health

Department:
Health
REPUBLIC OF SOUTH AFRICA

ACE

A newsletter for Provincial Assessors of
Confidential
Enquiries into Maternal Deaths

Editor
Fawcus S
Members of the NCCEMD

May 2017

Dear Assessors

It is the time of the year, when the NCCEMD publishes its first edition of 2017.

The May/June 2017 edition highlights and clarifies issues that all assessors have raised through their provincial representatives on the NCCEMD. These issues are discussed at a NCCEMD meeting. The NCCEMD has 4 meetings a year (in Feb, May, August and November).

For mainly financial reasons, we are not having an annual assessors meeting this year. However, representatives of the NCCEMD will visit each province towards the latter part of 2017 to discuss the national triennial report 2014-2016 and the provincial report at provincial assessors meetings.

Professor Fawcus is thanked for the effort she puts into ensuring that ACE maintains a high standard of reporting.

J Moodley

Professor Emeritus J Moodley, Chairperson for the NCCEMD

Foreword

This ACE is produced and distributed ahead of the release of the results of the 2015 HIV Antenatal Survey as well as the 2016 Demographic Health Survey (DHS). These surveys will, together with the NCCEMD reports, inform us of the progress we have made recently in dealing with maternal mortality as well as its causes. The DHS will provide us with overall maternal mortality – including those that occur outside our health institutions.

We know that HIV continues to be one of the three major causes of maternal mortality (including obstetric hemorrhage and hypertensive disorders). We are seeing declines in maternal mortality from HIV but we need to do more. The introduction of the 8 antenatal visits (BANC Plus) must be accompanied by testing for HIV and initiation of HIV+ moms on ART and enrollment into the PMTCT programme, measurement of blood pressure and its treatment. We must also ensure that we continue to support the ESMOE training as well as the " fire drills" / simulation training . We are convinced that these measures, if implemented in every health facility will further reduce the maternal mortality ratio.

Officials of the National Department of Health have visited provinces to discuss the Integrated Maternal and Child Health Plan which was adopted by the National Health Council. Besides BANC Plus, the Plan also includes the importance of reviewing the provision of caesarean deliveries and the establishment of gateway MOUs especially in regional hospitals. Provinces are currently developing plans to strengthen their maternal health delivery platforms.

In order to support nurses and midwives, Nurse Connect has been established and already has more than 17 000 registered users who get weekly technical and motivational messages. In addition, we have worked on adapting a Danish video on safe maternal care and will soon be launching this mobile phone app. We hope that this app will assist nurses and midwives to improve their clinical practices.

Finally, I wish to thank all assessors who despite difficult conditions, assist us to review maternal deaths so that we can provide good quality maternal care.

Dr Yogan Pillay

Deputy Director-General: HIV, TB and MNCH&W, National Department of Health

CONTENTS

1. Developments in NCCEMD processes: (a) Alternative arrangements for national assessors meeting and (b) Plans for future triennial and annual Saving Mothers reports. Prof R. Pattinson

2. Deaths in transit. Dr Neil Moran

3. Anaesthetic issues for maternal death assessments. Prof Chris Lundgren

4. Accreditation Tools for ensuring Safe CD. Prof Sue Fawcus, Dr S.Madondo, Prof C.Lundgren, Dr N.Moran

5. Practical issues in the management of placenta praevia and morbidly adherent placenta praevia at Caesarean delivery. Prof J Moodley

1. New Developments in the NCCEMD process.

(a) The annual national assessors meetings

As you are all aware there has been a severe funding crunch at the NDoH and Treasury has instituted some rather stringent rules.
The rule that affects us most is that all NDoH funded meetings must be held in DoH offices. This rule and general shortage of funding created the confusion and ultimate cancellation of the annual national assessors Meeting. We all felt this was a great disaster and Prof Moodley has tried by all means possible to make it happen. He even managed to get some funding from UNFPA at very short notice, but was unable to overcome the Treasury rule.
Thus came the question Assessors' meeting: Whither?
The NCCEMD believes that the assessors' meetings were valuable and ideally should continue. In the current climate this is not possible. Three options to go forward were discussed

1. Hold no meeting
2. Hold a one day national meeting. This would be for standardising, peer review and networking; but new Treasury regulations stipulate the meetings have to be held in government buildings, so time would be lost and getting people to the meetings would be difficult.
3. Three NCCEMD members visit the provincial assessors at their regular meeting where the previous year's results are discussed. The NCCEMD would present the national findings, the province their findings, input into the recommendations will be made and quality assurance using some cases will be performed.

The committee decided on the third option. These meetings will be held in the second half of 2017 after the next annual national report has been compiled

(b) NCCEMD Reports

Funding for publishing the Saving Mothers reports has also become an issue. This was discussed at the NCCEMD and the following decisions were made:

- Produce Short report includes overview, summary of each cause of death and new chapter (deaths outside of facilities);
- The chapter heads should expand on the summaries of cause of death and publish the data in journal articles e.g. O&G Forum.
- Provincial reports will be put on the national website.
- A special meeting – to develop draft recommendations where the chapter heads present their chapters (end of June/early July
- Road show to each province to discuss draft recommendations and hear the provincial reports.

2. Deaths in transit

Occasionally a maternal death occurs while the patient is in the care of the Emergency Medical Services (EMS), in transit between two health facilities, in the EMS vehicle (ambulance). This situation would normally occur when the patient is being referred from one facility to another and the transfer has been arranged with the EMS. In such cases, several issues arise which are dealt with below:

Who is responsible for notifying the death?
The referring facility has the responsibility to notify the death. The death would normally be counted in the maternal death statistics of the referring facility.

How should the fact that the death was "in-transit" be captured in the maternal death notification form?
In filling the maternal death notification form (MDNF), section one addresses the "locality where death occurred**".** This section does not give an option of "death in transit", but only gives options for the type of facility where the death occurred. It is important to document here the type of facility from which the patient was being referred when she died in transit.
The fact that the death occurred in transit should be clearly documented in the case summary (section 8). If there were problems with the EMS service (e.g. delays) these should be noted in section 11 (factors contributing to the death), and can be expanded on in the case summary (section 8) if more detail is required.
The NCCEMD should consider including a specific field in the MDNF form for indicating a death in transit, for inclusion in future versions of the MDNF form.

How should the fact that the death was "in-transit" be captured in the maternal death assessor's control sheet?

In the" Demographics" section of the assessors' control sheet, there is no field for entering that the death was "in transit". Field 5 asks the assessor whether the death occurred in a facility. The purpose of this field is to distinguish deaths in the community from deaths within the health service. Therefore in cases of death in transit between two facilities, the assessor is expected to answer "yes" for field 5, and then state the level of facility from which the patient was being referred.

The assessor will then have to specify in the case summary section, that the death occurred in transit. Problems with the EMS service can be recorded in the section on administrative problems and discussed in more detail in the summary if more detail is required.

The NCCEMD should consider including a specific field in the assessors' control sheet for indicating a death in transit, for inclusion in future versions of the assessor's control sheet, as this will allow a special analysis to evaluate the extent of the problem of deaths in transit.

Responding to the fact that the death occurred in transit

In responding to the death in transit, the management of the referring facility should institute a review process, in the same way as would occur if a maternal death happens in the facility. Special considerations for a "death in transit" are listed below:

- The relevant members of the EMS (EMS crew members who were on the ambulance at the time of death, and EMS District Manager) should be invited to participate in the review meetings about the death to clarify the facts about what happened in transit, and to determine whether there were any areas of substandard care related to the whole transfer process

- A senior representative from the medical team that accepted the transfer at the receiving facility should also be invited to this meeting, to help with reviewing the referral process that occurred and identifying any gaps in the efficiency of this process.

- Issues to be reviewed should include the indication for referral, the timing of the referral, stabilisation before transfer, monitoring while awaiting transfer, advice given by the receiving hospital, EMS response time, level of paramedics attending to the transfer and quality of care during transfer

3. Anaesthetic issues: Maternal Deaths

Anaesthetic issues pertaining to maternal deaths can be looked at in two ways:

- Firstly is the direct involvement of the anaesthetist in anaesthetizing a pregnant patient who then dies. The medicolegal requirements include the following:
  - Completion of the GW7/24 (unnatural death) form.
  - Completion of the death notification form (form DHA 1663-A). This is often completed by the obstetrician. If an anaesthetic was administered, by law it is considered to be an unnatural death and needs to be discussed with a state pathologist.
- Inclusion of a copy of the contemporaneous anaesthetic record for the Maternal Death Notification Form (MDNF), which is the document that is anonymized and subsequently assessed as part of the NCCEMD process.
- Secondly is the anonymous NCCEMD assessment process. In recognition of the need to reduce maternal mortality in South Africa, deaths during pregnancy, childbirth and the puerperium were made notifiable events on 1 October 1997, in terms of the National Policy Health Act, Number 116 of 1990. This assessment process of patient records (the maternal death notification form) is confidential, with committed anaesthesiologists assessing all maternal deaths during which an anaesthetic was administered. The process is one of audit, to ascertain as to whether the anaesthetic was the primary cause of death of the patient. This is documented on a national database, after which the data is destroyed.

  Note: the documentation that needs to be included with the MDNF includes:
  The contemporaneous anaesthetic record and recovery room or ICU chart;
  All surgical and theatre records; Forensic pathologist report if available.

4. Accreditation Tools for ensuring Safe CD .

The November ACE newsletter included the national consensus on Minimum standards for facilities to perform Caesarean delivery and the Allocation of responsibilities for the different components. The SA Caesarean delivery surgical safety checklist has also been distributed. This newsletter presents tools for ensuring CD safety:
(a) accreditation checklist for surgeon;
(b) accreditation checklist for anaesthetist ;
(c) accreditation check list for a facility.

(a) **Accreditation of surgeon to perform CD**

Trainee Name:		Assessor Name:		Date:
Level of training: Grade/Year		Post:		

Clinical details of complexity/difficulty of case	

Item under observation	**Performed independently**	**Needs help**
	PLEASE TICK RELEVANT BOX	
Appropriate skin incision (e.g. length, position)		
Safe entry of peritoneal cavity		
Careful management of bladder		
Appropriate uterine incision (e.g. length, position)		
Safe and systematic delivery of baby		
Appropriate delivery of placenta		
Check uterine cavity (e.g. intact, empty, configuration)		
Safe securing of uterine angles		
Check for ovarian pathology		
Appropriate closure of rectus sheath		
Attention to haemostasis		
Neatness of skin closure		
Comments:		

Levels of complexity for each stage of training:

ST1	First or second caesarean section with longitudinal lie
Core Training	Twins/transverse lie
	Preterm at gestation over 28 weeks
CCT	Preterm less than 28 weeks or grade 4 placenta praevia
	Fibroids in lower uterine segment

Both sides of this form to be completed and signed

	Performed independently	**Needs help**
PLEASE TICK RELEVANT BOX		
Item under observation: opening		
Appropriate preoperative preparation: bladder empty, prepare and drape abdomen		
Appropriate skin incision (e.g. length, position) with safe use of surgical knife		
Subcutaneous fascia opened with attention to haemostasis		
Rectus sheath incised either side of linea alba, extended with scissors and dissected off rectus muscle with attention to haemostasis		
Safe entry of peritoneal cavity by either sharp or blunt dissection		
Item under observation: closing		
Identification of peritoneal edge and closure (optional) using appropriate suture material, instruments and technique		
Ensure haemostasis of peritoneum and posterior surface of rectus sheath		
Secure closure of rectus sheath using appropriate suture material, instruments and technique for knot tying and placement of		
Ensure haemostasis before skin closure		
Accurate skin closure using appropriate method, instruments and technique (trainees should demonstrate competence in the full range of closure methods)		
Appropriate and safe use of needle holder: needle loaded correctly, no touch technique, no inappropriate movements		
Comments (please state skin closure method)		

Examples of minimum levels of complexity for each stage of training:

ST1	Patient with no previous lower transverse incision
Intermediate Training	Patient with previous lower transverse incision but without suspicion of severe abdominal adhesions
CCT	Patient with previous abdominal surgery and likely severe abdominal adhesions

GENERIC TECHNICAL SKILLS ASSESSMENT

Assessor, please ring the candidate's performance for each of the following factors:

Respect for tissue	Frequently used unnecessary force on tissue or caused damage by inappropriate use of instruments.	Careful handling of tissue but occasionally caused inadvertent damage.	Consistently handled tissues appropriately with minimal damage.
Time, motion and flow of operation and forward planning	Many unnecessary moves. Frequently stopped operating or needed to discuss next move.	Made reasonable progress but some unnecessary moves. Sound knowledge of operation but slightly disjointed at times.	Economy of movement and maximum efficiency. Obviously planned course of operation with effortless flow from one move to the next.
Knowledge and handling of instruments	Lack of knowledge of instruments.	Competent use of instruments but occasionally awkward or tentative.	Obvious familiarity with instruments.
Suturing and knotting skills as appropriate for the procedure	Placed sutures inaccurately or tied knots insecurely and lacked attention to safety.	Knotting and suturing usually reliable but sometimes awkward.	Consistently placed sutures accurately with appropriate and secure knots and with proper attention to safety.
Technical use of assistants Relations with patient and the surgical team	Consistently placed assistants poorly or failed to us assistants. Communicated poorly or frequently showed lack of awareness of the needs of the patient and/or the professional team.	Appropriate use of assistant most of the time. Reasonable communication and awareness of the needs of the patient and/or of the professional team.	Strategically used assistants to the best advantage at all times. Consistently communicated and acted with awareness of the needs of the patient and/or of the professional team.
Insight/attitude	Poor understanding of areas of weakness.	Some understanding of areas of weakness.	Fully understands areas of weakness
	Limited documentation, poorly written.	Adequate documentation but with some omissions or areas that need elaborating.	Comprehensive legible documentation, indicating findings, procedure and postoperative

Please complete the relevant box:

Needs further help with:		Competent to perform the entire procedure without the need for supervision	
Date:		Date:	
Signed Trainer		Signed Trainer	
Signed Trainee		Signed Trainee	

(b)Accreditation checklist for Doctor providing Anaesthesia for Caesarean Delivery.

Trainee Name:		**Assessor Name and qualification:**		**Date:**
Undergraduate University:		**Duration of Anaesthesia Block Undergrad:**		
Internship Location:		**Duration of Anaesthesia Internship training:**		
Post occupied by doctor under review (eg CSD/G1MO/Clin Manager:				
Details of Case Assessed on				

Item Under Observation	**Performed Independently**	**Needs Help**
	Please Tick Relevant Box	
Preoperative Assessment:		
Physical Examination; identify if patient high risk for PPH		
Airway Examination		
Review for GA or Spinal Contraindications		
Preoperative Equipment Check:		
Anaesthesia Machine Check (See Check List)		
Tilting table with lateral arm supports		
Anaesthetic wedge		
Suction apparatus, suction tubing and Yankhauer nozzles		
Resuscitation Equipment Check:		
Defibrillator		
Ambubag		
Intubation Equipment Check:		
Laryngoscope (Size, ?Operational)		
Stylet/Laryngoscope handle with batteries		
Laryngoscope blades (size 3 and 4)		
Stylet/bougie/introducer		
Magill's forceps		
Cuffed endotracheal tubes (sizes 6.0, 6.5, 7.0, 7.5)		
Syringe to inflate cuff		
Strapping		
Laryngeal mask airways (sizes 3 and 4), or equivalent supraglottic airway		
Stethoscope to confirm intubation		
Cricothyroidotomy set (scalpel handle and blade)		
Preparation Patient:		
Premedication – sodium citrate 30ml orally, 0 - 30 minutes pre-operatively		
Good IV access, with 500ml Ringer's lactate (or similar) given as preload		
Urinary catheter		

Draw up essential drugs:		
Phenylephrine/ephedrine/etilephrine		
atropine		
suxamethonium		
induction agent		

Spinal Technique:		
Set NIBP to read at 1 minute intervals		
Measure NIBP before starting		
AND Feel for volume of patient's pulse		
AND apply pulse oximeter		
AND apply ECG		
Administer 500ml of Ringer's lactate (or similar) while performing the spinal		
Lumbar Puncture technique:		
Appropriate needle insertion technique and direction		
Understanding of spinal anatomy		
Use of Pencil Point Needle and method		
Actions after Spinal administered:		
Wedging		
Head and Shoulders raised		
Monitor NIBP at **one** min intervals		
Communicate with patient		
Continue careful fluid administration		
40% Facemask oxygen		
Rapid administration of reactive vasopressor and/or prophylactic infusion if any sign of hypotension		
Assessment of level of block, knowledge of required level for CD		
Haemorrhage management:		
Understands risk factors for haemorrhage		
Knows when bleeding is excessive e.g. HD compromise, >1L		
Appropriate oxytocic management: (2.5 plus 20 units at 125ml/hr)		
Recovery management		
Understands need for recovery		
Documents level of spinal and completes postoperative charts		
Checks for PPH: haemodynamics and visible bleeding		
Knows discharge criteria after neuraxial anaesthesia		
Knowledge of action if failed spinal:		
Wait at least 20 minutes		
Options:		
Immediate conversion to GA (circumstances favouring this??)		
Supplementation and top up with Local Anaesthesia and Ketamine (circumstances favouring this??)		
Wait and repeat spinal. (NOT advised)		
Abandon Local attempt and refer (circumstances favouring this??)		

General anaesthetic technique		
Monitoring and positioning as with after insertion of spinal		
Intravenous line running, with ringer lactate or equivalent		
Preoxygenation with tight fitting mask, 100 oxygen for 5 vital capacity breaths		
Induction: RSI with sleep dose of induction agent, cricoid pressure and suxamethonium		
Intubate and confirm ETT position		
Maintenance: Volatile with 0.8 MAC of agent in oxygen/air		
Opioids after baby delivered; which one, how much?		
Additional muscle relaxants ?options plus oxytocic management		
Management of Failed intubation		
When to declare (after 2 unsuccessful attempts)		
Inform team and call for help		
Gentle mask ventilation – OXYGENATION		
Supraglottic airway insertion: 2 attempts		
Cannot intubate, cannot ventilate = surgical airway		
When to wake up or proceed		
Knowledge of Action if Cardiac Arrest:		
Informs team and call for help		
Deliver baby urgently (within 4 minutes)		
Immediate chest compression		
Immediate manual displacement of uterus		
BMV airway Mx		
Intubation		
Adrenaline bolus 1 mg/repeated each 3 minutes		
Recovery management		
Assesses level of consciousness		
Assesses adequacy of oxygenation and ventilation		
Check for PPH: haemodynamics and visible bleeding		
Knows discharge criteria after general anaesthesia		

Generic Technical Skills Assessment after SPINAL and GA

Assessor Please ring the Candidate's performance for each of the following factors:

Area	**Poor Performance** *This is unacceptable as implies failed airway, failed resuscitation*	Fair Performance	Good Performance
Preparation and Planning	Not aware of potential complications and failed to prepare	Gaps in Preparation for Potential complications	Careful planning to handle complications
Technical Skills	Poor handling of equipment, clumsy in use of needles, syringes and procedures	Achieves procedures, but lacking in finesse	Slick effective ivi access, lumbar puncture and intubation
Knowledge and handling of equipment	Unable to utilise monitors to assess patient conditions	Unfamiliar and slow in application of Blood Pressure cuff, oximetry and following monitoring	Slick use of monitors to reliably assess physiological condition of patient
Technical Use of Assistants and relations with patient and surgical team	Unable to utilise team members to achieve safe anaesthesia	Preparing the team for actions, instructs them on expected roles (cricoid pressure, assist patient positioning etc.)	Full control of the theatre team to ensure optimal outcome
Insight and attitude	Poor Understanding of areas of Weakness	Some understanding of areas of Weakness	Fully understands areas of weakness and has plans to correct the issues
Documentation	Limited Documentation, poorly written	Adequate documentation but some omissions or areas that need elaborating	Comprehensive legible documentation indicating procedure
Needs Further Help With the following:		Competent to perform Anaesthesia (spinal and GA) for caesarean Section without the need for further direct supervision.	
*			
*			
*			
*			
Date:		Date:	

Signed (trainer):	Signed (trainer):
Signed (trainee):	Signed (trainee):

DETAILS OF TRAINER:
Name:
Qualifications:
HPCSA no:
Contact details:

(c) Tool for Evaluation of Hospital Compliance with Minimum Standards for Safe Caesarean Section

(Tool can be used for internal facility evaluation, or for evaluation by external evaluator)

Hospital Name: _____ District:_____

Date of Evaluation:_____ Evaluator:_____

Standard	Checkpoint	Person to check with	Checking activity	Compliance		Comments
				Yes	No	
1. Surgeon must be a doctor accredited to perform CS or must be directly supervised (in theatre) by one. Anaesthetist must be a doctor accredited to perform anaesthetic for CS or must be directly supervised (in theatre) by one.	Medical manager's office	Medical manager	Check whether Medical manager has a list of doctors authorized to conduct 1) CS surgery 2) CS anaesthetic unsupervised, with dates of evaluation done or scheduled			
	Medical manager's office	Medical manager	Check whether the hospital has designated on-site or off-site evaluator(s) for CS surgery competence and CS anaesthetic competence.			

	Operating Theatre	Nurse in charge of theatre	Check whether the theatre has a list of doctors authorized to perform CS surgery and a list of doctors authorized to perform CS anaesthetic			
			Check the procedure book in theatre to confirm that the names of surgeon and anaesthetist for CS correspond to names on above-mentioned lists			
			In cases where there is a CS being performed during the evaluation, check that both surgeon and anaesthetist are on the above-mentioned lists.			
2. There must be a minimum of two doctors in theatre for each CS	Operating Theatre	Nurse in charge of theatre	Interview the nurse in charge of theatre to confirm whether there are always two doctors in theatre for a CS			
			Check the procedure book in theatre to			

			confirm that there are different names entered for surgeon and anaesthetist			
			In cases where there is a CS being performed during the evaluation, check that there are at least two doctors in theatre, one performing the surgery and the other the anaesthetic			
3. There must be a surgeon's assistant who is a different person from the anaesthetist	Operating theatre	Nurse in charge of theatre	Interview the nurse in charge of theatre to check who acts as the surgeon's assistant for CS cases			
			Check the procedure book in theatre to confirm that there are different names entered for surgeon, anaesthetist and assistant			
			In cases where there is a CS being performed during the evaluation, check who is the surgeon's assistant			

4. There must be a designated doctor for obstetric emergencies on the hospital site (within walking distance) at all times. There must be a second doctor who is immediately contactable and can be in theatre within 30 minutes of being called	Medical manager's office	Medical manager	Interview medical manager to confirm that there is always a designated doctor on-site for obstetrics, and a second doctor who is contactable and able to reach theatre within 30 minutes. Check the on-call roster to confirm that these two doctors are rostered with cellphone numbers listed			
	Labour ward	Nurse in charge of labour ward	Interview nurse in charge to find out whether there is always (day and night) a designated doctor contactable and available to attend to emergencies. Check if day duty and on-call rosters with cellphone numbers of doctors are available in labour ward			
5. There must be a theatre nursing team (at least 3 members) on-site 24/7, or if not, must be immediately contactable and able to get to theatre within 30 minutes	Nursing manager's office	Nursing manager	Check nursing allocation for theatre. If standby, or on-call system being used, check availability of roster with cellphone numbers and protocol for calling them out			
6. Must be a person competent in neonatal resus allocated to "catch" the baby. This person	Operating theatre	Nurse in charge of theatre	Interview nurse in charge to check that there is someone routinely allocated to "catch" and resuscitate the baby at CS, who is not the surgeon or			

must be different from surgeon and anaesthetist (usually a midwife)			anaesthetist			
	Maternity nursing manager's office	Maternity nursing manager	Interview the manager to check if midwives who are sent to "catch" the baby have training in basic neonatal resus (eg HBB). Ask for documentation of such training			
7. CS safety checklist	Operating theatre	Nurse in charge of theatre	Interview the nurse to find out whether the checklist process is routinely done at CS. Ask to see the checklist, and where it is kept			
			If there is a CS due to start during the evaluation, observe the performance of the checklist			
	Post-natal ward	Nurse in charge of ward	Review the charts of any post-CS patients in the ward to check if the CS checklist was completed			
8. Close post-op monitoring: patients should only be signed out from theatre recovery room to post-natal ward by a doctor; colour-coded early warning	Operating theatre	Nurse in charge of theatre	Interview nurse to find out whether a doctor reviews the patient in the recovery room before signing out to post-natal ward			

observation charts should be used for all post-CS patients; daily post CS ward round by a doctor including weekends	Post-natal ward	Nurse in charge of ward	Interview nurse to find out whether Doctors do post-CS rounds every day Check charts of post-CS patients to confirm whether: -Doctor signed patient out of theatre -colour-coded charts are being used -daily doctor's rounds are conducted				
9. There must be at least 2 units of emergency blood available in the hospital	Location of emergency blood fridge (if no blood bank on hospital site)	Staff member tasked with control of blood in emergency blood fridge	Check number of units of blood currently in the fridge. If less than 2, check what has been done to replenish the stock Check protocol on how to access blood from the fridge, and on replenishing used stock immediately				
10. There should be at least 2 units of FDPs available in theatre	Operating theatre	Nurse in charge of theatre	Check the availability of 2 units of FDP in theatre If not available, check with pharmacy manager if the hospital stocks FDP, and if there is a policy of allocating units to theatre				
11. CS audits should be conducted at least	Medical manager's office	Medical manager and doctor in charge	Interview the doctors to check if and how CSs are audited in the				

monthly, reviewing all CS done, including appropriateness of indications, delays, adverse outcomes		of maternity	hospital. Ask to see any documentation related to CS audits			

Summary

Hospital fully compliant Yes No

If not fully compliant, areas of non-compliance are:

_____
_____
_____
_____
_____

Recommended Actions to achieve compliance

Action required	**Responsible person**	**By when**

5. Practical issues in the management of placenta praevia

"BE MINDFUL"

Background

Morbidity and mortality rates associated with major placenta praevia and morbidly adherent placenta praevia are not only high, but a sizeable proportion are due to health care professional avoidable factors. This document addresses the so called minor core issues that impact on morbidity and mortality associated with placenta praevia and morbidly adherent placenta. There is a strong association between previous caesarean section and placenta praevia with morbidly adherent placenta. This risk increases with increasing numbers of caesarean sections so that a woman with 3 previous CS and an anterior placenta praevia has a 60% chance of it being morbidly adherent and requiring hysterectomy

Antenatal management

- Rule out placenta praevia in all women with antepartum haemorrhage and rule out morbidly adherent placenta in all patients with placenta praevia who have had previous uterine surgery, notably caesarean section. Be particularly aware of morbidly adherent placenta in women who have had two or more caesarean deliveries
- Identify women who have major placenta praevia by ultrasound ie the placenta is partially or completely covering the cervical os. These women have a much increased chance of major haemorrhage compared to those with minor praevia and should be managed at regional or tertiary hospital level.
- Rule out morbid adherence in all cases of placenta praevia with previous CS by appropriate imaging techniques (Sonar, Doppler, MRI). NB: in the absence of colour Doppler or MRI, it is sensible to assume that an anterior placenta praevia covering a previous C section scar is morbidly adherent. All women with confirmed or suspected morbidly adherent placenta praevia with previous CS should be viewed as very high risk for massive haemorrhage and surgery preferably performed at regional or tertiary level.
- Rule out anaemia and if present, establish type and cause:
    - If iron deficiency, correct with oral ferrous sulphate, parenteral iron, or blood transfusion. Take into account factors affecting the absorption and adherence to oral iron. Ensure that the patients haemoglobin is $\geq$ 11g/dl
- Ensure that the patient and her family/partner are fully aware of:
    - Risks
    - The need for prolonged admission if there is lack of transport or lives a long distance from a regional or tertiary hospital
    - The need / reasons for caesarean delivery in a regional or tertiary hospital
    - Warning signs of labour (uterine contractions) and any vaginal bleeding even if minor is of concern. If the vaginal bleeding occurs in a hospital ward to immediately inform a nurse; if bleeds at home to go immediately to the hospital and inform any health professional of her diagnosis
    - The need to abstain from sexual activity if managed as an outpatient
    - That she will be delivered at approximately 37 weeks gestational age or earlier if the need arises
- The need for a healthy diet and to minimise risks of constipation
- If hospitalised, to notify a nurse when going to the toilet – and to close, but not lock the door either in hospital or at home

- If patients are not hospitalised, they will need to have a fully informed person always present at home , who can assist in driving the patient to hospital, or call for help in an emergency (such as – vaginal bleeding abdominal pain /contractions).
- Hospital staff need to be made aware that the patient has a placenta praevia and that no digital vaginal examination should be performed. The hospital record should be "flagged" in a way that the diagnosis of placenta praevia is clear and that a specialist should be informed immediately if any bleeding, irrespective of amount, occurs

The surgery

- Plan elective caesarean delivery at appropriate health site and time of day
- Surgery for Major praevia and / or suspected morbidly adherent placenta in women with previous CS should be performed at regional or tertiary level
- Ensure Hb is > 11 g/dl
- **Be Mindful** that the clinical management of major placenta praevia or suspected morbidly adherent placenta praevia over a previous CS scar, requires a multidisciplinary team (experienced obstetrician, anaesthetist and a blood transfusion expert). Patients should have an "anaesthetic premedication examination", have two large-bore intravenous lines set up in theatre , general anaesthesia rather than regional anaesthesia and consideration given to having cell saver technology if available,
- Ensure discussions have occurred with blood transfusion services regarding the potential need for multiple units of blood transfusion and the potential need for the presence of at least two units of red blood cells in the operating theatre. Consider ordering blood on a returnable basis and having fresh frozen or freeze dried plasma in the operating room/theatre
- Informed consent should include consent for hysterectomy
- Ensure that all cases are first on the operating theatre list
- Ensure that the most experienced doctor, preferably a specialist obstetrician, does the operation or at least is the surgical assistant
- If morbid adherence into the bladder is suspected, consider having a urologist present
- Ensure appropriate abdominal and uterine incisions are made in respect of delivery; midline skin incision and classical CS are necessary if suspect morbidly adherent placenta.
- Major praevia: excess bleeding may occur from the lower segment. Uterotonics must be given and additional haemostatic sutures can be placed in the lower segment. Balloon tamponade is useful for ongoing bleeding from the lower segment and tranexamic acid can be given. Uterine artery ligation may also reduce blood loss and hysterectomy is required if bleeding cannot be controlled with all these measures.
- Placenta praevia plus morbidly adherent placenta (eg Accreta, increta or percreta over previous CS scar): Make uterine incision away from placenta and previous CS scar (high classical) . After delivering baby, administer iv oxytocin and wait for spontaneous placental expulsion. If it does not separate and there is no bleeding, do not attempt to remove it. It may be left in situ with or without hysterectomy depending on the woman's fertility wishes. In cases of severe ongoing bleeding early recourse to hysterectomy is essential.
- Ensure that uterus is contracted and haemostasis is achieved before closing the abdominal cavity. Do not "close" the layers of the abdominal wall without establishing with the anaesthetist that the systolic blood pressure is greater than 120mmHg, the pulse rate < 100/minute and the respiratory rate < 16/minute

Postoperative care

- Ensure that the above parameters (pulse rate, BP, respiratory rate) are within normal limits prior to discharge from the theatre recovery room. The surgeon should also note that there is no excessive vaginal bleeding prior to patient being transferred to the recovery room, and from the recovery room to the ward. NB If excessive bleeding is noted in the recovery area and/or the patient is unstable, she needs to return to theatre and have relook laparotomy .The surgeon and anaesthetist should communicate well and act collectively.
- Ensure that post-delivery monitoring occurs in a high care bed, or one established for this purpose, so that vital observations are done ½ hourly for 2 hours; hourly for 4 hours; 2 hourly for 6 hours; and then 4 hourly.

It is only in this way, by being mindful and preparing well for potential complications, that we can minimise morbidity and mortality.