

Sustained impact of a nurse-midwife intervention on maternal and neonatal health following an academic partnership

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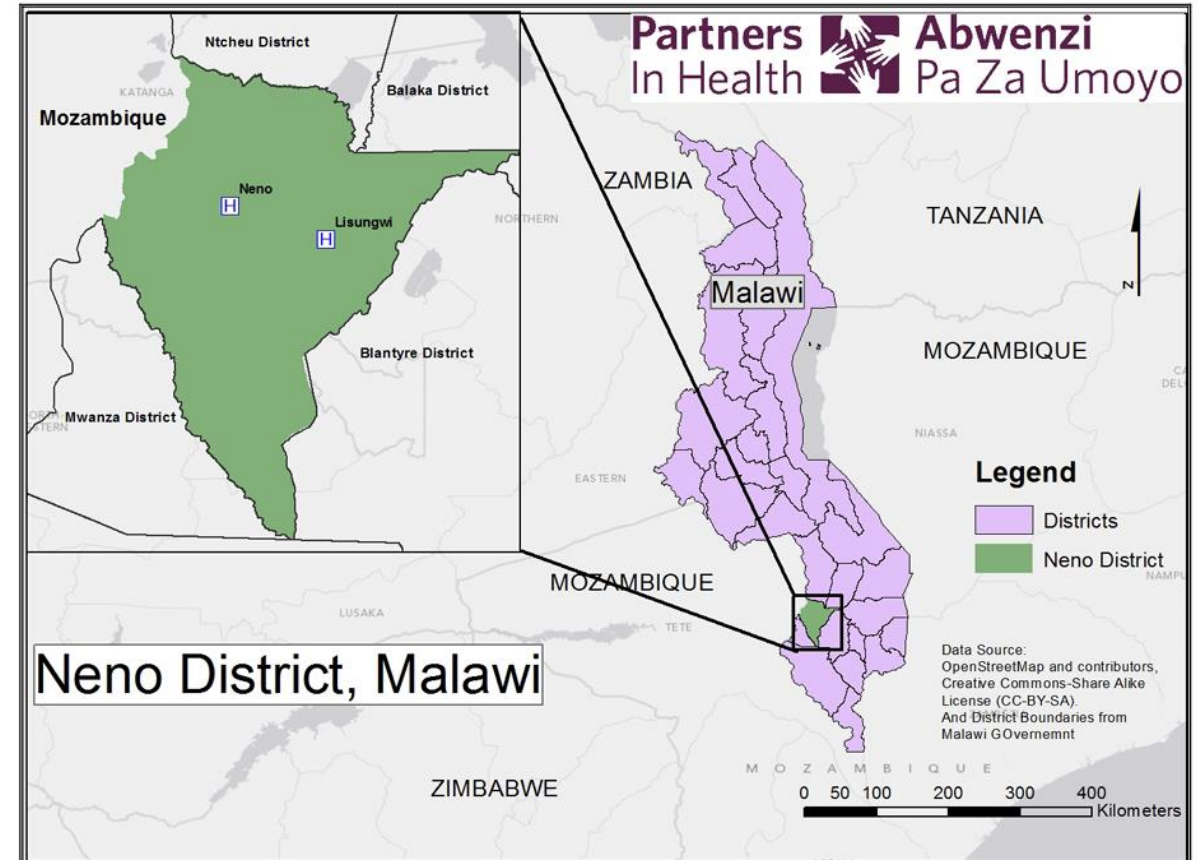


Background

University of California San Francisco (UCSF) Global Action in Nursing (GAIN) partnered with Abwezi Pa Za Umoyo (APZU) in Neno in 2017

Goal: improve maternal and neonatal outcomes

Combined intervention of intensive training with longitudinal bedside mentorship



Background



A neonatal care mentorship session at Neno District Hospital, Malawi

Staged handover of project activities

Planning and implementing trainings

Maintaining longitudinal bedside mentorship



October 2020: GAIN transitioned to limited support of research and evaluation



Methods

DHIS2 data origin and entry process

Data originate in the patient partograph



Copied into the patient register



Aggregated in the monthly report



Transferred into DHIS2



Data extracted from Malawi District Health Information Software 2 (DHIS2)



10 health facilities in the district

Study period

Pre-handover: January
2019- September
2020

Post-handover:
October 2020-May
2023



Methods

Bivariate analyses explored differences in the pre- and post-handover for all DHIS2 birth-related variables

Data were not normally distributed

Multivariate linear regression controlled for health facility

Variables

Ministry of Health maternal health register data

- Maternal complications
- Associated emergency obstetric care
- Neonatal complications
- Associated emergency neonatal care
- Delivery location: health facility, in transit, at home/traditional birth attendant, other facility
- Mode of delivery: vaginal, breech vaginal, vacuum, cesarean section
- Neonatal survival: death, fresh stillbirth, and macerated stillbirth



Results

Health facility	Median number of births per month	Median percent of referred cases per month (%)
Health center 1	24.38	12.50
Health center 2	21.45	14.84
Health center 3	3.74	28.57
Health center 4	13.00	10.52
Health center 5	17.50	13.33
Health center 6	40.30	16.66
Health center 7	17.0	27.27
Health center 8	31.52	3.70
Community hospital	109.03	0.88
District hospital	162.13	0.00



Results

525 monthly reports: January 2019 to May 2023 across 10 facilities

- 209 pre-handover
- 316 post-handover

23,259 births

- 9,313 pre-handover
- 13,946 post-handover

Facilities reported an average:

- 44.3 births per month

Health centers

- Average 21.2 births/ month

Hospitals

- 135.6 births/ month

Results

	Pre-handover (Total months=209) Median % [Min, Max]	Post-handover (Total months=316) Median % [Min, Max]	Unadjusted p- value	Adjusted p- value*
Maternal complications				
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
Associated emergency obstetric care				
Manual removal of placenta	0 [0, 11.1]	0 [0, 7.69]	<0.001	0.001
Neonatal complications				
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
Associated emergency neonatal care				
Neonatal antibiotics	0 [0, 79.8]	0 [0, 20.0]	0.074	0.019



Results and discussion

Maternal indicators

- ↓ antepartum hemorrhage
- ↓ maternal sepsis
- ↓ manual removal of the placenta

Neonatal indicators

↑ prematurity

Establishment of a neonatal nursery

- ↓ significant decrease in reported neonatal sepsis
- ↓ subsequent decrease in neonatal antibiotics

Conclusions

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 a pivotal for skill retention after trainings



Limitations

DHIS2

Provider reporting practices

Transition of providers to other districts

Recommendations for sustainability



Transparent partnerships



Mentorship after trainings



Predetermined end points



Bedside clinical skills support



Staged handovers



Center nurses and midwives
for maternal and neonatal
health



Thank you!

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Complication/ care	Total number of cases pre-handover	Total number of cases post-handover	Total number of cumulative cases in analysis
APH	60	53	113
Maternal sepsis	16	7	23
Manual removal of placenta	22	4	26
Prematurity	364	541	905
Neonatal sepsis	63	14	77
Neonatal antibiotics	299	169	468

Health facility	Mean number of births per month	Median percent of referred cases per month (%)
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District hospital	162.13	0.00

	Pre-handover (Total months=209) Mean% [SD]	Post-handover (Total months=316) Mean% [SD]	Unadjusted p-value	Adjusted p-value*
Maternal complications				
Antepartum hemorrhage	0.877 (2.51)	0.354 (1.60)	0.005	0.004
Maternal sepsis	0.366 (2.20)	0.0448 (0.505)	0.031	0.015
Associated emergency obstetric care				
Manual removal of placenta	0.337 (1.40)	0.0517 (0.540)	<0.001	0.001
Neonatal complications				
Prematurity	3.68 (5.47)	4.90 (7.73)	0.184	0.040
Neonatal sepsis	0.568 (2.29)	0.230 (1.58)	0.012	0.050
Associated emergency neonatal care				
Neonatal antibiotics	1.27 (3.05)	1.27 (3.05)	0.074	0.019