

# Implementation of interprofessional collaboration in childbirth with eclampsia: a case study at Imelda Hospital, Medan

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## Abstract

Maternal mortality rates in Indonesia remain high, with eclampsia being one of the main causes. The management of eclampsia cases requires interprofessional collaboration to optimise emergency maternal care. The aim of this study was to explore the implementation of interprofessional collaboration practices in childbirth with eclampsia at Imelda General Hospital, Medan. This was a qualitative study using a single case study approach, with nine informants (doctors, midwives, nurses, medical laboratory technicians, pharmacists, patients). Data were collected through observation, semi-structured interviews, and medical documentation, and analysed using thematic analysis with NVivo 12 Plus. Interprofessional collaboration practices in accordance with SOPs for the management of eclampsia are already in place, but specific SOPs for collaboration are not yet available. Five main themes were identified: collaboration practices, institutional support mechanisms, work environment and culture, barriers, and healthcare workers' expectations. The main barriers are limited healthcare personnel (especially midwives) and uneven PONEK training. Collaboration is carried out in accordance with the respective roles of health workers, but there is no systematic interprofessional discussion. Nevertheless, there has been an increase in rapid response (triage within 5–10 minutes), compliance with SOPs, appropriate clinical services, and patient satisfaction.

**Keywords:** childbirth; collaboration; interprofessional; eclampsia; practice

## 1. Introduction

The success of maternal health services is one of the key indicators in assessing the effectiveness of the health system. The Maternal Mortality Rate (MMR) remains a major challenge in achieving the Sustainable Development Goals (SDGs) target of reducing the MMR to 70 per 100,000 live births by 2030. According to WHO data (2023), the global MMR remains high at 223 per 100,000 live births, while in Indonesia it reaches 173 per 100,000 live births (BPS a, 2023; WHO, 2023). A total of 39% of maternal deaths occur during childbirth, with eclampsia being the main cause at 24%. (BPS a, 2023). A similar situation can be seen in North Sumatra Province, with an MMR of 195 per 100,000 live births (BPS a, 2023).

Eclampsia is an obstetric complication that carries a high risk of maternal and neonatal mortality. Possible effects on the mother include acute renal failure, pulmonary oedema, placental abruption, and permanent neurological damage (Nurul & Alamat, 2022). In infants, eclampsia can lead to foetal growth restriction, prematurity, low birth weight, asphyxia, and even stillbirth (Noviyani, 2021; Rijal et al., 2022). Therefore, the management of eclampsia requires comprehensive, rapid, and appropriate intervention in accordance with standards, including the administration of magnesium sulphate and blood pressure control (Nij et al., 2022).

In practice, the management of eclampsia requires the involvement of various health professions, such as doctors, midwives, nurses, and pharmacists. Interprofessional collaboration (IPC) is seen as an effective strategy for improving service quality, patient safety, and the efficiency of the health system (Andi Mappaware et al., 2021). IPC emphasises clear communication, understanding of roles, effective leadership, and joint decision-making. Several studies show that IPC contributes to a reduction in complications and mortality rates due to eclampsia, while limited collaboration has been shown to impact on treatment failure (Vogel et al., 2019).

Imelda General Hospital in Medan, as a type B referral hospital and teaching hospital, faced an increase in eclampsia cases from 9 cases in 2023 to 11 cases in 2024. Preliminary studies indicate challenges in IPC practices, such as limited understanding among midwives regarding the use of magnesium sulphate, staff shortages, suboptimal team coordination, and incomplete medical

documentation. These conditions underscore the need for further research on the implementation of interprofessional collaboration practices in the management of eclampsia during childbirth at Imelda General Hospital in Medan.

## 2. Method

This study employed a qualitative approach with a single intertwined case study design. There were nine informants: obstetricians, midwives, nurses, pharmacists, medical laboratory technicians, and patients. Data were collected through direct observation, semi-structured interviews, and analysis of medical documents. Data analysis was performed using thematic analysis with NVivo 12 Plus software. Data validity was tested through source and technique triangulation.

## 3. Results and Discussion

### 3.1. Results

#### 3.1.1. Characteristics of Informant

Table 1. Characteristics of Informant

Key informant						
No	Initials of Name	Age	Position/Job title	Length of Service	Office Room	Latest Education
1	ER	36 year	Practising Midwife	13 year	Obstetrics Emergency Room	D3 Midwife
2	RB	32 year	Head of Department	10 year	Delivery Room	S1 Midwife
3	FS	35 year	Head of Department	10 year	Postnatal Room	D3 Midwife
4	M.A S	26 year	Analytical	2 year	Laboratory	D3 ATLM
5	Dr. H	59 year	Obstetrician-Gynaecologist	> 10 year	RSU Imelda Medan	Specialist obstetrics and gynaecology
6	S	29 year	Nurse	4 year	ICU	D3 Nurse
7	HT	35 year	Midwife	15 year	Operating Theatre	S1 Midwife
8	L.H	35 year	Obstetrics patient care management	13 year	Midwifery Scope	D3 Midwife
No	Nama	Usia	Pendidikan	Diagnosis	Lama rawatan	Keterangan
1	Ny. N	34 year	senior high school	P2A0 KDR 32 weeks Previous SC, Eclampsia, IUFD	6 DAY	Patients may receive outpatient treatment (PBJ)

#### 3.1.2. Research Analysis Results

Table 2. Thematic Analysis Results

Category	Sub-Theme	Theme
Initial management Procedures in the management of eclampsia	The process of managing eclampsia	<b>Implementation of Collaborative Practice in Childbirth with Eclampsia Cases</b>
Midwife (initial action in patient management) Doctor on duty (leadership position) Obstetrician and gynaecologist (decisor)		

Category	Sub-Theme	Theme
Anaesthetist (to administer anaesthesia for surgical procedures) Atlm (blood and urine tests) Pharmacy (providing high alert medicines) Initial management Procedures in the management of eclampsia		
Midwife (initial action in patient management) Doctor on duty (leadership position) Obstetrician and gynaecologist (decisor) Anaesthetist (to administer anaesthesia for surgical procedures) Atlm (blood and urine tests) Pharmacy (providing high alert medicines)	Teams and roles of responsibility	
Communication between healthcare workers during patient handover, SBAR, maintaining ethical communication without blaming in front of patients/families Mutual respect between healthcare workers Maintaining good relations between staff members and maintaining patient confidentiality	Values and ethics Effective communication and maintaining privacy	
Rooms ranging from obstetrics and gynaecology, delivery rooms, operating theatres, intensive care units and postnatal rooms. Hospital facilities: medicine, oxygen Service Problem Resolution, Case Evaluation Standard operating procedures, emergencies. Work culture Shortage of Midwives on Duty	Availability of facilities Complication resolution Compliance with the SOP Decision Making Lack of human resources	<b>Mechanisms for Environmental, Institutional and Work Culture Support</b>        <b>Barriers</b>
To improve human resources	Teamwork	<b>Hope</b>
Training in Handling Eclampsia Cases Patients are satisfied with the prompt treatment they receive. Good communication The patient is stable and can be discharged.	Improvement of Human Resources Quality of service	<b>Result</b>

### 3.2. Discussion

#### 3.2.1. The Findings Of This Study Reveal Five Themes That Will Be Discussed In Accordance With The Articles And Theories That Support The Research.

The results of the study indicate that interprofessional collaboration practices in the management of eclampsia during childbirth at Imelda General Hospital in Medan have been carried out in accordance with the Standard Operating Procedures (SOP) for eclampsia management. However, it was found that specific SOPs regarding interprofessional collaboration practices are not yet available, so the implementation process still follows the applicable clinical SOPs. This condition is in line with the findings (Chatzakis et al., 2021; Perez-Cuevas et al., 2020) which emphasises the importance of a structured critical pathway in the management of obstetric emergencies, where delays in the early stages can have serious consequences for the safety of both mother and foetus yang menekankan pentingnya adanya critical pathway.

The findings of this study also confirm that the success of interprofessional collaboration is largely determined by the clarity of the roles and responsibilities of each healthcare professional. In cases of eclampsia, obstetricians act as the primary clinical decision-makers, while midwives and nurses focus on supportive care and monitoring the patient's condition. This is consistent with research (Anwar & Rosa, 2019; Romijn et al., 2018) which emphasises that a clear division of roles and mutual respect for professional boundaries can improve team effectiveness and accelerate clinical decision-making.

In addition to technical aspects, interprofessional values and ethics are an important foundation for collaboration. The findings of this study show that healthcare workers place patient safety as their top priority, uphold professional ethics, maintain confidentiality, and respect patient autonomy. This is in line with the moral principles of healthcare, which emphasise beneficence, non-maleficence, and respect for patient dignity (Ethics, 2016). The integration of ethical values into collaborative practices has been shown to strengthen interprofessional trust and increase patient and family satisfaction. (Stapleton et al., 2021).

Factors supporting the implementation of interprofessional collaboration practices at Imelda General Hospital in Medan include facility readiness, compliance with standard operating procedures, and institutional support in conflict resolution and decision-making. The availability of essential medicines such as magnesium sulphate and the readiness of emergency rooms accelerate the response to complications, according to research (Dougherty et al., 2023; Yu Gao, 2010). The main obstacle that still exists is the limited number of human resources, especially midwives who have received PONEK training. This situation results in a high workload and the potential for miscommunication between professions (Gilles et al., 2025).

Overall, the results of this study show that interprofessional collaboration has a positive impact on the quality of midwifery services, especially in the management of eclampsia as a high-risk obstetric emergency. Structured and ethical interprofessional collaboration has been shown to increase team response speed, reduce the risk of medical errors, and improve patient safety and satisfaction. These findings reinforce previous literature (Anderson et al., 2023; Dr. Sulistyaningsih, S.K.M., 2021), that strengthening human resource capacity through interprofessional training and fostering a collaborative work culture are important strategies for improving the quality of maternal care and reducing maternal mortality due to eclampsia.

### 4. Conclusion

The implementation of interprofessional collaboration in handling eclampsia during childbirth at Imelda General Hospital has been carried out in accordance with the respective roles of each health worker, but there is still a lack of formal interprofessional discussion. There is a need to develop specific SOPs for IPC, increase the number of health workers, and expand PONEK training to improve service quality.

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