Research Article ISSN 2639-944X

Journal of Medical - Clinical Research & Reviews

Epidemiological Profile, Clinical Presentation, and Management of Obstetric Emergencies at the CHU Renaissance, Kinshasa: A Series of 1,133 Cases

Trésor Ngamasata[1]*, Sylvain Mulumba[2], Roland Longenge[3], Serge Nyembo[2] and Moses Badianjile Kena[4]

[1]*Department of Neurosurgery & Medical Directorate, Centre Hospitalier Universitaire Renaissance (CHUR), Kinshasa, Democratic Republic of the Congo.*

[2]*Department of Obstetrics and Gynecology, Centre Hospitalier Universitaire Renaissance (CHUR), Kinshasa, Democratic Republic of the Congo.*

[3]*Department of Pediatrics, Centre Hospitalier Universitaire Renaissance (CHUR), Kinshasa, Democratic Republic of the Congo.*

[4]*Department of General Medicine and Public Health, Centre Hospitalier Universitaire Renaissance (CHUR), Kinshasa, Democratic Republic of the Congo.*

***Correspondence:**

Trésor Ngamasata, Department of Neurosurgery & Medical Directorate, Centre Hospitalier Universitaire Renaissance (CHUR), Kinshasa, Democratic Republic of the Congo, ORCID: 0009-0005-6832-4006.

Received: 05 Oct 2026; **Accepted:** 08 Nov 2026; **Published:** 19 Nov 2026

Citation: Trésor Ngamasata, Sylvain Mulumba, Roland Longenge, et al. Epidemiological Profile, Clinical Presentation, and Management of Obstetric Emergencies at the CHU Renaissance, Kinshasa: A Series of 1,133 Cases. J Med - Clin Res & Rev. 2026; 10(11): 1-4.

ABSTRACT

Background: *Obstetric emergencies are the leading cause of maternal and neonatal mortality in low-resource settings, including the Democratic Republic of the Congo (DRC).*

Objectives: *To evaluate the epidemiological, clinical, diagnostic, and therapeutic profiles, as well as outcomes of obstetric emergencies managed at the Centre Hospitalier Universitaire Renaissance (CHUR) in Kinshasa.*

Methods*: A 12-month retrospective descriptive and analytical study was conducted on 1 ,133 consecutive obstetric emergency cases. Socio-demographic, clinical, diagnostic, surgical, and fetomaternal outcome parameters were systematically analyzed.*

Results: *Mean maternal age was 27.4 ± 6.2 years. The majority of patients (68.4%, n = 775) were referred from peripheral primary and secondary health facilities. Severe preeclampsia (11 .4%, n = 129), fetopelvic disproportion (FPD) (10.5%, n = 119), premature rupture of membranes (PROM) (9.1 %, n = 103), and threat of preterm labor (6.1 %, n = 69) were the leading admission diagnoses. Emergency cesarean section was the predominant delivery mode (59.9%, n = 679), followed by vaginal delivery (33.1 %, n = 375), emergency non-cesarean laparotomies for uterine rupture or ruptured ectopic pregnancy (3.5%, n = 40), and uterine evacuation procedures (2.6%, n = 30). Severe neonatal asphyxia at 5 minutes was observed in 8.8% of live births, and 22.6% required neonatal intensive care unit (NICU) admission.*

Conclusion: *The obstetric emergency caseload at CHU Renaissance is heavily driven by hypertensive disorders of pregnancy and mechanical dystocia. Strengthening antenatal screening in peripheral centers, expediting emergency transfer networks, and maintaining round-the-clock surgical and blood bank readiness are critical to improving maternal and neonatal survival.*

N = 1,133	68.4%	59.9%	18.4%
EMERGENCY COHORT	REFERRED CASES	EMERGENCY C-SECTION RATE	HYPERTENSIVE DISORDERS

Keywords
Obstetric emergencies, Emergency Cesarean section, Preeclampsia, Kinshasa, DRC, Referral hospital, Fetomaternal outcome.

Introduction
Reducing maternal and neonatal mortality remains a central global public health priority, explicitly targeted under United Nations Sustainable Development Goal 3 (SDG 3) [1]. Globally, an estimated 287,000 women die annually from complications related to pregnancy and childbirth, with approximately 95% of these fatalities occurring in low- and lower-middle-income countries [2]. Sub-Saharan Africa alone bears nearly 70% of the global burden of maternal mortality [3].

In the Democratic Republic of the Congo (DRC), maternal mortality remains alarmingly high, with an estimated ratio exceeding 545 deaths per 100,000 live births [4]. The majority of these deaths stem from direct obstetric complications occurring during labor, delivery, or the immediate postpartum period—primarily obstetric hemorrhage, hypertensive disorders of pregnancy, puerperal sepsis, and mechanical dystocia [5]. Preventing adverse outcomes requires early complication detection alongside immediate access to comprehensive emergency obstetric and newborn care (CEmONC) [6].

The Centre Hospitalier Universitaire Renaissance (CHUR) in Kinshasa is a strategic tertiary referral hospital receiving a massive influx of critical obstetric emergencies referred from primary health centers and secondary hospitals across the capital and its peri-urban zones. Analyzing the clinical characteristics, referral patterns, diagnostic spectrum, and surgical decisions within this population is essential to guide hospital resource allocation, minimize treatment delays, and optimize maternal-fetal resuscitation protocols [7].

This study aims to analyze the epidemiological and clinical profiles, therapeutic management, and fetomaternal outcomes across a consecutive series of 1,133 obstetric emergencies managed at CHU Renaissance in Kinshasa.

Materials and Methods
Study Setting
This study was conducted in the Department of Obstetrics and Gynecology at the Centre Hospitalier Universitaire Renaissance (CHUR) in Kinshasa, DRC. CHUR is a tertiary referral hospital equipped with emergency surgical theaters, an adult intensive care unit (ICU), and a specialized neonatal care unit.

Study Design and Period
A retrospective descriptive and analytical study was carried out over a 12-month period.

Study Population and Eligibility Criteria
The study population comprised all pregnant, laboring, or postpartum women admitted as emergency cases to the department.

Inclusion criteria were:
1. Admission for a confirmed obstetric emergency (medical, surgical, or hemorrhagic) during the study period;
2. Availability of a complete medical record including admission clinical assessment, operative or delivery protocol, and inpatient follow-up notes.

Records with incomplete data (>20% missing variables of interest) were excluded. A final sample of N = 1,133 consecutive patients met all eligibility criteria and was included in the analysis.

Data Collection and Variables
Data were extracted using standardized record sheets from emergency admission logs, patient charts, delivery room registers, and operating theater logs. Analyzed variables included:

1. ***Socio-demographic variables:*** Maternal age, parity, referral status (referred from peripheral facility vs. direct self-referral);
2. ***Clinical and diagnostic variables:*** Reason for admission, gestational age, blood pressure at presentation, severity signs of toxemia/preeclampsia, membrane status;
3. ***Therapeutic variables:*** Mode of delivery (eutocic vaginal, dystocic vaginal, emergency cesarean section), complementary surgical procedures (laparotomy for uterine rupture/ectopic pregnancy, hemostatic hysterectomy, uterine evacuation);
4. ***Fetomaternal outcome variables:*** Apgar score at 1 and 5 minutes, birth weight, NICU admission, maternal and neonatal morbidity and mortality.

Statistical Analysis
Data were processed using Microsoft Excel and analyzed using SPSS version 25.0 and Stata version 16. Quantitative variables were presented as mean ± standard deviation (SD). Qualitative variables were expressed as absolute frequencies and percentages. Categorical comparisons were evaluated using Pearson's chi-squared test or Fisher's exact test where appropriate. Statistical significance was set at $p < 0.05$.

Ethical Considerations
The study protocol was approved by the Institutional Ethics Committee of CHU Renaissance (Kinshasa). Patient data confidentiality and anonymity were strictly maintained throughout data extraction and reporting.

Results
Socio-Demographic and Baseline Clinical Characteristics
Among the N = 1 ,133 admitted patients, the mean maternal age was 27.4 ± 6.2 years (range: 14 to 45 years). Women aged 20–29 years constituted the largest age group (54.2%). Primiparous women accounted for 41 .2% of the cohort. A major clinical finding was the admission route: 68.4% (n = 775) of patients were referred from primary or secondary healthcare facilities (Table 1)

Diagnostic Profile of Obstetric Emergencies
Hypertensive disorders of pregnancy and mechanical fetopelvic dystocia dominated admission indications. Severe toxemia / severe

preeclampsia was the single most common emergency diagnosis (11 .4%, n = 129), followed by fetopelvic disproportion (FPD) (10.5%, n = 119) and premature rupture ofmembranes (PROM) (9.1 %, n = 103) (Table 2).

Table 1: Socio-demographic and admission characteristics of the study cohort (N = 1 ,1 33).

Variable	Frequency (n)	Percentage (%)
Age Group (Years)		
< 20 years	153	13.5%
20 – 29 years	614	54.2%
30 – 39 years	312	27.5%
≥ 40 years	54	4.8%
Parity		
Primiparous (1)	467	41 .2%
Multiparity (2–3)	418	36.9%
Grand Multiparity (≥ 4)	248	21 .9%
Admission Route		
Referred from peripheral facility	775	68.4%
Direct admission / Self-referral	358	31 .6%
Gestational Age at Presentation		
< 37 weeks of gestation (Preterm)	318	28.1 %
37 – 41 weeks of gestation (Term)	742	65.5%
≥ 42 weeks of gestation (Post-term)	73	6.4%

Table 2: Exhaustive diagnostic distribution of obstetric emergency admissions (N = 1,133).

Rank	Primary Admission Diagnosis	Frequency (n)	Proportion (%)
1	Severe toxemia / Severe preeclampsia	129	11 .4%
2	Fetopelvic disproportion (FPD)	119	10.5%
3	Premature rupture ofmembranes (PROM)	103	9.1 %
4	Threatened preterm labor	69	6.1 %
5	Postpartum hemorrhage (PPH)	59	5.2%
6	Imminent eclampsia (Eclamptic prodrome)	51	4.5%
7	Contracted / Deformed pelvis	46	4.1 %
8	Complicated abortion (Incomplete / Septic)	37	3.3%
9	Acute fetal distress (AFD)	35	3.1 %
10	Complicated eclampsia	28	2.5%
11	Scarred uterus in labor	84	7.4%
12	Hemorrhagic placenta previa	42	3.7%
13	Abruptio placentae	31	2.7%
14	Malpresentation (Breech / Transverse)	68	6.0%
15	Ruptured ectopic pregnancy	24	2.1 %
16	Established uterine rupture	16	1 .4%
17	Other medical and obstetric emergencies	192	16.9%
Total Admissions		**1,133**	**100.0%**

Clinical Management and Surgical Procedures

Management required immediate surgical intervention in a majority of cases. The overall emergency cesarean delivery rate reached 59.9% (n = 679). Spontaneous and instrumental vaginal deliveries accounted for 33.1 % (n = 375). Table 3 details intervention types and surgical indications.

Table 3: Distribution of delivery modes and surgical interventions (N = 1 ,1 33).

Mode of Intervention / Surgical Act	Frequency (n)	Percentage (%)
Surgical Delivery (Emergency Cesarean Section)	**679**	**59.9%**
• Hypertensive indication (Severe preeclampsia / Eclampsia)	192	16.9%
• Mechanical dystocia (FPD / Contracted pelvis)	165	14.6%
• Scarred uterus & Fetal distress	152	13.4%
• Third-trimester hemorrhage (Placenta previa / Abruptio)	73	6.4%
• Other surgical indications	97	8.6%
Vaginal Delivery	**375**	**33.1%**
• Spontaneous eutocic vaginal delivery	322	28.4%
• Instrumental vaginal delivery (Vacuum / Forceps)	53	4.7%
Non-Cesarean Emergency Laparotomy	**40**	**3.5%**
• Uterine rupture (Repair / Hemostatic hysterectomy)	16	1 .4%
• Surgical management ofruptured ectopic pregnancy	24	2.1 %
Uterine Evacuation Procedures	**30**	**2.6%**
• Manual VacuumAspiration (MVA) / Curettage	30	2.6%
Conservative Medical Management & Resuscitation Alone	**9**	**0.8%**

Neonatal Outcomes

Neonatal outcomes among live births (n = 1,024) revealed high rates of perinatal depression and low birth weight, leading to substantial NICU utilization (Table 4).

Table 4: Neonatal outcomes and Apgar score distribution (Live births, n = 1 ,024).

Neonatal Parameter	Frequency (n)	Percentage (%)
Apgar Score at 5 Minutes		
Normal Apgar (≥ 7)	748	73.0%
Moderate Birth Asphyxia (4–6)	186	18.2%
Severe Birth Asphyxia (0–3)	90	8.8%
Birth Weight Category		
Low Birth Weight (< 2,500 g)	245	23.9%
Normal Birth Weight (2,500 – 3,999 g)	712	69.5%
Macrosomia (≥ 4,000 g)	67	6.5%
Direct Admission to Neonatal Intensive Care Unit (NICU)	**231**	**22.6%**

Discussion

Epidemiological Patterns and Referral Dynamics

This study demonstrates the primary role of CHU Renaissance as a major tertiary referral center for severe obstetric complications in Kinshasa. The high proportion of referred patients (68.4%) aligns with observations across Sub-Saharan Africa, where university

hospitals predominantly manage late-stage referrals transferred from primary centers [8]. This high referral volume is frequently compound by long transport delays (Thaddeus and Maine's "Second Delay"), stemming from fragmented emergency transit networks and financial hardship [8,9].

Predominance of Hypertensive Disorders

Hypertensive pregnancy disorders constituted 18.4% of all emergency admissions (severe preeclampsia: 11 .4%, eclamptic prodrome: 4.5%, eclampsia: 2.5%). This high burden reflects gaps in early blood pressure screening and proteinuria detection during routine antenatal care (ANC) at peripheral centers [10]. Standardization of magnesium sulfate administration and rapid blood pressure control remain essential clinical pillars at CHU Renaissance, following WHO guidelines [11].

Mechanical Dystocia and Emergency Cesarean Rates

The overall emergency cesarean rate of 59.9% substantially exceeds WHO population-level recommendations (10–15%), yet appropriately reflects the concentrated risk profile of a tertiary emergency department [12]. Fetopelvic disproportion (10.5%) and contracted pelvis (4.1 %) were key drivers. Delayed referral frequently converts manageable labor dystocia into acute surgical emergencies carrying risk ofuterine rupture [13].

Perinatal Morbidity

Severe 5-minute birth asphyxia (8.8%) and a 22.6% NICU transfer rate illustrate the direct fetal toll of delayed intrapartum intervention. Multidisciplinary coordination between obstetrics, anesthesia, and neonatology is indispensable to improve survival.

Conclusion

This study of 1,133 obstetric emergencies highlights a high surgical and medical workload dominated by preeclampsia and mechanical dystocia. Key operational priorities include: 1) Strengthening ANC quality in primary centers for early preeclampsia detection; 2) Organizing centralized emergency transit to reduce referral delays; 3) Securing continuous availability of operating capacity, blood products, and laboratory support at CHU Renaissance.

References

1. World Health Organization. Sustainable Development Goals Health targets. Geneva World Health Organization. 2021.
2. World Health Organization UNICEF UNFPA World Bank Group United Nations Population Division. Trends in maternal mortality 2000 to 2020 estimates by WHO UNICEF UNFPA World Bank Group and UNDESA/Population Division. Geneva World Health Organization. 2023.
3. Say L, Chou D, Gemmill A, et al. Global causes of maternal death a WHO systematic analysis. Lancet Glob Health. 2014; 2: e323-e333.
4. Ministère de la Santé Publique de RDC. Enquête Démographique et de Santé EDS-RDC II. Kinshasa. MSP. 2014.
5. Ronsmans C, Graham WJ. Maternal mortality who when where and why. Lancet. 2006; 368: 1189-1200.
6. Oladapo OT, Adetoro OO, Ekele BA, et al. When birth turns into danger emergency obstetric interventions in resource-limited settings. BJOG. 2015; 122: 945-955.
7. Dumont A, de Bernis L, Bouvier-Cololle MH, et al. Management of obstetric emergencies in West Africa. Cahiers Santé. 2006; 16: 221-228.
8. Thaddeus S, Maine D. Too far to walk maternal mortality in context. Soc Sci Med. 1994; 38: 1091–1110.
9. Wall LL. Dead mothers and injured wives: the social context of maternal morbidity and mortality among the Hausa of northern Nigeria. Stud Fam Plann. 1998; 29: 341-359.
10. Duley L. The global impact of pre-eclampsia and eclampsia. Semin Perinatol. 2009; 33: 130-137.
11. World Health Organization. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia. Geneva World Health Organization. 2011.
12. Betrán AP, Ye J, Moller AB, et al. The increasing trend in caesarean section rates global regional and national estimates: 1990-2014. PLoS One. 2016; 11: e0148343.
13. Harrison KA. Child-bearing health and social priorities a survey of 22,774 consecutive hospital births in Zaria Northern Nigeria. Br J Obstet Gynaecol. 1985; 92: 1-119.

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