.

In New Zealand, EOGBSI is responsible for only a tiny fraction of our perinatal mortality rate (PNMR). In 1998 the PNMR was 8.3/1000, with the neonatal rate of 3.0/1000. The one death (a fresh stillbirth) caused by EOGBSI in the two year period 1998-99 of 112,402 births resulted in a case fatality rate of 1.8% (ibid) and represents 0.11% of perinatal deaths in that year! Even if the New Zealand rate was double that reported for 1998-99 during other years, it would not be a significant cause of neonatal mortality here. Arguably, such an incidence does not justify subjecting all pregnant women to vaginal and rectal swabbing, hospitalising and giving 30% of them large doses of intravenous antibiotics (with their inherent risks). Given the best result possible being a 25% reduction in the incidence of EOGBSI based on Benitz et al.'s (1999b) calculations.

Issues arising and implications of evidence

GBS is considered normal human flora, and harmless almost all of the time – including intrapartally, as only a fraction of babies born to colonised mothers become unwell. Rarely, it does cause serious neonatal infection, which is why it is of interest (Langley, 2000). The current risk factors identified are not well defined and represent a cumulative sliding scale of risk, but approximately 40% of EOGBSI cases occur where no risk factors exist (Benitz et al. 1999a). The body of knowledge about GBS and its patterns is dated and limited, partly due to the nature of GBS, and partly to methodological weaknesses in existing studies. Arguably, antenatal swabbing is not a reliable predictor of intrapartal presence to be used as a screening tool. Further, the current recommendation from the researchers cited here and the CDC (MMWR, 1996), to take low vaginal/introital and rectal swabs, identifies a larger pool of women that become labelled 'at risk', without identifying those genuinely at some risk – women with intrapartal vaginal colonisation (Benitz et al. 1999a). The issue of widespread prophylactic antibiotic use should be of serious concern, particularly when it is predicted that approximately 25% of EOGBSI will still occur (ibid). The financial, social and clinical costs of antenatal screening cannot be justified from the data available to date.

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Is routine antenatal screening for Group B Streptococcus appropriate for women in New Zealand?

Recommendations for practice

The current evidence reviewed here with regard to the predictability of GBS and preventability of EOGBSI does not support a routine antenatal screening protocol in New Zealand. A recent survey of New Zealand maternity care providers (Gosling et al., 2002) has highlighted poor knowledge levels regarding risk factors pertaining to EOGBSI, optimal antenatal screening techniques, and the potential efficacy of any screening programme. What is required is an evidence-based national protocol, founded on a consensus of opinion between maternity and paediatric professionals and consumers, defining appropriate 'risk factors'. Given the paucity of clinical evidence for the current risk factors for EOGBSI (Benitz et al. 1999a), further evaluation of these needs to be carried out, to define genuine "risk", so that treatment is appropriately targeted.

Conclusion

There is a substantial body of literature relating to EOGBSI. However, insufficient evidence is currently available to adequately assess the effectiveness of routine screening for GBS colonisation. The information published to date is not convincing of the merits, or the cost and clinical effectiveness of screening in the context of New Zealand - indeed it fails to provide any justification for routine screening. The data also raise serious questions concerning the widespread use of antibiotics. The screening protocol has been a theoretical proposal based on inadequate data and inaccurate decision analyses, and assumptions of GBS predictability and EOGBSI preventability that are unjustified.

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1 Antibiotic is the common term for a group of antibacterial agents, which are in turn a subset of antimicrobials. Antimicrobials are anti-infective compounds which are defined by their chemical structure and target pathogen; for example, bacteria, viruses or fungi (Porth, 1994).

2 Positive predictive value is the rate at which a positive test result will be repeated in a subsequent test. Negative predictive value is the rate at which a negative test result will be repeated in a subsequent test.

S U R F I N G T H E N E T

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I love e-mail. I love the fact that I can communicate with people throughout the world at the click of a button, at any time. I particularly enjoy midwifery e-mail discussion lists or groups. An e-mail discussion list is a group of people that are connected by Internet software that enables them to 'talk' to each other. I may be a midwife who belongs to a list for midwives, who wants to know the latest evidence regarding vaginal breech birth. So I will post e-mail to the list asking what others can tell me, and that e-mail goes to all the members of the list. Members of the list can choose to reply to my query, sharing information that can be viewed by all list members. Thus, an e-mail discussion list can be an effective tool for exchanging information, generating scholarly debate, offering professional support and opportunities for reflection on practice (Anthony, 1996). This is particularly desirable for midwives who practice in rural and isolated situations in New Zealand, who are unable to meet regularly on a face-to-face basis with colleagues. There are some disadvantages such as post that has no relevance to the readers' needs, too many messages and conflict between members of the list (Huntley, 1999).

I am currently a member of two midwifery e-mail lists. The first, which I find hugely beneficial, is the midwifery research list, managed by Jane Sandall (**www.jiscmail.ac.uk/lists/midwifery-research.html**). The list was set up in June 1999 following the ICM conference in Manilla. The aim

of the list is to create an international network for all people working in the area of midwifery and reproductive health research, although you don't have to be a researcher to be a member of this list. I particularly enjoy this list because Jane is very active in sharing information, especially about electronic resources that can be found on the Internet.

It was from this list that I found out that the MIDIRS Informed Choice Leaflets were available online (**www.nelh.nhs.uk/maternity**) as well as online access to the full text of 'A Guide to Effective Care in Pregnancy and Childbirth' (**www.maternitywise.org**). The list has an archive that anyone can access, so you can check it out before you decide whether to join or not.

The other list I have just joined is the normal birth research list (**www.jiscmail.ac.uk/lists NORMAL-BIRTH-RESEARCH.html**). This list has been active for one year and is managed by Soo Downe. Both Jane and Soo are British midwives and researchers, but the lists have an international membership. This list focuses on how we can 'normalise' birth, which is currently a hot topic around the world. Don't be put off by 'research' in the list title – the list will cater for all midwives' and students' interests.

The New Zealand midwives' list is a 'closed' list. This means that the general public does not have access to the list archives, and has to go through the manager to join the list (**http://groups.yahoo.com/group/nzmidwives**). The list is for midwives' interested in supporting each other and sharing news, with a New Zealand focus. There is also a list specifically for midwifery students in New Zealand (**http://groups.yahoo.com/group/nzbirthstudents**). This is a smaller list, set up with the aim for students to be able to support and encourage one another in their studies.

If you want to explore what e-mail lists are available start with jiscmail (**www.jiscmail.ac.uk**), yahoo (**http://groups.yahoo.com**) or birthtalk (**www.moonlily.com/obc/birthtalk.html**). There are a huge number of e-mail discussion lists available for people to join, covering just about any topic under the sun. For example, did you know that there are at least 117 groups devoted to Russell Crowe! A word of advice, when you join a list, don't forget to save any instructions about joining or leaving the list. Also, don't forget to record your password, if you require one.

Bulletin boards are another way midwives can dialogue with each other. A bulletin board is a forum on the Internet where midwives can post messages and reply to those of other users. Such a forum can be found on the MIDIRS web site, although it doesn't seem to be heavily utilised (**www.midirs.org/midirs/midfourm.nsf/forumwelcome**). Midwifery Today also has links to a number of bulletin boards that are appropriate for midwives, students and consumers (**www.midwiferytoday.com/forums**). The forums specialise in a range of topics from general discussion about being a midwife and 'tricks of the trade', to more specific topics such as breastfeeding, shoulder dystocia, herbs and natural remedies.

I haven't really come across any chat sites for midwives. 'Chat' is simultaneous or synchronous communication compared to e-mail and bulletin boards, which is asynchronous communication. So if anyone knows of sites where you can chat, please let me know.

Finally, a word about a local web site I have discovered. Wendy Earle and Carol Soutter are midwives working in Golden Bay (**www.goldenbaymidwives.com**). They have developed their own web site as part of their post-graduate studies. It's a great web site with photos, descriptions of their services and useful links including Shelia Kitzinger and Birth.net.nz.

If you have any web sites you would like to recommend, please contact me at: mazz@paradise.net.nz

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Shoulder Dystocia - a midwifery action wheel

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Introduction

A recent experience with the unthinkable, that a baby could die, and that I might not be able to help the mother birth her baby because its shoulders were stuck, is the subject of this analysis. This has been my most challenging encounter with shoulder dystocia, and its impact has had a significant influence on me, as a midwife and on how I view my midwifery practice. As a corollary of this experience, a thorough investigation into this phenomenon became imperative, so that I could put reality into perspective, and make some sense of the unpredictable nightmare that is shoulder dystocia. I am now able to put the incident into a framework that will not influence my practice in an irrational and paranoid manner, but add to my quest for ongoing growth of practice wisdom. This article describes the midwifery management of shoulder dystocia by the presentation of an action model that I have developed in the form of a wheel. My specific focus is the needs of midwives who are practising in the home or in birthing facilities without access to immediate medical emergency services.

I acknowledge that for some, the use of management mnemonics (Etches & Klein, 1995), can be useful in managing shoulder dystocia, and for those trained to work in this manner, it may be essential. I would like to suggest however, that this approach might paradoxically prevent some midwives from acting in a spontaneous and intuitive way of managing "things stuck" (Banks, personal communication, October 25, 2001). The act of trying to "remember" might hinder the act of "doing", and cause more anxiety for all concerned. It also does not include or acknowledge the mother's active participation in this critical shared act of problem solving. However, I do acknowledge the usefulness of mnemonics as a revision tool.

My experience with shoulder dystocia

Dianne was a 27 year old artist, 5'3" tall, weighed 56 kg. She had her last baby in l997, at 42 weeks' gestation. She had a seven hour labour, and birth of a 3660gm baby girl, without any labour or birth problems that she could recall at this time. This pregnancy was unplanned, and she was uncertain of her last menstrual period date. She had an ultrasound scan (USS) at nine weeks gestation because of bleeding and pain, which resolved. At that time an estimated due date of birth was obtained.

I met up with her and booked her into our midwifery practice, when she was 13 weeks pregnant, and I noted that she was at least four weeks greater than expected dates. Following consultation with my midwifery colleagues, Dianne and I decided to wait for about six weeks to assess the baby's growth with a further USS at 19 weeks gestation. She had chosen to have a scan then to check for anomalies with her baby, and we wished to keep the number of scans to a minimum. The scan was normal and agreed with the previously estimated due date, with no suggestion of the baby being larger than dates. Dianne's baby consistently palpated to be at least four weeks greater than dates. She consulted with an obstetrician, who disagreed with our size estimate. My colleagues and I were convinced, as was Dianne, that she did in fact have a large baby, but expected her to be able to give birth in her home town, in a primary birthing facility.

Dianne went into labour at term, and appeared to be having a normal labour, coping really well with strong regular contractions. At about six hours into her labour she expressed that she felt as if "things were stuck" and that she was not progressing. I checked her cervical dilation, and found her cervix to be eight centimetres dilated with a large anterior lip, which I was unable to reduce, the baby's head was at station minus one (Stn. – 1). We tried various positional changes, all fours, knee-chest position, squatting, sitting on the toilet, and stepping up and down on a low stool. Dianne also tried lifting one leg up onto a stool to lift the hip to allow more space for the baby to descend. None of these activities seemed to help. After discussing the situation with Dianne, who was getting more distressed, we decided to try to facilitate further descent of the baby's head down the birth canal, by trying to rotate the baby's head vaginally into a more favourable position. To do this, Dianne pushed with a contraction, and at the same time I pushed the baby's head upwards vaginally with my fingers, rotating the baby's head, whilst she lay in a dorsal position. This worked. There was further descent, and his head came into view. We all felt very excited and expected him to be born very soon. Dianne chose to remain in this recumbent position, as it felt comfortable for her. She pushed with contractions for what seemed like ages, but in fact was only 24 minutes. The baby's head crowned, but only after we helped Dianne to adopt the McRoberts position, that is, flat on her back with her hips hyper-flexed onto her abdomen.

When Dianne's perineum pouted with its very slow sweep over the baby's face, alarm bells started ringing in my mind. My anxiety increased significantly when the baby's head, having been born, 'retracted' back into Dianne's vulva. The 'turtle' sign. Dianne's perineum was intact, the baby's head did not restitute with the next contraction, and firm traction on the baby's head did not allow the release of the anterior or posterior shoulder. We attempted suprapubic pressure in conjunction with my attempt to release the anterior or posterior shoulder by head traction, with Dianne still in the McRoberts position – without success. At this stage an overwhelming feeling of terror came over me, and I knew that this was one of those rare occasions in a midwife's life that she confronts a situation where there may be a death, and that I had to try to prevent it.

I was aware of entering an altered perceptual dimension; it felt like a "white space", where I was aware of not "thinking", and was just "doing". I was conscious of acting in an automatic manner, and felt that I didn't know what to do; and couldn't escape from this situation of terror. I tried to recall things I had been taught, and remembered that episiotomy was one of them. I performed a small episiotomy, and at the time realized that it was not the right thing to do, as there was plenty of space in her vagina, the perineum was not tight.

In the room were two other trusted midwife colleagues, and a close friend of Dianne's who had planned to catch the baby. She spent the time mopping my fevered brow, and just being attentive and supportive. We agreed with Dianne that the baby was stuck and that we all had to get this baby out somehow; she knew that the situation was serious. We turned Dianne onto her left side, tried to extract the baby again, without success. So, next step. One midwife exerted gentle pressure on the baby's buttocks, and the other held Dianne's upper leg in extension. I forgot all the mnemonics that I had been taught at this time, and in this altered thinking state, did basic things to "remove things stuck". I located the baby's armpits within Dianne's vagina, and with my index and middle fingers rotated the shoulders one way and then the other, suddenly the shoulder was released, and the baby was birthed in one move-

ment. He was very shocked, but not as stunned as I was! In fact he was white and limp, with a purple head; we stimulated him by rubbing his body, and bagged him with oxygen for a minute or two until he pinked up and cried, and breathed on his own. The time from realizing that we had a shoulder dystocia until he was born was about two or three minutes; it felt like hours. The baby had an apgar score of six at one minute, and nine at five minutes. He had no obvious physical injuries, his birth weight was 4460gm, and he is now a strapping, healthy lad of eleven months.

All those involved spent many hours talking over the experience with Dianne and her friends, and one another; until we felt that all the questions had been answered in an open and supportive manner. We believe that a contributing factor to the outcome was the partnership relationships we all had with one another; we had a high level of trust in our joint abilities to resolve unexpected problems by collaboration. We had spent a considerable time antenatally, developing a professional friendship with Dianne and her support people, and her family, which is the nature of small communities in rural areas.

Definition of shoulder dystocia

I have found wide variation in the way shoulder dystocia is expressed and defined. The majority of these definitions appear to be described from a subjective standpoint, or from the perspective of how it can be managed by the birth attendant, without taking into account the mother's physical participation in the management of this challenging birthing process.

Shoulder dystocia is an anatomical complication that occurs when the baby's shoulders are unable to be birthed by uterine contractions and maternal effort alone. The use of specific manoeuvres or position changes then become necessary to help the mother get the baby out of her body without delay. Olugbile & Mascarenhas (2000) define shoulder dystocia as a mechanical problem when the anterior shoulder becomes impacted above the mother's symphysis pubis, instead of rotating under it. My definition of shoulder dystocia is that it is present when neither the mother nor I can get the shoulders out of her body without resorting to exceptional manoeuvres, internal or external, or by rotational positional changes. Internal clues that I experience in such situations are; palpitations, feelings of terror and impending doom, and a certainty that I am facing one of those rare situations when a mother or baby may die.

Morris (1954, cited in Oxorn, 1986) ably describes the historic management of shoulder dystocia as follows:

[…]Time passes. The child's head becomes
suffused. It endeavours to breathe.
Abdominal efforts by the mother or by her
attendants produce no advance;
gentle head traction is equally unavailing.
Usually equanimity forsakes the attendants.
They push, they pull. Alarm increases.
Eventually by greater strength of muscle
Or by some infernal juggle
The difficulty appears to be overcome,
and the shoulders and trunk
of a goodly child are delivered […] (p. 294)

Incidence of shoulder dystocia

Following a review of the literature, I have come to the conclusion that it is nearly impossible to find consensus about how shoulder dystocia can be universally defined. I believe that this is because of the subjective nature of the event. However, it is interesting to note the variations in the stated incidence of shoulder dystocia. For instance, a study in MIDIRS Midwifery Digest, (1998) cites rates of 0.15-2.0% of all vaginal births, as does Oxorn, (1986). Coates (1997) in her article on the diagnosis and prediction of shoulder dystocia cites studies that report an incidence of 0.37% – 1.1% of vaginal births. At the higher end of reported incidences, the University of South Carolina (2001) in its teaching module on Shoulder Dystocia, cite the American College of Obstetricians and Gynaecologists (ACOG) statistics, suggesting a range of 1% to 4% of all vaginal births.

I believe that the higher reported incidence of shoulder dystocia may be related to whether the woman is actively involved in birthing her baby or not. If she has a medicalised birth, with epidural in place, she may be less able to be involved in resolving the problem with the assistance of her birth attendant, and therefore more likely to experience shoulder dystocia.

I believe that it is helpful to put the incidence into perspective and realize that serious shoulder dystocia is unpredictable, unanticipated, and very infrequent; and may happen only two or three times in a midwife's lifetime, when she and the mother have to manage this situation without medical assistance. I would also like to suggest that definitions such as "tight fit", "sticky" or "snug" shoulders, might in fact, quite correctly, be descriptions of minor degrees of shoulder dystocia when the shoulder is impacted, but easily resolved. Further defining influences include the experience of the birth attendants, their philosophical framework, and a belief system that might interpret minor difficulties with birth as pathological. At the other end of the spectrum, extreme difficulties with birthing the shoulders may be seen as a variation of the normal and therefore not pathological, particularly if the midwife and mother are able to overcome the challenge together.

It may be that if the birth weight of babies is increasing significantly and that if more are getting "stuck" then this may be a factor in a possible increase in the reporting of shoulder dystocia. On the other hand, it may be that the increasing medical management of birth, such as the use of epidurals, may have an impact on birthing difficulties, and the need for more medical intervention, (Roberts, Tracy & Peat, 2000). So a better description may be to describe the situation as "difficulty with birth of the shoulders" (which includes all degrees of shoulder dystocia), and then describe the manoeuvres or position changes needed to get the baby out.

Signs of shoulder dystocia

In their recent work, Olugbile & Mascarenhas (2000) reviewed a large population of nearly 30,000 birthing women in the United Kingdom. They concluded that it was difficult to make predictions about who was at risk. Factors including maternal diabetes, maternal weight gain greater than 12 kg, previous large baby, were *"unlikely to predict shoulder dystocia in this study"* (p.269), but that macrosomia was the greatest single predictor of shoulder dystocia. Sriemevan, Neill & Overton (2000) cite the work of Deter & Hadwek (1985) who state that the estimation of macrosomia by clinical or ultrasonographic means is of limited use and accuracy, and cite the work of Acker, Sachs & Friedman, (1985), and of Gross, Shime & Forrine (1987a), that 50–60% of cases of shoulder dystocia occur in babies weighing less than four kilograms.

Whilst there may not be any clear indicators or predictors of shoulder dystocia during pregnancy, other than macrosomia, the following events should alert the midwife to the possibility that it may occur during the labour and birth period.

1. Unexpected delay in late first stage of labour
2. Slow descent of baby's head onto the perineum
3. Slow sweep of the perineum over the baby's face
4. "Turtle Sign" - retraction of baby's head onto the perineum as the anterior shoulder impacts onto the symphysis pubis

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Shoulder Dystocia - a midwifery action wheel

5. No restitution of baby's head
6. Baby's head turns purple
7. Anterior and posterior shoulder unable to be born with normal traction and maternal effort

Pathophysiology of shoulder dystocia

The normal mechanism of the shoulders entering the pelvis is for them to enter in the oblique diameter of the inlet of the pelvis. The anterior shoulder then reaches the side of the pelvic floor and rotates forwards, bringing both shoulders into the anteroposterior diameter of the outlet of the pelvis (Myles, 1975). With the progression of labour, the anterior shoulder then rotates under the pubic arch, and is generally born first before the posterior shoulder, which sweeps over the perineum by lateral flexion. Oxorn (1986) describes the process of shoulder impaction, as occurring when the shoulders attempt to enter the pelvis in the anteroposterior diameters of the inlet of the pelvis. The posterior shoulder usually manages to negotiate passing over the sacral promontory, if not, then this becomes a bilateral impaction, which is significantly more difficult to resolve.

Mortality and morbidity

The MIDIRS Midwifery Digest, (1998) cites the work of Benedetti (1978) who states a mortality rate of 21 to 290 per 1000, and a morbidity range of 16% to 48%. I believe that the wide range of these findings suggests and reinforces the difficulty with which shoulder dystocia is defined. The most common complications for the baby are asphyxia, brachial nerve injuries such as Erb's and Klumpske's palsy. Fractures of the humerus and clavicle are not uncommon. Most of these injuries heal within the first year of life (UK Midwifery Archives, 2001). Rosser (1999) emphasised from the findings of the 5th Annual Report (part VI), of the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI), that in the interval between the birth of the head and that of the body, 47% of babies who died did so within the first five minutes.

Manoeuvres

There are a number of manoeuvres that have been developed to help reduce shoulder dystocia and thereby get the baby out. They have been designed to either enlarge the potential space within the pelvis, or to reduce the bisacromial diameters of the baby. I shall only describe the manoeuvres that I believe are relevant for midwives. These include rotational manoeuvres and positional changes. Over the years the accuracy of the descriptions of these manoeuvres appears to have altered. The work of Ramsey, Ramin, Field & Rayburn, (2000) describes the original rotational manoeuvres, and shows how some of them have been modified.

All fours position

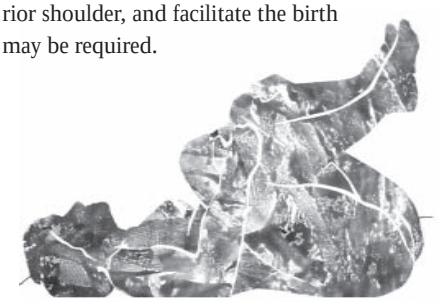
Ina May Gaskin learned about this position from indigenous midwives in Guatemala in 1976, (Meenan, Gaskin, Hunt & Ball, 1991). It involves the maintenance of the hands and knees position, or helping the mother turn into this position to birth her baby. It is possible that the act of changing into this position will dislodge the impacted shoulder. The force of gravity may be influential also in turning the baby. As illustrated in the Wood's manoeuvre, rotational manoeuvres and posterior arm extraction in this position are also possible.

Wood's screw manoeuvre

The anterior surface of the baby's posterior shoulder is abducted towards the symphysis pubis, in conjunction with rotation of the other shoulder, rotating the baby 180 degrees, thereby 'unscrewing' the baby between the sacral promontory and the pubic bone, and allowing the release of the impacted shoulder (Woods & Westbury, 1942).

McRobert's manoeuvre

In this manoeuvre the mother hyperflexes her legs against her abdomen, thereby increasing the pelvic inlet diameter by about 10%, also this position decreases the curve of the sacrum. This action alone may allow the anterior shoulder to escape from impaction against the symphisis pubis, and allow the baby to be born. However the use of suprapubic pressure to disimpact the anterior shoulder, and facilitate the birth may be required.



Suprapubic pressure

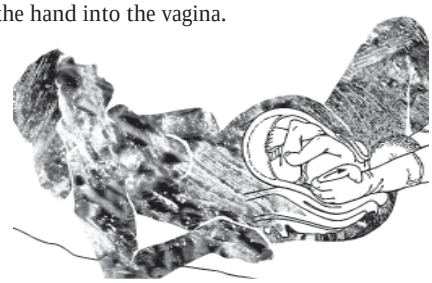
It is important to know the position of the baby, so that pressure can be directed from behind the baby's back. At first, firm 'rocking' of the baby's anterior shoulder forwards should be tried. This may dislodge the impaction. This can be followed by sustained pressure on the shoulder for 30 seconds at a time, rotating it into the oblique diameter of the pelvis, and hopefully releasing the anterior shoulder. This manoeuvre plus the McRoberts position is often enough to relieve anterior shoulder impaction.

Rubin's rotational manoeuvre

This manoeuvre is often used in conjunction with suprapubic pressure in the direction of the baby's back, into the oblique diameter of the pelvis. The anterior or most accessible shoulder is rotated towards the other shoulder, which decreases the bisacromial diameter of the shoulders, and hopefully releases the anterior shoulder from under the symphysis pubis. Rubin (1964) suggested that if this didn't work, then "*…rock the fetus' shoulders from side to side… by pushing on the mother's lower abdomen*" (p. 836).

Posterior arm extraction

This is achieved by inserting a hand into the hollow of the sacrum posteriorly, and grasping the baby's posterior arm. The baby's arm is grasped and then flexed at the elbow and swept upwards over its chest, followed by rotating the baby through 180 degrees, releasing what then becomes the anterior shoulder, which should allow the baby to be born normally (Coates, 1997). This manoeuvre may be achieved with the mother in the hands and knees position. It may be necessary to perform an episiotomy to allow extra room to insert the hand into the vagina.

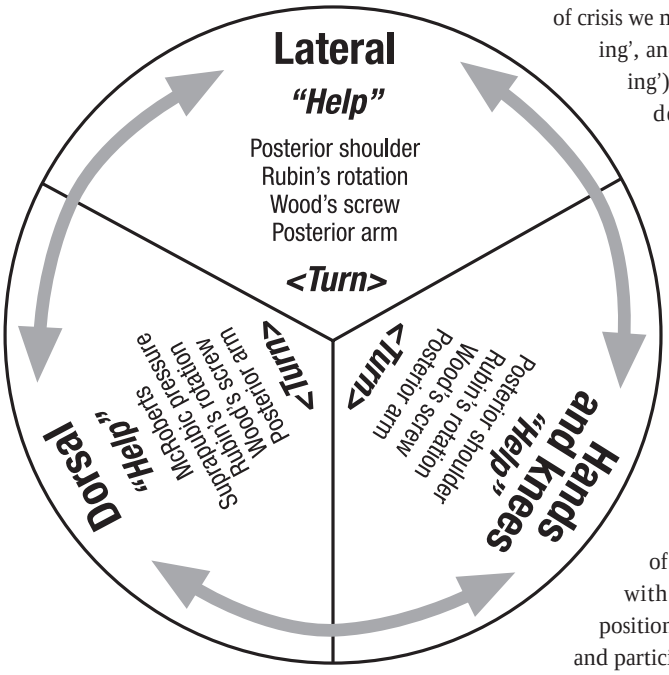


Midwifery management of shoulder dystocia

An important conclusion I have reached as a result of my experience is that it is possible to apply an intuitive response to the problem of getting a baby who is stuck partly out of its mother's body, by any means that are helpful for the mother and midwife at the time. I believe that swift action, movement, not giving up and having the confidence to believe that there is almost always something that we can do by trying a range of manoeuvres, are critical factors in keeping this potentially terrifying event in perspective.

If one movement does not work, change. Try another. I don't believe that it is important to remember the names of the manoeuvres, other than on reflection. Having the cooperation and ability of the mother to move freely is crucial in getting the baby out of its mother's body. 1As a result of my experience, I have developed an action wheel (Figure 1) to illustrate an attitude of rotation of the baby's shoulders, and movement of the mother from one position to another if necessary. My intention is that in this time of crisis, midwives may remember at least one thing, and that is to think of a WHEEL; to try everything possible, and to ROTATE…. TURN…. MOVE…. and to keep trying.

Figure 1:
SHOULDER DYSTOCIA ACTION WHEEL



Conclusion

As a result of my encounter with and investigation into shoulder dystocia, I have been able to confront my fears of inadequacy and powerlessness, with constructive information that will make it easier to manage a similar recurrence. Whilst I had been taught mnemonics to manage this emergency, they did not help. My belief that in times of crisis we move into a state of 'not thinking', and react by 'doing' (or 'not doing') has been the prompt for the development of this visual model. The development of a Shoulder Dystocia Wheel model, for visualizing midwifery management is intended as a tool for use during this critical time, when fear may overwhelm rational thought. I have found that it is nearly impossible to define shoulder dystocia because of the subjective nature of the event, and that most difficulties with the birth of the shoulders can be overcome with rotational manoeuvres and positional changes. The co-operation and participation of the mother is a fundamental part of the problem solving process. I believe that this can be best achieved in a relationship of trust, partnership and understanding.

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Shoulder Dystocia - a midwifery action wheel

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Editorial comment:
Carol retains retain the intellectual property rights to the graphics (figures) and to the shoulder dystocia wheel diagram.

B O O K R E V I E W

Defining Your Own Success. Breastfeeding after Breast Reduction Surgery.

By Diana West *(2000)*
USA: La Leche League International
Cost: $24.95 (US), $57.96 (NZ)

Reviewed by Kathy Manhire, BA, RM.
Nurse Lecturer, Eastern Institute of Technology, Hawkes Bay

Diana West has had breast reduction surgery, has breastfed three children and is a La Leche Leader. She was motivated to write this book after encountering a lack of professional knowledge and support when she came to breastfeed. She initially began an email group, with the acronym BFAR (Breastfeeding after Reduction). This book is directed at women who have had breast reduction surgery and wish to breastfeed, but is very relevant for the health professional who will support her. This is the first book to be published about breast reduction and breastfeeding.

West believes that in order to breastfeed after breast surgery four factors are needed : one breast, one nipple, information and support, with the latter factors being critical. The emphasis throughout the book is on each woman defining her own successful breastfeeding relationship, which is not so much related to quantity of breast milk but to the experience for both mother and baby.

This is a comprehensive and easily read book of 328 pages. West acknowledges support from academic sources and the experiential knowledge of women. Each chapter is prefaced by women's stories, which provide both positive and negative interpretations of their breastfeeding experience. Chapters include discussion about why women have breast reduction surgery, reduction surgery techniques and the impact of the surgery on breastfeeding. This includes the practical mechanics of breastfeeding after the surgery and preparations the mother might make before she begins to breastfeed. There is a review of practical ways to maximize milk supply, breastfeeding problems, supplementation and emotional issues. A chapter is written specifically for health professionals. Evidence is provided for much of the information given with current research cited at the end of each chapter. An appendix offers worldwide resources for support, weight gain charts, breastfeeding assessment sheets, relaxation techniques and equipment checklists. A glossary and index is also included.

Some areas of the book may be initially irksome to the reader. The long list of breastfeeding equipment is one, but this is not stated as an essential list. Renting scales and daily weighs are recommended and this may be viewed as a medicalised or anxiety producing approach, but it is also important to remember that dehydration and low milk supply are a possibility after breast reduction surgery. The use of scales are not for test weighs, rather they are suggested as a way for the mother to use a standard measurement, and to establish that her baby is gaining weight (or not) in order to perhaps preclude too early intervention. This is a North American book and some recommendations are not available in New Zealand such as human milk banks, doulas, drugs and insurance. It retails at sixty dollars (NZ).

There are two messages for women in this book, the first to value their own breastfeeding experience and the other for women to develop their own system that works for them and their family. Women receive a lot of misinformation about breastfeeding even without having had breast surgery and this book offers empowering and realistic information for them. It encourages women to be proactive in the pursuit of their own successful breastfeeding experience. I don't believe it sets up high expectations or pushes the "breastfeeding or nothing" barrow. For this reason I recommend that health professionals be aware of its existence, read it and recommend it to their clients.

Breastfeeding: Conditions and Diseases. A Reference Guide.

Merewood, A. & Philipp, B. L. (2001).
Published by Pharmasoft Publishing: Amarillo USA.
IBSN 0-9636219-5-5. Price: USA $29.95
Available from: www.iBreastfeeding.com
Email: books@iBreastfeeding.com

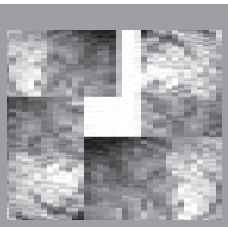
Reviewed by Annette Hagan, RN, RM, International Board Certified Lactation Consultant (1994 & 1998). Lecturer (Nursing), Faculty of Health and Sports Science, Eastern Institute of Technology, Hawke's Bay. Contact: ahagan@eit.ac.nz

This comprehensive reference guide provides handy summaries and background information on each of the breastfeeding related conditions and diseases it deals with. The book's value is in its discussion of common and obscure breastfeeding conditions and diseases in a succinct, thorough and readable way. It will be a useful book for busy midwives and other health professions with little time to search out up-to-date information as it provides common sense, informed answers concerning the common conditions and diseases that practitioners are faced with in their day-to-day work as well as those rare situations that arise from time-to-time.

The issues discussed range from problems such as low milk supply and nipple trauma to common medical conditions like infectious diseases and diabetes and the very rare, like chylothorax. The information provided is evidence-based and well referenced. However, practitioners need to constantly be aware of developments in research-based evidence which support treatment options that differ from those recommended in any text. The reader must also be mindful of the occasionally evident American bias.

This reference guide is organised alphabetically and clearly laid out with entries being three pages long on average. Each entry starts with a summary of the main facts relating to the condition or the disease and the breastfeeding issue. Then follows a definition or cause of the issue or problem. While these generally are medically orientated facts the authors are not without a sense of humour as demonstrated in the definition/cause of pregnancy, which is given as *"well documented in both the academic and in the popular literature"* (p, 179). Each entry then follows with the signs and symptoms of the condition, the treatment for the mother and/or the baby, the importance of the condition to breastfeeding and finishes with a small section titled "Food For Thought". It is this section that allows the authors to include wide range of background and other material that does not easily fit into the other sections. For instance did you know that fenugreek was reported to increase average daily milk volume from 207 mL to 464 mL in a study of ten women?

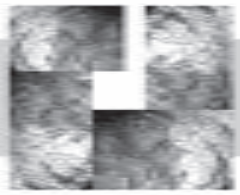
Entries are fully referenced and include research findings on breast milk and breastfeeding. Lastly, each section has a resources entry, which provides comprehensive details of valuable contact addresses for parents. Although these are American references modern information technology will make these resources available to many New Zealand families. The book also contains a small number of appendices which are; a glossary of terms, the Ten Steps to Successful Breastfeeding and a very useful comprehensive web sites for breastfeeding information. I would not hesitate to recommend this book although it is moderately expensive. It is a handy size and would fit into a pocket or work bag and is packed full of relevant and interesting facts to assist the practitioner support the breastfeeding mother.



Papers presented at the 7th Biennial **New Zealand College of Midwives Conference** in Dunedin, July 2002.

The following are some of the papers presented at the conference. We regret that we are unable to print all of the papers but hope that this selection will highlight interesting issues for midwives. The papers have not gone through a peer review process but have been prepared by the presenters in a form for publication in the journal.

Images from the conference



Midwifery decision making and management of the third stage of labour

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INTRODUCTION

This paper reports the key findings of a survey undertaken at the New Zealand College of Midwives Conference in Cambridge, 2000, that examined the views of 121 New Zealand midwives about midwifery decision making and management of third stage of labour.

BACKGROUND

The third stage of labour is potentially the most hazardous part of childbirth for the mother. This is attributed to the risk of postpartum haemorrhage and associated morbidity (Rogers, Wood, McCandish, Ayers, Truesdale & Elbourne, 1998). It is therefore not surprising that the management of third stage has ongoing professional significance for midwives.

Four major research studies comparing active and physiological management of labour have been undertaken since 1988. These include the Bristol Trial (Prendiville, Harding, Elbourne & Stirrat, 1988), Dublin Trial (Begley, 1990), Brighton Trial (Thilaganathan, Cutner, Latimer & Beard, 1993) and Hinchingbrooke Trial (Rogers et al., 1998). These randomised controlled trials were conducted within hospital settings in the United Kingdom or Ireland. Results from all four trials were comparable in that they agreed active management improves outcomes for women by reducing postpartum haemorrhage and other morbidity factors such as postpartum anaemia. The length of the third stage was also shortened and this resulted in a reduction in the use of therapeutic oxytocic drugs.

These studies have had a significant impact on practice. Although some of the improvements in post-partum haemorrhage statistics, since routine ecbolic usage was introduced following ergot discovery in 1935, could also be accounted for by improvements in antenatal care, improved nutritional status and general health and increased access to blood transfusions (Begley, 1990).

The question arises, however, as to the relevance of these studies in the current New Zealand context. Prior to 1990, active management of the third stage was widely practised and the majority of births were conducted in hospitals under the supervision of medical staff. Since midwives gained autonomy of practice there has been increasing focus on woman-centred care and partnership between midwife and woman/family/whanau. The medical model of technological 'active' intervention has been critiqued, challenged and examined. For example, a study undertaken by midwives Smythe, Macaulay, Kerins, Schollum, and Gunn (1992) examined the normal practices surrounding the third stage of labour and the beliefs and attitudes of midwives. The authors concluded that *"there is a wide diversity of practice and beliefs related to the third stage of labour within this group"* (p.10). It was also noted that the advent of independent midwifery practice had impacted on decision making around the management of third stage and women were being given choices regarding active or physiological approaches. Another New Zealand study by Prichard, O'Boyle, and Nogden (1995), measured the outcomes of physiological management of the third stage of labour in the homebirth setting. The authors suggested that trials should be undertaken in different settings, such as home birth.

A critique of research in the area of third stage management indicates a lack of consistency in operational definitions across studies. Terms such as 'active', 'physiological', and 'post-partum haemorrhage' have been subject to a variety of meanings and interpretations. Hence the survey reported in this paper questioned midwives about their usual practice and where appropriate it asked them to define the meaning of related terms.

METHODOLOGY

Design

A survey was designed in order to obtain information about midwives' attitudes, knowledge, values and reported experiences in relation to decision-making and management of the third stage of labour. Approval for the research was obtained following the processes required from the ethics committee of the Auckland University of Technology where the authors currently work.

Sample

Registered New Zealand midwives were invited to participate in the survey at a national New Zealand College of Midwives Conference. Inclusion criteria stipulated that participants were to be registered midwives currently practising in New Zealand. A limitation of this study relates to the convenience sample, which means that results may not be representative of New Zealand midwives as a larger group. Approximately 500 attendees registered for the conference. The writers were unable to ascertain exactly how many midwives would have met the selection criteria. However, 121 registered New Zealand midwives responded to the questionnaire.

Method

A pilot study of the written questionnaire was undertaken with 10 participants to check content and criterion validity. The questionnaire was distributed with an information cover page. Questions included non-identifiable demographic details of participants and management of third stage.

Analysis

SPSS computer software was used for the quantitative descriptive statistics. Comments were analysed qualitatively using content analysis.

RESULTS AND DISCUSSION

Some respondents did not answer all the questions and therefore, the percentages are based on the response rate, for each question. The writers have chosen to present the findings with discussion points.

Demographic profile of respondents

The majority of midwives were either self-employed (48%) or hospital employed (38%). A few were employed in educational institutions and others worked in various combined roles. Midwives were generally well qualified. Approximately a quarter had practised for less than 5 years, half had practised between five and twenty years and about one quarter of the sample had practised for over twenty years.

Numbers and frequency of those who practise active and/ or physiological management

When midwives were asked, "do you practise active management?" 18 answered "no". Twelve

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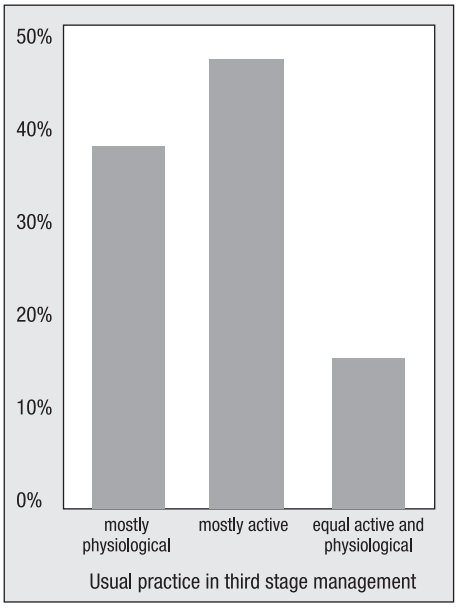
Midwifery decision making and management of the third stage of labour

midwives answered "no" they did not practise physiological management. Those who answered "no" to these questions did not respond to further questions specific to those management approaches.

Graph 1: Midwives' usual practice in management of third stage



When midwives were asked to describe their practice in relation to third stage management that year, 56 (46.3%) said that they mostly practised active, 45 (37.2%) mostly physiological and 20 (16.5%) practised equally active and physiological management *(Graph 1)*.

Defining usual practice

A critique of the international literature indicates a lack of clear definition when describing operational terms such as 'active' and 'physiological' management. Harris (2001) states that there appears to be variation in practice within each approach and no clear consensus.

We assessed what participants viewed as activities that constituted 'active' or 'physiological' management and their level of participation by including questions that asked participants to describe their 'usual practice'. Practice categories provided included: Massage of the uterus; Controlled cord traction; Intermittent cord traction; Maternal effort; Immediate/early clamp and cut the cord; Maternal end cord clamped; Ecbolic given; Use of complementary therapies and Breastfeeding.

As with overseas studies (e.g. Harris, 2001) we also found variation of definition and description amongst our participants. For example, the figures for controlled cord traction (CCT) as usual practice showed that 82.5% answered "yes" to providing CCT when practising active management, while 92% participants did not use CCT when practising physiological management. This suggests that 17% of midwives "only sometimes" or "do not" use CCT when practising active management and equally there are 8% who use CCT as part of their physiological management. This level of unexpected response certainly blurs the definition and shows the variety of meanings attached to types of practice in the third stage.

Table 1: Midwives' use of intermittent cord traction as usual practice

	AM: intermittent cord traction %	PM: intermittent cord traction %
Yes	26.3%	12.5%
No	31.6%	66.7%
Sometimes	42.1%	20.8%

AM=active management (n=57)
PM=physiological management (n=96)

When considering the question of intermittent cord traction, Table 1 shows that 68.4% answered "yes" or "sometimes" when practising active management, and 33.3% answered "yes" or "sometimes" when practising physiological management. This leaves 66.7% of respondents who did not use intermittent cord traction during physiological management. One has to wonder if participants were confused by the question, or does the definition associated with physiological management vary so widely?

Another interesting result from the section on usual practice was the high inclusion of breastfeeding in both active management and physiological management. Of midwives answering "yes" or "sometimes", 87% were practising active and 90% were practising physiological management. Breastfeeding is not usually included in the medical textbook definitions of the third stage management for either active or physiological management. It may be that this result could be more to do with the importance that New Zealand midwives generally place on the early initiation of breastfeeding than specifically related to these midwives' definition of "usual practice" in third stage management.

Influences on midwives' decision-making

Women's Choice

Firstly, we need to emphasis that the most important factor influencing midwives' decision con-

continued over...

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References: 1. Lumbers E. Prevention of preterm pre-eclampsia by antioxidant multivitamin supplementation. Abst. Hrsc. Obs. Gyn. Aust. & Nzl. Coll. Obst. Gynaecologists 15, 1991. 2. Data on file. 3. Smithells R. Lancet 1980.

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Midwifery decision making and management of the third stage of labour

cerning management of the third stage of labour was the woman's preference. It is interesting, that in this study the partnership relationship between midwives and women has been acknowledged. Some midwives commented on aspects of women's choice and management, as follows. *"I offer women a choice antenatally of active or physiological management (if all is well)."*

"Some women choose physiological third stage then change their mind when the placenta takes longer than they expect and ask for the injection to get it over with."

The following paragraph was written by one midwife and summarises the views of many midwives. *"The way of practice depends on the woman. Years ago, [while] home birthing I felt confident with physiological 3rd stage and I would still support the woman who makes this choice. As a hospital midwife with episodic midwifery care and not knowing the women, I feel more comfortable with active management of the third stage as their general health status is unknown. I ensure that women have made an informed choice about an ecbolic; but I still can't help but wonder how many women would choose not to use an ecbolic if they felt more in control of themselves during their whole pregnancy and birth time."*

Practice confidence

Midwives rated their degree of confidence as "OK", "confident" or "extremely confident" for 99% practising active management and 94% practising physiological management. Our results suggest that these New Zealand midwives are reflecting confidence in both active and physiological management of the third stage of labour. Although the relationship between expertise and confidence is tentative, we believe that this is an important finding as one of the major criticisms of the international studies of active versus physiological management is that the midwife participants had limited expertise in physiological management. (Prendiville et al., 1988; Rogers et al., 1998).

Midwives wrote about issues of confidence in practice. Two such comments are presented here. *"This seems to be the stage that is fraught with anxiety when it should be the time for faith in nature, where the bond between mother and baby is paramount, supported and attended in confidence. Fear exhibited at this stage leads to a piecemeal, unsatisfactory approach, which often precipitates complications that could be avoided."*

"Midwives who are not that familiar with physiological management get anxious at the time it can take to 'deliver' the placenta."

Midwives' experience

The midwives' experience of third stage management was considered to be an important influence in decision-making. Of those considering using active management, 59% felt that the midwife's own experiences were "important" or "very important", and 67% of those considering using physiological management had the same view.

Setting

The survey sought to establish whether there was an influence of the birth setting on the midwives' decision-making around the third stage. The hypothesis was that there was a significant influence between setting and decision-making. We found that for 83% of midwives, the hospital venue was in the range of "very unimportant", "unimportant" or "no strong feelings" when considering it as a factor that influenced their use of active management. Only 17% thought it was "important" or "very important". For those midwives practising physiological management, 93% stated that the hospital venue was "very unimportant", "unimportant" or "no strong feelings" as a factor that influenced their use of physiological management, with only 7% stating that it was "important".

However, some comments identified the possible influence of hospital policy and protocol. One midwife stated that: *"Sometimes hospital policy dictates how third stage is managed, especially when core midwives don't get the opportunity (because we don't see them antenatally) to make the woman aware of the two different ways of birthing the placenta."*

If we look at the influence of the homebirth setting we see a similar outcome. Eighty percent of midwives stated that the homebirth venue was either "very unimportant", "unimportant" or that they had "no strong feelings" when considering it as a factor that influenced active management. This was similar in physiological management with 78% of midwives expressing that the homebirth setting was not an important influence.

Despite the New Zealand study by Prichard et al. (1995) which advocated further investigation into home birth and the third stage outcomes, the international literature has very limited information around management of third stage in the home environment. All of the major studies in this area have been conducted in hospitals. In this limited sample, however, findings do suggest that the birth venue, whether at home or hospital, does not

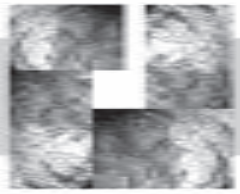
Table 2: Midwives' type of employment in relation to third stage management

		Employment type							
		che	self	educ	other	che & self	self & educ	self & other	**total**
Usual practice	mostly physiological	6	33	1		4		1	45
	mostly active	33	18	1	1	3			56
	equal active and physiological	7	8	2		2	1		20
Total		46	59	4	1	9	1	1	121

che = public hospital self = self employed educ = teaches

Midwives were then asked about the importance of hospital protocol and policy on decision-making. For those midwives using active management, 35% thought protocol and policy was "important" or "very important" in their decisions compared with 18% of those practising physiological management. A clear majority of midwives felt that hospital policy and protocol was not an important factor influencing decision-making.

strongly influence decision making in management of the third stage. In contrast, the midwives' type of employment was associated with most usual practice of third stage management *(Table 2)*. Midwives who were employed in a public hospital (namely Crown Health Enterprise) predominantly used active management (33 of 46 or 72%). Whereas many self-employed midwives (33 of 59 or 56%) used physiological management. Chi-squared test of this cross tabulation was statisti-



cally significant (p= <0.01). The proportion of midwives in other types of employment was too small in number to generate a significance test.

Women's general health

The woman's general health was felt to be an "important" or a "very important" influence, for 91% of midwives when considering active management of the third stage and for 86% of midwives electing to use physiological management. Clinical factors also rated highly as "important" or "very important" with 96% of midwives considering active management and 92% of midwives considering physiological management.

Use of ecbolic

Midwives were asked what their choice of ecbolic would be in a 'normal' situation where active management of labour was to be used to manage the third stage. The intention of the word 'normal' was to indicate that excessive bleeding had not occurred and that the woman did not have any particular high-risk factors. The ecbolic of first choices was intramuscular syntocinon for 52% of midwives and intramuscular syntometrine for 41%. A small number of midwives chose a selection of alternative or complementary therapies instead of a traditional pharmaceutical ecbolic. These remedies included the use of motherwort, shepherd's purse, arnica and rescue remedy.

The preference for the use of intramuscular syntocinon was a surprising finding in this study given that the traditional 'textbook' ecbolic is syntometrine. What does the research indicate regarding a preference towards syntometrine or syntocinon? McDonald, Prendiville and Elbourne (2002) evaluated prophylactic syntometrine versus oxytocin for delivery of the placenta. Syntometrine was associated with a small reduction in the risk of postpartum haemorrhage, although the advantage was smaller when syntocinon 10iu, rather than 5iu, was used. There was no difference seen between the groups using either 5iu or 10iu of syntocinon when blood loss was equal or greater than 1000 mL. Vomiting and hypertension were associated with the use of syntometrine. Further studies are needed to differentiate potential benefits of syntocinon compared with syntometrine which appears to have unwanted side effects.

Definition of blood loss

Midwives were asked to give a definition of what they considered minimal, moderate, and excessive blood loss and a definition for post-partum haemorrhage (PPH).

The 2002 Ministry of Health "Guidelines for Lead Maternity Carers" Section 88 of the NZ Public Health and Disability Act 2000 (code 6003) suggest that a referral is necessary, and that a PPH has occurred, when blood loss exceeds 600mL with ongoing bleeding observed. Traditionally the definition of blood loss for PPH has been set at 500mL (Sweet & Tiran, 1997). Although midwives in this survey did most commonly define PPH as 500mL,

Table 3: Midwives' definition of blood loss (n=121)

	mean (mL)	median (mL)	mode (mL)
minimal	131.7	100	100
moderate	328.3	300	300
excessive	548.3	500	500
post-partum haemorrhage	645.4	600	500

continued over...

continued...

Midwifery decision making and management of the third stage of labour

some midwives defined PPH well outside this figure (range 100-1500mL) bringing the mean definition to 645mL *(Table 3)*.

Research shows that estimating blood loss is notoriously inaccurate with estimates generally lower than the actual amount of blood loss. In addition, as the amount of blood loss increases the accuracy of estimating the loss reduces (Johnson & Taylor, 2000). Many respondents wrote about the ambiguity surrounding estimated blood loss (EBL). Many suggested that definitions of blood loss should consider the effect of the loss on the woman. Such comments are well summarised by the following contribution. *"Amounts [are] not definable. I think [blood loss] is different for every woman - any blood loss, which significantly compromises the woman, is important and should be acted upon. Conversely, a large blood loss which has no effect on the woman is not significant."*

This position is supported in *Mayes Midwifery* (Sweet & Tiran, 1997), which states that the exact amount of blood loss is less important than the effect on the mother of the blood loss. Barclay (2001) highlights the concern for good monitoring of blood loss to avoid the risk of PPH. One of Barclay's observations is that clinical indicators of peripheral perfusion loss, such as increased heart rate, and reduced blood pressure, level of consciousness and urine output levels, lag behind the actual blood loss events. This means that by the time women are displaying clinical indicators, such as hypotension, excessive blood loss has already taken place. This signals the importance of the need to be proactive when blood loss is estimated to be around 500-600mL.

Clinical factors/situations and active management

Midwives were asked to rate the importance of clinical indicators in their decision to use active management. A list of clinical factors/situations was provided which included: twin pregnancy; previous PPH; elderly primigravida; primigravida; previous caesarean section; epidural in situ; long labour; big baby; induced labour; low haemoglobin; low platelets; raised maternal temperature; meconium liquor; parity 4, 5, 6 and >6; requested early discharge; instrumental delivery; episiotomy and precipitate labour. The following section looks at the research based evidence and literature that supports the significance of some of these indicators.

Twin pregnancy was thought by 94.8 % of respondents to be an "important" or "very important" reason in deciding to use active management of the third stage. Several studies looking at risk factors associated with PPH or risk factors associated with multiple pregnancies would support this view (Combs, Murphy, Laros, 1991; Conde-Agudelo, Belizan, Lindmark, 2000; Sebire, Jolly, Harris, 2001).

A "not very important" factor for 93% of midwives' decision to use active management was a **primigravida** woman and for 80% of midwives this included an **elderly primigravida** woman.

Results from all four trials were comparable in that they agreed active management improves outcomes for women by reducing postpartum haemorrhage and other morbidity factors such as postpartum anaemia.

However, an "important" or "very important" factor in the decision to use active management was **parity 6** for 71% of respondents and this increased to 81.2% for **more than parity 6**. Parity in terms of primigravida does feature in some studies although multiparous women do not feature as a significant indicator for PPH (Combs et al., 1991; Eggebo & Gjessing, 2000). Page (2001) also reviewed four studies and found that none demonstrated a direct association between multiparity and a higher probability of PPH. It has been acknowledged that women in each particular case may have other risks associated with multiparity. For example, Mocanu, Greene, Byrne, Turner and Coombe (1996) suggest that multiparous women have larger babies, and are therefore more at risk. This survey found that 74.2% of midwives thought that **big babies** were an "important" or "very important" factor. A limitation of this part of the survey is that respondents were asked about specific factors in isolation and so combinations of clinical factors cannot be measured.

When asked if a previous **caesarean section** was reason to influence use of active management in the third stage 34.3% thought it would be an "important" or "very important" influence and 65% thought it was "not very important". The literature on previous caesarean section is based around uterine rupture as a risk factor and there is very little reference to risk of PPH.

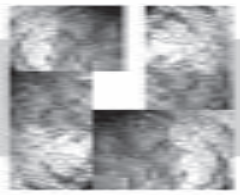
Having **low haemoglobin** (Hb) was thought to be an "important" influencing factor by 88% of respondent midwives, in their active management decision-making. Similarly, **low platelets** also featured as an important factor (95% of respondents) in consideration of active management of third stage.

Long labour was perceived by 93.1% of respondents as "important" in deciding to use active management. In the qualitative section of the questionnaire, which asked: "*in your experience, what do you consider to be the main contributing factors to PPH?*" the single, most important contributing factor to PPH, was identified as long labour. Atony has been reported as the major cause of PPH (Jouppila, 1995).

Precipitate labour was an "important" influence for 70.6% of respondents, although in the qualitative section, only 6 midwives mentioned precipitate labour. Precipitate labour does not feature largely in the literature.

Induction does not seem to appear as a highly significant factor in the literature . This may be because it is entangled with other statistics such as long labour, in-coordinate labour and epidurals. However, 70% of respondents thought **induced labour** was an "important" influence in deciding to use active management.

Using 'evidence' to support practice can be relative. Lesley Page (2000), for example, talks of five steps in the application of evidence to practice. These are: finding out what is important to the woman and her family; using information from the clinical examination; seeking and assessing evidence to inform decisions; talking it through and reflecting on outcomes, feelings and consequences. From a midwifery perspective when it comes to finding evidence for some of the clinical indica-



tors around management of third stage, the woman and her family/whanau's preference may be as important, and at times more important, than seeking and assessing evidence, and this may partly explain some of the results.

Comments made by midwives

Many comments were made about the complexity of the 'management' issue. These comments centred around partnership, continuity of care, birth setting, confidence and knowledge issues relating to particular clinical issues like blood loss. Comments included the following.

"It's interesting that we think we need to 'manage' the third stage. Surely, in most cases, as with the first and second stages of labour, nature is extremely efficient."

"Active management of the second and third stage of labour, as routine practice, undermines and dangerously affects the natural progression of women's trust in the natural process of birth."

"Third stage management in tertiary care seems to be more important than anything else during the birth of the baby. The routine use of ecbolic means that some midwives don't ever know what a physiological third stage looks like."

"The third stage should always be physiological, and then based on an individual need, not choice. An ecbolic should be an emergency type measure."

Some of these comments could be considered in the light of findings from the Hinchingbrooke Trial, reported by Rogers et al. (1998). They noted that women provided with a mixture of both physiological and active management had a PPH rate of 21%, compared with an 8% rate for those who had full active management and 11% for those who had total physiological management.

CONCLUSIONS

This research has revealed information about midwives' practice in relation to pathophysiology, clinical skills and 'knowing'. Key findings include that midwives rated themselves as having confidence in both physiological and active approaches to third stage management, and that both a woman's preference and clinical factors were important to midwives when deciding which approach to use. This was the case over and above hospital policy and protocol. Lesley Page (2000, p.1) offers an understanding of this point, when she writes *"that a midwife is a person, who attends other women in pregnancy, at childbirth and during the early weeks of family life. Beyond this simple function lies a wealth of art and science, knowledge and expertise, attitudes and approaches that provide a unique and irreplaceable approach to care*". The data from this survey about clinical factors, usual practice and the supporting literature demonstrate midwives' weaving of the art, the science, and the knowing of midwifery itself.

Future research

The ability to generalise from this study is limited, as the midwives who answered were a convenience sample attending a national New Zealand College of Midwives conference. Further studies could be worthwhile. For example, some of the questions could be reworded in a further survey to account for the complexity of midwifery decision-making. It could also be beneficial to undertake a qualitative study to uncover some of these complexities. One participant suggested that a study with confident practitioners undertaken in New Zealand could be planned. It could also be interesting to undertake a study from women's perspectives.

Research uncovers and frequently raises more issues than it solves. This research has provided some interesting key findings. It presents a challenge for midwives to: critique their own practice; consider the evidence that they bring to their decision making, examine the partnerships that they form with women and the information that they provide to women. Not least, it raises issues about the quality of care they provide for women.

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Core midwifery: the challenge continues

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This article has been adapted from a paper that was presented at the New Zealand College of Midwives 7th Biennial Conference, 2002. This paper endeavoured to bring to the fore some of the issues around practice for core midwives in the South Auckland Health Middlemore delivery unit.

Questions about core midwives' practice

To meet the requirements of Section 88 (Ministry of Health, 2002), South Auckland Health, Middlemore is about to significantly change the way it delivers primary care and as a service provider will have to restructure its services. For Middlemore and the midwives it employs, Section 88 will change the way midwives work. It will require fewer core staff and more midwives able, and willing, to work in a model offering continuity of midwifery carer. As a group of midwives who are part of a service provider that before July 1st 2002 provided a large primary care service, we believe our voice in the midwifery profession can only add to the richness of who we are; as New Zealand midwives and as members of the New Zealand College of Midwives.

One of the issues that we believe face us as core midwives is the interface between primary and secondary midwifery care. We are very aware that secondary midwifery care does not exist in its own right and any references to secondary care are in relation to specialists or secondary maternity services (Pairman, 2002). What do we mean by the interface between primary and secondary midwifery care?

These are some of the questions we find ourselves asking

What is the role of a core midwife when our advice has been sought by a lead maternity carer (LMC)? What is our role when we find ourselves in the delivery room as support person seeing practice that we consider less than safe?

This question has become a very important issue for midwives at Middlemore because of its "greyness" and the ethical challenges and legal implications.

While secondary maternity care may well refer to the provision of specialist services for those women who have a clinical need for either consultation or transfer on a planned emergency basis, what happens in situations like the following?

A story of practice

It is Friday at 1500 and we have just had a call from one of the outlying units to say they are transferring a woman who is a primigravida, spontaneous rupture of membrances for 18 hours and she has been in established labour for 12 hours. She is 3cms dilated and the head is at station –2 not well applied to the cervix and possibly an occipito-posterior position. The woman's temperature is 37.7 degC. She is transferred from an outlying area and on arrival the LMC consults the consultant. The consultant asks her to put in an IV line, send off bloods, start antibiotics, provide adequate pain relief, start syntocinon and follow the primigravida guidelines in the running of the syntocinon. The LMC comes to me, as the charge midwife, very anxious about the syntocinon, the intravenous luer and the running of the epidural. She states she needs help to put the luer in and a little refreshing on how to run the syntocinon and monitor the epidural. This is not a rare occasion in delivery unit. *While you may have many thoughts and questions around this scenario – in this moment the questions for us are:*

- What is our role?
- Are we the support for the LMC? If we are – what is our role as there is no recognition of a role except when care is handed over to a specialist doctor?
- What are our responsibilities legally, ethically and professionally if we are not the LMC?
- Should we take over the care completely because it is out of the scope of practice of the LMC?

Another story

It is 0100 and the unit is very busy with 10 women in labour. The LMC asks me to come in and review the woman's cardiotocograph (CTG) trace that she is concerned about. I look at the CTG trace and note decelerations of greater than 60 beats per minute lasting up to one minute and getting progressively longer. This is a primigravida whose cervix is 3cms dilated. I express my concerns to the midwife and suggest she needs to consult with a consultant. The midwife, however, believes that the woman is in established labour and will progress well if we give her a chance. She therefore opts at this point not to consult.

Where do we stand?

- Should we refuse to view CTG traces of LMCs when asked because there are no clear guide lines on where core midwives stand?
- It is said to us that professionally and ethically we are responsible for any situation at which we are present because there is a 'duty of care' and yet how does that "pan out" in practice?
- If we, as charge midwives, were so concerned about the CTG that we called the consultant to come in and review it – where would we stand? We do this on occasions but it is horrible position in which to be put.

So, either midwives who are LMCs never consult with us, or we come up with clear guidelines and procedures, of which everyone is aware – which then reduces the flexibility that informality brings.

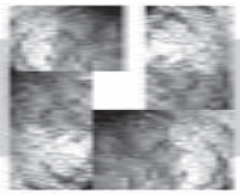
The interface of primary and secondary midwifery care

It appears to us that what has developed is a culture of core midwives being the support people to LMCs with little, or no right of, authority with regards to care and practice. The other culture that has developed is that reflection on practice is interpreted as criticism rather than as concern or a learning opportunity. We need to learn to hear and discuss what we have to say about each other's practice without becoming defensive and feeling judged. We believe that there is an interface between primary and secondary midwifery care. Many times when we have brought this issue up, the answer has been that it is about relationships and this is true. Clearly, in many situations both we, as core midwives, and the LMCs are able to talk about each others' practice. However, because we are human and relationships are not always easy, we believe greater clarity needs to be brought to this interface.

The need for secondary midwifery care

While secondary midwifery care does not appear to exist on paper, or in midwifery philosophies, it does exist and needs to be named, explored, and discussed. So that the boundaries and the roles are more clearly defined and women are aware of everyone who is having input into their care. Despite what the profession may tell us, we do not believe that a midwife, is a midwife, is a midwife. We believe that there are roles to be played and that not all midwives can work effectively with the demands of complicated midwifery care. We believe clarification of the role and responsibilities of core midwives will lead to recognition of the place that they have as practitioners who enable birth to remain as normal as possible even when it does become complicated.

Some of the literature and research would place midwives who practise in large hospitals as being



part of the medical model of childbirth because the institutions, in which they work, give care that is fragmented into pre- and post-natal wards, labour and delivery units. Mavis Kirkham (2000) would claim that midwives are unable to work in partnership with women in large consultant hospitals since the constraints in these settings disempower midwives. It would appear that midwives have to work outside the medical setting to practise in a midwifery model.

However, the Report on Maternity (2001) indicates that of 53, 273 babies born in hospital, over 6000 were born in primary units or primary plus units, thus leaving over 47,000 babies born in secondary/tertiary hospitals. With a picture like this, surely we have an obligation to be aware of, and vigilant with regards to, the medicalisation of birth that can happen in these units where the majority of women give birth? Can we not as midwifery practitioners in these secondary and tertiary settings also lay a claim to being guardians of normal birth? Or do we have to submit to the setting dictating how women will birth?

Surely, if we believe in the midwifery model, it should be most evident in the institutions where most women birth? Who said the big institutions belonged to the medical profession? Surely they belong to women and we are there, as their advocates, to ensure the art of midwifery and normal birth does not die in this technological age of ours. There is endless literature and research telling us that midwifery which involves little intervention and technology is safe and appropriate care for most women. When will we have the courage to practise in this way in the institutions where the majority of women are birthing?

We would like to suggest that core midwives should not be disempowered by these institutions. Instead we need to find ways to preserve, nurture, support, and breathe life into the midwifery model, to operate on an equal footing with the medical model in the big hospitals. We would like to suggest this is possible. It would appear that it is imperative to have Section 88 operating in such a way in these institutions if we are going to maintain a midwifery model of care. There are a number of studies which were presented at the conference which show that continuity of care leads to better outcomes than fragmented care.

Core midwifery at Middlemore

We would like to offer an illustration of core midwifery at Middlemore. Table 1 represents the number of women who had normal vaginal deliveries (NVD) whilst cared for by LMCs and core midwives working in a fragmented care model for the year May 2001- April 2002.

Table 1: Comparison of some outcomes associated with LMC and core midwife care of 5400 plus deliveries at Middlemore delivery unit

Outcome	LMC midwives	Core midwives
Normal vaginal deliveries	75.2 %	77.3 %
Ventouse rate for primigravidae	4.9%	2%
Caesarean section (emergency)	12.8%	15.2%
Epidurals with all women	27.4%	24.3%

Whilst the proportion of NVD is similar the number of caesarean sections is slightly higher for women cared for by core midwives. One explanation is that core midwives care for many of the high-risk women who have diabetes, medical problems, premature labour, cardiac complications and other high-risk problems. Alongside this, 1.5% of women who arrive at Middlemore in labour are unbooked and have a very chequered obstetric history. There are also a significant number of women who, while booked, have had little, or no real, antenatal care. We also receive women who are booked at other hospitals. An example of this is the woman who was booked to have her baby at National Women's Hospital and who arrived at Middlemore the other night with no notes. When we finally uncovered the story, she had had two previous caesarean sections; the last one because her uterus had ruptured during the trial of labour. Inevitably on arrival at Middlemore she was contracting. This gives some idea of our colourful client base.

Pain relief as one of the key areas where continuity of care has been cited as making a difference. The number of women cared for by core midwives who had an epidural was less than LMCs who are providing continuity of care. We hope the statistics reflect the commitment to midwifery of midwives working in a tertiary hospital such as Middlemore delivery unit. In particular, their commitment to normal birth despite being in an institution which, some would suggest, leads to the disempowerment and medicalisation of midwives.

Aspects of successful secondary care midwifery practice

Buist (2001, pp.2-3) suggests the reasons for our low intervention rates are the following:

- "A core, well-trained midwifery staff who only seek medical support when all other options have been explored"
- "A strong midwifery leadership in delivery unit"
- "A close audit of outcomes"
- "A small hence consistent specialist staff"
- "Relatively few private practitioners delivering in the unit"
- "A practice of so-called 'active management' of labour for primigravida"
- "A predominantly Polynesian and Maori population that has a culture of non-intervention"

It is also important at this point to recognise that at Middlemore, born out of necessity and aligned with a group of fairly hard-nosed midwives, a unique relationship has evolved between the midwifery and medical teams which has proved to have advantages for both. The registrar and the house surgeon have both a gynaecological and obstetric caseload, which leaves the general management and triaging of the delivery suite in the hands of the clinical charge midwife. The primary care caseload has become the domain of the midwife, and in this hospital setting there is true midwifery autonomy. Without a sound medical/midwifery team environment, with respect for the skills and values that each discipline brings, this unit would indeed fail. The importance of a good working relationship existing between the registrar and the charge midwife cannot be understated. Without such a relationship, the safe and effective functioning of the unit would not be possible.

The building of such relationships with the registrars is always a challenge for the charge midwife. In addition, these relationships, once established, do not automatically continue, since the nature of a teaching hospital means that the registrars change with monotonous regularity. Registrars come from a variety of backgrounds, some not of New Zealand origin, and others from units with a medical model focus to control birth. They also come at varying stages of their registrar-ship, sometimes experienced and sometimes newly promoted from a house surgeon position. A settling-in period usually ensues, in which both parties take time to trust and understand each other. It is necessary for us to start as we intend to continue and in the initial stages, some very challenging situations arise. The stronger the medical model from which the registrar emanates, the more difficult it can

continued over...

Core midwifery: the challenge continues

be. In these situations where they are used to being involved with all the women in the unit **and** making all labour and delivery management decisions, the more difficult that transition can be.

In order for new registrars to the area to be able to make adjustments in their manner of practise, the biggest challenge for them is in the giving up of "ownership of the women". This includes understanding that:

- the primary care women in the unit are totally midwifery cases and will pass through the unit without them even needing to know they are there;
- registrars are expected to stay outside of the rooms of the women that the clinical charge midwife has designated, "Midwife only".

This seems, on the outside, to be very simple, but you would be surprised how difficult it is for them initially. It requires them to understand that just because a woman is designated secondary care does not mean that the midwifery input into her care will be any less. It involves recognising that the labour and delivery planning of the secondary care women in the unit will be arrived at through a consultative process, giving due recognition and regard to the expertise each discipline brings to afford the best possible outcome for the woman and her baby.

Sometimes in the early days of settling in, it becomes necessary to demonstrate that apart from the medical model, there are other effective ways. Here is an example that demonstrates just how the midwifery model can, and sometimes does, override the medical model.

A clinical charge midwife's experience

Registrar A, in her first registrar posting does a change over round of the unit with her Consultant for the day. They saw a woman who was having an induction of labour for gestational proteinuria and hypertension. She had an epidural in situ and had been in second stage for one hour. There were some variable decelerations during the labour and these are now more pronounced in second stage. Her blood pressure was 140/95 mmHg. The consultant instructed the registrar to make a decision for the delivery of this woman before going to theatre to attend a case awaiting her there.

As clinical charge midwife I had seen the woman and felt that she had a good chance of a normal delivery given a little more time. I was satisfied that the decelerations were acceptable for second stage. However, I also knew that this registrar was very nervous in her new position and would not have the confidence to give us more time, especially as she was aware of other duties waiting. Had she gone into the room at this time she would probably have made the decision to deliver the baby by ventouse extraction. Therefore, I did the only thing I could do, and that was to prevent her from going into the room. I held my arms out wide in front of the doorway. She pleaded with me to let her in as the consultant had instructed her to make a decision and she felt she was bound to obey. I told her to go directly to theatre to attend the case there, and that if there was any fallout with the Consultant, I would take full responsibility. And when she returned to the unit she could then make her assessment of the woman. Of course, by the time she did return the woman had given birth to her baby, with no sutures, and a healthy baby girl with apgar scores of 9 and 10, with a postpartum blood pressure of 130/90mmHg.

For us this was "run of the mill" for the registrar it was a huge learning curve. For a midwife to feel comfortable in overstepping a consultant's instructions, she needs a strong sense of confidence in her own practice and decision making ability, and to be within the boundaries of safety. It would only take one mistake to undo years of gain and we are always very aware of that. Consequently we must always be certain in our decision-making.

Concluding thoughts

Core midwives providing secondary care are a valuable resource with a wealth of experience and knowledge which they use to keep birth normal. With section 88 there are many changes ahead in the provision of primary care. However, we still believe that there will be a place for the expertise of midwives who can keep birth normal even amidst the most complicated of cases.

Our concerns in regard to Section 88 include the following questions.

- Is there a role for the specialised midwife who does have expertise in high-risk care and is very skilled in the use of technology that is often used in secondary care? These midwives do not necessarily lose touch with keeping birth normal even though the woman may have multiple problems or risk factors which will affect her and her pregnancy. However these midwives endeavour to give her a rich and satisfying experience in the light of the problems faced.
- Where is the recognition of skill that the core midwife can provide to support primary care LMCs when labour is not going as planned?
- Does it mean that midwives who have small children, and cannot provide independent or team midwifery care will have to give up practice? Or will midwives, who for life style reasons do not want to be on call all the time, be forced to feel that they provide second-rate midwifery care?

If our model of midwifery in New Zealand is so good why are the caesarean section and intervention rates still going up?

If our model of midwifery in New Zealand is so good why are the caesarean section and intervention rates still going up? It would appear that while the model of continuity is important, the way that midwifery is practised within any model needs close examination. Warwick (2001) states that *"even in the midwifery practice model of care, the rates of caesarean vary widely"* (p.1) It would appear that it is up to midwives and obstetricians to look at practice that may be leading to these outcomes. We value the sharing of knowledge and skills that are unwritten and believe it is an important part of keeping the art of midwifery alive. We hope that you have enjoyed reading this paper and that you will walk this journey with us as we continue to explore, define and understand the role and future of the core midwife.

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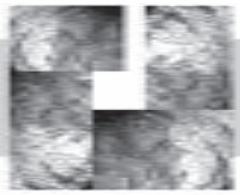

Boundaries: work and home

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Introduction

It is time for midwives to debate how they make choices concerning competing demands between home and work. As the resources, both personal and institutional, available for maternity care have become constrained, some midwives have been slow at adapting their professional outlook to cope with these changes. As a result, a number have become burnt out and not been in the work force for some time. Others have become disillusioned and left midwifery altogether. In this context of health service reform and change, debate will open fundamental questions about how midwives set boundaries between their home and work lives.

Boundary work

This paper presents a simple concept to approach reflective thinking about the cultural and social layers that influence boundary work for midwives, both self-employed and employed. Sociologist, Christina Nippert-Eng, (1996) analysed workers in a large scientific factory and has theorised that there is a continuum from integration of work and home tasks through to segmenting all aspects of home and work. I became enthusiastic about Nippert-Eng's study, "*Home and Work*" (1996), because it was potentially useful to examine the way in which self-employed midwives, or hospital-based midwives, negotiate the public/private boundaries of their work.

In boundary work, there are always multitudes of people 'bidding' for our home and work time. Each person is influenced by themselves, as well as by those close to them, in shaping what home and work look like. In the process of socialisation, we are influenced by what was modelled to us as children, by education, by differing employment experiences, by our co-workers, by our bosses and by our immediate family expectations. Alongside these factors sits the physical environment of workspaces. The character of each physical space may influence the way we perceive differences or similarities between home and work. Boundary work is predominantly a mind activity, it is maintained by physical and practical activities (Nippert-Eng, 1996). These physical markers include; the clothing a person wears, socialising or not with co-workers, family involvement in the work place, the actual work place and having work paraphernalia in the home or home objects in the work place. Generally boundary expectations remain in a constant pattern, but any changes at work or home may mean segmenting or integrating practices alter.

Midwives and boundaries

It is probable that midwives who work in partnership have integrated lives with little opportunity to separate work from home activity. Midwives may bring some work into the home and they will have some strategies to create boundaries to keep parts of their lives separate. This includes the places midwives will, or will not, work, when and where they will see clients and how much time they are prepared to spend working. The person who integrates home and life, may be seen as complicated and unconventional and, in the case of midwives, some could make the assumption, that an extreme integrator is 'unprofessional'. An extreme integrating midwife might have women come to her home for appointments and regard a client as a friend. Nippert-Eng states that it is easy to recognise the person who segments. A midwife who segments might choose to be employed working predetermined hours, wear a work uniform, have many friends unassociated with her work or be involved in other regular non-work activities.

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For midwives who are not employees of an organization, boundary work includes managing the business of " business". One aspect is determining the number of clients with whom a midwife is prepared to work in order to achieve a guaranteed income. Another aspect is keeping accurate client and financial records and generally being accountable for having her affairs in order. This requires decisions about where to store these materials – at "work" or is "work" at home?

The challenge of practice

Perkins (1997) mentions the need for midwives to "manage" involvement with clients so that they are not overtaken by both physical and emotional demands that they cannot meet. Otherwise, the midwife may become disillusioned with the concept of continuity of care, which can quickly lead to burnout (Sandall, 1997). Walsh (1998) believes the pressures created by the way in which groups of midwives are organised is more likely to lead to disillusionment if the group are trying to 'mimic' traditional team care rather than continuity of care. If New Zealand is unable to retain a dedicated, passionate midwifery work force because boundary work between home and work becomes too hard, midwives are likely to opt out of the midwifery workforce at best briefly, at worst permanently. Additionally, if midwives are on-call workers there are other demands, such as irregular income, that blur the boundaries between being at work and time off from work (Engel, 2000). Where midwives have relentless workdays with no provision for meal breaks or opportunities for essential mental and emotional refreshment, then they may experience feelings of professional isolation, as well as the decreased ability to contribute meaningfully to the family or clients

Individuals bring their own personalities, self-concepts, goals, ideals, and levels of commitment to the work situation. They also come with some idea of how to respond to stress. Over all balance is more likely to be achieved once the person processes their stress points and understands their coping skills. It is inevitable that midwives working autonomously will bring work home (Todd, 1998), even if that only means phone or pager contact at home. The fact that women have midwives' home phone numbers means that there are likely to be work related calls when the midwife has a day off. Providing cover for clients of other partner midwives can also cause some angst if clients expect the midwife to be available at 'out-of hours' times for routine visits like 'their own' midwife provides.

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Boundaries: work and home

Self-employed midwives could improve their home and work life by working co-operatively with each other and having approximately the same number of clients per month. Some midwives describe a sense of loneliness, or isolation, from community friends. This may mean they tend to have close friendships with other midwives with whom they work because work conversations easily became social talk. It is critical, therefore, that all midwives participate in peer review so that a midwife friendly process will assist each midwife to identify reflective knowledge and set goals for managing boundaries each year. Mentoring, life coaching or supervision are added dimensions that will help midwives gain balance between their home and work worlds.

Sharing midwifery wisdom

When midwives share their boundary stories they share midwifery wisdom. This wisdom is about what boundaries are effective, as well as boundaries that do not compromise what midwifery is. Amidst individual perceptions of how a midwife should care for their clients, midwives need to be aware that their boundaries will influence their colleagues' boundaries. What midwives establish as the pattern of their practice and the business plans they adopt, along with supportive friends and other health professionals, are strongly indicative of their longevity as a midwife.

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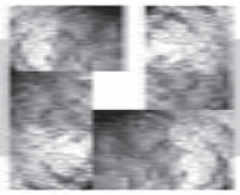

Whenua

At the beginning of your world, I was part of you.
Made of the same luminous fabric, flesh of your flesh,
of our father and mother's being.
As we grew, we were separated but united. I fed you, breathed for you,
became a pathway for the flushing currents of our mother's blood.
As you slept, I was your cradle and your guard; when you awoke I was your companion.
Together for that last day I leashed you to the very limits of our linking line
before releasing you to the touch of others–lovers,
yes–but surely none will hold you as nearly, as sweetly or as softly as I did.
As our connection was severed you cried aloud, then were gone.
Carry me deep in your heart as you bury me in the soil of our home,
for I am the earth of your making.

Kate Spenceley, 2002.
Midwife, Queen Mary Maternity Centre, Dunedin

Letter to the Editors

Dear Editors
To all those at the College of Midwives and all those who put the journal and midwifery news together.

I would like to express my heartfelt thanks to you for stimulating my passion for midwifery. Your extraordinary efforts enthuse me and rejuvenate me. I am grateful for the effort you so obviously put in through negotiating, planning, writing, publishing, discussing and fighting. You are what makes midwifery so great in New Zealand and your efforts do not go unnoticed.

Nicky Jordan
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Auckland University Technology

NEW ZEALAND COLLEGE OF MIDWIVES (INC)

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Format

Articles should be typed on one side of white A4 paper with double spacing and a left margin of 3 cm. Authors should use section headings and label any diagrams or tables which are included. Diagrams, tables or photographs should be supplied as computer generated items. The word count for the article should be stated. If supplied as hard copy then three copies of the article should be supplied. If supplied as an electronic copy then a WORD document or RTF file for PC is required.

In addition, authors are requested to provide the following details on a separate sheet which is **not** sent to the reviewers. Name, occupation (current area of practice/expertise), qualifications, address for correspondence during the review process including day time phone number, contact details such as email address which can be published if the journal accepts the article . Where the article is co-authored, these details should be provided for all authors. ALL authors of the article should sign an accompanying letter stating that they wish to submit it for publication.

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Any article which reports a piece of research needs to note the processes undertaken for ethical approval.

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Authors are responsible for providing accurate and complete references. The journal uses the American Psychological Association (APA) format. Some details of this format are available on the APA website at www.apastyle.org. The 5th edition of the APA *Publication Manual* was published in 2001. In the text, authors' names are followed by the date of publication such as *"Bain (1999) noted ….."* or *"this was an issue in Irish midwifery practice (Mary, 2000)"*. Where there are three or more authors, all the names should appear in the first citation such as *"(Stoddart, Mews, Neill and Finn, 2001)"* and then the abbreviation *"(Stoddart et al., 2000)"* can be used. Where there are more than 6 authors then *"et al."* can be used throughout.

The reference list at the end of the article should contain a complete alphabetical list of all citations in the article. It is the responsibility of the author to ensure that the reference list is complete. A comprehensive range of examples are provided on the APA website. Two examples are included here.

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- Book reviews
- Abstracts of Masters or doctoral theses
- Letters to the editor.

The expectation regarding publication of any of these items is that they preserve confidentiality where necessary (e.g. in exemplars) and seek any necessary copyright permission of quoted materials (see earlier section on copyright). Items other than articles are not generally sent out for a review. Instead the Editorial Board reserve the right to make a final decision regarding inclusion in a journal issue. Such decisions take into account the length of the journal and the nature of other articles.

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