

# Building Clinical Research Capacity for HIV & Noncommunicable Diseases (NCDs) in Nigeria

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## BACKGROUND & OBJECTIVES

The **Vanderbilt-Nigeria Building Research Capacity in HIV and Non-communicable Diseases (V-BRCH)** program is a training platform with the goal of developing Nigerian investigators to become leaders in HIV-associated NCDs research. This goal is accomplished through intensive on-site workshops in Nigeria for physicians and research staff focused on essential research topics and skills. Here we present the results of two workshops focused on **implementation science** and **grant writing** for Nigerian physician-scientists.

## METHODS

- Trainees attended interactive week-long workshops at Aminu Kano Teaching Hospital in Kano, Nigeria focused on developing skills in either or both:
  - Implementation science** frameworks, strategies, adaptation, and outcomes
  - Grant writing** techniques, grant review processes, and funding opportunities.
- Participants completed **pre- / post-workshop surveys** assessing self-perceived knowledge and confidence in specific topics and skills related to implementation science and grant writing
  - Survey results presented in Tables 1–4.

## Analytic Approach

- For both pre- & post-workshop surveys, participants ranked their knowledge and/pr confidence in specific competencies on a scale of 1 to 4 (1 not confident at all, and 4 very confident).
- Rankings were transformed to: 4= 100, 3= 75, 2= 50, and 1= 25.
- Averages of confidence in specific competencies were taken with these new values.
- The **gap** was calculated as the difference between pre-and post-workshop average rankings.
- Percentage increase** in confidence was calculated by dividing the gap by the pre-workshop average.

## ACKNOWLEDGEMENTS

This work was supported by the Fogarty International Center and the National Institute of Alcohol Abuse and Alcoholism of the National Institutes of Health (D43TW011544). KMG received a training grant from the Agency For Health Care Research and Quality (T32HS026122).

## RESULTS

**Table 1: Average Knowledge by Topic Area Pre & Post Workshop**

Topic	Pre-Workshop	Post-Workshop	Percent Increase
Factors that impact implementation success	53	91	72%
Implementation theory and frameworks	44	86	95%
Implementation strategies	41	89	117%
Adaptation frameworks	37	84	127%
Implementation outcomes	43	87	102%
Implementation study designs	45	86	91%
Implementation grants	35	72	106%

**Table 2: Average Confidence by Topic Area Pre & Post Workshop**

Topic	Pre-Workshop	Post-Workshop	Percent Increase
Identifying setting characteristics that impact implementation success	44	92	109%
Identifying individual characteristics that impact implementation success	43	92	114%
Selecting a good framework for my implementation science research	41	86	110%
Selecting the most important implementation science outcomes	36	85	136%
Assessing implementation measures	40	86	115%
Analyzing implementation measures	36	81	125%
Writing a hybrid grant	36	69	92%
Teaching others about implementation science	35	85	143%

**Table 3: Average Knowledge by Topic Area Pre & Post Workshop**

Topic	Pre-Workshop	Post-Workshop	Percent Increase
Generating research questions for a scientific grant proposal	48	91	90%
Principles of study design/methods to evaluate grant proposal research questions	68	91	34%
Developing specific aims & hypotheses for grant proposal research questions	70	94	34%
Key components of scientific grant proposals	46	91	98%
Scientific writing techniques for grant proposals	65	89	37%
Features of strong grant proposals	46	90	96%
Types of grant funding sources	40	86	115%
Data analysis plans for different types of studies being conducted	59	86	46%

**Table 4: Improvements in confidence in grant-writing competencies by topic area.**

Topic	Pre-Workshop	Post-Workshop	Percent Increase
Developing a research question & hypotheses to evaluate one's own research question	63	91	44%
Selecting the appropriate study design for a specific research question	66	85	29%
Selecting the appropriate analysis plan for a chosen scientific study	61	82	34%
Writing specific aims pages for a grant proposal	50	93	86%
Identifying the important features of the grant review process	39	81	108%
Interacting with funding agencies	37	80	116%
Providing feedback on grant proposals	48	84	75%

## IMPLICATIONS FOR POLICY AND PRACTICE

The V-BRCH program will create a cohort of skilled Nigerian scientists capable of designing & implementing high quality research that will generate evidence to inform policy and practice ultimately leading to improved outcomes for Nigerians impacted by HIV-associated NCDs.

Training programs such as these facilitate larger efforts to decolonize global health by providing physician-scientists with skills needed to compete for independent funding, to develop sustainable implementation strategies tailored to local needs, and to disseminate research findings.

## CONCLUSIONS

Improvement in participant knowledge and/or confidence was observed in every topic area and competency measured (including implementation science and grant writing techniques)

Findings will inform the development of similar research training programs in analogous settings.

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## REFERENCES

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## PARTICIPATING INSTITUTIONS

