

Improving maternal sepsis care by task shifting vital sign observations to Hospital Attendants in Malawi:



UNIVERSITY OF BIRMINGHAM

a mixed methods study

Megan Owen 1407914



BACKGROUND & PURPOSE

- The maternal mortality ratio in Malawi was 634/100,000 live births in 2015¹
- To identify maternal physiological deterioration and improve outcomes, better monitoring of vital signs is needed
- Adequate monitoring of inpatients is difficult due to a 60% shortage of nurses in Malawi²
- Task shifting the measurement of vital sign observations to a lower cadre of workers, Hospital Attendants (HAs), could improve monitoring and reduce the burden on staff
- As part of the FAST-M study³, HAs were trained to take vital sign observations, record them in Modified Early Obstetric Warning Score (MEOWS) charts and escalate patients with signs of maternal sepsis

Aim: To assess whether task shifting vital sign observations to Hospital Attendants (HAs) is effective and accepted in Malawi

Hypothesis: The performance of HAs is no different to healthcare staff of a higher cadre, when recording patient vital sign observations



METHODOLOGY

- This study was set across Mitundu, Kabudula and Dowa government hospitals and their associated health centres, in central Malawi
- HAs involved in the FAST-M study were recruited by purposive sampling and given training over 2 days per site
- 613 MEOWS charts completed by 59 different HAs, between September 2017 and February 2018, were retrospectively audited to determine correct completion and whether appropriate action was taken
- Data was compared with 63 MEOWS charts completed by nurses using the Fisher's Exact Test
- Self-constructed, open-ended questionnaires assessed 69 HAs' attitudes towards measuring vital signs and using MEOWS charts
- Questionnaires were completed in a group setting, with local research facilitators acting as translators
- Questionnaire responses were summarised using content analysis
- Quantitative data was analysed using SPSS

RESULTS

Effectiveness

- No significant difference in performance was observed between nurses and HAs when completing respiratory rate and temperature (p-values 0.141 & 1.000)
- HAs were significantly better at completing all remaining vital signs (p-values all <0.0001)
- 95.7% of HAs were able to correctly identify when action needed to be taken, using 3 example MEOWS charts
- 98.6% of HAs stated they knew when to inform higher cadre staff of abnormal vital signs
- However in 23.5% of cases action was needed but not taken

Acceptance

- Participants are accepting of the intervention with 98.6% happy to perform and record vital signs
- 98.6% of participants found the FAST-M training useful and 88.4% of participants find the MEOWS charts easy to use
- 91.3% think training HAs to use MEOWS charts is a very good idea and 98.6% of HAs feel the FAST-M study has improved patient care a lot, (both measured on a 5-point likert scale)
- All participants agreed they enjoy their role taking and recording vital signs, although 52.2% reported there are some aspects they do not enjoy; most commonly this was respiratory rate (14.5%), reflected by low numbers reporting high confidence, shown below

Vital sign	Percentage completed by Hospital Attendants	Percentage completed by nurses	Fisher's Exact Test P-value
Respiratory rate	56.6	66.7	0.141
Temperature	94.3	95.2	1.000
Heart rate	98.9	88.9	0.0001
Systolic BP	99.5	92.1	0.0001
Diastolic BP	99.5	92.1	0.0001
Urine output	89.6	61.9	0.0001
Mental state	93.6	81.0	0.0001

A comparison of vital signs completed on MEOWS charts by HAs compared to nurses

Confidence rating to measure:	Number of participants (percentage)				
	No confidence	Not very confident	Not sure	Slightly confident	Very confident
Respiratory rate	2 (2.9)	0	5 (7.2)	15 (21.7)	46 (66.7)
Temperature	0	0	2 (2.9)	8 (11.6)	55 (79.7)
Heart rate	0	1 (1.4)	3 (4.3)	8 (11.6)	55 (79.7)
Systolic blood pressure	0	1 (1.4)	5 (7.2)	9 (13.0)	53 (76.8)
Diastolic blood pressure	0	1 (1.4)	2 (2.9)	6 (8.7)	58 (84.1)
Urine output	3 (4.3)	6 (8.7)	0	6 (8.7)	52 (75.4)
Mental state	6 (8.7)	4 (5.8)	2 (2.9)	8 (11.6)	47 (68.1)
Whether the patient looks unwell	1 (1.4)	1 (1.4)	1 (1.4)	6 (8.7)	56 (81.2)

A table to show HAs' confidence to measure each vital sign observation

CONCLUSION

Task shifting the measurement of vital signs and escalation of patients with signs of maternal sepsis, to Hospital Attendants is an effective and accepted intervention in Malawi.

The performance of HAs recording vital signs has been shown to be no worse than that of nurses, and in some areas significantly better. In addition HAs enjoy their new role, reporting increased knowledge and empowerment. Future research could explore further the effect task shifting has on relationships and dynamics in the wider multidisciplinary team.

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References:

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