REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

ZAMBIA NATIONAL MATERNAL AND NEONATAL SERVICES REFERRAL GUIDELINES

2018

First Edition

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FOREWORD

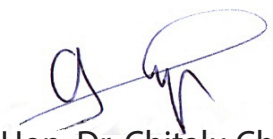
The Zambia Demographic Health Survey (ZDHS) 2013/2014 shows that the Maternal Mortality Ratio (MMR) has reduced from 591/100, 000 to 398/100, 000. This MMR remains unacceptably high and the Government of the Republic of Zambia through the Ministry of Health, under the National Health Strategic Plan (NHSP) 2017 – 2021, intends to reduce the MMR further to 100/100, 000 by 2021.

The Neonatal Mortality Rate (NMR) according to the 2013/2014 ZDHS is 24/1000 live births, a decline from 34 /1000 live births in 2007. An improvement in antenatal, delivery and newborn care are likely to improve neonatal survival. The Government of the Republic of Zambia through the Ministry of Health, under the National Health Strategic Plan (NHSP) 2017 -2021, targets to reduce the NMR to 10/1000 live births by 2021.

One of the key strategies and interventions to achieving the reduction of MMR and NMR is by strengthening the referral system in order to ensure maximal maternal and newborn survival. The strengthened maternal and neonatal referral system will reduce referral delays, improve pre-referral care, triage, ambulance transportation, communication and enhance preparedness and feedback at the receiving centre.

The 2017 National Maternal and Neonatal Referral guidelines clearly outline the referral process, referral criteria, pre-referral care, referral checklists, communication, transfer and the enhanced maternal and neonatal referral forms with the provision for feedback from the receiving centre. The Ministry of Health expects these guidelines to improve the quality of maternal and newborn care and lead to further reduction in maternal and neonatal mortality.

Therefore, I wish to encourage all health care providers to implement these guidelines in order to improve maternal and newborn survival in Zambia.



Hon. Dr. Chitalu Chilufya, MP.
Minister of Health

ACKNOWLEDGEMENT

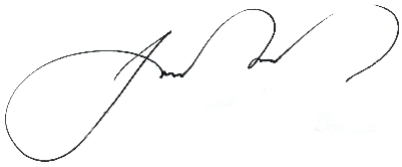
This first edition of the Zambia National Referral Guidelines for Maternal and Neonatal Services has been developed with the aim of standardizing referral practices that will contribute to high quality maternal and neonatal care at all levels of the health sector. The document provides health care workers with concise guidance on which patient conditions to refer; when to refer; to what level the patient must be referred; required pre-referral care; and a standard national format for documenting referral and feedback information.

The Ministry of Health acknowledges with gratitude, the support from the European Union through the Millennium Development Goal Initiative: Accelerating Progress Towards Maternal, Neonatal and Child Morbidity and Mortality Reduction in Zambia (MDGi) program which made this work possible.

Technical support to the Directorate of Clinical Care through its National Coordinator – Maternal Health Office during the development of this document, was drawn from the University Teaching Hospital – Women and Newborn, and Lusaka Children Hospital; UNICEF Zambia Country Office; Zambia Flying Doctor Services; and JICA. The Ministry appreciates the committed partnership in the campaign to stop all preventable maternal and neonatal deaths that it enjoys with these and other stakeholders.

The Lusaka Provincial Health Office team of experts are commended for having taken the lead to conceptualize this work with the Lusaka District Health Office, and providing the vital lessons that lead to the development of these guidelines.

The team of experts which was assembled from across the country to provide the real-world experiences necessary to render these guidelines a practical document is recognized for their input as well as their continued efforts at the front-line to save the lives of women and their babies.



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ACRONYMS

Term	Definition
AFASS	Acceptable, Feasible, Affordable, Sustainable and Safe
BEmONC	Basic emergency, obstetric and newborn care - Health facilities with antibiotics, oxytocin, anti convulsants and offer manual removal of placenta, neonatal resuscitation, removal of retained products of conception and assisted vaginal delivery in their obstetric emergency and neonatal care package .
BOH	Bad obstetric history
C/S	Caesarean Section
CEmONC	Comprehensive emergency, obstetric and newborn care - Health Facilities that offer surgery and blood transfusion in addition to BEmONC package.
CPD	Cephalo-pelvis disproportion
CRT	Capillary Refill Time
DVT	Deep vein thrombosis
ECG	Electrocardiograph
Echo	Echocardiogram
FBC	Full blood count
FHR	Foetal heart rate
IUGR	Intrauterine growth restriction
KMC	Kangaroo mother care
LBW	Low birth weight
LFTs	Liver function tests
PPH	Post partum haemorrhage
PROM	Premature rapture of membranes
RDS	Respiratory Distress Syndrome
RPR	Rapid Plasma Reagin (Test for Syphilis)
RVD	Retroviral Disease
RVF	Recto-vaginal fistula
TSB	Total Serum Bilirubin
U/Es	Urea and electrolytes
VDRL	Venereal Disease Research Laboratory (Test for Syphilis)
VVF	Vesico-vaginal fistula

BACKGROUND

Zambia's Maternal Mortality Ratio is 398/100, 000 according to the Zambia Demographic Health System (ZDHS) 2013 - 2014; a reduction from 591/100,000 in 2007. This Maternal Mortality Ratio (MMR) still remains unacceptably high and the Government of the Republic of Zambia, through the Ministry of Health; under the National Health Strategic Plan (NHSP) 2017 – 2021 intends to reduce it further to a target of 100/100,000 by 2021.

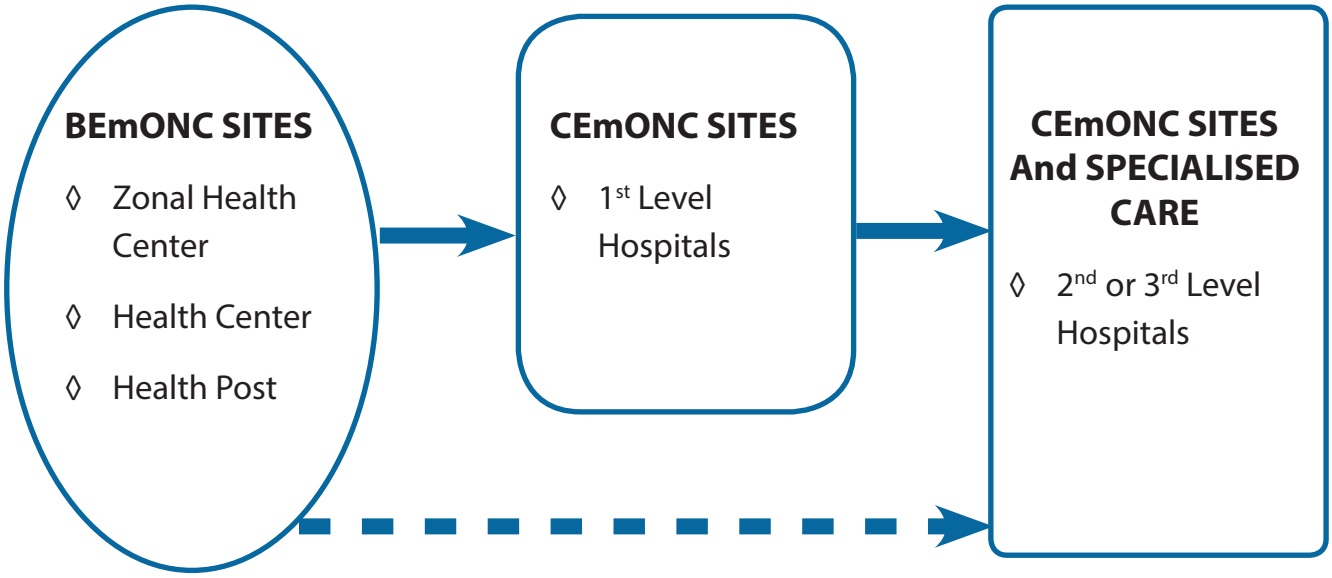
The Neonatal Mortality Rate (NMR) according to the 2013/2014 ZDHS is 24/1000 live births, a decline from 34/1000 live births in 2007. This remains unacceptably high. An improvement in antenatal, delivery and newborn care are likely to improve neonatal survival. The Government of the Republic of Zambia through the Ministry of Health, under the National Health Strategic Plan (NHSP) 2017 - 2021, targets to reduce the NMR to 10/1000 live births by 2021.

Some of the top five (5) direct causes of maternal deaths in Zambia are haemorrhage, infection, hypertension, unsafe abortions and obstructed labour. The major causes of neonatal deaths in Zambia are birth asphyxia, prematurity and neonatal sepsis / infection.

One of the key high impact interventions and strategies is to reduce the high maternal and neonatal mortality through strengthening of the referral system. The strengthened maternal and neonatal referral system will reduce referral delays, improve pre-referral care, triage, ambulance transportation, communication and will enhance preparedness and feedback at the receiving centre. The 2017 National Maternal and Neonatal Referral Guidelines clearly outline the referral process including referral criteria, pre-referral care, referral checklists, communication, transfer and the maternal and neonatal referral forms that have provision for feedback from the receiving facility.

It is hoped that all health providers at health posts, health centre, first , second and third level hospitals will utilize these guidelines to improve maternal and newborn outcomes and reach the 2021 target of reducing maternal and neonatal deaths to 100/100, 000 and 10/1000, respectively.

SECTION 1 THE REFERRAL PROCESS



Key

Main referral path

Direct referrals as outlined in Section 2

NOTE 1: Life threatening emergencies for mother or baby may be referred directly from BEmONC Sites to 2nd/3rd level hospitals

NOTE 2: ***Health Post*** is included as a BEmONC site because they perform the basic signal functions recommended in Emergency Obstetric and Neonatal Care

SECTION 2 DIRECT REFERRALS FROM BEmONC SITES OR 1ST LEVEL TO 2ND LEVEL HOSPITALS

2.1. ANTENATALLY

2.1.1. Pregnant woman with pre-existing medical condition

- ◊ Asthma
- ◊ Cardiac condition
- ◊ Diabetes mellitus
- ◊ Epilepsy
- ◊ Hypertension
- ◊ Hyperthyroidism
- ◊ Moderate to severe anaemia (< 8g/dl)
- ◊ Previous or current coagulopathy (eg. DVT)
- ◊ Renal disease
- ◊ Sickle cell disease
- ◊ RH negative

2.1.2. Preeclampsia or Eclampsia with other complications

- ◊ Abruptio Placenta
- ◊ Coagulopathy
- ◊ HELLP syndrome
- ◊ Renal failure,
- ◊ Thrombocytopenia
- ◊ Unconscious patient

2.1.3. Placenta praevia

2.1.4. Abruptio Placenta

2.2. DURING LABOUR

- ◊ Any of the above antenatal conditions if presents in labour.
- ◊ Ante-partum haemorrhage
- ◊ Labour below 35 weeks (In-utero transfer)

2.3. POST PARTUM

- ◊ Post-partum haemorrhage (PPH)
- ◊ Any of the above antenatal conditions if present

NOTE 1: For emergencies, provide appropriate resuscitative care before referring

NOTE 2: BEmONC site in a district without a 2nd Level facility should refer to Level 1 facility

NOTE 3: Doctor at the 1st Level may use discretion on cases to be referred to second and third level hospital.

SECTION 3 ANTENATAL REFERRALS FROM BEmONC SITES TO 1ST LEVEL HOSPITALS

3.1. Conditions/complications in previous pregnancy that must be referred at booking or as soon as patient is in contact with provider

- ◊ Bad obstetric history (BOH)
- ◊ Eclampsia or hypertensive disorder in previous pregnancy
- ◊ History of myomectomy
- ◊ History of rupture uterus
- ◊ History of previous perinatal death (still birth and neonatal death)
- ◊ Previous caesarean section

NOTE: These can be seen and sent back to BEmONC sites for continued ANC till 34 wks

3. 2. Conditions/complications in current pregnancy that must be referred at booking or as soon as patient is in contact with provider

- ◊ Bleeding in pregnancy
- ◊ Fibroids in pregnancy
- ◊ Intra uterine foetal death.
- ◊ Intrauterine growth restriction (IUGR)
- ◊ Multiple pregnancy
- ◊ Premature Rupture of Membranes (PROM)
- ◊ Polyhydramnious /oligohydramnious
- ◊ Rh Negative
- ◊ Severe malaria
- ◊ Varicosity
- ◊ Any condition deemed as urgent for referral

3.3. Cases that must be referred from BeMOnC to 1st Level Hospital at or af-ter 34 weeks gestation

- ◊ Malpresentation
  - Breech presentation
  - Compound presentation
  - Transverse /Oblique lie
- ◊ Excessive vulvar warts
- ◊ Grand multiparous
- ◊ Under age (16 years old and below)
- ◊ Post dates
- ◊ Known contracted pelvis
- ◊ Previous ectopic

SECTION 4 REFERRALS FROM BEmONC SITES TO 1ST LEVEL HOSPITALS DURING LABOUR

- ◊ Any of the antenatal conditions/complications if present during labour
- ◊ Cephalo-pelvic disproportion (CPD)
- ◊ Face presentation
- ◊ Fetal distress.
- ◊ Hand prolapse.
- ◊ Cord prolapse
- ◊ Hypertonic uterine contractions.
- ◊ Obstructed labour.
- ◊ Meconium stained liquor.
- ◊ PROM
- ◊ Prolonged latent phase of labour
- ◊ Prolonged first stage of labour (partograph on or to the right of action line)
- ◊ Prolonged second stage
- ◊ Chorioamnionitis
- ◊ Any condition deemed life-threatening.

SECTION 5 REFERRALS FROM BEmONC SITES TO 1ST LEVEL HOSPITALS IN POST PARTUM

- ◊ Puerperal sepsis
- ◊ PPH
- ◊ Wound dehiscence
- ◊ Post-partum psychosis
- ◊ Puerperal infections
- ◊ Vesico-vaginal fistula (VVF)
- ◊ Life-threatening medical conditions

SECTION 6 PRE-REFERRAL MANAGEMENT

6.1. NON-EMERGENCY ANTENATAL CONDITIONS REGARDLESS OF GESTATIONAL AGE

Conditions	Examples
Medical disorders in pregnancy – Stable patient	Cardiac disease, diabetes, asthma, Hyperthyroidism, epilepsy, previous or current coagulopathy
Any previous obstetric/gynecological operations and not in labor	Ruptured uterus, Caesarian section, ectopic pregnancy, myomectomy, VVF/RVF repair
Current obstetric /gynecological complications and not in labor	Multiple pregnancy, oligohydramnios / polyhydramnios, IUGR , fibroid in pregnancy, varicose veins
Previous obstetric problems	BOH, previous perinatal death or still birth
Other obstetric conditions	Rhesus-negative mother

Pre-referral management
◊ Refer immediately ◊ Do ultrasound if available

6.2. NON-EMERGENCY ANTENATAL CONDITIONS AT OR AFTER 34 WEEKS OF GESTATIONAL AGE

Conditions	Examples
Malpresentations	Breech, compound, transverse/oblique lie
Other conditions	Excessive genital warts, Under age (16 years old and below) Grand multipara (Gravida 5 and above) Post dates (40 completed weeks & above) Known contracted pelvis

Pre-referral management
◊ Refer at or after 34 weeks ◊ Do ultrasound if available

6.3. NON-EMERGENCY POSTNATAL CONDITIONS

Condition	Examples
Birth trauma	VVF &/or RVF (within 3 months of last delivery)

Pre-referral management

- ◊ In-dwelling urine catheter (VVF)
- ◊ Change catheter every two weeks
- ◊ Physiotherapy
- ◊ Nutritional support
- ◊ Encourage adequate oral fluids
- ◊ Counselling on personal hygiene
- ◊ Refer to hospital if still leaking after 3 months of incidence

6.4. EMERGENCY ANTENATAL CONDITIONS REGARDLESS OF GESTATIONAL AGE

Condition	Examples
Cardiac disease	Congestive heart failure & acute pulmonary edema

Pre-referral Management

- ◊ Nurse propped-up position at 45° angle
- ◊ Give oxygen by mask
- ◊ Check BP, pulse, temperature and respirations, oxygen saturation (SPO_2)
- ◊ Insert Foley's catheter
- ◊ Urinalysis
- ◊ Insert IV cannula
- ◊ Collect blood for U/Es, LFTs , FBC
- ◊ Give IV Frusemide 1.5 – 2mg/kg body weight over 1 -2 minutes
- ◊ Chest X-ray, Electrocardiograph (ECG), Echocardiogram (Echo.) if available

◊ Do not give IV fluids
◊ Do not sedate the patient

Condition	Examples
Cardiac disease	Cardiac arrhythmias

Pre-referral Management

- ◊ Nurse Propped-up position at 45° angle
- ◊ Total bed rest
- ◊ Give oxygen by mask
- ◊ Check BP, pulse and respirations
- ◊ Urinalysis
- ◊ Insert IV cannula

Condition	Examples
Hypertensive disorder	Severe hypertension

Pre-referral Management

- ◊ Check BP, pulse, temperature and respirations
- ◊ Insert Foley's catheter
- ◊ Urinalysis
- ◊ Insert IV cannula
- ◊ Collect blood for U/Es, LFTs , FBC
- ◊ Give anti-hypertensives
  - Nifedipine 20mg P.O.
  - Hydralazine 5mg IV stat slowly over 10 – 15 mins if diastolic BP ≥ 110mmHg or Labetalol 20mg IV over 2 minutes

- ◊ **Do not give IV fluids**
- ◊ **Do not sedate the patient**
- ◊ **Do not give sublingual nifedipine**

Condition	Examples
Hypertensive disorder	Severe pre-eclampsia and eclampsia

Pre-referral Management

◊ Check BP, pulse , temperature and respirations
◊ Insert Foley catheter
◊ Urinalysis
◊ Insert IV cannula
◊ Collect blood for U/Es, LFTs , FBC
◊ Give anti-hypertensives
- Nifedipine 20mg P.O.
- Hydralazine 5mg IV stat slowly over 10 – 15 mins if diastolic BP ≥ 110 mmHg or Labetalol 20mg IV over 2 minutes
- $MgSO_4$ loading dose (4g IV and 5g IM in each buttock with 2% lignocaine)

◊ Do not give IV fluids
◊ Do not sedate the patient
◊ Do not give sublingual Nifedipine

Condition	Examples
Obstetric haemorrhage (with shock)	◊ Placenta praevia ◊ Abruptio placentae ◊ Uterine rupture

Pre-referral Management

◊ Check BP, pulse, temperature and respirations
◊ Keep warm and commence oxygen 2-4 litres per minute by mask
◊ Elevate the lower limbs
◊ Insert 2 large bore I.V. cannulae
◊ Collect blood for FBC, Grouping & cross-match
◊ Do bedside clotting time
◊ Give IV fluids; run **any crystalloid** (normal saline, Ringers Lactate) 1st litre within 15 min, 2nd litre over the next 30 min, 3rd litre over the next 1 hour
◊ Maintain diastolic BP at or above 60 mmHg
◊ Insert Foley's catheter
◊ Monitor fluid intake and output

◊ Do not sedate the patient
◊ Do not perform vaginal exam in placenta praevia

Condition	Examples
Obstetric haemorrhage (without shock)	◊ Placenta praevia ◊ Abruptio placentae ◊ Uterine rupture

Pre-referral Management

◊ Check BP, pulse, temperature and respirations
◊ Keep warm and commence oxygen 2 - 4 litres per minute by mask
◊ Insert 2 large bore I.V. cannulae
◊ Collect blood for FBC, Grouping & cross-match
◊ Do bedside clotting time
◊ Give IV fluids. Run **any crystalloid** (normal saline, Ringers Lactate) available fast
◊ Maintain diastolic BP at or above 60mmHg
◊ Insert Foley catheter
◊ Monitor fluid intake and output

◊ **Do not sedate the patient**
◊ **Do not perform vaginal exam in placenta praevia**

Condition	Examples
Other obstetric problems	◊ Premature labour ◊ Preterm Prelabour rupture of Membranes (PPROM)

Pre-referral Management

◊ Check BP, Pulse, Temperature and Respirations
◊ Insert I.V. cannula if applicable
◊ Collect blood for FBC, ESR
◊ Start Dexamethasone 6mg IM
◊ commence oral antibiotics
- Erythromycin 500 mg
- Flagyl 400 mg

◊ **Give IV antibiotics if suspecting chorioamnionitis**
◊ **Do a Speculum Exam but do not perform a Digital Vaginal Exam in PPROM**

6.5. EMERGENCY CONDITIONS IN LABOUR AND DELIVERY

Condition	Examples
Prolonged labour	◊ CPD ◊ Big baby ◊ Uterine inertia ◊ Contracted pelvis ◊ Obstructed labour ◊ Malposition

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Insert I.V. cannula ◊ Collect blood for FBC, Grouping & cross-match ◊ Insert Foley catheter ◊ Give broad spectrum antibiotic if indicated ◊ Continue monitoring FH & other vitals as per routine until you hand over

Condition	Examples
Cord accidents	◊ Cord presentation ◊ Cord prolapse

Pre-referral Management
Refer if cord is pulsating and do the following:- ◊ Nurse woman in knee-chest position ◊ Check BP, pulse and respirations ◊ Insert I.V. cannula ◊ Collect blood for FBC, Grouping & cross-match ◊ Insert Foley's catheter and inflate bladder if empty ◊ Keep bladder full ◊ Ensure that cord is protected with saline-wet sterile gauze ◊ Continue monitoring vitals as per routine until you hand over

Condition	Examples
Hypertensive disorders	◊ Severe pre-eclampsia and eclampsia

Pre-referral Management
◊ As in antenatal

Condition	Examples	
Malpresentations	◊ Breech ◊ Face ◊ Transverse lie	◊ Hand prolapse ◊ Oblique lie ◊ Compound presentations

Pre-referral Management

- ◊ Check BP, Pulse, Temperature and Respirations
- ◊ Insert I.V. cannula
- ◊ Collect blood for FBC, Grouping & cross-match
- ◊ Insert foley catheter
- ◊ Continue monitoring FHR and vitals as per routine until you hand over

Condition	Examples	
Obstetric haemorrhage with shock	◊ Placenta praevia ◊ Abruptio placentae ◊ Uterine rupture ◊ Retained placenta	◊ Atonic uterus ◊ Cervical/vaginal tears ◊ 3rd /4th degree perineal tears

Pre-referral Management

- ◊ Check BP, pulse, temperature and respirations
- ◊ Keep warm and commence oxygen 2 - 4 litres per minute by mask
- ◊ Elevate the lower limbs
- ◊ Insert 2 large bore I.V. cannulae
- ◊ Collect blood for FBC, Grouping & cross-match.
- ◊ Do bedside clotting time
- ◊ Give IV fluids; run (normal saline, Ringers Lactate) 1st litre within 15 min, 2nd litre over the next 30 min, 3rd litre over the next 1 hour
- ◊ Maintain diastolic BP at or above 60 mmHg
- ◊ Insert Foley catheter
- ◊ Monitor fluid intake and output
- ◊ Consider anti-shock garment
- ◊ Perform Uterine Baloon Tamponade (UBT) for atonic uterus
- ◊ Estimate and record blood loss

- ◊ **Do not sedate the patient**
- ◊ **Do not pack the vagina in PPH**

Condition	Examples
Distress	◊ Fetal Distress

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Give oxygen 4 litres per minute by mask if oxygen saturation is less than 100% ◊ Nurse woman in left lateral position ◊ Insert I.V. cannula ◊ Collect blood for FBC, Grouping & cross-match ◊ Commence 1 litre Ringers Lactate IV ◊ Insert Foley catheter ◊ Continue monitoring FHR and vitals as per routine until you hand over

Condition	Examples
Other conditions	◊ Excessive genital warts ◊ Under age (16 years old and below) ◊ Grand multipara (Para 5 and above)

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Insert IV cannula ◊ Collect blood for FBC, Grouping & cross-match ◊ Continue monitoring FHR and vitals as per routine until you hand over

6.6. EMERGENCY CONDITIONS IN POSTPARTUM

Condition	Examples
Puerperal infections	◊ Puerperal sepsis

Pre-referral Management

◊ Check BP, pulse, temperature and respirations
◊ Insert I.V. cannula
◊ Collect blood for FBC, ESR, LFTs, U/Es
◊ Give broad spectrum IV antibiotics
- Benzyl penincillin (X-Pen), Gentamycin & Metronidazole
- Ampilicin, Gentamycin & Metronidazole
- Cefotaxime or Ceftriaxone & Metronidazole OR any other antibiotics available

Condition	Examples
Cardiac disease	◊ Congestive heart failure ◊ Acute pulmonary edema ◊ Cardiac arrhythmias

Pre-referral Management

As in antenatal

Condition	Examples
Medical condition	◊ Severe malaria

Pre-referral Management

◊ Check BP, pulse, temperature and respirations
◊ Insert foley catheter
◊ Insert IV cannula
◊ Commence 1 litre 10% Dextrose or Dextrose Normal Saline (DNS) infusion
◊ Collect blood for U/Es, LFTs , FBC
◊ Commence antimalarial medications following standard guidelines

Condition	Examples
Medical condition	◊ Severe anaemia

Pre-referral Management

- ◊ Nurse propped-up position at 45° angle
- ◊ Give oxygen 4 – 6 litres per minute by mask
- ◊ Check BP, pulse, temperature and respirations
- ◊ Insert Foley's catheter
- ◊ Insert intravenous (IV) cannula
- ◊ Collect blood for U/Es, LFTs , FBC & cross-match
- ◊ Give IV Frusemide 40 mg to 80 mg over 1 -2 minutes
- ◊ Do chest X-Ray if available
- ◊ Start haematinics

- ◊ **Do not sedate the patient**
- ◊ **Do not give IV fluids**

6.7. EMERGENCY GYNAECOLOGICAL CONDITIONS

Condition	Examples
Bleeding in early pregnancy	◊ Ectopic pregnancy

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Insert IV cannula ◊ Collect blood for FBC , Grouping & X-match ◊ Commence IVF (normal saline or Ringers Lactate) ◊ Insert Foley's catheter ◊ Monitor intake and output

Condition	Examples
Bleeding in early pregnancy	◊ Inevitable abortion/miscarriage ◊ cervical weakness/incompetence

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Do pelvic ultrasound scan ◊ Insert IV cannula ◊ Collect blood for U/Es, LFTs , FBC ◊ Commence IVF (normal saline & Ringers Lactate)

Condition	Examples
Bleeding in early pregnancy	◊ Incomplete abortion /miscarriage ◊ Septic abortion

Pre-referral Management
◊ Check BP, pulse, temperature and respirations ◊ Insert IV cannula ◊ Collect blood for U/Es, LFTs , FBC ◊ Commence IVF (normal saline & Ringers) ◊ Commence broad spectrum antibiotics ◊ Insert Foley's catheter ◊ Monitor intake and output

SECTION 7 NEWBORN REFERRAL CRITERIA

7.1. REFERRALS FROM CLINICS TO 1ST LEVEL HOSPITALS

Cardiac

◊ Asymptomatic heart murmur
◊ Heart murmur with non-life threatening symptoms

Respiratory

◊ Meconium aspiration requiring oxygen
◊ Respiratory distress: grunting, tachypnea, nasal flaring, chest in drawing, cyanosis

Musculoskeletal

◊ Birth Injury (Mechanical injuries not affecting cardiorespiratory status)
◊ Absent digits or limbs
◊ Congenital hip problem (can be seen non urgently at tertiary level)
◊ Congenital foot problem (can be seen non urgently at tertiary level)

Neurological

◊ Microcephaly

Gastrointestinal

◊ Sustained feeding difficulties in a newborn not related to gestational age
◊ Poor weight gain

Genitourinary

◊ Undescended testes

Maternal conditions

◊ Stable infant of a mother with history of substance or alcohol misuse/dependence in this pregnancy
◊ Infant of mother with diabetes (apparently normal)
◊ Intrauterine infection (RPR, Hep B, Hep C)
◊ Maternal medication with risk to baby (carbimazole, antipsychotics, antidepressants, anticonvulsants)
◊ Maternal/family history with risk factors for baby

Growth and feeding

◊ Dehydration or >10% weight loss since birth
◊ Small for gestation age
◊ Low birth weight: 1.5kg to 2.5kg

Metabolic and others

◊ Significant jaundice in previous infant
◊ Excessive irritability
◊ Hypothermia/hyperthermia

7.2. DIRECT REFERRAL FROM 1ST LEVEL HOSPITALS (OR CLINICS) TO 2ND AND 3RD LEVEL HOSPITALS

Cardiac

◊ Absent femoral pulses
◊ Cyanosis
◊ Heart murmur with life threatening symptoms

Respiratory

◊ Acute respiratory condition requiring ventilatory support
◊ Cyanosis
◊ Nasal obstruction
◊ Repeated apnoea

Neurological

◊ Severe infant depression at birth
◊ Convulsions or unresponsiveness
◊ Limpness, lethargy, hypotonic
◊ Stridor (If has cardiorespiratory stability, refer non urgently)

Gastrointestinal

◊ Persistent vomiting without blood or bile
◊ No passage of meconium in 36 hours
◊ Persistent or bile stained vomiting or persistent fresh blood in stools with/without abdominal distension
◊ Gastrochisis
◊ Omphalocele
◊ Imperforate anus

Genitourinary

◊ Renal abnormality or vesico-ureteric reflux
◊ Failure to pass urine in the first 36-hour period
◊ Ambiguous genitalia

Surgical:

◊ Spina Bifida (non urgent referral)
◊ Cleft palate (non urgent referral)
◊ Protruding abdominal viscera (exomphalos
◊ Gastroschisis)
◊ Hydrocephalus (non urgent referral)
◊ Encephalocele (brain protrusion through the skull)
◊ Urethra malposition (Hypospadias, Epispadias) {non urgent referral}

Maternal conditions

◊ Infant of mother with diabetes with any anomalies requiring cardiorespiratory support.
◊ Infant of mother with diabetes with prolonged and recurrent hypoglycaemia unresponsive to dextrose infusions

Genetic, metabolic and others

◊ Septicemia requiring 3rd line antibiotics not stocked at first level e.g. imipenem
◊ Bilirubin levels above 400 micromol/L or requiring exchange transfusion (see age appropriate charts)
◊ Persistent hypoglycaemia not responsive to dextrose infusions
◊ Late jaundice: visible or >150 micromol/l from 2 weeks in term infant and 3 weeks in preterm infant
◊ Jaundice associated with pale or gray colored stools
◊ Familial bleeding tendency

Dermatological (skin)

◊ Life threatening skin conditions (blistering of the whole or significant parts of the body)

Growth and feeding

◊ Low birth weight: less than 1.5 Kg

NOTE: For emergencies, provide appropriate resuscitative care before referring the patient

7.3. HEALTH FACILITY POSTNATAL WARD GUIDELINES

◊ All babies who are clinically well, and if there were no complications at birth, should be monitored for 6 hours post-delivery.
◊ All other babies should be monitored for 24 hours, these include:
  - initial mild respiratory distress (grunting, cyanosis, recessions and tachypnoea) which settled quickly
  - initial 1min apgar <7, but then 5 min apgar was normal
  - meconium stained liquor
  - babies who have a birth weight >1800g but <2000g

◊ If after 24 hours, the baby's condition is not satisfactory then referral to hospital is needed.
◊ Referral to hospital might be needed earlier if baby's condition deteriorates or there is a space issue in the postnatal ward.

7.4. CHECKLIST BEFORE DISCHARGE:

- ◊ Vitals (e.g. blood sugar, respiratory rate, CRT and temperature) are normal
- ◊ Clinically baby is well (i.e. no RDS, normal tone, sucking well) , and mother is satisfied with baby's condition
- ◊ If formula feeding, mother knows how to prepare the milk and uses the correct amounts (must meet AFASS)
- ◊ Cord care has been demonstrated
- ◊ If RVD exposed, baby was started on nevirapine/zidovudine and mother issued with medicine and shown how to administer it
- ◊ If Baby is LBW, then KMC must be explained and mother must demonstrate that she is confident in doing this
- ◊ Total Serum Bilirubin (TSB) was done, if indicated and details given to mother to phone for results (make sure the folder details are correct in case mother doesn't phone)
- ◊ Baby received polio drops and BCG
- ◊ Road-to-health card completed correctly
- ◊ Mother and family concerns have been addressed
- ◊ Warning signs must be explained to mother (e.g. not feeding well or problems with breathing), and she must know when and where to come back if there is a problem at home
- ◊ Has received Vitamin K IM STAT 0.5mg < 2.5 kg and 1mg > 2.5 kg
- ◊ Follow-up appointment must be given post discharge

SECTION 8 PRE-REFERRAL MANAGEMENT OF COMMON NEONATAL CONDITIONS

Transfer of a sick baby requires stabilisation, and the ABCDE should be done for all these babies

A-Airway; ensure the airway is clear (suction only if secretions present)

B-Breathing; the baby is put on respiratory support during transfer if in respiratory distress (nasal prong oxygen or CPAP if available on transfer)

C-Circulation; Insert IV access peripherally with a size 24/26G cannula or umbilical catheter (can use a size 5/6 NGT) if peripheral access fails and one is skilled enough in inserting umbilical catheter.

D- Dextrose bolus of 5 ml/kg should be given PO/IV. In transit, give continued dextrose boluses calculated based on the baby's weight. NGT for feeds should be inserted in babies that are not breast feeding (feeds should be calculated based on the weight as in the chart below)

E-Exposure; keep the baby warm (put a hat and socks transfer skin to skin with the mother or use a plastic bag before covering with a blanket if mum is not available). Aim for temperature 36.5oC and above

NOTE: For purposes of transfer, all hypothermic babies regardless of weight should be put skin to skin or in a plastic bag and temperatures monitored.

8.1. CALCULATION OF FEEDS/FLUIDS

Weight	Fluids (dextrose 10) /feeds –Expressed breast milk
>1000g	90ml/kg/day
1000-1200g	80ml/kg/day
1201-1500g	70ml/kg/day
>1501g	60ml/kg/day
Bolus dose of dextrose 10% - 5ml/kg stat	

Example

1 kg baby needs first 5ml IV dextrose 10% stat. Then using 80ml/kg, fluids are calculated as 1 kg x 80 ml =80 ml and this is divided by 12 to give 2 hourly boluses ; 80/12 giving 6.7 ml rounded off as 7ml every 2 hours.

Therefore, this baby receives 7 ml of dextrose 10% every 2 hours

8.2. PREMATURITY

Weight less than 1000 grams

- ◊ Cover the baby in a hat and socks Insert a cannula or umbilical catheter if peripheral IV access fails
- ◊ Give a bolus dose of 5 ml/kg of dextrose 10%
- ◊ Start an infusion of dextrose 10% at 90ml/kg/day (can be given divided in 2 hourly boluses for ease of administration on the way-refer to example above)
- ◊ Transfer the baby in skin to skin position with a warm mother (mother should be naked and the baby only in hat and soaks placed in mothers' blouse)
- ◊ If mother not available for transfer, put the baby in a plastic bag leaving the face only
- ◊ If available, put on Continuous Positive Airway Pressure (CPAP) during transfer

NOTE: Do no transfer a baby less than 500 grams. Explain the poor prognosis and put the baby in mother's arms for comfort care. Such babies are unlikely to survive in our set-up

Weight 1000 to 1200 grams

- ◊ As above
- ◊ Start the dextrose 10% at 80ml/kg

Weight 1201 to 1500 grams

- ◊ As above
- ◊ Start dextrose 10% infusion at 70ml/kg/day

Above 1501 grams

- ◊ Start Dextrose 10% infusion at 60ml/kg/day

8.3. ASPHYXIATED /CONVULSING BABY

- ◊ Insert cannula or Umbilical catheter if peripheral access is not available
- ◊ Give a bolus of 10% dextrose at 5 ml/kg if low sugar or if dextrose Stix are not available)
- ◊ If convulsions persist after the dextrose bolus, give Phenobarbitone at 20 mg/kg IV stat dose (a second dose can be given but beware of respiratory depression)
- ◊ Calculate the Dextrose boluses at 40ml/kg/day (asphyxiated babies require initial fluid restriction)
- ◊ Put hat and socks on
- ◊ Baby should be transferred at a temperature of 36.5°C to 37.2°C
- ◊ Transfer on oxygen

8.4. PRESUMED SEPSIS /JAUNDICE/PNEUMONIA

- ◊ Insert peripheral IV access (Do not put an Umbilical catheter especially if there's evidence of umbilical sepsis)
- ◊ Give a bolus of dextrose at 5 ml/kg (if evidence of hypoglycaemia or if dextrose Stix are not available)-bolus dextrose can be given orally if no IV access
- ◊ If no fits detected, no abdominal distension and no vomiting, insert an NGT and give a cup to mother to express feeds depending on the baby's weight (refer to the section above)
- ◊ Give stat doses of X-pen (50,000IU per Kg and gentamicin 5 mg/kg)
- ◊ Transfer on oxygen/CPAP if baby needs it

SECTION 9 COMMUNICATION AND TRANSFER

9.1. COMMUNICATION

◊ Communication tools should be available
◊ National coordinating communication centre to link with provincial and district officer responsible for referrals
◊ Create a national, provincial and district contact Directory to be available in every facility
◊ The referring officer at the initiating referral facility should communicate with command post and record the time of:

- Communication with command post
- Expected time of the ambulance arrival

◊ Where feasible, technical support can be sought internally or externally
◊ Regular meeting within the zonal/district to discuss the referrals

9.2. AMBULANCE SERVICES

◊ Ambulance should be kept at designated commanding post close to health centers
◊ Dedicated zone/district maternity ambulance service
◊ Designated zone/district commanding officer
◊ Maintain phone directory at every centre and in all ambulances for easy access to ambulance commanding post/ officer (contact number)
◊ The responsible officer to ensure the ambulance is maintained according to minimum standards for safe transfer
◊ The accompanying health care provider should sit close to the patient while being transferred.
◊ The ambulance must only be used for purposes of transporting patients

COMMUNICATION SYSTEM FOR AMBULANCE SERVICES

REFERRING FACILITY

Calls **command centre** for ambulance services and informs r**eceiving facility** about the referral case

*AMBULANCE COMMAND CENTRE**

Receives call and sends ambulance with nurse to referring facility.

Follows up with referring facility to confirm that patient has been picked-up

RECEIVING FACILITY

Provides feedback to referring facility on any additional pre-referral guidance, and begins to prepare to receive the patient.

KEY

- Calls from referring facility
- Feedback from receiving facility
- Ambulance route
- Follow up call by command centre

**Command Centre* may mean the designated center that coordinates ambulances services. This could be a selected Health Facility at which the ambulances is normally stationed and to which other facilities intending to refer a patient will call, or could be a District Health Office that serves this function".*

APPENDIX 1. Checklist for Maternal Emergency Cases

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

Checklist for Maternal Emergency Cases

Diagnosis:

Receiving facility contacted		Yes	No	N/A
Information communicated:				
○ Reason for referral		Yes	No	
○ Co-morbid conditions (Cardiac, hypertension……..etc)		Yes	No	
○ General Condition of patient (Conscious level)		Yes	No	
○ Blood group and HB if known		Yes	No	
Pre-referral actions:				
○ IV access		Yes	No	
○ Urinary catheter		Yes	No	
○ Collection of blood in 3 bottles(purple, green and red top)		Yes	No	
○ Bedside Clotting		Yes	No	
○ Urinalysis		Yes	No	
○ IV Fluids if necessary		Yes	No	
○ All Observations	BP	Yes	No	
	Pulse	Yes	No	
	Temp	Yes	No	
	Resp rate	Yes	No	
○ Appropriate drugs given. e.g.		Yes	No	
○ Anti-Shock garment/UBT		Yes	No	
○ Estimated blood loss		Yes	No	
○ Appropriate position during transfer		Yes	No	
Details of referral discussed with patient and family		Yes	No	
Referral form completed		Yes	No	
Referral register completed		Yes	No	

Checked by:	Date:	Sign:
Health Care Provider:	Date:	Sign:

APPENDIX 2. Checklist for Neonatal Emergency Cases

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

Checklist for Neonatal Emergency Cases

Diagnosis:

Receiving facility contacted		Yes	No	N/A
Information communicated				
○ Reason for referral		Yes	No	
○ Co-morbid conditions (Birth Weight, Gestational Week, Apgar Score and Meconium aspiration, etc.)		Yes	No	
○ General Condition of patient (Vital signs)		Yes	No	
Pre-referral actions				
☐ Resuscitation required**:**		Yes	No	
○ Drying and stimulation		Yes	No	
○ Suctioning		Yes	No	
○ Bag and Mask		Yes	No	
○ Chest compressions		Yes	No	
○ Intubation		Yes	No	
○ Adrenaline		Yes	No	
○ Dextrose		Yes	No	
☐ Supplemental oxygen during transfer		Yes	No	
☐ Kangaroo Mother Care		Yes	No	
☐ IV Fluids if necessary		Yes	No	
☐ All observations	Pulse	Yes	No	
	Temp	Yes	No	
	Resp rate	Yes	No	
☐ Details of referral discussed with mom and family		Yes	No	
☐ Referral form completed		Yes	No	
☐ Referral register completed		Yes	No	

Checked by:	Date:	Sign:
Health Care Provider:	Date:	Sign:

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

NATIONAL MATERNAL REFERRAL FORM

Form ID: MOH/MAT/002/v1
Page 1 of 1

Referring Facility:	Contact#:
Receiving Facility:	Person Contacted:
Designation:	Phone#:
Reason for referral:	

PATIENT DETAILS

Full name:		Age:	File number:
Parity:	Gravidity:	GA:	Previous C/S? ☐ Yes ☐ No
Address:			
Contact number:			
Next of Kin:		Next of kin's contact number:	

Brief history:

PHYSICAL EXAMINATION

General examination

Conscious? ☐Yes ☐No	Pallor:	Jaundice:	Oedema:
Other:			

Observations

BP: /	Pulse:	Resp Rate:
Temperature:	Urinalysis:	

Abdominal examination *(General)*

Liver:
Spleen:
Other:

Abdominal examination *(Obstetric)*

SFH:
Lie:
Presentation:
Contractions:
Fetal heart:
Other:

Investigations done:

Vaginal examination:

Speculum exam:

Digital: Vulva:		Vagina:
Cervix:	Os:	Membranes:
Liquor:	Caput:	Moulding:
Station:	Cord:	Other:

Provisional diagnosis:

Treatment given:

Documents accompanying referral

ANC card? ☐ Yes ☐ No	Partograph? ☐ Yes ☐ No

Referring health provider:
Designation:
Date: Time: Signature:

Transport:	Mode of transport: ☐ Ambulance	☐ Other:	
Time called:		Time arrived:	

Receiving provider:	Designation:
Date: Time:	Signature:

Handover vitals:

BP: /	Pulse:	Resp Rate:	Temp:
FH:	Conscious level:	Other:	

FEEDBACK TO THE REFERRING HEALTH FACILITY

Name of the patient:	
File # (**referring** facility):	File #**receiving** facility:
Date of referral:	Date of discharge:
Reason for referral:	
Admitting Diagnosis:	
Management at referral hospital:	
Outcome:	
Follow up advice:	
Comment on the referral process of this patient:	
Name of attending health provider:	
Designation:	Signature:

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH

NATIONAL NEONATAL REFERRAL FORM

Form ID: MOH/NEO/006/v2
Page 1 of 1

Referring Facility:	Contact#:
Receiving Facility:	Person Contacted:
Designation:	Phone#:
Reason for referral:	

PATIENT DETAILS

Name: DOB: File #:

Maternal booking results: - VDRL: RVD: Blood group:

Birth history:

Course:

Problems list		Resolved problems

Cranial ultrasound

Relevant results:

Feeds:

Medication list:

Further plan:

Referring person: Designation:

Date: Time: Signature:

Transport: Mode of transport: ☐ Ambulance ☐ Other:

Time called: Time arrived:

Receiving provider: Designation:

Date: Time: Signature:

Handover vitals:

BP: /	Pulse:	Resp Rate:	Temp:
Capillary refill time (CRT):		Passed urine and stool:	

FEEDBACK TO THE REFERRING HEALTH FACILITY

Name of the patient:	
File # (**referring**):	File # (**receiving**):
Date of referral:	Date of discharge:
Reason for referral:	
Admitting Diagnosis:	
Management at referral hospital:	
Outcome:	
Follow up advice:	
Comment on the referral process of this patient:	
Name of attending health provider:	
Designation:	Signature:

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European Union

UNITED NATIONS ZAMBIA

MDGI: A Joint Government of the Republic of Zambia-European Union-United Nations Programme