CHESHIRE MEDICAL CENTER KEENE, NH	DEPARTMENT: Women and Children's Health Unit	
SUBJECT: Guidelines for Warm Water Immersion for Labor & Birth		PAGE: 1 of 5
APPROVED BY:	EFFECTIVE: Original version written by Barbara Harper and adapted for CMC by C Carignan RNC 1998	
APPROVED BY:	REVISED: Revised 8/00 KPF / reviewed 10/03; 2/04 mgk	
REFERENCES: Barbara Harper, Global Maternal/Child Health Association- compilation of studies and papers evaluation water birth outcomes, safety and effectiveness		

Standard:	Provide appropriate, effective, and efficient care to individuals involved in the childbirth process in various states of health or illness through a continuous process of data collection, assessment, intervention, and evaluation in consultation/collaboration with other care providers.
Objectives:	FOR LABORING WOMEN: 1. To provide both the hydrothermal (perineal, vaginal, cervical relaxation) and hydrokinetic (release of endogenous oxytocin due to nipple stimulation by water) effects of hydrotherapy. 2. To provide a noninterventionist method of promoting relaxation and pain management, minimizing the need for medical intervention, recognizing four major concepts A. Her relative weightlessness in water provides support, creating equal pressure on all body surfaces beneath the water (unlike constant localized pressure of a mattress beneath her), decreasing energy expended. B. With relaxation, the woman experiences less pain, which produces less anxiety and apparently, reduced adrenaline levels encouraging endogenous oxytocin and oxygen to flow uninhibited. C. As there is no external compression of the interior venacava, blood supply to the uterus is improved, allowing for more oxygenation of muscle tissue to produce more efficient contractions. Blood supply is also increased to the placenta, allowing for improved fetal oxygenation. D. Mild vasodilatation occurs in the water, decreasing maternal blood pressure slightly, and increasing maternal pulse slightly, causing increased oxygen to the uterus and fetus. 3.To facilitate maternal positioning that may assist fetal descent. FOR BIRTHING WOMEN: 1. To provide the laboring woman with a flexible, low-risk alternative to delivering in a bed. 2. To enhance the normal physiologic process of birth, viewing it as wellness, rather than illness centered. 3. To assist in the restoration of control of the birthing process to the mother. 4. To provide a gentler transition to the world for the newborn.

Eligibility	Women are eligible to use the pool for hydrotherapy during labor and birth if: 1. They indicate a desire to use hydrotherapy and the procedure is carefully explained to them either by the nursing staff or the provider. 2. They have no current untreated vaginal, urinary tract or skin infections. 3. Maternal and fetal vital signs are WNL, reactive NST documented prior to warm water immersion. 4. Maternal and fetal vital signs are monitored intermittently during water immersion. 5. The pool and all the equipment has been cleaned between clients according to the standard cleaning protocol (see attached document). 6. Client agrees to follow instructions from CNM, physicians, or nurse, including getting out of the water if asked to do so. 7. Client has no contraindications as listed below. Eligibility for labor and birth in water will also be determined by priority of need, progression of labor, and number of clients requesting warm water immersion. It is understood that flexibility on the part of the client and care providers will be present in order to meet the needs of as many people as possible.
Contra-indications	FOR LABOR: 1. Maternal fever greater than 100.4, or suspected maternal infection 2. Amnionitis 3. Documented fetal distress 4. Any condition requiring continuous electronic fetal monitoring where auscultation is inappropriate. High- risk auscultation and palpation interval assessment and continuous fetal monitoring yield than same perinatal outcomes (Guidelines for Perinatal Care, 4th edition, AAP and ACOG 1997 page 101) 5. Excessive vaginal bleeding 6. Amniotic fluid grossly contaminated by fecal material. (i.e.: thick meconium) 7. Positive HIV status: (Hydrotherapy may be offered as shower only) FOR BIRTH: 1. Malpresentation 2. Heavy particulate meconium (which would necessitate suctioning on the perineum) 3. Gestation <36 weeks by confirmed dates 4. Positive HIV status: no data currently available to determine presence of virus in water immersion and subsequent risk of this exposure to infant 5. Any other condition at the discretion of CNM or physician
Water Temp:	1. Water temperature for immersion during labor may vary but should never exceed 101 ° Fahrenheit. Temperatures higher than 101 ° can cause dehydration of the mother, overheating, and lead to fetal tachycardia. 2. Water temperature for immersion during birth should not vary more than 95 – 100 .9 ° Fahrenheit (due to newborn breathing mechanisms at the time of birth). *Guidelines for Warm Water Immersion for Labor & Birth page 2*

Equipment	▪ Portable pool:
	  ▪ Drain pump if using portable pool
	  ▪ A length of hose sufficient to reach pool but not long enough to cause kinks
	  ▪ Faucet adapter for portable pool filling
	• Permanent Pool
	• Waterproof doppler or waterproof leads on EFM
	• Thermometer (may be floating)
	• Shoulder length gloves (Veterinary)
	• Waterproof outerwear for practitioner
	• Splash guard eyewear
	• Medium sized tropical fish net (disposable)
	• Inflatable Pillow
	• Extra towels, bath blankets
	• Delivery kit
	• Infant radiant warmer and newborn resuscitation equipment (as with all deliveries)

Procedure During Labor	1. A laboring mother must never be left unattended in the bath or pool (reliable family members or staff must attend her.) 2. The woman may enter the water at any point in labor, however, if cervical dilation is not progressive (early phase – 0 to 4 cm), entering the water may decrease the frequency of uterine contractions. Bathing in the tub may be used as a method for "therapeutic rest". Ambulating is recommended until the dilation is cervical dilation is progressive (active phase 4 to5cm) and the contraction pattern is well established. 3. The woman may adopt any desired position in the water. 4. Provide hydration for the mother with cold drinks, water, juice, sport drinks, or any clear liquid. 5. Protective equipment (barriers meeting CDC universal precautions) must be available and utilized by all personnel as needed. 6. Observe and document the following: ▪ <u>Membranes:</u> - Check status. With SROM, check FHR and rhythm and check for cord prolapse. - Meconium staining can be evaluated by checking color and monitoring FHR and rhythm. If fetal well being is established, mother may return to pool. ▪ <u>Cervical Dilation and Effacement, Fetal Position</u>: This can be assessed prior to entering pool. Vaginal exams may be done in the water or mother may be asked to leave pool or raise her buttocks out of the water and sit on the edge of the pool, or stand. ▪ <u>Maternal Hydration:</u> (dehydration is evidenced by maternal and fetal tachycardia, increased maternal temperature). If signs and symptoms of dehydration occur, force clear liquids. If dehydration persists, start IV or lactated Ringers at discretion of physician / CNM. Client may remain in the pool with IV site covered with plastic.

	▪ Fetal heart rate is assessed per appropriate risk intervals via Doppler, fetoscope, or intermittent auscultation with EFM transducer (do not submerge transducer into water). See auscultation and intermittent FHR guidelines. 1.) An elevation of the fetal baseline heart rate less than 30 bpm is normal. 2.) If fetal tachycardia is present (an increase by 30 bpm in FHR baseline for greater than 10 minutes), assess mother for dehydration and temperature elevation and measure tub temperature. Hydrate mother as needed decrease water temperature to appropriate level. Reassess fetal heart rate within 15 min . If tachycardia persists assist mother out of the pool to cool down and monitor FHR by EFM. Mother may return to the tub with return of reassuring FHR pattern. ▪ Progress of labor, including contraction pattern. ▪ Maternal vital signs (q 2 hour temperatures or as needed if FHR increases). It should be noted that during and following warm water immersion, it is normal to observe a slight increase in maternal temperature and elevation of the fetal baseline heart rate. If mother experiences dizziness, check BP, pulse, temperature, fluid intake, and cool her down as needed. Encourage controlled breathing. ▪ Cleanliness of Water 1.) Water is changed, or the client is removed from the pool, if excessive feces or debris accumulates during labor that cannot be easily removed with a fish net. 2.) Nothing needs to be added to the water to sanitize. ▪ Check water temperature with thermometer hourly and document.
SECOND STAGE IN WATER-BIRTH OF THE INFANT	1. Mother may adopt any position that feels safe and is comfortable for her – freedom of movement allows each woman to instinctively find her own appropriate birthing position. 2. If using a pool with whirlpool jets, turn off during pushing stage if needed to optimize visualization of the perineum by the practitioner and to reduce the amount of noise the infant is exposed to. 3. Birth of head is facilitated by gentle pushing by the mother. The practitioner attending the birth wears shoulder length gloves. Perineal support and gentle pressure may still be used if indicated. The mother may control the birth of the head with her own hands. 4. Manipulation of the head is usually not necessary to facilitate delivery of the shoulders. a) Waiting until the next contraction is recommended before manipulation. b) Fetal heart tones should be assessed after every pushing effort. c) **If restitution and delivery of the shoulders does not happened after 2-3 contractions, mother is advised to stand or get out of the pool to finish the delivery. Have a birthing bed immediately available to assist mother for emergency needs.** 5. The presence of meconium, especially light meconium, does not rule out birth in the water. Note the color and consistency of the meconium and finish the birth in the water. 6. Once the complete body of the infant is birthed, the baby is lifted out of the water in a smooth motion within the first 10-20 seconds. Infants are not left under the water for any reason.

	a) Care should be taken in lifting body out of the water, assessing length of umbilical cord. b) APGAR score assessment should be done after baby is lifted onto mother's chest. (It has been noted water born babies do not breathe right away, but start slowly within the first minute). Delay start of APGAR scoring from time baby is born to time baby's face emerges from water, to better reflect when the baby is physically and chemically stimulated to initiate respiration. c) Suctioning of the oropharynx and nares may be done while infant is on mother's chest as needed. d) Infant can be kept warm either by submersion of everything but the head in the warm water, or warm blankets or towels may be placed over the body while still on mother's chest. e) Umbilical cord should not be cut right away, allowing cord to continue to pulsate. 6. Mother is to be encouraged to breastfed immediately to assist in the contracting of the uterus and the expulsion of the placenta. 7. Waterbirth is noted on the delivery record.
THIRD STAGE – DELIVERY OF THE PLACENTA	The goal is to provide delivery of the placenta and perineal/vaginal inspection within 45 minutes. Placenta is delivered in or out of the water at the discretion of the CNM or physician. DELIVERY OF THE PLACENTA IN THE WATER. 1. A lightweight container should be used to facilitate floating the placenta if the cord has not been cut prior to placental delivery. 2. Parents are given the opportunity to cut the cord, per instruction of OB provider. 3. Cord may be cut after placenta has been expelled. 4. Estimated blood loss is assessed according to a change in the color of the water. The darker the water, the more blood loss is estimated. DELIVERY OF THE PLACENTA OUT OF THE WATER 1. Umbilical cord has been clamped and cut. 2. Baby is dried, wrapped in dry blankets, and handed to father, parent, friend, or nurse. 3. Mother is assisted out of the tub, either into the bed, squatting beside the tub, or on birthing stool, or sitting on the side of the pool. 4. Mother is dried and wrapped in a warm bath blanket. 5. Placenta is delivered in the usual method.
EVALUATION OF THE NEWBORN AFTER WATER BIRTH	WHILE MOTHER IS STILL IN POOL, WITH NEWBORN ON MOTHER'S CHEST: 1. APGAR assessment is made according to standard guidelines, with the understanding that babies born in water take up to 60 seconds to breathe after they are brought out of the water. 2. If tachycardia (HR> 160) is present, the water temperature should be assessed, cooled if > 101F, or mother and baby should be assisted out of pool by the five-minute APGAR 3. Baby may be suctioned or a DeLee trap may be used as indicated. 4. Keep baby's body warm by keeping body lowered into the warm water with head out or body covered with warm blankets or towels. 5. Standard protocol for newborn care is followed *Guidelines for Warm Water Immersion for Labor & Birth page 5*