

# Shared Reflection across Communities on Malaria Vaccine Communication: A Workshop with Community Health Workers in Ghana

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## Background and Rationale

Malaria remains a major cause of morbidity and mortality in Ghana, particularly among children under 5 years and pregnant women<sup>1</sup>. Ghana's malaria vaccine program has made encouraging progress, yet completion of the four-dose schedule remains uneven across communities, despite high reported acceptance<sup>2-4</sup>. These gaps reflect not only service delivery constraints, but also the social and relational dynamics shaping caregiver decision-making<sup>5,6</sup>. Community health workers (CHWs) are well positioned to address caregiver perceptions, misinformation, trust, and practical barriers through locally grounded communication<sup>7</sup>. Providing CHWs with a structured space for reflection may help strengthen communication practices and build trust in vaccination<sup>7</sup>.

## Workshop Settings

On 9 April 2026, we conducted an 85-minute interactive vaccine communication workshop at Ensign Global University, Kpong, Ghana. With the focus on malaria vaccine communication with caregivers, it provided participants with the opportunity to reflect on their own communication. All 41 participants were frontline health workers, including midwives, nurses, and community health officers from rural and urban communities. They were asked to work in groups of three, each of which was assigned either of two cases. Figure 1 and 2 show the workshop format.

Figure 1. Overview of the workshop structure, timeline, and two role-play cases.



Figure 2. Participants were encouraged to rotate through all three roles.

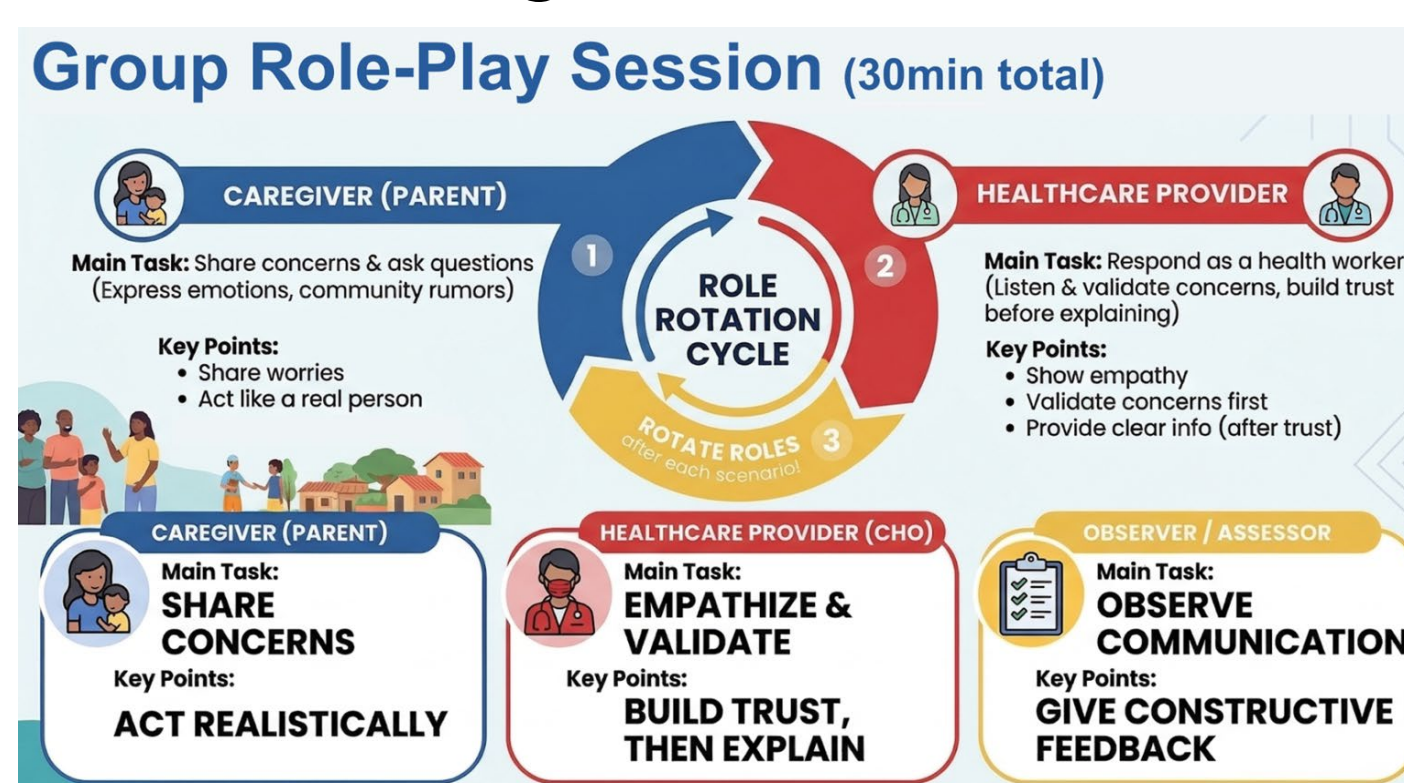


Figure 3. A scene from the workshop day with participants from rural and urban communities.



## Evaluation Methods

Data were collected through a post-session survey and structured worksheets.

- The survey captured demographics, self-reported confidence in vaccine communication using 5-point Likert scales assessed retrospectively for before and after the session, and perceived workshop impact.
- Worksheets elicited observer notes from role-play exercises and individual reflections.

Of 41 questionnaires distributed, 32 were returned (78.0% response rate).

Quantitative data were summarized descriptively, and pre/post confidence was assessed using the Wilcoxon signed-rank test. Qualitative responses were analyzed using thematic analysis.

## Results

### Post-Session Survey Results (Quantitative)

#### Post-session confidence and perceived workshop impact

- Respondents reported high confidence and strong perceived benefits of the workshop (Table 2).
  - All respondents reported confidence in addressing misinformation, caregiver mistrust, and family influence (100%).
  - Most participants agreed that the workshop improved their understanding (90%), that the role-play scenarios reflected real-world situations (96.8%), and that it would change their communication practices (93.5%).

#### Change in self-reported confidence

- A significant improvement in Confidence (A Wilcoxon signed-rank test:  $V = 154, p = 0.001$ )
- A median increase of one point (95% CI: 1.00–1.00) (Hodges–Lehmann estimated) (Figure 5)
- A communication tips information (Figure 4) may have enhanced the confidence.

Table 2. Post-session confidence and perceived workshop impact among participants

Outcome	Median (IQR)	Top-2 box, %*
Confidence in handling misinformation	5 (4–5)	100.0
Confidence in handling caregiver mistrust	5 (4–5)	100.0
Confidence in addressing family influence	5 (4–5)	100.0
Improved understanding of why caregivers delay or refuse vaccines	4 (4–5)	90.0
Role-play and materials reflected real situations in the community	5 (4–5)	96.8
Role-play changed how participants communicate with caregivers	5 (4–5)	93.5

\*Top-2 box = proportion selecting the two highest response categories.

- For confidence outcomes, this corresponds to Confident or Very confident.
- For agreement outcomes, this corresponds to Agree or Strongly agree.

Figure 4. Tips on Vaccine Communication Brochure

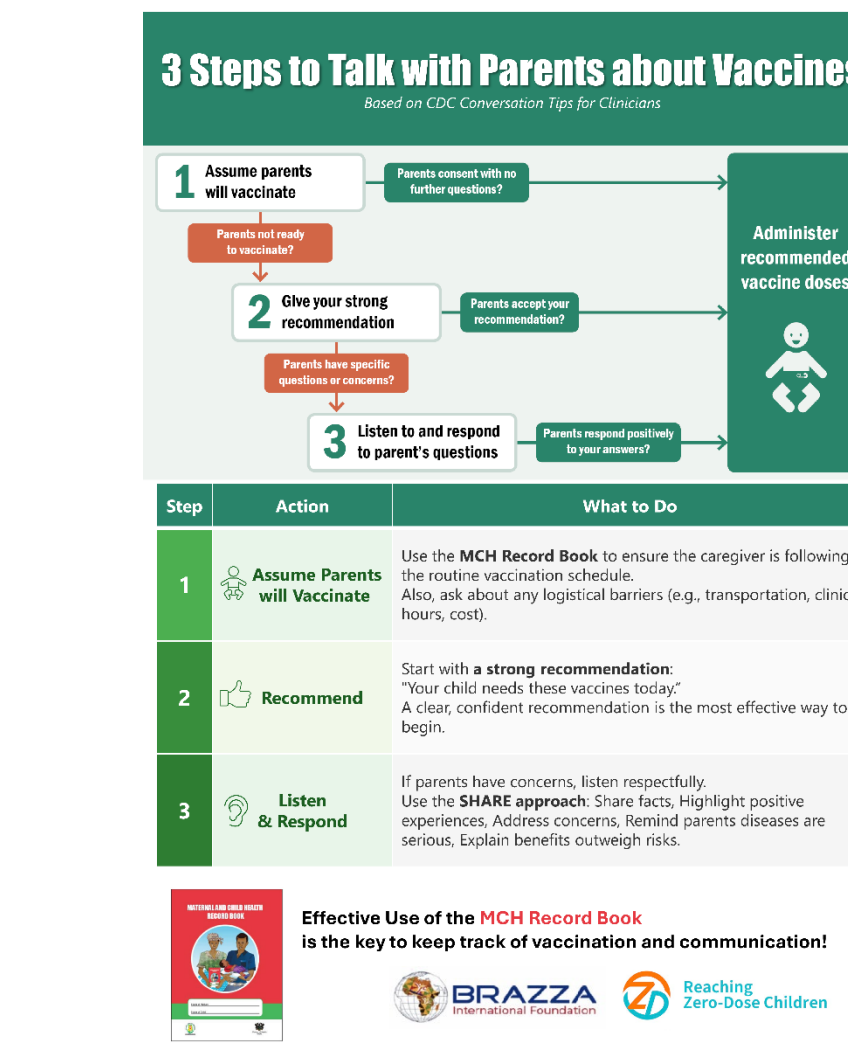


Figure 5. An Alluvial diagram of the change in confidence

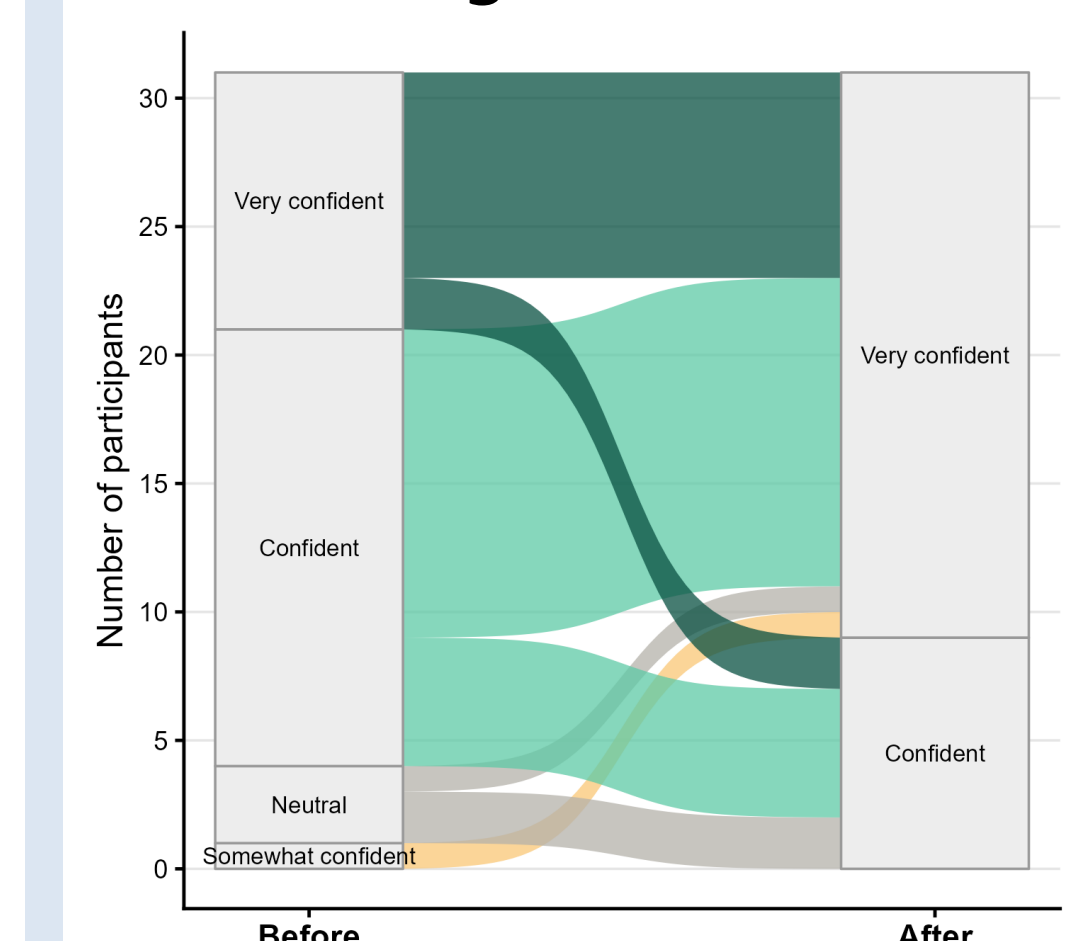


Table 1. Characteristics of respondents (N = 32)

Characteristic	Category	n (%)
Gender	Female	25 (78.1)
	Male	7 (21.9)
Age group	<25 years	2 (6.2)
	25–34 years	16 (50.0)
	35–44 years	9 (28.1)
	45–54 years	3 (9.4)
	≥55 years	1 (3.1)
	Decline to answer	1 (3.1)
Occupation	Nurse (incl. PHN, CHN)	17 (53.1)
	Midwife†	12 (34.4)
	Physician assistant	2 (6.2)
	Other	1 (3.1)
	Facility type	CHPS
	Primary facility	14 (43.8)
	Secondary facility	5 (15.6)
	Tertiary facility	5 (15.6)
	Other	3 (9.4)
Years in healthcare	<1 year	3 (9.4)
	1–3 years	1 (3.1)
	4–5 years	8 (25.0)
	5–10 years	10 (31.2)
	10–20 years	9 (28.1)
	≥20 years	1 (3.1)
Communication frequency with caregivers about vaccination	More than 7 times/week	12 (37.5)
	4–6 times/week	5 (15.6)
	1–3 times/week	4 (12.5)
	1 time/month	7 (21.9)
	Never	1 (3.1)
	Other	3 (9.4)

†includes one nurse-midwife

### Worksheet Reflection Results (Qualitative)

Thematic analysis of participant worksheets identified four key strategies that CHWs prioritized for vaccine communication with caregivers. (Figure 6) Representative responses for each strategy are as follows:

**Active & Respectful Listening**

(Caregiver feels more comfortable)  
“When they are not being brushed off or ignored but rather addressed accordingly.”

**Clear & Accurate Communication**

(Health worker effectively responded)  
“By giving accurate information about the vaccine, including the effectiveness and side effects.”

**Privacy, Confidentiality & Safe Settings**

(Trust can be strengthened by)  
“Ensuring confidentiality and privacy and giving answers to direct questions.”

**Addressing Myths & Misinformation**

“They respond by educating mothers with the right information about vaccination to help clear all myths.”

Figure 6. A Word cloud from Open-ended individual worksheet reflections. Dominant terms correspond to the four themes identified above.



## Lessons Learned, Limitations, and Future Directions

### Lessons Learned

- Structured reflection for CHWs across communities may boost confidence in vaccine communication support more effective conversations with caregivers, with potential to improve malaria vaccine uptake.
- Effective caregiver communication should be treated as a practical package of skills: clear explanation, respectful listening, timely addressing of myths, and privacy-conscious engagement.
- Crosscommunity peer reflection (rural and urban frontline workers learning from each other in the same session) adds practical value beyond standard singlecommunication trainings.

### Limitations

- Retrospective pre/post self-ratings are subject to recall bias and social desirability; they measure perceived confidence, not observed communication or uptake outcomes.
- Earlier workshop segments (other activities, mock role-plays, slides, etc.) may have primed participants; concepts emphasized there (e.g. “active listening”) could shape open-ended worksheet wording.

### Future Directions

- Explore generalizability to other newer vaccines (e.g. HPV), tailoring scenarios and messages to local rollout stage and community concerns.
- Establish a structured, sustainable, system-level process that enables CHWs to routinely reflect on vaccine communication with caregivers and iteratively improve their practice.

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