A system for monitoring and responding to excess mortality in a health deprived setting of northern Ghana

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Outline

- Background
- The Ghana Essential Intervention Project
- Priorities
- Interventions
- Moving forward
The District Primary Health System in Ghana

District level: (C)
District Health Management Teams (DHMT)

Community level (A)
Community Health Committees CHPS

Sub-district level (B)
Sub-district Health Management Teams

District hospital: C

Supervision

Patient referral

Health Centre B

Patient referral

Health Centre B

Patient referral

A: CHPS: Volunteer + paid community nurses + health post

Patient referral

Patient referral

Patient referral

...
Community-based Health Planning & Services

- Community-based Health Planning and Services (CHPS)
- Based on results of the Navrongo Community Health and Family Planning Project (CHFP)
- Provision of ‘doorstep’ services to communities including preventive care, health education, and treatment of common childhood and other diseases.
The Context: Rural Realities

- Population: mostly rural
- Inadequate infrastructure
- Terrain: Rocky and mud-covered roads
  - Many communities inaccessible by vehicle during rainy season
  - Some communities inaccessible due to streams or paths too narrow for a vehicle to pass.

- Main modes of transport
  - Walking, bicycles, motorcycles and donkey carts
The Context: Rural Realities

- Community-based Health Planning & Services (doorstep services) the model for basic service delivery is not scaled up
- Weak referral system
- Laborious paper-based information capture with little time for information for decision-making
- Minimal or no feedback
The Ghana Essential Health Intervention Project

- An implementation research project that seeks to strengthen elements of the six WHO pillars of health systems development aimed at accelerating the achievement of the health MDGs

- Funded by Doris Duke Charitable Foundation and Comic Relief (UK)

- Partnership
  - The Ghana Health Service
  - The University of Ghana School of Public Health
  - The Mailman School of Public Health, Columbia University, New York
Perinatal mortality surveillance

Regional & District-level Surveillance (Routine completion of midwifery related forms)

Community-level Surveillance (Community-based Volunteers mortality reports)
1. District & Regional Level Surveillance

**District-level surveillance:** Use of a routine monthly midwifery focused form (FORM A) which indicates critical information perinatal health including mortality, the occurrence of complications, premature deliveries, and abortion complications.

<table>
<thead>
<tr>
<th>Deliveries</th>
<th>Outcome of delivery</th>
<th>Total births</th>
<th>Birth weight</th>
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<td></td>
<td>Mothers</td>
<td>Children</td>
<td>Live</td>
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<tr>
<td>Single</td>
<td>613</td>
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<td>Twin</td>
<td>7</td>
<td>14</td>
<td>301</td>
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<tr>
<td>Triplet</td>
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**Mortalities**

<table>
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<tr>
<th>Type of delivery</th>
<th>Total</th>
<th>Mortalities</th>
<th>Maternal deaths</th>
<th>Neonatal deaths (&lt;1 month)</th>
<th>Post neonatal deaths (1-11 months)</th>
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<tbody>
<tr>
<td>Normal</td>
<td>584</td>
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<td></td>
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<tr>
<td>C/section</td>
<td>33</td>
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<tr>
<td>Vacuum</td>
<td>4</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Forceps</td>
<td>507</td>
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</table>

**Age group of maternal deaths**

<table>
<thead>
<tr>
<th>Age group of maternal deaths</th>
<th>Total</th>
<th>Deliveries with 2+ IPT doses</th>
<th>Vesico-vaginal fistula</th>
<th>Morbidities</th>
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</thead>
<tbody>
<tr>
<td>10-14</td>
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<tr>
<td>Forceps</td>
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**Age group of mother at delivery**

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<tr>
<th>Age group of mother at delivery</th>
<th>Total</th>
<th>Receiving Oxytocin for the first time</th>
<th>Mother Infant feeding</th>
<th>Exclusive breastfeeding</th>
<th>Breastfeeding within first 1 hour</th>
<th>Active mother</th>
<th>Health professionals trainedin</th>
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2. Community-level surveillance

- Community-based volunteers provide monthly reports indicating all mortalities (including perinatal) within their designated catchment areas.
- Upon receiving mortality reports, sub-district staff are deployed to perform verbal autopsies.
- Verbal autopsies involve dialogue with the family of the deceased regarding the circumstances surrounding the death.
Both tiers of the system were reporting alarming trends related to neonatal deaths.

Verbal autopsies and further review of midwife’s FORM A’s indicated that neonatal resuscitation and premature births were a serious problem within the region.

These issues were detected at both the district and regional levels.
Problem: Data stockpiling rather than utilization

- Frontline health workers are required to provide vast amounts of data collection.
- The compilation of data is performed generally as a bureaucratic exercise, with findings rarely translated into action or policy reform.
- This is especially the case for health workers, who rarely benefit from their tedious data collection practices.
Priority problems and GEHIP solutions:

<table>
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<th>Problems:</th>
<th>GEHIP Strategies</th>
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<tr>
<td>Use information from audits to develop training and interventions</td>
<td>• Retrain frontline workers to expand the range of services that they offer.</td>
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<td>• Develop referral services and emergency management capacity.</td>
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<td>Improve the utilization of evidence.</td>
<td>• Expand the range of services that volunteers can provide.</td>
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<td></td>
<td>• Improve “information for decision-making” with a mortality audit procedure.</td>
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</tbody>
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Proven interventions are not being scaled-up
• Access is low; Leadership is lacking
• Resource allocation is inappropriate
• Budget lines for CHPS expansion

Accelerate community health service coverage by…
• Developing leadership at all levels of the system
• Improving information systems
• Implementing evidence based budgeting
GEHIP Intervention highlights:

- Capacity building through staff training
  - New training sessions focused on neonatal resuscitation &
  - Kangaroo Mother Care (KMC)
- Rapid Expansion of CHPS coverage
- Introduction of emergency referral pilot project
The Regional and District health administrations coordinated together to deliver a clinical emergency public health training program, with a focus on perinatal mortality:

- Neonatal Resuscitation (HBB)
- Kangaroo Mother Care
Improved data capture

- Developed simplified registers, training on their use & increased monitoring and supervision
Developed Referral Strategies

A qualitative appraisal of an emergency referral pilot in one sub-district to inform implementation strategy for scale up in 12 sub-districts
CHPS Scale-up

Percentage of district populations covered by functional CHPS services –
Evaluation of GEHIP

- Program Monitoring
  - Performance/service provision
  - Regular program monitoring: CHPS scale-up
  - Health system strength: resources, staffing, etc.

- Impact Evaluation
  - Baseline & Final surveys
  - Health System Strength: resources, staffing, etc.
  - Qualitative systems appraisal
  - GIS data

- Economic Evaluation
  - Pilot studies/operations research
Results- Program monitoring

- Continuous training and mentoring required to maintain skills
- Context-specific emergency referral care is required in rural communities in Ghana
- Feedback among all referral levels of care
- Cost sharing mechanisms required to sustain emergency referral
- CHPS scale up requires catalytic funding
Lessons & policy implications

WHO “Pillar #3” states that health system strengthening requires *information for decision-making*. GEHIP has demonstrated practical means of strengthening the system with improved information for decision-making:

- **Simplification.** It is feasible to greatly simplify the collection of data without loss of information.

- **Utilization** It is feasible to improve data utilization for....
  - **Reforming training.** It is feasible to use data collected by service workers to guide the reform of service worker training and supervisory decision-making.
  - **Worker feedback & support.** Simplification makes it feasible to use data for decentralized feedback and worker support.
  - **Community engagement.** It is possible to involve communities in data utilization, leading to improved engagement and support for community-based primary health care.
THE END

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