Brief Introduction to Navrongo HDSS
The Navrongo Health and Demographic Surveillance System (NHDSS) site is located in the Kassena-Nankana District of the Upper East region of Ghana. The district covers an area of 1675 km² along the Ghana-Burkina Faso border. It measures roughly 55 km x 50 km and has an altitude of 200-400 m above sea level. The land is fairly flat, and passing through it from Burkina Faso is the White Volta River, which feeds Lake Volta (the world's largest artificial lake) in southern Ghana. Located in the Guinea savannah belt, the district is typically Sahelian (hot and dry).

Set up in 1993, the NHDSS was established to support research on the determinants of morbidity, mortality and fertility in Ghana’s northern regions. One of the most important recent changes that the NHDSS has introduced in its data collection system, is to reconfigure the system from the compound as the unit of analysis to the household level as happens in many other HDSS sites and also to conform to demographic and health surveys worldwide. To this end, during the last quarter of 2004, the NHDSS started introducing these changes, which became operational in early 2006. Due to some operational and financial challenges in 2009, there were only two updates rounds done in that year.
Demographic Characteristics as at June 2010

- Total Population: 151,955 (Male: 72535; Female: 79420)

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Birth Rate (CBR)</td>
<td>25.4 per 1000 population</td>
</tr>
<tr>
<td>Total Fertility Rate (TFR)</td>
<td>3.8 per woman</td>
</tr>
<tr>
<td>Crude Death Rate (CDR)</td>
<td>10.1 per 1000 population</td>
</tr>
<tr>
<td>Neonatal Mortality</td>
<td>12.4 per 1000 live births</td>
</tr>
<tr>
<td>Post-neonatal Mortality</td>
<td>18.6 per 1000 live births</td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>30.8 per 1000 live births</td>
</tr>
<tr>
<td>Under Five Mortality</td>
<td>67.9 per 1000 live births</td>
</tr>
<tr>
<td>Rate of Natural Increase</td>
<td>15.3 per 1000 population</td>
</tr>
<tr>
<td>In-Migration (external)</td>
<td>70.4 per 1000 population</td>
</tr>
<tr>
<td>Out-Migration (external)</td>
<td>65.4 per 1000 population</td>
</tr>
<tr>
<td>Growth rate</td>
<td>20.0 per 1000 (2.0%)</td>
</tr>
</tbody>
</table>
Funders

Collaborators
- London School of Hygiene and Tropical Medicine (LSHTM)
- Noguchi Memorial Institute for Medical Research
- INDEPTH Network
- U.S. Naval Medical Research Unit #3
- Naval Medical Research Institute
- Swiss Tropical and Public Health Institute
- MVP
- AARSH
- WHO
- Columbia University

PUBLICATIONS


5. Tindana, P.; Bull, SJ; Amenga-Etego, LN.; de Vries, J.; Aborigo, RA.; Koram, K.; Kwiatkowski, D and Parker, M. Seeking consent to genetic and genomic research in a
rural Ghanaian setting: the MalariaGEN experience. (Under review at BMC medical ethics, 2011)

6. Francis Anto¹ Victor Asoala¹ Thomas Anyorigiya¹, Abraham Oduro¹ Martin Adjuik¹ Patricia Akweongo¹ Raymond Aborigo Langbong Bimi² Joseph Amankwa³ Abraham Hodgson¹ Simultaneous administration of praziquantel, ivermectin and albendazole, in a community in rural northern Ghana endemic for schistosomiasis, onchocerciasis and lymphatic filariasis” Article first published online: 20 JUN 2011 DOI: 10.1111/j.1365-3156.2011.02814.x © 2011 Blackwell Publishing Ltd


**Objectives**
To date, the NHDSS has fulfilled its role of serving as a resource for the conduct of research at the Navrongo Health Research Centre by

- Accurately documenting demographic dynamics in the Kassena-Nankana district
- Serving as a framework for population-based health research that addresses local health priorities
- Providing the needed platform for research that informs population and health policy both in Ghana and worldwide

**Priority Research Areas**
- Malaria prevention and control
- Reproductive Health
- Cerebro-spinal meningitis epidemiology and vaccine studies
- Rotavirus epidemiology and vaccine studies
- Policy Monitoring and Impact Assessment
- Poverty and Equity Studies

**Key Achievements in 2010- June 2011**

1. Health care intervention research-improving pre-natal and maternal care (QUALMAT) WP3-7.
4. The Ghana Essential Health Intervention Programme (GEHIP) OF The Tanzania Ghana Health Partnership (TGHP).
5. Evaluation of Safety and Immunogenicity of GARDASIL in Health Females Between 9 and 26 years of Age in SubSaharan Africa.
6. A phase II randomised, controlled double-blind, multi-centre study, and immunogenicity of GMZ2 candidate malaria vaccine in, Gabonese, Burkinabe, Ghanaian and Ugandan children aged 12-60 months.
7. A Phase III, randomized, open labelled, active controlled, multi sector, superiority trial of ArTiMist versus intravenous quinine in children with severe or complicated falciparum malaria or uncomplicated falciparum malaria with gastrointestinal complications
8. Qualitative assessment of the experiences and perspectives of Mobile Midwife Users in the district of Kassena Nankana West, Upper East Region, Ghana.
9. Bacteria meningitis in Sub-Saharan Africa; from understanding of the dynamics of colonisation and disease patterns to improve control.

Navrongo HDSS celebrating Twenty years of “Excellence in Health Research”

Navrongo staff interacts with community leaders as part of community entry processes