Child Health and Mortality Prevention Surveillance: Overview of Kenya Site

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Kenya site Co-Director/PI
Transforming data to Action
Webinar with the CHAMPS Kenya site Team
6/9/2022
- Project hosted within KEMRI Center for Global Health, Family Health Unit
- Data & stat team: Data generation
- Clinical team: Results delivery, family follow-up, case preparation and presentations
- SBS team: Result delivery, family follow-up, community engagement, dissemination, rumor surveillance
- MOH team (county, MOH, FELTP, NPHI): key lead in D2A, formulation of public health actions, implementation and evaluation

**Teams Primarily involved in D2A**

- Data to Action/Operation Research Section
- Administrative Section
- Socio-Behavioral Science sub-unity
- Data Section
- DeCoDe/Clinical sub-Unit
- Surveillance
  - Mortality Surveillance
  - Pregnancy Surveillance
- Pathology Section
- Regulatory & QA/QC Section
- Implementation Science Sub-Unit
- HDSS Liaison
  - Manyatta HDSS
  - Karemo HDSS
- Other collaborative Labs (4)

**KEY:**
- Reporting lines
- Functional lines
Site Profile: Karemo HDSS, Rural Siaya County

- HDSS established in 2001 (by Kemri & CDC); About 400 km²
- On the backdrop of over 40 years collaboration KEMRI, MOH and CDC
- Estimated mid-year population: 93,000
- Number of households: 23,803

- Estimated no. of pregnant women/yr: 1500
- Crude birth rate: 22.7
- Total fertility rate: 3.0
- U5MR: 86/1000 (69%)
SITE PROFILE: Manyatta HDSS, Urban Kisumu County

- Established in 2016 by CHAMPS Project
- Approx. Area: 5 km²
- Population is about 78,000 and is urban
- No. of Households : 31,266
- Estimated number of pregnant women/yr: 1000
- U5MR: 79/1000
Pre D2A work: Social & Behavior Science & Community Engagement

• Use of formative research data:
  − Understanding **timing of burial** - informed expedited MITS procedures
  − Perceptions about **morgue arising from experience** with poor conditions – work with MOH to improve morgue status
  − Consent is shared beyond immediate family - Close kinship ties and decision-making processes

• Influence of community engagement strategies for greater acceptability
  − Better “packaging” of info, e.g., involving provision of incentives
  − Expanding **notification team** to include community leaders, religious leaders, etc.
  − Community health dialogues
  − Community CHAMPS CHAMPIONs
  − Community advisory board – help identify community groups to engage

• Integration of SBS work with mortality surveillance
  − Enhance CHAMPS narrative around maternal and child health/child survival vs visible involvement during death
  − Health care worker concern: MITS results that differ from hospital diagnosis, may bring into question issues of competence and trust – initial concerns
  − Transport of bodies, family members and neighbors accompany the body to the morgue and witnessing procedure
  − Working with MOH on data generating actionable findings for routine use
Kenya CHAMPS enrolment Cascade as of 30th May 2022

- **>85% consent rate**
- Target about 240 MITs cases/yr
- 97% MITs on all consented cases
- >50% community MITs

<table>
<thead>
<tr>
<th>Category</th>
<th>Count (Percentage)</th>
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<tbody>
<tr>
<td>Notifications</td>
<td>1396</td>
</tr>
<tr>
<td>CHAMPS eligible</td>
<td>1081 (77.4%)</td>
</tr>
<tr>
<td>Enrolled (MITs + non-MITs)</td>
<td>984 (91.0%)</td>
</tr>
<tr>
<td>MITS Eligible</td>
<td>930 (94.5%)</td>
</tr>
<tr>
<td>MITS Consented</td>
<td>795 (85.5%)</td>
</tr>
<tr>
<td>MITS performed</td>
<td>788 (99.1%)</td>
</tr>
<tr>
<td>CoD determined</td>
<td>602 (76.4%)</td>
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**MITS Performed**
- Siaya 367
- Kisumu 421
Use of HDSS Deaths to track Percent CHAMPS eligible and MITs performed

Death Notifications/CHAMPS Eligible Vs MITS Performed

First case of COVID reported in Kenya March 2020
Location of Death by Age Group (Kenya)

- Kenya:
  - Overall: 73% hospital deaths (27% community)
  - Community deaths: Significant deaths in the community, especially infants and children >1 yr
  - Conducted >50% MITs on community deaths

![Location of Death by Age Group (Kenya) Diagram]
Malaria, HIV, malnutrition leading Underlying Cause of Death in Infant/Child - Kenya (n=236)
Majority of U5 Deaths are Preventable (Kenya)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage Preventable</th>
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<tbody>
<tr>
<td>Total</td>
<td>95%</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>95%</td>
</tr>
<tr>
<td>Neonate</td>
<td>93%</td>
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<tr>
<td>Infant/Child</td>
<td>96%</td>
</tr>
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HEALTH SYSTEM GAPS (FAMILY/COMMUNITY LEVEL)

- Delay in seeking care: 35
- Inadequate early detection and response to danger signs: 19
- Alternative medicine use: 23
- Inadequate community malnutrition Mx: 19
- Inadequate ANC attendance: 9
- Teen pregnancy: 9
- Unskilled delivery: 5
- Early weaning: 5

Legend:
- Green: Late neonates and children
- Brown: Stillbirths and Early Neonates
HEALTH SYSTEM GAPS (HEALTH FACILITY LEVEL)

- Lack of knowledge/skills
- Inadequate Lab and radiology use
- Lack of proper documentation
- Lack of adherence to guidelines
- Inadequate labor monitoring & Mx
- Inadequate malnutrition Mx
- Inadequate early detection and response to danger signs
- Irrational antibiotic use

Legend:
- Green: Late neonates and children
- Brown: Stillbirths and Early Neonates
Summary Of Decode Panel Recommendations

• Improve the quality of clinical care
  • Adherence to treatment guidelines
  • IMCI, HIV guidelines, ANC, Management of labor, history taking, examination & documentation)

• Improve health care seeking behavior of the communities
  • Address delays in seeking care and use of alternative medicine (herbs, surgeries)
  • Addressing religious beliefs
  • Recognizing danger signs

• Improve the quality supply of human resources /essential commodities
  • referral system,
  • staffing,
  • essential drugs & equipment,
  • blood and blood products
MOH noted most of death cases would have been missed if CHAMPS was not there

Need to think of how CHAMPS data and methods can be used to strengthen MOH system (causes of deaths and quality of death certificates data)

Keen on Klebsiella AMR and serotyping data

Linkage of surveillance studies within HDSS with CHAMPS data

Extend mortality surveillance to children beyond <5 years of age

Site serves as mortality surveillance CoE for mortality for the country and Africa CDC
Strategic Positioning of Kenya CHAMPS site

- Ability to capture & conduct MITS on community deaths (>60% of eligible community deaths)
  - 87% reported by community health workers/community reporters

- The mobile MITS van could help reduce missed opportunities for MITS, especially for community deaths

- A well-established pre-existent HDSS platform that offers the advantage of
  - Comparing mortality trends before & after the CHAMPS D2A activities
  - Contributing to excess mortality discussion

- State-of-the-art labs with various capacities - has greatly reduced outsourcing of lab services

- Highly experienced staff with diverse skills

- Layering MNH/pregnancy studies – double as D2A activity
CHAMPS Provided Opportunities for new studies

- HDSS:
  - Manyatta
  - Karemo

- CHAMPS

- Pregnancy Surveillance

- Pregnancy studies

- PRiSMA
  AnCOV (COVID data: contributes to WHO data)

- Sickle Cell
- Ocular
- Anthropometric
- AMR

Coming up:
- Adult malaria mortality study

Family Health Unit established by MOH and KEMRI to host CHAMPS and related studies
Other Investments

New JOOTRH Morgue
- CHAMPS investment

Siaya Morgue Renovation
First case conducted within the VAN in a participant’s home on 7th June 2022!!

- Following intense community engagement and showing and demonstrating VAN use to the community
- Consent granted by grandmother (mother is a minor) – observed the whole procedure (along with other family members)
- Community excited the vehicle went up to their compound
- Caution: Very receptive compound – cannot be used to measure acceptability
What worked

- Inclusion of Health facility support staff (Cleaners and security guards) as notifiers
- Working with village elders and CHV in the community as notifiers
- Working closely with private health facilities
- Working closely with traditional birth attendants
- Having a dedicated hearse transport services to Transport body to the burial place
- Paying of mortuary bills
- Funeral support to the family (kshs 5000)
- Rumour surveillance system involving community members

What hasn’t worked well

- The HDSS system: biannual round limiting
- Delay in delivering of results to the family
- Follow-up of mothers after delivery of results
- Placenta collection
- Frequent strikes affected our enrolment at public health facilities
- COVID-19 affected our enrolment in the community
Conclusion

- Kenya CHAMPS site strong collaboration with MOH and other collaborating partners
- Site has been able to meet most PO set target
- CHAMPS data being used by MOH, professional bodies and other stakeholders
  - CHAMPS Data-to-Action tightly coordinated with county health departments, hospital and health partners
    - Ensure greatest possible impact
    - Dissemination of lessons learned more broadly
    - Improve quality of care
- CHAMPS platform and data inform new surveillance questions and studies
- Wider discussion on CHAMPS next frontier beyond 2025
CHAMPS acknowledges the families and communities that make our work possible.
USING CHAMPS DATA FOR HEALTH SYSTEM STRENGTHENING IN WESTERN KENYA

Dr. Dickens Onyango
Kenya site Data-action program

- **Stewardship**
  - Data-to-action spearheaded by County Governments
  - Strong collaboration with research institutions (KEMRI and CDC)
  - County level - each county has data to action leads
    - Sub-county child health focal persons
  - Collaboration with national government – NPHI/Division of child and neonatal health

- **Funding** - the International Association of Public Health Institutes (IANPHI)
  - Annual scope of works developed by the site in consultation with CHAMPS PO
  - Completed – 3 annual funding cycles
  - Currently – year 4
THE DATA-TO-ACTION CYCLE

- DeCoDe team
- CHAMPS staff
- County health departments
- National gov’t
- Facility staff
- Externals partners
- NGOs, bilateral, multilateral partners
DATA-TO-ACTION AT VARIOUS LEVELS

**Family**
- Feedback on causes of death
- Case finding for infectious diseases – HIV
- Management of chronic conditions - cervical incompetence; rhesus incompatibility

**Community**
- Community dialogue days- aggregate data
- Health education using mass media platforms
- Community CHAMPions

**Health Facility**
- Mortality review meetings
- Health professional associations

**County and Sub-County**
- Participation in TWGs
- Policy briefs

**National and global**
## OVERVIEW OF DATA-TO-ACTION ACTIVITIES

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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<tr>
<td>Training on data demand and use</td>
<td>Mortality review meetings</td>
<td>Establishment of quality</td>
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<td>Dissemination of CHAMPS</td>
<td>improvement teams</td>
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<tr>
<td>Training on writing success story (KEMRI</td>
<td>findings to professional</td>
<td>Small grants to health facilities</td>
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<tr>
<td>and MOH staff)</td>
<td>bodies: KOGS, KPA</td>
<td>Technical working groups</td>
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<td>Videoconferencing facilities</td>
<td>Success Stories</td>
<td>CHAMPS champions</td>
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<td>CDH Kisumu, Siaya</td>
<td>Stakeholders mapping</td>
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<td>Household mapping in Manyatta</td>
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- **Year 1**
  - Training on data demand and use
  - Mortality review meetings
  - Training on writing success story (KEMRI and MOH staff)
  - Videoconferencing facilities CDH Kisumu, Siaya
  - Household mapping in Manyatta

- **Year 2**
  - Mortality review meetings
  - Dissemination of CHAMPS findings to professional bodies: KOGS, KPA
  - Success Stories
  - Stakeholders mapping

- **Year 3**
  - Establishment of quality improvement teams
  - Small grants to health facilities
  - Technical working groups
  - CHAMPS champions
Manyatta HDSS enumeration

- No. of HHs >twice the MOH estimated (31,266 vs. 11,686)
- CHVs covering >100 households (some up to 800)
- Some households missing critical health projects as a result e.g. bed nets

Outcome:

- Re-assignment of CHVs to 100 household completed
- Inclusion of additional CHVs
MORTALITY REVIEW MEETINGS

County level meetings:
- Participants: CHMT (Kisumu & Siaya)
- Presentation - selected cases
- Discussion of public health actions
  - family, community & health system)
  - Implementation plan developed

Outcome
- Health facility leadership - demanding the input of CHAMPS for routine mortality meetings
- >60% of activities identified in action plans implemented

Health facility:
- Presentation of select CHAMPS cases
- Facility staff identify corrective measures
STAKEHOLDERS MAPPING 2017/2018

- Conducted with assistance of Emory University MPH students
- Objective – identify strategic data to action partners
- **Outcome:** - CHAMPS data disseminated to
  - HIV implementing partners
  - Malnutrition – Country and Zonal UNICEF nutrition teams
  - Ongoing engagement through TWGs
INTEGRATED MANAGEMENT OF ACUTE MALNUTRITION

- Training health providers on Integrated Management of Malnutrition (IMAM)
  - 42 HCWs drawn from 33 facilities (Siaya and Kisumu)
  - 5-day training
- Outcomes:
  - Increased detection of malnourished children esp in Siaya
  - Purchase of MUAC tapes for CHVs
  - Planned community intervention – rapid results initiative
Supported sensitization of 40 HCWs (Kisumu/Siaya) on Kenya Quality Model for Health

Outcomes:
- Formation of health facility work improvement teams (WITs)
- WITs identified quality improvement projects in maternal and child health
- Institutionalization of quality improvement by JOOTRH board –
  - CHAMPS Kenya site represented in a board subcommittee on quality improvement
Acknowledgement

- Families of the cases enrolled in CHAMPS
- Karemo and Manyatta HDSS communities
- Kenya CHAMPs Directors and staff
- Kisumu and Siaya County Department of Health
- Henry Jackson Foundation
- U.S. Centers for Disease Control, Kenya
- Kenya Medical Research Institute
THANK YOU!