A quick guide to management of clients at the High Risk Obstetrics Clinic at Tygerberg Hospital.

- The high risk clinic is the **only specialist referral clinic** for pregnant clients from the Metro East health district of Cape Town. Within this drainage, there are several Basic Antenatal Care clinics [BANC] (they only do first bookings, and follow up of low-risk pregnant women); 8 Midwife Obstetric Units [MOUs] (they conduct deliveries of low-risk women as well as antenatal and postnatal care for low risk women), one small district hospital (Helderberg [HH]) and two larger district hospitals (Khayelitsha [KDH] and Karl Bremer [KBH]) that have 24 hour caesarean section [CS] capabilities.
- The maternity service is **regionalised**, meaning that low risk women are managed at clinic level, intermediate (Level 1) risk woman are managed at medical officer level (district hospitals) and high risk (level 2) woman (specialist referrals) are managed at Tygerberg high risk clinic. Women needing subspecialist (tertiary)/Level 3 care are managed at special clinics (fetal medicine, special care, diabetic clinic or cardiac clinic).
- Care is sometimes shared between levels, with only key visits at the high risk clinic (this is explained in each protocol).

The different levels of care is explained in appendix A.

Write the level of care for Antenatal care and Delivery on the **front page** of the Maternity Case Record (note that this can change during the antenatal period):

LEVEL OF CARE	
Antenatal clinic:	**Delivery site:**
Transport when in labour:	

- All **level 1 patients must be referred to their nearest clinic** for follow up visits. **High risk (level 2)** and **Special care (level 3 patients)** are followed up at **Tygerberg Hospital**.
- **Level 2 patients residing outside of metro east** can be followed at the outreach clinics of the regional hospitals (Paarl or Worcester). This information must appear on the antenatal card.
- **Level 3 patients from rural towns** can be seen at the rural outreach clinics in conjunction with their local health care workers (outreach specialist clinics) as long as there is a clear plan from TYGERBERG HOSPITAL regarding follow up and delivery noted on the antenatal card.

All the clinics in the drainage area is available in appendix B.

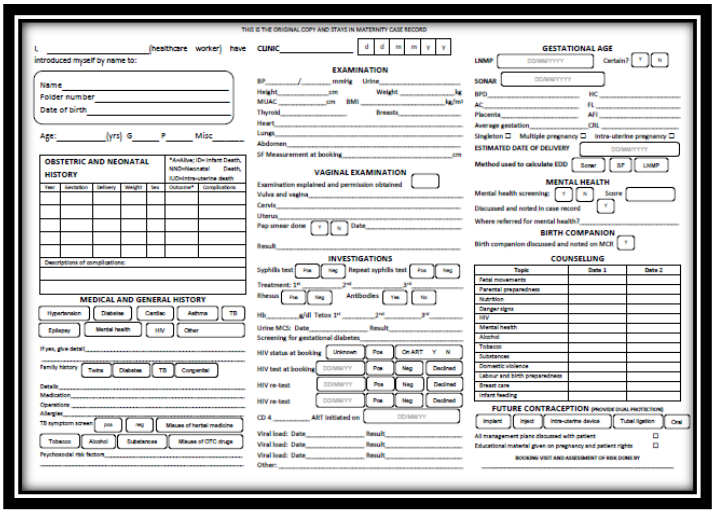
- ALL PREGNANT PATIENTS must have a maternity case record [MCR] that remains with the patient when she goes home. Please remind the patient to keep the record with her at all times and to bring it with her to the hospital or clinic.

When you receive a file for a patient to see, proceed as follows:

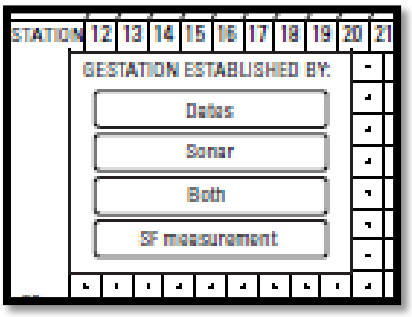
1. Read the observations on the **triage form** and check for major complaints/abnormal observations.

The triage form is shown on page 7

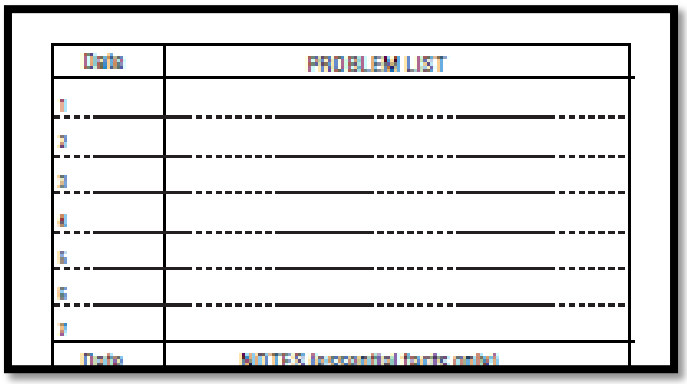
2. Calculate the current gestation correctly **[Ultrasound policy]**; the quickest way is usually by using the EDD of a formal early ultrasound report (<24 weeks). DO THIS WITH every visit, do not rely on the previous calculations.
3. Read/complete **page 10 of the MCR** to determine/calculate the risk(s):
    - Age
    - Gravidity and parity
    - Previous obstetrical history
    - Medical and surgical history
    - Check that a general examination was done and documented (thyroid/breasts/lungs/heart etc). It is only necessary to do this once; if it was not done before do it with this visit and document on this page. It is not required to do a full general examination with every clinic visit; only do this when there are major complaints/abnormal observations or if this is an emergency admission.
    - Calculate BMI correctly **[BMI protocol]**
    - Check that all investigations were done and results available (Rh, Hb, HIV, Syphilis, U-MCS etc) and repeat according to protocol (syphilis at ~32 weeks, HIV with every visit, viral load if HIV positive).
    - Page 10 looks like this:



4. Now go to **page 11** of the MCR: This page **must be completed** with every visit!
    - Plot the current gestation on the antenatal card and write the date on top.
    - If not done before, use this box to indicate which method was used to calculated the gestation:



    - Read the PROBLEM LIST to determine the reason for referral. Also, read all previous notes to see if there are additional problems/previous admissions etc. **At the end of the consultation, update this list to reflect the current situation:**



5. Now call the patient, introduce yourself, and ask about her well-being and any current complaints.
6. Plot the SF measurement, presenting part, head above brim, BP and urine results, Hb and fetal movements **on page 11.**
7. **Deal with the presenting complaint(s) according to the appropriate protocols/guidelines or advice from senior colleagues (see p5 for list of major problems).**
8. **Determine an appropriate follow up date at the correct level of care. (Use the care Pathway on p8)**

- All women will come to you with a route slip on the front of their folder. The complete route slip must accompany her to the clerk for a follow up booking.

The route slip is explained on page 6

9. On note keeping: **[policy on note keeping]**
    - **Make sure p10 and p11 is complete. Do not repeat** information already available on p10 and p11 (e.g. age, gravidity, parity, gestation etc) in your additional notes; **only write additional** notes on the presenting complaint, management and follow up plan in the space provided (page 12 or 13 of the MCR- use one block per visit). If this space is already full, use p17).

- **Write the DATE, TIME, PLACE SEEN (HRC) as well as your NAME (clearly written), rank and HPCSA number.** Student notes must include the rank (e.g. SI) as well as a signature from a registered doctor.
- Make cryptic duplicate notes on the **triage form** (this is captured on ECM). This serves as a record of the visit as well as provide backup in case the hand-held MCR is lost. Place these notes in the hospital folder, not in the MCR. Do not discard this page!

Staple any sonar reports to **page 16** and write the measurements in the space provided on page 11 in the GESTATIONAL AGE block.

With EVERY visit:

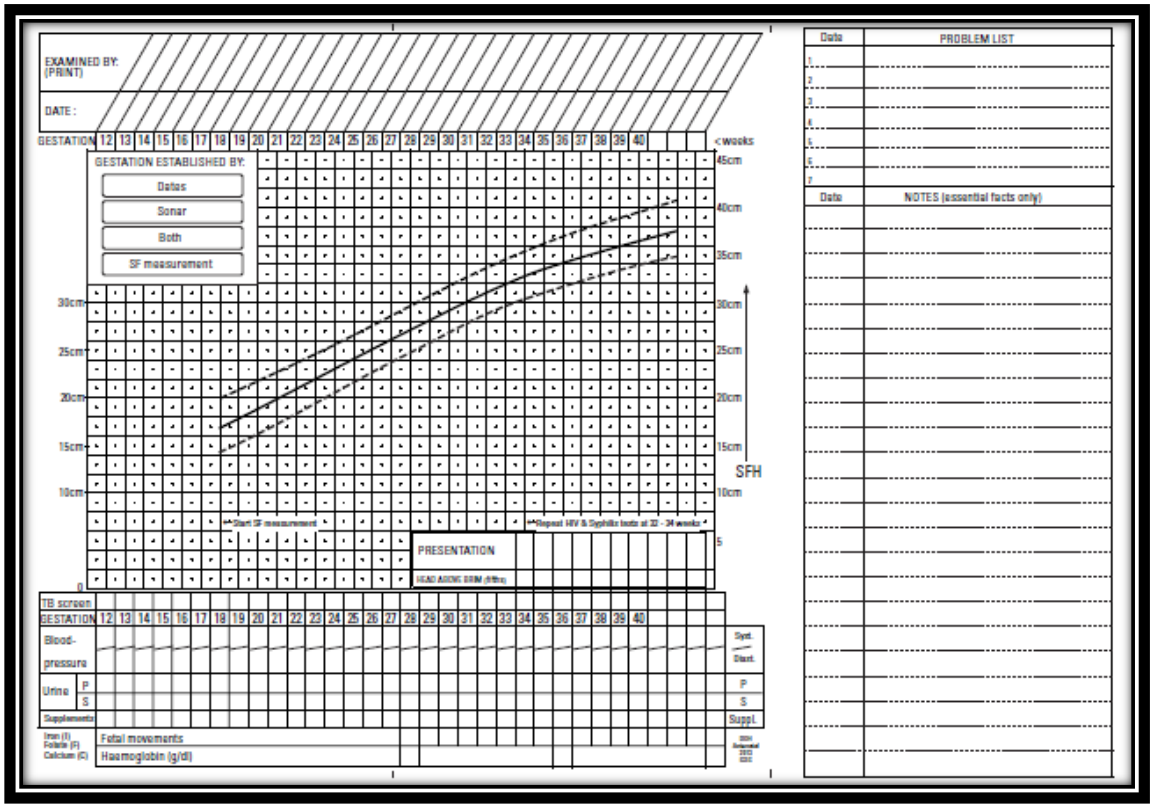
Educate on danger signs and symptoms of pregnancy (use p2 of the MCR for a visual guide):

- Severe headache
- Abdominal pain (not discomfort)
- Drainage of liquor from the vagina
- Vaginal bleeding
- Reduced fetal movements

- Ensure that all medication are used correctly and the patient has enough till her next visit

  The following must be given to all pregnant women:
  - Ferrous sulphate tablets 200 mg daily, to prevent anaemia
  - Folic acid tablets 5 mg daily.

Page 11 looks like this:



Major complaints/conditions

The most important problems seen at the HRC are as follows; please use the appropriate protocol on management (protocols also available at http://www.obstyger.co.za/Protocols.html):

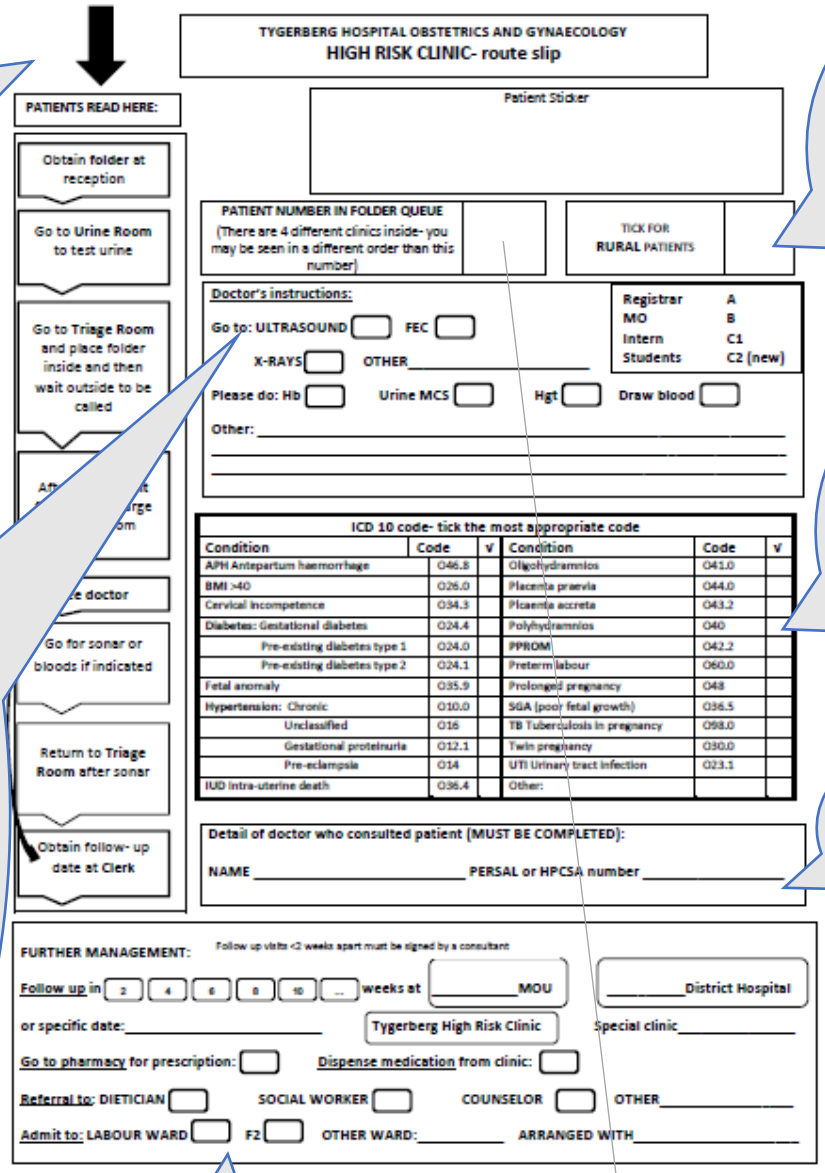
- Increased BMI **[BMI protocol]**
- Hypertensive diseases in pregnancy **[HDP protocol]**
- Gestational diabetes **[Diabetes in pregnancy protocol]**
- Uncomplicated twin pregnancy **[DCDA twin protocol]**
- Risk for preterm labour [Risk for preterm labour protocol]
- Poor growth with normal Doppler **[SGA protocol]**
- Abnormal Doppler **[Abnormal Doppler protocol]**
- Advanced maternal age **[Ultrasound policy]**
- Booking for CS **[CS policy]**
- Induction of labour **[IOL protocol]**

A note on the MINOR complaints of pregnancy [guide to minor discomforts in pregnancy]

Most women will complain about some of the minor complaints. It is important to listen to her, counsel on appropriate advice and re-assurance that this will get better after the pregnancy. It is not needed to document all of these complaints in your notes, but distinguish the minor (physiological) complaints from serious conditions.

Gastro-oesophageal reflux / heartburn
Varicose veins and leg oedema
Carpel tunnel syndrome
Haemorrhoids
Leg cramps
Nausea and vomiting
Sleep disturbance
Vaginal discharge
Pelvic girdle and low back pain

ROUTE SLIP



TYGERBERG HOSPITAL OBSTETRICS AND GYNAECOLOGY
HIGH RISK CLINIC- route slip

PATIENTS READ HERE:

Obtain folder at reception

Go to Urine Room to test urine

Go to Triage Room and place folder inside and then wait outside to be called

Go for sonar or bloods if indicated

Return to Triage Room after sonar

Obtain follow- up date at Clerk

Patient Sticker

PATIENT NUMBER IN FOLDER QUEUE
(There are 4 different clinics inside- you may be seen in a different order than this number)

TICK FOR RURAL PATIENTS

Doctor's instructions:

Go to: ULTRASOUND FEC
X-RAYS OTHER
Please do: Hb Urine MCS Hgt Draw blood
Other:

Registrar	A
MO	B
Intern	C1
Students	C2 (new)

ICD 10 code- tick the most appropriate code

Condition	Code	√	Condition	Code	√
APH Antepartum haemorrhage	O46.8		Oligohydramnios	O41.0	
BMI >40	O26.0		Placenta praevia	O44.0	
Cervical incompetence	O34.3		Placenta accreta	O43.2	
Diabetes: Gestational diabetes	O24.4		Polyhydramnios	O40	
Pre-existing diabetes type 1	O24.0		PPROM	O42.2	
Pre-existing diabetes type 2	O24.1		Preterm labour	O60.0	
Fetal anomaly	O35.9		Prolonged pregnancy	O48	
Hypertension: Chronic	O10.0		SGA (poor fetal growth)	O36.5	
Unclassified	O16		TB Tuberculosis in pregnancy	O98.0	
Gestational proteinuria	O12.1		Twin pregnancy	O30.0	
Pre-eclampsia	O14		UTI Urinary tract infection	O23.1	
IUD Intra-uterine death	O36.4		Other:		

Detail of doctor who consulted patient (MUST BE COMPLETED):

NAME PERSAL or HPCSA number

FURTHER MANAGEMENT: Follow up visits <2 weeks apart must be signed by a consultant

Follow up in 2 4 6 8 10 ... weeks at MOU District Hospital
or specific date: Tygerberg High Risk Clinic Special clinic
Go to pharmacy for prescription: Dispense medication from clinic:
Referral to: DIETICIAN SOCIAL WORKER COUNSELOR OTHER
Admit to: LABOUR WARD F2 OTHER WARD: ARRANGED WITH

This explains the flow through the clinic

Rural patients are seen first, as they are dependent on transport.

You must tick one ICD-10 code. A complete list of codes is on the notice board

Your name and HPCSA number is compulsory

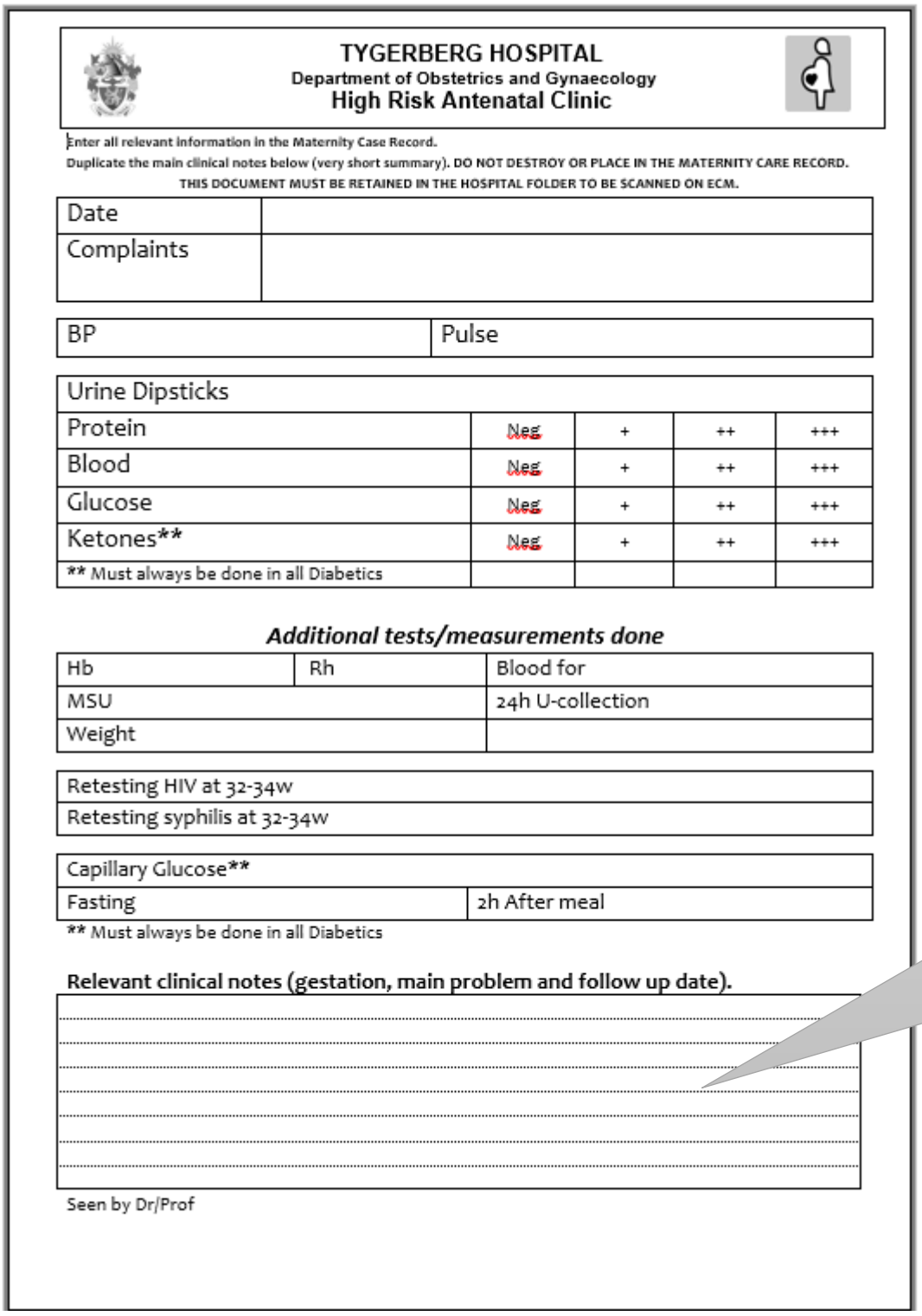
Tick here if a patient has to go to sonar or fetal evaluation clinic. KEEP THE ROUTE SLIP IN THE CLINIC on the front counter so that you know she is still coming back. On return, put the route slip back on the folder

See local patients with lowest number first.

Complete this part (further management) in full. Make sure follow-up date is at the correct gestation and clinic or hospital. DO not automatically make a booking for Tygerberg- first check is the client can be managed at another level of care.

TRIAGE FORM

All women will be triaged by the sisters first. They will come to you with this form completed:



TYGERBERG HOSPITAL
Department of Obstetrics and Gynaecology
High Risk Antenatal Clinic

Enter all relevant information in the Maternity Case Record.
Duplicate the main clinical notes below (very short summary). DO NOT DESTROY OR PLACE IN THE MATERNITY CARE RECORD.
THIS DOCUMENT MUST BE RETAINED IN THE HOSPITAL FOLDER TO BE SCANNED ON ECM.

Date	
Complaints	

BP	Pulse

Urine Dipsticks				
Protein	Neg	+	++	+++
Blood	Neg	+	++	+++
Glucose	Neg	+	++	+++
Ketones**	Neg	+	++	+++
** Must always be done in all Diabetics				

Additional tests/measurements done

Hb	Rh	Blood for
MSU		24h U-collection
Weight		

Retesting HIV at 32-34w
Retesting syphilis at 32-34w

Capillary Glucose**	
Fasting	2h After meal

** Must always be done in all Diabetics

Relevant clinical notes (gestation, main problem and follow up date).

Seen by Dr/Prof

Remember to make duplicate clinical notes here

Typical frequency of visits

Low risk women receive eight visits during pregnancy:

Booking, 20 weeks, 26 weeks, 30 weeks, 32 weeks, 34 weeks, 36 weeks, 38 weeks, 40 weeks.

- **Visits for BP/Urine dipsticks and SF growth only can be scheduled at a lower level clinic**
- **Adjust the frequency of visits according to the clinical problem (use the appropriate guideline). Visits less than two weeks apart (outside of a protocol) have to be discussed with the consultant.**

Key visits

First full assessment at TBH	Review and complete MCR Do risk assessment and reason(s) for attending Tygerberg Hospital
NT Scan 10-13w	Offer to women that qualify according to Ultrasound criteria If CRL 45-84mm Not necessary for HRC visit on this day, except if referred by sonar
Detail Scan 18-20w	Offer to all patients (book at x5572 for women who will remain at High Risk; those that will be referred back can get a detail scan at their local hospital/clinic)
Cervical Evaluations 16-26w (2 weekly)	For all women with previous preterm birth (use Risk of preterm labour protocol) 2 weekly ultrasound cervical length measurement and management according to findings
UAD (At FEC) 26w	Offer to all women with: Current: Diabetes, hypertension, autoimmune disease, BMI≥40 Previous: Pre-eclampsia, Eclampsia, Preterm Birth, SGA, Abruptio or Stillbirth
Glucose Profile 26w	For all women with age ≥ 40y, BMI ≥ 40 or with previous: macrosomia, GDM, shoulder dystocia, Stillbirth of unknown cause
Cervical Evaluations 26-32w	For all women with previous preterm birth 2 weekly clinical vaginal examination to do cervical evaluations (use Risk for Preterm birth protocol)
32 weeks	Syphilis repeat test on venous blood (laboratory)
34 weeks	Informal growth scan and UA Doppler for all diabetic women (34 weeks)
36 weeks	Anaesthetic appointment for BMI>45 Growth scan for BMI>45 where it is not clinically possible to determine fetal size (risk for SGA) Ensure all women have a birth/delivery plan, have chosen a birth partner and have decided on future contraceptive options
38-40 weeks	Review for delivery (diabetes, hypertension, previous stillbirth etc- use appropriate protocol)
41 weeks	Offer IOL/delivery to all women with a sure gestation after 41 weeks.

Western Cape Government
Health

METRO EAST OBSTETRIC SERVICE

Summary of Levels of Care & Referral Routes for Antenatal Services and Labour Wards

Updated 1 November 2018

Contents

BANC+ risk assessment

Clinic Checklist - Classifying (first) visit

Name of patient _____ Clinic record number | | | | | | | | |

Address _____ Telephone _____

_____ Cell _____

INSTRUCTIONS: Answer all the following questions by placing a cross mark in the corresponding box

Obstetric History	No	Yes
1. Previous stillbirth or neonatal loss?		
2. History of 3 or more consecutive spontaneous abortions		
3. Birth weight of last baby < 2500g?		
4. Birth weight of last baby > 4500g?		
5. Last pregnancy: hospital admission for hypertention or pre-eclampsia/eclampsia?		
6. Previous surgery on reproductive tract (Caesarean section, myomectomy, cone biopsy,cervical cerclage,)		
Current pregnancy		
7. Diagnosed or suspected mulitple pregnancy		
8. Age < 16 years		
9. Age 37 years or more at conception		
10. Isoimmunisation Rh (-) with antibodies in current or previous pregnancy		
11. Vaginal bleeding		
12. Pelvic mass		
13. Diastolic blood pressure ≥90mmHg OR systolic blood pressure ≥140 at booking		
General medical		
14. Diabetes mellitus on insulin or oral hypoglycaemic treatment		
15. Cardiac disease		
16. Renal disease		
17. Epilepsy		
18. Asthmatic on medication		
19. Tuberculosis		
20. Known 'substance' abuse (including heavy alcohol drinking)		
21. Any other severe medical disease or condition		

Please specify _____

A yes to any ONE of the above questions (i.e. ONE shaded box marked with a cross means that the woman is not eligible for the basic component of antenatal care

Is the woman eligible (circle) **No** **Yes**

If NO, she is referred to _____

Date _____ **Name** _____ **Signature** _____

(staff responsible for antenatal care)

Management of risks detected at first visit (after completion of maternity case record):

Obstetric history

1. Previous stillbirth or neonatal loss: refer to Tygerberg Hospital before 20 weeks
2. Three or more consecutive spontaneous early miscarriages - refer to Tygerberg Hospital within one week after booking. If already >32 weeks at booking not necessary to refer.
3. Birth weight of any baby <2500g refer to Tygerberg Hospital within one week after booking.
4. Birth weight of any baby >4500g- do random glucose at booking and refer the next day if the value is ≥8 mmol/l. If <8 mmol/l, refer to Tygerberg for the 26 weeks' visit (BANC+ until then). Patient must arrive nil per os on day of appointment and bring their breakfast with them.
5. Hypertension/pre-eclampsia ≥34 weeks in last pregnancy, refer to district hospital for 26 weeks visit (BANC+ until then). Hypertension/pre-eclampsia <34 weeks in last pregnancy- refer to Tygerberg Hospital within one week of booking. Start with Calcium 2 tablets per day and aspirin 150mg per day in the meantime.
6. Previous CS (1 or more) or previous surgery on reproductive tract- refer to district hospital for the 20 weeks' visit or as soon as possible after that.

Current pregnancy

7. Suspected twins- refer for ultrasound and follow instructions from sonographer. Diagnosed twins- refer to Tygerberg hospital ultrasound unit (phone 021 938 5572 for appointment).
8. Age <16 years- refer to social worker and CHW. Book 20 week's appointment at district hospital.
9. Age 37 or more at conception- refer to Tygerberg hospital ultrasound unit (phone 021 938 5572 for appointment on a Monday or Tuesday ONLY if gestation is <24 weeks). If already ≥24 weeks at first booking, refer to district hospital for the next scheduled visit (if less than 40-41 years) or to Tygerberg Hospital HRC (if 42 years or older).
10. Rhesus negative without antibodies does not need referral but repeat bloods for titres need to be taken at 20, 26, 32 and 38 weeks. Once antibodies are present, the patient needs to be referred: If antibody titre ≤1:8, refer to Tygerberg Hospital High Risk clinic (make appointment at 021 938 4423) within 2 weeks. If titre 1:16 or higher, refer to Tygerberg Hospital Ultrasound unit immediately (phone 021 938 5572 for appointment).
11. If vaginal bleeding at first visit, refer to district hospital (same day) casualty unit to exclude a miscarriage or ectopic pregnancy.
12. Pelvic mass- refer to Tygerberg Hospital high risk clinic before the 20 weeks visit. If already after 20 weeks when booking, refer within one week.
13. Hypertension at booking- treat and refer according to the BANC+ protocols

General medical

14. Known diabetes- refer to High Risk Clinic at Tygerberg (phone 021 938 4423 for an appointment) within 1 week.
15. Known cardiac disease- refer to Tygerberg High Risk clinic the next Tuesday (phone 021 938 4423 for appointment).
16. Known renal disease- refer to Tygerberg High Risk clinic (phone 021 938 4423 for appointment) within 2 weeks.
17. Epilepsy on medication- refer to the closest district hospital clinic for assessment at the next scheduled BANC+ visit. If uncontrolled/history of repeated convulsions at booking, refer to Tygerberg Hospital high risk clinic the next working day (phone 021 938 4423 for appointment).
18. Stable asthma on medication- refer to the closest district hospital clinic for assessment at the next scheduled BANC+ visit. If history of poorly controlled asthma at booking, refer to Tygerberg Hospital high risk clinic the next working day (phone 021 938 4423 for appointment). If severe shortness of breath, refer to the closest emergency centre immediately.
19. Women on TB treatment must have their next scheduled BANC+ visit at the district hospital. Newly diagnosed TB (on day of booking) must be referred on the same day to the district hospital doctor's clinic.
20. Women who admit to a history of heavy alcohol drinking or the abuse of illicit drugs must be referred to the social worker and CHW for support. She must also be referred for an assessment at Tygerberg Hospital High Risk clinic at the next scheduled BANC+ visit.
21. Phone Tygerberg Hospital high risk clinic for advice on other medical conditions that are detected at booking (phone 021 938 4423 for advice).

BANC PLUS Clinic checklist: Follow-up visits

First visit for all women at first contact with clinics, regardless of gestational age. If first visit later than recommended, carry out activities up to that time	VISITS 1	2	3	4	5	6	7	8
DATE :								
Approximate gestational age (weeks)	**<14**	**20**	**26**	**30**	**34**	**36**	**38**	**40**
Classifying form indicating eligibility for BANC								
History taken								
Full clinical examination								
Estimated date of delivery calculated								
Blood pressure taken								
Maternal height/ weight/ BMI/ MUAC								
Haemoglobin test								
RPR performed								
Urine tested for protein and sugar								
Rapid Rh performed								
HIV counselling and testing		Retest every 12 weeks if negative						
ART for HIV-infected women	Viral load monitoring as per guidelines							
Iron and folate supplementation provided								
Calcium supplementation provided								
Information for emergencies given								
Antenatal record completed and given to woman								
Asked if fetal movements felt and normal								
TB symptom screen								
Clinical examination for anaemia								
Uterus measured for growth - twins, IUGR								
Instructions for delivery/transport to institution								
Recommendations for lactation and contraception								
Detection of breech presentation and referral								
Remind woman to bring antenatal record in labour								
Doctor or senior midwife to review gestational age								
Give hospital visit date at 41 weeks for induction								
Initials staff member responsible								

Additional Visits

Date	Reason	Action/Treatment

ANTENATAL CARE: BANC+ CLINIC OR MOU

BANC+ and MOU *– Low Risk Group*

WHAT IS BANC+?

- BANC+ = Basic Antenatal Care plus (8 visits), provided at clinics and MOU's throughout the individual health sub-districts.

WHICH PATIENTS ARE ELIGIBLE FOR BANC+ OR MOU CARE AND DELIVERY AT MOU?

- All healthy pregnant women, parity 4 or less, from 16 years of age up to 36 years of age at booking.

The following patients ALSO remain **LOW RISK and can ATTEND a BANC+/MOU clinic and deliver at the MOU**:

	PREREQUISITE
✓ Age 37 to 39 at conception	**Genetic screening/detail sonar normal or no special attention required at delivery (40 and 41 years must deliver at district hospital, 42 years and older at Tygerberg)*
✓ Alcohol misuse	*Support from social worker/CHW*
✓ Asthma - good control (not on steroids)	*If on steroid treatment- next scheduled BANC+ visit at Tygerberg high risk clinic*
✓ Cystitis	
✓ Family history of diabetes	*Normal glucose profile at 26 weeks*
✓ Glycosuria with normal (<8 mmol/l) random glucose levels	*Do random glucose every time there is glucosuria, but also ask client to come the next day for a fasting glucose value.*
✓ HIV positive and otherwise healthy	*Follow PMTCT protocol*
✓ 1 or 2 previous miscarriages before 12 weeks	
✓ Penicillin allergy	
✓ Poor socio-economic standards	
✓ Previous Caesarean section (up to 36 weeks)	*Must be referred to district Hospital at 20 weeks to sort out route of delivery and then again at 36 weeks, cannot deliver at MOU*
✓ Previous ectopic pregnancy	*Confirmed intra-uterine pregnancy this pregnancy*
✓ Previous instrumental delivery (forceps or vaccuum)	
✓ Rh negative without antibodies	*Repeat antibodies at 26, 32 and 38 weeks*
✓ Smoking	
✓ Trace proteins on diagnostic urine sticks	
✓ Tuberculosis	**HIV negative and no wasting*
✓ Varicose veins	*No evidence of thrombosis or infection*
✓ RPR titres or rapid syphilis test positive	*Ensure adequate treatment (3 doses)*

ANTENATAL CARE: **DISTRICT HOSPITAL**

KARL BREMER HOSPITAL OPD 021-918 1255
KHAYELITSHA HOSPITAL OPD 021-360 4539/4360
HELDERBERG HOSPITAL OPD 021-850 4700

LEVEL 1 REFERRALS */ SHARED CARE– Intermediate Risk Group*

WHAT IS SHARED CARE?

- Women are referred from primary care (MOU/BANC+) to a doctor/experienced midwife at the level 1/district hospital for assessment, but can be referred back for antenatal care and/or delivery to the MOU/clinic once the problem is sorted out. (* suitable for delivery at MOU once problem is excluded/resolved; others need to deliver at district hospital)

WHICH PATIENTS SHOULD BE REFERRED FOR SHARED CARE?

- The following patients are **INTERMEDIATE RISK Patients**

	PREREQUISITE
✓ Abnormal lie at 34 weeks	*Follow up for confirmation and version at 36 weeks**
✓ Age 15 years or less	*Refer to social worker; deliver in district hospital*
✓ Age 40 or 41 at conception	Review ultrasound and genetic counselling report, deliver in district hospital
✓ Anaemia (mild)	*Hb <10g/dl, but >8g/dl**
✓ BMI ≥ 35 kg/m^2	*Deliver at district hospital if BMI 35-39 kg/m^2 or at Tygerberg if ≥40 kg/m^2*
✓ Spotting (slight vaginal bleeding)	*Exclude placenta praevia**
✓ Asthma with poor control but not on steroids	*Achieve control district hospital, otherwise refer on to Tygerberg. Must deliver at district hospital.*
✓ Contact with rubella	*Can go back to BANC+/MOU once sorted out**
✓ Decreased fetal movements	*Follow BANC+ protocol for decreased movements**
✓ Diabetes in previous pregnancy	*If blood glucose normal in this pregnancy (screen again with glucose profile at 26 weeks)**
✓ Epilepsy	*Good control. Must deliver at district hospital*
✓ Parity 5 or more	*Have delivered 5 or more term infants before. Must deliver at district hospital.*
✓ Hypertension without proteinuria and with good control	*On one drug only. If 1+ proteinuria and NO clinical signs of pre-eclampsia, quantify to exclude significant proteinuria. Must deliver at district hospital.*
✓ 3 or more consecutive miscarriage <14 weeks	*Once assessment at Tygerberg is completed**
✓ Infertility (only if pregnancy following oocyte donation, IVF or other fertility treatment)	*Can refer back to the MOU at 34 weeks**
✓ One previous abruption of the placenta	*Doppler at 24 weeks, IOL at 38 weeks. Must deliver at district hospital*
✓ Polyhydramnios	*Once fetal abnormalities and diabetes have been excluded. Must deliver at district hospital*
✓ One previous Caesarean section	*Sort out reasons for CS at first referral and then follow at MOU until 34 weeks' visit. From 36 weeks ONWARDS as well as delivery at district hospital. If induction of labour is needed must be done at Tygerberg hospital.*
✓ Previous postpartum haemorrhage	*Must deliver at district hospital*
✓ Proteinuria 1+ (persistent on repeat visit 2 days later)	*If blood pressure normal; follow BANC+ protocol first*

✓ Psychiatric diseases	*Must deliver at district hospital.*
✓ Pyelonephritis in current pregnancy	*Can deliver at MOU once completely resolved*
✓ Rheumatic fever previously, with no significant defects	*Sorted out at Tygerberg cardiology clinic first. Can deliver at MOU if so triaged by cardiology clinic.**
✓ Poor SF growth (follow SGA protocol) after 34 weeks	*Must deliver at district hospital (Tygerberg if delivery needed <34 weeks).*
✓ Umbilical artery Doppler >95th centile but not AEDV (follow the Abn UaD protocol)- after 34 weeks	*Must deliver at district hospital (Tygerberg if delivery needed <34 weeks).*

ANTENATAL CARE: **LEVEL 2 HOSPITAL**

ALL METRO EAST SERVICES REFER TO **TYGERBERG HOSPITAL** 021-938 4424

HIGH RISK CLINIC REFERRALS *– LEVEL 2*

WHAT IS A HIGH RISK Level 2 CLINIC?

Women are referred to Level 2 High Risk Clinic either directly after booking – when a high risk factor is identified on history or clinical findings OR from BANC+ or Level 1 clinics, when high risk condition arises. High Risk Clinics are run by general specialists, registrars and medical officers.

WHICH PATIENTS SHOULD BE REFERRED FOR HIGH RISK LEVEL 2?

- The following patients are **HIGH RISK LEVEL 2**

- ✓ **Age** 42 years or older (also refer to Tygerberg ultrasound for genetic screening/detail sonar)
- ✓ **Diabetic** patients (diabetes controlled on diet only will be stepped down to DH care after assessment)
- ✓ Booking **BMI** ≥40 kg/m^2 (calculate correctly according to BMI protocol)
- ✓ Uncomplicated **twin** pregnancies
- ✓ Severe **Anaemia** (Hb < 8g/dl)
- ✓ **Anti-thrombotic** therapy (warfarin, heparin etc.)
- ✓ **Auto-immune diseases** (initial workup at level 3)
- ✓ **Cervical incompetence** (initial workup and cervical cerclage)
- ✓ **Congenital abnormalities** on sonar [requiring delivery at Tygerberg]
- ✓ **Heart** valve disease (refer on Tuesdays only)
- ✓ **Hypertension** in pregnancy requiring more than one drug to control
- ✓ **Pre-eclampsia**: Hypertension with significant proteinuria [2+ proteinuria, two occasions, 4 hours apart or 0.3g/24hours]- refer to Tygerberg labour ward
- ✓ **Placenta praevia**, proven on sonar after 28 weeks (sonographer needs to follow provincial ultrasound policy for timing of scan and referral indication).
- ✓ Previous **pre-eclampsia/eclampsia**
- ✓ Previous **intra-uterine death** or neonatal death (that occurred ≥24 weeks. Do not refer if IUD was due to syphilis). If previous death as due to congenital anomaly, refer to Tygerberg ultrasound unit.
- ✓ Previous **myomectomy**
- ✓ Previous **mid-trimester** miscarriage (14-26 weeks)
- ✓ Previous **preterm** delivery (before 34 weeks)
- ✓ Previous **thoracic surgery** (refer on Tuesdays only)
- ✓ **Rh negative with antibodies** (refer directly to Tygerberg ultrasound if titre ≥1:16 or if anti-Kell)
- ✓ **Substance** abuse other than cigarette smoking or alcohol
- ✓ Two or more previous **abruptio** placentae (refer immediately, client will need admission at 28 weeks)
- ✓ Confirmed **polyhydramnios** (refer directly to TBH ultrasound unit to rule out fetal anomalies if a detail scan has not yet been performed, patient must arrive prepared for glucose profile).
- ✓ **SGA** pregnancies <34 weeks (follow SGA protocol)
- ✓ Umbilical artery **Doppler >95th centile but not AEDV** < 34 weeks (follow the Abn UaD protocol)

ANTENATAL CARE: **LEVEL 3 HOSPITAL**

ALL METRO EAST SERVICES REFER TO **TYGERBERG HOSPITAL** 021-938 4424

HIGH RISK CLINIC REFERRALS *- LEVEL 3*

WHAT IS A HIGH RISK LEVEL 3 CLINIC?

- Women are referred to Level 3 High Risk Clinic or *Special Care Clinic* either at booking – when a high risk factor is identified on history or clinical findings OR from BANC+ or Level 1 clinics when high risk condition arises. These specific conditions are dealt with by specialists and sub-specialists, who may refer a patient downstream once stabilised and a plan has been proposed for the pregnancy and delivery. For Metro East, all of these are referred to the HIGH RISK CLINIC first, where appropriate work-up and triage will be done.

WHICH PATIENTS SHOULD BE REFERRED FOR HIGH RISK LEVEL 3 ASESSMENT?

- The following patients SHOULD BE FOLLOWED AT A **HIGH RISK LEVEL 3 CLINIC**

- ✓ **Auto-immune diseases**, including Myasthenia gravis in pregnancy
- ✓ **Epilepsy**- poor control
- ✓ **Asthma** (or other severe lung disease) with poor lung function
- ✓ All patients with **cardiac lesions** (initial workup- on Tuesdays only)
- ✓ Previous **cardiomyopathy** during or after pregnancy
- ✓ Two or more previous **abruptio** placentae
- ✓ All patients with **endocrine** disease in pregnancy (initial workup)
- ✓ Previous **Acute Fatty Liver** of Pregnancy (AFLP)
- ✓ **Recurrent miscarriages** (≥3 consecutive first trimester miscarriages or ≥2 mid-trimester abortions). Refer to TBH ultrasound at 12-13 weeks if possible.
- ✓ **Cervical incompetence** (abdominal cerclage procedures, complicated cases)
- ✓ Diabetes in pregnancy requiring **insulin** or with difficult control
- ✓ Chronic **kidney failure**
- ✓ Any **atypical antibodies** on blood grouping, for initial workup (refer directly to Tygerberg ultrasound if titre ≥1:16 or if anti-Kell
- ✓ Suspected morbidly adherent placenta
- ✓ Previous severe pre-eclampsia with onset <34 weeks
- ✓ Absent End Diastolic Flow (AEDV) at any viable gestation if normal CTG at referral unit.
- ✓ Fetal medicine:
  - Advanced maternal age (≥ 37 years at conception. If detail ultrasound normal, refer back to correct level according to age)
  - Suspected congenital abnormalities on ultrasound incl. discordant measurements, oligo- or polyhydramnios on early scan (see provincial ultrasound policy)
  - Previous congenital abnormality or recurrent miscarriages with same partner (refer back if fetal assessment normal)
  - All monochorionic pregnancies, triplets or more, twins with complications
  - Special referrals according to protocol
  - AEDV or REDV
  - Red cell isoimmunisation (Rhesus and other antibodies)

LABOUR WARD REFERRALS: **DISTRICT HOSPITAL**

KARL BREMER HOSPITAL LABOUR WARD 021 918 1455/1421 SWITCHBOARD 021 918 1911
KHAYELITSHA HOSPITAL LABOUR WARD 021 360 4596/7 SWITCHBOARD 021 360 4200/1/2/3
HELDERBERG HOSPITAL LABOUR WARD 021 850 4731 SWITCHBOARD 021 850 4700

LEVEL 1 LABOUR WARD REFERRALS

- Patients with these conditions can be managed at Level 1

- Retained placenta (stable, without postpartum haemorrhage)
- Caesarean section for poor progress, malpresentation or fetal distress > 34 weeks
- Prolonged SROM > 34 weeks (refer from MOU to district hospital if not in ACTIVE labour: after 24 hours if HIV negative, in 4 hours if HIV positive)
- Prolonged first or second stage of labour (latent phase >12 hours, active phase refer on action line)
  - Use the 2-hour partogram that starts active phase at 5cm
- Malpresentations (including breech at any dilatation) (can be delivered at MOU if fully dilated and advance midwife on site)
- Vaginal bleeding < 26 weeks
- Vaginal birth after one previous caesarean section (VBAC) ≥ 34 weeks
- Elective caesarean section at term (uncomplicated)
- Induction of labour at term (post-dates; intra uterine death if not clinically abruptio placentae; chronic hypertension)
- Decreased or absent fetal movements.
- Preterm labour ≥ 34 weeks or ≥ 2000 g if unsure gestation
- PPROM >34 weeks
- Maternal age 40-41 years or ≤15 years at conception
- All meconium stained liquor
- Postpartum sterilisation
- Postpartum anaemia, Hb >7g/dl, BP normal, uterus contracted, not bleeding (if PPH; or HB <7g/dl stabilise and refer to Tygerberg)
- Mild postpartum infection (infected episiotomy, breast abscess, localised wound sepsis etc)

LABOUR WARD REFERRALS: **LEVEL 2 HOSPITAL**

ALL METRO EAST SERVICES REFER TO **TYGERBERG HOSPITAL** 021-938 4707

LEVEL 2 LABOUR WARD REFERRALS

- **Any patient where there is underlying maternal disease that will warrant specialist management**
- Stabilise at primary level and transfer

- Eclampsia
- Significant antepartum haemorrhage
- All Pre-eclampsia patients (Hypertension with significant proteinuria [2+ proteinuria, two occasions, 4 hours apart or 0.3g/24hours]
- Preterm labour <34 weeks.
- Preterm rupture of membranes <34 weeks
- Postpartum sepsis (if not due to known local cause e.g. episiotomy or localised wound sepsis)
- Severe wound sepsis following recent Caesarean section
- Postpartum haemorrhage
- ALL Multiple pregnancies
- Third and Fourth degree tears, for suturing. During office hours- can be sutured at District Hospital if capacity exists.

HIGHLY SPECIALISED LABOUR WARD REFERRALS: **LEVEL 3 HOSPITAL**

ALL METRO EAST SERVICES REFER TO **TYGERBERG HOSPITAL** 021-938 4707 (labour ward) or 021 938 5968 (**speak to registrar in high care unit**)

LEVEL 3 LABOUR WARD REFERRALS

- Any patient where there is underlying maternal disease that will warrant a multi-disciplinary specialist management
- Patient to be stabilised at primary care (MOU or district hospital) before referral

- Abruptio placentae with intra-uterine death, DIC or kidney failure (rupture membranes before referral if possible)
- All patients with cardiac lesions in pregnancy (if not already sorted out at cardiology clinic during antenatal period with a clear birth plan for MOU/Level 1 or level 2)
- Anti-coagulative therapy for any reason
- Any maternal patient with respiratory distress
- Any pregnant or puerperal patient with deep vein thrombosis (DVT) or pulmonary embolus
- Any pregnant patient with jaundice or suspected hepatitis
- Cerebrovascular accident
- Comatose patient
- Placenta praevia with antepartum haemorrhage
- Pre-eclampsia at any gestation when complicated by any of the following: clotting defects, kidney failure, pulmonary oedema or HELLP syndrome
- Puerperal sepsis with septic shock
- Status epilepticus

COMMUNICATION MOU - LEVEL1 - LEVEL2 - LEVEL3

Communication between the different units involved in patient care should be optimised to ensure rapid routing to the correct institution.

INTER-COLLEGIAL INTERACTIONS SHOULD ALWAYS BE CONDUCTED IN A RESPECTFUL AND PROFESSIONAL MANNER

1. ***MOU TO DISTRICT HOSPITAL***
    a. Referrals that adhere to the guideline above can be arranged midwife-to-midwife
    b. Calls regarding advice should be taken by the doctor on duty
    c. If the receiving doctor is of the conviction that the patient has not been referred to the correct level of care, it is the responsibility of the receiving doctor to contact the next level of care, and inform the referring midwife of the routing of the patient. If a conclusion cannot be reached between the receiving doctor and the next level of care, a consultant opinion should be sought to resolve the issue.

2. ***MOU TO TYGERBERG HOSPITAL***
    a. Referrals from the MOU should be made to the doctor on call in labour ward (021 938 4707).
    b. If the receiving doctor is of the conviction that the patient has not been referred to the correct level of care, it is the responsibility of the receiving doctor to contact the appropriate level of care, and inform the referring midwife of the routing of the patient. If a conclusion cannot be reached between the receiving doctor and the doctor at the district hospital, a consultant opinion should be sought to resolve the issue.

3. ***DISTRICT HOSPITAL TO TYGERBERG HOSPITAL***
    a. Referrals between these centres are done Medical Officer to Registrar – after consulting the referral guidelines.
    b. Should the receiving doctor feel the patient is inappropriately routed, and this cannot be resolved by consulting the referral guidelines, the receiving doctor should resolve this issue with the consultant on call for labour ward.

LABOUR WARD REFERRALS BETWEEN INSTITUTIONS:

Labour Ward Capacity:

Each hospital must have its own escalation procedure to follow once full capacity is reached (all beds occupied with patients that cannot be discharged immediately) according to the current provincial policy on escalation. As TYGERBERG HOSPITAL is the only referral centre for all specialist patients in metro east, the hospital cannot close for patients with maternal disease.

Referrals can be re-routed to Groote Schuur or Mowbray by the consultant on call for Tygerberg labour ward after the correct escalation procedure was followed (maternity centre on RED status). Only the medical superintendent of a hospital can close the hospital for admissions once full capacity is reached. Rerouting tertiary/secondary level of care patients are done on a consultant-consultant basis between the central hospitals.

Neonatal ICU capacity

Neonatal ICU capacity at TYGERBERG HOSPITAL is very limited and the unit has to close for outside admissions from time to time when full. Mothers that need referral purely for fetal reasons (imminent delivery of a ≤32 week baby) must preferably be rerouted to another facility with neonatal care. Contact the paediatrician on call at TYGERBERG HOSPITAL to arrange this transfer.

GS Gebhardt

Signed: Prof GS Gebhardt

1 November 2018
Date

Document revised and updated by L Geerts, D Mason, L Oberholzer, M Coetzer, E Zwanepoel, E Swart, C Swiegers. L de Waard and S Gebhardt May-November 2018

Any problems encountered with a referral; whether deviation from this protocol, refusal of correctly allocated patients, inappropriate referrals or unprofessional conduct during referral must be reported to Stefan.Gebhardt@westerncape.gov.za or esteswart@sun.ac.za

Clinics and delivery units in Cape Town Metro East

Northern sub-structure

For women residing in Bothasig, Bloekombos, Brackenfell, Brighton, Durbanville, Fisantekraal, Harmonie, Kraaifontein Northpine, Oostenberg, Scottsdene or Wallacedene:

- **BANC at Durbanville CHC (Thursdays) OR Fisantekraal clinic**
- **MOU at Kraaifontein MOU**
- **Level 1/shared care at Karl Bremer Hospital**
- **Level 2 or 3 care at Tygerberg Hospital**

Tygerberg sub-structure

For women residing in Bellville South, Bishop Lavis, Chestnut, Delft, Elsie's Rivier, Groenvallei, Leonsdale, Matroosfontein, Parow, Ravensmead, Ruiterwacht, St Vincent, Uitsig or Valhalla Park:

- **BANC at Delft CHC, Delft South clinic, St Vincent's clinic in Belhar and Chestnut**
- **MOU at Bishop Lavis MOU or Elsies Rivier MOU or Delft MOU**
- **Level 1/Shared care at Karl Bremer Hospital**
- **Level 2 or 3 care at Tygerberg Hospital**

Eastern sub-structure

For women residing in Blue Downs, Driftsands, Gordon's bay, Gustrouw, Hillcrest, Ikwezi, Kleinvlei, Macassar, Mfuleni, Sarepta, Sir Lowry's pass, Somerset West, Strand or Wesbank:

- **BANC at Kleinvlei CHC, Gustrouw CHC, Gordon's Bay clinic, Ikwezi clinic, Fagan Street clinic, Sir Lowry's pass clinic, Somerset West clinic, Blue Downs clinic, Dr Ivan Toms clinic (Mfuleni)**
- **MOU at Macassar MOU or Grabouw MOU**
- **Level 1/shared care at Helderberg Hospital**
- **Level 2 or 3 care at Tygerberg Hospital**

Khayelitsha sub-structure

For women residing in Khayelitsha: Ekuphumleni, Graceland, Harare, Ikwezi park, Mandela Park, Makhaza, Site B, Site C, Town 2, Town 1, Village 1, 2 or 3.

- **BANC at Kuyasa and Nolungeli**
- **MOU at Michael Mapongwana MOU OR Site B MOU**
- **Level 1/shared care at Khayelitsha Hospital**

GS Gebhardt August 2012

Management of Minor Complaints in pregnancy

GASTRO-OESOPHAGEAL REFLUX / HEARTBURN

Heartburn is common in pregnancy (incidence is 17-80%), and can occur in all trimesters, with increasing severity in later pregnancy.

MANAGEMENT

Clinical History

- Diagnosis is based on clinical history. Obtain a current history of symptoms and any previous history of reflux-type symptoms.
- Symptoms of heartburn can be similar to epigastric pain associated with pre-eclampsia. Exclude a diagnosis of pre-eclampsia.

Dietary and other modifications

- Eat small frequent meals
- Avoid eating and drinking at the same time to reduce stomach volume
- Avoid gastric irritants (foods & medications causing reflux) e.g. chocolate, coffee, citrus juices, tomato products, alcohol, fizzy drinks, greasy/spicy/acidic foods
- Avoid eating late at night or within 3 hours of going to bed
- Chewing gum stimulates the salivary glands and may neutralise acid
- Cease smoking

Positioning

- Elevate the head of the bed by 10-15cm.
- Lying on the left side has been shown cause less frequent reflux.
- Encourage an upright position where possible, avoiding lying down after meals.

Medication

- Antacids:
  - Most calcium and magnesium-based antacids are considered safe at usual doses in pregnancy. Liquid antacids are more effective than solid antacids.

    Take antacids at least 1 hour apart from iron and other medications.

- Intermittent use of metoclopramide is safe in pregnancy.
- For severe symptoms, omeprazole can be prescribed.

VARICOSE VEINS AND LEG OEDEMA

Varicose veins may develop in up to 40% of pregnant women. Support measures such as use of compression stockings and elevation of the legs may provide comfort.

MANAGEMENT

Non-Pharmacological interventions

- Elevate the legs when at rest
- Avoid prolonged standing or immobility- take breaks to exercise or elevate the legs, and avoid wearing of high heels.
- Avoid tight or restrictive clothing
- Regular exercise improves calf muscle pump. Encourage ankle flexion exercise for at least 30 minutes per day.
- Compression stockings may relieve swelling and aching of legs and prevent development of more varicose veins. Remove at night.
- If resting for long periods women are advised to lie on their left side which decreases pressure on the veins in the legs and feet (the inferior vena cava is on the right side, and left-sided position relieves it of the weight of the uterus).

HAEMORRHOIDS

Haemorrhoids occur in up to 85% of women in late pregnancy and for many will resolve soon after birth

Conservative management

- Prevent / treat constipation - high fibre diet, increased fluid intake, exercise
- Stool softeners; avoid straining during defecation and encourage defecating with a strong urge in the morning and after meals when colonic activity is highest.
- Mild analgesia.

- Warmed baths may be used to decrease sphincter tone or improve venous congestion.

Surgical Management

Occasionally, surgery is required. Refer to surgery if symptoms are severe.

NAUSEA AND VOMITING

Approximately 50% of women experience nausea and vomiting in early pregnancy, and another 25% feel nausea alone.

MANAGEMENT

Medical History

- Perform a medical history including the pattern of nausea and vomiting, fluid and dietary intake, factors exacerbating the condition, and current management.
- Note signs of fever, headaches, abdominal pain or other symptoms that are not characteristic with uncomplicated nausea and vomiting in pregnancy.
- Exclude other medical conditions causing nausea and vomiting e.g. gastro-intestinal

Clinical Assessment

- Perform urine MCS
- Maternal assessment for signs of dehydration.
- Check routine observations

Non-pharmacological Interventions

- Reassure: That early pregnancy nausea/vomiting is common, not refined to mornings, usually resolves spontaneously by 16-20 weeks and is not generally associated with poor pregnancy outcomes.
- Small, frequent meals and snacks
- Bland, low fat, low carbohydrate, high protein diet may help
- Take more liquids than solids in the diet

- Encourage fluids to prevent dehydration – a least 2 litre/day
- Avoid rich, spicy or fatty foods (including smelling and cooking)
- Eating dry crackers before rising in the morning
- Ice chips may be beneficial
- Consume a high-protein snack prior to going to bed
- Ginger may provide benefit for management of nausea and vomiting.
- Getting plenty of rest

Pharmacological treatment

Pharmacological treatment may be required if non-pharmacological methods are unsuccessful.

- Pyridoxine (vitamin B_6) has been shown in limited randomised studies to reduce symptoms of nausea and vomiting, dosage: 25- 50 mg up to three times daily.
- Iron therapy may need to be temporarily stopped until nausea settles

VAGINAL DISCHARGE

High levels of oestrogen in pregnancy result in increased thick, white vaginal discharge (leucorrhoea) from marked shedding of superficial mucosal cells in the vagina.

MANAGEMENT

- Women should be advised of normal physiological vaginal discharge changes in pregnancy.
- If there are symptoms of infection (itching, burning or unpleasant smell) do a speculum exam and treat infection appropriately.

PELVIC GIRDLE AND LOW BACK PAIN

Many women (45-50%) experience pregnancy-related low back or pelvic girdle pain, with more than 80% of these women having trouble with daily living, and up to 30% requiring bed rest and leading to absence from work.

Pelvic girdle pain refers to pain in the symphysis pubis and/or pain in the region of one or both of the sacroiliac joints, and pain in the gluteal region. Pain is often aggravated during standing, walking, sitting, twisting, climbing of stairs, and turning while in bed. The pain is often described as a stabbing, burning, dull, or shooting pain

Low back pain is characterised by lumber region pain, is dull, and women experience it during forward flexion.

MANAGEMENT

- Reassure women that most of this pain resolves in a few weeks or within the month following delivery.
- Exclude other pathology
- Refer severe cases for physiotherapy.
- avoidance of fatigue and have frequent periods of rest
- avoiding situations that aggravate the condition e.g. twisting while lifting, activities such as unequal weight bearing, bouncing, hip abduction, high-heel shoes
- use pillows to support the abdomen while lying in the lateral position, and to support the lower back when sitting

CARPAL TUNNEL SYNDROME

Carpal tunnel syndrome (CTS) in pregnancy usually presents in the second or third trimester and is caused by excess fluid compressing the median nerve in the wrist. This causes paraesthesias, swelling and pain in the hand(s), and impairs sensory and motor function of the hand. Symptoms often are worst at night, and can be exacerbated by forceful activity and extreme wrist positions.

MANAGEMENT

- Early treatment involves activity modification including:
    - avoiding positions of extreme flexion or extension
    - avoiding prolonged exposure to vibration (e.g. driving, lawn mowing, use of power tools) & repetitive actions or aggravating activities (e.g. typing)
- Arrange physiotherapy referral if symptoms require further management.

- Inform women carpel tunnel symptoms normally resolve within 2 weeks of birth.
- Surgical options are generally not recommended during pregnancy.

LEG CRAMPS

Leg cramps and restless leg syndrome can occur at any time, but usually occur at night and may effect up to 30% -50% of pregnant women, especially in the third trimester. The cause of leg cramps in pregnancy remains unclear.

MANAGEMENT

- Perform a health history to exclude other causes of leg cramps
- Strategies for prevention or relief of cramps include:
  - during leg cramps – massage, walking, and stretching may help
  - a warm bath prior to bedtime
  - a balanced diet, calcium supplements, drinking adequate fluids
  - prophylactic night-time calf stretching

SLEEP DISTURBANCE

A result of some of the above disorders (e.g. leg cramps, pelvic/back pain, reflux), anxiety, nocturia, and fetal activity is that sleep can be disturbed in pregnancy.
Up to 90% of pregnant women report disturbed sleep. Sleep medications should be avoided. Interventions to reduce disruption include:

- avoiding caffeine and passive smoking
- limiting fluids in the evening.