



# A Multidisciplinary Health Project in Rural South Eastern Nigeria: Our Contribution to Sustainable Development Goal 3

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## INTRODUCTION

- Low- and middle-income countries (LMICs) have limited medical resources which contributes to high morbidity and mortality rates from non-communicable diseases (NCDs) such as diabetes and hypertension.
- Globally, diabetes prevalence is expected to increase from 8.4% in 2017 to 9.9% by 2045 (1); hypertension rates from 26.4% in 2020 to 29.2% by 2030 (2; 3).
- The largest increases are expected in sub-Saharan African countries like Nigeria (1; 4).
- Private and non-profit organizations play a critical role in providing health education, screenings, and treatment to vulnerable populations through medical missions or health service projects, which contribute to Sustainable Development Goal 3: Ensure healthy lives.

## PURPOSE

- To describe and share lessons learned from a multidisciplinary international collaboration whose mission is to increase access to health care, improve treatment, and encourage self-management of NCDs in a vulnerable population in rural south eastern Nigeria.

## METHODS

- **Study population:** Residents of a rural community (population 50,000) located in south eastern Nigeria who were served during annual medical missions.
- **Timeframe:** 2004 to 2018.
- **Sample.** A convenience sample of adults > 18 years with complete and relevant data were included.
- **Data collection:** One-time visit notes including patient demographics, collected during medical missions each year, were reviewed.
- **Data analyses:** Chi square and t-tests were used

## KEY REFERENCES

1. Cho, N. H., et al. (2018). IDF diabetes Atlas: Global estimates of diabetes prevalence for 2017 and projections for 2045. *Diabetes Research & Clinical Practice*, 138, 271-281. <https://doi.org/10.1016/j.diabres.2018.02.023>
2. Adeloje, D. & Basquill, C. (2014). Estimating the prevalence and awareness rates of hypertension in Africa: A systematic review. *PLoS ONE*, 9(8): e1-4300. doi:10.1371/journal.pone.0104300
3. Kearney, P. M., Welton, M. Reynolds, K., & He, J. (2005). Global burden of hypertension: Analysis of worldwide data. *Lancet*, 365(9455), 21-23.
4. Adeloje, D. (2014). An estimate of the prevalence of stroke in Africa: A systematic review and meta-analysis. *PLoS ONE*, 9(6): e100724. doi:10.1371/journal.pone.0100724.
5. Personal stories. Patients consent received to share pictures and story.

## RESULTS

- We increased access to care through annual intensive 1 to 3-day medical missions - totaling 39 service days; and reached persons from 23 communities.
- We accomplished the following:
  1. Served 7376 child and adults (male = 1636; females 4802)
  2. Provided 50 cataract surgeries
  3. Distributed 3000 reading glasses from 2004 to 2018
  4. Provided follow-up care through a clinic manned by our medical mission ([www.providenchi.com](http://www.providenchi.com)).

Table 1. Characteristics of persons served: 2004-2018

Year	Number Days of Service	Total Served	Male	Female
2018	1	223	59	164
2017	2	265	83	182
2016	3	952	194	758
2015	2	400	Not available	Not available
2014	2	400	Not available	Not available
2013	0	0	0	0
2012	4	853	194	659
2011	2	360	76	284
2010	2	617	127	490
2009	0	0	0	0
2008	3	802	206	584
2007	3	927	287	699
2004-06	15	1577	410	982
Total	39	7376	1636	4802

## RESULTS

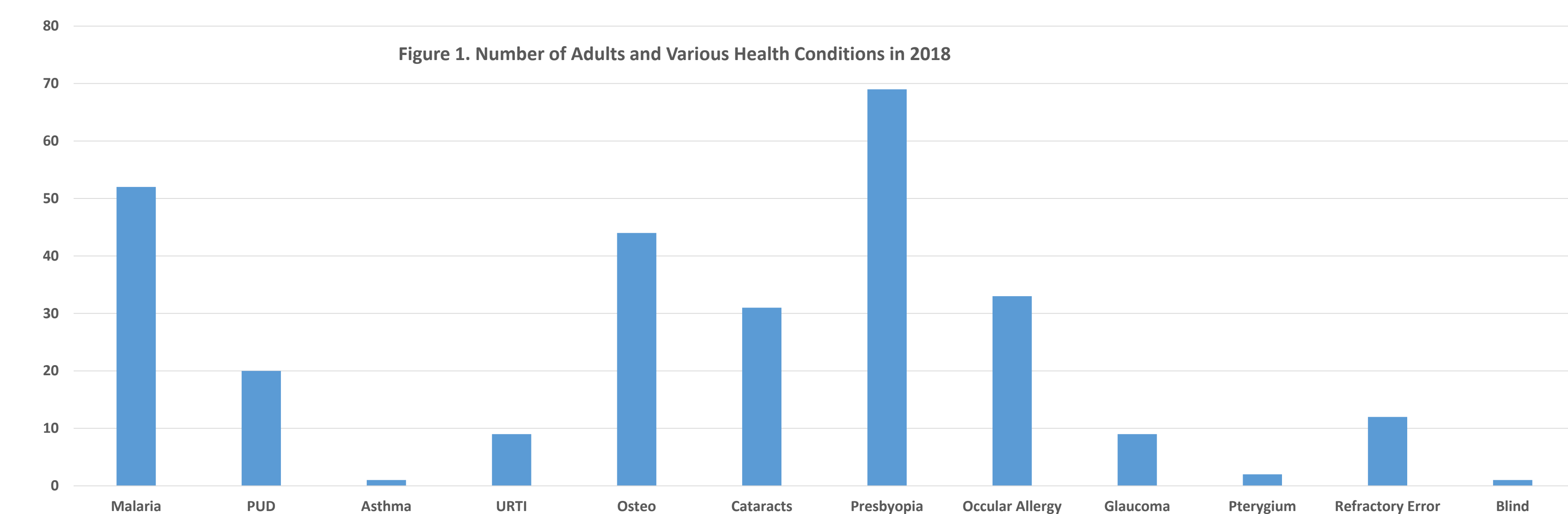


Table 2. Hypertension and Diabetes among Participants

Mean(SD)/N(%)	Total( N=186)	Males(N=45)	Females(N=141)	p values
Age	53(16)	55(17)	53(15)	0.319
Hypertension	83(45)	27(60)	56(40)	0.017
Mean Random Blood Glucose*	122(52)	146 (75)	114 (38)	0.0003
>200mg/dl	25(13)	10(22)	15(11)	0.047
*N=175				

## PERSONAL STORY



Mrs. Felicia who is in her 30s and presented with her 4 children ages 2 to 8 years. She reported that she was stressed and worried about the children who were all running fever that she attributed to malaria. She said she really was at a loss about what to do until she learned about the free medical care and mission at Providence Care Community Health Center. Public announcement about the mission were broadcasted at places of worships, market centers, and community-wide events surrounding communities. Mrs. Felicia shared that she was especially stressed because she was also caregiving for her husband who recently suffered a stroke. She was unable to bring him with the children because she had no transportation. We served Mrs. Felicia and her children; and provided needed medications. We also encouraged her to return with her husband to the follow up clinic manned by the medical mission (5).

## LESSONS LEARNED

- Diabetes and hypertension rates in this rural community was higher than global average.
- Patients' testimonials suggests that our services make a difference. For many, the only health care they receive each year is through our annual medical missions.
- The health project could not have lasted over a decade without community engagement.
- Although we collected data every year, our data categories varied limiting detailed report to 2018.

## RESEARCH IMPLICATIONS

- Systematically track long-term outcomes to further improve population health
- Identify ethical considerations to collect research data within the context of medical.
- Quantify cost and benefits of services through medical missions.
- Seek external funding opportunities - critical to sustainability of medical missions.



## AFFILIATIONS

1. Indiana University School of Nursing, IN, USA
2. Providence Care Community Health Initiative, Nigeria
3. University of San Francisco, CA, USA
4. Goldfarb School of Nursing at Barnes-Jewish College, St., Louis, MO, USA
5. John Hopkins University, Baltimore, MD, USA

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