Maternal near miss: Inclusion criteria and data collection form

Definition Maternal Near Miss:
A maternal near-miss is defined as a woman with a life-threatening pregnancy-related complication who survives a complication **that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy**. It therefore includes women with severe acute maternal morbidity as defined below.

Identification of women with Maternal Near Misses:
Women will be assigned to be a Near Miss when they have one or more criteria (described in section 1) and caused by underlying complication (section 2).

Data collection:
Data will be collected from patient files in Section 3.
NB: The woman will be assigned a Near Miss number (eg NM1, NM2), but no identifiers will be included in this form. A separate log of NM numbers and folder numbers will be kept in a secure office by the PI/ Near Miss coordinator.

Section 4 on the Assessment of quality of care/ avoidable factors/ substandard care will be completed after the facility Maternal Near Miss/ morbidity meeting

The WHO tool has been adjusted for the South African situation in agreement with the three authors of recent publications: **Prof Fawcus (a), Prof. Priya Soma-Pillay (b) and Dr Heitkamp (c) by** combining experiences in South Africa, the WHO maternal near miss criteria, and existing literature with the Haydom criteria (d) and the outcomes of the Delphi study for low income countries (e).

References
(a) Iwuh et al 2018, (b) Soma Pillay et al 2015, (c) Heitkamp et al 2021 (d) Nelissen et al 2013.(e)Tura et al 2017

Signature and designation of practitioner completing form:

Date form completed:

1. Adjusted Criteria for identification Maternal Near Miss for South Africa

Tick the box where criteria occur (more than one criterion possible)

A. Clinical Criteria		
C1	Acute cyanosis (blue lips)	
C2	Gasping	
C3	Respiratory rate >40 or <6/min	
C4	Shock	
C5	Oliguria non responsive to fluids or diuretics	
C6	Failure to form clots	
C7	Loss of consciousness lasting >12 h	
C8	Cardiac arrest	
C9	Stroke	
C10	Uncontrollable fit/total paralysis	
C11	Jaundice in the presence of pre-eclampsia	
B. Laboratory based criteria		
L1	Oxygen saturation <90% for >60 minutes	
L2	Hypoxemia PaO2/FiO2<200 mmHg (on roomair Po2 <5.6, on 40%xygen PO2<10.2)	
L3	Creatinine >300mmol/l or >3.5 mg/dL	
L4	Bilirubin >100 mmol/l or >6.0 mg/dL	
L5	pH <7.1 or Lactate >5	
L6	Platelets <50	
C. Interventions		
	Massive blood transfusion ≥ 4 bloodproducts	
I1	Admission intensive care unit/ critical care	
I2	Hysterectomy	
I3	Laparotomy (excludes caesarean section/ ectopic)	
I4	Intubation & Ventilation	
I5	Use of continuous vasoactive drugs (inotropes)	
I6	Renal Dialysis	
I7	Interventional radiology	
I8	Cardio pulmonary resuscitation (CPR)	

2. Underlying Obstetric/Medical complication *(only tick one box)*

		DIRECT CAUSES	Category	Sub-category
1		**Ectopic pregnancy**		
	1	Less than 20 weeks		
	2	More than 20 weeks		
2		**Miscarriage**		
	1	Septic		
	2	Haemorrhage (non traumatic)		
	3	Uterine trauma		
	4	Gestational Trophoblastic Disease		
3		**Miscellaneous**		
	1	Hyperemesis gravidarum		
	2	Acute fatty liver syndrome		
4		**Pregnancy related sepsis**		
	1	Chorioamnionitis		
	2	Puerperal sepsis after vaginal birth		
	3	Puerperal sepsis after Caesarean Section (CS)		
5		**Obstetric haemorrhage**		
	1	Placental Abruption with hypertension		
	2	Abruption without hypertension		
	3	Placenta praevia		
	4	Other antepartum haemorrhage		
	5	Ruptured uterus with previous CS		
	6	Ruptured uterus without previous CS		
	7	Retained placenta		
	8	Morbidly adherent placenta		
	9	Uterine atony		
	10	Cervical trauma		

	11	Perineal trauma		
	12	Uterine inversion		
	13	Bleeding during CS		
	14	Bleeding after CS		

			Category	Sub-category
6		**Hypertension**		
	1	Chronic hypertension		
	2	Gestational hypertension		
	3	Preeclampsia		
	4	Eclampsia		
	5	HELLP Syndrome		
	6	Liver rupture		
	7	Pulmonary oedema		
7		**Anaesthetic complications**		
	1	General anaesthesia		
	2	Spinal anaesthesia		
	3	Epidural anaesthesia		
8		**Embolism**		
	1	Pulmonary embolism		
	2	Amniotic fluid embolism		
9		**Acute collapse**		
10		**Other (please specify**):		
INDIRECT CAUSES				
11		**Non pregnancy related infections (NPRI)**		
	1	HIV		
	2	TB		

	3	Respiratory tract infection	[redacted]	
	4	Urinary tract infection		
	5	Other NPRI		
12		**Underlying medical disease**		[redacted]
	1	Cardiac disease	[redacted]	
	2	Diabetes mellitus		
	3	Gastro-intestinal disease		
	4	Neurological disease		
	5	Respiratory disease		
	6	Haematological disease		
	7	Genito-urinary disease		
	8	Auto-immune disease		
	9	Psychiatric disease		
	10	Neoplasm		
	11	Other/medical disease; specify		
13		**Other (please specify):**		

3. Details of women with NEAR MISS

Patient Near Miss number	
Age	
Gravidity	
Parity	
HIV (CD4, VL)	
BMI	
Past medical history 1= Chronic Hypertension 2= Diabetes mellitus 3= Cardiac disease 4= Asthma 5= Previous TB 6= Autoimmune disease 7= Thyroid disease 8= Other (specify) 9= none Please enter more than one if applicable	
Obstetric History 1= Previous Caesarean section 2= Previous Gestational hypertension 3= Other, specify	
Timing of Near Miss 1= Ante partum 2= Peri partum 3= Post partum	
Where did Near Miss event happen (level of care) 1=MOU/ clinic 2= District hospital 3= Regional hospital 4= Tertiary hospital 5= Private hospital	
Referral route 1= MOU to DH 2= MOU to RH 3= MOU to TH 4= DH to RH 5= DH to TH 6= RH to TH 7= more than one journey; specify ----------	
Gestational Age at delivery *(99 if undelivered)*	
Induction of Labour (IOL) 1 = Yes	

2 = No	
Mode of delivery / termination : 0= Women discharged still pregnant 1= Spontaneous vaginal delivery 2= Ventouse 3= Forceps 4= Emergency CS 5= Elective CS 6= Laparotomy for ruptured uterus 7= Laparotomy for ectopic 8= Medical methods for uterine evacuation 9= Surgical methods for uterine evacuation	
Indication for Caesarean section (CS) 0= not applicable 1 = Fetal distress 2 = Prolonged first stage 3 = Failed IOL 4 = Fetal macrosomia 5 = Previous CS 6 = Abruptio placenta 7 = Prolonged 2nd Stage 8= Failed instrumental delivery 9 = Malpresentation 10 = Placenta praevia 11 = Maternal request 12 = Multiple pregnancy 14 = Uterine rupture 15 = Cord prolapse 16 = Other; specify ……..	
Blood loss at delivery (Enter in millilitres)	
Days spent in Hospital	
Maternal Death	

Perinatal Outcomes

Gender (1=male, 2=female)		Birth weight (g)		Apgar	1 min	5 min

4. Assessment of avoidable factors

(form used by the National Committee for Confidential Enquiry into Maternal Deaths)

More than 1 may be ticked

PATIENT RELATED FACTORS		
1	No avoidable factor	
2	No antenatal care	
3	Initiated antenatal care late	
4	Defaulted antenatal care	
5	Delay in accessing medical help	
6	Declined medication/surgery/advice	
7	Unsafe abortion	

ADMINISTRATIVE RELATED FACTORS					
		MOU	1	2	3
8	No avoidable factor				
9	Transport problem: home to institution				
10	Transport problem: institution to institution				
11	Delay initiating care				
12	Delay initiating critical care				
13	Lack of health care facilities: ICU				
14	Lack of health care facilities: Blood products				
15	Lack of appropriately trained staff: Doctors				
16	Lack of appropriately trained staff: Nursing				

HEALTH WORKER RELATED FACTORS					
		MOU	1	2	3
17	No avoidable factor				
18	Problem with recognition/diagnosis				
19	Delay in referring patient				
20	Managed at inappropriate level (antenatal)				
21	Managed at inappropriate level (at time of event)				
22	Incorrect management (incorrect diagnosis)				
23	Incorrect management (correct diagnosis)				
24	Not monitored/infrequently monitored				
25	Prolonged abnormal monitoring with no action taken				

IMPACT OF SUBOPTIMAL CARE: COULD NEAR MISS HAVE BEEN AVOIDED or MANAGED BETTER? 1=yes, 2=no		
26	No suboptimal care	
27	Suboptimal care, different management would not have made a difference to outcome	
28	Suboptimal care, different management might have made a difference to outcome	
29	Suboptimal care, different management would reasonably to have been expected to have made a difference to outcome	