

# Knowledge of postpartum danger signs and planning for obstetric emergencies during pregnancy, delivery and postnatally among women in East New Britain Province, Papua New Guinea

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## Background

- Papua New Guinea (PNG) has one of the highest maternal mortality ratios in the world (around 558/100,000 live births)<sup>1</sup>.
- The three main causes of maternal mortality in PNG reflect global patterns<sup>1</sup>:
  - Postpartum haemorrhage
  - Preeclampsia/Eclampsia
  - Sepsis
- Over 60% of maternal deaths occur in the postpartum period<sup>2</sup>.
- Lack of knowledge of postnatal danger signs can result in delays in care seeking.
- Minimum knowledge set for postpartum danger signs as defined by Johns Hopkins includes: severe vaginal bleeding, foul smelling discharge and fever<sup>3</sup>.
- A review of maternal deaths in one PNG province identified delays at the family level, in deciding to access care, were a strong predictor for poor maternal and neonatal health outcomes<sup>1</sup>.
- There is a lack of evidence surrounding women's knowledge of postnatal danger signs and emergency plans in PNG.



**Aim:**  
Our aim was to assess women's knowledge of postnatal danger signs and their emergency plans to manage obstetric complications in rural East New Britain (ENB) province, PNG. We also examined correlates of knowledge of one or more danger signs and an effective emergency travel plan.

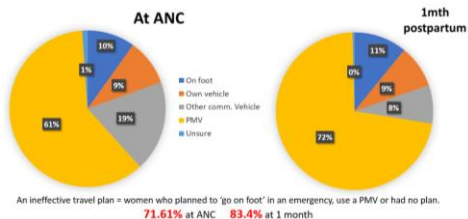
## Study design and methods

- 700** women recruited from first antenatal care visit (ANC) of any gravidity or gestation, from 2 urban hospitals and 3 rural health centres located in East New Britain Province.
- 629 followed to delivery and 578 to one month after childbirth.
- Trained research officers used structured questionnaires to collect data on women's knowledge of danger signs and emergency plan intentions.

## Results: Planning for postpartum emergencies

- Over 90% of women had an emergency plan during pregnancy and in the postpartum period.
  - At ANC: **90.5%**
  - At 1 month: **94.8%**
- Over **80%** of women's emergency plans relied on public transport (Public Motor Vehicle (PMV\*)) or walking. \*PMVs are privately owned mini buses or utility trucks with unpredictable hours that rarely operate after dark.

Figure 2. Women's transport plans in the event of an obstetric emergency

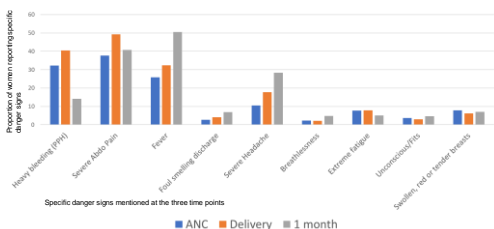


- Women with a **tertiary education** were significantly more likely to have an effective travel plan during pregnancy (AOR 2.09, 95% CI 1.30-3.37, p<0.001) and one month postpartum (AOR 3.37, 95% CI 1.83-6.19, p<0.001).
- Increased monthly household expenditure** was not associated with improved knowledge of danger signs but was associated with an effective travel plan during pregnancy (OR 1.77, 95% CI 1.13-2.77, p<0.01) and postpartum (OR 2.47, 95% CI 1.30-4.70, p<0.01).

## Results: Knowledge of danger signs

- Knowledge of postpartum danger signs was low. **34.3%** of women during pregnancy, **18.7%** at childbirth and **18.2%** at one month postpartum could not identify a postnatal danger sign.
- Less than 1%** reported all three postpartum danger signs defined as the minimum knowledge set for postpartum readiness by the Johns Hopkins Birth Preparedness and Complication Readiness Index (BPCR)<sup>3</sup>.
- Knowledge of at least one danger sign at first antenatal visit was more likely in women who were **married** (single women AOR 0.36, 95% CI 0.16-0.82, p<0.02), **multiparous** (OR 3.17, 95% CI 2.22-4.52, p<0.001), **aged 25 years or over** (AOR 2.46, 95% CI 1.74-3.48, p<0.001) or if their **male partner attended the first antenatal care visit** (AOR 1.73, 95% CI 1.08-2.78, <0.02).

Figure 1. Proportion of women reporting specific danger signs at first antenatal visit, delivery and 1 month postpartum.



## Recommendations & Conclusions

- Women's knowledge of postnatal danger signs and plans for emergencies in PNG have not been previously described.
- These findings have important implications for educating and empowering women and their families, as well as immediate relevance to PNG health systems, policy and practice to improve maternal health outcomes.

Given our findings we propose the following **five key** recommendations:

- Importance of emphasising postnatal danger signs, and the need for postnatal emergency preparedness, as part of antenatal education.
- Harnessing experiential learning, such as, peer support teaching between older, multiparous women and younger, nulliparous women to provide lived experience of maternal health systems.
- Better support for women and their families' emergency plans using local referral pathways and local resources.
- Scale-up routine checks for women in first week(s) post delivery to reinforce awareness of danger signs and check for danger signs/complications.
- Include and break down barriers for involvement of male partners in pregnancy and postnatal care.

## References

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