

# Reliability of self-reported mobile phone ownership and access in rural north-central Nigeria: A cross-sectional study

**William Nii Ayitey Menson, MD, MPH**

Researcher

Global Health Initiative

School of Community Health Sciences

University of Nevada, Las Vegas

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# Outline

- Background
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- Conclusion



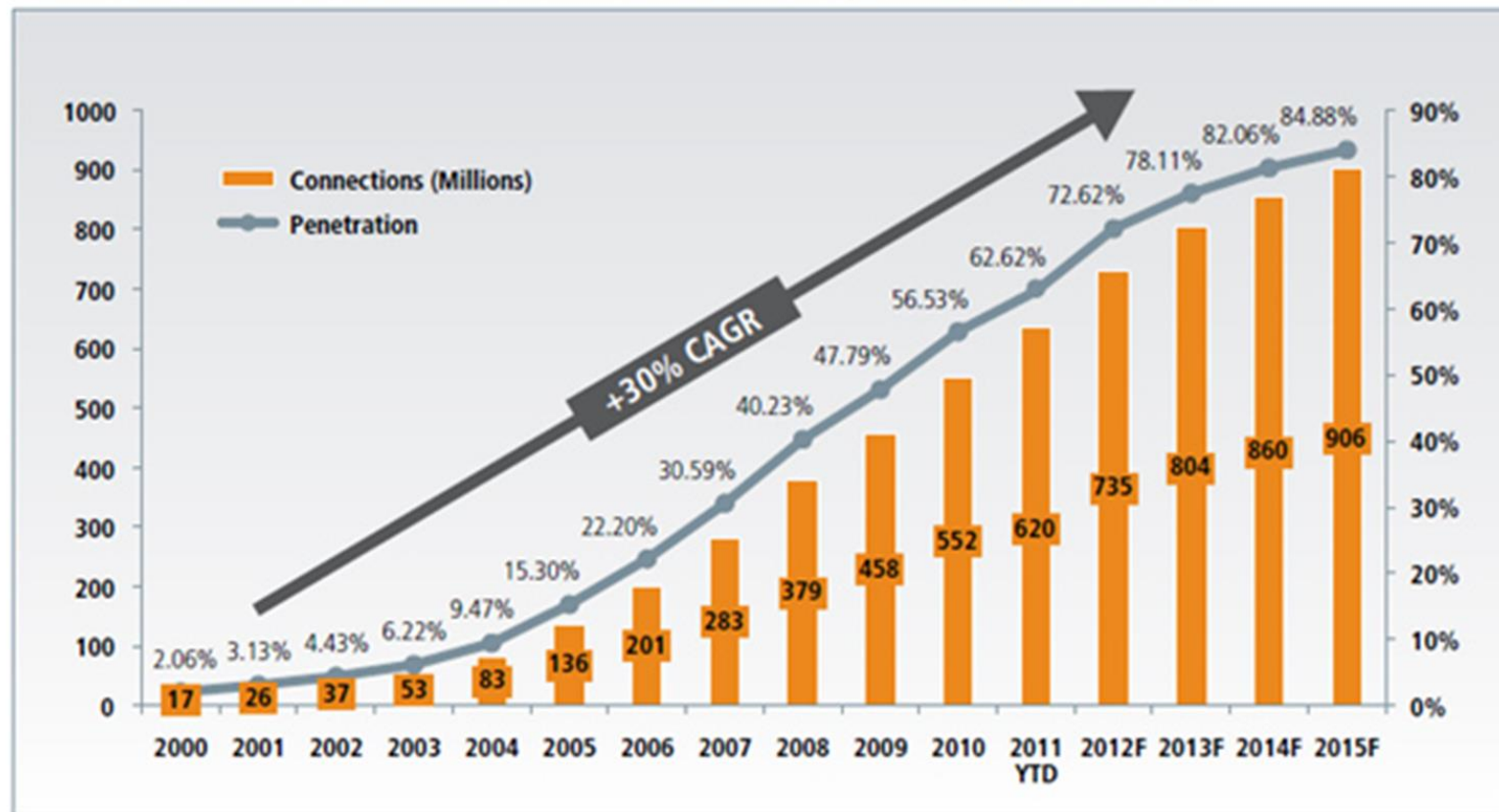
# Background



Source-helsinki.fi

# Background

Total African Mobile Connections and Penetration Rate (million, % penetration)<sup>1</sup>



Source: Aviat networks



# Background

- Trends in mobile phone ownership and subscriptions
  - Significant increases worldwide
- mHealth practitioners have leveraged surge in coverage to design interventions



# Background

- Specific uses in healthcare

1 Client education & behaviour change communication (BCC)	7 Provider-to-provider communication User groups, consultation
2 Sensors & point-of-care diagnostics	8 Provider workplanning & scheduling
3 Registries / vital events tracking	9 Provider training & education
4 Data collection and reporting	10 Human resource management
5 Electronic health records	11 Supply chain management
6 Electronic decision support Information, protocols, algorithms, checklists	12 Financial transactions & incentives

Credit- Labrique et al



# Background

- mHealth impact on patient health outcomes?
  - Mixed, but showing great potential
  - Reasons for sub-optimal impact?
- Are self-reported mobile phone numbers reliable?



# Study Objective

- To ascertain the reliability of self-reported ownership and access to mobile phones among a population of rural dwellers in north-central Nigeria





# Methods

- Cross-sectional study
- Stratified random sampling
- Cohort of pregnant females and male partners who participated in a community-based HIV testing program



# Methods II-Sample size assumptions

- Nominal response rate of 50%- to, maximize the sample-size calculation and a precision of 5%.
- From a total of 2,215 subjects who had provided telephone numbers.
- This resulted in a sample of size of 328 participants needed for this study- Final sample of 350 chosen for ease of design and to provide additional subjects for robustness



# Methods

- Self-reported phone numbers collected during participation
- Three attempts made to contact participants at different times of the day via phone over a one-week period
- Proportions reached and unreached ascertained
- $\chi^2$  tests to ascertain differences in proportions between males and females etc.



# Results

- Total sample of 349 individuals
  - Female –62%
  - Male –38%



# Results

Outcome*	Female (n,%)	Male (n,%)	Total
Reach	42 (19.4)	68 (51.1)	110 (31.5)
Did not reach	174 (81.6)	65 (48.9)	239 (68.5)
No ring	79	44	123
Rang, not answered	21	7	28
Rang, other party answered	74	14	88
<b>Total</b>	<b>216 (100)</b>	<b>133 (100)</b>	<b>349 (100)</b>

\*-  $p < 0.001$



# Public Health Implications

- Impact may be negatively affected by reduced reach
- Privacy- especially in cases of phone sharing where unintended disclosure could lead to violence and other unintended consequences
- Reach- The need to explore alternative means of reaching beneficiaries of mHealth interventions



# Food for Thought

How do we increase reach and impact, given these findings?



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