HEALTH
KwaZulu-Natal

PROTOCOLS

FOR THE MANAGEMENT OF OBSTETRIC PATIENTS

AT

LOWER UMFOLOZI

DISTRICT WAR MEMORIAL HOSPITAL

EMPANGENI

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ACKNOWLEDGEMENTS

As a first booklet to be published for the purpose of providing a guide to the management of an Obstetric Patient and Lower Umfolozi District War Memorial Hospital and Area 3, we hope this will improve the maternal and neonatal outcome of our efforts.

Many thanks Dr Kambaran, HOD, departmental Consultants for their contribution, Dr Bwambale (Anaesthesia) Dr Kapongo and the Paediatric Department.

Finally, thank you to the publishers, for their support.

Dr Thabo Matsaseng
March 2007

INTRODUCTION

The well being of mothers have long been acknowledged to be a building block of public health. Therefore the level of maternal deaths should be an issue of concern for all working in the field of woman health.

Unfortunately the saving mothers report (2002-2004) indicates that South Africa's maternal mortality ratio (MMR) has increased.

Either due to better reporting or an increase in absolute numbers of maternal deaths.

The saving mothers report (2002-2004) highlighted the important facts that non-pregnancy related infections, aids is still the leading cause of death.

Hypertensive disorders of pregnancy remains a common direct cause of a maternal death especially in the woman under the age of 24yrs and teenagers. If we emphasize the importance of family planning / contraceptive services, and termination of pregnancies (TOPS) services accessibility and availability we might reduce the deaths in this category.

Perennial problems noted from the previous tri-annual report (1999-2001) have not changed, especially a delay in seeking help viz. The first delay in recognizing the problem at home, second delay in decision making about health care facility, the third delay is transporting the mother to a health facility and the fourth delay in receiving good quality care on arrival at a health facility.

It would appear that safe pregnancy goes beyond the provision of good basic maternity. It requires extensive community involvement (community health workers, outreach personnel, volunteers, religious groups, educational institutions and the media) to provide woman with the relevant information, offer choices of care, identify those at risk and refer appropriately for professional care. Furthermore efforts to reduce poverty, to improve infrastructure and overall socio-economic should be acknowledged and be encouraged where they lack. Finally, the national committee for the confidential enquiry into maternal deaths (NCCEMD) has produced yet another report not to sensitize but to encourage and motivate us (health care workers and the community) to implement the key recommendations that will reduce maternal deaths and improve the health of our nation. As an active strategy to ensure that the recommendations are properly implemented, their implementation will be incorporated in the managers or people in key positions (key performance areas-KPA).

AIMS OF THE BOOKLET

- To highlight the big five causes of maternal deaths as reported by NCCEMD in the 2002-2004 report.
- Outline protocols to be followed in dealing with the above mentioned causes of maternal deaths.
- To ensure that the key recommendations are implemented by all health facilities dealing with woman's health.

DEFINITIONS

According to the international classification of diseases, injuries and causes of death – 10th revisions, maternal death is defined as "the death of a woman while pregnant, or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes"

DIRECT : Death resulting from obstetric complications of the pregnancy state (pregnancy, labour and puerperium) from interventions, omissions, incorrect treatment or from a chain of events resulting from any of the above.

Indirect : Deaths resulting from previous existing disease, disease that developed during pregnancy and which were not due to direct obstetric causes, but which were aggravated by the physiological changes of pregnancy.

Co-incidental: Deaths from unrelated causes which happen to occur in pregnancy or the Puerperium.

Unknown: Deaths during pregnancy or the puerperium where an underlying cause was not identified.

BIG FIVE (5) CAUSES OF MATERNAL DEATHS – PROTOCOLS -

1. Non – Pregnancy related sepsis/Infections (e.g.) HIV / aids
2. Hypertensive disorders of pregnancy
3. Obstetric hemorrhage
4. Pregnancy related sepsis, includes septic miscarriages and puerperial sepsis
5. Pre-existing medical illness/disease eg:
   Cardiac disease

COMMUNICABLE DISEASE – PROTOCOLS

1. Tuberculosis
2. Malaria
3. Urinary tract infection and sexually transmitted infections

SUMMARY OF KEY RECOMMENDATIONS
(SAVING MOTHERS REPORT 2002-2004)

1. Protocols on the management of important conditions
Causing maternal deaths must be available and utilized appropriately in all institutions where woman deliver. All midwives and doctors must be trained on the use of these protocols:

The following are key conditions of which relevant protocols must be available:

- Hypertensive disorder in pregnancy
- Obstetric hemorrhage
- Septic Abortion
- Puerperial sepsis
- Communicable diseases: STI, TB and Malaria
- Resuscitation: Maternal and Neonatal
- Non – Communicable diseases: Diabetes, mellitus and cardiac disease in pregnancy.

2. All Pregnant women should be offered information on, screening and appropriate management of non-communicable diseases.

- Sexually Transmitted Infections
- Tuberculosis
- Malaria
- Urinary Tract Infections
- Non-communicable diseases

3. Criteria for referral and referral routes must be established and utilized properly and utilized properly in all provinces.

4. Emergency transport facilities must be available for all pregnant and postpartum women and their babies with complications (at any site)

5. Staffing and equipment norms must be established for each level of care and for every health institution concerned with the care of pregnant women.

6. Blood for transfusion must be available at every institution where caesarian sections are performed.

7. Contraceptive use must be promoted through education and service provision and the number of mortalities from unsafe abortions must be reduced.

8. Correct use of the partogram should become the norm in each institution conducting births. A quality assurance programme should be implemented, using an appropriate tool.

9. Skills in anaesthesia should be improved at all levels of care, particularly level 1 hospital.

10. Women, families and communities at large must be empowered, involved and participate actively in activities, projects and programmes aiming at improving maternal and neonatal health as well as reproductive health in general.

PROTOCOLS

- CAUSES OF MATERNAL DEATHS
- LABOUR WARD PROTOCOLS
- MALARIA IN PREGNANCY
- TUBERCULOSIS IN PREGNANCY
- SEXUALLY TRANSMITTED INFECTIONS
- SYPHLLIS
- UTI
- INDICATIONS FOR INTUBATION
- MANAGEMENT OF HIGH SPINAL
- MANAGEMENT OF DIFFICULT NTUBATION
- RESUSCITATION OF THE MOTHER
- RESUSCITATION OF THE NEWBORN

"PROTOCOLS"

BIG '5' CAUSES OF MATERNAL DEATHS IN SOUTH AFRICA

1. NON PREGNANCY RELATED SEPSIS, (mainly HIV/AIDS)

2. HYPERTENSIVE DISORDERS IN PREGNANCY

3. OBSTETRIC HAEMORRGAGE

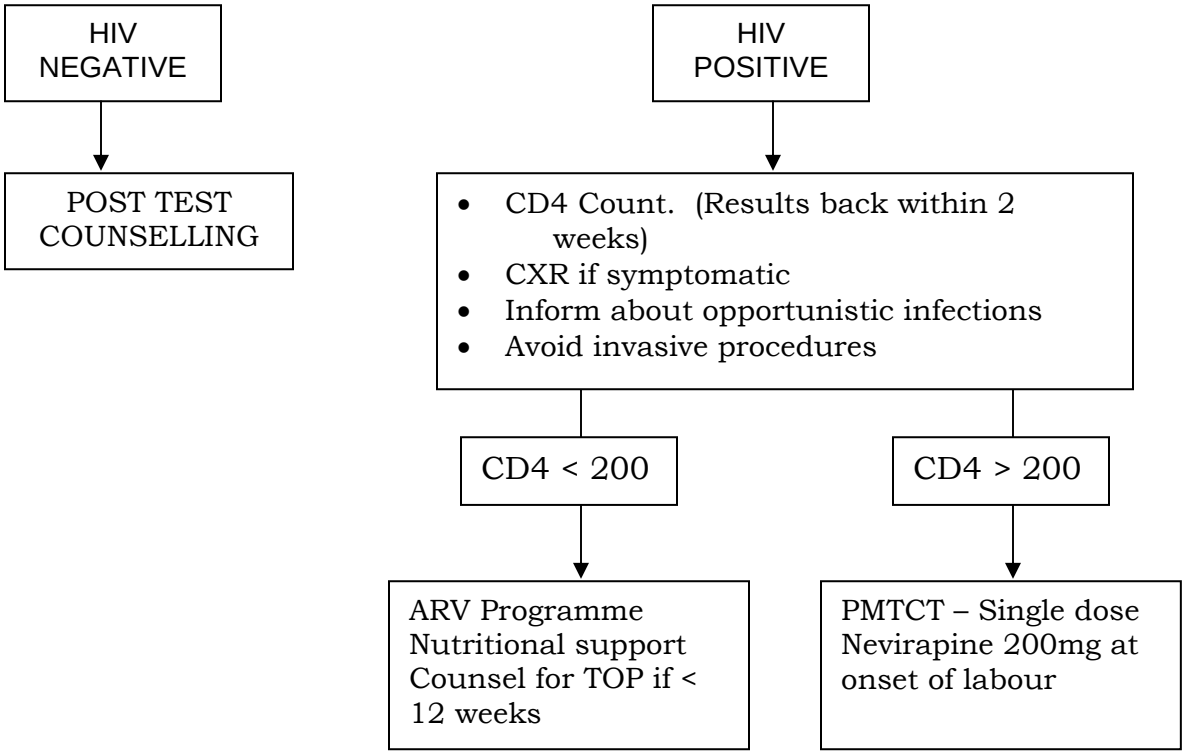
4. PREGNANCY RELATED SEPSIS

5. MEDICAL DISORDERS IN PREGNANCY (mainly CARDIAC DISEASE)

1. NON PREGNANCY RELATED SEPSIS, HIV/AIDS

Common cause of deaths amongst these patients is chest infections and other opportunistic infections. e.g. TB

All pregnant mothers must be offered mandatory counseling and testing for HIV, and they should opt out.



INTRAPARTUM MANAGEMENT OF HIV POSITIVE PATIENT

UNIVERSAL PRECAUTIONS

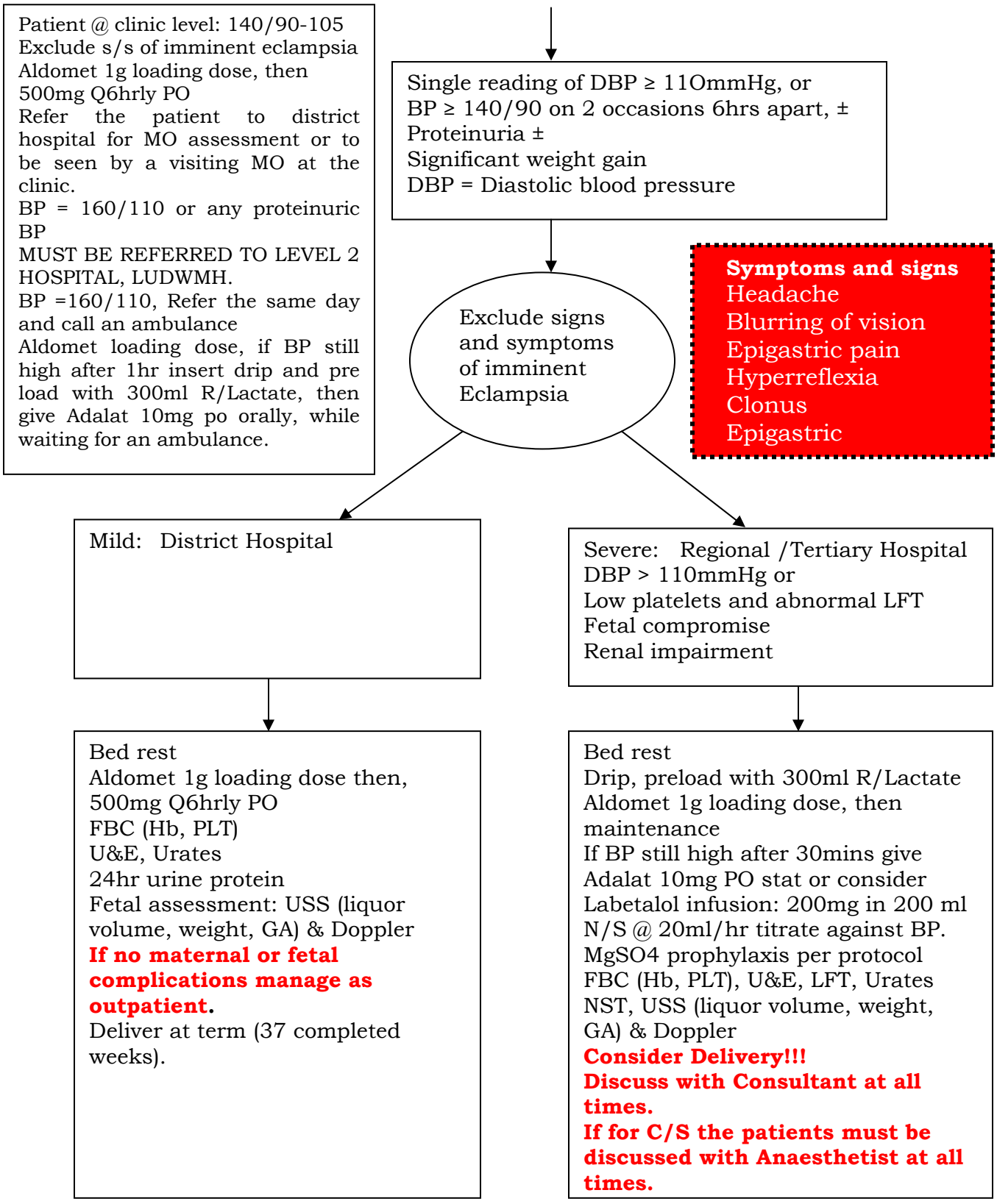
- Avoid repeated vaginal examinations
- Vaginal lavage before and after an internal exam
- Avoid unnecessary episiotomy
- Avoid fetal scalp blood testing
- Avoid rupture of membranes
- If augmentation required – can be effected with intact membranes
- All patients with prolonged rupture of membranes or going for emergency caesarean section must receive therapeutic IV antibiotics for 5 days
- If assisted delivery necessary – Forceps are recommended (Discuss with the consultant)

POST DELIVERY

- Multivitamins and Vit A (200,000 IU orally stat)
- CD4 count every 6 months, if not on the programme
- Discuss feeding options.
- Breastfeeding should be exclusive for 6 months Contraception must be emphasized and effected.

2. HYPERTENSIVE DISORDERS IN PREGNANCY

Proper assessment of all pregnant mothers in the antenatal care, e.g. blood pressure, urine test, and weight measurements.



3. OBSTETRIC HAEMORRHAGE

Commonest cause of deaths amongst this group is postpartum haemorrhage. Best management is prevention.

Identify patients at risk

↓

Abruptio placentae
Placenta praevia
Previous PPH
Prolonged labour
Big baby
Multiple pregnancies

↓

Pre delivery preparation:
Ensure that the haemoglobin is at least ≥ 10g/dl,
Insert a drip
If Hb is < 8 g/dl - Transfuse
Resuscitation equipment must be readily available
Active management of third stage:
Ensure the bladder is empty
Rub the uterus to effect contractions
Syntometrine 1amp IM at delivery of anterior shoulder (if not contraindicated)
Oxytocin infusion – 40u in 1L R/Lactate @ 30d/min.
Rectal Misoprostol 600mcg stat.
Repair any genital tears and Exclude ruptured uterus in a multipara
Monitor vitals: Colour, BP, P, Pad checks hourly.
Intake and output monitoring

IN CASE OF EMERGENCY:
SEVERE BLEEDING OR SHOCKED PATIENT

Call for help of senior personnel: earlier than late
Two IV line 16G / 18 G Needle, CVP monitor
Foley's catheter to monitor urine output
Oxygen by mask – 40%
Fluids: Crystalloids and Voluven
Blood products: FDP's
Packed cells, at least 4u
FBC (Hb, PLT), U&E, ABG, INR, PT/PTT
ONCE RESUSCITATED TREAT THE CAUSE
RPOC : EVACUATION
TEARS : REPAIR IN OT
DECISION FOR LAPAROTOMY ± HYSTERECTOMY MUST BE TAKEN EARLY

4. PREGNANCY RELATED SEPSIS

Most common is puerperal sepsis and septic miscarriages.

Thorough patient evaluation is the key:
History of interference should be emphasized in case of a miscarriage
Blood pressure, pulse, colour, respiratory rate, nasal flare, temperature, and urine output.
Respiratory system:? ARDS
Abdominal:? Peritonitis? Bowel sounds
Speculum: The **condition of the cervix**? Necrosis/Gangrene
Neurological: GCS, any confusion?

Investigations:
FBC (Hb, PLT)
U&E
LFT
CXR, ABG
INR, PT/PTT
U - MCS

Management Principle:
Admit to high care area
Discuss with the consultant
Resuscitation: Oxygen, IV line ±CVP, Foley's.
Start IV antibiotics
Input and output monitoring

Septic shock or
≥2 organ failure or
Distended peritonitic abdomen or
Mental confusion with abnormal blood gas

Immunocompromised may not have overt abdominal signs.

Stable patient
No peritonitis
No organ failure

LAPAROTOMY ± HYSTERECTOMY
2 IV lines + CVP
IV Antibiotics
Arrange ICU care
Discuss with the senior anaesthetist

IV Antibiotics:
Augmentin 1.2g 8hrly IV
Gentamycin 240mg dly IV
Metronidazole 1g 12hrly PR
Analgesia: Indocid 100mg BD PR
Fluids: MRL 1L 8hrly IV
Monitor: BP, P, T, Urine output
± EVACUATION by Senior doctor
Consider Colpopuncture

5. EXISTING MEDICAL DISORDER

Most common is cardiac disease in pregnancy.

History	:	Obstetric and medical history, any cardiac illnesses
Examination	:	Blood pressure, pulse, respiratory rate, and colour, chest examination, listen for murmurs

5.1 ANTENATAL CARE OF A CARDIAC MOTHER

All patients should be evaluated at Regional or Tertiary hospital early in pregnancy

Grade the functional ability by NYHA classification
Correct any anemia – Haematenics (repeat Hb at 36 weeks)
Treat any UTI (U – MCS)
Ensure the patient is not in cardiac failure (dypsnoea, orthopnoea, tachycardia etc)
Exclude infective endocarditis (splinter haemorrhages, fever, splenomegaly etc.)
All patients to be assessed by specialist Obstetrician, Physician, Anaesthetist, and Social worker.
FBC (Hb, PLT), U&E, CXR, ECG, ECHOCARDIOGRAM
No trial of labour in a cardiac, therefore mode of delivery must be determined antenatally
(Ideally all primigravid mothers must have CT scan of the pelvis – assessment)
Sterilization should be encouraged in patients with moderate to severe disease
Anticoagulation in patients with valve replacement or stenotic lesion
Ensure patient has easy access to health facility antenatally and during labour.

If a patient is in cardiac failure:

Stabilize the mother first: Antifailure therapy

Do not monitor the baby until the mother is stable

Antifailure management: Oxygen by mask

Semi fowler's position

Furosemide 40 – 80mg IV, then maintenance

Treat the precipitating factor

If severe and hypoxic – consider ventilation & ICU

5.2 INTRAPARTUM CARE OF CARDIAC MOTHER

RESUSCITATION TROLLEY MUST BE READILY AVAILABLE AND FUNCTIONAL
Semi fowler's position
Analgesia – preferably epidural if not contraindicated
Avoid repeated vaginal examinations
Delay artificial rupture of membranes
If augmentation is necessary – Concentrated oxytocin e.g. 10u in 200ml N/S titrated to contractions
Continuous fetal monitoring
Second stage of labour should be assisted – outlet forceps (Individualize)
Avoid unnecessary episiotomy
Avoid lithotomy position – the legs must be placed on the chair on either side with the knees slightly below the level of the hips.

5.3 POST PARTUM CARE OF CARDIAC IMMEDIATE AND INTERMEDIATE

HIGH CARE MANAGEMENT FOR 24 HOURS
Avoid syntometrine
Give syntocinon 5U IM and 5U IV
Furosemide 40mg IV stat, if patient not on treatment already
Antibiotics : Ampicillin 1g 8hrly IV
Gentamycin 240mg dly IV
Anticoagulation : The need for anticoagulation should be discussed with the consultant post delivery.
Contraception and breastfeeding must be discussed.

5.4 DIABETES IN PREGNANCY

Gestational Diabetes (GDM): Patient diagnosed first time in pregnancy and resolving after.

Established Diabetes: Patient with known disease, either insulin dependant (type 1) or non insulin dependant (type 2). Therefore medical history is very important in evaluation of all pregnant women.

Which patients to be screened:

- Previous gestational diabetes
- Unexplained IUFD
- Increased body mass, > 90kg
- Glycosuria
- Previous big baby, > 4kg
- Fetal congenital abnormalities
- Polyhydramnios
- Family history of diabetes
- Women of Asian origin

Screening (SGTT): Irrespective of the last meal.
Give 75g of glucose diluted in 250ml of water.
Venous blood glucose must be taken an hour later.
If the level is < 7, 8 – repeat the test @ 28 weeks.
If the level is > 7, 8 – Book for a diagnostic test, FGTT.

Diagnostic test (FGTT): Patient must be starved.
Fasting blood glucose
Give 75g of glucose diluted in 250ml of water
Venous blood glucose must be taken at 1hr, 2hrs, and 3hrs.
O'Sullivan's criterion is used:

Normal levels: Fasting : ≤ 5
1hr : ≤ 9
2hrs : ≤ 8
3hrs :≤ 7

If 2 or more of the levels are above normal, the patient is diabetic = GDM

5.5 ANTENATAL CARE OF DIABETIC PATIENT

Multidisciplinary approach
Admit to ward
Dietician consults re: diet management
Obstetrician / Physician / Anaesthetist / Social worker
Profiles: Twice a week
Pre and post prandial blood levels: Morning – 07h00 & 09h00
Evening – 16h00 & 18h00

Assess for maternal complications: Fundoscopy, feet assessment, CXR, ECG, 24hr urine protein, HbA1C, U – MCS.

Fetal assessment: USS (GA, EFW, AFI, Anomalies, Doppler) – every 3 weeks
If no control on diet for GDM – Commence insulin therapy
If no fetal or maternal complications – deliver @ 38 weeks
For known diabetics, the oral medication must be converted to insulin therapy
Patients can be managed as outpatient once the blood glucose is controlled and they know how to use the needles and syringes.
Patients must be counseled on signs of hypoglycemia and how to handle the situation.

INSULIN THERAPY:

Begin at 0, 6 u / kg / day

Adjust the doses according to profiles.

Combination of short acting (Actrapid / Humilin R) and intermediate acting (Humilin L / Protophane)

Total dosage: 2/3 morning - 2/3 Protophane
1/3 Actrapid

1/3 evening - ½ Protophane
½ Actrapid

5.6 INTRAPARTUM CARE

If patient is for induction the morning dose of insulin must be omitted.
All patients in labour must be on a **sliding scale**
A drip of 5% dextrose must be inserted
Foley's catheter
Monitor blood glucose 1 hourly
Urine dipstix 1 hourly – ketones, glucose
U&E as baseline – K+
Input and output monitoring
If blood glucose is > 14mmol – change fluids to normal saline
Continuous fetal monitoring
C/section for obstetric indication
Paediatrician to be informed about a diabetic in labour and the baby should be assessed in nursery.

5.7 POST DELIVERY CARE

HIGH CARE FOR 12hours

Continue sliding scale

If normal birth: Commence treatment after 6hrs

Adjust according to glucose control

If C/section : Commence treatment after 48hrs, once the patient is ambulant and eating

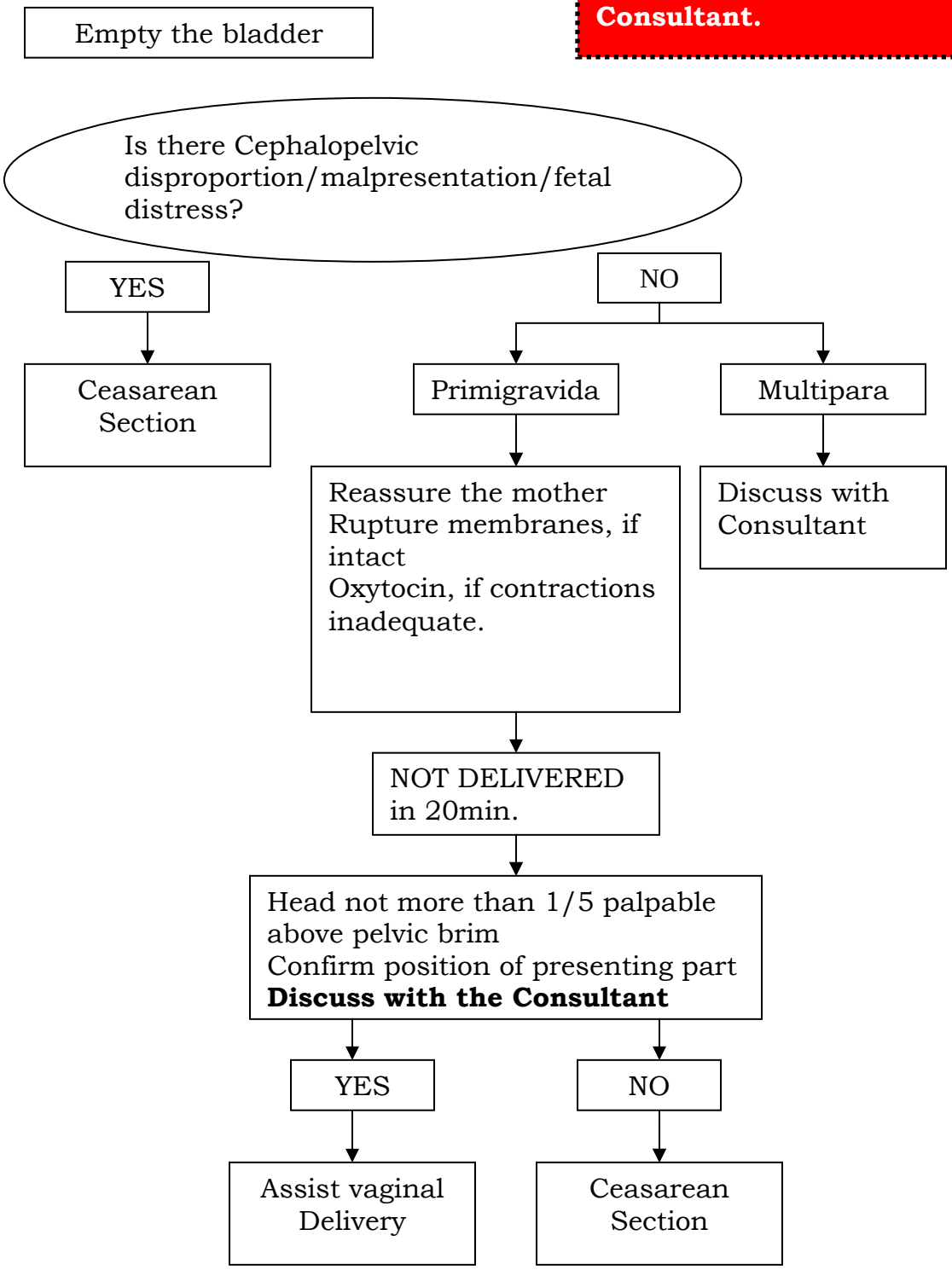
GDM – Must have OGTT after 6 weeks to exclude established disease

Contraception and breastfeeding must be discussed.

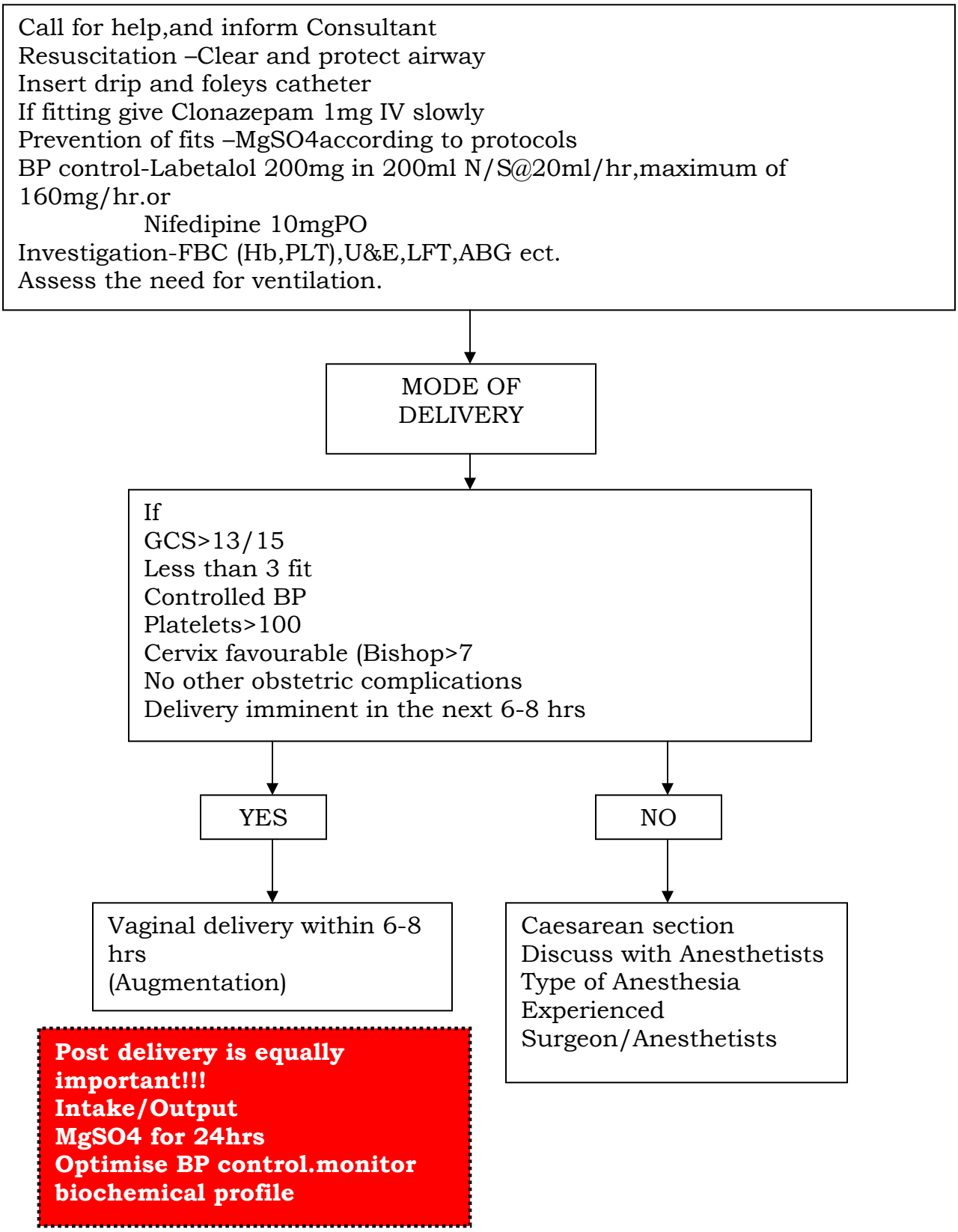
Established diabetics must be referred to their family physician for long term care of the disease.

PROLONGED SECOND STAGE OF LABOUR
Nullipara>30min,Multipara>20min

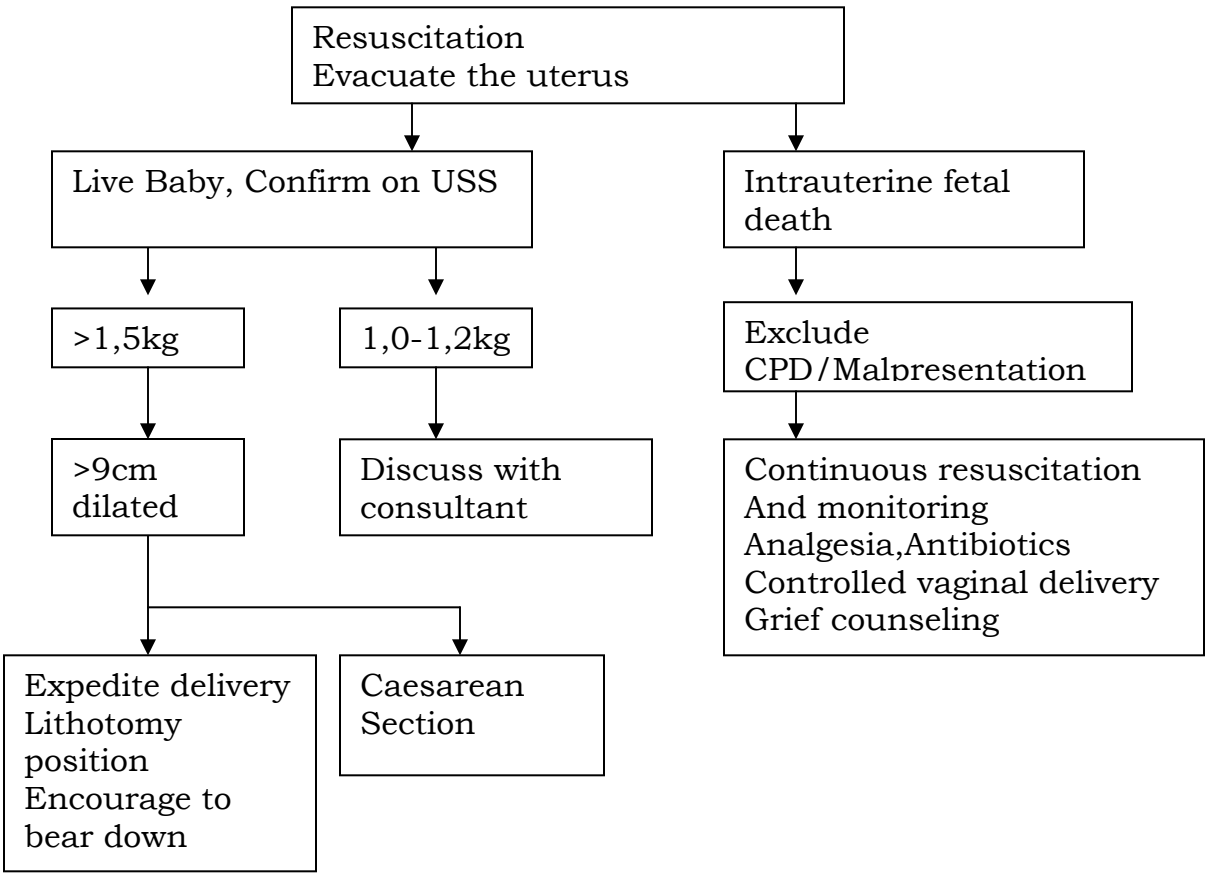
Senior Medical Officer to be involved at all times.
Discuss HIV + patients with the Consultant.



ECLAMPSIA


Call for help,and inform Consultant
Resuscitation –Clear and protect airway
Insert drip and foleys catheter
If fitting give Clonazepam 1mg IV slowly
Prevention of fits –MgSO4according to protocols
BP control-Labetalol 200mg in 200ml N/S@20ml/hr,maximum of 160mg/hr.or
Nifedipine 10mgPO
Investigation-FBC (Hb,PLT),U&E,LFT,ABG ect.
Assess the need for ventilation.
MODE OF DELIVERY
If
GCS>13/15
Less than 3 fit
Controlled BP
Platelets>100
Cervix favourable (Bishop>7
No other obstetric complications
Delivery imminent in the next 6-8 hrs
YES
NO
Vaginal delivery within 6-8 hrs
(Augmentation)
Caesarean section
Discuss with Anesthetists
Type of Anesthesia
Experienced
Surgeon/Anesthetists
Post delivery is equally important!!!
Intake/Output
MgSO4 for 24hrs
Optimise BP control.monitor biochemical profile

ABRUPTIO PLACENTAE



RESUSCITATION MANDATE:

0-2hrs: Crystalloids, R/Lactate at least 2L
Transfuse 2u blood urgently (total 4u PCD 2u as standard), 2u FDP

2-4hrs: AROM, Mefoxin 2g IVstat
Morphine 10-15 mg IM/IV

4-6hrs: If no progress, Oxyton cautiously

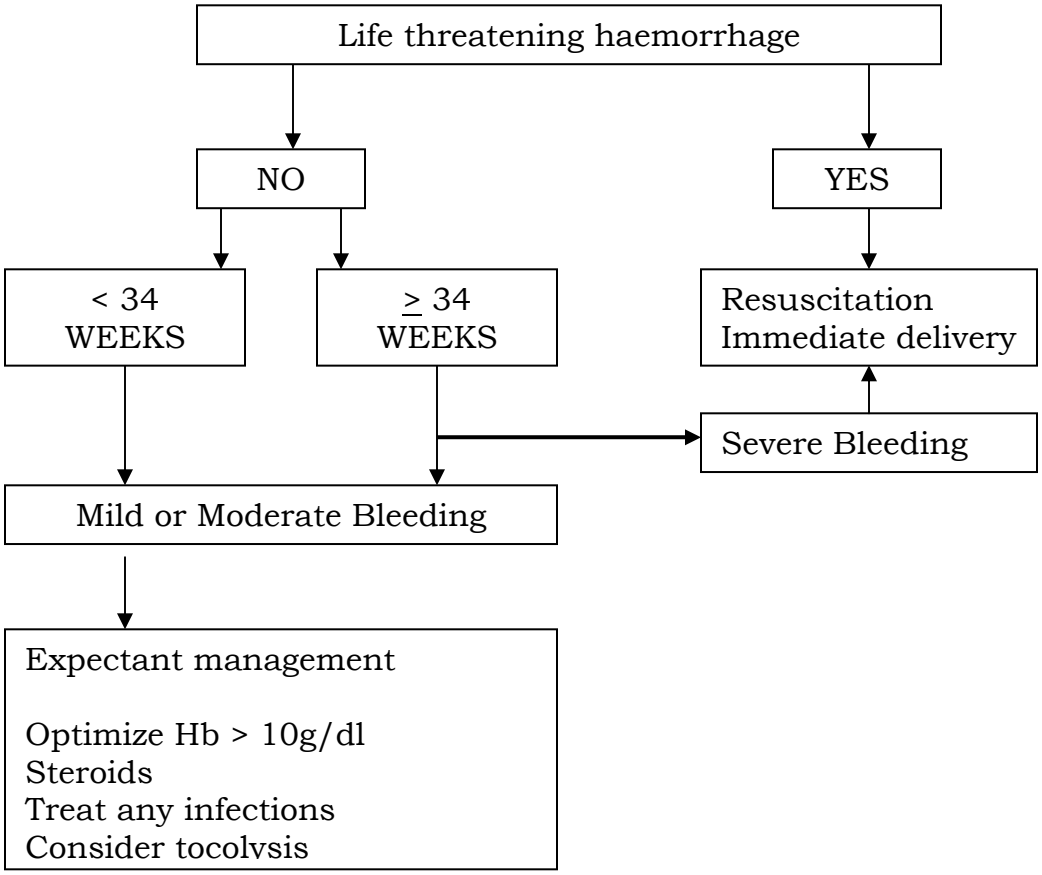
6-8hrs: If not fully dilated or ready to deliver, discuss with the consultant.

ALL CASES FOR OT MUST BE DISCUSSED
RESUSCITATION MUST BE CONTINUED AND MONITORED

PREVENTING OF POSTPARTUM HAEMORRRHAGE

Give Oxytocin 5u at delivery of anterior shoulder
Rub the uterus to effect contractions
Expell all the clots
Maintenance 40u oxytocin infusion in 1L R/Lactate at 30d /min
Consider rectal Misoprostol 600mcg explore the genital tract immediately after delivery
Repair any tears.
Pad checks hourly for 6-12 hrs

PLACENTA PRAEVIA

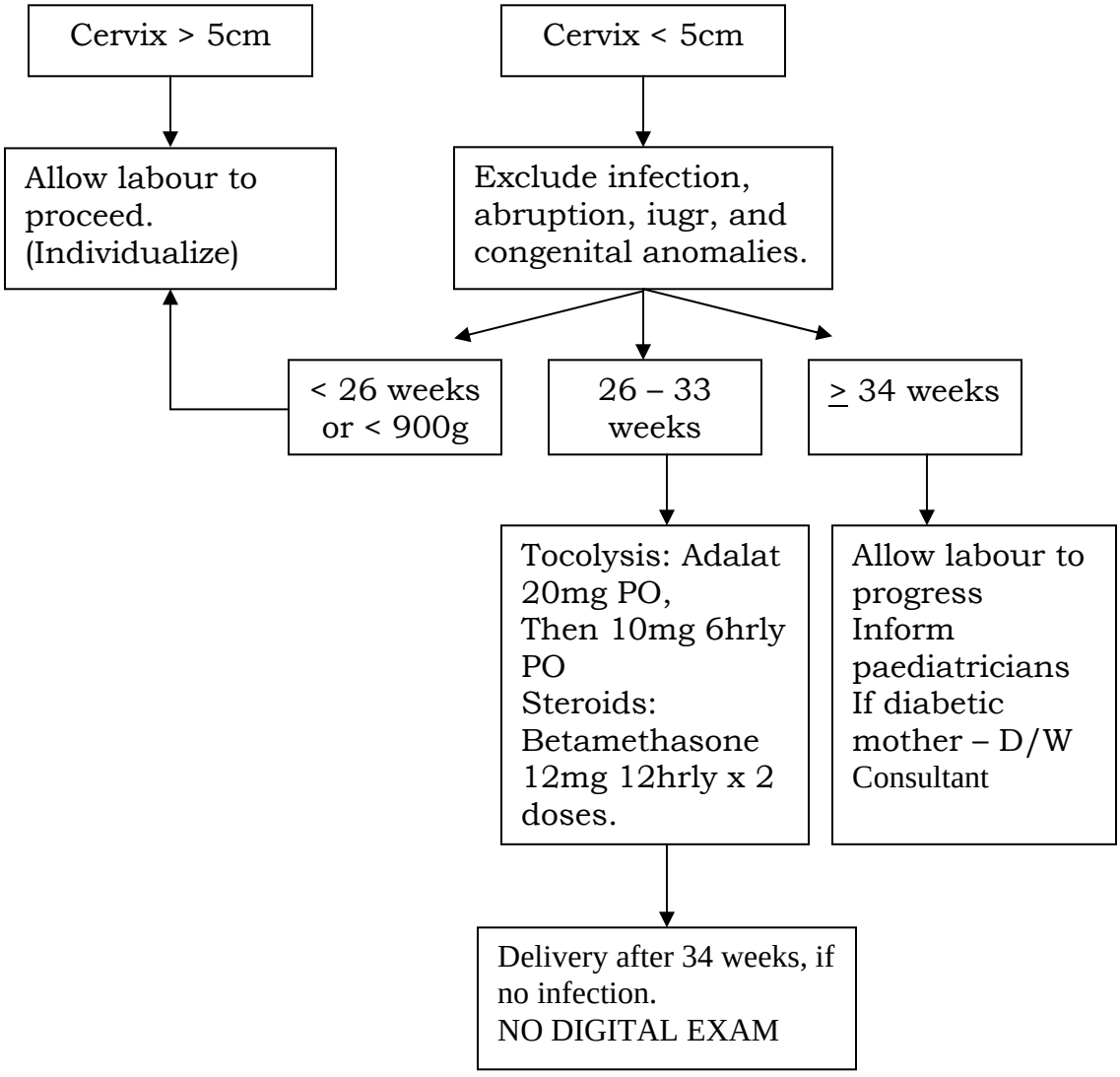


PREPARATION FOR CAESEREAN SECTION

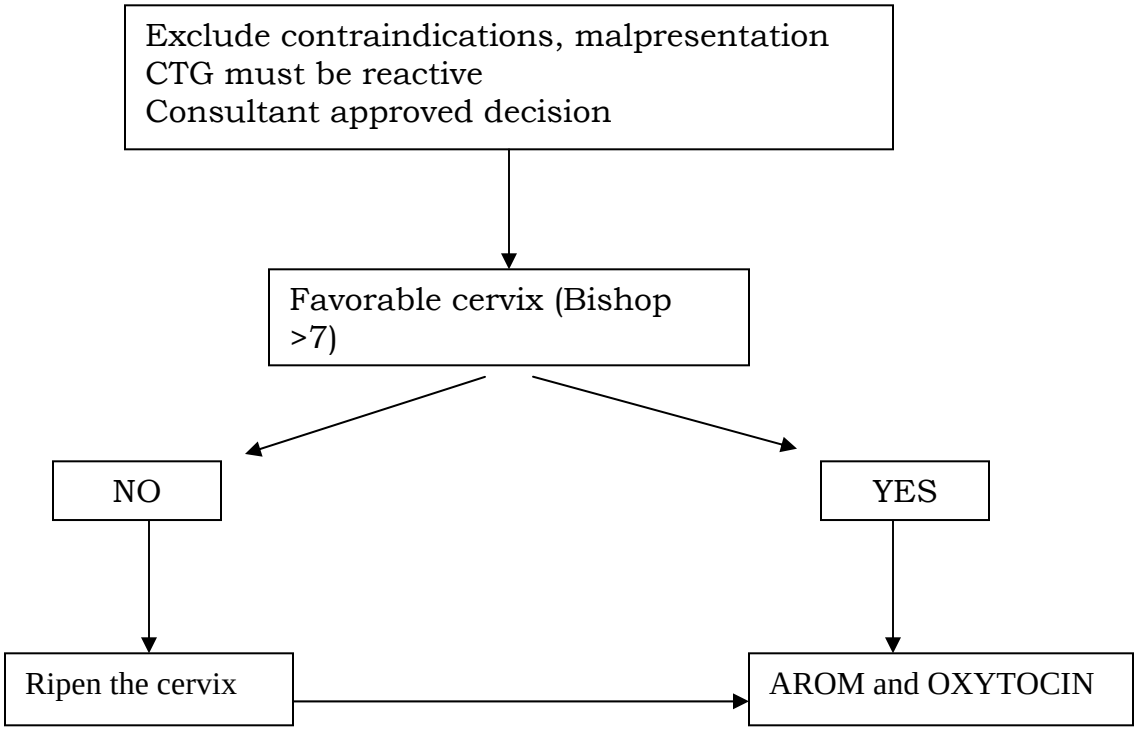
Resuscitate well before operation
Haemoglobin must be > 10g/dl
All patients must be typed and screened (T/S)
Discuss all patients with the senior anaesthetist
General anaesthesia is advisable
Consultants must be informed
Experienced surgeon to conduct the operation
Call for help in time if necessary.

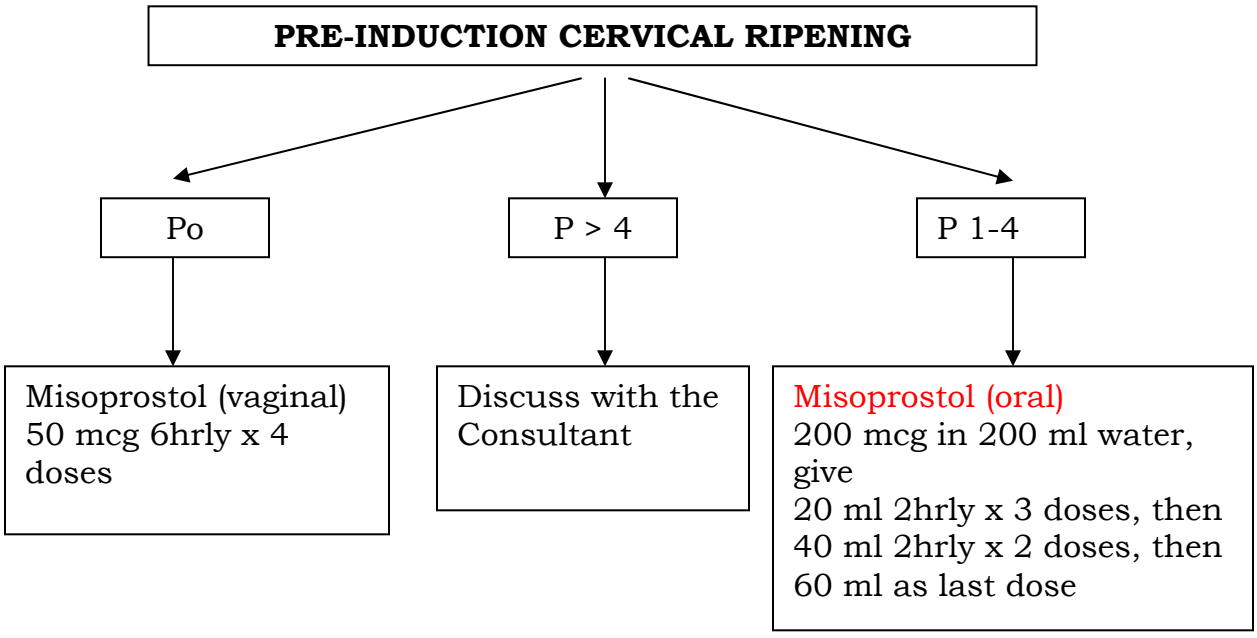
EVERY EFFORT MUST BE MADE AT ALL TIMES TO ASSESS FOR MORDID ADHERENCE BY MEANS OF SIMPLE DOPPLER COLOUR FLOW, IN THE ANTENATAL PERIOD.

PRETERM LABOUR



INDUCTION OF LABOUR





MALARIA PROTOCOL

ALWAYS consider malaria infection in patients with:

- Anaemia
- Fever
- Positive travel history

Preventive Measures:
Pregnant women should avoid going to malaria endemic areas but if it is unavoidable the following measures can be taken.

Non Medical

- Avoid the outdoors at dusk
- Use insecticides
- Wear long sleeved clothing
- Sleep under insecticide treated net (where possible)

Medical

- Chloroquine (in non resistant areas) OR
- Erythromycin 500mg QID a week before traveling, then throughout stay and for 4 weeks after the trip.

TREATMENT

Uncomplicated Malaria Infection (Hb ≤ 6g/dl, parasitaemia count < 5%):

- Admit to ward
- Quinine 600mg TDS PO or IV if cannot tolerate oral x 7 days
- 4 hrly HGT in first 24hrs
- Co-artemesin can be used as a second line of treatment

Complicated malaria Infection (Hb<6, parasitaemia count > 5%, low GCS, renal impairment, jaundice, spontaneous hypoglycemia, severe thrombocytopenia < 50 000):

- Admit to ICU
- Consult with the Physicians
- Insert: CVP, peripheral lines and urinary catheter
- Bloods: FBC, LFT, U&E, Glucose & clotting profile
- Correct any electrolyte imbalances
- Do an ECG and maintain on ECG machine for the loading dose
- Give Quinine IVI

Quinine	Dose
300mg/ vial to be diluted in 200ml 5% Dextrose	Loading dose: 1.2g over 4 hrs(=50ml/hr) After 8hrs:600mg over 4hrs Then 8 hourly x 1/52

- Monitor HGT 1 hourly
- ECG monitor
- Daily NST, if baby viable.

CONSIDERATIONS:

- IUGR
- SGA

ABNORMAL VAGINAL DISCHARGE

An attempt should be made to enquire about discharges on history and to use speculum to look for any lesion on the cervix.

Vaginal Candidiasis (itchy, cottage cheese discharge): Clomitrazole pessary 500mg PV stat.
Trichomoniasis (frothy, green, foul smelling): Metronidazole 400mg tds po x 7 days
Clomitrazole pessary 500mg PV stat, in the first trimester.

Gonorrhea/Chlamydia (mucopurelent discharge): Ceftriaxone 250mg IMI stat, then Erythromycin 500mg qid x 7 days.

If any difficulty in making a specific diagnosis syndromic approach will be acceptable:
Ceftriaxone 250mg imi stat
Metronidazole 400mg tds po x 7 days (Avoid in the 1st trimester)
Erythromycin 500mg qid po x 7 days

Ciprofloxacin and Doxycycline are contraindicated in pregnancy

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GENITAL ULCER DISEASE

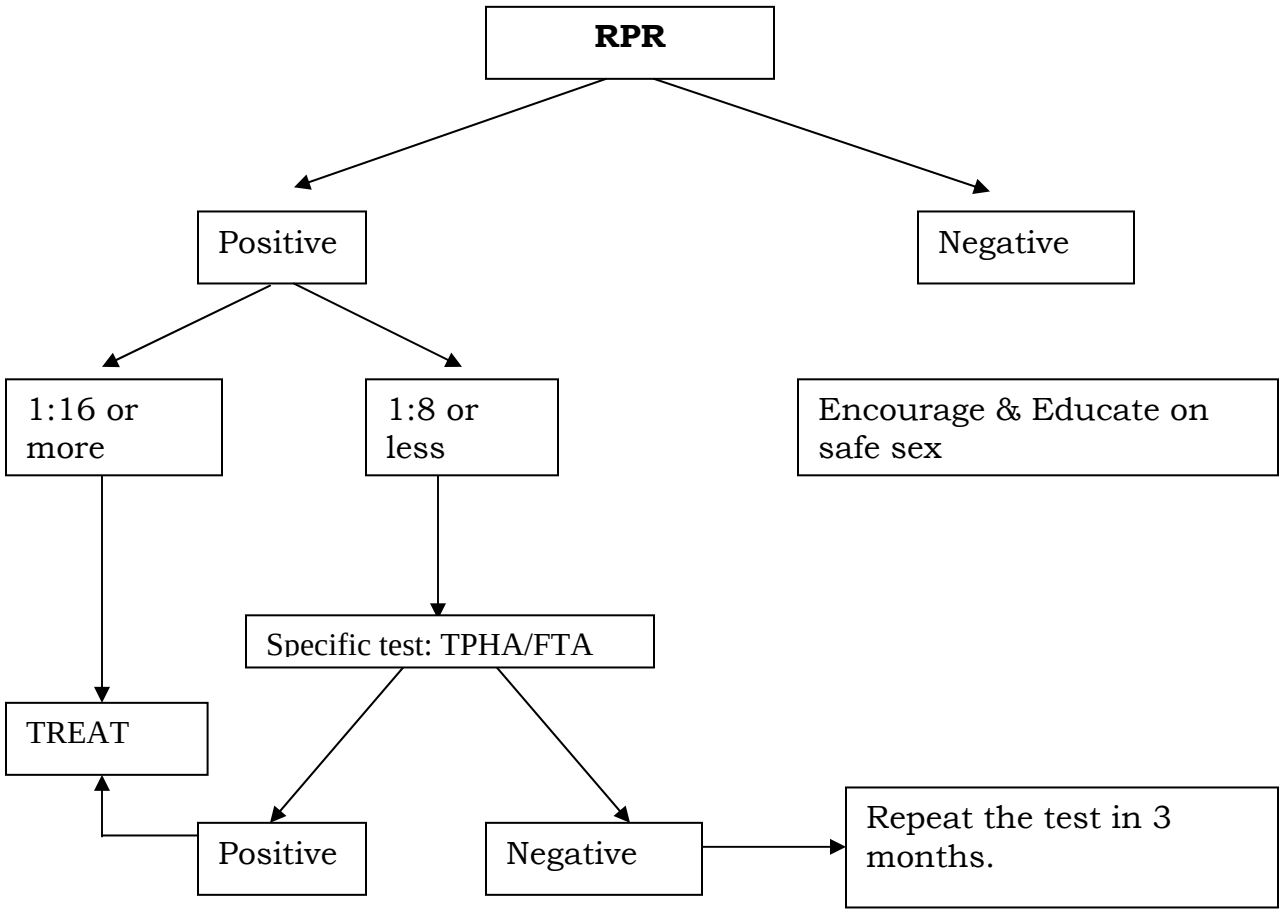
Exclude herpes genitalia
Do RPR, HIV
Give benzathine penicillin 2.4mu IMI stat, then Erythromycin 500mg qid po x 5 days
If granulomatous in nature – punch biopsy to exclude TB.

GENITAL WARTS

Do not treat them in pregnancy
Podophyllin is contra indicated in pregnancy.
Reassure the mother that the warts will be treated after pregnancy if they persist.
Consider ELCS, if the warts are big and obstructive.
Treat all infected warts.

SYPHYLLIS

It must be screened and treated routinely in the clinic**.**



TREATMENT:

Bicillin (benzyl penicillin) 2.4mu IMI weekly x 3 or

Procaine penicillin daily IMI x 10 doses (in patient). It is mainly for patients with no response to outpatient regimen and mothers in the late 3rd trimester without enough time to follow the outpatient regimen.

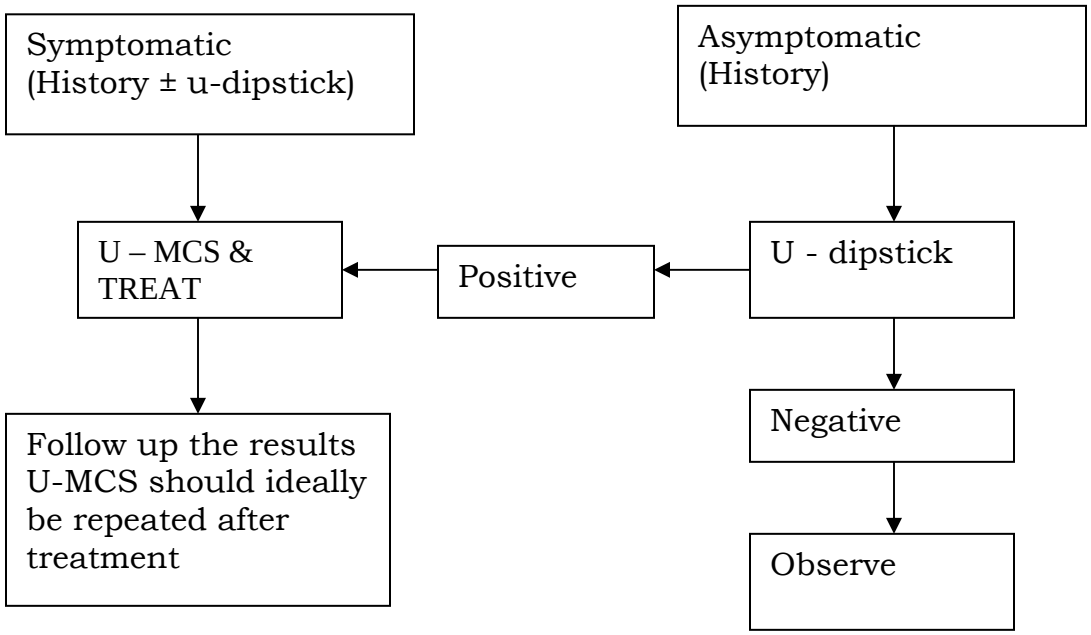
If allergic to penicillin, Erythromycin can be used, 500mg QID X 14 days.

Always screen for other sexually transmitted infections and offer syndromic management per protocols.

URINARY TRACT INFECTIONS

History is very important as part of screening.

Dipstick urine testing for protein, blood, leucocytes, and nitrites should be routine at antenatal visits.



TREATMENT: Nitrofurantoin 100mg QID X 7days PO or
Augmentin 375mg TDS X 7days PO

Encourage high oral fluid intake.

RECURRENT UTI:

Ensure that U-MCS results are reviewed and appropriate treatment is instituted.
Consider prophylaxis: Nitrofurantoin 100mg dly PO until delivery and/or
USS kidneys and ureters.
Bilharzias must be excluded in all cases of haematuria.

INDICATIONS FOR INTUBATION AND VENTILATION IN ECLAMPSIA

1. POOR AIRWAY MAINTANANCE
    a. OVERSEDATION
    b. LARYNGEAL OEDEMA
    c. EXTREMELY SWOLLEN & OBSTRUCTIVE TONGUE
2. POOR SATURATION ≤ 92 % ROOM AIR
    ≤ 95 % O2 MASK
3. LOW GLASCOW COMA SCALE ≤ 8
4. PULMONARY OEDEMA
5. METABOLIC ACIDOSIS
6. UNCOTROLLABLE SEIZURES
7. UNCONTROLLABLE HYPERTENSION
8. RESTLESSNESS - INDIVIDUALISE

PROTOCOL FOR MANAGEMENT AND TREATING HIGH SPINAL

1. Treat hypotension when BP Sy. <100mm Hg a 25%drop in the pre induction value.
2. Have a freely flowing i.v line 18G or better 16G
3. Must have O_2 and equipment for ventilation (anaesthetic machine) checked and ready.
4. Drugs for resuscitation eg. ephedrine, phenylephrine, Atropine, Sux, Thiopent. Should be kept on hand
5. Put a wedge below the right buttock (Vacuolitre) or tilt the table 15 degree to the left
6. Most of the so called high spinals are actually due to hypotension leading to hypoperfusion of the brain stem to cause respiratory arrest

SIGNS OF HIGH SPINALS

- Difficult in breathing
- Difficult in speaking
- Weakness and tingling sensations in the upper limbs
- Nausea and vomiting
- Dizziness

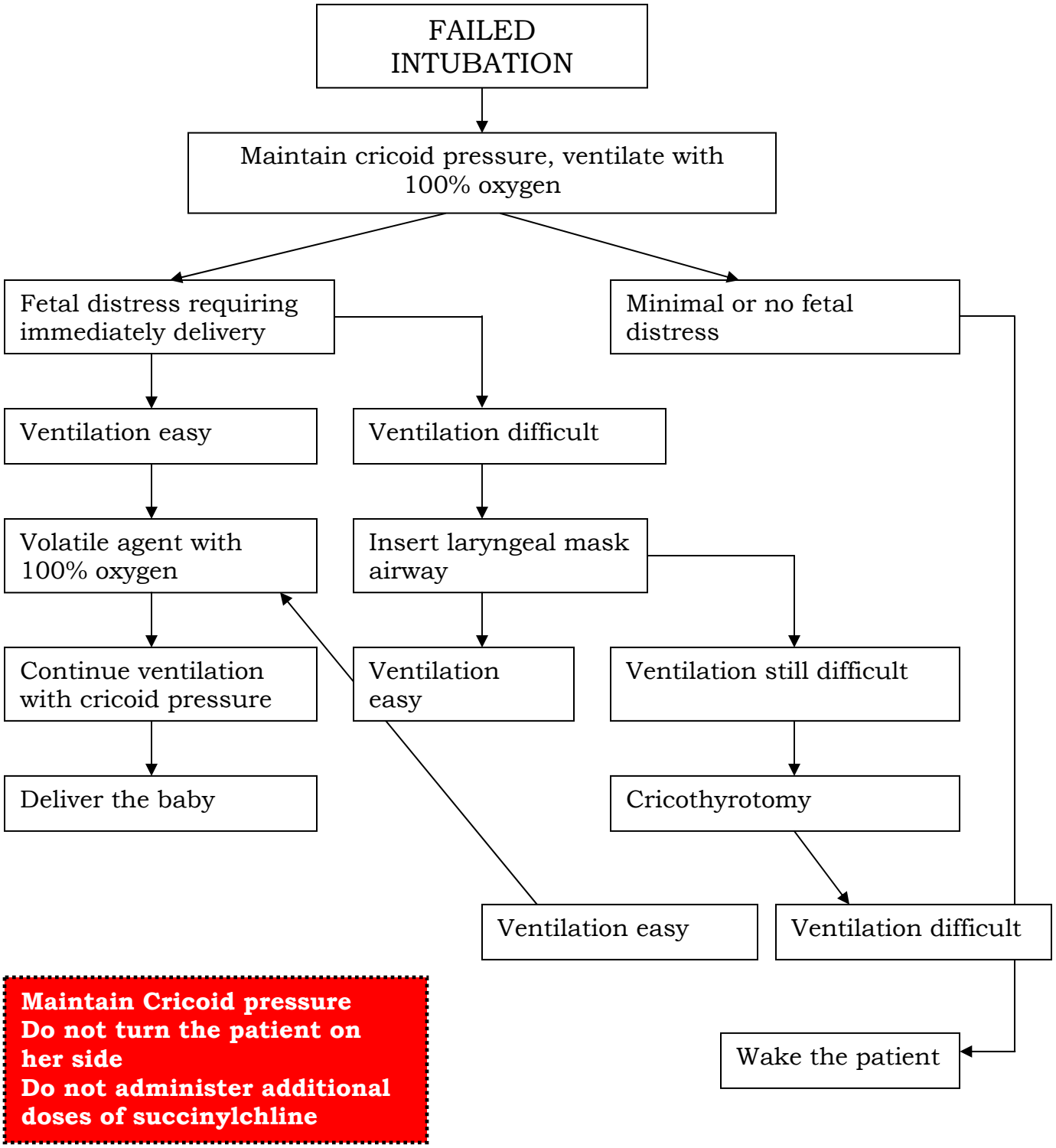
IN EVENT OF HIGH SPINAL

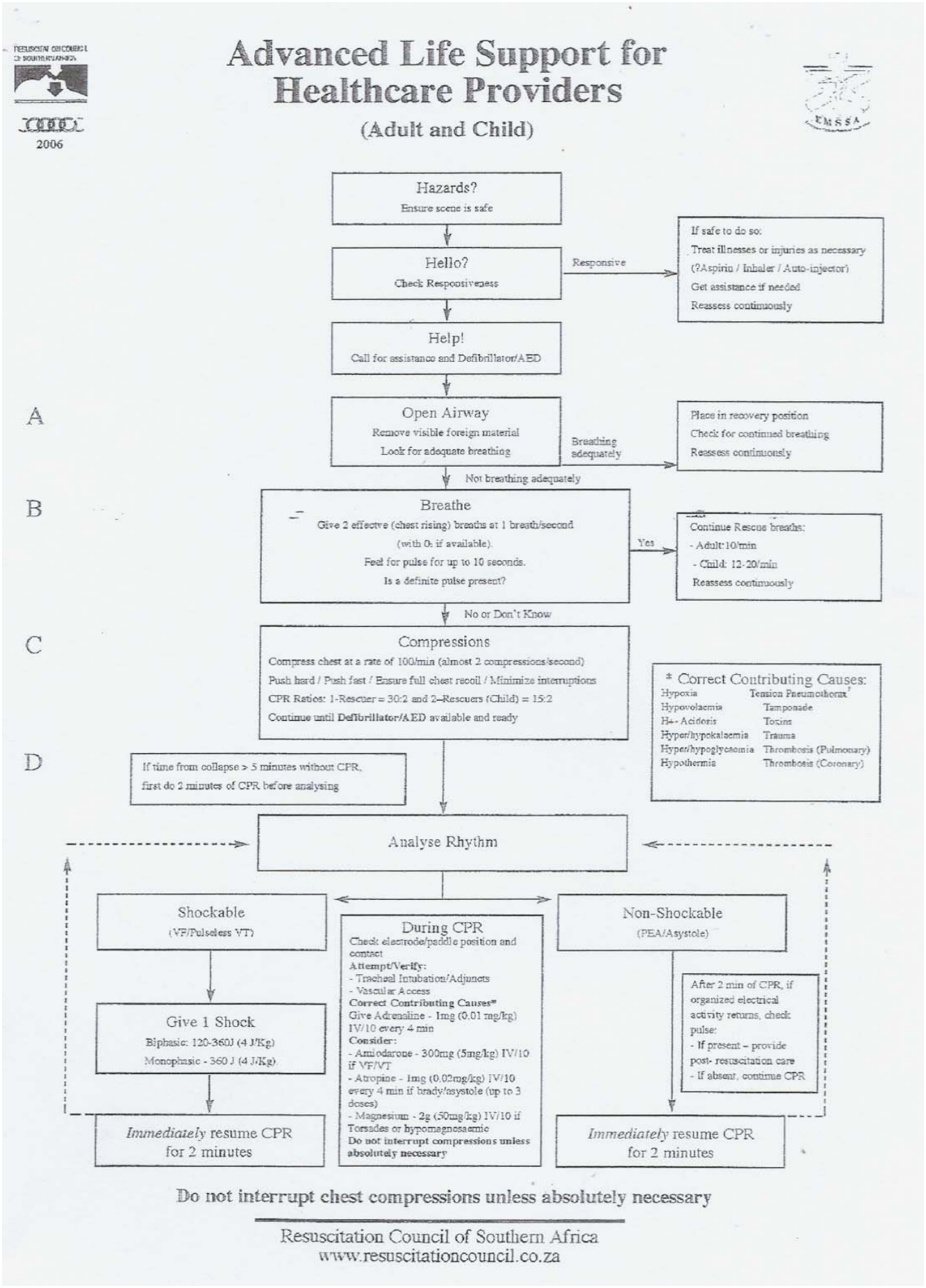
1. Treat hypotension immediately with Vasopressors: ephedrine 5-10mg ivi bolus. Repeat every 2-3min until BP normalizes, Or use phenylephrine 50-100 microgramme, OR Adrenalin 5 microgramme i.v bolus.
2. Increase i.v fluid rate
3. Give supplementary 0_2 by face mask. If patient unable to breath then give IPPV with 100% O_2 with face mask (Assistant to give cricoid pressure in case of a pregnant patient)
4. If there is no improvement then secure airways by intubation. Give small doses of Thiopentone 3mg/kg OR propofol 1-2mg/Kg followed by suxamethonium 1mg/Kg
5. Continue vasopressors till BP stabilizes
6. Ensure that patient is adequately sedated/anaesthetized while being ventilated

DRUG DILUTION

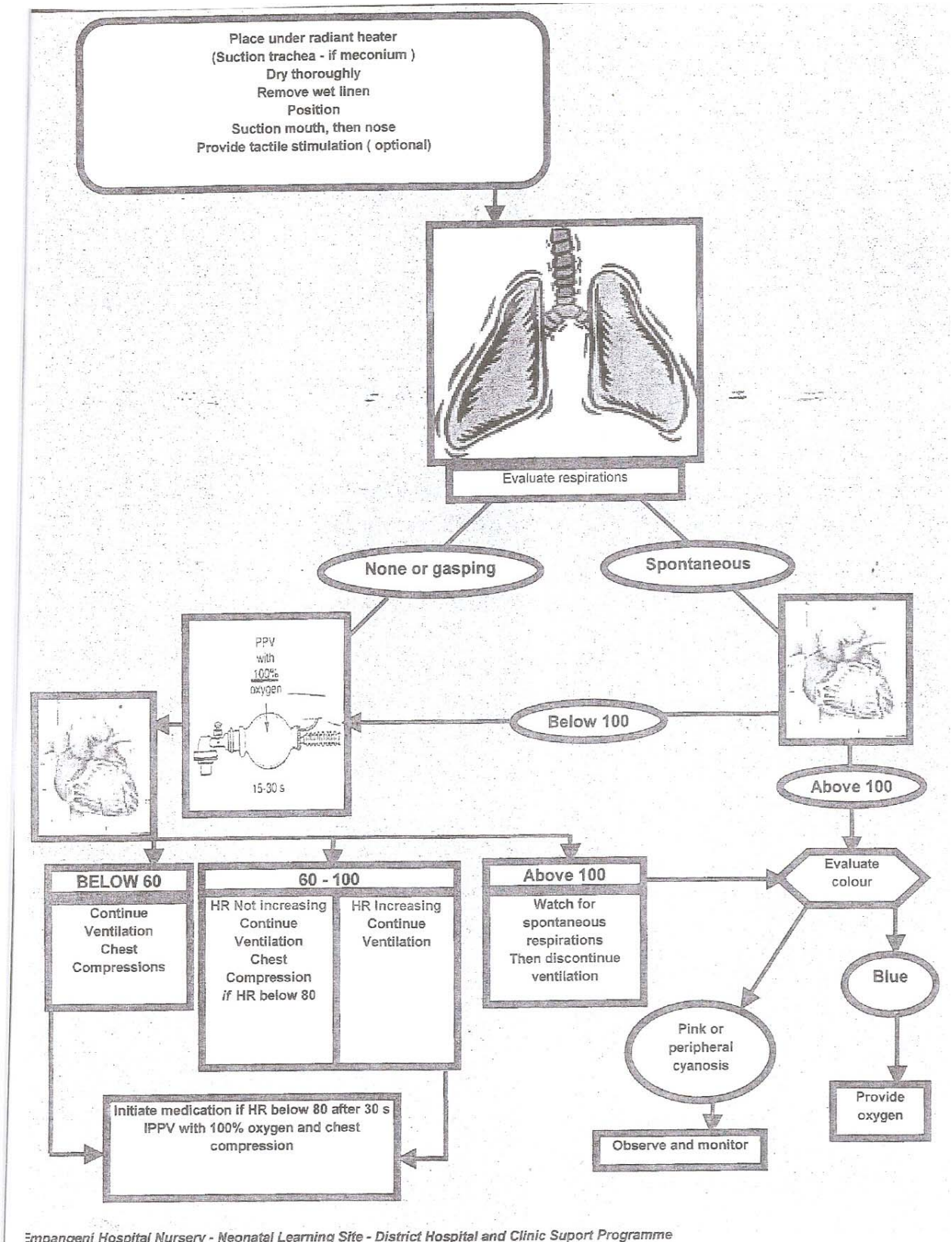
1. Ephedrine:50mg in 1ml ampoule diluted to 10ml with water for injection =5mg/ml
2. Phenylephrine:10mg ampoule in 200ml of NS=50microgramme/ml
3. Adrenaline:1mg ampoule in 200ml of NS =5microgramme/ml

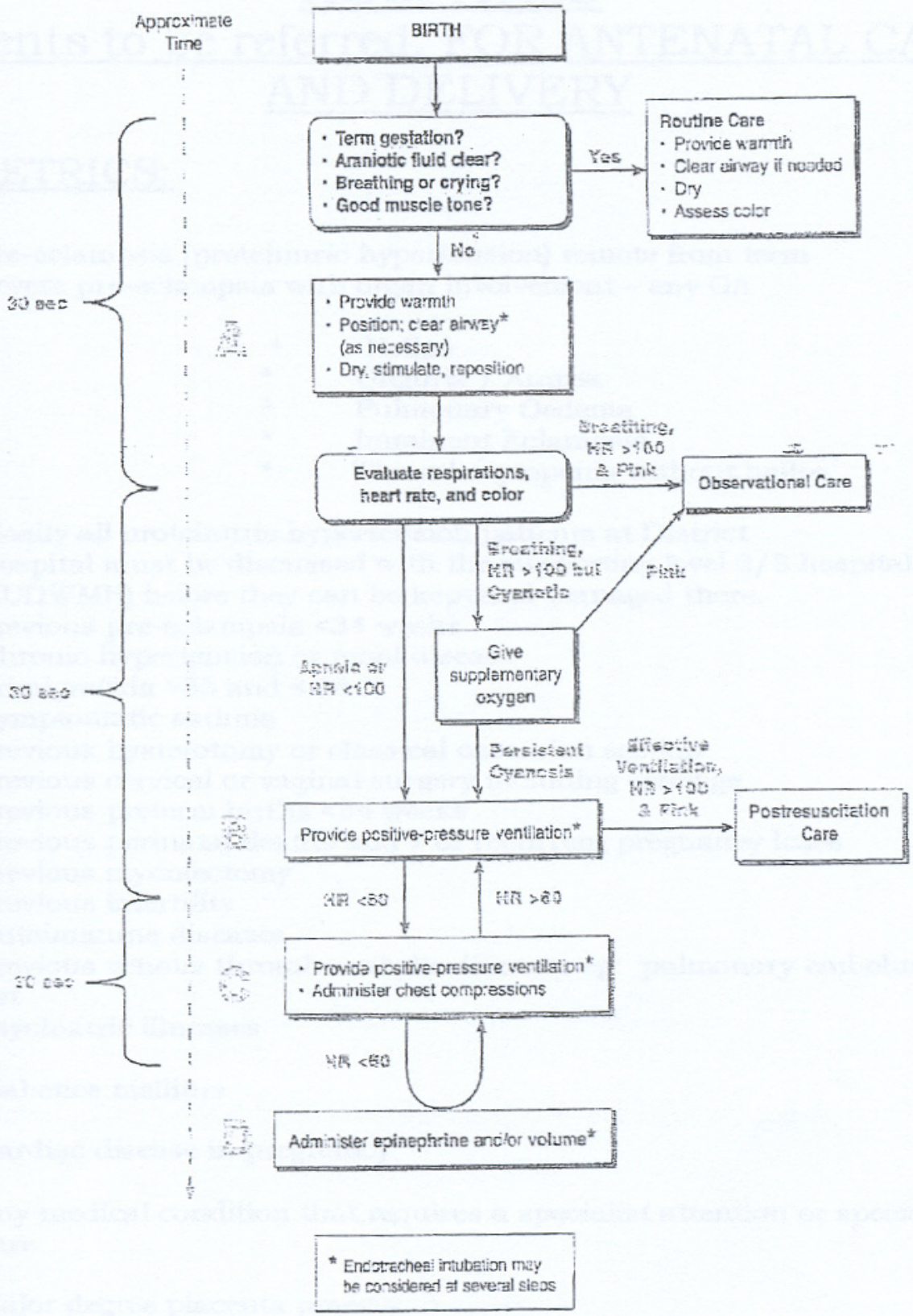
MANAGEMENT OF FAILED INTUBATION




Advanced Life Support for Healthcare Providers
(Adult and Child)
2006
Hazards?
Ensure scene is safe
Hello?
Check Responsiveness
Responsive
If safe to do so:
Treat illnesses or injuries as necessary
(?Aspirin / Inhaler / Auto-injector)
Get assistance if needed
Reassess continuously
Help!
Call for assistance and Defibrillator/AED
A
Open Airway
Remove visible foreign material
Look for adequate breathing
Breathing adequately
Place in recovery position
Check for continued breathing
Reassess continuously
Not breathing adequately
B
Breathe
Give 2 effective (chest rising) breaths at 1 breath/second
(with O2 if available).
Feel for pulse for up to 10 seconds.
Is a definite pulse present?
Yes
Continue Rescue breaths:
- Adult: 10/min
- Child: 12-20/min
Reassess continuously
No or Don't Know
C
Compressions
Compress chest at a rate of 100/min (almost 2 compressions/second)
Push hard / Push fast / Ensure full chest recoil / Minimize interruptions
CPR Ratios: 1-Rescuer = 30:2 and 2-Rescuers (Child) = 15:2
Continue until Defibrillator/AED available and ready
* Correct Contributing Causes:
Hypoxia
Hypovolaemia
H+ Acidosis
Hyper/hypokalaemia
Hyper/hypoglycaemia
Hypothermia
Tension Pneumothorax
Tamponade
Toxins
Trauma
Thrombosis (Pulmonary)
Thrombosis (Coronary)
D
If time from collapse > 5 minutes without CPR,
first do 2 minutes of CPR before analysing
Analyse Rhythm
Shockable
(VF/Pulseless VT)
Give 1 Shock
Biphasic: 120-360J (4 J/Kg)
Monophasic - 360 J (4 J/Kg)
Immediately resume CPR for 2 minutes
During CPR
Check electrode/paddle position and contact
Attempt/Verify:
- Tracheal Intubation/Adjuncts
- Vascular Access
Correct Contributing Causes*
Give Adrenaline - 1mg (0.01 mg/kg) IV/10 every 4 min
Consider:
- Amiodarone - 300mg (5mg/kg) IV/10 if VF/VT
- Atropine - 1mg (0.02mg/kg) IV/10 every 4 min if brady/asystole (up to 3 doses)
- Magnesium - 2g (50mg/kg) IV/10 if Torsades or hypomagnesaemic
Do not interrupt compressions unless absolutely necessary
Non-Shockable
(PEA/Asystole)
After 2 min of CPR, if organized electrical activity returns, check pulse:
- If present – provide post- resuscitation care
- If absent, continue CPR
Immediately resume CPR for 2 minutes
Do not interrupt chest compressions unless absolutely necessary
Resuscitation Council of Southern Africa
www.resuscitationcouncil.co.za

OVERVIEW OF RESUSCITATION IN THE DELIVERY ROOM




Approximate Time
BIRTH
• Term gestation?
• Amniotic fluid clear?
• Breathing or crying?
• Good muscle tone?
Yes
Routine Care
• Provide warmth
• Clear airway if needed
• Dry
• Assess color
No
30 sec
• Provide warmth
• Position; clear airway* (as necessary)
• Dry, stimulate, reposition
Evaluate respirations, heart rate, and color
Breathing, HR >100 & Pink
Observational Care
Breathing, HR >100 but Cyanotic
Pink
Apnea or HR <100
Give supplementary oxygen
30 sec
Persistent Cyanosis
Effective Ventilation, HR >100 & Pink
Provide positive-pressure ventilation*
Postresuscitation Care
HR <60
HR >60
• Provide positive-pressure ventilation*
• Administer chest compressions
30 sec
HR <60
Administer epinephrine and/or volume*
* Endotracheal intubation may be considered at several steps

REFERRAL: FOR CLINIC AND DISTRICT HOSPITALS

Patients to be referred: FOR ANTENATAL CARE AND DELIVERY

OBSTETRICS:

- Pre-eclampsia (proteinuric hypertension) remote from term
- Severe pre-eclampsia with organ involvement – any GA

PET:

- Hellps
- Oliguria / Anuria
- Pulmonary Oedema
- Imminent Eclampsia
- Thrombocytopenia without hellps

- Ideally all proteinuric hypertension patients at District
- Hospital must be discussed with the supporting level 2/3 hospital (LUDWMH) before they can be kept and managed there.
- Previous pre-eclampsia <34 weeks
- Chronic hypertension or renal disease
- Primigravida >35 and <16
- Symptomatic asthma
- Previous hysterotomy or classical caesarian section
- Previous cervical or vaginal surgery including cerclage
- Previous preterm births <34 weeks
- Previous perinatal deaths and / or recurrent pregnancy loses
- Previous myomectomy
- Previous infertility
- Autoimmune diseases
- Previous venous thromboembolic diseases eg: pulmonary embolus, dvt
- Psychiatric illnesses
- diabetics mellitus
- Cardiac disease in pregnancy
- Any medical condition that requires a specialist attention or specialized care
- Major degree placenta praevia
- Minor degree placenta praevia - small baby (premature)
  Previous scared uterus

- Any patient who is an anaesthetic risk eg.
    - Short neck
    - Kyphoscoliosis
    - Morbidly obese (wt >105kg)
- Abruption placentae with IUFD
- Complicated Eclampsia
    - Low GCS
    - Abn blood results
    - Restlessness
    - Oliguira / Anuria
    - Multiple seizures (x3)

- Preterm labour (ptl) < 32 weeks
- Premature rupture of membranes (prom) < 32 weeks –
- Any gestation with suspected AFIS
- Pueperial sepsis – might require surgical intervention

CASES THAT CAN BE ANTENATAL AT LOCAL CLINIC BUT DELIVERED AT HOSPITAL

- Primigravidas
- Previous post partum haemorrhage
- Previous LSCS
- Parity >5

All other cases can be discussed with the consultant at the referral centre on continuous bases.

Gynaecological Referral

Septic miscarriage – sick

TOP with co-existing medical disease as eg. cardiac

Abdomino-pelvic masses

Malignancy – Ovarian + Endometruim
Early cervical cancer
Clinically stage iib or more
Must be booked directly at IALCH (Durban)

All colposcopy cases – if not offered at the referring centre.

Urogynaecology and pelvic floor cases

- Incontinence
- VVF
- Fistulae
- Pelvic organ prolapse (pop)
- 3rd degree tears

Infertility and recurrent pregnancy losses

THESE ARE GUIDELINES; PROBLEM CASES CAN BE DISCUSSED ON CONTINIOUS BASES, WITH THE REFERRAL HOSPITAL.

REFERRAL CENTRE:

LUDWM HOSPITAL	:	(035) 9077000
HRC	:	(035) 9077176
LABOUR WARD	:	(035) 9077132
GOPD	:	(035) 9077158
SPECIALIST CLINIC	:	(035) 9077160 (MONDAY / TUESDAY)
EMERGENCY CALL	:	(035) 9077011

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29 UNION STREET
PRIVATE BAG X20005
EMPANGENI
3880
allen.kambaran@kznhealth.gov.za
http://healthweb.kznhealth.gov.za/luwmhospital.htm