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Water Birth Guideline

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If the review date has passed please contact the Author for advice.

Powys Teaching Health Board is the operational name of Powys Teaching Local Health Board
Bwrdd Iechyd Addysgu Powys yw enw gweithredol Bwrdd Iechyd Lleol Addysgu Powys

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Version	Summary of Changes/Amendments	Issue Date
1	Initial Issue	June 2020
2	Update to include pool cleaning and general principles of use of water in labour	Oct 2023

Engagement & Consultation

Key Individuals/Groups Involved in Developing this Document

Role / Designation
Clinical Supervisor for Midwives
Senior Health and Safety Officer
Manual Handling Trainer Assistant
Consultant Midwife
IPC team
Estates

Circulated to the following for Consultation

Date	Role / Designation
August 23	Midwifery Leadership and Management Team
August 23	Health & Safety Officer and manual handling team
August 23	Manual handling trainer
August 23	Powys Midwives
August 23	W&C Guidelines Group members
Sept 23	Estates
Sept 23	Facilities

Groups approved at

Date	Group
02/10/2023	Maternity Guidelines Group
12/10/2023	Women and Children's Guidelines Group

Evidence Base

Health & Safety Executive 2023 **Manual handling risks to midwives associated with birth pools: literature review and incident analysis.** Health & Safety Executive available at [Manual handling in birthing pools \(hse.gov.uk\)](https://www.hse.gov.uk/Manual-handling-in-birthing-pools) – accessed 18/8/23

All-Wales Midwifery-Led Care Guidelines and The All Wales Clinical Pathway for Normal Labour

Swansea Bay UHB – Waterbirth Immersion for labour and birth (2021)

Powys THB Water Safety Policy -(v2.8, 2023) Appendix H Birthing Pool Cleaning & Water Safety Maintenance - Task Method Statement

COSHH Assessment Actichlor Plus (2023)
 Ecolab Actichlor Plus Safety Data Sheet (2017)

Aneurin Bevan UHB 2014 Emergency evacuation from a birthing pool, Aneurin Bevan UHB

IMPACT ASSESSMENTS

Equality Impact Assessment Summary

	No impact	Adverse	Differential	Positive
Age	X			
Disability				X
Gender reassignment	X			
Pregnancy and maternity				X
Race	X			
Religion/ Belief	X			
Sex	X			
Sexual Orientation	X			
Marriage and civil partnership	X			
Welsh Language	X			
Human Rights	X			

Risk Assessment Summary

Have you identified any risks arising from the implementation of this guideline?

No
Have you identified any Information Governance issues arising from the implementation of this guideline?
No
Have you identified any training and / or resource implications as a result of implementing this guideline?
Annual pool evacuation training as part of manual handling

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1. Introduction

Water can provide a calming environment for women. Once in active labour water can enhance uterine activity, provide effective pain relief (thereby reducing the need for pharmacological analgesia). There is some evidence to suggest that the length of the first stage may be reduced. Powys Teaching Health Board (PTHB) are committed to providing waterbirth and this guideline will demonstrate advice on manual handling, cleaning of pool and daily maintenance as well as guidance on pool evacuation in the event of an emergency.

Water immersion during labour is not associated with reduced five- minute APGAR scores, increased neonatal infection rates or admission to a neonatal unit.

This guideline has also been developed to support emergency evacuation procedures from a birthing pool at all sites within PTHB and any home birth using a birthing pool. This document also advises on cleaning processes for a birthing pool including those at a home birth. PTHB expects that all staff will be trained and updated in emergency evacuation procedures.

2. Aims

This guideline aims to provide the best available evidence to facilitate the safe and effective use of water immersion during labour and birth.

To inform PTHB staff of necessary procedures to safely undertake in the event of a collapsed woman who is unable to move herself, requiring evacuation from a birthing pool by staff.

It must be noted that there is currently limited evidence available relating to the use of water during labour and birth therefore aspects of the guideline have been based on advice published by midwives who have become experts in the use of supporting women using water for labour and birth.

3. Objectives

Safe use of water immersion for women in labour.

Safe evacuation of a woman from a birthing pool to commence resuscitation procedures.

Safe transfer handling procedures for staff undertaking the evacuation.

Safe cleaning and disinfecting of the pool including daily maintenance.

4. Definitions

- **PTHB** – Powys Teaching Health Board
- **HoM** – Head of Midwifery
- **AHoM** - Assistant Head of Midwifery
- **CSfM** – Clinical Supervisor for Midwives
- **BMI** – Body mass index
- **SRoM** – spontaneous rupture of membranes

5. Role / Responsibilities

The HoM and AHoM, Band 7 midwives for the birth centre environment and transfer handling cascade trainers are responsible for implementation of this guideline and ensuring that training is undertaken.

5.1 Head of Midwifery

The Head of the Midwifery must:

- Ensure all staff read and understand this procedure.
- Arrange regular review to monitor compliance with this procedure.

5.2 Assistant Head of Midwifery

The AHoM has responsibility for:

- Ensuring yearly update training is provided as part of emergency drills in each birth centre.
- Ensuring the emergency drills are rostered for the year by the Practice Facilitator in accordance with manual handling trainer advice and partnership working.

5.3 Consultant Midwife and Clinical supervisor for midwives

- The Consultant midwife and CSfM have responsibility for arranging annual midwifery updates and Prompt sessions. Linking with Practice Facilitator to ensure consistent yearly pool evacuation sessions are completed as skills and drills sessions within birth centers.

6. Criteria for women

All women who wish to use the pool for labour and/or birth should be assessed for their suitability regardless of whether it is a birth centre or homebirth. Documentation of all discussion is essential, and the appropriate risk assessment must be completed and kept in the woman's handheld maternity records (Appendix A). The risk assessment should be reviewed prior to the woman entering the pool in labour.

Midwives should provide instruction to women on safe entry to and exit from the birth pool in line with manufacturers recommendations. This is to enable safe, independent access and egress from the birthing pool.

Pool cleaning and disinfecting is fundamental in any pool birth and ensuring the water is flushed daily / pool clear of dust and debris as well as cleaning after a waterbirth. Please see Appendix B for further instructions

7. Midwife-led pathway

Water birth is suitable for healthy women with uncomplicated pregnancies and labour (as defined by the All-Wales Midwifery-Led Care Guidelines [MAT030] and The All-Wales Clinical Pathway for Normal Labour (AWCPNL))

- Uncomplicated obstetric history
- No medical history that affects birth
- Current pregnancy uncomplicated
- Cephalic presentation
- 37-42 weeks gestation
- Spontaneous onset of labour
- SROM > 37/40 <24 hours prior to onset of active labour
- BMI <35 for nulliparous women
- BMI <40 for multiparous women with previous uncomplicated vaginal birth

All women following the AWCPNL should be supported to labour and give birth in water.

It is recommended that women do not enter the water pool within 2 hours of receiving opioids, or if feeling drowsy or affected by them after this period. There is a need to consider the risk of respiratory and reflex depression in a baby where the mother has received opioids in the last few hours.

Water may be used whenever desired for pain relief. There is insufficient evidence on timing of immersion into water in the first stage of labour and therefore there should be no restriction on when women enter the pool.

The woman may choose to leave the pool at any time.

The woman should understand that she will be requested to leave the pool should any complication or concern arise.

The woman should be asked to leave the pool if appropriate fetal monitoring cannot be undertaken.

Document the time of entry and exit of the pool in the AWCPNL.

8. Consultant-led pathway

Increasingly, women who are following a consultant-led pathway and who are recommended to birth on a labour ward wish to use the water pool. However, if a woman chooses to birth at home or in a free-standing birth centre, the named community midwife will offer appropriate advice and complete a Clinical Information Sharing (CIS) document in partnership with the woman as per guideline MAT079 GUIDELINE FOR POWYS MIDWIVES SUPPORTING WOMEN WITH MEDICAL CONDITIONS.

Prior to the woman being offered the use of the birthing pool, consideration should be given to the plan of care and requirements of the individual woman and/or baby having reviewed the full antenatal history and clinical assessment in the handheld maternity records.

The woman may choose to leave the pool at any time.

The woman should understand that she will be requested to leave the pool should any complication or concern arise or if appropriate fetal monitoring cannot be undertaken. The time of entry and exit of the pool should be recorded in the maternal labour records.

9. Homebirths / Pop up Birth Centre

For women planning homebirth, it should be advised that the pool should be situated on the ground floor, or on a floor capable of taking the weight of a full pool (see manufacturers guidance).

If the pool has been used before then a new pool liner will be required. A new/clean hose should be used.

The women should be advised not to fill the pool and let it stand in preparation for going into labour even when the temperature is being maintained using a pump or heater as there is a small risk of Legionnaire's Disease.

Any pumps used should be used solely for pool emptying and not for the recirculation of water.

The woman should be asked to supply a new sieve, thermometer, and mirror to support the midwife to provide care for her during the water birth.

The maintenance of the pool and the regulation of water temperature during the labour is the responsibility of the woman and her birth support but will be monitored by the midwife.

10. Care in labour

10.1 1st Stage of Labour

Run the water (for several minutes) before filling the pool. The water should be deep enough to cover the woman's abdomen and to nipple level when sitting. Insufficient water levels will not create buoyancy which is thought necessary to trigger the release of endorphins and oxytocin and reduce the production of stress hormones. Deep water also provides support for the body and aids mobility.

Water immersion triggers chemical and hormonal changes which take effect after 20 minutes and peak at about 90 minutes. It is suggested that women leave the pool after 2 hours for a period of about 30 minutes for mobilisation and micturition. Getting back in the pool after 30 minutes should re-activate the chemical and hormonal processes. It is then advised to continue encouraging the women to mobilise out of the water every 1.5 -2 hours.

Baseline observations must be within normal the parameters before entering the pool.

Maternal and fetal well-being must be monitored as outlined in the All-Wales Clinical Pathway for Normal Labour, and documented on the partogram, with additional hourly maternal temperature monitoring as per NICE Guidelines (CG 190, 2022).

Water temperature is to be recorded hourly and should be adjusted to the woman's comfort, however it must not exceed 37.5°C to avoid maternal hyperthermia.

Women should be encouraged to drink fluids or still isotonic drinks. Consideration should be given to excessive hydration which may affect oxytocin levels and in rare cases lead to hyponatremia.

The woman should be encouraged to pass urine regularly.

Entonox may be used if the woman wishes whilst she is in the pool.

A woman should not be left alone in the pool.

Partners can be in the pool with the woman so long as trunks/costume is worn, and they are willing to leave the pool if asked/necessary.

If there is a rise in maternal temperature greater than 1°C or an increase to between 37.5°C – 37.9°C:

- The pool temperature must be lowered, and the room cooled.
- Increase oral fluids.
- Consider administering Paracetamol.
- Ensure that the maternal pulse and fetal heart rate is not raised.
- Repeat temp in 30 minutes and if still raised leave the pool.
- Repeat again in 30 minutes and if continues to be raised, discuss with the woman the recommendation for transfer to an obstetric unit.

If maternal temperature, maternal pulse, and fetal heart rate rise the woman should leave the pool immediately and follow AWCPNL guidelines and recommend transfer to an obstetric unit.

In cases of a maternal temperature of greater than 38°C, the woman should be advised to exit the pool and be advised to transfer to an obstetric unit for review.

If contractions become irregular or slow progress in labour is confirmed on vaginal examination, the woman should be advised to leave the pool to mobilise and adopt a more upright position. If contractions increase and labour progresses the woman can return to the pool.

Women should be advised to leave the pool in the presence of any maternal or fetal concerns.

10.2. 2nd Stage of Labour

During the 2nd stage of labour, the pool temperature should be between 37-37.5°C

To avoid fetal stimulation a 'hands off' technique must be used. The baby should be born spontaneously with little intervention (avoiding directed pushing, control of the head or "guarding the perineum").

A mirror can be used to enhance visibility of advancing fetal head for the mother.

There is no need to feel for an umbilical cord.

The baby should be born entirely under the water and brought gently and slowly, face uppermost, to the surface. If the woman raises herself out of the water and the fetal head is exposed the delivery should continue out of the water. Ensure the baby's body is immersed and 'skin to skin' commenced to maintain baby's temperature.

Check that the umbilical cord is intact. If it has snapped or torn it must be clamped immediately. Midwives should be aware of hidden cord rupture and have appropriate equipment (cord clamp) easily accessible. If it has snapped or torn it must be clamped immediately.

Babies born underwater often do not cry immediately and may remain blue-tinged for a longer period compared to those born out of water. The heart rate must be checked, and spontaneous respiratory effort observed.

The cord should not be clamped earlier than 1 minute after the birth unless there is concern about the integrity of the cord or the baby's well-being.

10.3 3rd Stage of Labour

More research is needed regarding management of 3rd stage in the pool, although there is no evidence regarding benefits or risk associated with experiencing 3rd stage of labour under water. There have been no studies comparing management of 3rd stage in or out of water. In some areas it is common practice to complete 3rd stage under water, and there have been no known occurrences of water embolism from managing the 3rd stage in a water pool.

Physiological third stage can occur in or out of the pool. If there is a delay in the third stage, the woman should be asked to exit the pool.

Active management can be conducted in the pool or out of the pool depending on the woman's wishes. However, the mother's leg should be lifted out of the water prior to administering intramuscular oxytocic injection.

In the event of a delay in 3rd stage, excessive bleeding, or concerns around the wellbeing of the woman indicating potential compromise; the woman should be encouraged to leave the pool.

Examination of the perineum should be conducted out of the pool and unless perineal trauma is assessed as severe, or bleeding profusely, any suturing required should be delayed for 1 hour following birth as perineal tissue may be water-logged and friable.

11. Measuring blood loss

It is not possible to measure blood loss in the pool therefore blood loss will need to be estimated. Once the woman exits the pool, blood loss can be measured. If there is concern about the blood loss in the pool the woman should be supported to exit. Appendix F shows pictorial images to assess blood loss in a pool birth.

12. Management of a woman collapsing in a pool

In the event of an emergency, immediate assistance should be requested, and the woman must promptly be assisted to vacate the pool and the appropriate emergency procedure followed by ringing 999 or pulling the emergency buzzer to summon help.

In the event of shoulder dystocia, immediate assistance should be requested, and the woman should be encouraged to change position in the water (to all fours or deep squat). If birth is not achieved with the next contraction and manoeuvres are required, the woman should exit the pool immediately. The woman should be supported by a midwife/staff member when leaving the pool, and another midwife should be prepared to support the fetal head.

In the event of maternal collapse in the pool or if the woman is unable to vacate the pool herself, immediate assistance should be requested (Appendix C), and the agreed Safe System of Work for Evacuation from birthing pool must be promptly adhered to (see Appendix D). Appendix E provides a list of equipment kept in each of the Birth Centres.

13. Considerations and training for midwives

The first time a midwife has the responsibility of a pool birth, the midwife should be supported by a second midwife experienced in pool birth.

Two maternity health professionals (ideally 2 midwives) should be present at a pool birth.

The midwife's general health, ability and any personal or human factors should be taken into consideration when involved in tasks such as filling, emptying, cleaning, and maintaining the pool and during emergency evacuation.

Staff should have instruction, information, and training to enable them to safely carry out the tasks they undertake and use the equipment provided. This training should include musculoskeletal risks including sustained postures; postures to be adopted and avoided.

Staff need to be properly trained in emergency evacuation procedures to be competent and confident in the use of emergency handling equipment. Maternity staff complete annual pool evacuation training within the birth centers.

Pool evacuation will be covered as a topic at manual handling training within PTHB.

A DVD is available in each birth centre demonstrating the method of evacuation with the net.

<https://youtu.be/yQB2-GX5Fx0>

14. Pool Cleaning

Appendix B gives clear instructions on how to clean and disinfect the pool daily and after use. Please ensure you follow the instructions and document that you have done so on the pool checklist kept in the birth room.

15. Monitoring Compliance / Audit

A database is kept reflecting training that maternity staff have attended in relation to pool evacuation and manual handling.

Daily checklist on display in each birth centre demonstrating the pool cleaning schedule.

A Datix will be completed in all cases where pool evacuation is required.

16. Review and Change Control

This document will be reviewed every three years or earlier should audit results or changes to legislation / practice within PTHB indicate otherwise.

Addressograph

Appendix A

Risk assessment for use of water in labour and birth at home and in Birth Centres within Powys Teaching Health Board

1. Carry out a manual handling risk assessment prior to and during labour

Date of assessment prior to labour: _____

Date and time of assessment in labour: _____

2. Criteria for use of water

All women suitable for homebirth/ birth centre as per the All Wales Midwifery-Led Care Guidelines and the All Wales Clinical Pathway for Normal Labour are suitable to labour and birth in water at home and in the birth centres.

3. Pool check for home births

Is the pool situated on the ground floor? Yes/No

Is there a new disposable liner? Yes/No

Is there a new disposable hosepipe? Yes/No

Is there adequate clearance around the pool? Yes/No

Are the walls of the pool sturdy enough for the woman or midwife to lean on? Yes/No

Is there something available nearby to evacuate the woman onto in an emergency? Yes/No

4. Advice to the woman

- Birth partner to be responsible for filling, maintaining and emptying pool and ensuring temperature maintained as per guideline.
- Do not pre-fill the pool and maintain with a heater prior to labour due to a risk of Legionnaire Disease. Fill at time of labour.
- Ensure new liner and hosepipe used and disposed of afterwards
- Pool bottom should be non-slip
- To supply a new sieve, thermometer and mirror
- The woman may be advised to leave the pool if a deviation from the Normal care Pathway occurs and/or in the event of an emergency
- In the event of the woman collapsing in the water she should be slid over the top of the pool onto a dry area with the assistance of the birth partner
- Paramedics will be called if transfer into an obstetric unit is indicated and in the event of an emergency.

5. Equipment required:

- Birthing pool and Electric airpump
- Single use disposable liner and disposable hosepipe
- Plentiful supply of hot water
- Stool/step for pool access
- Sieve
- Thermometer
- Mirror
- Towels

Appendix B Birthing Pool Cleaning & Water Safety Maintenance - Task Method Statement

Equipment and materials required:

- Disposable Gloves
- Goggles
- Disposable Cloths
- Actichlor Plus solution (for daily cleaning, 1 tablet in 1 litre of cold water to achieve a solution of 1,000ppm)
- Actichlor Plus solution (for after-use clean, 10 tablets in 1 litre of cold water to achieve a solution of 10,000ppm)
- Neutral detergent solution

Please Note:-

The Birthing Pool needs to be cleaned and flushed every 24 hours, as per the instructions below and following its use. On completion, The Birthing Pool Cleaning Record should be signed by the member of staff performing the procedure.

Before each use and or at least every 24 hours, the pool taps need to be run for 2 minutes.

Please note that a daily clean uses an Actichlor Plus solution of 1,000ppm and that the after-use clean uses an Actichlor Plus solution of 10,000ppm.

This method statement applies to both Domestic cleaning staff and Birth Centre staff. The domestic staff however are responsible for daily flushing, daily cleans and full cleans of the area and Birthing Centre staff are responsible for after-use cleans.

Daily Clean and Flushing of Birthing Pool - Method

1. Use the standard infection control precautions (hand washing, plastic apron, disposable gloves, and eye protection) when cleaning the pool. Ensure the area is well-ventilated.
2. Run the water taps for 2 minutes.
3. Allow the pool to drain then ensure the pool drain outlet is turned to "closed" before cleaning the pool tap and pool area with the Actichlor Plus solution, 1,000ppm dilution.
4. First, clean the pool tap before cleaning the pool with the Actichlor Plus solution, 1,000ppm dilution.

5. When cleaning the pool itself, pour the Actichlor Plus solution around the side of the pool. Using a clean disposable cloth, clean the surfaces of the pool and leave the solution in the pool for 10 minutes. Dispose of all cloths in the appropriate waste stream.
6. Open the pool drain outlet and empty the pool of the Actichlor Plus solution, 1,000ppm dilution.
7. Using cold water, rinse the tap and then the pool to remove all traces of the Actichlor Plus solution, to prevent any residue from being left on the pool surface. Allow the pool to drain.
8. Dry the entire surface of the pool using a clean disposable cloth. When the pool is dried ensure the bucket assigned for cleaning the pool is cleaned and dried thoroughly before storing. Dispose of all cloths in the appropriate waste stream.

Cleaning the Birthing Pool After Use - Method

1. Use the standard infection control precautions (plastic apron, disposable gloves, and eye protection) when cleaning the pool. Ensure the area is well-ventilated. Ensure staff use a long arm mop to clean the pool.
2. Remove any debris from the pool, using the sieve, before emptying the pool (to prevent debris from blocking the pool drain outlet). Please ensure the thermometer has been removed from the pool before emptying the pool, in order not to block the pool drain outlet.
3. Use a neutral detergent solution to clean the pool of any further debris and blood; ensure the tap is cleaned first, so as not to transfer micro-organisms from the "dirty" pool area to the cleaner tap region. Rinse down the pool with warm water and allow the pool to drain.
4. Ensure the pool drain outlet is turned to "closed" before cleaning the pool tap and pool area with the Actichlor Plus solution, 10,000ppm dilution.
5. Clean the pool tap first before cleaning the pool with the Actichlor Plus solution, 10,000ppm dilution.
6. When cleaning the pool itself, pour the Actichlor Plus solution around the side of the pool. Using a clean disposable cloth, clean the surfaces

- of the pool and leave the solution in the pool for 10 minutes. Dispose of all cloths in the appropriate waste stream.
7. Open the pool drain outlet and empty the pool of the Actichlor Plus solution.
 8. Using cold water, rinse the tap and then the pool to remove all traces of the Actichlor Plus solution, to prevent any residue from being left on the pool surface. Allow the pool to drain.
 9. Dry the entire surface of the pool using a clean disposable cloth. When the pool is dried ensure, the bucket assigned for cleaning the pool is cleaned and dried thoroughly before storing. Dispose of all cloths in the appropriate waste stream.
 10. To clean the equipment (mirror, unless disposable) used: wash and rinse these in warm water. Then soak for a minimum of 30 minutes in an Actichlor Plus solution, 10,000ppm dilution. to cover the equipment. After this, rinse and dry the equipment before placing storing it. Indicate with an "I am clean" sticker.
 11. Continue to carry out a full clean of the birthing room using disposable cloths and mops and an Actichlor Plus solution, 1,000ppm dilution.
 12. Finally, after the birthing room full cleaning has been completed the area may be restocked of equipment, towels, sheets etc.

Appendix C Emergency evacuation of the pool

Procedures for emergency evacuation of woman/woman and baby from birthing pool in the birth centre or home			
	Woman alert and compliant	Woman alert with limited compliance	Woman unconscious/unable to comply
1) baby not birthed 2) baby's head birthed	Talk woman through rolling onto side, onto all fours and onto feet and support to step over side of pool	Woman asked to sit forward so the evacuation net can be positioned behind and under. Lift woman from pool Deflate the top layer of the pool if at home and support the woman to be lifted out to the nearest dry area	Four people minimum to lift woman from pool. Net positioned behind and under woman. Two people on each side. If at home deflate the top layer of the pool and support the woman to be lifted out to the nearest dry area
3) baby birthed and still attached to woman 4) 3 rd stage of labour	Someone hold baby, talk woman through rolling onto side, onto all fours and onto to feet to step over side of pool	Cut & clamp the cord. Put baby in cot or safe surface, woman asked to sit forward so the net can be positioned behind. Slide woman from pool onto bed with slide sheets Deflate the top layer of the pool if at home and support the woman to be lifted out to the nearest dry area	Cut and clamp the cord –put baby in cot or safe warm place. Slide net behind woman. Four people to lift woman out of pool – sliding onto a bed with slide sheets Deflate the top layer of the pool if at home and support the woman to be lifted out to the nearest dry area

Appendix D

Emergency Evacuation from Birthing Pool - Safe System of Work

SUMMON HELP (Call 999 or pull emergency buzzer and turn on the water in pool to raise level)

The midwife will take responsibility for maintaining the woman's airway and ensure her face is held clear of the water.

Equipment to be used:

Trolley/bed, Evacuation Net, Buoyancy aids (noodles) Slide Sheets

No. of people required: Minimum of 4

DO NOT DRAIN THE POOL

The buoyancy offered by the water will assist staff to position the net and support and turn the woman.

Two slide sheets should be placed on the trolley/bed to assist with sliding woman onto the trolley/bed.

Two members of staff will position the evacuation net under the woman.

The midwife must move to one side of the woman but remain in charge of the airway.

The midwife who is in control of the woman's airway, will be in charge of issuing commands and using clear commands e.g., "Ready, Steady, Lift" to lift the woman clear of the pool and slide onto the trolley/bed. OR this may also be "We're going to count to three and then lift, the first count is all going down with the net, thereby 'bouncing the woman', to get the energy to lift after 'three'.

Remove the net and the slide sheets from under the woman once she is safely located on the trolley/bed. Cover with towels/blankets and complete an ABC assessment, if she is breathing, turn the woman onto her left side continuing to maintain her airway. Keep warm.

Appendix E

Equipment within each Hospital Site

(this list will include an adjustable bed in each birth centre to allow swift emergency transfer from the pool)

Knighton Birth Centre

Options available – Bradbury birth couch in birth room
Bed in Antenatal room
Slide sheets next to pool
Physio trolley in physio department temporarily kept on ward so accessible at all times (key to department kept in cupboard in office) code in maternity cupboard
or extra-large bean bag for two staged approach, then onto mat on floor.
Noodles and inflatable neck pillow

Ithon Birth Centre

Options available - Trolley outside reception (x-ray trolley) ask Staff from Claerwen ward to bring trolley on way when called.
birth couch from antenatal room to the end of the pool.
Slide sheets, sling, noodles and inflatable neck pillow in cupboard by window

Brecon Birth Centre

Options available - Bradbury birth couch move to edge of pool or
Closest trolley is in the cardiology assessment room opposite the birth centre or in MIU, MIU staff should bring the trolley when called to attend the pool evacuation.
Sling, slide sheets, noodles, inflatable neck pillow, in the cupboard next to pool.

Newtown Birth Centre

Options available – Trolley in pink room or
Bradbury birth couch move to edge of pool
Sling, slide sheets, noodles and inflatable neck pillow in cupboard next to pool.
Staff to be called from the ward,

Llanidloes Birth Centre

Options available – Trolley in sluice, adjacent to the birth room.
Sling, slide sheets, noodles in the tall left-hand cupboard in the birth pool room.
Call the Graham Davies ward on x4200 to inform ward staff of emergency and attend.

Two slings and sets of slide sheets available to enable a set to be sent for washing if used and still have a set in the birth centre.

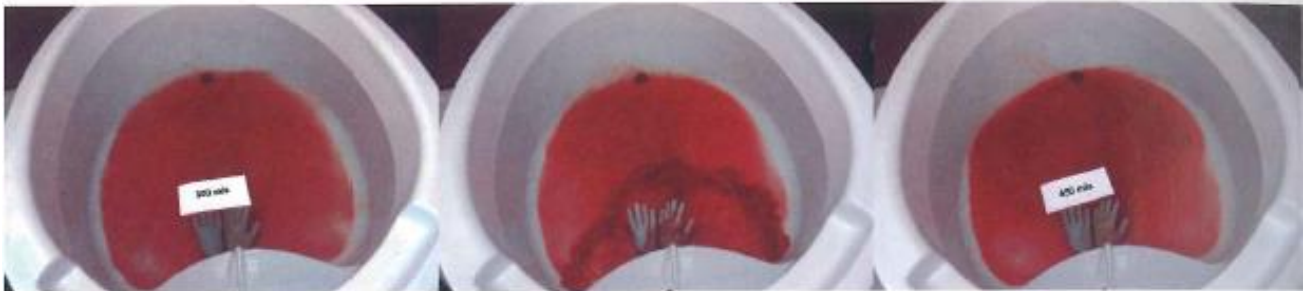
Appendix F – Calculating blood loss estimates in a pool birth



1.0 Blood being poured into the pool

1.1 150ml of blood poured in. Thin layer of blood, covering two thirds of the bottom of the pool

1.2 More blood being poured in. Blood spreading towards the plughole



1.3 300ml of blood present. Blood has reached plughole; thin layer of blood completely covers bottom surface of pool

1.4 More blood being poured in. Moving towards plughole and overlaps

1.5 450ml of blood present. Second layer of blood (overlap), covering three quarters of the bottom of pool



1.6 Clots appearing under gloves

1.7 750ml of blood, bottom layer darker now

1.8 More clots under gloves



1.9 1050 ml of blood

2.0 1050 ml with the water agitated

2.1 Blood was poured through a flexible tube