Birthing in Water: Midwifery Knowledge & Skill to Support Women


Biography: Roz has been a midwife for 17 years. She has practiced midwifery publicly and privately in hospitals, Birth Centers and community settings since 1994, facilitating homebirths and water births. Roz was Joint Unit Head of the Midwifery Group Practice at Women’s & Children’s Hospital 2003 – 2008. She has been a participant on SA Department of Health Committees to develop Statewide Guidelines for Planned Birth At Home and policies for safe use of water immersion during labour and birth. This has included teaching and facilitating other midwives to develop skill, confidence and formal accreditation to attend labour and birth in water. The policies above are included with the South Australian Perinatal Practice Guidelines and can be located on the website as PDF files at: http://www.health.sa.gov.au/PPG/Default.aspx?tabid=189.

Birth in water is connected to optimizing physiologic childbirth and humanization of birth movement

Ideas are powerful. The practical implementation of ideas holds potential to transform the lives of individuals, of families and communities and indeed of whole societies around the world. I wish to identify this presentation entitled, Birthing in Water: Midwifery Knowledge & Skill to Support Women, within a clear philosophic framework. Birth in water is not some new age, hippy fad or alternative for modern childbirth fundamentalists who want to push the boundaries of normal birth. Rather, it is a small part of a much bigger and more sophisticated idea. Birth in water is connected to the humanization of birth movement and the profound effect this can have in the evolution of a more conscious human culture, encompassing supportive human relationships based on respect, compassion, care, trust and self – determination (Beech 1996; Balaskas & Gordon 1990; Garland 2000; Odent 1990). This idea is deeply powerful and more expansive than birth in water for its own sake. It extends to optimizing opportunities for physiologic childbirth that enhance the woman’s and newborns physiology, including the primal adaptive system, early neural pathways and hormonal and immunologic patterns that are established and influenced for life at the time of every individual’s birth, in accordance with nature’s blueprint and design (Buckley 2006; Odent 2002). This is significant for current and future states of health. In comparing the development and outcomes of medicalized childbirth to the widespread ecological implications of intensive farming practice in modern Western societies (including increasing adoption of both in developing nations), Odent challenges contemporary thinkers to consider the broader connections and ramifications of applying purely rational, Western scientific solutions and industrialized / mechanized approaches to human endeavours (Odent 1999; 2002; 2004). These impact on human beings and their environments in profound ways, resulting in the notion that, “The emotional
desert in man creates the desert in nature” (Odent 1990). It is in this broader context I place this presentation. For those wishing to explore these ideas and supporting evidence in greater detail see www.wombecology.com.

Why water? An overview
The use of water enables many women to better cope with the strong sensations of childbirth. Mobility, control, comfort, maternal satisfaction and optimizing instinctual behaviour and the progress of vaginal birth have found to be associated with the use of warm water immersion (Burns & Kitzinger 2001; Balaskas & Gordon 1990; Garland 2000; Maude & Caplice 2010). Importantly, a reduction in the use of pharmacologic pain relief and minimizing medical interventions is also associated with immersion and birth in water. This benefits mothers and babies who are more alert, more responsive and more satisfied (Enkin et al 2000; Green et al 1990). A prospective observational study undertaken in Switzerland found that babies born in the water had the lowest rate of neonatal infection and that their average Apgar score at 5 minutes was higher. Women birthing in the water had the most satisfying birth experience, in addition to the lowest rate of analgesic use, lowest episiotomy rate, lowest incidence of third and fourth degree tears and the lowest maternal blood loss (Eberhard & Geissbuchler 1999). Other surveillance studies and scientific reviews have also supported the safety of birth in water for healthy pregnant women and their babies at term (Gilbert & Tookey 1999; Nikodem 2001). However, whilst application of heated towels and the use of warm showers are common practices in many environments, immersion and birth in the water may present a challenge and a practice prejudice for some care givers and in some settings, (Wattis 2010). There is no simple formula for the use of water during labour and birth and it is not a method that can be evaluated by double blind studies or randomized controlled trials, although unbelievably some have tried. For an entertaining and incisive critique read an article published in the international journal Birth entitled ‘Challenging Water Birth – How Wet Can it Get?’ (Keirse, 2005). Attraction to water varies considerably from one individual to another and it is not a panacea for all. While it can assist some labouring women to liberate their instincts, like any intervention, it can also complicate birth if it is utilized unwisely, (Odent 1998).

Why water? Mother’s and father’s views
The following quotations taken directly from the Waterbirth International website (www.waterbirth.org) constitute a powerful description of the attraction and benefits perceived by women and families who have experienced labour and birth in water.

“Maya was born in water using a deep relaxation birthing method of Hypnobirthing. My early labour was very easy, so much so that it was difficult to distinguish it as labour at all. As my surges progressed and strengthened I opened and relaxed and my labour progressed quickly. The environment was incredibly calming and reassuring – quite a contrast from the hospital birth of my first daughter. The water supported and relaxed my body and tissues, and Maya was born easily and gently after approximately 2 hours of (noticeable) labour. Given a typical, healthy pregnancy with no special circumstances, I would now never birth my baby and other way.” (Cori, mother of Maya 2007)

“After 8 hours of labour (most of them in our birth pool set up inside our house) our daughter was water born .... amazing experience, the warm water was essential .... This is our second child and is a vaginal birth...” (Roslyn Donnellan – Fernandez 2010)
birth after caesarean. We can really tell now: this is the best way to have a baby” (Saul, father of Carmine 2007)

“It was absolutely amazing. After getting in the water he was born in 2 hours, not once did I feel the need for any other form of pain relief. Warm, luxurious water to cradle you and give you complete freedom to move during the greatest achievement of your life. Baby was so calm, no crying, he just looked around wide-eyed taking everything in…” (Karli, mother of Elijah 2001)

“I was free to labour in a warm tub and also within my husband’s embrace, and upon the point of delivery my joyful blessing was to be able to push with my body, and pull with my own arms, my own dear daughter – out of me and into a warm and welcome embrace also. Lovely!” (Sharlene, mother of Talia 2004) Waterbirth International 2010 www.waterbirth.org

In 2010 women in Australia will birth approximately 300 000 babies. The mantra of the Maternity Coalition Inc, the largest maternity advocacy organization for childbearing women in Australia, is “Every woman, every choice” (Maternity Coalition 2008).

In the twenty first century it is important that midwifery knowledge and skill is able to meet the expectations of childbearing women and their families. This increasingly includes the use of water for labour and birth.

Why water? History: Reflecting on birth in the 21st Century

It is now well recognized that environment has the capacity to affect physiology, emotion, psychology, culture, sexual, spiritual and social dimensions of health and human experience. The claim that birth is (or should be) a healthy, physiological, positive, life affirming event for the vast majority of women, babies and families is more than an ideological position supported by a particular set of values or a lifestyle choice. It surrounds the heart of the human condition, both at the level of individual health, but also for human relationships and unfolding human potential that is central to species survival (Odent 1990; 1999; 2002; 2004). Modern western culture is currently experiencing unprecedented levels of cultural ‘fear’ of vaginal childbirth, as evidenced by the epidural epidemic prevalent amongst first time mothers (upward of 70% in many large public maternity hospitals in Australia, and even higher in the private sector). Additionally, rising rates of routine surgical extraction of babies from their mother’s womb using what was initially a life saving medical operation, the lower segment caesarean section, is now upward of 30% in most states of Australia (Australian Bureau of Statistics data). This surgical operation has consequent short and long term life course morbidities for women and babies that are physical and mental (Odent 2004). Increasing volume of these interrelated and complex morbidities in women and babies in Australia not only compromises individual and family health, but creates a costly longitudinal burden for health services and system that may be intergenerational.

Water and sexuality: rediscovering and reinforcing instincts / embodied knowledge

Pregnancy and birth are physiologic, emotional, psychological, cultural, spiritual, social and sexual experiences. Vaginal birth is currently located within an obstetric, specialized medical context in dominant health services and systems in western societies, including Australia. Privileged application of
science and medicine within high technology, centralized hospital environments is often based more on dominant ideology than sound evidence. Rationalization of health services within dominant medical ideology and structures constrain opportunity for physiologic childbirth. This compromises the level of support, culture and services that optimize physiological childbirth, which in turn significantly influences cultural perceptions, beliefs, expectations, service choices and outcomes. The end result is high levels of indiscriminate intervention in normal birth and compromised rates of vaginal birth. This has consequences for the health of mothers, babies, families and Australian society as a whole (Donnellan – Fernandez et al. 2008). Additionally, conflict or stress between the ‘primitive brain’ and the ‘rational brain’ during labour will impede hormones and processes that facilitate physiologic childbirth (Buckley 2006). Water, as a feminine symbol, and an environmental resource is a medium and an effective intervention. Water holds the potential to facilitate collaboration between the primitive brain and the rational brain, enabling women to rediscover instinctual embodied knowledge that optimizes and supports physiologic, vaginal childbirth (Odent 1990).

Water Birth: art, science, or both?
Birth in water encompasses aspects of both art and science. This is evidenced by some of the diverse interest documented in this field over the past half century. This includes Russian swimming instructor Igor Tcharkovsky who investigated the capacities of human babies in water and the relationship between humans and dolphins, pregnant women and babies in the 1960’s. Frederick Leboyer, a French obstetrician also practiced immersing newborns in warm water throughout the 1960’s with the objective of hoping to ease the transition from the womb to outside world post birth. Michel Odent, initially a surgeon began using a warm water pool for pain relief for laboring women at a Birth Centre in Pithiviers, France throughout the 1970’s and 1980’s. Many women progressed to giving birth in the pool. By the 1990’s, thousands of women had given birth in water and the idea had spread to many western countries as part of a movement to reclaim normal birth utilizing natural resources to support women’s inherent physiology (www.bellybelly.com.au/articles/birth/waterbirth-birth-in-water). Many childbirth activists and educators (eg: Janet Balaskas, Sheila Kitzinger and Beverly Beech), supportive medics (eg: Yehudi Gordon and Michel Odent) and midwives (eg: Diane Garland, Ethel Burns, Robin Maude and Shea Caplice) have sought to advance the uptake of water immersion and birth in institutionalized birth settings. By the mid 1990’s the First International Waterbirth Conference had taken place in the United Kingdom: ‘Water Birth Unplugged’ (Beech 1996). By 2010 three quarters of UK hospitals now provide this option for birthing women. Multi-media dissemination of knowledge enabled by the worldwide web and development of new information technologies and social networking sites into the 21st Century (eg: U-Tube and Face Book) demonstrate a correlation between the number of women who access information about childbirth via these sites and an increase in vaginal birth rates. This suggests that access to democratization of information may counter / offset some of the cultural and health system influences that currently impede physiologic childbirth.

Warm water immersion: physical and emotional benefits in labour and birth
- Facilitates mobility and control; woman herself can assume any position comfortable for birth
- Reduces abdominal pressure
- Conserves energy

Roslyn Donnellan – Fernandez 2010
• May speed up labour
• May reduce blood pressure
• Promotes relaxation and relief of sensations (private, protected space, weightlessness, warmth, can enhance hormone secretion)
• Reduces need for drugs and interventions
• Changes consciousness, reduces inhibition
• Reduces perineal trauma
• May facilitate second stage and provide an easier birth for mother and baby
• Is highly rated by women (www.wikipedia.org/wiki/Water_birth)

Preparing for a Water Birth: Considerations for the Woman
• Prepare the mind; be flexible with expectations; ensure a skilled attendant (midwife)
• Pool or bath must be comfortable: deep enough; hard or soft sides; length of time to fill
• Water should be clean: temperature 35 – 38 degrees C
• Room: sound floor to hold weight of water tube, access for birth attendant, heat source, clean towels and wraps for baby
• Eating and drinking for energy: avoid dehydration – minimum of 300 mls every few hours
• When to enter: established labour/ strong contractions; 5 cm cervical dilation; out if progress slows
• Dealing with debris: sieve for clots, mucus, vomit, faeces
• Best positions: any – kneeling, sitting, squatting, leaning, floating
• Baby: bring to surface of water when born; will breathe when stimulated by air; blow on face if relaxed; assess cord for heart rate
• Placenta: optimally born out of water; theoretical risk of water embolism
• Infection risks: no evidence of increased infection risk for mother or baby from water; no increased risk of infection for midwife (ie: Hepatitis A, B, C or HIV due to virus dilution in water, although open abrasions should be covered; long latex vet gloves available for added protection (www.bellybelly.com.au/articles/birth/preparing-for-a-waterbirth)

Facilitating a Water Birth: Responsibilities of the Midwife
• Facilitate normal birth physiology for mother and baby: simple!
• Maintain private, low stimuli environment to minimize stress hormones (noradrenaline and catecholamines) and maximize oxytocin and endorphin release
• Routine midwifery observations as with land birth, per ACM National Midwifery Guidelines for Consultation and Referral (2008); use waterproof doppler to auscultate fetal heart rate
• Remain vigilant and alert for complications as with any birth
• Monitor water temperature (35 – 38 degrees C) to avoid haemodynamic compromise of mother and baby; ie: overheating, dehydration, blood pressure fluctuations and postpartum haemorrhage
• Ensure adequate depth, coverage and cleanliness of water

Roslyn Donnellan – Fernandez 2010
• When should woman enter bath? Discriminating use and timing of warm water immersion relating to progress of labour is important: ie: established labour, 5 cm cervical dilation or > can facilitate progress; < 5 cm can inhibit oxytocin and stall / prolong labour, leading to possible dehydration and exhaustion, therefore need to assess wisely
• Maintain woman’s hydration: water intake; cool cloth for face; spray mist bottle
• Vaginal examinations (if necessary) can be performed in the water by midwife or by the woman herself!
• Woman should follow own natural urges of her body to push / breathe her baby out; hands off birth is fine as water supports crowning and perineum, although many women instinctively support their own perineum
• Baby and Breathing: inhibitory factors prevent the baby from inhaling water. 24 – 48 hours prior to the spontaneous onset of labour, increased levels of PG E2 levels are produced by the placenta to slow fetal breathing movements. Normal birth causes apnea and swallowing, not breathing and gasping (provided no hypoxic compromise or insult). Water is hypotonic solution and lung fluid in fetus is hypertonic (dense). Dive Reflex: an autonomic newborn reflex for glottis closure and swallowing, not inhaling – this reflex is present to 6 – 8 months of age. Baby should be brought to the surface of the water within the first few moments of birth to initiate respiration in air and await cessation of cord pulsation. Water babies are often very relaxed and appear asleep when brought to surface.
Mother can be encouraged to blow on baby’s face and provide tactile stimulation if required. Have resuscitation equipment prepared and ready as for standard midwifery practice
• Keep the mother and baby warm. Ensure accurate estimation of blood loss occurs: often there is none apparent. Colour of water: “Rose is OK; Claret is NOT”, although assessing the status and condition of the woman’s response is the best guide. Some institutions such as Women’s & Children’s Hospital in Adelaide have developed visual charts to guide estimation of blood loss
• Observe closely for signs of placental separation (ie: lengthening cord, gush of blood; contracted fundus) and exit the pool for warm wraps and birth of placenta / third stage management: theoretical risk of water embolism in tub, although placenta is sometimes is birthed quickly prior to the woman exiting the bath
• Initiate early breastfeeding and routine care and post birth observations, including support of the family
• Occupation Health & Safety Considerations for the Midwife: back care for midwife when attending a woman in a pool; minimize infection risk for self and other users of facility by ensuring appropriate care and cleansing of equipment
(Maude & Caplice in Pairman et al 2010)

Managing complexities and challenges: Water Birth
As with any birth, unexpected midwifery challenges may arise in relation to water immersion and birth in water. These can range from the mildly challenging, eg: nuchal cord at birth, or continuous monitoring for a woman who has experienced a previous caesarean section, to moderately confronting, eg: undiagnosed vaginal breech or immersion exclusion criteria for women who may be
of large Body Mass Index (BMI) or pregnant with twins, to far more serious complexities, such as the need to evacuate a woman from a pool to manage an obstetric emergency, eg: a shoulder dystocia or postpartum haemorrhage.

- **Nuchal cord:** in the absence of earlier non-reassuring fetal heart tones during labour, nuchal cord is rarely a problem. The cord will slip over the baby's shoulder at the time of birth, or can be unraveled in the water when baby is born.

- **Meconium:** Many protocols insist that the woman should exit the water if meconium is identified during labour. This is certainly the case if labour and/or birth becomes complicated as identified by lack of progress, non-reassuring fetal heart tones, in conjunction with other indications for continuous electronic fetal monitoring, treatment for signs of onset of infection, or any combination of factors indicating deviations from normal in mother and/or baby.

- **Women outside BMI guidelines are often excluded from water immersion due to concern re increased risk factors for complications and problems with evacuating them from a water pool in the event of an emergency.** Ironically, the buoyancy, mobility and other many physiological benefits conferred by water as a medium may be an effective intervention currently being denied to this group of women, that would actually increase their chances of vaginal birth and lower the morbidity associated with higher rates of surgical birth. This is equally true for women who may be challenged with a range of physical disabilities, eg: polio, hemiparesis or paraplegia.

- **Women who have experienced a prior caesarean birth may be subject to hospital protocols that recommend continuous electronic fetal monitoring for labour and birth.** In the absence of other contraindications, the option of waterproof monitoring equipment enables water immersion and birth if desired by women planning a vaginal birth after caesarean section (VBAC). Similarly, whilst many institutional protocols exclude women with uncomplicated twin pregnancies from the use of water immersion in labour, these do not necessarily have a strong foundation in evidence. Additional concern and vigilance is certainly required on the part of the midwife and team attending the vaginal birth of twins. Additionally, giving birth outside the bath may be optimal, particularly in relation to risks associated with increased complexities of birth with the second baby. Despite this, the exclusion to laboring in water is more often related to recommendations and protocol requirements relating to highly medicalised, interventional twin birth protocols in the institutional environment, than it is to any reliable evidence that water immersion interferes with twin labour.

- **Undiagnosed vaginal breech birth is always a possibility in the water.** Some midwives may request the woman to exit the bath if breech is assessed late in labor, however New Zealand midwife Maggie Banks book ‘Breech Birth Woman-Wise’ is a useful guide re breech babies born into water (Banks 1998). Principles for vaginal breech birth are same in water as out: “hands off the breech”. Once the breech has “rumped” (as contrasted with ‘crowning’) and legs and trunk are born, these babies are often observed to bicycle their legs in the water to facilitate descent prior to birth of arms and head. If there is delay with the after coming head, the midwife may need to advise the woman to stand above the water surface to perform the Mauriceau-Smellie-Veit manoeuvre to assist birth of baby’s head (Thorogood in Pairman et al 2010). Be prepared with resuscitation equipment on hand.
• Shoulder Dystocia: arises from impaction of the anterior shoulder behind the symphysis pubis after the head has crowned. If there is delay with the shoulders, getting the woman to stand above the waters surface and elevating one leg higher than the other up on the edge of the bath is a good strategy to maximize pelvic space and movement, in addition to enabling access for the midwife to perform internal manoeuvres to free anterior and/or posterior shoulder. If these strategies are not successful the woman will need to be assisted from the bath and application of the HELPERR pneumonic principles applied as with any systematic management of shoulder dystocia (Thorogood in Pairman et al 2010). Be prepared for resuscitation of the baby, and prepared for the likelihood of a postpartum hemorrhage, often the sequela to shoulder dystocia.

• Postpartum Haemorrhage: one of the most frequent and confronting obstetric emergencies, can be challenging to manage when the woman is in a bath. It is much easier to remove a woman from the bath with the water still in it to promote buoyancy. Accurate estimation of blood loss is crucial as is equipment and/or additional attendants to evacuate the woman from the bath should further resuscitation be required. Principles for management remain the same as with any PPH, in addition to the requirement to remove the woman from the water: ie: calling for assistance, administering and repeating oxytocic and rubbing up fundus, venous access x 2 16 gauge cannulae, oxygen and fluid resuscitation; 40 unit syntocinon drip in 1 litre Hartmann’s; Ergometrine administration and/or Misoprostol PR. If the woman is at home, initiating emergency ambulance attendance and liaison with the tertiary maternity hospital and/or retrieval team is also required simultaneous to emergency PPH management.

Whilst complication rates for healthy mothers and babies undertaking birth in water remain low, vigilance and preparedness to manage unexpected situations remains within the professional responsibility of the midwife attending.

References
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- www.waterbirth.org.au (Waterbirth International)
- www.wikipedia.org/wiki/Water_birth
- www.wombecology.com