Integrating the Continuum of Emergency Obstetric, Newborn Care and Referral Services in Two Municipalities in Rural Ghana: Implementation Research with a Health Systems Approach

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Introduction

The Developing Acute Care and Emergency Referral Systems (ACERS) Program is a four-year program that uses context-appropriate, evidence-based learning in the planning, evaluation, and adaptive implementation of a multifaceted Emergency Obstetric and Newborn Care (EmONC) Continuum of Care (CoC) Program. The ACERS program comprises interventions to address the three delays across the CoC[1].

Objective: Here we focus on the second delay, where we hypothesize that introducing a National Ambulance Service (NAS) Emergency Dispatch Center (EDC) at the municipal level improves communication between communities, Ghana Health Service (GHS) and NAS, will enhance referral systems' coordination and access to EmONC services.

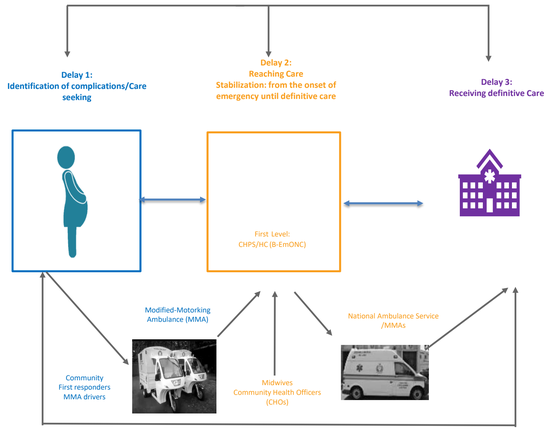


Figure 1. ACERS EmONC Three Delays Model

Methods

Pre-selected implementation research frameworks guided baseline and endline mixed methods assessments and the implementation process. Routine referral data were collected quarterly from NAS' open-access Pre-Hospital Information Management System (PIMS) and Lot Quality Assurance Sampling (LQAS) and qualitative and quantitative baseline and endline surveys.

References

Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. *Social science & medicine*, *38*(8), 1091-1110.

Results

Across the two municipalities, a qualitative assessment captured data from 776 participants at baseline and 314 at the endline. The Women's Survey collected responses from 3158 women and 2754 women at endline.

Collaboration between the GHS and NAS created an EDC Harmonization Framework (EDC HF) to streamline communication and feedback continuity between entities providing emergency transport and facility-based care at all system levels. The significance of social change communication innovations in the initial roll-out of the EDC intervention and interviews with key informants identified gaps in their readiness for implementation.

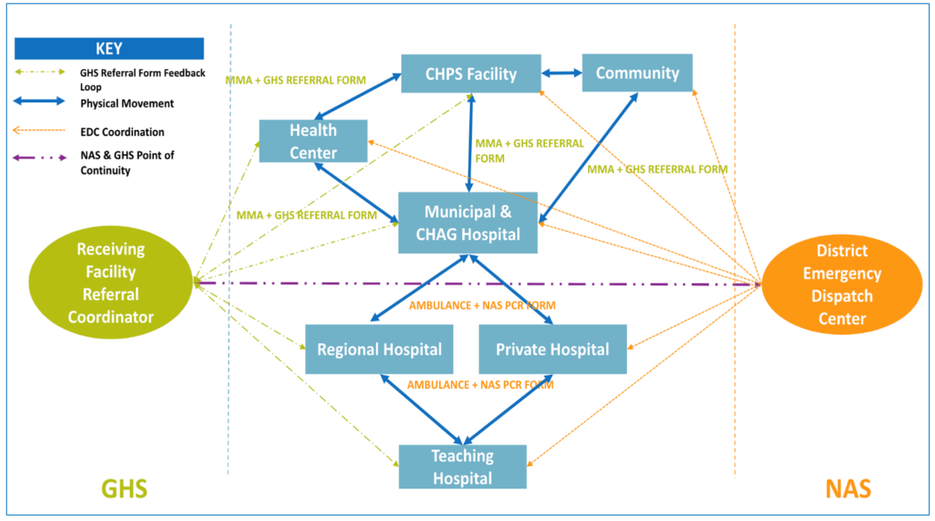


Figure 2. Harmonization framework between NAS and GHS for streamlined continuum of care for maternal and newborn emergency services informed by ACERS implementation research frameworks

RE-AIM Framework Dimensions	Illustrative Examples of Indicators
Reach	# of CHVs trained/200 CHVs in all intervention communities
Effectiveness	Proportion of women surveyed who deliver at facilities
Adoption	Extent to which CHVs support community care-seeking behavior
Implementation	% of CHPS zones with CETS established and implemented % of supportive supervision visits conducted
Maintenance	Integration of District EDCs into the National Ambulance Service (NAS)

Consolidated Framework for Implementation Research (CFIR) Domains	Illustrative Contextual Factors
Intervention Characteristics	Opportunity cost and perceived complexity of interventions
Outer Setting	Presence of social networks, other programs/NGOs and emergency referral policies
Inner Setting	Commitment and engagement of leaders and staff members
Characteristics of Individuals	Staff and community knowledge, trust, and familiarity of the intervention
Process	Community and staff engagement and participation in project implementation

Figure 3. Illustrative examples of ACERS implementation research frameworks

Results (continued)

Referral feedback on patient outcomes and further outpatient care instructions from the health facility to the community revealed challenges. Once the Referral Coordinator position was established and all parties adopted the EDC HF, implementing the ACERS emergency referral interventions was streamlined.



Figure 4. Use of ACERS virtual mentoring program (left) and decentralized Emergency Dispatch Center (right)

Conclusion

The complexity of integrating novel health system-strengthening innovations, like the EDC, there into an established continuum of care can be intimidating. Still, by coupling an IR approach to the practical implementation of a package of EmONC services, program partners were able to ensure impact and document lessons learned for the benefit of future EmONC initiatives to streamline awareness of inequities, increase advocacy, and supplement quality improvement efforts for reducing maternal and neonatal morbidity.

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