



## Interprofessional Collaboration Practice Model in Basic Emergency Neonatal Obstetric Services in Covid-19 Pandemic Era

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### ARTICLE INFO

#### Article history:

Received 10 October 2022  
Accepted 31 January 2023  
Published 20 March 2023

#### Keyword:

basic emergency  
neonatal obstetrics  
interprofessional collaboration practice

### ABSTRACT

The Basic Emergency Obstetric Neonatal Service program is an effort to reduce mortality in Indonesia, which involves various professions collaborating. Various studies state that interprofessional collaboration is proven to improve the quality of health services and can prevent medical errors, but little is known about interprofessional collaboration in the PONEC era of the Covid-19 pandemic in Indonesia. This study aims to develop an Interprofessional Collaboration Practice (ICP) model in PONEC in Puskesmas. This research is qualitative research with an embedded single-case design. Collecting data using observation, in-depth interviews and documentation studies. The main informants are doctors and health workers who provide services in PONEC cases at the Sedayu I Health Center Bantul, Yogyakarta Special Region, Indonesia. Supporting informants are patients/families and ambulance drivers. The number of main informants is 17 people, while the supporting informants are 2 people. Data analysis used thematic analysis. The results of this study found four themes: interprofessional collaboration practices, institutional support mechanisms, work culture mechanisms and environmental mechanisms. The three mechanisms are interrelated and affect the effectiveness of interprofessional collaboration practices and the quality of PONEC

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### Kata kunci:

Emergensi dasar  
Obstetri neonatal  
Praktik kolaborasi interprofessional

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DOI: 10.30604/jika.v8i1.1384

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### ABSTRAK

Program pelayanan obstetric neonatal emergensi dasar (PONEC) merupakan upaya untuk menurunkan angka kematian di Indonesia, yang melibatkan berbagai profesi untuk berkolaborasi. Berbagai penelitian menyatakan bahwa praktik kolaborasi interprofessional terbukti dapat meningkatkan kualitas pelayanan kesehatan dan dapat mencegah medical error, tetapi sedikit yang diketahui tentang model praktik kolaborasi interprofessional pada PONEC era pandemic Covid-19 di Indonesia. Penelitian ini bertujuan untuk mengembangkan model Interprofessional Collaboration Practice (ICP) pada PONEC di puskesmas. Penelitian ini merupakan penelitian kualitatif dengan desain embedded single case. Pengumpulan data menggunakan observasi, wawancara mendalam dan studi dokumentasi. Informan utama adalah dokter dan tenaga kesehatan yang memberikan pelayanan dalam kasus PONEC di Puskesmas Sedayu I Bantul, Daerah Istimewa Yogyakarta, Indonesia. Informan pendukung adalah pasien/keluarga dan sopir ambulance. Jumlah informan utama 17 orang, sedangkan informan pendukung 2 orang. Analisis data menggunakan analisis tematik. Hasil penelitian ini menemukan empat tema yaitu praktik kolaborasi interprofessional, mekanisme dukungan institusional, mekanisme budaya kerja dan mekanisme lingkungan. Ketiga mekanisme saling berhubungan dan mempengaruhi efektivitas praktik kolaborasi interprofessional dan kualitas PONEC.

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## INTRODUCTION

From 1990-2015, the global Maternal Mortality Ratio (MMR) was 10.7 million (Alkema et al., 2015). MMR in developing countries is 20 times higher at 239 per 100,000 live births (LB) than MMR in developed countries, that is 12 per 100,000 LH in 2015 (Ansari et al., 2015), MMR in Indonesia was 305 per 100,000 LH, whereas the SDGs targeted MMR less than 70 per 100,000 LB in 2030. The target is not easy to reach since MDGs (2000-2015) have not succeeded in lowering MRR (Hoelman et al., 2015). Almost all MMR occurs in low resources, and most are preventable (WHO, 2018).

PONED and PONEK facilities must be made available to reduce MMR (Mirkuzie et al., 2014). Complication treatment in neonatal emergency obstetric services is poor due to delays in making decisions and arriving at the hospital, as well as insufficient assistance at the Referral Hospital (among others because health workers are not available) (Hoelman et al., 2015). Whereas the availability of sufficient health staff competency, infrastructure, facilities, and dependable administration is critical to the effectiveness of emergency neonatal obstetric care (Direktur Jenderal Bina Upaya Kesehatan Kementerian Kesehatan Republik Indonesia & Kementerian Kesehatan Republik Indonesia, 2012). Many health care institutions are unable to address obstetric complications because cooperation practices are inadequate, communication is ineffective (Amatullah, 2018), personnel are poorly trained, and management is incompetent (Crofts et al., 2015).

PONED (Basic Emergency Obstetric and Neonatal Care) is a health service offered by inpatient health centers for obstetric and neonatal emergencies at the basic level 24 hours a day, seven days a week. PONED services are also used as a resource for community referrals, first-level individual assistance, and referrals from nearby health clinics and midwives (Pengurus Pusat Ikatan Bidan Indonesia, 2020). According to the Central Leadership of the Indonesian Midwives Association's assessment in May 2020, 575 independent midwife practices closed during the Covid-19 outbreak (Pengurus Pusat Ikatan Bidan Indonesia, 2020). This condition affects the PONED service.

According to Health Facilities Research statistics from 2019, the number of public health centers in Indonesia that can execute PONED is 30.4% of the total of 9,830 Puskesmas (Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI, 2019). PONED in a public health center requires the participation of at least 1-2 general practitioners, 5 associate's degrees in Nursing, 5 associate's degree in Midwives, 1 laboratory analyst, and 1 administrative officer (Pengurus Pusat Ikatan Bidan Indonesia, 2020). During the Covid-19 epidemic, the practice of interprofessional collaboration (ICP) and the participation of PONED and PONEK became unavoidable demands to successfully decrease maternal and infant mortality. Medical errors caused by a malfunctioning ICP are the major cause of death (Lerner et al., 2009; Makary & Daniel, 2016). The collaborative improvement activities of PONED and PONEK in Depok city have been ongoing but have not been optimal (Handayani & Achadi, 2018).

For the past five years, the problem of maternal and neonatal mortality in Bantul regency has ranked first in DIY. There were 14 maternal deaths in 2019, and 13 mothers died between September 2020 and September 2021. Sedayu Public Health Center is one of the PONED public health centers with 0 maternal and newborn mortality in 2020. The objective of the study was to develop a model of

interprofessional collaboration practices in PONED services at the Public Health Center (*Puskemas*) during the COVID-19 pandemic.

## METHOD

### *Participant characteristics and research design*

This study is qualitative research with a single case study method holistic case design (holistic single case design) or a case study that contains more than one sub-unit of analysis (Yin, 2018). The only case seen was the practice of interprofessional collaboration on PONED at Kasihan I Public Health Center. The context of this study is the service in the covid-19 pandemic era. The study focused on the practice of interprofessional collaboration on PONED in the emergency room, maternity room, nursery, and postpartum room. The health professionals, the patient/family, and the team referring the PONED patient are the units of analysis.

### *Sampling procedures*

The study's informants included PONED's chairman, general practitioners, midwives, nurses, nutritionists, health analysts, pharmacists, medical recorders, and ambulance drivers who were PONED members, as well as PONED patients. The informant is chosen by purposive sampling based on the following criteria: the informant has worked for at least one year as a member of the PONED Team of Sedayu I Public Health Center, is not currently suffering from Covid-19 sickness, and is willing to become an informant. This study was approved by the Bantul regency Government's Department of Investment and Integrated Services under the number 2562/DPMPT/260/X/2021 and the Bantul regency Health Office under the number 070/2962. This research has received ethical clearance from the Health Research Ethics Committee of the University of 'Aisyiyah number: 1899/KEP-UNISA/XI / 2021.

### *Sample size, power, and precision*

The main informants are 19 PONED members, including two General Practitioners (one of whom serves as Chairman of PONED), eight midwives, four nurses, one nutritionist, one health analyst, one pharmacy, one medical recorder, and one ambulance driver. Supporting informants are 2 patients and family. The number of informants is determined after the data saturation. In Qualitative Research, the primary data collection tools are the researchers themselves. Data collection techniques include observation, in-depth interviews, and documentation studies. The instruments of this study are 1) observation guidelines for observation of PONED infrastructure, 2) interview guidelines referring to The Collaborative Practice Assessment Tool (CPAT) (Fisher et al., 2017), the WHO ICP framework model (Department of Human Resources for Health, 2010), and 3) documentation study guidelines for conducting record studies on the results of PONED services. Researchers keep a log book and take (field notes) (Craswell, 2013).

### *Measures and covariates*

In-depth interviews, observation, and documentation studies are all used to collect data. Guba criteria, namely credibility, transferability, dependability, and confirmability

are used in data validity techniques. Techniques to improve the validity of qualitative research data refer to Shenton, namely member checking, peer debriefing, audit trail, the persistence of observation, search for negative impacts and alternative explanations, as well as triangulation. Researchers triangulate methods and sources to obtain the validity of data and information, as well as check and compare against the data and information that has been obtained from the main informant (Craswell, 2013). Triangulation with sources was conducted through in-depth interviews with supporting informants, namely patients/families of patients who received PONED.

**Data analysis**

Thematic analysis is used in research data analysis techniques such as creating codes, coding, and pattern codes (Miles et al., 2014).

**RESULTS AND DISCUSSION**

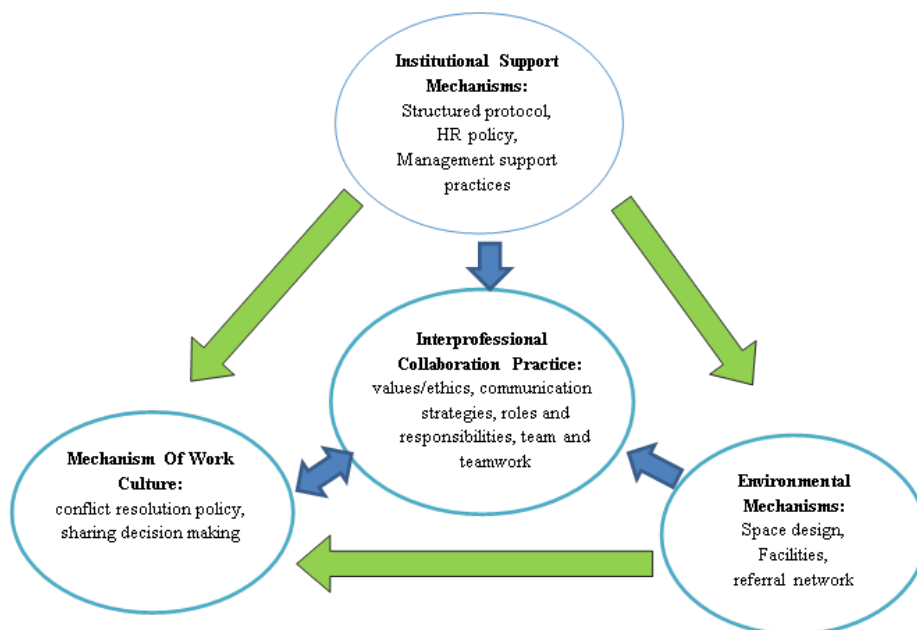
Data collection through observation, documentation studies, and in-depth interviews was carried out from October to November 2021. In-depth interviews were conducted with 19 informants with the following characteristics.

This study discovered four major themes that contribute to the development of a model of interprofessional collaboration practices in PONED services during the Covid-19 pandemic, namely interprofessional collaboration practices, work culture mechanisms, institutional support mechanisms, and environmental mechanisms. The following image summarizes the four major themes:

**Table 1**  
**Characteristics of Informants**

Informant	Amount	Code	Age (Range of Years)	Education	Length Of Service (Range of Years)
Midwife	8 people	Mw-1-8	28-52 y.o	Diploma 3 (6), Diploma 4 (1), Bachelor (1)	3-29 y.o
Nurse	3 people	Ns-1-3	35-37 y.o	Diploma 3	10-15 y.o
Physician	2 people	Dr-1-2	35-37 y.o	Master	12-16 y.o
Pharmacist	1 person	Ph-1	27 y.o	Diploma 3	1 y.o
Nutritionist	1 person	Nu-1	27 y.o	Diploma 3	6 y.o
Medical Laboratory Technologist	1 person	MLT-1	30 y.o	Diploma 3	4 y.o
Medical record officer	1 person	MRO-1	30 y.o	Diploma 3	11 y.o
Driver	1 person	Dv-1	24 y.o	Senior High School	5 y.o
Patient	1 person	Pa-1	42 y.o	Bachelor's degree	-

**Note;** y.o: years old



**Figure 1. Health Collaboration Practice Model on PONED at Sedayu I Public Health Center, Bantul**

### **Implementation of Interprofessional Collaboration Practices in PONED**

The implementation of interprofessional collaboration practices involves four themes: team and teamwork, roles and responsibilities communication strategies, and values/ethics. PONED teams are multi-professionals appointed based on specified qualifications and circumstances, serving in teams and establishing shift schedules. Sedayu I Public Health Center's PONED Team consisted of 24 individuals, including physicians, midwives, nurses, health analysts, medical recorders, and drivers. The head of the Public Health Center is in charge of PONED. The following is based on in-depth interviews with coordinating midwives and physicians.

*"...In Sedayu 1 Public Health Center, the individuals in charge are the head doctor team, Doctor A, myself as the midwife, and Ms. C, who was introduced last. This can be called the leader of the main team. And from the supporting team, there is a general practitioner, Doctor A who I mentioned earlier, plus five nurses and midwives. The registered midwives are five but actually, there are 11... We are here involved in the inpatient of 24 people earlier. PONED team must consist of doctors, midwives, nurses, analysts, and..." (Mw-2; 51 years old).*

*"Well, there is already a PONED team before, the main person in charge is Dr. A. Therefore, there is already a doctor accountable for PONED. Then, the coordinating midwife is Mrs. E, and there was an initial charge for the nurse..." (Dr-1; 37 years old).*

The appointment of PONED team members based on qualifications requires STR (registration certificate), PONED training, and consideration of the adequacy of healthcare personnel in inpatient and outpatient settings. Here are the results of interviews with midwives and nurses:

*"For nurses, we will see their potential, whether they have STR or not. Midwives are the same. We have two medical records, one of which is already responsible for outpatient records. Appointable employees are people who have recently entered the public sector. One has been assigned to the outpatient division, indicating that the other has been sent to the inpatient division. Then there are two analysts, one of whom is responsible for the automatic inpatient analyst and the other of whom must work in outpatient care..." (Mw-2; 51 years old).*

*"The PONED team should adhere to the training here. I do not know what criteria are applied, but they may prioritize civil servants...yet they are still involved in the implementation..." (Mw-8; 31 years old).*

Due to the 24-hour operation of the emergency room, the PONED staff is divided into three shifts (morning, afternoon, and night). Coordinating Midwives and Coordinating Nurses create schedules. The morning schedule consists of 1 midwife, 1 nurse, and 1 doctor (onsite), while the day and night schedule consist of 2 midwives and 1 doctor (*on-call*). The PONE team that has been appointed has clear roles and responsibilities, namely doctors as consultants, the delegation of interprofessional authority, nurses and midwives as care implementers, and the role of supporting health workers (nutritionists, pharmacists, medical laboratory technologists). The consulting doctor is an obstetrics and gynecology specialist. Here are the results of the in-depth interviews:

*"There is a SpOG doctor who provides consultation. (Mw-3; 33 years old).*

*"As a consulting doctor, we always collaborate. If we have a morning shift or a night shift, and the doctor is far away, we always consult through the phone..." (Mw-4.52 years old).*

*"Then, if you require consuls and obstetricians in the future, a link will already exist..." (Mw-6, 47 years old).*

The roles of nurses as implementers of neonatal care and midwives as implementers of midwifery care, as discussed in interviews with midwives and nurses:

*"If there is an inpartu like that. But if it's still at Stage I, the process is not too much. Occasionally, midwives, nurses, or both will administer the intravenous infusion. But the most important thing was at the time of the childbirth process. Because just one midwife and one nurse are available during the morning to noon shift. Therefore, the nurse will aid the patient..." (Mw-3.33 years old).*

*"The collaboration here is excellent. If there are midwives who assist with birth and play a larger role, we will consult with doctors. Other nurses will also assist with neonatal services at the time of delivery..., and some general practitioners will also help us..." (Mw-6.47 years old).*

*"It depends on the case. So if there is such a case that can be handled between Midwife and Nurse, we continue it. But for the case that requires the help of doctors, the doctors will also help us. If we are midwives or nurses, may we should put IVs and so on. The doctor may later see what kind of bleeding is need to be fixed. We work together because we..." (Ns-1.36 years old).*

Pharmacists are in charge of providing medicines according to the list of drug requests made by doctors/nurses, such as the results of in-depth interviews with pharmacists and midwives:

*"..., so later, the midwife or nurse in the inpatient division will make a list of drugs they need every day. The doctor, for example, suggested what medicine to consume, so later we prepare them. So, every morning they take drugs to the pharmacy we prepare only later in the afternoon after our service is delivered there..." (Ph-1, 27 years old).*

*"So, there is a book for mm demand for disposable equipment materials. We write and give it to the pharmacy..." (Mw-5, 28 years old).*

The role of a medical laboratory technologist is as an officer who conducts laboratory examinations and swab tests, but after midwives and nurses are trained in swab tests, it is the midwife or nurse who performs the swab tests. This is based on the results of in-depth interviews with the following medical laboratory technologists and nurses:

*"Then there are things that need to be checked in the lab later, in collaboration with lab staff. For now, there is a swab procedure for example in the morning, laboratory staff will do it, but in the afternoon and evening, midwives and nurses will do the swab. Yes, except on holidays, you can call the lab staff later, the lab staff who will come to check may be swabs or laboratory tests for Hb and others..." (Ns-2, 37 years old).*

*"In the past, it was done by the analyst. But since yesterday there was an OJT who took care of the swab directly to the nurse or midwife in charge..." (MLT-1, 30 years old).*

According to the results of in-depth interviews with nutrition officers, the nutrition officer plays a role in providing maternal nutrition during the first 1000 days of life.

*"If in the PONEC itself, it may be related to the nutrition at the time of maternity. So, yes, we collaborate on that part 1000 First Day of Life..."* (Nu-1, 27 years old).

The midwife coordinator's responsibility is to oversee governance and team building, as well as to inspect medical equipment.

*"...we must ensure that if one of the teams is truly unable to attend or is missing, I must be accountable for finding substitute staff, such as reminding individuals." For example, who supervises the afternoon shift, and why there is an issue here..."* (Mw-2.51 years old).

Strategy for Communication PONEC team uses telephone media for spoken communication, book and case report media for written communication, as well as a *WhatsApp* group. This is following the results of in-depth interviews with midwives as follows.

*"If there's a special case in the middle of the night, midwives usually call the doctor first to find out what to do next, like doing consultation first or observation first? In case of an emergency, we both try to work together with mutual understanding, depending on the situation or the nearby on-call person."* (Mw-1.50 years old).

*"If between professions in inpatient division, we have an inpatient group to discuss the activities"* (Mw-3.33 years old).

*"We also keep track of communication in a report book, and if something important comes up, we have a WhatsApp group..."* (Ns-1, 36 years old).

The intended values/ethics are mutual assistance, teamwork, shared responsibility, and attention to superiors. Here are the results of the in-depth interviews:

*"We are a team, so we do things like refer each other and help each other out. Even though we don't work together as a team, we do share a responsibility."* (Mw-4.52 years).

*"...The collaboration has been good because the coordinating midwives pay attention to their subordinates. If there is a problem, the group will know about it. And, it gets a good response right away."* (Mw-8, 31 years).

According to the study's findings, the PONEC team was assigned to implement interprofessional collaboration practices based on certain qualifications such as having an STR (registration certificate), having completed PONEC training, and paying attention to the adequacy of health workers in inpatient and outpatient settings. Strategy for Communication PONEC team uses telephone media for spoken communication, book and case report media for written communication, as well as a *WhatsApp* group. The oral and written communication tactics used in this study are consistent with the communication strategy used in PONEC's model of interprofessional collaborative practices (Sulistyaningsih et al., 2020). Effective communication strategies will contribute to the effectiveness of interprofessional collaboration practices (Engelhard, et al., 2018).

Mutual assistance, teamwork, shared accountability, and superior attention is among the values/ethics implemented. The roles and responsibilities of each team are clearly defined. The values/ethics and roles of the health professions are consistent with key competencies in interprofessional collaboration practices (Interprofessional Education Collaborative, 2016). Values/ethics providing caring, working together, and shared responsibility support core values for Interprofessional interactions identified by the National Academies of Practice namely respect, honesty/ethics, and integrity, compassion/empathy, trust, humility, fairness, listening (Rider et al., 2020). The distribution of roles and responsibilities of health workers in the practice of interprofessional collaboration in PONEC is in accordance with the ICP model of maternity care between doctors, nurses, and midwives in rural British Columbia, Canada (Rider et al., 2020) and the practice model of interprofessional collaboration in PONEC (Sulistyaningsih et al., 2020).

### **Mechanism Of Work Culture**

Work culture mechanisms of interprofessional collaboration practices in PONEC include dispute resolution procedures and decision sharing/coordination. In this study, there is no conflict between professionals. Instead, there is a mismatch because of a lack of discipline and responsibility in function tasks, as well as a high workload due to a lack of people. The incompatibility can be successfully handled. This is in accordance with the results of in-depth interviews with doctors, nurses, and midwives as follows.

*"For the incompatibility, I have never been at all, I have never found. Because indeed when we have a small problem, we immediately solved them. We solve together by using the best option, we involve the doctor so the problem will be fixed as soon as possible"* (Mw-8, 31 years old).

*"If I'm not mistaken, that's happened once before. This is because of the schedule of midwives and nurses. Yes, because of the amount it is limited. For example, there is a permit that needs training and then replaces or exchange it was a bit difficult."* (Dr-1, 37 years old).

*"The conflict is only related to coming late (laughter). It occasionally creates tension; the colleague who arrives late is quickly scolded, but after that, everything is okay. No bickering so far"* (Ns-1, 36 years old).

The decision is made after consulting with a SpOG doctor or a general practitioner (Chairman PONEC) and seeing the patient. Consultations are conducted by Midwives or Nurses on duty as a result of in-depth interviews with doctors, midwives, and nurses as follows.

*"Most of the friends of midwives and nurses in the field. Then almost all cases must be consulted, even normal parturition is usually reported."* (Dr-2, 42 years old).

*"Sometimes there are patients who have been observed, but we asked the doctor to confirm it first. Then we consult with dr. E, for reference, we do reference with the manual reference"* (Mw-4.52 years old).

*"Thank God, if there is an emergency case in the middle of the night, they will immediately respond. But, yes, for the usual cases we go to the general practitioner first."* (Mw-1.50 years old).

*"We also go to see the patient, and if there are problems, we sometimes talk to the patient's SpOG. I think it's quite conducive, there's no hesitation in consulting each other"* (Dr-2, 42 years old).

So far, the PONE D team's work culture has resulted in no interprofessional confrontations, and incompatibilities are easily resolved. The lack of interprofessional conflict in this study supported the findings of the PONE K research model of interprofessional collaborative practices (Sulistyaningsih et al., 2020). This is because the coordination and collaboration of the PONE D team have been carried out properly in accordance with the authority of interprofessional. According to other research, coordination and collaboration are innovative strategies to support health care. Collaboration can foster interprofessional cooperation to generate safe and high-quality services (Wood et al., 2020).

### ***Institutional Support Mechanisms***

Institutional support mechanisms include HR policies, structured protocols, and management practice support. HR policies include implementing officer PONE D and improvement of HR capabilities. PONE D executive officers are friendly and good at managing their job, multi-professional executors, serving in teams, and working based on certain qualifications and conditions. This is in accordance with the results of interviews with midwives as follows.

*"Very nice and friendly."* (Pa-1.42 years old).

*"Because we do work as a team. We work in shifts, so when we care for a patient in the morning, for example, there may be a more complete team. There's a doctor, a nurse, a midwife... We are a team, so when we refer to each other, we help each other... At least we're all on the same team and share responsibility."* (Mw-4.52 years old).

Based on what midwives said in interviews, HR capabilities were improved by *transferring knowledge* and teaching special skills.

*"Usually, we continue to update knowledge. For example, we invite the SPPD SpOG to explore specific material, which is trained by PONE D first, doctors and midwives. Mrs. A was there at the time, and there was a midwife. Well, it's a coincidence that I have not been specially PONE D training"* (Dr-1, 37 years old).

Structured protocol/SK has not been introduced by the PONE D team. Here's information from midwives:

*"Yes, the chairman is Mrs. A, then about PONE D's Decree, please wait for a minute. So, for the decree, I just got the photo... At that time, it is used without a decree, so the role is appointed directly. But now, it must use Decree. But I cannot memorize all the SOP, as you can see at the previous station. You can see them if you want to."* (Mw-2.51 years old).

Management support helps in resolving problems in the field. For budget, some special funds are available for staff training, improvement of facilities and infrastructure as a form of development PONE D. Here's an excerpt from the interview from The Midwife:

*"The support is good, and the head has truly worked together, but it is eventually handed back to their respective personnel."* (Mw-6.47 years).

*"The training is quite clear, it is about PONE D... Then for the related update knowledge, we update the knowledge on baby emergencies and maternity mothers related to PONE D every few months. Thank God, the infrastructure is well-prepared. The reference communication is also supported by a special cellphone for the Emergency Room so we can coordinate across networks such as PONE K. For example, if we want to refer or give birth later to this difficult hospital, we cannot use networks with related services for hospitals. If it is difficult to handle, the coordination will be facilitated by such service"* (Ns-3, 35 years old).

Based on what midwives said in interviews, the following are strategies to improve the quality of service by screening high-risk pregnant women and keeping a closer eye on them.

*"...we have also screened at the beginning, for example, when we find complications, we consult and referred early. So, we do not wait for him to arrive at the ER but already from the mother and baby division. When he was ANC so we find out from the screening 'What are the risk factors now' we refer from the ANC... especially mostly from the ANC screening to the Public Health Center"* (Dr-1, 37 years old).

Collaborative partnerships require teamwork, sharing responsibility for problem-solving, and making decisions to formulate patient care plans. In addition to cooperation, increasing human resource competencies within the team is required to improve the quality of collaborative practice execution (Hojat et al., 2015). *Updated knowledge* can provide possibilities for health workers to learn new things and increase teamwork (Eddy et al., 2016). According to a certain study, the strategies in enhancing service quality will boost the organization's image and contribute positively to its performance (George et al., 2019).

### ***Environmental Mechanisms***

Environmental mechanisms include facilities, room design, and PONE D referral networks. The facilities are good enough and the cleanliness of the environment is well maintained. This is in accordance with the results of in-depth interviews with midwives as follows.

*"If the facilities and infrastructure I think we have been enough (laughter). I think it is enough"* (Mw-3.33 years old).

Other information provided by midwives indicates that some medical devices cannot be used, the workspace is less practicable, and the design of the room layout is poor. Here are the results of the in-depth interviews:

*"Indeed, this layout is not unsuitable because the entry faces the patients' bed. As a result, it is a lack of privacy. There are two beds; one bed does not work since it is less effective when two patients are there at the same time."* (Mw-8, 31 years old).

The PONE D referral network is case-specific, and the management of pathological cases is adapted via the referral system. This is in accordance with the results of interviews with midwives as follows.

*"...for example, there are incidents of asphyxia or something similar." But if, for example, there is no direct birth problem, it will usually be taken care of by the nurse after IMD. So once the placenta is born, we continue to IMD.*

If the case cannot be managed in PKU Gamping, for example, the possibility of Low-Birth-Weight Babies, PKU Gamping doesn't want to accept it. They usually are referred to as Panembahan Senopati. You don't have to travel to PONEK if Stage I is relatively long, depending on the circumstances. You could also visit PKU Gamping or Griya Mahardika" (Mw-3, 33 years old).

Patient safety for PONEK services is being implemented in accordance with existing protocols. Emergency medications are constantly available and checked to confirm the drug's expiration date. Here's the interview result.

"For the patient safety, we only make sure the accuracy of the drug, the right dose then expired. And ensure that the drug given to the patient was safe" (Ph-1, 27 years old).

The practice of interprofessional collaboration in PONEK is also supported by adequate health facilities and the PONEK referral network. The findings revealed that health services that are well-equipped and conveniently accessible will boost patient accessibility (Mambo et al., 2020). Existing collaboration carried out in groups or teams in a coordinated manner will result in improved efficiency and effectiveness of results.

#### LIMITATION OF THE STUDY

The limitations of this study were supporting informants, PONEK patients who were very difficult to find, because during the two months of data collection there was only one PONEK case.

#### CONCLUSIONS AND SUGGESTIONS

PONEK's model of interprofessional cooperation practices is divided into four major themes: interprofessional collaboration practice implementation, work culture mechanisms, institutional support mechanisms, and environmental mechanisms. These three interconnected mechanisms determine the quality and effectiveness of interprofessional collaboration practices in PONEK. The suggestion for future research is to lengthen the observation time in order to obtain PONEK cases.

#### Acknowledgment (If Necessary)

The researcher expressed his gratitude to the Muhammadiyah Council for Higher Education, Research, and Development of Muhammadiyah Central Executive for its financial support of the study. The researcher also acknowledged the head of the Sedayu I Public Health Center in Bantul, as well as the full PONEK team and all research informants.

#### ETHICAL CONSIDERATIONS

##### Funding Statement.

This study was funded by the Council of Higher Education, Research and Development of Muhammadiyah Central Executive.

#### Conflict of Interest Statement

Authors declare that there are no conflict of interest in this research.

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