Automated Verbal Autopsy in Ghana: The Role of Community Health Workers and Other Cadres

Francis Yeji (Country Coordinator, D4H Initiative)
CRVS Landscape in Ghana

CRVS Stakeholders - Ghana

- President’s Office
  - Ghana Statistical Services
  - National Development Planning Commission
  - Oversight Committees?
- Ministry of Local Government and Rural Development
  - Births & Deaths Registry
- Ministry of Health
  - Ghana Health Service
  - National Health Insurance Agency
  - Registrar General Department
  - Law Reform Commission
  - Judicial Service
- Ministry of Justice & Attorney General
- Ministry of Communications
  - National Identity Authority
- Ministry for the Interior
- Ministry of Education
- Ministry of Foreign Affairs & Regional Integration
- Passports
- Immigration
- Medical Schools
- Embassies abroad

CRVS Development Partners

UNICEF
UNFPA
UNECA
UNDP
WHO
Bloomberg D4H
Other NGO’s and FBOs
CRVS Challenges in Ghana

- **Incomplete information**
  - Birth registration (~55%), Death registration (~27%)
  - COD (~7% - majority, facility-based deaths)

- **Limited access to registration points**
  - ~420 registration offices (1 / 67,000 population)

- **Family-led notification**
  - No obligation on GHS to notify births or deaths
CRVS Strengths in Ghana

• Renewed focus on CRVS system strengthening leading to:
  • Comprehensive assessment (2015)
• Well-functioning inter-agency coordinating mechanism
• Strong human capacity at many key stakeholders
• Newly drafted CR law, addressing many key issues
• Team of DHIS2 developers
Data for Health (D4H) Country Strategy

• Use business process mapping to improve system design
  ✓ Completeness
    - Health facility events
    - Community events

• Extend CR service point coverage and IT digitization strategy
  ✓ Completeness
    - Health facility events
    - Community events

• Support national rollout of DHIS2 mortality module
  ✓ Completeness
    - Health facility deaths
  ✓ Quality
    - COD
D4H Country Strategy

- Use ANACONDA to regularly assess quality of mortality data
  - Quality
    - COD
- Implement community-based automated verbal autopsy
  - Completeness
    - Community deaths
  - Quality
    - COD
- Training course on CRVS data analysis and use (DI component)
  - Dissemination
    - Vital statistics
Deaths outside facilities (~70%) (136,500 deaths)

Data lost for policy and program use

Usable but insufficient and biased data for public health

Facility Deaths (~30%)

All Deaths, 2015 (205,000)
Objectives of Community Based VA

• Test an active system of death notification
• Increase the level of death registration
• Improve availability of data on COD
• Generate evidence about the effectiveness and feasibility of a model for community-based death notification and automated VA in Ghana’s CRVS
Key Stakeholders

GHS
- National
- Regional
- District
- Sub-district
- Community

GSS
- National
- Regional

BDR
- National
- Regional
- District
- Community

LOCAL COMMUNITY
(Chiefs, Religious leaders, Volunteers etc.)
Community VA Process Mapping

Ghana CRVS for Death in the Community with VA

1. Notification of the event
2. Trigger the VA
3. VA data collection and transmission
4. VA analysis and dissemination of COD
5. Activities related with registration and certification

**Death in the community**

**Family**
- Family declares event to local authority to notify event
- Family completes funeral and uses the Notification Form to register the death at the nearest CR Office within 30 days
- CHW conducts VA at the household within 30 days and refers/assists the family to register the death at the local BDR office
- Family returns with Death Certificate

**Community**
- Community Leadership obtains information for the death notification
- Local authority issues a death notification form with unique serial number
- Notification Register used to trigger the VA via the CHPS Zone
- Local GHS CHPS CHW schedules a visit to the bereaved household to conduct the VA interview on a mobile tablet device
- CHW transmits completed VA questionnaire to the GHS DHIMS Central server

**GHS Health Facility**
- Local Health Facility receives VA COD for "opt in" information for the family
- BDR receives COD with Notification Number to link with the registered death
- BDR receives and links Notification from the family and COD from GHS
- BDR validates data, registers death and sends to GSS
- BDR issues Death Certificate to family

**Local / National BDR Office**
- BDR notified
- Quality Control & Analysis
- COD Established
- VA COD processed and stored on GHS DHIMS Server

**Ghana Health Service**
- Individual COD sent to BDR
- Individual COD returned to Health Facility for family counselling
- Aggregate COD data used by GHS and sent to GSS

**Statistical Service**
- CR & COD data aggregated for production of Vital Statistics
- Vital Statistics produced, disseminated and used
Site Selection for VA Pilot

Criteria:
- High crude death rate
- Strong CHPS implementation
- Lack of access to health facilities
- Near but not in HDSS catchment area
- Strong local support for the intervention
- Functional BDR office and volunteers
## Death Notification Form: A Giant Step

### BIRTHS AND DEATHS REGISTRY

**DEATH NOTIFICATION FORM**

### A. DETAILS ABOUT DECEASED AND EVENT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>0.</td>
<td>District / Sub-District / Community</td>
</tr>
<tr>
<td>1.</td>
<td>SERIAL NUMBER</td>
</tr>
<tr>
<td>2.</td>
<td>FULL NAME OF DECEASED</td>
</tr>
<tr>
<td>3.</td>
<td>AGE OF DECEASED</td>
</tr>
<tr>
<td>4.</td>
<td>SEX OF DECEASED</td>
</tr>
<tr>
<td>5.</td>
<td>DATE OF DEATH (DAY/MONTH/YEAR)</td>
</tr>
<tr>
<td>6.</td>
<td>PLACE OF DEATH (State House Address or Name of Facility)</td>
</tr>
<tr>
<td>7.</td>
<td>USUAL ADDRESS OF RESIDENCE</td>
</tr>
</tbody>
</table>

### B. DETAILS ABOUT INFORMANT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FULL NAME OF INFORMANT</td>
</tr>
<tr>
<td>2.</td>
<td>ADDRESS</td>
</tr>
<tr>
<td>3.</td>
<td>TELEPHONE NUMBER</td>
</tr>
<tr>
<td>4.</td>
<td>DATE OF REPORTING</td>
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</tbody>
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*Note: This is not a burial permit or a death certificate.*

### DECLARATION

I, ............................................................................................................................................................................ do hereby declare that I have been notified of the death of ..................................................................................................................................................................................... and permission is hereby granted for the burial of the deceased after the registration of the death with the Births and Deaths Registry.

**Name:** ...........................................................................................................................................................................

**Title:** ..........................................................................................................................................................................

**Signature:** .................................................................................................................................................................

**Date (DAY/MONTH/YEAR):** .................................................................................................................................

**Stamp**
Frontline Workers

- **Community Health Volunteer**
  - Link between community, CHW, and BDR
  - Fills death notification form (*Not registration*)
  - Copy to BDR for death registration
  - Copy to CHPS CHW for VA interview

- **Community Health Worker (CHW)**
  - Conducts VA interview

- **Births and Deaths Registration (BDR) Office**
  - Register and issue death certificate
Expected Impact of VA in Ghana

All Deaths

Facility Deaths (~30%)

Deaths outside facilities (~70%) (136,500 deaths)

Data useable for health policy and program use

Use of VA in CRVS & Health Systems

Pilot may not capture all outside facility deaths
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>2016</th>
<th>2017</th>
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<tbody>
<tr>
<td>Stakeholder Consultations</td>
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<td></td>
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<tr>
<td>Advocation and Community Sensitization</td>
<td></td>
<td></td>
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<tr>
<td>Train community informants</td>
<td></td>
<td></td>
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<tr>
<td>Train Interviewers, Supervisors and data managers</td>
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<td>Train physicians in CoD Certification/coding</td>
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<tr>
<td>Field test tools and model</td>
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<tr>
<td>Data collection</td>
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<tr>
<td>Physician coding of VA, coding and run algorithm for probable COD</td>
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<td>Evaluate field test results</td>
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<tr>
<td>Presentation of results and decision on pilot</td>
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THANK YOU!

QUESTIONS, COMMENTS, SUGGESTIONS?