

Development of midwifery skills for Community Health Extension Workers in Northern Nigeria

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Objectives for Today

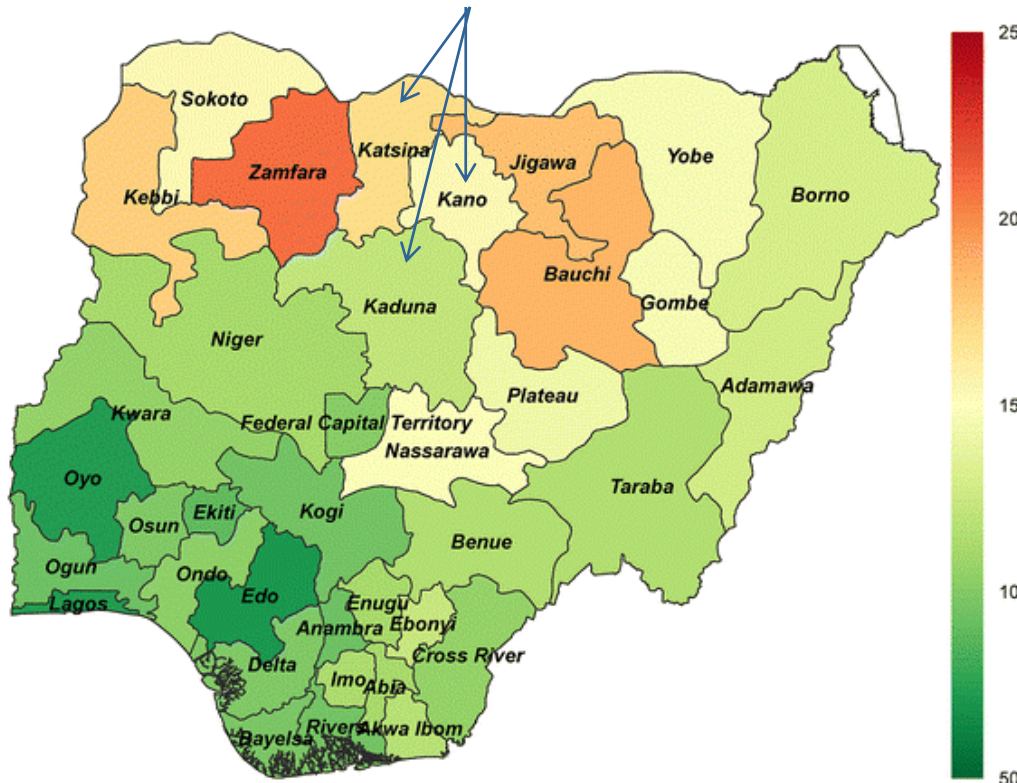
- Describe the CHAI mentoring as a key element of task shifting for CHEWs
- Outline the methods we used to monitor participation and outcomes from the mentoring
- Summarize the results of the mentoring program on learning key midwifery skills
- Suggest the implications of the findings for Nigerian and other national task-shifting programs

Rationale for the CHAI mentoring program

- Maternal and newborn mortality remain very high in northern Nigeria.
- High mortality related to low competency levels of health care workers at lowest levels of health system.
- National Task-Shifting Policy prioritizes enhancing competencies for maternal and newborn care by CHEWs, who are main providers at primary levels.
- Vast numbers of CHEWS already in post need post-service training to be able to acquire the needed skills.
- CHAI developed a three-part training and mentoring program to upgrade/introduce maternal and newborn care skills

Study Setting

- Three northern Nigerian state of Kaduna, Kano, and Katsina, with some of the highest child mortality rates in the country

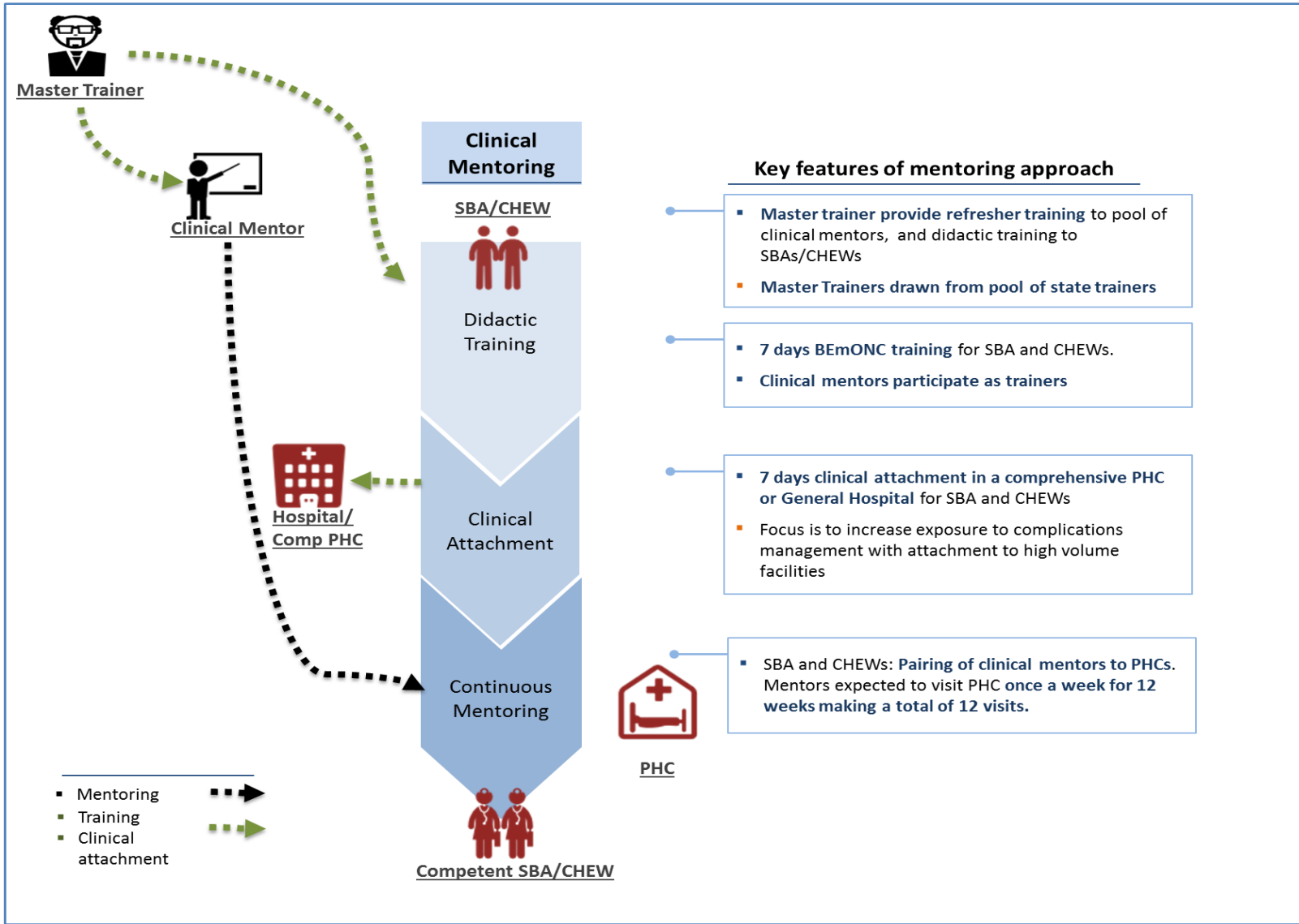


- Wollum,A. Burstein, R, Fullman,N et al. “Benchmarking health system performance across states in Nigeria: A systematic analysis of levels and trends in key maternal and child health interventions and outcomes, 2000-2013. BMC Med 2015;13: 208.

CHAI Post-Service Task Shifting Training

- Adapted task-shifting training methods for post-service training:
 - Short, focused didactic training on key MNH competencies
 - Clinic-based practical skills training
 - 3-month on-the-job mentoring
- Emphasis in the training is learning-by-doing.
- Mentoring on-the-job ensures that skills are learned and practiced in their real-world work environment

Flow diagram of CHAI mentoring approach



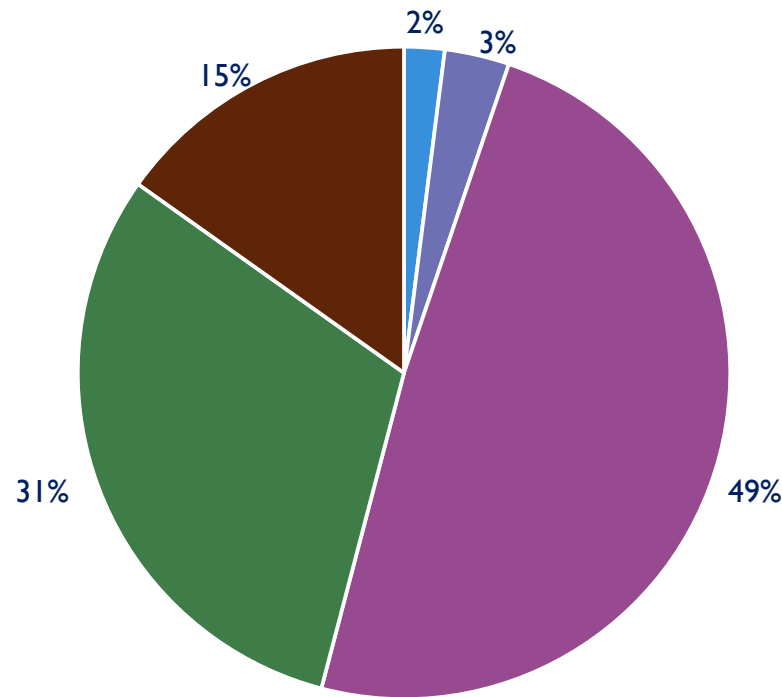
Evaluation Methods

- Didactic training pre/post-test: 80 multiple choice questions concerning knowledge of care of pregnancy, labor and delivery, and newborns
- Clinical skills pre/post-test assessment: 23 multiple choice questions focusing on best-practices for specific skills required for clinical care of mother and newborn.
- Mentoring pre/post-test assessments: Competency ranking for 15 signal functions or essential skills of midwifery and newborn care, at beginning and after 3 months of mentoring
 - Completed by the mentees at beginning and end of mentoring, along with feedback on mentoring at the end of mentoring
 - Completed by the mentor at beginning, mid-point and end of mentoring
- Bi-variate significance tests for mean pre vs. post test results by test type
- Multiple regression analyses of predictors of individual's self-assessed post-test total confidence level.

Participants in the Mentoring

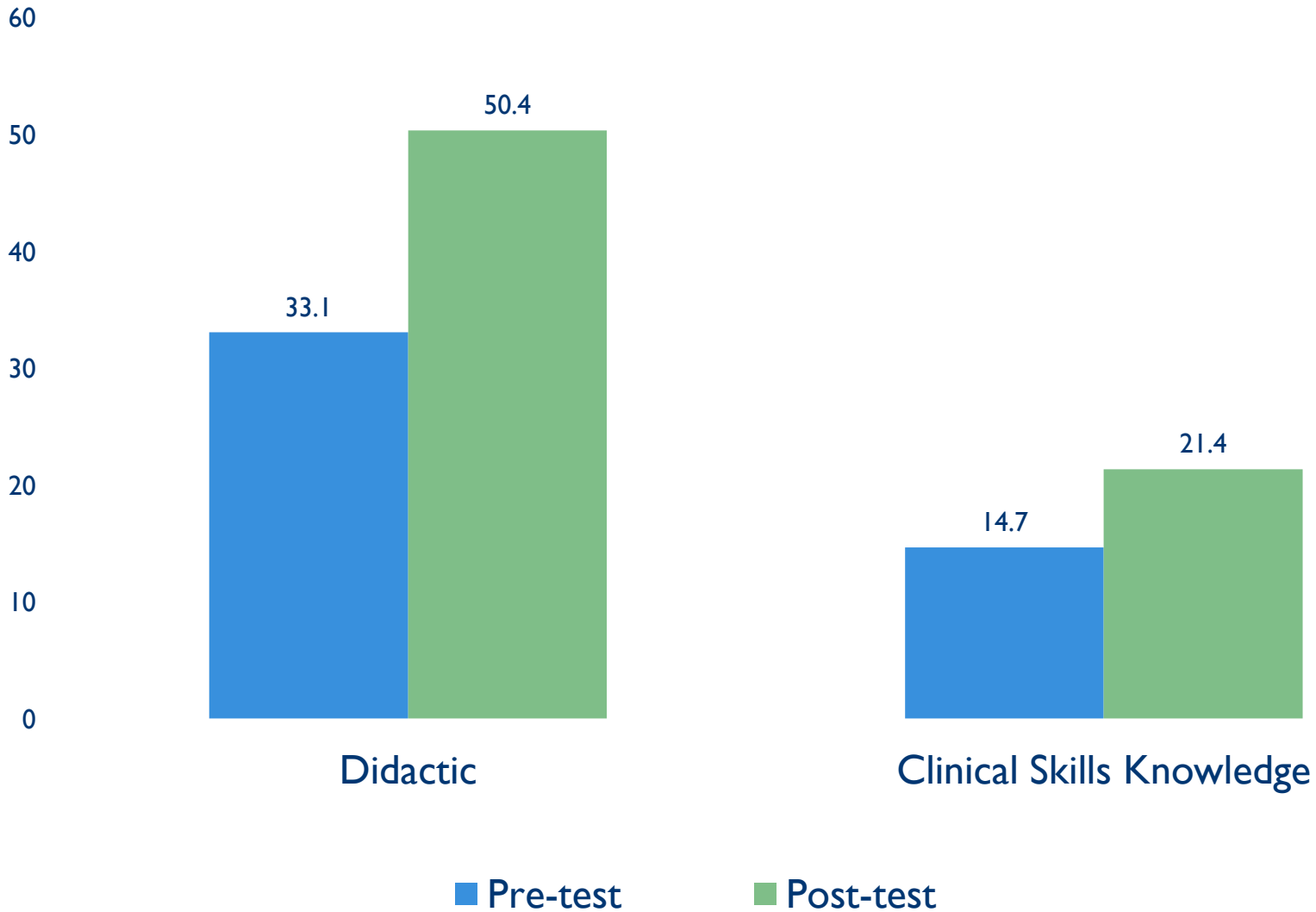
	Kaduna	Kano	Katsina	3-state total
Clinical Mentors	39	38	35	112
Mentees	654	328	514	1496
Nurses/Midwives	8	3	19	30
Midwives	3	11	34	48
JCHEW/CHEW	358	104	269	731
SCHEW/CHO	151	205	104	460
Other	134	5	88	227

Distribution by Cadre

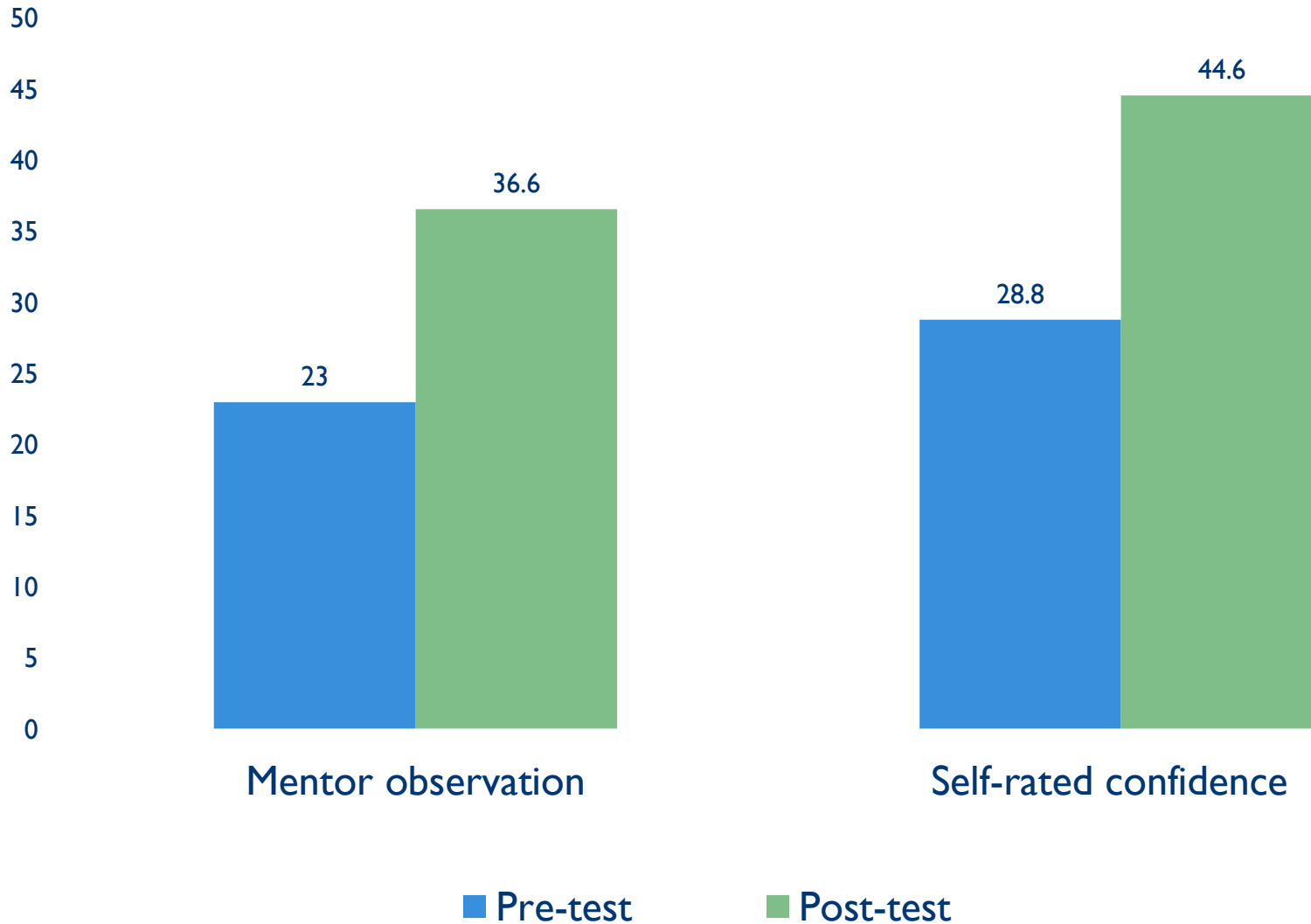


■ Nurse/midwife ■ Midwife ■ JCHEW/CHEW ■ SCHEW/CHO ■ Other

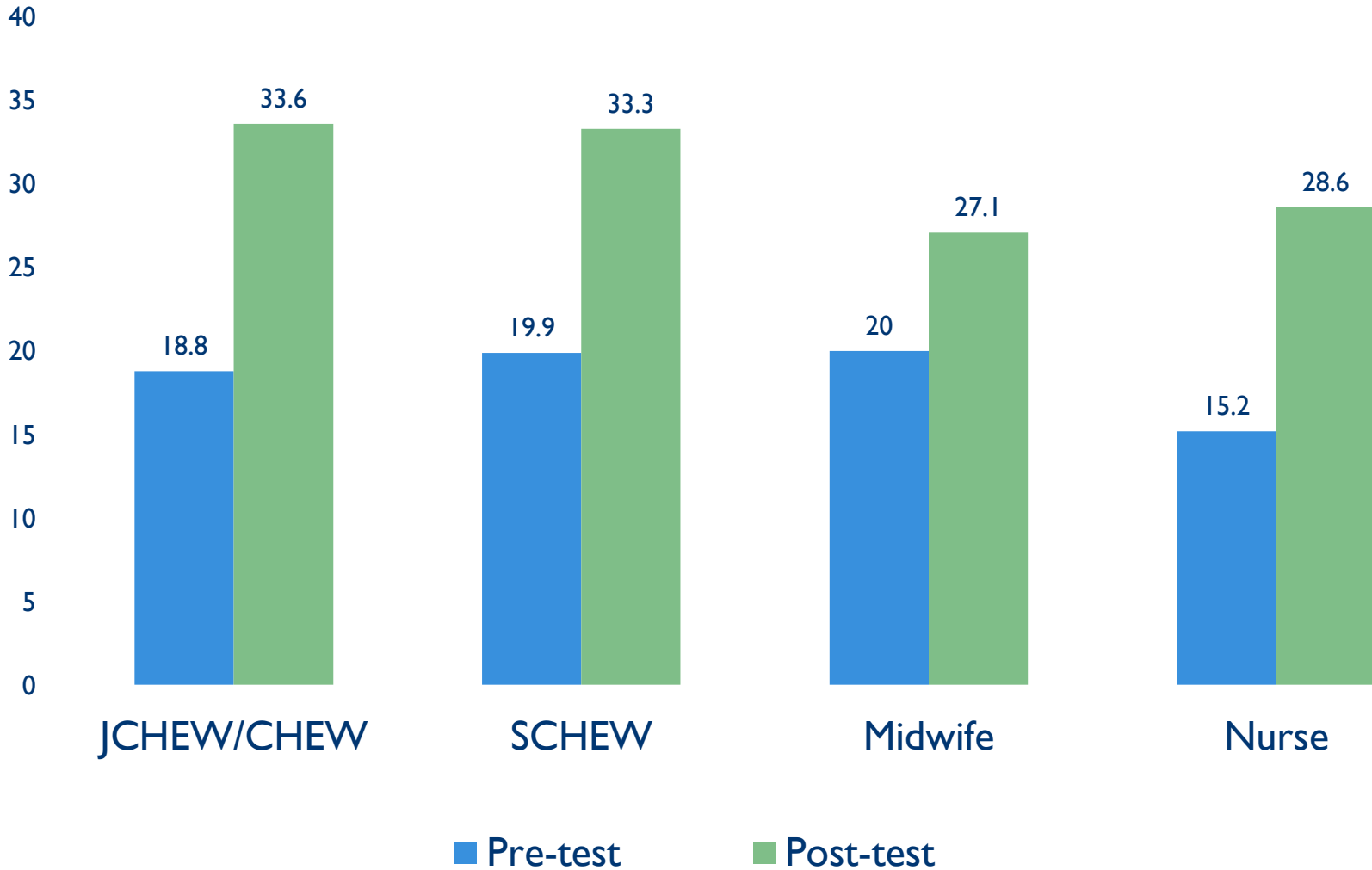
Average Skill Levels Knowledge



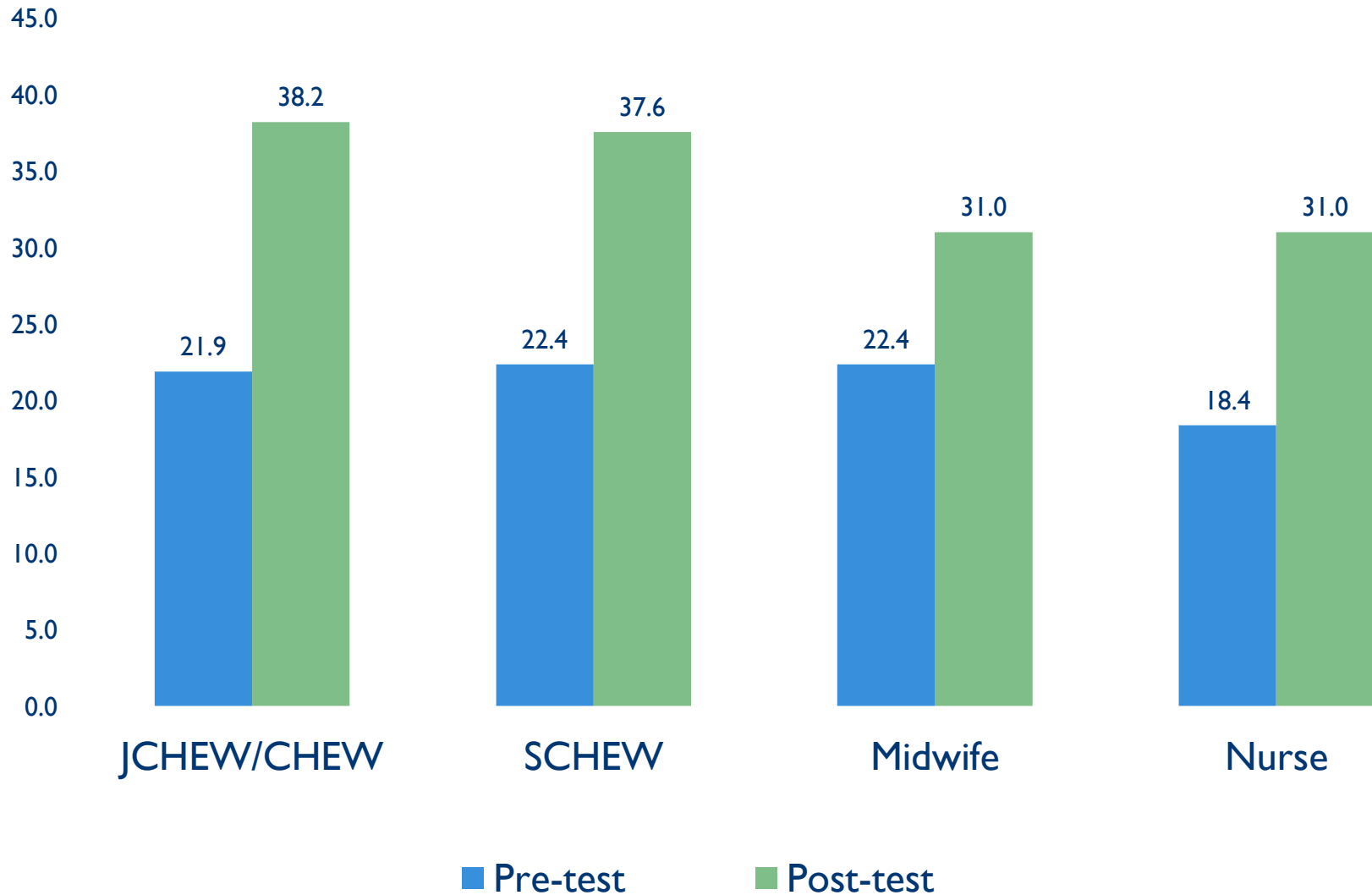
Average Competency Levels



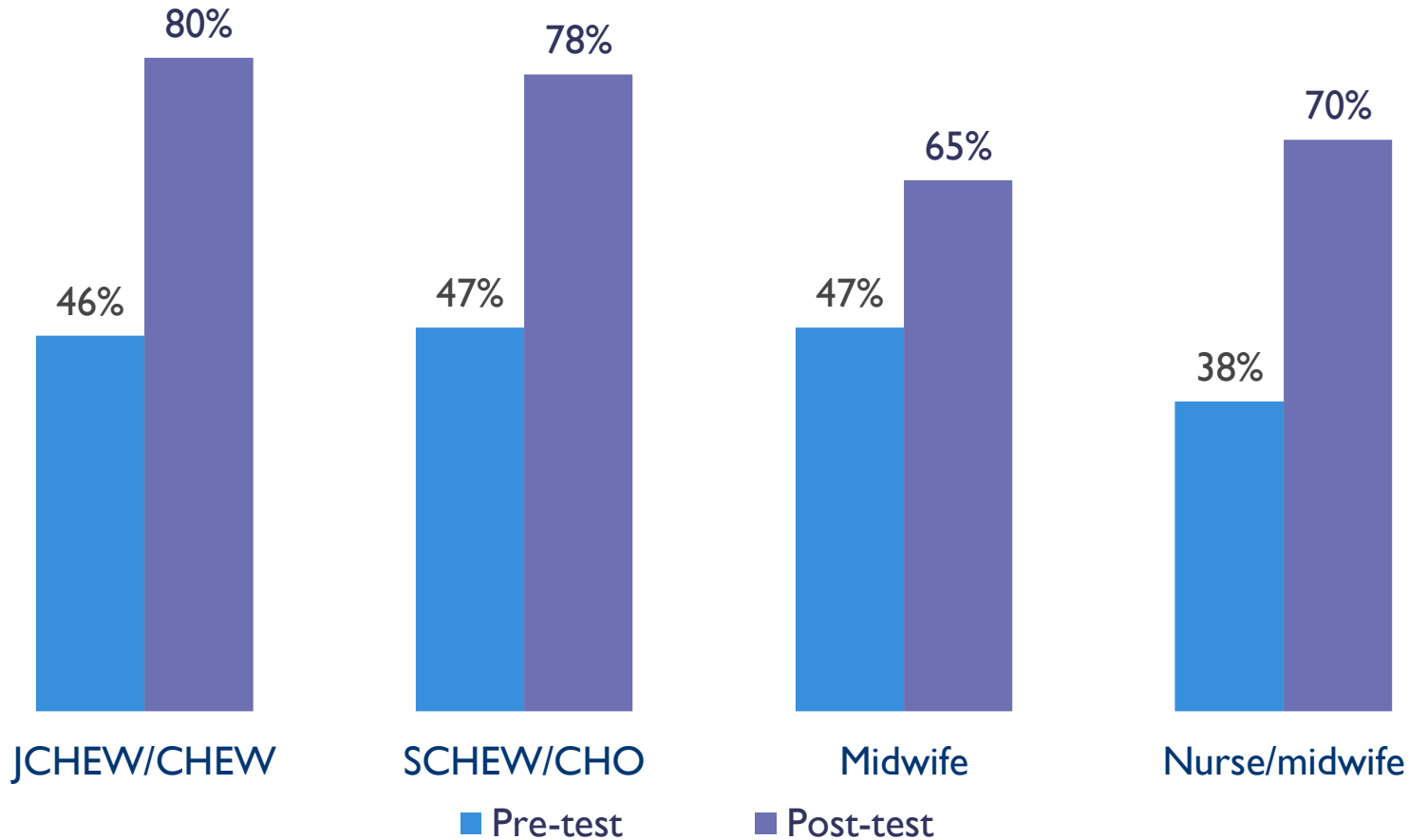
Mentor rating of clinical skills by cadre



Self-Assessment of clinical skills by cadre



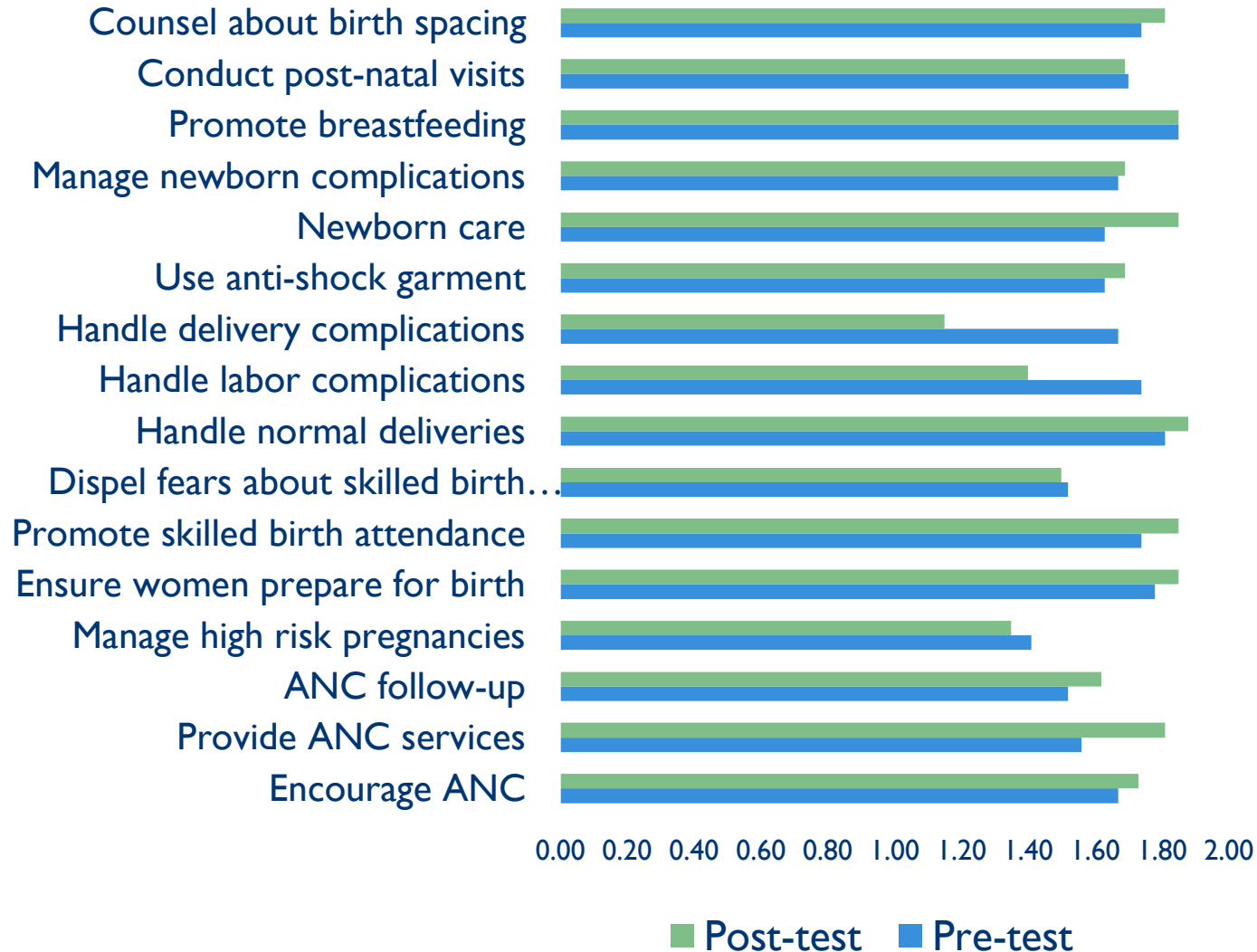
Percent of Cadre Mastering all 16 skills



Clinical practices with greatest gains (>=25%) in awareness by CHEWs

- Understanding importance of birth plan
- Use of sterile gloves when taking blood
- When to use oxytocin during delivery
- Clinical signs of breech birth progressing
- High blood pressure as sign of eclampsia
- How to manage manual removal of placenta
- Signs of puerperal sepsis
- Proper use of antibiotics for metritis
- Signs of birth asphyxia

CHEW self-Assessment of clinical skills by skill



Predictors of Total Confidence Level $R^2=.588$

N= 692	Coeff.	Std. Err.	t	P>t	[95% Conf.	Interv al]
Health Worker Type	-0.150	0.745	-0.20	0.840	-1.613	1.312
Years_Worked	-0.005	0.025	-0.21	0.835	-0.054	0.044
Mentoring on labor complications	1.690	0.200	8.43	0.000	1.297	2.084
Mentoring on delivery complications	0.426	0.214	1.99	0.047	0.006	0.847
Mentoring on newborn complications	2.307	0.215	10.74	0.000	1.885	2.729
Mentoring on hospital referrals	0.942	0.260	3.62	0.000	0.431	1.453
Mentoring on relations with TBAs	1.496	0.382	3.92	0.000	0.747	2.246
Connected to MW networks	1.034	0.423	2.45	0.015	0.204	1.865
Met w Sr. Midwives	-0.912	0.476	-1.92	0.056	-1.847	0.022
Constant	8.984	2.488	3.61	0.0	4.100	13.868

Predictors of Total Confidence Level Adj. R²=.58

N= 692	Coeff.	Std. Error	t	P>t	[95% Conf.	Interv al]
Health Worker Type	-0.150	0.745	-0.20	0.840	-1.613	1.312
Years_Worked	-0.005	0.025	-0.21	0.835	-0.054	0.044
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Predictors of Self-confidence

- The only mentoring activities which significantly predicted the total skill level of the mentee were:
 - Mentoring on labor and on delivery complications
 - Mentoring on newborn complications
 - Mentoring on hospital referrals
 - Mentoring on relations to TBAs
 - Connection to MW networks and the Senior midwives
- We controlled for health worker type, however, the original training and certification of the mentee had no relation to their total confidence level. JCHEW, SCHEW, CHO, and midwives/nurse-midwives had no special or additional influence on self-confidence levels.
- Nor did seniority or years worked...

Specific skills predicting Total Confidence Level Adj R²=.85

N= 692	Coeff.	Std. Error	t	P>t	[95% Conf.	Interv al]
Health Worker_Type	0.017	0.437	0.040	0.970	-0.842	0.876
Years_Worked	-0.003	0.015	-0.210	0.837	-0.032	0.026
Can manage_hi-risk_pregnancies	2.217	0.234	9.490	0.000	1.758	2.676
Can manage_normal_deliveries	3.329	0.292	11.390	0.000	2.755	3.902
Can manage_labor_complications	1.675	0.267	6.270	0.000	1.151	2.199
Can manage_delivery_complications	3.713	0.209	17.750	0.000	3.303	4.124
Teamwork_w_JCHEW_VHW	0.770	0.193	3.990	0.000	0.391	1.149
Hospital_referrals	0.574	0.138	4.160	0.000	0.303	0.846
Establishing_relations_with_TBAs	1.656	0.199	8.340	0.000	1.266	2.046
Quality_of_relations_to_community	0.276	0.114	2.420	0.016	0.052	0.500
Constant	2.436	1.449	1.680	0.093	-0.409	5.281

Key skills associated with higher levels of self-confidence

- After controlling for Health Worker Type and years worked, the following were significant predictors of average self-confidence levels:
 - Ability to manage high-risk pregnancies
 - Ability to manage normal AND complicated deliveries
 - Skills in working as a team with the CHEWs and VHWs
 - Managing hospital referrals
 - Establishing relations with TBAs
 - Quality of relations with the community
- These variables explained 85% of the variation in the average self-confidence level at post-test.

Conclusions

- Compared to the other cadres, the CHEWs had the greatest gains in knowledge and specific skill.
- The change in competency levels appears to have been greatest after the 3-month mentoring, which focused on building confidence on-the-job
- At the end of the mentoring period, 80% of the CHEWs felt confident to perform all 16 MNH skills
- Regression analyses confirmed that the greatest contributors to total self-confidence levels was the practical skills mentoring, including management of pregnancy, labor and delivery, and newborn care, but also interaction, teamwork and communication skills.

Implications for other CHEW task-shifting programs

- While pre-service training will be important to orient CHEWs to the basic midwifery and newborn skills that they need as primary care providers, post-service training is critical to enable the thousands of previously trained and posted CHEWs to participate in task shifting and provide life-saving skills to their communities.
- The CHAI mentoring model emphasizes practical skill building and mentoring, and was successful at building CHEW competencies and self-confidence.
- This practical skills-based model has potential for to assist countries in rapidly accomplishing key task-shifting goals for CHEWs.

Limitations

- No reliability assessment of the mentors rating of mentee skill competency, nor any training to the mentees in standards for self-rating of skill competency
- Majority were CHEWs at different levels, included men and women. Not enough men to separately analyse their experience, but may be important in the long run when considering task shifting for MNH skills where gender is relevant to women's choices.

Acknowledgements

- Thank you to the 112 mentors who worked tirelessly to reach their mentees and provide them with the best possible mentoring experience.
- We thank our funder: _____, for generous support of this pilot program.
- Thanks also to _____ at CHAI, who shared their experiences and helped us shape our program for Nigeria.