TYGERBERG HOSPITAL
Department of Obstetrics and Gynaecology: General Specialist Services

PROTOCOL FOR CEASEREAN DELIVERIES
Counselling, Booking and Technique

- **ENSURE THAT THERE IS A VALID INDICATION FOR ALL CAESAREAN DELIVERIES**
- **ALL WOMEN SHOULD BE ADEQUATELY COUNSELLED REGARDING THE INTENDED PROCEDURE**
- **IN CASES OF AN ELECTIVE CAESAREAN DELIVERY AN "ELECTIVE C/S CHECKLIST" MUST BE COMPLETED**

Obstetric elective procedures, unlike most other elective procedures, are not cold cases and can usually not be postponed for more than 24 hours as there may be a risk of the patient going into labour. The morbidity of an elective CS is much lower than for an emergency CS.

To organise an elective CS, to start at a specific time needs coordination from 9 different role players (anaesthetist, surgeon, assistant, theatre sister, theatre manager, porter, midwife, paediatrician, ward sister). This protocol is to help each one involved to streamline the process so that we do not waste any theatre time.

CAESAREAN DELIVERY: MOST COMMON INDICATIONS:

- **Previous C/S x 2, or Classical C/S**
- **Previous C/S x 1 (VBAC contra-indicated, declined)**
- **Failure to progress during labour**
- **Non-reassuring fetal status**
- **Failed induction of labour**
- **Abnormal Placentation (Placenta Previa, Vasa Previa, Placenta Accreta)**
- **Mechanical obstruction to vaginal birth (Abnormal pelvis/spine, large leiomyoma)**
- **Maternal Medical Condition**
- **Multiple Gestation**
- **Big baby (>4,5kg in non-diabetic mother)**
- **Breech (Failed ECV, ECV Contraindicated)**
- **Fetal malpresentation (i.e. Transverse lie)**

1. CAESAREAN DELIVERY: BOOKING of ELECTIVE CASES:

1.1 Duty of the High Risk Clinic

- The clerking, consent and prescription chart is to be done by the admitting Dr in HRC

  Including: CS Safety Checklist

  Prescribe premedication, including prophylactic antibiotics (and therapeutic antibiotics for those on HAART)

  Evaluate for thromboprophylaxis (TED stockings and/or Heparin)

- Refer to **Section C** for Counselling for Caesarean Delivery of a patient.
- Refer to **Section D** for perioperative issues for Caesarean Delivery of a patient.
- The minimum number of clients that can be accommodated on one day are as follows:

Admission on	List on	Total Number of Cases
Sunday	**Monday**	**6**
Monday	**Tuesday**	**6**
Tuesday	**Wednesday**	**4**
Wednesday	**Thursday**	**6**
***No elective lists are available for Fridays.**		

- If the booking list is full, ask the clerk to check if someone may have already delivered
- Do not book any additional cases on the elective list
- All additional cases should be booked on the "Emergency – Elective list" in the separate file – See "Emergency – Elective" Section for further details.
- If the patient has severe medical comorbidities or the fetus may need constant fetal monitoring before the operation, admit to ward F2.
- Please ask patients to come in early on the day of admission. After obtaining their folder they must go to Fetal Evaluation Clinic for a CTG and then present at J2 on the latest at 09h00.
- Offer placement of intra-uterine contraceptive devices to those wanting long-acting reversible contraception.
- All 3 pages of the sterilisation consent must be completed if sterilization requested.
- If the patient is using the latest (September 2018) maternity case record, the consent for sterilisation must be done in the maternity care peri-operative record booklet (available at HRC and LW)

1.2 Duty of J2 Medical Officer

- Get a copy of the BOOKING LIST from the HRC at 07h30 (before the ward round) and confirm that all are not already delivered – check with the ward clerk.
- Check with the F2 Registrar for any F2 patients planned for elective CS.
- The consultant on for the wards will do a pre-op round at 11h00 where each patient and their indication for CS will be double checked.
- Review each patient admitted for elective CS again – double check the gestation,

indication, consent, prescription (premeds, TED stockings/Heparin, PMTCT meds, post-operative antibiotics) and CTG (from FEC).

- If more beds are required for especially the elective admission on Mondays and Wednesdays, then the Consultant for Ward Duties should be contacted and patients should either be admitted in J5 or J4.
- Cerclage procedures must be managed in J4 by the allocated MO.
- Compile a FINAL list (based on booking list and patients that actually arrived in J2) by 13h00. If there are cases that are likely not to have been done on the previous days list, indicate their names clearly on the list for the next day, as they should get priority, if they were not done during the night.
- If there are slots open on the elective list due to patients that has already delivered check with the labour ward team if they have any "Emergency – Elective" cases that could be added, these cases can then be admitted to J2 for the next day, instead of waiting in the labour ward.
- The list must be handed to Mr Jordan personally (not later than 14h00) so that it can be distributed to the theatres. If Mr Jordan is not on duty, the list must be handed to the secretary at R2 personally.
- The consultant on ward duty as well as the Medical Officer or Registrar that will be doing the list should also receive a copy of the list.

1.3 Duty of nursing clerk (J2)

- Receive the FINAL list from the MO in J2
- Make five photocopies and distribute to the following: Labour ward (one copy for the maternity notice board and one for the nursing shift leader), and G2 baby ward.

1.4 Duty of Sister in charge of the Obstetric Elective Theatre [labour ward east theatre]

- The first elective case should be sent for at 07h00
- Electives need to start with anaesthetic preparation by 07h30
- Incision time should be at 8:00 at the latest.
- Orders for gowns and linen, instruments etc. must be placed the day before so that there are no undue delays in the morning.

1.5 Duty of Nursing staff in J2 (or J4 / J5 as necessary)

- Patients must be fully prepared the day before surgery.
- The MO in J2 must immediately be notified if a patient's ward Hb is < 10g/dl.
- The night staff must write up the patient's valuables, so that there are no delays when theatre sends for the patient.
- PMTCT Drugs should be administered by 5am the morning of elective CS if indicated.
- Pre-operative medication should be administered just before the patients leaves the ward.

1.6 Duty of surgeon on duty for the Obstetric Elective List (MO or registrar)

- Familiarise yourself with list of patients the day before.
- Discuss any complicated cases with the labour ward Consultant, as they are responsible to help you if needed.
- Consider choosing the easiest Caesar to be first, to facilitate intern teaching.
- Be punctual on the day of the list, the clinician should be present in theatre no later than 07h30.
- As you are the person doing the caesarean section, you are also responsible for the decision and indication.
- Make sure there is a bed for the patient in the post-natal wards, and clearly communicate this to the recovery room nursing staff.
- Make sure that there are proper instructions for post-operative observations on the nursing instruction chart.
- Communicate al difficult cases to the doctor in charge of the post-natal ward, which the patient will be going to after the procedure.
- Do a post-operative round on all complicated cases.
- Familiarise yourself with the recovery room procedure in point 4.4.

1.7 Duty of Intern training for C/S

- Familiarise yourself with patients the day before.
- Be punctual on the day of the list (be in theatre no later than 07h30).
- Confirm with theatre sister that she has sent for patient and that the porter has indeed left to fetch the patient.
- Call anaesthetist (6123 or bleep) if not in theatre already by 07h30
- Familiarise yourself with the evidence-based C/S technique in the ESMOE training module and that you are able to tie a good surgical knot
- The paediatric MO will always be in theatre by 08h00 Monday-Thursday unless we inform them not to come.
- Once the patient is in theatre, inform the Sr in charge in C2A that an elective C/S is on the table and that a midwife is required for the delivery.

1.8 Duty of Anaesthetic Registrar on Duty

- The elective list will be available the day before and the Registrar should familiarize him/herself with the list.
- The anaesthetist should be in theatre no later than 07h30.
- The anaesthetist should help with the flow of the patients and ensure good theatre management.

1.9 Paediatrician on Call

- A list will be available the day before surgery
- Arrive in theatre by 08h00 at the latest to familiarise yourself with the case.
- Introduce yourself to the surgeon and labour ward team and exchange contact details to ensure quick and easy communication.

1.10 Duty of Labour Ward midwives

- The shift leader must assign a midwife responsible for the Elective Obstetric Theatre List [Monday -Thursdays].
- This midwife must be in the Elective Obstetric theatre (Labour Ward East) by 07h30 to check the resuscitation equipment and to prepare for the baby.
- Bleep Paediatrician on for caesers (if not present yet) once the spinal is sited.
- Do umbilical cord gas if indicated, as well as cord blood for chromosomes if requested by Geneticist or Fetal Medicine, and/or Rhesus status if mum Rh Neg.

1.11 Emergency – Elective Cases

- All patients that require a caesarean section but does not get a space on the elective list during the indicated week, gets booked in the “Emergency – Elective” file.
- The responsibilities regarding the bookings remains the same as for any other elective case, as stated above (regarding doctor as well as nursing care at HRC).
- There are two slots per day on a Monday, Tuesday, Friday, Saturday and Sunday. No slots on Wednesday and Thursdays as those are the days that the post-natal and elective list are usually at full capacity.
- Patients that have severe comorbidities regarding anaesthetic or surgical risk, or fetal risks which requires senior paediatrician input, should not be booked as Elective Emergency Case.
- Patients who have relative indications for caesarean sections, like 1 previous c/s that declines VBAC, should be booked on the emergency-elective lists as a rule, to leave space open for the higher risk c/s to be booked on the Elective lists.
- The booking doctor from HRC should explain the situation to the patient and hand them the information sheet regarding the Emergency Elective list, this will be available in HRC.
- These patients should present NPO on the scheduled date to C2A admissions area at 07:00.
- On the day of admission, they get observations and a CTG in the triage area, and is seen as a priority patient, before 08h00, the intern in admissions then discuss the case with the labour ward consultant before the handover round. If the labour ward has capacity, the patient waits in the labour ward until there is time on the emergency theatre list. If there is space on the elective theatre list, she gets admitted to J2.

- If the obstetric system is in red status and there will not be a chance to do the case in the next 24 – 48 hours, and the patient is otherwise stable with a normal CTG, she can be requested to go home and return the next day. Check the elective-emergency list in HRC to make sure it is not overbooked already.

2. CAESAREAN DELIVERY: BOOKING of EMERGENCY CASES:

2.1 Duty of the MO or Registrar in Labour Ward

- All cases will be done in the **Emergency Obstetric Theatre** (Labour Ward West Theatre)
- The clerking, consent and prescription chart is the responsibility of the attending Dr in labour ward, including:
    - Prescribe premedication, including prophylactic antibiotics (and therapeutic antibiotics for those on HAART)
    - Evaluate for thromboprophylaxis (TED stockings and/or Heparin)
- Refer to **Section C** for Counselling for Caesarean Delivery of a patient.
- Refer to **Section D** for perioperative issues for Caesarean Delivery of a patient
- Patients being booked for emergency CS must be
    - Discussed with the anaesthetist (on call for labour ward)
    - Correctly coded according to urgency of the CS and booked at 4849
    - Discussed with the paediatrician (on CS bleep)
- All 3 pages of the sterilisation consent must be completed if sterilization requested
- If the patient is using the latest (September 2018) maternity case record, the consent for sterilisation must be done in the maternity care peri-operative record booklet (available at HRC and LW)

2.2 Duty of Sister in charge of the Emergency Theatre (labour ward west theatre)

- If no emergency case has been booked for by 07h00 then J5 should be contacted to find out whether any post-partum sterilisations are ready or any Emergency – Elective c/s.
- Orders for gowns and linen, and instruments etc. must be placed the day before so that there are no undue delays in the morning

2.3 Duty of Nursing staff in the labour ward

- Patients must be fully prepared and the patient's valuables must be written up
- Urinary catheter needs to be sited if the patient doesn't have one yet
- The MO/Reg must immediately be notified if a patient's ward Hb is < 10g/dl

2.4 Duty of Anaesthetic Registrar on Duty

- The anaesthetist should be in theatre no later than 07h00
- If no emergency caesarean cases and no postpartum sterilizations are booked then the registrar should enquire whether a lower risk(not expecting complications to avoid the

blocking of theatre) Elective Caesarean section can be done. In the case of none of the above cases available then enquire if any epidurals needed to be sited in labour ward as well as to enquire where any help is needed in the Obstetrical Critical Care Unit

- Help with the flow of the pts and ensure good theatre management

2.5 Paediatrician on Call

- Once the paediatrician on for emergency cs is notified of a case, they should immediately present to the theatre

2.6 Duty of Intern in J5 (regarding post-partum sterilisations)

- As a priority, on arrival in J5 at 07h30, identify any patients that have expressed a wish for post-partum sterilization
- If there is no space available on any list, offer post-partum IUD with an interval sterilization later.
- Determine Hb, check for co-morbidities that might influence anaesthetic risk as well as the number of days postpartum
- Take consent after adequate counselling. Call consultant or MO doing the emergency list for the day by 08h00 on the latest with a list of names (bleep or call 4700 in theatre)
- If the patients are cancelled 2 days in a row due to lack of theatre time, consider booking them for an interval sterilization or insertion of an IUCD, 6 weeks post-partum with Family Planning Clinic (4447)

2.7 Duty of J5 Nursing Staff

- Help identify patients for sterilization to help the Intern prioritise them early in the morning
- Keep NPO from 00h00 if patient expresses a wish for T/L, even if not consented yet
- Do Hb on all patients awaiting T/L, inform the intern immediately if the Hb is < 10g/dl
- If theatre has not sent for a patient by 14h30, please call 4713 or 4707 to confirm with Dr in charge of the emergency list whether patients' are possibly cancelled (due to lack of theatre time)

2.8 Duty of C2A midwives

- The shift leader must assign a midwife responsible for the Emergency Obstetric list
- This midwife must be in theatre by 07h30 to check the resuscitation equipment
- Bleep Paeds (if not present yet) once the spinal is sited.
- Do umbilical cord gas if indicated, as well as cord blood for chromosomes if requested by Geneticist or Fetal Medicine, and/or Rhesus status if mum Rh Neg.

3. CAESAREAN DELIVERY: COUNSELLING AND CONSENT:

[Aspects to cover in the counselling session]

3.1. THE INTENDED BENEFITS:

Caesarean delivery is performed when the risks of vaginal delivery are more than those of a caesarean section operation. In general, caesarean delivery is a safe procedure; the rates of serious complications are extremely low.

3.2. PROGNOSIS AND RECOVERY:

Most mothers and infants recover well, with few problems. The average hospital stay is 2-4 days.

3.3. RISKS:

- **Maternal:**
  - Common:**Infection** (site of incision and uterine), 6 women in every 100
    - Readmission to hospital, persistent wound / abdominal discomfort, 5 women in every 100
  - Uncommon: Severe **haemorrhage** with the need for blood transfusion, 5 women in every 1000
    - Need for **further surgery** at a later date, 5 women in every 1000 Emergency **hysterectomy**, 7-8 women in every 1000
    - **Bladder injury**, 1 woman in every 1000
  - Rare: **Ureteric injury**, 3 women in every 10 000
    Thromboembolic disease, 4–16 women in every 10 000
- **Fetal:** **Lacerations**, 2 babies in every 100 (common)
  Respiratory / **breathing difficulties** and low APGAR Scores
- **Future pregnancies will have an increased risk of:**
  - Repeat caesarean when vaginal delivery attempted, 1 in 4 woman (very common)
  - Uterine rupture during subsequent pregnancies/deliveries, 2-7 women in every 1000 (uncommon)
  - Antepartum stillbirth, 1-4 woman in every 1000 (uncommon)
  - Placenta praevia and placenta accreta, 4-8 women in every 1000 (uncommon)
- **Anaesthetic concerns include:** Reaction to medication**,** Aspiration**,** Problems with breathing

4. CAESAREAN DELIVERY: PERI-OPERATIVE MANAGEMENT:

4.1. Pre-operative management:

- Urine-dipsticks (Check previous antenatal urine cultures)
- Ward Hb [If < 10g/dL draw blood for a formal lab Hb, Plt and MCV]
  - If 8-10 do a Group and Screen
  - If < 8 do a Crossmatch and evaluate for a possible transfusion before surgery.
  - If any difficult surgery anticipated, then discuss with anaesthetist regarding having blood on standby in theatre regardless of Hb

- All major placenta previa and suspected placenta accreta surgery must have blood on standby

- Serum Creatinine and electrolytes – Only if indicated i.e. pre-eclampsia, renal lesion, on HAART etc.
- NPO for 6hrs if elective caesarean section, can have clear fluids up to 2 hours before surgery.
- Review patient for post-op thromboprophylaxis (DVT Stockings, Unfractionated or LWM Heparin)
- Inform anaesthetist [in emergency cases as well as cases of elective caesarean section] about any significant maternal morbidity. [Relay anaesthetic plan if anaesthetic evaluation was done in HRC or in the Antenatal Wards]
- Inform the paediatricians about the delivery in any emergency case, as well as when there is a significant fetal growth restriction, fetal compromise, remote from term gestation or severe anomalies.
- Lastly confirm the patient's family planning needs and ensure that they are carried out.
- Review the patient's intended contraception method post-partum. If applicable counsel on intra caesarean post-placental IUCD insertion. If desired and counselled then collect a CuT 380A from the Labour Ward in the Nurse's Office during all hours. Complete the registry, and collect the counselling sheet and IUCD card, which should be completed and given to the patient. (Refer to **Protocol for Post-Placental Insertion of an IUCD**).

4.2. Premedication and preoperative orders written up:

- The following should be charted and given 1hour before surgery.
- Broad-spectrum antibiotics – Cefazolin 2g IV (if allergic give Erythromycin 1g intravenous)
- Antacid – Sodium Citrate 30ml p.o. (30 min pre- operative) short duration of action
- Antiemetic – Metoclopramide 10mg I.V.
- PMTCT/ARV Medication – written up as per national protocol

4.3. The following post-operative medication and management should be written up when the case is booked (at the clinic or in the labour ward):

- To which ward the patient must go post operatively
- Thromboprophylaxis if indicated
- Analgesia

4.4 Recovery Room Procedure

- All post caesarean section patients should be transported to the recovery room accompanied by the anesthetist, surgeon/assistant, one of the theatre nursing staff.
- All uncomplicated cases should go with their baby to the labour ward recovery room if they are open and have space. There are certain patients that do not qualify for recovery in the LW recovery area, please refer to the Labour ward Recovery room Protocol for details.

Ensure that the nursing staff working in the recovery room agrees to manage the patient in the area.

- All other cases that does not qualify for the labour ward recovery room should go to R3 (during day working hours) or R1, afterhours.
- The surgeon is responsible for arranging a post natal bed for the patient depending on the level of care required for the specific case, and to communicate this clearly with the nursing staff in the recovery room.
- No patient should spend more than 3hours in the recovery room, if still no bed available for the patient the labourward and ward consultants should be contacted to arrange a bed for the patient.

E. CAESAREAN DELIVERY: TECHNIQUE:

5.1. INTRODUCTION — *As with most surgical procedures, there is no standard technique for caesarean delivery. The following will provide evidence-based recommendations for surgical technique, where data is available.*

5.2. OPENING THE ABDOMEN:

- *Skin incision*: Transverse or vertical — a transverse (Pfannenstiel or Joel-Cohen) is associated with less postoperative pain, greater wound strength, and better cosmetic results than the vertical midline incision. However, vertical incisions generally allow faster abdominal entry, cause less bleeding and nerve injury, and can be easily extended cephalad if more space is required for access.
  - Neither scalpel nor electro surgery holds a significant benefit over the other
  - It isn't necessary to change to a fresh scalpel blade after opening the abdomen
- Size — A 15 cm long incision (the size of a standard Allis clamp) is the minimal length that allows atraumatic and expeditious delivery of the term fetus
- *Subcutaneous tissue layer* —Blunt dissection (with fingers) has been associated with shorter operative times and less chance of injury to vessels
- *Fascial layer* — the Joel-Cohen or the Misgav-Ladach techniques, a small transverse incision is usually made medially with the scalpel, and then extended bluntly by inserting the fingers of each hand under the fascia and then pulling in a cephalad-caudad direction.
- *Rectus muscle layer* — Rectus muscles can be separated bluntly in most cases; avoiding transection of muscles preserves muscle strength. Dissection of the rectus fascia from the rectus sheath and muscles seems to be unnecessary and can result in injury to the inferior epigastric vessels.
- *Opening the peritoneum* — Use fingers to bluntly open the peritoneum
- *Assuring adequate exposure* — The full thickness abdominal incision should be adequate to allow delivery of the fetus. The surgeon and an assistant together can manually stretch apart the opening at the angles of the incisions.

5.3. INTRA-ABDOMINAL PROCEDURES:

- *Bladder flap* — Not routinely needed to create a bladder flap in ELCS. This saves time and reduces blood loss. Performing a bladder flap may be needed if a difficult delivery is anticipated.
- *Hysterotomy* — Prior to making a hysterotomy incision, the surgeon should be aware of the general location of the placenta and the fetal lie. The uterine incision may be transverse or vertical; the type of incision depends upon several factors, including the position and size of the fetus, location of the placenta, presence of leiomyomas, and development of the lower uterine segment. The principle consideration is that the incision must be large enough to allow atraumatic delivery of the fetus.
  - Transverse incision — For most caesarean deliveries, a transverse incision along the lower uterine segment (ie, Munroe-Kerr or Kerr incision) is advised.

Vertical incision — There are two types of vertical incisions, the low vertical (Kronig, De Lee, or Cornell) and the classical vertical. The generally accepted indications for considering a vertical uterine incision are:

- Poorly developed lower uterine segment in a setting in which extensive intrauterine manipulation is anticipated (eg, extremely preterm breech presentation, back down transverse lie)
- Lower uterine segment pathology that precludes a transverse incision (eg, large leiomyoma)
- Densely adherent bladder
- Anterior placenta previa / accreta
- Postmortem delivery

Procedure — A scalpel is used to perform the initial part of the hysterotomy. When entry into the uterine cavity is achieved, the hysterotomy incision can be extended using blunt expansion with the surgeon's fingers. Extending the uterine incision transversely by pulling vertically (cephlocaudad) with the index fingers reduces the risk of unintended extension and excessive blood loss.

- *Delivery* — To deliver a fetus in cephalic presentation, the surgeon inserts his/her hand into the uterine cavity to flex the fetal head and bring it to the level of the uterine incision, from which it can be extracted. Transabdominal fundal pressure is usually applied by the surgical assistant. A set of forceps or a vacuum device should be available in the operating room to assist with flexing the head and guiding it through the incision if this is difficult, but routine use of these instruments is not recommended since they may increase morbidity. A deeply impacted fetal head can be hard to disengage and deliver. The "push" method involves the operator or an assistant pushing the head back through the vagina and out of the pelvis; the "pull" or "reverse breech" method has the surgeon grasp the fetal legs in the upper uterine segment and extract the fetus by the breech.
- *Cord clamping and infant assessment* — Delayed (30-60 seconds), rather than immediate, cord clamping results in greater neonatal haemoglobin levels and appears to be beneficial for both

preterm and term infants. Refer to the departmental protocol regarding cord clamping as this is done as routine practice in Tygerberg Hospital.

- *Placental extraction* — Drainage of the placenta prior to extraction appears to result in less fetomaternal transfusion. Do spontaneous extraction (gentle traction on the cord and use of oxytocin to enhance uterine contractile expulsive efforts) to remove the placenta. There is no need to change gloves before removal of the placenta. Ensure that the entire placenta has been removed, this can be done by inspecting the cavity and if necessary exploring the cavity with two fingers (*Do not make use of abdominal wet swabs tow wipe the cavity, as this is associated with increased rates of puerperal sepsis*).
- *Prevention of haemorrhage* — As soon as the placenta is delivered, the uterus is massaged to promote contraction. Oxytocin is administered intravenously to promote uterine contraction and involution. In patients at increase risk for postpartum heammorrhage continue with an Oxytocin infusion post partum.

5.4. PROCEDURES DURING CLOSURE

- Exteriorizing the uterus — Exteriorize the uterus to improve exposure and facilitate closure is recommended but there is no clinically significant difference in outcome between uterine exteriorization versus repair in situ.
- Uterine closure — continuous closure incorporating all of the muscle in order to avoid bleeding from the incision edges, in two layer closure. Locking the sutures is not needed but may work better in difficult cases.
- Use of blunt tip needles during closure is associated with similar maternal outcomes as use of sharp needles, but may be safer for the surgeon.
- Abdominal irrigation – is not of any beneficence.
- Peritoneum — Closure of the visceral or parietal peritoneum is not advised and is associated with short-term detrimental effects.
- Rectus muscles — Surgical re-approximation of the rectus muscles is unnecessary and increases postoperative pain
- Fascia — Closure with a delayed-absorbable, continuous, non-locking suture. (Continuous and interrupted closures yield similar results, but the continuous closure is faster). Care should be taken to avoid too much tension when closing the fascia since re-approximation, not strangulation, is the goal.
- Subcutaneous tissue — Irrigation before closure is probably unnecessary in the setting of routine intravenous antibiotic prophylaxis. Close the subcutaneous adipose layer with interrupted delayed-absorbable sutures if the layer is ≥ 2 cm.
- Use of drains — The routine use of wound drains is not beneficial, even in obese women.
- Skin — Re-approximation of the skin may be performed with staples or sutures. Remove staples about five to seven days postoperatively. Adhesive strips may be applied after removal of the staples to help keep the wound edges approximated.

5.5 COMPLICATIONS

- In cases where surgical complications occur that are outside the experience or scope of the surgeon, immediately communicate this with the anaesthetist, especially if there is any blood loss more than 1000 ml, and request that the consultant or registrar in labour ward are called for help. Make sure that the person calling for help clearly communicates the urgency and nature of the problem. Ie “Please come help in the emergency theatre, the dr cannot deliver the baby”
- If a bladder or ureteric injury is suspected during surgery, contact the consultant on duty for the theatre immediately to assess and confirm. The urologist should be contacted for further repair and advise of further management.
- If during the post-operative recovery period a ureter injury is suspected then discuss the case with the consultant on duty for the wards. This patient must be reviewed with the Urologist on call and further imaging studies (IVP or KUB US) should be arranged
- Confirmed or suspected bowel injuries should be assessed by the abdominal surgeons on call.

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COMMITTEE RESPONSIBLE	L de Waard, E Swart, GS Gebhardt,
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Signed: GS Gebhardt

Head: general specialist services; Obstetrics and Gynaecology