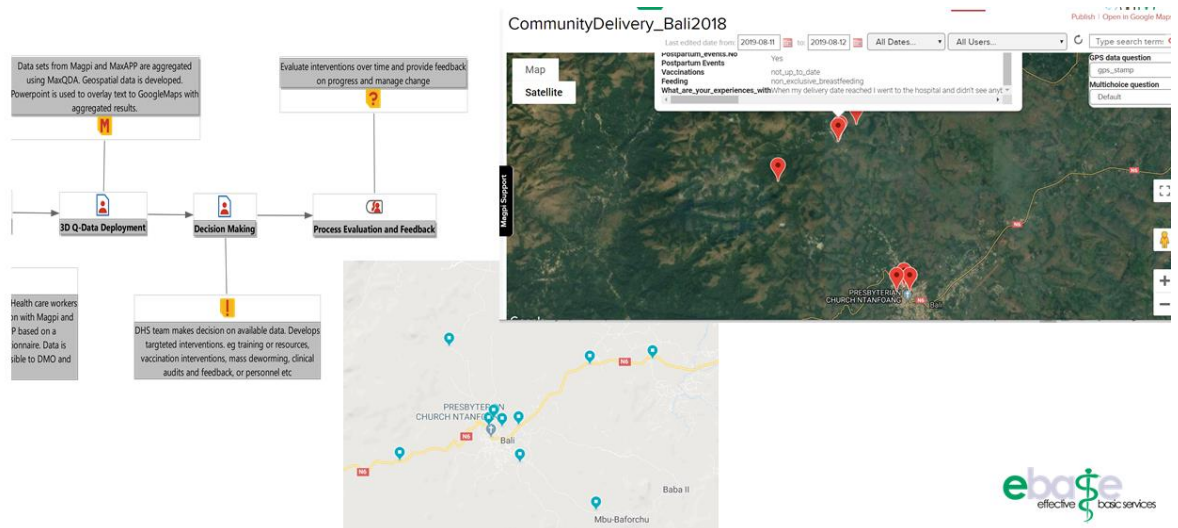


# Case Report of a 3D Q-Data Project: Skilled Birth Deliveries in Bali DHS



## Table of Contents

<b>Case Report of a 3D Q-Data Project: Skilled Birth Deliveries in Bali DHS.....</b>	<b>1</b>
<b>Summary.....</b>	<b>4</b>
<b>Background.....</b>	<b>5</b>
<b>Using Existing Data.....</b>	<b>6</b>
Data Mining.....	6
Data Quality Assurance.....	6
Data Preparation.....	8
<b>Community Meeting.....</b>	<b>10</b>
Data Feedback.....	10
Health Area Triage.....	11
<b>What Works.....</b>	<b>13</b>
Online Research.....	13
<b>Formative Studies.....</b>	<b>15</b>
<b>Additional data collection through Household Visits.....</b>	<b>15</b>
<b>Decision Making Process.....</b>	<b>16</b>
DHS Strategic Development.....	16
<b>3-Dimensional Qualitative Data Deployment.....</b>	<b>18</b>
<b>Results.....</b>	<b>18</b>
<b>Process Evaluation and Feedback.....</b>	<b>19</b>
<b>References.....</b>	<b>20</b>
<b>Annexes.....</b>	<b>22</b>
Annex 1: Indicator list Hospital and Community deliveries in Bali DHS in Cameroon.....	22
Annex 2: eBASE System Theoretical Framework.....	22

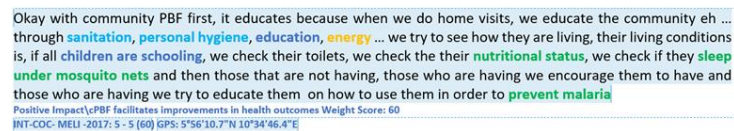
## Abbreviations

<b>DHIS2</b>	District Health Information Software
<b>PBF</b>	Performance Pay Finance
<b>SDGs</b>	Sustainable Development Goals
<b>WHO</b>	World Health Organizations
<b>SBA</b>	Skill birth attendant
<b>LMIC</b>	Low and middle income countries
<b>MNCH</b>	Maternal and child health
<b>DHS</b>	District health service
<b>DMO</b>	district medical officer
<b>CBH</b>	Chief of bureau for health
<b>PWD</b>	People with disability
<b>eBASE</b>	Effective basic services
<b>MINSANTE</b>	Ministry of health
<b>CHWs</b>	Community health workers
<b>PICO</b>	Population/intervention/comparison/outcome
<b>TBA</b>	Traditional birth attendant
<b>HF</b>	Health facility
<b>PPH</b>	Post-Partum Hemorrhage

This documents reports on the eBASE System decision making at district level for increasing skilled birth deliveries. eBASE Africa worked with the district health service of Bali in Cameroon to reduce unskilled births through the use of data from DHIS2, stakeholders' meetings, use of best practices, qualitative evidence from household visits by community health workers, and geotagging of quantitative and qualitative data. The evaluation shows that the approach reduced unskilled deliveries by 79.3% over 12 months compared to increasing unskilled deliveries in a similar health district. This project was implemented in a conflict area where health services had become fragmented with more likelihoods for unskilled deliveries.



It is about voice, space, and time



... Best Evidence for Best Practice Decision Making ...



## Background

Skilled birth delivery is essential for improving maternal, neonatal, and child health outcomes. The appropriate conditions for skilled birth deliveries in Cameroon are in recognized or accredited health facilities. Although home deliveries are possible, this is restricted in the Bali District Health Service due to skilled birth attendant's workload. Most home deliveries reported in the Bali DHS are done by retired health staff in unacceptable conditions.

Skilled birth attendance contributes to the SDGs (SDG target 3.1), by reducing maternal mortality likelihood (Tura G 2013). In Cameroon, the WHO estimates about 65% of women are attended by skilled health personnel during delivery (WHO 2018). In 2018, 512 (83.7% SBA rate) number of births occurred in the hospital and was attended by SBA while 100 number occurred in the community under unclear conditions (Bali DHS 2019).

Home delivery in Cameroon does not have any clear guidelines and is discouraged by government policies. Research evidence also suggests that in LMIC, home deliveries have a higher risk of poor MNCH outcomes compared to hospital delivery (Goodburn EA 2000).

In this report, we consider hospital delivery as skilled birth delivery because all the health facilities within the Bali Health district have scored above 50% quality score and undergo a quarterly PBF quality assessment and are expected to consistently record a score above 80% to retain their accreditation. Home delivery is considered non-skilled delivery because it is still unclear what practices obtain in these setting and who provides services. The DHS is in the process of home delivery censoring to identify service providers, quality of care, and data on home deliveries.

Maternal and facility factors have been known to affect choice of place of delivery (Moyer CA 2013, Gabrysch S 2009). Maternal factors like maternal education, parity or birth order, rural or urban residence, household wealth or socioeconomic status, distance to the nearest facility, and number of antenatal care visits were the factors most consistently associated with hospital delivery (Gabrysch S 2009, Lee AC 2011, Baral YR 2010, Sarker BK 2016). Health facility quality of care, including how healthcare workers receive patients also contributes to the decision about place of birth by mothers (Exavery A 2014).

To improve skilled delivery rates in sub Saharan Africa, decision making at decentralized level is critical. However, skills and resources needed are low or locked up behind complex scientific papers. An effective district level decision making process should include use of local health data of good quality, evidence of effective interventions, and citizens voice and preferences.

## Using Existing Data

Effective decision making requires validated data to inform decision making process. This data should be complemented with citizens voice and preferences, and best available research evidence.

In Cameroon, district health services (DHS) collect daily routine data for decision making using District Health Information Software (DHIS2). This data is forwarded to the ministry of health where it is analyzed with development partners and decisions are made to improve health outcomes. However, DHS tend to collect this data just to 'check boxes' and the quality of the data has been often questioned. The eBASE System of decision making mines data from DHIS2 to use for decision making, during the process of data mining the data is validated for quality and sometimes its necessary to verify data through registers and patients' records.

In this section we describe the approach we used to mine data, check data quality, and prepare feedback on data for hospital directors, patients' representatives, and community leaders.

The objectives of this step are:

1. Extract good quality data for decision making
2. Validate the quality of the data
3. Prepare data presentation and discussion points for community members

## Data Mining

eBASE Africa worked with the district medical officer (DMO), the chief of bureau for health (CBH) and the data manager to mine data on skilled delivery from DHIS2 database. We explored all data elements that included deliveries related data elements in <https://www.dhis-minsante-cm.org/>. We found community deliveries related indicators under 9.2 MPR2017 Deliveries, emergency, obstetrics, and neonatal care, RMA2017\_39. We extracted all community delivery indicators, exported as excel spreadsheets and took screenshots of all tables within DHIS2 using Microsoft Snipping Tool. We used a 6-monthly interval for data collection with focus on the first trimesters (Jan-June 2018 and 2019) for comparison. Data is extracted in duplicate by 2 independent DHS staff and the DMO referees any differences. A total of 4 data sets were extracted.

In order to compare change in health outcomes in Bali, we collected same datasets from a similar district and compared over the same period. Njikwa DHS has similar demographics as Bali DHS (population, geography, number of health areas, located in a conflict region, and household income)

It is critical to note that we could not consider equity related to people with disability (PWD) and indigenous populations because DHIS2 does not systematically consider these social determinants of health. A few of these elements can be gotten from MANGO software (another data collection tool used at DHS), but this is not integrated into DHIS2

## Data Quality Assurance

eBASE and the DHS team extracted datasets from DHIS2 MINSANTE RMA2017\_39. Cumulative Community Delivery over 6 months (Jan-June 2018). We double checked the data extracted with the data in hard copy of delivery forms as well as from the DHIS2 system. In order to ensure quality of collected data, we compared the data for overall population, deliveries in health units, total deliveries declared at the end of the month which is the sum of hospital (skilled) deliveries plus community (unskilled) deliveries. Below (fig 1 - 2) are datasets extracted from DHIS2 for Bali and Njikwa DHS.

<<< Update ▾ Favorites ▾ Layout ▾ Options ▾ Download ▾ Embed ▾		
Jan to Jun 2018		
Organisation unit / Data	RMA2017_39. Nombre de naissances vivantes enregistrees dans la communaute au cours du mois ↕	
AS Bali catholic		0
AS Bali urban		17
AS Bawock		0
AS Bossa		12
AS Gungong		0
AS Njenka		0
AS Wosing		0

Figure 1: study of Home deliveries statistics for first semester 2018 Bali DHS

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Jan to Jun 2019		
Organisation unit / Data	RMA2017_39. Nombre de naissances vivantes enregistrees dans la communaute au cours du mois ↕	
AS Bali catholic		0
AS Bali urban		2
AS Bawock		1
AS Bossa		3
AS Gungong		0
AS Njenka		
AS Wosing		0

Figure 2: study of Home deliveries statistics for first semester 2019 Bali DHS

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Jan to Jun 2018		
Organisation unit / Data	RMA2017_39. Nombre de naissances vivantes enregistrees dans la communaute au cours du mois ↕	
AS Akanunku		7
AS Bassa		1
AS Konda		1
AS Kuttin		0
AS Njikwa		3
AS Oshie		2

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Jan to Jun 2019	
Organisation unit / Data	RMA2017_39. Nombre de naissances vivantes enregistrees dans la communaute au cours du mois ↕
AS Akanunku	5
AS Bassa	5
AS Konda	0
AS Kuttin	0
AS Njikwa	3
AS Oshie	3

### Data Preparation

To facilitate discussions at the community meeting, data was prepared on a table showing problematic in data and problematic in health outcomes (fig 5). In this project, we found 4 discrepancies in DHIS2 data where different values were indicated for the same indicator. For example, in AS Bossa, 185 live births were reported in the hospital where as there were only 132 skilled births.

Health Area	Problematic with HA data	Problematic with HA Health Outcome
AS Bossa	None	To be completed after community meeting
AS Catholic	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	1. 132 deliveries in the hospital but only 185 live births Jan to June 2018 2. 135 deliveries and 145 livebirths in 2019
AS Urban	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	1. 128 deliveries in the hospital with 130 livebirths in 2018 2. 2 community deliveries with 17 livebirths in 2018 1 community delivery with 2 livebirths in 2019
AS Bawock	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	No community delivery with one livebirth in 2019
AS Gungong	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	1. 12 hospital deliveries with only 9 livebirths in 2019 2. No community delivery with two livebirths in 2019



Based on the above table the following discussion points were planned named for the community meeting:

1. Address discrepancies with datasets: most discrepancies were a result of error in entering data and were corrected from birth registers.
2. Discuss reasons for high unskilled (community) deliveries in Bossa and Bali Urban.
3. Discuss who takes deliveries that are done in the community (ie outside the hospital)

## Community Meetinging

The community meeting is organized to coincide with the coordination meeting. These meetings will continue to follow indicators of interest and will hold every quarter in the life cycle of the project. Communicating data analysis results to stakeholders during this meeting is important to put into perspective the health outcomes of the community, and provide them data needed for shared decision making at district level. The meeting brings together key stakeholders in healthcare to discuss results from DHIS2, prioritize health issues, develop a research question for synthesizing evidence on best practices, and proposing solutions. The objectives of the meeting are:

1. Present results from DHIS2 in a format that service users will understand
2. Validate DHIS2 data
3. Discuss results of DHIS2 data
4. Prioritize health issues
5. Develop an evidence synthesis question for best practices
6. Identify health areas for community health workers to conduct home visits to gather qualitative evidence
7. Develop open ended questionnaires for home visits

Invitees for these meeting are same for coordination meetings; these are:

1. District health service team
2. Local authorities (administrative, traditional, and religious)
3. Patient representatives
4. Community health workers
5. Citizens
6. eBASE team

## Data Feedback

At community/coordination meetings the DHS invited representatives of HF (HCWs), CHWs, administrative officials, traditional leaders, patients selected in an inclusive fashion. We ensured representation of disadvantaged groups e.g. women, PLWD, indigenous groups (Bororo).

We discussed importance of data (not the usual reasons: because you need it for your work, because we develop this approach, because you must make decisions, (often HCWs collect data just to tick the check boxes)).

### DHIS2 Data Discussions at Coordination Meetings.

Health Facility	RMA2017_39. Cumulative Community Delivery over 6 months (Jan-June 2018)
AS Bali catholic	0
<b>AS Bali urban</b>	17
AS Bawock	0

AS Bossa	12
AS Gungong	0
AS Njenka	0
AS Wosing	0
<b>Total Bali DHS</b>	<b>29</b>

Figure 4: study of Home deliveries statistics for first semester 2019 Njikwa DHS

The third quarter coordination meetings focused on high community delivery rates. With 29 community deliveries, this was considered unacceptable. The high community delivery rates were reported in Bossa, and Bali Urban HAs. In Bali Urban, there was a clear expression and need for extra health staff, staff burn out, and demotivation due to workload. In Bossa, reasons for high community deliveries was unclear.

During the discussion the participants of the meetings (or one meeting?) also analysed the strength, the weaknesses, the opportunities and the threats of .... Of what? The analysis is presented below.

#### Strategies Developed at Coordination Meetings

##### SWOT Analysis

	Item
Strength	Completeness of data Reliability of data Engaged team
Weakness	Shortage of staff High cost of care Demotivated staff
Opportunity	Access to DHIS2 data Access to research evidence
Threats	Community perceptions

##### Health Area Triage

We classified health areas by problematic with 2 health areas (Boosa and Bali Urban) having high rates of unskilled births. We tabulated the health areas to assist with developing intervention and strategy for evidence informed decision making using DHIS2 data. The problematics were classified into those from health area (high rates of unskilled deliveries) or human errors (discrepancies in datasets and indicators). The health outcomes are what the eBASE system seeks to address.

During the analysis process the team identified 3 problematics with HA health outcomes.

Health Area	Problematic with HA data	Problematic with HA Health Outcome
AS Bossa	None	High rates of unskilled deliveries in the community 1. Poor attitude of health care workers 2. Absentee health care workers 3. High cost of delivery

AS Catholic	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	No reported unskilled deliveries
AS Urban	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	High rates of community delivery
AS Bawock	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	
AS Gungong	Discrepancies in 9.2 MPR2017 - Deliveries, emergency, obstetric and neonatal care and RMA - II.I.4 Naissances (1)	

*Figure 5: Table of HA Triage for high home or community deliveries*

Bossa and Bali Urban were therefore selected as key health areas requiring a targeted intervention to improve skilled delivery.

1. A set of open-ended questions are developed for CHWs to use during home visits to identify reasons for home births
2. CHWs are selected to do household visits
3. Possible interventions are proposed during development of the PICO question.
4. A work plan is developed

### **Development of PICO Question**

We developed PICO questions and identified interventions and outcomes to measure.

**Population:** Our populations of interests included healthcare workers, community health workers, pregnant women and postpartum women.

**Intervention:** Identified interventions included trainings, sensitization, maternal and perinatal auditing, and CHWs home visits.

**Control:** We compared interventions against each other

**Outcome:** Hospital delivery and censoring of TBA

## What Works

In order to have effective policies at district level, it is important to inform the decision making process with not just trustworthy data but also trustworthy evidence. This steps ensures that a good policy question is developed and trustworthy evidence is synthesized to guide decision making process. It consists of developing a policy question that looks at a population of interest (P), effective interventions (I) that feasible, appropriate, meaningful and effective in the context (FAME). These are compared with current practice (C) and based on outcomes (O) chosen by stakeholders.

The objectives of this step is to:

1. Identify population of interest (P), effective interventions (I), compare current practice (C), and prioritize outcomes (O) in a PICO question
2. Develop a search strategy
3. Search evidence on what works or best practices
4. Develop recommendations from synthesized evidence
5. Use recommendations to inform policies

### Policy/Clinical Question

How can we ensure 100% HF delivery?

How can we ensure that 100% expected mothers have delivery plan?

How can we ensure that all 80% of CHWs know the pregnant women in their communities and closely follow them up?

To ensure that 100% of TBAs are censored by CHWs in the community

### PICO I

Population: pregnant and postpartum women

Intervention: interventions to increase hospital delivery

Control: Not applicable (because we do not know enough yet – we could say no counselling or no money but we are not sure if this kind of study is ethically correct)

Outcome: delivery in HF; censorship of TBA

### PICO II

Population: Healthcare workers and community health workers

Intervention: interventions to increase staff capacity in managing pregnant and postpartum women (educational meetings, academic detailing, outreach, TBA censorship, maternal audits, multifaceted)

Control: We will compare interventions against each other.

Outcome: All deliveries in all health facilities and reduction or no home delivery

## Online Research

The Bali DHS used the PICO questions to conduct a search of evidence to develop interventions. To do this, the team searched Google Scholar, Africa Evidence Network, Cochrane Database of

Systematic Reviews, JBI database of systematic reviews and evidence implementation reports, and the Campbell Collaboration.

Database	No of resources/Studies	No Relevant resources/Studies	No Evidence Recommendations Retrieved
Ministry of Health Website	3	3	1
Africa Evidence Network	NA	NA	NA
WHO.int	18	3	1
Google Scholar	NA	NA	NA
Cochrane Database of Systematic Reviews	8	6	5
JBI database of systematic reviews and evidence implementation reports	NA	NA	NA
Campbell Collaboration	NA	NA	NA

## Formative Studies

eBASE Africa works with community health workers at DHS to collect qualitative and quantitative data during household visits. Qualitative data includes voice, pictures, and videos. Qualitative data is tagged to geographic location of the household and forms part of a dataset consisting of voice, time, and space. The qualitative data represents the voice of the service users. The results of this formative study will be used to inform decision making and develop interventions.

The objectives of this step is to:

1. Collect qualitative data to complement quantitative data for decision making
2. Use qualitative data to inform decision making
3. Educate households on best practices

## Additional data collection through Household Visits

### Actions for Household Visits

During home visits, CHWs and DHS team will use a number of software:

1. **WhatsApp:** software for collecting and geotagging audio recordings
2. **Magpi:** software for collecting quantitative data and populating geolocation
3. **MaxAPP:** software for conducting focus group discussions and key informant interviews
4. **MaxQDA:** software for transcribing and coding transcripts from household visits

We developed a questionnaire on Magpi and discussion topics for MaxAPP

CHWs discussed with 10 persons in 8 households' post-partum, including 8 women, 2 men; including 3 adolescents; including 1 Bororo; and including 1 PLWD. 5 persons accepted to have pictures of their households taken for poverty measure, others were recorded by writing.

CHWs visited mothers who delivered at home postpartum during this period to ask questions about reasons why they prefer home deliveries, their past experiences with hospital deliveries and their experiences of home deliveries. CHWs administered quantitative data questionnaires using Magpi to collect data on households (Age, sex, income, religion, presence of disability, presence of indigenous populations, post-partum mental health, satisfaction with HF services, and postpartum events including PPH, vaccination, feeding,). CHWs discussed home delivery experiences/dangers related topics collecting data using MaxAPP audio, video and picture options and forwarded these to eBASE team through messages and online database on Magpi or using MaxAPP folders.) Topics discussed included poverty related topics and pictures; HF experiences with deliveries (was cost of delivery discussed with you? Do you know the dangers of home delivery? Who conducted the delivery? Did you attend the clinic? Do you know about FP; do you have a delivery plan? Is there anything you want to see done to improve care at health facilities?). All participants did not have to discuss all topics.

All collected data are sent to DHS for district team to analyze and deliberate on way forward

## Decision Making Process

A proper decision-making process will use trustworthy data and evidence from the steps above to inform the decision-making process. Qualitative evidence collected during household visits is necessary to complement quantitative data from DHIS2. The qualitative data can explain gaps in quantitative data, portray community experiences, barriers, and facilitators.

The objectives of this step are:

1. Incorporate quantitative data from DHIS2 into decision making process
2. Incorporate 3-Dimensional qualitative data (voice, time, and space) into decision making process through deployment of datasets on Google Maps
3. Inform decision making with best available evidence from research
4. Develop district policies to improve practice (a set of interventions that work based on research evidence)

## DHS Strategic Development

Home visits and coordination meetings identified 3 main problematics.

### Problematic 1: Poor attitude of care workers

Community members complained about attitudes of HCW during their last pregnancy or from other pregnant women who experienced delivery at the HF. This led to demotivation to deliver at health facility and an inclination towards home birth with support from more compassionate family members.

*"In my last delivery, the nurse was very rude to me and did not listen to my complaints. Although he did his work well, I was not happy with the treatment, and it was my first delivery. I did not feel like going back there, especially because my neighbor had similar complaints and then successfully delivered at home"*

Code: ● Community Delivery\Enablers\Healthcare Workers Weight score: 50

CHW Home Visit Bossa Woman 2 Position: 90 – 90 GPS: 5°55'27.7"N 9°58'17.1"E

### Problematic 2: Absentee health care workers

Health facilities are understaffed and unable to provide off hours call duties. This also has a negative impact on staff resilience. Community members prefer not going to health facility to deliver due to the fact that they may not meet anyone.

*"I was told that there are not staff working in the night at the health center, s there was no need to go there since my baby came in the night. Why should I even go there [laughs]"*

Code: ● Community Delivery\Enablers\Healthcare Workers Weight score: 50

CHW Home Visit Bali Urban Woman 1 Position: 10 – 10 GPS: 5°53'34.2"N 10°00'34.7"E

*"The health center is centrally located, has a catchment area of 6,000 people with an estimated 250 pregnant women annually, plus other cases I have to see. It is not easy. I go home sometimes by 6pm and just crash till morning "*

Code: ● Community Delivery\Enablers\Workload Weight score: 50

Coordination Meeting Bali DHS COC Bali Urban Position: 16 – 16 GPS: 5°53'52.6"N 10°00'42.8"E

### Problematic 3: High cost of delivery



Although delivery costs have been subsidized by government and development agencies like GIZ, through the delivery kit program, the cost is still unaffordable for some community members especially indigenous populations who live far away from the hospital.

*"I live in Banja, I have to pay a horse or people to carry me and trek from sunset to when it becomes dark to get to the health center. That will cost me a lot of money, I will have to sell my animals to pay for this. It is just too expensive, I will just deliver at home"*

Code: ● Community Delivery\Enablers \High Cost of Care+Indigenous Population Weight score: 70

CHW Home Visit Bossa Woman 1 Position: 23 – 23 GPS: 5°57'07.3"N 10°00'30.3"E

## **Interventions that work**

Research shows that use of community health workers through household visits is effective in improving communication in maternal and child health. (Lewin 2005, Molina 2016). This approach was applied for the whole district with a specific emphasis on Bossa and Bali Urban. In this report, we refer to Lay Health Workers (LHW) as Community Health Workers (CHWs) because this is the acceptable term in most of Sub-Saharan Africa.

Another promising approach is the organization of educational meetings between staff of health centers and the community for improved communication (Forsetlund L 2009). Workshops targeted Bossa and Bali Urban staff. Trainings were done for effective client communication at ANC, during delivery and post-partum.

A third result from the literature review suggests that it is useful to identify all TBA, to engage them in the birthing process, and evaluate their skills and knowledge in birth related activities (MINSANTE RDPH NWR 2018).

Research also found that approaches targeting the economic aspect related to the use of health centers can increase the use. One promising approach is to promote risk sharing through micro health insurance schemes through community mutual health arrangements (De Wit L 2018, Adebayo EF 2015, Wiysonge CS 2017).

Use PBF subsidies to hire new staff (Witter S 2012)

Make request for staff deployment for DHS, this will be forwarded to central level for more staff deployment.

Outreach programs to reach out to Bororo (nomadic) communities

Bossa and Bali Urban are health units with insufficient staffs both in quality and quantity. Bawock and Bossa are rural health areas with dispersed settlements, poor access to health care and having only one (technical) staff each and no midwife. They are also, weak in skills for convincing the women of the community to come closer to health units when their EDD is near. AS Bossa and AS Bawock have the Bororos who live in the hills. They also lack the necessary resources to ensure women good delivery. They do not use mobile apps to guide couples with smart phones. No considerations are made for PLWD eg blind couples who may need to write down their rhythm dates.

## **Actions for Health Facilities**

### **AS Urban and Bossa:**

1. Use of community health workers to sensitize community members on skilled birth deliveries during household visits

2. Capacity building in maternal and child health for hospital staff
3. Increase outreach health campaigns to Bororo communities
4. Censoring community deliveries
5. Higher new staff through PBF subsidies

### **Actions for DHS**

We provided feedback on the findings at coordination meetings, highlighted and reinforced positive outcomes, and discussed options to fixing problems. We organized training for HCWs and CHWs on different aspects of home/community delivery.

### **Recommendations to forward to Regional Delegate**

Organized discussions with regional delegate and prepared presentations for regional coordination meetings.

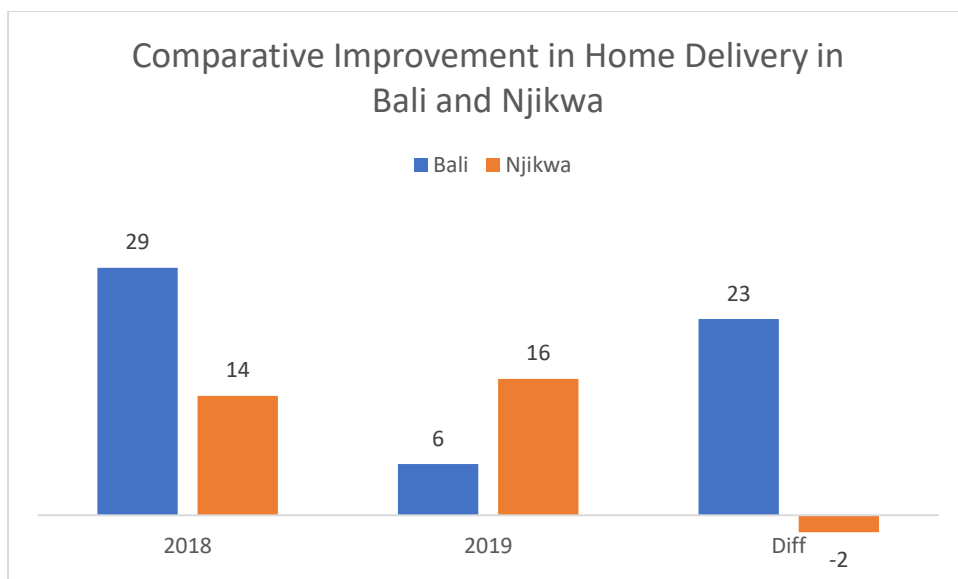
### **3-Dimensional Qualitative Data Deployment**

Data is exported to MaxQDA, transcribed where necessary and coded following a systematic approach. 3-Dimensional Qualitative Data (3D Q-Data) . This is subsequently transferred to Microsoft Power Point for displays. Google Maps and Magpi will provide a visual display of qualitative and quantitative data that facilitates decision making.

### **Results**

The Bali DHS reported 29 deliveries in 2018 and only 6 in 2019 following our interventions of educational meetings with staff (Forsetlund L 2009), academic detailing, TBA censoring (MINSANTE RDPH NWR 2018), and community sensitization (Mushi D 2010, Lewin 2005, Molina 2016) . Compared to Njikwa DHS where this intervention was not done, but with similar characteristics as Bali, we report an improvement of 23 community delivery compared to an increase of +2 community deliveries in Njikwa DHS.

Most community delivery was reported in AS Bali Urban, Bossa, and Bawock. We developed a targeted evidence based approach to addressing this problem using monthly district coordination meetings, community health workers home visits, and search on google scholar for best practices relevant to the problematic.



District team makes decision on interventions. For example, CHWs identified that in Urban staff are not always there at night. This was because staff of the health center having only one staff. Meanwhile Bossa and Bawock the women cannot pay for the delivery and some of the staff are rude.

Decision making is usually from central level, regional level and district level based on the findings. Development partners also make decisions along their areas of intervention and interest. They can also influence MINSANTE to make decisions.

**Decisions made:** Train of staff and CHWs on sensitization of the population on dangers of home deliveries, provision of obstetric Kits to Bossa and Bawock , meeting with the staff of Bawock and Bossa AS to counsel them to respect professional ethics , sensitization messages on deliveries in the health unit, work with bornfyne to carry out sensitization campaigns on community deliveries:

These recommendations are forwarded to MINSANTE and CNLS through the regional delegation of health.

### Process Evaluation and Feedback

Process evaluation is done by tracking indicators of interest or indicators we are working on to see how they progress over time by health areas and households. It incorporates both DHIS2 data, quantitative data and qualitative data all classified in space and time.

Eg Review data from AS Urban, Bawock and Bossa monthly and provide them feedback.

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## Annexes

### Annex 1: Indicator list Hospital and Community deliveries in Bali DHS in Cameroon

#### Community delivery in Bali Mid-term 2019

##### Dataset Dhis2 MINSANTE

(Under data elements, select number of life births registered in the community during the month to get the datasets)

RMA2017\_39. Nombre de naissances vivantes enregistrées dans la communauté au cours du mois

### Annex 2: eBASE System Theoretical Framework

