

# Why mentorship is critical for knowledge retention: A secondary data analysis of maternal and neonatal complications in Neno district, Malawi

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## Introduction

### Background

- Critical need to strengthen the global nursing and midwifery workforce, especially in Malawi, where they primarily provide obstetric and neonatal care.
- In 2017, an intensive training program with year long bedside mentorship was implemented for nurses and midwives in Neno district, Malawi.
- Project aimed for sustainability with a staged handover to local ownership after three years of intervention.

### Study objective

To assess sustained improvement in obstetric and neonatal complication reporting practices 31 months post-project completion.

## Methods

### Design:

This was a secondary data analysis of Malawi District Health Information Software 2 (DHIS2) data.

### Study Periods:

*Pre-completion:* January 2019 – September 2020  
*Post-completion:* October 2020 – May 2023

### Analysis:

Bivariate analyses explored differences between pre- and post-project periods.  
Multivariate linear regression to control for facility factors.

### Study variables

- Maternal complications & associated emergency obstetric care
- Neonatal complications & associated emergency neonatal care
- Location and mode of delivery
- Neonatal survival
- Referrals to tertiary care

## Mentorship Program Design



## Results

### 525 monthly reports across 10 facilities

- 209 pre-handover • 316 post-handover
- **23,259 births:** 9,313 pre- & 13,946 post-handover
- Few significant differences between pre- and post-project periods.
- Improvements linked to enhanced identification and management of complications.

Statistically significant differences	Pre-handover (Total months=209) Median % [Min, Max]	Post-handover (Total months=316) Median % [Min, Max]	Unadjusted p-value	Adjusted p-value*
<b>Maternal complications</b>				
Antepartum hemorrhage	0 [0, 20.0]	0 [0, 20.0]	0.005	0.004*
Maternal sepsis	0 [0, 20.0]	0 [0, 8.33]	0.031	0.015*
<b>Associated emergency obstetric care</b>				
Manual removal of placenta	0 [0, 11.1]	0 [0, 7.69]	<0.001	0.001*
<b>Neonatal complications</b>				
Prematurity	2.38 [0, 50.0]	2.68 [0, 66.7]	0.184	0.040*
Neonatal sepsis	0 [0, 19.4]	0 [0, 20.0]	0.012	0.050*
<b>Associated emergency neonatal care</b>				
Neonatal antibiotics	0 [0, 79.8]	0 [0, 20.0]	0.074	0.019*

## Conclusion

- Lack of differences suggest practices were sustained
- Accurate reporting and subsequent care suggests providers have an improved ability to recognize complications
- Long-term mentorship is pivotal for skill retention after trainings

## Recommendations for sustainability

- Transparent partnerships with predetermined handover timelines are key to long-term sustainability
- Clinical mentorship after trainings is important for skill retention
- Center nurses and midwives for maternal and neonatal health

## References

1. Jester R. Global shortage of nurses. Int J Orthop Trauma Nurs. 2023;49:101018. doi:10.1016/j.ijotn.2023.101018
2. Openshaw M, Kachimanga C, Mphande I, et al. The Global Action in Nursing (GAIN) project in rural Malawi. Int J Afr Nurs Sci. 2023;19:100615. doi:10.1016/j.ijans.2023.100615

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