

ANNUAL REPORT



INDEPTH Network

Better Health Information for Better Health Policy



2014 Annual Report



INDEPTH Network

Better Health Information for Better Health Policy.

MESSAGE FROM THE BOARD CHAIR



Let me take this opportunity to first welcome aboard new members of the Board (Prof. Abhijit Chowdhury, Dr. Josephine Odera, Nguyen Thi Kim Chuc and Dr. Walter Otieno). We look forward to working with each and every one in the coming year towards the goals of our network. The past year was most successful in many areas of our work: Data Management and Sharing, Capacity Strengthening and Training, Science and Policy Engagement and Communication. INDEPTH continues to go from strength to strength.

Besides thanking my fellow Board members for their continued confidence in the INDEPTH Network as well as for their great commitment, I am most grateful to the SAC members, all Centre Leaders, the Executive Director and his team at the Secretariat for our collective, great achievements of INDEPTH in 2014. It is because of everyone that INDEPTH harmonically developed since its creation 16 years ago and adapted to address the global health challenges we face these days. By doing so we need to become even more innovative and have to invest more in the new areas of research, in assuring data quality and in facilitating data sharing, as well as in effectively translating INDEPTH findings into policy and guidelines at all levels and in as many of its member countries as possible.

Funding has remained a challenge for INDEPTH as it is for many other organisations which depend on competitive research grants for their income. But we are encouraged by the untiring efforts of the Executive Director and his

team together with the active involvement of the Centre Leaders, SAC members and Working Group leaders to seek funding opportunities. We are sincerely grateful to all our funders and partners for their dedication and continued commitment to support INDEPTH.

It is regrettable that we only had one Board meeting in 2014. The one planned for Kampala, Uganda, could not be held owing to the many travel restrictions following the outbreak of Ebola in West Africa. But it is noteworthy that the devastating effects of the Ebola epidemic in West Africa have not only placed the area in global focus but also has indicated our joint and global responsibility and implies that we should therefore see this as an opportunity for INDEPTH to use its unparalleled strength in health and demographic research to make significant contribution to West African health development, and the surveillance of emerging and re-emerging diseases.

At various levels much of INDEPTH's research experience is proving to be in great demand and this can be seen from the increased involvement of the Network in various high profile forums as it will be evident in the report. The Board will make every effort to support all activities that increase the visibility and use of INDEPTH knowledge at international, national and local levels. With the Network's clear strategy for exceptional performance, INDEPTH's global growth story is a compelling one.

None of the work described in this report would have been possible without the fruitful partnerships and collaborations with national and international institutions and the generous, great and unconditional support granted by the many donors mentioned throughout the report. We are deeply indebted to all of them.

Finally, presenting our annual report also entails thanking you, dear readers, for your support and interest. We sincerely hope that reading about our developments, specific highlights and plans stimulates further interest in and support of our activities. All the Network members look forward to your comments and suggestions as well as the development of possible new collaborations.

I wish you a stimulating reading!

Prof. Marcel Tanner
Director, Swiss TPH



MESSAGE FROM THE EXECUTIVE DIRECTOR



There was very good news for INDEPTH during 2014 when the Network's Board Chair, Prof. Marcel Tanner, was named among the world's most productive researchers in the last 112 years of health systems research. Marcel was 6th in the top 20 most prolific authors. His success also means success for INDEPTH; I congratulate Marcel and wish him well in the year 2015.

And more good news: The INDEPTH family continued to grow. We added one additional member in 2013, the Birbhum HDSS in West Bengal, India, and three new centres were approved by the Board to join the Network in 2014, thus achieving more than 50 HDSSs from the initial 17 in 1998. The new members are the Chókwè HDSS in Mozambique, Cross River HDSS in Nigeria, and Kyamulibwa HDSS in Uganda. With these additions, the INDEPTH Network currently has 45 member centres operating 52 HDSS field sites in 20 countries in Africa, Asia and Oceania. Chókwè is a rural town in southern Mozambique. The Cross River HDSS in Nigeria covers a rural and urban area. Its rural site is the Ikot Nakanda Community while the urban site covers the Ikot Ishie – Ikot Ansa Communities. Kyamulibwa HDSS is located at the Kalungu district in Central Region, Uganda. I welcome our colleagues on board.

Among various other accomplishments during 2014, I would like to highlight a few milestones:

In 2013 we launched the world's first online demographic and health data repository, INDEPTH Data Repository

(www.indepth-ishare.org) and a website displaying summary statistics, images and graphs of key health and demographic indicators generated from the INDEPTH member HDSS centres (www.indepth-ishare.org/indepthstats). At the launch, datasets from six member centres were made available. On 1 July, 2014, the INDEPTH Data Repository was updated with new data from seven more centres making a total of 13 HDSS datasets on the repository. INDEPTHStats was also updated with nine new datasets for 2011 from the initial 18 HDSSs, making a total of 27 HDSSs in 14 countries. Hence, we have already crossed the 50% mark of member centres on INDEPTHStats.

The Scientific Development and Leadership Programme, our flagship training initiative to grow the capabilities of scientists at member centres, continued to support new and continuing students to ensure their successful completion of the programme at Masters level. We also provided partial support for PhDs. In 2014 nine Masters Students were at various stages of their studies while one of the two partially sponsored PhD students completed his training.

We continued to play a role in international technical groups. As members of the WHO Verbal Autopsy (VA) Working Group, INDEPTH made a contribution to the development of the 2014 WHO VA instrument. This instrument will be the basis for multiple analytical methods, including physician-based diagnosis, InterVA, Tariff and others. INDEPTH was also involved in regional efforts to improve Civil Registration and Vital Statistics (CRVS) systems in Africa as part of a Core Group set up with representation from various organizations, including WHO and UNECA.

Overall, there was good progress in working group activities and projects under the Scientific Research and Coordination arm. There were 12 effective working groups during the year compared to 10 in 2013. In 2014 the INDEPTH Cause of Death Determination Working Group published the largest ever dataset on individual deaths in Africa and South East Asia (more than 110,000 individual deaths and their causes across 13 countries). The INDEPTH cause of death findings were published in a special issue of the journal, 'Global Health Action', which is fully open access. The Migration, Urbanisation and Health Working Group published two papers, with two others under review, while the Adult Health and Aging Working Group continued with the implementation of two projects, HAALSI and AWI-Gen.

Big projects bring together a number of HDSS sites to answer specific research questions. To name just a few: the multi-site

OPTIMUNISE project run by the Vaccinations and Child Survival Working Group, uses HDSS sites in Africa and Asia as platforms to assess the effect of major child interventions; it published a total of 12 papers with members participating in 10 international meetings; the INDEPTH Effectiveness and Safety Studies of Antimalaria Drugs in Africa project (INESS) developed over 27 manuscripts, eight of which were published, and AWI Gen, the collaboration between INDEPTH and the University of the Witwatersrand (Wits) Health Consortium on identifying genomic and environmental risk factors for cardio-metabolic diseases in Africans published a marker paper in *Science*.

I thank all working group leaders and project managers for their achievements in 2014. Productivity, in terms of the number of grants secured, applications submitted and publications in peer reviewed journals, was impressive during the reporting period. Three new multi-centre grants were received for GAVI study (Vaccinations and Child Survival Working Group), EVIDENCE project (Sexual and Reproductive Health Working Group) and Household Out-of-Pocket Expenditure (iHOPE) project (Health Systems Working Group). We were able to develop 12 proposals involving more than three HDSSs and received about \$5.8 million in grants. Over 550 publications appeared in international journals from INDEPTH member centres compared with 500 in the previous year. Some centres are yet to update their lists, we expect the number to go up significantly.

Since the launch of the HDSS cohort profiles in the 'International Journal of Epidemiology' (IJE) in June 2012, continuous efforts were made to bring all member centres on board. First cohort profile writing workshop in collaboration with IJE was held in November 2012. The second INDEPTH-IJE cohort profile writing workshop was held in Accra from 1-4 April 2014. Five profiles, including one from an associate member, Muzaffarpur-TMRC in Bihar, India, and Data Resource Profile for SPD: *Tanzania's national platform for health impact evaluation* were published, bringing the total published profiles to 20.

We continued to grow our footprint on policy engagement and communication with the revival of the Research to Policy Working Group in early 2014. It went on to organise a meeting of researchers and policymakers and other stakeholders in Ghana to discuss practical strategies for bridging the gap between research findings and policy making later in the year. The group was active during the year in defining and sharing best practices in some centres that would be useful to the Secretariat and other Network members. The Network also engaged a consulting firm, CommsConsult, to develop a Strategy for Policy Engagement and Communications —work that is expected to be completed in mid 2015.

The Secretariat produced various communication products, including reports, policy briefs, brochures and branded items

during the year while several systematic reviews were published in international journals. In March 2014 INDEPTH published a brochure - *The Past, The Present & The Future*— which shows our achievements and goals for the future, in English and French.

In 2014 there were two highlights among the number of international forums attended by my colleagues and myself: in March I participated in a symposium in Sweden with Bill Gates (Gates Foundation), Hans Rosling, Anna-Mia Ekstrom (Karolinska) and Hannah Akuffo (Sida); and in May, I had the opportunity to speak at a side meeting at the World Health Assembly in Geneva, Switzerland. The World Health Assembly is the decision-making body of WHO and is attended by delegations from all Member States.

I would like to thank all our partners who attended the INDEPTH Funders meeting held in Stockholm, Sweden, on March 27, 2014, and graciously hosted by Sida, a core support funder of the Network. The main purpose of the meeting was to present INDEPTH's global health research and policy activities over the past decade, a strategy for INDEPTH's financial sustainability, and to discuss the Network's leadership role in making public health research data from the global South more widely accessible.

The Ebola epidemic in West Africa made it necessary to cancel a number of activities in 2014, including the Network's Annual General Meeting and the associated Board meeting which were to be held in Uganda.

Funding for core activities continues to be a challenge. However, we enter 2015 on a firmer footing, with a greater determination to succeed, and a stronger commitment to generate, manage and share statistically sound and internationally comparable data. We are confident of the future prospects for our work and resolve to manage both the opportunities and the challenges ahead.

Our achievements would have been impossible without the effective oversight and cooperation we continue to receive from the Board of Trustees and the Scientific Advisory Committee (SAC). We also acknowledge the indispensable support of our various funders, partners and collaborators, and thank Centre Leaders and their teams, as well as staff of the Secretariat, for their continuing commitment to goals of the Network.

Audited financial statements for 2014 are provided at the end of this report. I trust that you will find the 2014 Annual Report both informative and interesting.

Prof. Osman Sankoh
Executive Director

1. INTRODUCTION AND PERFORMANCE 2014

1.1 Vision

INDEPTH is an international network of demographic research institutions providing health and demographic data to enable developing countries to set health priorities and policies based on the best available evidence, and to guide the cost-effective use of tools, interventions and systems to ensure and monitor progress towards national goals.

1.2 Mission

To harness the collective potential of the world's community-based longitudinal demographic surveillance initiatives in low-and middle-income countries in order to provide a better understanding of health and social issues, and to encourage the application of this understanding to alleviate major health and social problems.

1.3 INDEPTH's Objectives

1. To strengthen the capacity of INDEPTH member centres to conduct longitudinal health and demographic studies in defined populations;
2. To stimulate, coordinate and conduct cutting-edge multi-centre health and demographic research;
3. To facilitate the translation of INDEPTH's findings to maximise impact on policy and practice.

1.4 INDEPTH's Key Strategies

The INDEPTH Network achieves its objectives through the following key strategies:

1. Conducting research to quantify and understand the complex demographic and health transitions in LMIC settings through longitudinal population-based demographic, epidemiological and cause-of-death data; and to discover what works, for whom and at what cost.

Through intervention research and impact evaluations. INDEPTH campaigns and works for fuller exploitation of members' data, but does not impose specific research topics on members. At the same time, regional or global priorities are highlighted and may be supported.

2. Tailoring research outputs as appropriate for different audiences and stakeholders to reduce the critical gap between research findings and action. Our methods for enhancing policy dialogue and communicating new knowledge to potential end users include:

- * Encouraging and supporting Working Groups to publish research findings and policy analyses in varied formats, including peer-reviewed articles in international journals, working papers and research reports, policy briefs, fact sheets, media releases and newspaper articles; our emphasis wherever possible is on "open access";
- * Organising forums, meetings and briefings with key stakeholders;
- * Participating in international conferences and agenda-setting meetings;
- * Strengthening and collaborating with national and regional entities focused on population, health and development, and
- * Assessing existing policies and the policymaking environment and, on the basis of evidence, making relevant recommendations.

3. Growing the capabilities of scientists in Member Institutions as well as strengthening the capacity of such institutions to conduct world-class research.

1.5 INDEPTH in Brief

INDEPTH is a global leader in health and population research, providing robust answers to some of the most important questions in development. The lack of a reliable information base to support the identification, prevention and treatment of health problems is a major hurdle to addressing the high burden of disease in low- and middle-income countries. INDEPTH — through its global network

of 52 health and demographic surveillance system (HDSS) sites run by 45 research centres in 20 countries across Africa, Asia and the Pacific region — is the only organisation in the world capable of developing that information base. It tracks a total population of over 3.8 million people, providing high quality longitudinal data not only about the lives of people in low- and middle-income countries (LMICs), but also about the impact on those lives of development policies and programmes.

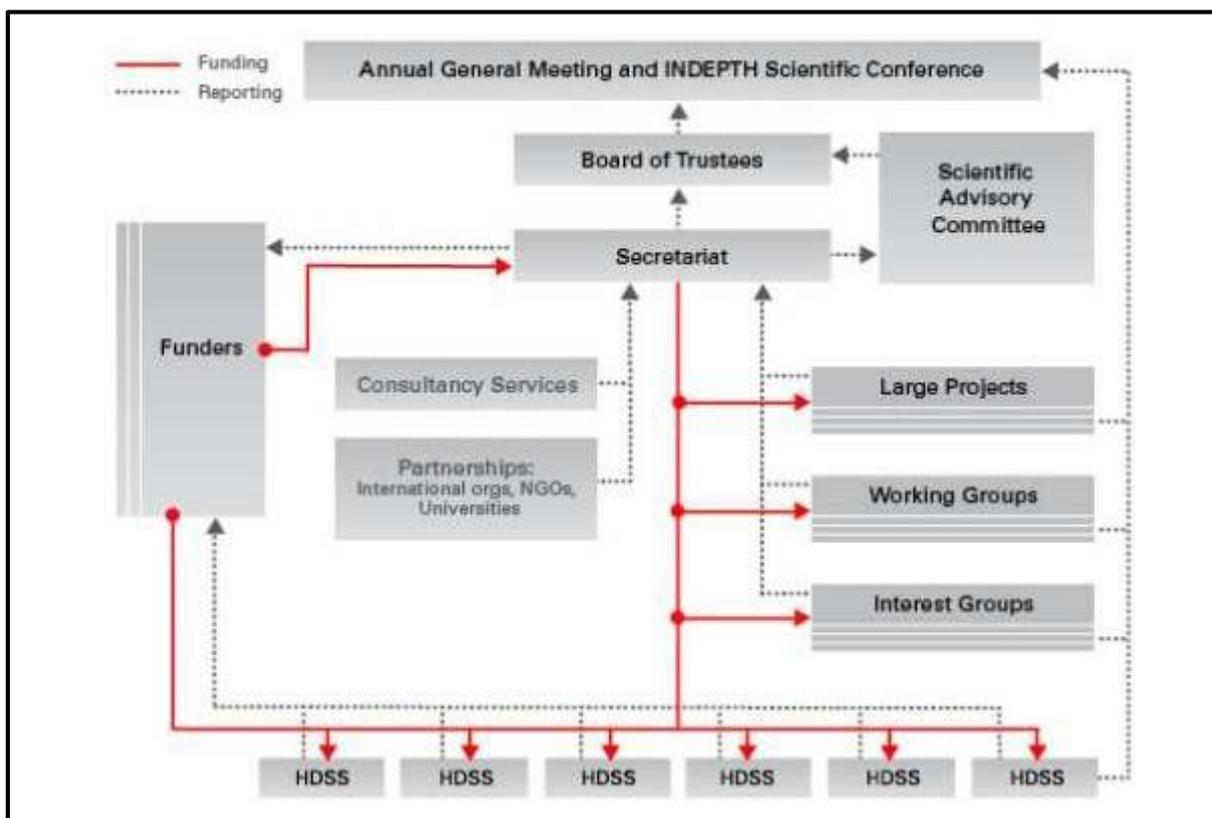


Figure 1: The INDEPTH Network is built on the work of Independent Research Centres managing 52 HDSS sites. It is structured to help facilitate cross site studies through a set of Working Groups and Interest Groups.

1.6 Our Performance in 2014

Performance measurement is central to the Network's growth and evolution. Not only are funders increasingly requiring it, but it is vital that INDEPTH monitor its productivity in such domains as publications, graduate students, dataset production and policy translation. Measuring our impact helps to clarify our value proposition to a wider range of stakeholders.

Intermediate performance indicators cut across our three business lines (research, policy engagement and communications, research capacity strengthening) and Network organs in order to clarify

What is expected of each Working Group, Member Centre, Secretariat, Scientific Advisory Committee and the Board of Trustees. They allow for a complete view of the Network given our inherent inter-relatedness.

Regular tracking towards defined targets helps identify critical issues as they arise so that they can be addressed in good time. Consistently, on an annual basis, we critically review intermediate outputs and aggregate Network productivity in the domains just noted. The Network has developed a results-based monitoring system with a logframe (Figure 2) to report on outputs and outcomes of our Strategic Plan.

Objective 1: To strengthen the capacity of INDEPTH member centres to conduct longitudinal health and demographic studies.

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
1. Train 50% more scientists and HDSS staff by 2016 and improve the skills of existing ones	40% growth in number of scientists participating in INDEPTH training	80% growth in number of scientists participating in INDEPTH training	<p>Development of new training programmes</p> <p>Organisation of training workshops and capacity strengthening activities</p> <p>Identifying & sharing partner training schemes & opportunities that may benefit members</p> <p>Constitute a strategy group to advise on training activities</p>	<p>4 MSc students in training</p> <p>6 training workshops involving an average of 15 persons per workshop</p>	<p>6 MSc students in training</p> <p>4 training workshops involving an average of 12 persons per workshop</p>	<p>9 Masters students on training; 6 of whom completed training</p> <p>2 partially supported PhDs in training, one completed</p> <p>2 training workshops involving 14 persons per workshop</p>	<p>INDEPTH strengthened effective data management systems and further harmonised data across member centres. In particular, the training of a new generation of data scientists with the pioneer group funded to attend the programme at the University of the Witwatersrand. The data management workshops held, combined with regular plausibility checks/reports on data received, enabled more data managers to be acquainted with the INDEPTH-recommended best data management process and reference data model. This also enhanced the ability of most member centres to contribute fully-documented, high-quality micro-level datasets to the scientific programme in a timely manner as well as their ability to share data with the wider scientific community.</p> <p>13 centres had data on the INDEPTH data repository and 27 centres had data on INDEPTHStats. The launch of INDEPTHStats app was a milestone in 2014.</p> <p>At the end of 2014 the Network had funded 44 staff from its member centres to earn a Master's degree.</p>
2. Improve the quality and depth of data collected by member centres	25% of 45 member centres on the OpenHDS platform	90% of 45 centres on OpenHDS or using electronic data capture	<p>Organised workshop to train centres in OpenHDS, Leveraging W/G to get centres to add data modules</p> <p>Data preparation and management workshops</p> <p>Provide relevant support to centres with data issues</p>	<p>1 centre on OpenHDS</p> <p>5 centres collecting non-core HDSS data</p> <p>First training in OpenHDS done</p>	<p>2 INDEPTH fellows posted to Butajira HDSS to improve data quality and ensure core data are contributed</p> <p>OpenHDS Training workshop held with 14 in attendance</p>	<p>25% of 45 member centres on the OpenHDS platform</p>	

Objective 1: To strengthen the capacity of INDEPTH member centres to conduct longitudinal health and demographic studies.

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
3. Improve data harmonisation and management across the Network	70% of Centres using the INDEPTH Stats (IDMP ¹) and 50% having data on the INDEPTH Data Repository	80% of Centres using INDEPTHStats (IDMP) and 70% on the INDEPTH Data Repository	Organise additional IDMP workshops Plausibility checks on indicators from various centre datasets Update of data on INDEPTHStats, INDEPTH Data Repository annually	INDEPTH data sharing policy development, data use agreement agreement on core micro-dataset specification	6 centres on the INDEPTH Data Repository 18 on INDEPTHStats	7 more centres on the INDEPTH Data Repository; total 13 9 more on INDEPTHStats; total of 27 519 downloads of INDEPTH Datasets	We started partial support for PhD programme and hope that as we secure more funding, we will be able to support more PhD students. The Network's partnership with the International Journal of Epidemiology (IJE) has been very successful, with 23 centres having published their HDSS profiles by the end of 2014.
4. Increase by 30% the number of publications using INDEPTH member data by 2016	25% growth in number of papers published by centres – both multi-centre and centre-specific	50% growth in number of papers published by centres	Organise scientific and young scientists' writing workshops on topical issues Facilitate publication of HDSS cohort profiles in the <i>International Journal of Epidemiology (IJE)</i> Encourage INDEPTH groups (strategic, working, interest) to develop and undertake multi-centre studies	300 peer-reviewed publications in international journals 12 multi-centre publications	494 peer-reviewed publications in international journals 7 multi-centre publications	496 peer-reviewed publications in international journals 8 multi-centre papers 6 more HDSS cohort profiles and a data resource profile published in IJE	The key challenges in 2014 in the pursuance of the capacity strengthening objective were mainly the total absence of dedicated funds for this at our disposal. Funding for this objective comes mainly from core support which has dwindled over the years. Another related challenge with regards to long term training is the capacity of Wits to absorb the number of potential students in the event of funding. We intend to address these challenges in 2015 through soliciting and hopefully securing more funds to cover training activities. Meanwhile we will also engage other university partners for joint efforts to foster this objective as well as embedding some elements of training into the various funded projects.

¹ INDEPTH Data Management Programme

Objective 2: To stimulate, co-ordinate and conduct cutting-edge multicentre health and demographic research

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
1. Increase the activity level of Working Groups and have 5 new active Working Groups in relevant research areas by 2016	5 new active Working Groups and 5 publications each and at least 2 funded proposals by Working Groups	All Working Groups are effective, productive and generate more funding for their activities	Name/purpose of new Working Groups; SAC feedback on Working Groups' strategies; Mapping of Working Groups against top research issues	Rearticulate framework / vision of Working Groups; Co-ordinate Working Groups' strategies; Assist Working Groups to organise various workshops	8 Working Groups were active in 2012. (See Annual Report pp 8-12 for details on their activities and notes below)	9 active Working Groups (See Annual Report pp 11-22 for details on the activities and notes below)	12 active Working Groups. The Education Working Group is the latest addition.	<p>The Network has strengthened its ability to stimulate, co-ordinate and conduct cutting-edge multicentre health and demographic research with 12 of its Working Groups actively participating in diverse research areas. The Education Working Group was re-launched to look at the health status of children of school going age.</p> <p>Four INDEPTH Working Groups developed successful grant proposals and raised over US\$2.5M from various funders.</p> <p>A dozen grants proposals were developed and submitted for funding. This was a result of renewed determination by the Secretariat and Working Groups to fundraise and increase the number of Network projects. The challenge was with core funds to develop these proposals.</p> <p>On its own efforts, the Secretariat was able to raise \$2.3M from the Gates Foundation for a specific project on Household out-of-pocket expenses in which three centres in Ghana, Burkina Faso and Vietnam will participate.</p>

Objective 2: To stimulate, co-ordinate and conduct cutting-edge multicentre health and demographic research

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
2. Increase the number of multi-centre proposals by 25% by 2016	Working Groups/ Secretariat generate 25% more proposals by 2016	90% of Working Groups developing large scale proposals/projects	Number of multi-centre proposals	Co-ordinate with WG leaders and collaborators to ensure each focused on large scale planning Assist Working Groups to organise proposal development workshops	12 grant proposals submitted.	7 grant proposals developed involving more than three HDSS members 20 institutional collaborators	12 proposals involving more than three HDSSs	<p>Regarding scientific productivity, INDEPTH centres collectively produced more than 500 papers in peer-reviewed international journals. This continues to demonstrate the quality of data and research generated by the centres and the support the Network provides to strengthen data systems. Multi-centre papers are gradually picking up, which are understandably more difficult to produce since they must emanate from multi-centre projects. The Network is working assiduously in this direction.</p> <p>The major challenges faced in 2014 in pursuing this objective included limited funds to keep the leaders of working groups focused on Network activities and limited funds to organise proposal development workshops to compete for larger grants.</p>

Objective 2: To stimulate, co-ordinate and conduct cutting-edge multi-centre health and demographic research

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
3. Increase the number of multi-centre grants and consultancies by 20% by 2016	3 to 5 new multi-centre grants of a value of at least \$100,000 each by 2016	10% annual growth in number of grants/\$100,000 value per year Increase in core-support funders	Number of multi-centre grants Number of core support funders	Co-ordinate with Working Group leaders to ensure development of grant proposals	4 grant awards made to INDEPTH for multi-centre research involving at least 3 HDSSs	6 grant awards made to INDEPTH for multi-centre work involving at least 3 HDSSs	3 new multi-centre grants awarded to INDEPTH with one above \$2M	<p>The Network will continue to work harder to make Working Groups more effective and attract more funding for multi-centre projects.</p> <p>Partnerships with international research organisations will also increase the potential for INDEPTH to be more scientifically productive. We will continue to look for new as well as maintain existing collaborations which will benefit the Network as a whole.</p>

Objective 2: To stimulate, co-ordinate and conduct cutting-edge multi-centre health and demographic research

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
4. Increase the number of multi-centre publications by 25% by 2016	25% growth in number of papers published using multi-centre data by 2016	20% annual increase in number of publications	<p>Number of active Working Groups meeting to draft multi-centre papers</p> <p>Use of data on the INDEPTH Data Repository and INDEPTHStats</p>	<p>Collation of all multi-centre publications</p> <p>Organise or support Working Group meetings</p>	12 multi-centre publications	7 multi-centre publications	8 multi-centre publications	Partnerships with international research organisations will also increase the potential for INDEPTH to be more scientifically productive. We will continue to look for new as well as maintain existing collaborations which will benefit the Network as a whole.

Objective 3: To facilitate the translation of INDEPTH findings to maximise impact on policy and practice

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
1. Increase the number of Systematic Reviews by 25% by 2016	<p>At least 8 new systematic reviews completed</p> <p>Policy Engagement and Communications Manager and Communications Officer recruited</p> <p>Research to Policy Working Group revived</p>	<p>At least 20 systematic reviews completed</p> <p>Policy Engagement activities in the Network integrated in INDEPTH activities, both at national and international levels</p>	<p>Number of systematic reviews completed each year</p> <p>Staff of the Policy Engagement and Communications recruited</p>	<p>All peer-reviewed publications from member centres compiled.</p> <p>Staff recruitment process put in place.</p> <p>Worked with Working Groups to submit publications to enable a bibliometric analysis</p>	<p>Member centres carried out specific activities. The Network had not put plans to collate these policy-relevant activities and learn from their experiences</p>	<p>2 systematic reviews published in international journals</p> <p>List of member publications on the INDEPTH Website</p> <p>Concept for strengthening of PEC activities in INDEPTH developed and presented to the Board.</p> <p>Consultants recruited to help understand existing efforts and challenges</p>	<p>2 systematic reviews published</p> <p>PEC Manager and recruited</p>	<p>By end of the year, the Network was up the gear to facilitate the translation of INDEPTH findings to impact on policy and planning. It started with a review of its policy engagement activities by a team of international consultants who made key recommendations that we will follow in the coming year.</p> <p>The INDEPTH Research to Policy Working Group was revived early in the year. It was able to organise the first in-country meeting on bridging the gap between research and policy in Ghana.</p>
2. Increase the number of Policy Briefs (Secretariat, centres) by 25% by 2016	<p>5 policy briefs produced</p> <p>PEC Manager and communication officer recruited</p> <p>Active Research to Policy Strategic Group</p>	<p>15 policy briefs produced</p>	<p>Number of policy briefs</p> <p>Number of systematic reviews</p> <p>Number of multi-centre papers</p>	<p>Develop tracking tool for policy briefs</p> <p>Coordinate with Policy Working Group</p>	<p>Established partnerships with international organisations such as Population Council and Population Reference Bureau</p>	<p>Developed tracking tool for policy briefs</p> <p>2 policy briefs published on the INDEPTH website</p>	<p>2 Secretariat policy briefs on the website</p> <p>PEC Manager recruited</p> <p>In-country meeting of policy-relevant stakeholders and HDSSs in Ghana</p>	<p>A key milestone was settling on a candidate for a full-time policy engagement and communications manager. We hope that with this expert, the Network will more vigorously pursue this objective.</p>

Objective 3: To facilitate the translation of INDEPTH findings to maximise impact on policy and practice3

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
3. Increase the number of Stakeholder interactions (national, regional and international) by 25% by 2016	5 International stakeholder meetings held At least 10 presentations by ED and staff at international forums	10 -15 international stakeholder meetings held At least 25 presentations by ED and staff at international forums	Number of briefings held with policy makers Number of major international forums by ED and staff attended Increased stakeholder engagement	Coordinate with Policy Working Group: Develop tracking tool to help track site interactions with policy makers More innovative use of social media to reach global and Ghana audiences Strengthen linkages of INDEPTH and stakeholders (including media) Publicize key messages through relevant global events	Position the network to participate in stakeholder meetings Visitor and engagement statistics on website and social media respectively Updated database of important stakeholders. Number of published news items in newspapers, website, and social media. Also press releases Number of newsletters sent to stakeholders	3 international stakeholder meetings Executive Director made presentations in 6 international conferences Board agreed that INDEPTH must now pursue vigorously the objective to facilitate the translation of research evidence to influence policy and practice	4 international stakeholder meetings The ED made presentation at international conferences including the World Health Assembly in Geneva and UNICEF, Italy In-country meeting of policy-relevant stakeholders and HDSSs in Ghana held in Navrongo	Systematic reviews on HIV/Aids were successfully published. This success will be continued. There was extensive media coverage for programmes organised by INDEPTH during the year. 2014 was a good year for external engagements. The ED addressed side meeting of WHO General Assembly, with his paper appearing on Lancet Global Health Blog. He also participated in a UNICEF symposium in Italy and in a panel with Bill Gates in Stockholm and in the annual meeting of IJE editors in London. The key challenge was not having a full-time PEC manager. With his taking office in January 2015, we hope to effectively pursue this objective. We will also engage a consultant to help us with a policy engagement and communications strategy. We also hope to raise more resources for this work.

Objective 3: To facilitate the translation of INDEPTH findings to maximise impact on policy and practice

Sub-objective	Intermediate Outcomes by 2016	Long-term Outcomes (2017-2020)	Performance indicators	Outputs (Activities of Secretariat)	Baseline 2012	Output Indicators 2013	Outcome Indicators 2014	Progress
4. Increase Policy/ Practice influence and the number of recommended changes linked to INDEPTH findings by 25% by 2016	Growth in number of policy recommendations linked to INDEPTH studies – both adopted and just recommended	INDEPTH network and members as “Go-To” partners for policy makers	Enumeration of policy recommendations Number of policy recommendations made/adopted	Co-ordinate with Policy Working Group & centres to track policy recommendations and identify HDSS linkage	No work started	Board agreed that INDEPTH must now pursue vigorously the objective to facilitate the translation of research evidence to influence policy and practice	Two consultants funded by Hewlett Foundation to review Policy work at INDEPTH Consultants recommended need for a Policy Engagement and Communications Strategy Secretariat secured funding to recruit another consultant to work on developing the strategy 5 examples of impact of research to policy and practice from centres and two from the Secretariat on the website.	

Figure 2: Logframe of INDEPTH's Strategic Objectives

2. CAPACITY STRENGTHENING AND TRAINING

Apart from growing the capabilities of scientists in member centres and improving the capacity of their institutions to collect quality data and conduct world class research, INDEPTH has so far funded over 40 graduates through MSc studies in population-based field epidemiology at the Wits University in South Africa, MPH at BRAC University in Bangladesh and MSc at Chulalongkorn University, Thailand. In addition, in 2014 INDEPTH gave priority to the training of a new generation of data managers (data scientists) through the launch of the new Master's programme in Research Database Management (RDM) in partnership with the University of the Witwatersrand.

2.1 Scientific Development and Leadership Programme

In order to improve the capabilities of scientists at member centres, the Scientific Development and Leadership Programme is the flagship of INDEPTH's capacity strengthening and training initiatives. This programme has the following components: MSc. in Population-based Field Epidemiology (PBFE) and Research Database Management (RDM) at Wits University, South Africa; MPH at the James P. Grant School of Public Health, BRAC University, Bangladesh; and Master's training that may be supported elsewhere if considered relevant to the

programme, as well as partial support to PhD training at South-based universities or on sandwich programmes, and the placement of INDEPTH fellows at member centres in need of human resources.

In keeping with its key mission INDEPTH, in partnership with the Wits University, Johannesburg, South Africa, established two separate but closely related flagship Masters' training courses: the Population-Based Field Epidemiology (PBFE) track and the Research Data Management (RDM) track. The first was launched in 2005 and the second in January, 2014. Both tracks consist of two main components: one year of course work and six months of practical training on the conduct of a research project in a field setting at one of the INDEPTH-Wits accredited field HDSS learning centres.

2.1.1 Master's Training in Population-Based Field Epidemiology (PBFE)

Since the establishment of the programme in 2005, INDEPTH has supported a total of 40 MSc students for an average of 4 per year. In July 2014, four students of the 2013 batch, namely, Ms. Irene Tampuri of Kintampo HDSS and Ms. Patricia Gweliwo of Navrongo HDSS (Ghana), John Kasule Jingo of Rakai HDSS (Uganda) and Tieba Millogo of Kaya HDSS (Burkina Faso), completed the programme and returned to their home institutions.



John Kasule Jingo
Rakai, Uganda



Patricia Gweliwo
Navrongo, Ghana



Tieba Millogo
Kaya, Burkina Faso



Irene Tampuri Azindow
Kintampo, Ghana



Adama Baguiya
Kaya, Burkina Faso



Mieks Twumasi
Kintampo, Ghana



Tumaini Kilimba
Ifakara, Tanzania



Nelson Likove Mbaya
Nairobi, Kenya

2.1.2 Master's training in Epidemiology with Research Database Management (RDM) track

Since inception of the PBF program, INDEPTH has identified the pressing need to strengthen capacity in advanced database management for research to support the ever-increasing quantity of health research conducted in low- and middle-income countries (LMICs). This recognition informed the development of a new track in Research Database Management (RDM) incorporated into the existing partnership with the Wits University, South Africa, as a specialist qualification with specific reference to HDSSs and embedded within the existing MSc in Population Field-based Epidemiology.

This track is designed to produce data scientists capable of understanding the research process, interacting and responding to the data needs of multiple researchers as well as carrying out research-specific responsibilities such as data collection and storage. The training also enhances their ability to manage the design, implementation and operation of a system to extract, clean and produce analytical datasets from research databases for use by researchers, and by an international community of investigators under controlled access conditions. The graduates are expected to be able to lead data management teams, guide data management activities from data collection through to data processing and data analysis for publication, and also collaborate with scientists to develop data structures and apply data management software during various stages of research projects.

In view of the number of graduates supported through the PBF track, once the RDM track was approved, INDEPTH gave priority to the promotion and funding of the pioneer batch of students. Hence, INDEPTH funded five into the pioneer RDM cohort, of

whom four effectively joined: Adama Baguiya-Kaya HDSS, Burkina Faso; Tumaini Kilimba-Ifakara HDSS, Tanzania; Nelson Mbaya-Nairobi HDSS, Kenya, and Mieks Twumasi-Kintampo HDSS, Ghana. They have all completed course work and are set for the field attachment component. Fortunately, midway into the programme, one of the funded students (Tumaini Kilimba), secured funding which should release funds for supporting other students.

2.1.3 INDEPTH/Wits Accredited Field Attachment Supervisors Workshop

To strengthen the networking and supervision base for the newly launched Research Data Management (RDM) track, an INDEPTH/Wits workshop was convened at Wits SPH on July 17 and 18, 2014 with the accredited field-based training supervisors of the old and new INDEPTH affiliated sites that host INDEPTH-funded students for the research component of their study. The meeting was attended by over 20 delegates, mostly the centre leaders and those that had been involved in supervision of students, those in charge of the Data divisions at the accredited field sites, and the Wits staff involved in teaching the Population-Based Field Epidemiology and RDM modules.

The main goal of the workshop was to ensure quality control and adequate site based teaching/supervision and facilitate eventual appointment of supervisor as honorary staff at Wits. More specifically, the workshop aimed to:

- * Brief all the field training centres and supervisors about the RDM / PBF programmes;
- * Discuss potential students' projects, student placement, supervisors and other logistics;
- * Reflect on past supervision experiences;



INDEPTH - Wits field attachment supervisors meet in South Africa.

- * Brief participants on requirements for MSc supervision at Wits University, and;
- * Agree on the main guidelines for the field-base supervision of the students.

Presentations included brief overviews of the field attachment HDSSs, with specific reference to what they do; the opportunities available at the sites (especially on research data management) to students at their sites; and any other information that students may/would want to know about these host training sites. In this regard, some of the workshop sessions were attended by the current MSc students.

The key achievements of this meeting included well over a dozen research projects topics discussed and agreed upon, along with draft guidelines for the field-based supervision. More importantly, all the participating field attachment training centres identified areas of priority where they could readily host students. Considering the fact that most member centres are increasingly working on sensitive data, it was strongly recommended that a standalone module on data security be included in the curriculum. To ensure a better training experience, RDM students on field attachment should be granted full access to the data systems with virtualisation or other measures taken to avoid any

eventualities.

2.1.4 New Joint Accredited HDSS Field Attachment Learning Centres

It should be noted that since the inception of the INDEPTH-Wits MSc training programme in 2005, resources have been provided to specific centres (Africa Centre, Ifakara, Navrongo and recently Nairobi and Vadu) to support the hosting of INDEPTH-funded students on field attachment. Based on a transparent review process of full applications received the previous year, Nairobi HDSS (APHRC) in Kenya and Vadu HDSS (KEM Hospital) in India were recommended as the additional attachment training centres for the MSc programme at Wits University. They start hosting students in 2015.

However, in the course of 2014 it became increasingly clear that this support to specific centres was unsustainable. Considering the growing challenge of raising funds to cover the training of member centre staff, the Secretariat decided to discontinue the specific hosting centres. Accordingly, funded students will henceforth (from 2016) return to their respective HDSSs for the practical field training component. By implication, all current member centres of INDEPTH (45 as at December 2014) will eventually become potential hosting centres/sites for students. Discussions are ongoing with Wits to ensure the transition and eventually the implementation of this strategy.

2.1.5 Master's Training Elsewhere

With an ever expanding membership (currently 45 centres) it is evident that the Wits partnership is unable to cater for the growing need for training the staff of INDEPTH member centres. Besides, there is the challenge faced by applicants from HDSSs in countries whose working language is not English. The Secretariat has therefore been exploring other avenues for expanding training options for the staff of member centres, especially at select South-based universities, as well as extending opportunities to young non-English-speaking scientists through partial support. In 2014, the Secretariat offered funding to one student (Kenneth Nartey of Dodowa HDSS, Ghana) who joined the 2014/2015 batch of the MPH programme with James P Grant SPH at BRAC University in Bangladesh. He completed the programme in December and returned home. Also, a female student (Ms. Le My Lan from Filabavi HDSS, Vietnam), who was partly supported for Master's training in Health Economics and Health Care Management at Chulanlongkorn University in Bangkok, successfully completed the programme in 2014 and returned to Filabavi.

2.1.6 Doctoral Training Support

Whenever possible, the Secretariat also tries to facilitate training beyond the Master's level by providing partial support to member-centre staff already registered into PhD programmes, or embedding this into funded projects and/or funded working group activities. In 2014, the Secretariat provided partial support for two PhD students (Raymond Aborigo from Navrongo HDSS, Ghana on a PhD at Monash University and to Vijendra Ingole of Vadu HDSS, India on a PhD at Umea University). The first student has completed the programme and submitted his thesis, while the second is expected to complete in 2016. Meanwhile five project-funded (OPTIMUNISE) PhD students who started between 2012-2013 at Heidelberg University, Southern Denmark, University of Nairobi, University of Ghana and in Bangladesh (respectively Moubassira Kagone from Nouna Burkina Faso; Paul Welaga from Navrongo Ghana; Martin Mutua from Nairobi Kenya; Charles Zandoh from Kintampo Ghana; and Hanifi Manzoor from Chakaria Bangladesh) are progressing well.

2.1.7 INDEPTH Fellows Appointed at Member Centres

As part of the efforts to build a pool of indigenous young scientists/researchers, the training effort is



Vijendra Ingole
Vadu, India



Raymond Aborigo
Navrongo, Ghana

being complemented by an INDEPTH fellowship programme whereby young graduates with a Master's qualification in population (or related disciplines) are identified (on request by the centre leader) and posted for one year, renewable, to a centre lacking adequate human resources.. For instance, in 2014, in response to a request from Butajira HDSS, Ethiopia, the Secretariat confirmed the appointment and placement of two INDEPTH fellows (Anteneh Aklilu, a statistician and Etsehiwot Tilahun a demographer) at Butajira for the year (with possibility of renewal in 2015).



Etsehiwot Tilahun



Anteneh Aklilu

2.2 Young Scientists

As part of continuing efforts to train and strengthen the research capabilities of the next generation of scientists from member centres, the Secretariat introduced a new concept tentatively known as the INDEPTH Resident Research Fellows (IRRF) Competition for Young Scientists. The idea is to host at least one carefully selected young scientist every year at the INDEPTH Secretariat for one month of intensive research during which they will work on and complete a multi-centre paper as a first author. Indeed, young researchers at member centres have access to HDSS data offering enormous potential to

launch their careers as independent investigators without requiring excessive grant funding. In addition, the growing data on INDEPTHStats and INDEPTH Data Repository now offer unique opportunities for tackling some of the key challenges in identifying novel multi-centre research questions, developing multi-centre research protocols and sending compelling multi-centre manuscripts to major journals for publication. The call for applications was circulated to member centres.

2.3 INDEPTH Training and Research Centres of Excellence (INTREC)

The INDEPTH Training and Research Centres of Excellence (INTREC) programme was started to give junior researchers in Africa and Asia an opportunity to improve their understanding of the framework and concepts of social determinants of health (SDH), as well as to develop specific methodological expertise in qualitative and quantitative research. The programme was split into three blocks of teaching over a 12-month period. The first block consisted of an online course of video lectures and assignments, and was followed by 30 trainees from 9 countries in Africa and Asia.

The second block consisted of a two-week regional workshop organised in Indonesia for Asian participants, and in Ghana for African participants. Strictly restricted to the HDSS nominees who had completed the block 1 (online course) programme, the second block was attended by 24 trainees (9 and 15 respectively, from HDSS centres in Asia and Africa). This regional mixed methods workshop consisted of two separate but closely related courses

as the title suggests: *Quantitative and Qualitative Research Methods for Addressing Inequities and Social Determinants of Health (SDH)*.

The workshop aimed to demonstrate key techniques in quantitative and qualitative methods for research on SDH. More specifically, the objectives were to:

- * Ensure a better understanding of scientific articles of SDH and to critically evaluate their content;
- * Provide experience in the process of analyzing data on SDH;
- * Enhance ability to prepare a writing plan for quantitative analysis (related to the research question from Block 1);
- * Become familiar with the basic requirements of a qualitative study design such as formulating a research question and planning for sampling and recruitment;
- * Provide basic skills in different data collection methods (in-depth interviews, focus groups, participant observation) in qualitative research; Enhance understanding of the basics of qualitative data analysis and reporting of qualitative studies;
- * Help develop a plan (design and methodology) for a qualitative study.

The third and final teaching block was a one-week data analysis workshop held at Harvard University (Harvard Center for Population and Development). Thirteen (13) participants completed all INTREC teaching activities. The overall aim of the workshop was for the trainees to begin developing their own proposed SDH-focused study, based on the INDEPTH data from their respective HDSSs.



INTREC 13 -23 May 2014 workshop participants.



Representatives from 11 HDSSs during the IJE workshop in Accra with facilitators Jane Ferrie (1st row, right), Martin Bangha (3rd right) and Matthias Egger (2nd right, back row).

2.4 HDSS Cohort Profiles in International Journal of Epidemiology (IJE)

As reported previously, an agreement was reached in 2012 with the *International Journal of Epidemiology* (IJE) to support and publish cohort profiles of all INDEPTH member HDSSs. To facilitate this activity, the first cohort profile writing workshop was held in November 2012, in collaboration with the IJE. The achievements and success of the first writing workshop underscored the importance of both peer and external support for young scientists at member centres to undertake scientific writing. Based on this recognition, the Secretariat, in partnership with the IJE, decided to announce a second INDEPTH-IJE cohort profile writing workshop for those who missed the first opportunity.

The four-day workshop was held in Accra from 1-4 April 2014, and facilitated by two editors from the IJE (Jane Ferrie and Matthias Egger) and Martin Bangha of INDEPTH. It was attended by representatives from 11 member HDSSs and an associate member. They came from Kersa and Kilite Awlaelo (Ethiopia), Dodalab (Vietnam), Kombewa and Nairobi (Kenya), Ifakara (Tanzania), Rakai (Uganda), Farafenni (The Gambia), Nahuche (Nigeria), Taabo (Cote d'Ivoire), Birbhum and Muzaffarpur (India).

In all, 12 profiles were reviewed, discussed and revised during the workshop, six of which were published in course of the year. Cohort profiles

published in 2014 included: Bandafassi (Senegal), Kombewa (Kenya), Nahuche (Nigeria), Taboo (Cote d'Ivoire), Birbhum (India), along with one associate member profile Muzaffarpur-TMRC (India), and a Data Resource Profile for Sentinel Panel of Districts (SPD) (Tanzania), bringing the total to 20 since the launch issue. HDSS Cohort Profiles published (2014) in the IJE include:

- * Gilles Pison, Laetitia Douillot, Almamy M Kante, Ousmane Ndiaye, Papa N Diouf, Paul Senghor, Cheikh Sokhna and Valérie Delaunay. **Health & Demographic Surveillance System Profile: Bandafassi Health and Demographic Surveillance System (Bandafassi HDSS), Senegal** *Int. J. Epidemiol.* (2014) 43(3): doi: 10.1093/ije/dyu086;
- * Peter Sifuna, Mary Oyugi, Bernhards Ogutu, Ben Andagalu, Allan Otieno, Victorine Owira, Nekoye Otsyula, Janet Oyieko, Jessica Cowden, Lucas Otieno, and Walter Otieno. **Health & Demographic Surveillance System Profile: The Kombewa Health and Demographic Surveillance System (Kombewa HDSS)** *Int. J. Epidemiol.* (2014) 43 (4): 1097-1104 doi:10.1093/ije/dyu139;
- * Olatunji Alabi, Henry V Doctor, Abdulazeez Jumare, Nasiru Sahabi, Ahmad Abdulwahab, Sally E Findley, and Sani D Abubakar. **Health & Demographic Surveillance System Profile: The Nahuche Health and Demographic**

Surveillance System, Northern Nigeria (Nahuche HDSS) *Int. J. Epidemiol.* first published online November 14, 2014 doi:10.1093/ije/dyu197;

- * Siaka Koné, Nahoua Baikoro, Yao N'Guessan, Fabienne N Jaeger, Kigbafori D Silué, Thomas Fürst, Eveline Hürlimann, Mamadou **Ouattara**, **Marie-Chantal Y Séka**, **Nicaise A N'Guessan**, **Emmanuel LJC Easo**, **Fabien Zouzou**, **Louis I Boti**, **Prosper T Gonety**, **Lukas G Adiossan**, **Daouda Dao**, Andres B Tschannen, Thomas von Stamm, Bassirou Bonfoh, Marcel Tanner, Jürg Utzinger, and Eliézer K N'Goran. **Health & Demographic Surveillance System Profile: The Taabo Health and Demographic Surveillance System, Côte d'Ivoire** *Int. J. Epidemiol.* first published online November 29, 2014 doi:10.1093/ije/dyu221;
- * Saswata Ghosh, Anamitra Barik, Saikat Majumder, Ashoke Gorain, Subrata Mukherjee, Saibal Mazumdar, Kajal Chatterjee, Sunil Kumar Bhaumik, **Susanta Kumar Bandyopadhyay**, **BiswaRanjan Satpathi**, **Partha P Majumder**, and **Abhijit Chowdhury**. **Health & Demographic Surveillance System Profile: The Birbhum population project (Birbhum HDSS)** *Int. J. Epidemiol.* first published online December 23, 2014 doi:10.1093/ije/dyu228;
- * Paritosh Malaviya, Albert Picado, Epcó Hasker, Bart Ostyn, Sangeeta Kansal, Rudra Pratap Singh, Ravi Shankar, Marleen Boelaert, and Shyam Sundar. **Health & Demographic Surveillance System Profile: The Muzaffarpur-TMRC Health and Demographic Surveillance System** *Int. J. Epidemiol.* first published online September 2, 2014 doi:10.1093/ije/dyu178;
- * Gregory S Kabadi, Eveline Geubbels, Isaac Lyatuu, Paul Smithson, Richard Amaro, Sylvia Meku, Joanna A Schellenberg, and Honorati Masanja **Data Resource Profile: The sentinel panel of districts: Tanzania's national platform for health impact evaluation** *Int. J. Epidemiol.* first published online November 29, 2014 doi:10.1093/ije/dyu223.

3. DATA MANAGEMENT AND HARMONISATION



Participants of Open HDSS workshop in Dubai 14 – 17 November 2014.

Both launched on 1st July 2013, INDEPTHStats (www.indepth-ishare.org/indepthstats) is a website that displays summary statistics, images and graphs of key health and demographic indicators generated by the INDEPTH member HDSS centres, while the INDEPTH Data Repository (www.indepth-ishare.org) is an online archive of high-quality datasets from

INDEPTH member HDSS centres. All the data are subjected to rigorous technical checks, first at the individual HDSSs and then within INDEPTH, led by the Secretariat data quality and management support team. At the initial launch it was agreed that these data would be updated on 1st July every year, with fresh data from those already contributing to the

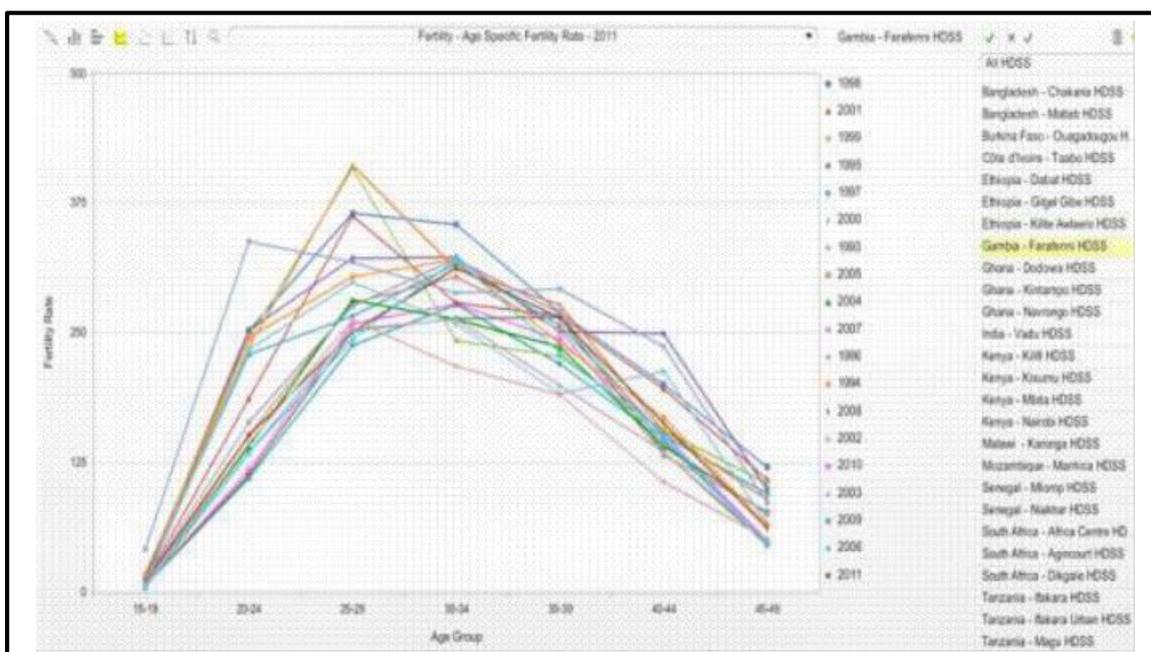


Figure 3:

repository as additional datasets from member centres which had subsequently become contributors. In the course of 2014, the every effort was made to keep this commitment.

The INDEPTH Data Repository is the first specialising in longitudinal population-based data from LMICs. At the launch, datasets from six member centres were made available namely: Vadu HDSS (India), Nairobi HDSS (Kenya), Magu HDSS (Tanzania), Chililab HDSS (Vietnam), Agincourt HDSS (South Africa) and Africa Centre HDSS (South Africa), along with one project dataset (SEEDS). On July 1, 2014, the INDEPTH Data Repository was updated with new data from 5 of the 6 initial HDSSs namely Africa Centre and Agincourt HDSSs (South Africa), Chililab HDSS (Vietnam), Nairobi HDSS (Kenya), Vadu HDSS (India) and an additional seven (7) new datasets from Ouagadougou HDSS (Burkina Faso), Taabo HDSS (Côte d'Ivoire), Gilgel Gibe HDSS (Ethiopia), Kilite Awlaleo HDSS (Ethiopia), Dabat HDSS (Ethiopia), Mbita HDSS (Kenya), and Karonga HDSS (Malawi), making a total

of 13 HDSS datasets in the repository. Cause of death datasets from 22 member centres were later added.

The indicators available on INDEPTHStats include crude birth and death rates, age specific fertility and death rates, infant, child, and under-five mortality rates, as well as numerous other health and demographic indicators. At the initial launch, INDEPTHStats had data from 18 member centres. On July 1, 2014, **INDEPTHStats** was updated with new data for 2011 from the initial 18 HDSSs. Additional Nine (9) new datasets from Taabo HDSS (Cote d'Ivoire), Dabat HDSS, Gilgel Gibe HDSS and Kilite Awlaleo HDSS (Ethiopia), Mbita HDSS (Kenya), Karonga HDSS (Malawi), Mlomp HDSS (Senegal), Ifakara HDSS (Tanzania), FilaBavi HDSS (Vietnam). Hence, we have already crossed the 50% mark of member centres on INDEPTHStats (with a total of 27 HDSSs in 14 countries).

On July 1, 2014, INDEPTH also launched the beta version of INDEPTHStats app, a data visualisation app allowing users to explore basic demographic indicators generated from member HDSS data.



Figure 4: INDEPTHStats App for smart phones

4. SCIENTIFIC RESEARCH AND CO-ORDINATION

Scientific research is the primary activity of the Network. It falls under the second strategic objective of INDEPTH which is to stimulate, coordinate and disseminate cutting-edge **multi-centre health and demographic research**. Scientific research and coordination activities are conducted through Working Groups and Interest Groups. In 2014, there were 12 active working groups and three interest groups. This section summarises some of their key activities.

4.1 Working Groups

Each Working Group evolves from being an Interest Group focusing on a specific research topic, project or programme identified as being of priority interest, and on which a number of member centres wish to work collaboratively.

4.1.1 Cause of Death Determination

Documenting and understanding cause-specific mortality patterns is at the core of INDEPTH's mission. Mortality statistics derived from death certificates are the only continuously collected population-based, disease-related information available in most parts of low-and middle-income

countries. For this reason, a lot of effort has been made to ensure that most specific, more accurate and complete information regarding the death is registered. INDEPTH does this with the use of Verbal Autopsy, a tool in data collection. This group seeks to standardise methodology across the Network as well as ensure the full aggregation and analysis.

The team conducted a standardised analysis of 114,465 deaths, of which 102,258 had verbal autopsies completed representing over 12,424,657 person-years of observation at 22 INDEPTH HDSS sites. In November 2014, findings were published in a special issue of the journal *Global Health Action*, which is fully open access. There are six multi-site papers dealing with specific causes of death: HIV/AIDS, malaria, pregnancy-related, external causes (including accidental death and suicide), adult non-communicable diseases and childhood illness. Other papers describe methods, and many sites contributed papers with local details. The project was substantially funded by the Hewlett Foundation, Sida/Research Cooperation Unit and the Wellcome Trust.

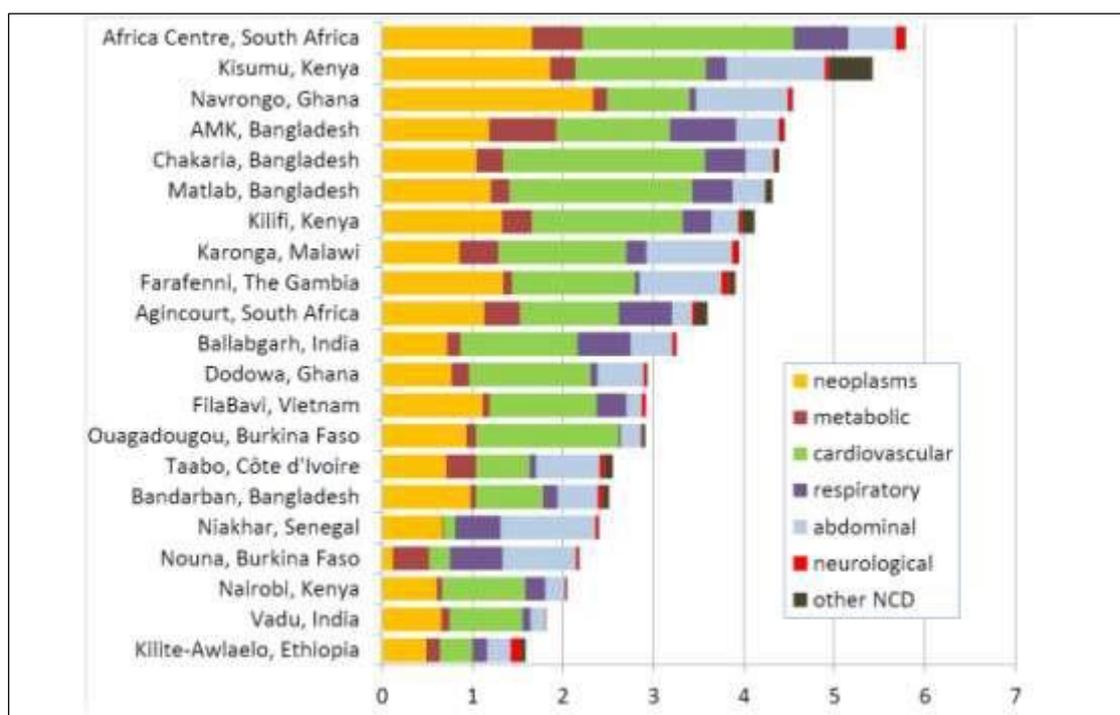


Figure 5: Age-Sex-Time-Standardised Mortality Rates per 1,000 persons - years among adults, 15 years and over by NCD

Key findings

- * Findings show high variability in cause of death across sites, particularly in deaths caused by endemic diseases such as malaria and HIV/AIDS. For example, an INDEPTH site in rural northeast South Africa has documented the peak of HIV/AIDS-related deaths and is now seeing a substantial decline in HIV/AIDS mortality as public health programmes start to take effect;?
- * Malaria mortality ranged from zero at one Bangladeshi site to more than 2 per 1,000 in parts of Africa;
- * HIV/AIDS mortality was more than 300 times higher in some African sites compared with Asian levels;
- * Across the countries, the data show consistently high rates of maternal and childhood mortality. Childhood drowning in Bangladesh and homicide among adult males in eastern and southern Africa are other causes for concern;
- * Mortality from non-communicable diseases, particularly in younger adulthood, is an emerging problem, accounting for a high proportion of deaths in Asian countries;
- * The findings of INDEPTH are similar to outputs from the mathematical modeling techniques, indicating that they confirm each other.

In addition to *Global Health Action* supplement, the working group published several papers:

- * **Performance of four computer-coded verbal autopsy methods for cause of death assignment compared with physician coding on 24,000 deaths in low-and middle-income countries.** *BMC Medicine* 2014; 12:20;
- * **Comparison of physician-certified verbal autopsy with computer-coded verbal autopsy for cause of death assignment in hospitalised patients in low-and middle-income countries: systematic review.** *BMC Medicine* 2014; 12:22;

- * **Usefulness of the Population Health Metrics Research Consortium gold standard verbal autopsy data for general verbal autopsy methods.** *BMC Medicine* 2014; 12:23.

The group has decided to publish Volume 2 of the supplement with datasets from the remaining HDSSs. By the end of December 2014, 15 HDSSs had expressed interest in the publication of Volume 2.



INDEPTH - GAVI Accra workshop, 3-9 March 2014.

4.1.2 Vaccination Child Survival Working Group

The Vaccination and Child Survival Working Group was created to monitor childhood interventions for child survival and to optimise the impact and cost-effectiveness of child health intervention programmes for vaccines and micronutrients in low- and middle-income countries. It also aims to stimulate research in child interventions. Participating centres include Bandim in Guinea Bissau, Chakaria in Bangladesh, Kintampo and Navrongo (in Ghana), Nairobi (Kenya), Nouna in Burkina Faso and Vadu in India.

Completed Project

A project funded by the GAVI Alliance 'Analysis of Coverage of Fully Immunised Child, Associated Factors, Outcomes and Impact Using Routinely Collected Population Cohort Data' was completed during the year. The project's broad objective was to analyse existing prospective data routinely collected by HDSS sites on vaccinations and child survival to measure coverage of fully immunised child (FIC) and assess missed opportunities for immunization, including children vaccinated on schedule as well as out-of-schedule and associated factors. It also

examined associations with mortality and morbidity outcomes using hospitalizations as a proxy measure.

Key Achievements

The working group published 12 papers and also organised two meetings in Navrongo and Accra in Ghana. The team members participated in 10 international meetings, while one group member completed PhD training.

Key Findings

Most childhood interventions (vaccines, micronutrients) in low-income countries are justified by their assumed effect on child survival. However, the interventions have usually been studied only with respect to their disease/deficiency-specific effects and not for their overall effects on morbidity and mortality. In many situations, the population-based effects have been quite different from the anticipated effects. INDEPTH member centres have been in an ideal position to document such additional non-specific effects of interventions because they follow the total population long term.

The key findings include:

- * Live vaccines have beneficial effects which are more important than the specific prevention;
- * Inactivated vaccines may have negative effects, particularly in girls;
- * Non-specific effects of vaccines often differ for girls and boys.
- * Measles and polio vaccination campaigns pave the way towards MDG 4;
- * Not receiving measles vaccine at 12 months is associated with 30% higher mortality between 1 and 5 years of age.



IHTAS Dodowa workshop 11 July 2014.

4.1.3 Sexual and Reproductive Health

This working group was established to promote the uptake of implementation research on sexual and reproductive behaviour, including the use of family planning in INDEPTH sites. The team aims to achieve

the above goal by building research capacities in sexual and reproductive behaviour, developing and testing a standard tool to collect data on sexual and reproductive behaviour, including contraception for

INDEPTH's toolkit of questionnaires; and by facilitating collaboration between INDEPTH sites and Family Planning implementing partners and stakeholders at the local and international levels.

Completed Project

INDEPTH Health Transitions to Adulthood Study (IHTAS) started in 2013 and ended in 2014. It was implemented in Dodowa (Ghana) and Kilifi (Kenya) with financial support from the Hewlett Foundation.

Key Achievements

- * Systematic literature review of existing adolescent programmes, policies and services in Ghana and Kenya and within the specific districts covered by the study: Dodowa and Kilifi;
- * Identified and engaged with relevant stakeholders;

- * Analysed HDSS data relating to young people, and developed methods to link HDSS and health facility data on young people;
- * Conducted cross-sectional surveys of



IHTAS participants in a field visit to Kilifi on 28 June 2014.

young people's health, and a pilot study of linkage of HDSS and health facility data in Dodowa and Kilifi;

Organised two field visits in Dodowa and Kilifi.

Key Findings

Dodowa:

- * Young people's major health challenges include alcoholism, violence, common mental disorders, lack of access to health care, smoking and teenage pregnancy;
- * Knowledge on family planning methods is quite low;
- * Young people living with HIV are stigmatised and therefore try hard to keep their HIV status secret;
- * Adolescent health policies exist but implementation is weak and patchy. Reported constraints include lack of coordination among adolescent health stakeholders and funding;
- * Conditional cash transfers for young people and performance-based incentives for health workers could be effective in increasing uptake of preventive and promotive health services by young people, but would need to be carefully designed and implemented;
- * The data linkage study suggested that health facility attendance by young people is likely

to be low. However, an alternative method for linkage of data from HDSS and the clinics will be required.

Kilifi:

- * In young women (10-24y), the leading cause of admission to the Kilifi hospital is pregnancy-related complications, and the leading cause of death is HIV/AIDS. In young men (10-24y) the leading cause both of admission and of death is injury;
- * There are very high rates of migration among both male and female youth (15-24y). This is primarily for education, employment and marriage;
- * Key perceived health problems identified in the quantitative survey of young people aged 13-24 years were sexual and reproductive ailments, violence and injuries, nutrition, hygiene and mental illness. In addition, drug and substance abuse emerged as priority issues according to stakeholders working in the field of adolescent health in Kilifi, but the quantitative survey data from young people themselves did not support this;
- * The study identified many groups working with adolescents within Kilifi District but there appeared to be little coordination, sharing of experience, and evaluation of the impact of their interventions;
- * National policies supporting the provision of

adolescent health services exist, but these services are not always provided as they should be and young people are not always able to access the services that are available, because of shyness, fear of stigma and lack of awareness;

- * Both performance-based incentives for health facilities or health staff and conditional cash transfers for young people to make use of services provided were viewed as unsuitable for scalability and sustainability

Ongoing Project

EVIDENCE: The EVIDENCE Project's goal is to strengthen family planning and reproductive health programming through implementation science. This is a five-year cooperative agreement awarded to the Population Council and its partners, funded by USAID. INDEPTH leads in the generation of longitudinal data on family planning and unintended pregnancies.

Key Achievements

- * Developed research protocol;
- * Group members participated in implementation science training;
- * Developed a concept note for baseline survey;
- * Developed questionnaire to assess the availability of relevant variables for the project as well as to list interventions on family planning, maternal and child health over the past five years.
- * Group members participated in the Partners annual meeting in Washington DC;
- * Developed criteria for the selection of the sites where the study will be conducted, circulated the call for application to which there were 12 applicants.

Furthermore, the working group organised one data analysis workshop, had one steering committee meeting, had two meetings with WHO in Geneva. The team drafted five papers of which two have been submitted for peer review and two are under the internal review process.

4.1.4. Migration, Urbanisation and Health

Migration and urbanisation are central to sustainable development and health in low - and middle-income countries, migration is often seasonal, with people

frequently returning to their origin households. This gives rise to circular, seasonal migration with income or food sent back to the original household, as well as the regular transmission of urban ideas, norms and practices.

The INDEPTH Migration, Urbanisation and Health Working Group seeks to conduct new longitudinal research into migration, health and development, triangulated across multiple settings to address deficiencies in comprehensive longitudinal data in LMICs. The agenda includes improving resource flows to poorer households and limiting the unhealthy aspects of migration and urbanisation.

Key Achievements

The working group published two papers and two others are still under review. They also organised two training workshops, while members participated in four international conferences. The published papers are:

- * Collinson, M.A., White, M.J., Bocquier, P., McGarvey, S., Afolabi, S.A., Clark, S.J., Kahn, K., Tollman, S.M. 2014. **Migration and the Epidemiological Transition: Insights from the Agincourt sub-district of northeast South Africa.** *Global Health Action*. 2014, 7: 23514 - <http://dx.doi.org/10.3402/gha.v7.23514>.
- * Bocquier, P., Collinson M.A., Clark, S.J., Gerritsen, A.G., Kahn, K., Tollman, S.M. 2014. **Ubiquitous burden: the contribution of migration to AIDS and tuberculosis mortality in rural South Africa.** *African Population Studies. Volume 28, Number 1, May 2014: Supplement on Population Issues in South Africa.* Pp. 691-701.

4.1.5. Education

This group was revived in October, 2014, with the recruitment of a Postdoc in Education. The working group looks at the educational aspect of the HDSS data.

Key Achievements

A call for show of interest was sent out to the HDSSs in which 14 HDSSs expressed interest. The team submitted a project proposal to the Rockefeller Foundation in November but was unsuccessful. They are now planning a kick-off and paper analysis and writing meeting in first quarter of 2015. They are also carrying out a systematic literature review on education studies completed by INDEPTH Network

researchers. The group will try to answer the following questions:

- * Children's school attendance by age-in-grade: what is the evidence from longitudinal population based surveys?
- * Two decades of Education for All – has there been an increase in primary completion and primary to junior secondary school transition?
- * Do children who attend government schools have lower progression, completion, and transition rates than children who attend private schools?
- * Does the supply of quality education encourage higher enrolment and retention among children from poor households?
- * Has the relationship between household poverty and children's school attendance become weaker over time?
- * What determines the attendance of poor rural girls at basic education?

4.1.6. Environment and Health

There is a growing body of evidence of the health impacts of climate change. Understanding the various effects of climate change and their likely potential impact on human health is of prime importance for developing efficient adaptation, mitigation and protection measures especially in rural populations. HDSS sites, which collect information on the health status of the same individuals over a long period, offer a great opportunity to investigate and understand both the long and short-term climate health effects. In addition, movements of people, either as households or communities can be investigated as consequential results of the climate change. Evidence from HDSS centres will be used to highlight the associations between climate change mortality and migration of rural populations. The results will be disseminated to inform the scientific community and guide national and regional policy.

This working group has a threefold mission:

- * To demonstrate the capability of HDSS sites to monitor the health consequences of environmental change in addition to their usual demographic surveillance;

- * To identify a research agenda on environmental change for the INDEPTH Network, and;
- * To explore opportunities to build and strengthen capacity in INDEPTH sites to include environmental aspects in their demographic work.

Key Achievements

The group organised two workshops in 2014, submitted five proposals among which two are under review. A capacity strengthening workshop in Abidjan from 14 to 15 October, 2014 on climate change and sustainable development, brought together 25 participants, among them three journalists. The activity was organised in collaboration with the Africa University College of Communication (AUCC).

4.1.7. Health Systems

This working group aims to investigate the implications of epi-demographic change for health and welfare systems as well as implementation of health policies and utilisation of health services.

Completed Project

INDEPTH Universal Health Coverage Project (IUHC) is a study aimed to ensure greater health equity across income levels of the population, as well as to reduce the incidence of poverty instigated by health bills. The longitudinal tracking of populations has enabled sites to measure the incidence of treatment and the burden of health costs before and after the introduction of new health payment programmes. The project was implemented in Navrongo and Filibavi. Funded in 2012 by the Rockefeller Foundation, the project ended in mid 2014. Six manuscripts were drafted and are currently under internal review.

Ongoing Project

INDEPTH Household Out of Pocket Expenditure (iHOPE) study aims at improving estimation of Out-Of-Pocket expenditure (OOP) in a household survey and develop a set of questions to facilitate OOP-specific disease measurement. iHOPE also seeks to test and develop alternative approaches to household surveys and provide a socio-economic context to interpret OOPs. This is a three-year project (2015-2017) and will be implemented in Filibavi (Vietnam), Navrongo (Ghana) and Ouagadougou

(Burkina Faso).

During the year, the group submitted the report of the IUHC project to the Rockefeller Foundation. They also submitted two project proposals to the BMG Foundation, among which one (iHOPE) was successful. The group also wrote six papers for publication.



4.1.8. Maternal, Child and Neonatal Health

Child mortality in most countries has been decreasing in the past decades. However, both neonatal and maternal mortality have largely remained the same. Neonatal mortality accounts for almost 40 per cent of an estimated 9.7 million children's under-five deaths and for nearly 60 per cent of infant (under-one) deaths. This means that a child is about 500 times more likely to die in the first day of life than at one month of age. The largest absolute number of newborn deaths occurs in South Asia – India contributes a quarter of the world total – but the highest national rates of neonatal mortality are in sub-Saharan Africa. Since all INDEPTH HDSS member centres currently track pregnancies, newborn births and deaths, the Network provides an excellent platform for tracking newborn health interventions as well as morbidity and mortality trends on a longitudinal basis. The team aims to develop standardised tools that will allow collection of reliable data on maternal and neonatal health.

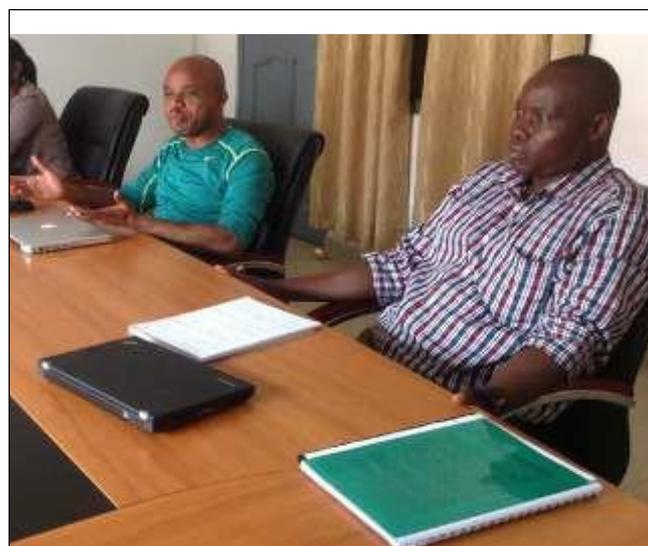
Ongoing Project

INDEPTH Maternal, Child and Neonatal Health Study: The INDEPTH/ Navrongo maternal, child and neonatal health survey is designed to provide information on child and neonatal health indicators as well as maternal reproductive health behaviour in Navrongo. The survey will involve interviewing about 3,000 randomly selected households in which the head of household or any adult member living in the household, and women aged 12-49 years old will be targeted. The survey will also collect information on birth history, child survival and health.

IUHC Analysis and Writing workshop in South Africa.

The INDEPTH Newborn Steering Committee met in Accra from the 28-29 April, 2014. The team drafted the research agenda, strategic plan and guidelines to improve pregnancy and outcome data. In addition, the team developed three cross-site manuscripts, which are under internal review and submitted one proposal to the Bill and Melinda Gate Foundation (which is still under review).

A team from the INDEPTH Secretariat made up of Prof. Jacques Emina, the INDEPTH Science Programme Manager and Ms Samuelina Arthur, an INDEPTH research fellow, visited the Navrongo HDSS (the study site) to have a face to face discussion and an interaction on the project with the Navrongo researchers. The two-day meeting was held from the 10 to 11 September, 2014. They were hosted by Dr. John Williams, the PI of the project and other project team members - Dr. Cornelius Debpuur, Mrs Evelyn



Maternal, Child and Newborn meeting in Navrongo.

Sakeah and Mr. Daniel Azongo.

4.1.9. Adult Health and Aging

While the challenge of aging is well understood in high income countries, we know little of its impact in low-and-middle income countries. Longitudinal data is critical to assessing patterns of deterioration in well-being of older adults due to the impact of infectious and non-communicable disease as well socio-economic factors. Participating member centres include Agincourt (South Africa), Filabavi (Vietnam), Ifakara (Tanzania), Matlab (Bangladesh), Nairobi (Kenya), Navrongo (Ghana), Purworjo (Indonesia) and Vadu (India). This group aims to establish cohorts of older adults in a range of African and Asian settings at different stages of the health transition.

Ongoing Projects

The group continued with the implementation of the **Health and Aging in Africa: Longitudinal Studies of INDEPTH Communities (HAALSI)** Project. The HAALSI is a collaborative project between the INDEPTH Network, Harvard T.H. Chan School of Public Health and Witwatersrand University. The overall objective of this project is to introduce validated performance-based and self-reported assessments of physical and cognitive function into one INDEPTH cohort at Agincourt, South Africa, and use these data to test whether selected risk factors predict physical or cognitive impairments. The study is funded by the National Institute on Aging (NIA), and the National Institutes of Health (NIH), USA.

4.1.10. Mortality Analysis

The aim of this working group is to provide insights and knowledge with respect to mortality patterns and trends. The team also provides support to centres in data plausibility checks as well as review, cleaning and identification of data errors.

Achievements

- * In 2014, the group organised a workshop on spatial analysis of child mortality, using Bayesian spatial analysis technique, from the 6-11 July in Accra in which 16 Participants from Karonga, Nairobi, Kisumu, Taboo, Kersa, University of Warwick and South African Medical Research Council attended. Three papers have been drafted, which are under internal review.
- * Furthermore, the group has drafted two cross-site papers, which are under review:

- Transitions paper is under review at Population Studies;
- Model Life Tables is under internal review, and will be submitted to Demographic Research.

4.2 Interest Groups

The Working Groups are supported by and often informed by Interest Groups, assemblies of scientists from HDSSs who come together, usually virtually, to discuss common research interests. Interest Groups can upgrade to Working Groups or continue as discussion groups to pool and develop knowledge on particular research themes and issues. Below is the outline of the progress of three interest groups that were active in 2014.

4.2.1. Household Dynamics and Poverty

Three cross-sites papers are currently under internal review. One paper was presented at the 2014 Annual Meeting of the Population Association of America (PAA), two papers will be presented during the next annual meeting of the PAA. The group received technical support from Dr. Zacharie Tsala of Canada National Statistical Agency who visited the Secretariat in September 2014.

4.2.2. Indoor Air Pollution

Submitted a proposal, which did not receive funding. It also submitted a paper for publication: "Effectiveness of Interventions to Reduce Indoor Air Pollution and Improve Health in Homes using Solid Fuel: Protocol for a Systematic Review."

4.2.3. Chronic Diseases and Female Cancer

Organised a kick-off meeting in Germany on the 17 – 21 March. This meeting was attended by Ifakara, Navrongo, Kilite HDSSs and a representative from the INDEPTH Network. The group met again on 27-29 October in Dar es Salaam, Tanzania, to finalise their proposal for submission. The team submitted the proposal to the German Government



The group during proposal development workshop on Chronic Diseases and Female Cancer in Dar es Salaam, October 2014.

BIG PROJECTS

INDEPTH Effectiveness and Safety Studies of Anti-malarial Drugs in Africa (INESS)



INDEPTH Network and GSK 18-20 March 2014 meeting in Accra, Ghana.

This is a platform that aims to enable African researchers to carry out large Phase IV trials. This will result in systematic, evidence-based reviews of the comparative effectiveness and safety of malaria drugs in many widely used drug classes, and to apply the findings to inform public policy and related activities in local settings. The study is implemented in 7 HDSS sites which are Dodowa, Kintampo and Navrongo (Ghana), Rufiji (Tanzania), Nanoro and Nouna (Burkina Faso), and Manhica (Mozambique). The grant period ends in March, 2015.

Update on a Phase IV study for the newly registered antimalaria, Dihydroartemisinin Piperaquine (with the generic, Eurartesim) of the INESS study

The drug, Eurartesim was approved by European Medical Agency (EMA) for registration in October, 2011. Few conditions were attached to the registration including data on a phase IV study by the INDEPTH Network using the INESS platform as part of the risk management plan. Series of meetings were held between INESS partners, Sigma Tau and MMV in preparation for the phase IV study in 4 countries (Ghana, Burkina Faso, Tanzania and Mozambique) on the INESS platform before and after registration of the product with EMA.

The 1st investigators meeting was held in May 2012 in Ho which involved 6 Site PIs (Nouna, Navrongo, Kintampo, Dodowa, Rufiji and Manhica Sites), INESS partners (Sigma Tau and MMV) and Independent Senior Clinical Research Associate from MMARCRO. A drafted Protocol for the Eurartesim phase IV study and other relevant documents were reviewed. Sites added addendums and made specific changes in the context at the sites. All changes were systematically documented by all the sites. The final protocol, addendum, informed consent forms, Case Report Forms and the various translations were put together by INESS and the Site teams.

The Dossier for Eurartesim was filed by Sigma Tau and MMV in Ghana, Burkina Faso, Tanzania and Mozambique between July and October, 2012 and all approvals were received by September 2013.

The final protocol, addendum, informed consent forms and Case Report Forms were also submitted to the various National and Institutional review Boards for approval.

Approval was obtained in all the four countries from the National and Institutional review Boards for the study between January and June, 2013. Registration of the study was with Clinicaltrials.gov and Trial registration number has been obtained.

In preparation to take off for the study after registration of Eurartesim in the selected four countries on the INESS platform, a two week detailed training session was held on the protocol with emphasis on safety signals and ECG training by a Physician consultant and a Cardiologist from Cardibase with emphasis on QTc interval, calibrations and input of key parameters for each participant, transmission and receiving of results from Cardibase and archiving of ECGs print outs. The data managers had several sessions on an on-line data entry using Openclinica.

To mimic a real life situation in a phase IV study, a maximum of 3 visits (initiation, interim and close out) were done by the external clinical monitors together with an offsite monitoring and a detailed systematic review of all procedures and adverse events. Drugs for the study was donated by MMV. Recruitment was on a competitive basis. The study was initiated on September 2013 with the Nouna site and over 10,000 uncomplicated malaria cases confirmed by either RDT or microscopy were recruited within a period of ten months from 41 health facilities by the seven sites. Currently, the data is being cleaned for analysis and publications.

Major challenges encountered by INESS

1. Undue delay in registration of Eurartesim by the regulatory Authorities in the various countries, varying from 4 to 12 months;
2. Delay in delivery of the drugs by Sigma Tau/MMV to the sites had serious cost implication including payment of staff for minimal work done;
3. The high turnover of site PIs and key site staff
4. Harmonizing the study protocol and documents to meet the demands of all Institutional and National ethics committee;
5. The application of a Phase III study requirements to review a phase IV study by ethical review Boards;
6. Pressure to focus more on recruitment during the peak malaria season;
7. Prompt on-line data entry of cases as they complete a particular visit.

INDEPTH, GSK hold scientific meeting in Accra

INDEPTH Network in collaboration with GSK held a scientific meeting on epidemiological studies for the malaria vaccine projects in sub-Saharan Africa in Accra from 18-20 March 2014.

In his opening remarks to set the stage, the Executive Director of INDEPTH, Prof. Osman Sankoh, presented the Network's track record in demographic surveillance and long term follow up of cohorts. Touching on the INESS Prof Sankoh said it was a viable platform to enable African researchers to carry out large Phase IV trials and to apply the findings to inform public policy. Based on this experience, he said INDEPTH was taking safety issues a step ahead with the establishment of the INDEPTH Safety Platform.

GSK's Vice President for Clinical Development, Dr. Didier Lapierre, gave an update on the development of RTS,S vaccine. He said the effects of a booster dose of RTS,S given 18 months after the third dose in the clinical trial Malaria-055 would be made available during summer 2014. He noted that in the GSK database, 12000 subjects had been vaccinated with RTS,S.

Speaking on "Pharmacovigilance activities after vaccine introduction", GSK's Head of Global Epi, Laurence Baril, said GSK will submit an application to the European Medicines Agency (EMA) under Article 58 of the European Regulation for the RTS,S vaccine in June of 2014. There were other presentations from Quintiles, AMP, PATH and RAFT.

From INDEPTH, the following participated in the three-day meeting: Ali Sie and Bountogo Mamadou (Nouna, Burkina Faso); Sodiomon Sirima and Alfred Tiono (Sapone, Burkina Faso); Seth Owusu-Agyei and Kwaku-Poku Asante (Kintampo, Ghana); Walter Otieno and Ruth Wasuna (Kisumu, Kenya); Aldiouma Diallo and El Hadj BA (Niakhar, Senegal). Bernhards Ogutu from the INESS Project also attended.

INDEPTH's associate members were represented by Roger Tine and Khadim Sylla (Keur Soce, Senegal); John Lusingu and Filbert Francis (Korogwe, Tanzania).

Pictures from INESS site - Manhica, Mozambique



The outside view of the main Laboratory on entrance to the centre.



Researchers at work in the Parasitologist Laboratory 1.



A session on training of investigators, clinicians and data managers.



Biometric device guarding the entrance to the data entry room.



Study drug shelf under lock and key.

Africa Wits-INDEPTH partnership for Genomic studies on body composition and cardiometabolic disease risk (AWI-Gen)



AWI-Gen Researchers 13 - 24 September 2014, Nairobi, Kenya.

AWI-Gen key members:

Michèle Ramsay (PI) and Osman Sankoh (co-PI)

Wits: Ernest Tambo, Cassandra Soo, Scott Hazelhurst, Zané Lombard, Nigel Crowther, Himla Soodyall, Ananyo Choudhury, Freedom Mukomano

Agincourt: Steve Tollman, Kathy Kahn, Xavier Gómez-Olivé, Alisha Wade, Rhian Twine

Dikgale: Marianne Alberts

Nairobi: Catherine Kyobutungi, Christopher Wandabwa

Nanoro: Halidou Tinto, Hermann Sorgho

Navrongo: Abraham Oduro, Godfred Agongo, Paulina Tindana

Soweto: Shane Norris

Although obesity is preventable, it is estimated that in 2014 over 600 million (13%) of the world's adult population was overweight or obese. Yet the risk factors for obesity and related cardiometabolic diseases are poorly documented and rarely studied in African populations.

The Africa Wits-INDEPTH Partnership for Genomic studies, AWI-Gen, aims to investigate the genomic and environmental contributions to obesity and body fat distribution in African populations, to understand the genomic architecture of sub-Saharan populations from west, east and South Africa and to plan genomic studies

on the risk for cardiometabolic diseases (CMD) in longitudinal cohorts.

AWI-Gen is a partnership between the University of the Witwatersrand (Wits) and INDEPTH, and is drawing on the unique strengths of existing longitudinal cohorts, including an urban Soweto cohort and five well established INDEPTH demographic health and surveillance centers in Kenya (Nairobi), Ghana (Navrongo), Burkina Faso (Nanoro) and South Africa (Agincourt and Dikgale).

AWI-Gen is a Collaborative Centre under the Human Heredity and Health in Africa Consortium (H3Africa) (<http://h3africa.org>) and is funded by the NIH.

The long-term vision of AWI-Gen is to build sustainable capacity in several regions of Africa for research that leads to an understanding of the interplay between genetic and environmental risk factors for obesity and related CMDs in sub-Saharan Africa.

The AWI-Gen project is a cross-sectional population study where we are planning to recruit 12 000 participants, including randomly selected, unrelated males and females between the ages of 40 and 60 years.

Following informed consent, participants are administered a questionnaire including demographic, health history, family health history, substance use, infection history, exercise and diet related questions. Anthropometric measurements (height, weight, waist and hip circumference), are taken and measure blood pressure and perform ultrasonography for visceral and subcutaneous fat measurements and cIMT. Blood samples are collected for DNA extraction and to measure blood biomarkers, and urine samples are collected to assess levels of potential kidney disease.

All six AWI-Gen centres have obtained ethics approvals, at local, institutional and national levels (as appropriate) and are progressing with enrolment of participants in the field. Current successes have been achieved through robust community engagement adapted to the local contexts at each of the centres. Independent centre anthropometry and ultrasonography

training of field workers was conducted and they show commitment and diligence in their work.

Centres have ongoing participant enrolment and also focus on capturing questionnaire and anthropometry data into the RedCap data management system with ongoing QC to promote high quality data. Blood and urine samples are being collected across the all AWI-Gen sites and one of our major challenges has been shipping frozen aliquots to a centralised location for DNA extraction and biomarker measurement, in order to ensure that the data are comparable.

A flagship project has been completed to determine whether known genetic variants that influence body composition and contribute to susceptibility for cardiometabolic disease (CMD) also confer risk in a subset of participants from urban Soweto in South Africa. Some of the data are being prepared for publication by a PhD student and the broader data set is also being used to perform additional studies and to act as a training set.

Publications from the project:

1. H3Africa Consortium, Enabling the Genomic Revolution in Africa. *Science*. 344(6190):1346-8. PMID 24948725
2. Owolabi MO, Mensah GA, Kimmel PL, Adu D, Ramsay M, Waddy SP, Ovbiagele B, Rabada-Diehl C, Rasooly R, Akarolo-Anthony SN, Rotimi C; H3Africa Consortium. 2014. Understanding the rise in cardiovascular diseases in Africa: harmonising H3Africa genomic epidemiological teams and tools. *Cardiovasc J Afr*. 25(3):134-6. PubMed PMID:24878536.
3. Ramsay M, de Vries J, Soodyall H, Norris SA, Sankoh O. 2014. Ethical issues in genomic research on the African continent: experiences and challenges to ethics review committees. *Hum Genomics*. 8(1):15. PubMed PMID: 25145346



H3Africa Consortium meeting in Dar es Salaam, Tanzania in October 2014. From left, Christopher Wandabua (Nairobi), Ernest Tambo (Wits), Godferd Agongo (Navrongo) and Hermann Sorgho (Nanoro).

AWI-Gen activities in various sites



NAVRONGO: Training to enter the field



DIKGALE: Fieldwork



NANORO: Blood pressure measurements



DIKGALE: Blood sample collection



DIGKALE AWI-Gen pilot - INDEPTH



The NAIROBI team

The INDEPTH Vaccine Network (OPTIMUNISE)



Supervision of field work in Nouna, Burkina Faso.

Key members

Bandim: Amabelia Rodrigues, Cesario Martins

Nairobi: Martin Mutua Kavao

Chakaria: SM Manzoor Hanifi, Abbas Bhuiya

Kintampo: Charles Zandoh, Seth Owusu-Agyei

Nouna: Moubassira Kagone, Ali Sie

Navrongo: Paul Welaga, Abraham Oduro

Heidelberg, Germany: Olaf Müller, Heiko Becher

CVIVA, Copenhagen, Denmark: Christine S Benn, Henrik Ravn, Ane Fisker, Peter Aaby

Funding: DANIDA, EU

Background: The many vertical health interventions led by WHO, UNICEF and other international organisations are undertaken with little attempt to assess their real life impact on health. Child health programmes in low-income countries are justified by their assumed impact on child survival and how they may contribute to reaching the Millennium Development Goals 4 (MDG4). The impact assessment is based on measurements of performance indicators like vaccination coverage and assumptions about intervention efficacy. These assumptions are based only on studies of the target condition; for example, a vaccine is evaluated only for the clinical protection against the targeted disease.

Main objectives and progress: Observational studies and randomised controlled trials (RCTs) in several African countries have shown that this procedure is not reliable. First, vaccines and micronutrients may have beneficial or negative **non-specific effects (NSE)** which are not

explained by prevention of targeted disease or deficiency. Second, NSEs are frequently **sex-differential**. Third, **interventions interact producing stronger beneficial or negative effects; for example, vitamin A given with diphtheria-tetanus-pertussis (DTP) may increase mortality for girls**. There is increasing evidence that these observations may be plausible for interventions make epigenetic changes which can reprogram the immune system.

To test the real life impact of child interventions, individual-based data on health intervention uptake and health outcomes are necessary. OPTIMUNISE takes advantage of the Health and Demographic Surveillance System (HDSS) sites in the INDEPTH Network (www.indepeth-net.org). The HDSS sites provide a platform for 1) assessing the real life effect and cost-effectiveness of interventions in observational studies; 2) testing modifications of current programs in RCTs, and 3) testing new interventions and interactions with existing interventions in RCTs. The routine data collection programme on childhood interventions is being implemented at six INDEPTH sites. We attempt to train PhDs at all sites.

Randomised trials have now shown for live vaccines including BCG, measles vaccine (MV) and OPV (OPV) that they have beneficial NSEs. Inactivated vaccines like DTP have negative effect particularly for girls. WHO's Strategic Advisory Group of Experts on Immunization



Workshop participants in Copenhagen.



The DSMB reviewing progress in measles vaccination trial in Nouna, Burkina Faso.



Collecting vaccination information from the mother of child during quarterly household visit, Chakaria HDSS, Bangladesh.



Health volunteer providing OPV to infant in National Immunization Day, Chakaria, Bangladesh.

(SAGE) recently reviewed the potential NSEs of BCG, MV and DTP and concluded that the NSEs warrant further studies.

We are also testing the implications of the many variations in actual vaccination practice. For example, administering DTP and BCG simultaneously reduces the negative effect of DTP. Receiving DTP with or after MV, i.e. out-of-sequence vaccinations, increases mortality markedly compared with having MV as the most recent vaccination as is the current WHO recommendation. It is therefore important that vaccination programmes function well. For example, 25 years ago 86% of MV and DTP vaccinations were out-of-sequence in Navrongo. Today this is less than 1%. This change in implementing the vaccination programme has reduced mortality after one year of age with 30% and has therefore contributed importantly to reaching the MDG4 in some sites. We are also analysing the impact of general vaccination campaigns with OPV and MV for child survival.

Using routine data from all sites we have analysed for GAVI what are the determinants of not being a fully immunized child (FIC) which is now the key concept for GAVI. Vaccination data collected from 109,473 12-23 months old children was used to analyse the trend over time and determinants of being FIC and the consequence for subsequent child mortality of being FIC compared to

not being FIC. There was an upward trend over time in the proportion being FIC at all centres except one, the coverage in 2013 ranging between 71% and 88%. None of the centres found differences in the proportion of being FIC among females and males. While the age of DTP-containing vaccines and OPV went down over time at all centres, the patterns were more variable for BCG and measles vaccine. The predominant cause of not being FIC was lack of MV, explaining from 75% to 100% of not being FIC at the six centres. Controlling for back-ground factors, lack of MV was associated with 28% (14-45%) higher mortality in the following years. None of the centres with mortality data reported measles epidemics, suggesting that the effect of MV is non-specific. In conclusion, to improve FIC coverage and child survival a stronger emphasis should be given to ensure that all children are measles vaccinated on time.

Publications from the project:

1. Sankoh O, Welaga P, Debpuur C, Zandoh C, Gyaase S, Poma MA, Mutua MK, Hanifi SM, Martins C, Nebie E, Kagoné M, Emina JBO, Aaby P. The non-specific effects of vaccines and other childhood interventions: the contribution of INDEPTH Health and Demographic Surveillance Systems. *Int J Epidemiol* 2014;43:645-53
2. Schoeps A, Souares A, Niamba L, Diboulo E,

- Kynast-Wolf G, Müller O, Sié A, Becher H. Childhood Mortality and its Association with Household Wealth in Rural and Semi-urban Burkina Faso. *Trans R Soc Trop Med Hyg.* 2014 Oct;108(10):639-47. doi:
3. Schoeps A, Lietz H, Sié A, Savadogo G, De Allegri M, Müller O, Sauerborn R, Becher H, Souares A. Health Insurance Reduces Child Mortality in Rural Burkina Faso. *Glob Health Action.* 2015;doi: 10.3402/gha.v8.27327
 4. Fisker AB, Ravn H, Rodrigues A, Østergaard MD, Bale C, Benn CS, Aaby P. Co-administration of live measles and yellow fever vaccines and inactivated pentavalent vaccines is associated with increased mortality compared with measles and yellow fever vaccines only. An observational study from Guinea-Bissau. *Vaccine* 2014;32:598-605
 5. Martins CL, Benn CS, Andersen A, Balé C, Schaltz-Buchholzer F, Do VA, Rodrigues A, Aaby P, Ravn H, Whittle H, Garly ML. A randomized trial of a standard dose of Edmonston-Zagreb measles vaccine given at 4.5 months of age: effect on total hospital admissions. *JID* 2014;209:1731-8
 6. Martins C, Garly ML, Bale C, Rodrigues A, Njie-Jobe J, Benn CS, Whittle H, Aaby P. Measles virus antibody responses in children randomly assigned to receive standard-titre edmonston-zagreb measles vaccine at 4.5 and 9 months of age, 9 months of age, or 9 and 18 months of age. *JID* 2014;210:693-700
 7. Andersen A, Jensen KJ, Erikstrup C, Ravn H, Fisker AB, Lisse IM, Sartono E, Aaby P, Yazdanbakhsh M, Benn CS. Both very low- and very high in vitro cytokine responses were associated with infant death in low-birth-weight children from Guinea Bissau. *PLoS One* 2014:e93562
 8. Aaby P, Martins CL, Garly ML, Andersen A, Fisker AB, Claesson MH, Ravn H, Rodrigues A, Whittle HC, Benn CS. Measles vaccination in the presence or absence of maternal measles antibody: impact on child survival. *CID* 2014;59:484-92
 9. Jensen KJ, Søndergaard M, Andersen A, Sartono E, Martins C, Garly ML, Eugen-Olsen J, Ullum J, Yazdanbakhsh M, Aaby P, Benn CS, Erikstrup C. A randomized trial of an early measles vaccine at 4½ months of age in Guinea-Bissau: sex-differential immunological effects. *Plos One* 2014:e97536
 10. Hansen AS, Lund N, Flanagan KL, Rodrigues A, Njie-Jobe J, Sanyang LC, Salanti A, Andersen A, Aaby P, Benn CS, Whittle H. Randomized trial: The effect of oral polio vaccine at birth on polio antibody titers at 6 weeks and 6 months of age. *Trials in Vaccinology* 2014;3:33-39
 11. Benn CS, Diness BR, Balde I, Rodrigues A, Lausch KR, Martins CL, Fisker AB, Aaby P. Two different doses of supplemental vitamin a did not affect mortality of normal-birth-weight neonates in Guinea-Bissau in a randomized trial. *J Nutr* 2014;144:1474-9
 12. Fisker AB, Bale C, Rodrigues A, Balde I, Fernandes M, Jørgensen MJ, Danneskiold-Samsøe N, Hornshøj L, Rasmussen J, Christensen ED, Bibby BM, Aaby P, Benn CS. High-dose vitamin A with vaccination after 6 months of age: A randomized trial. *Pediatrics* 2014;134(3):e739-48
 13. Fisker AB, Hornshøj L, Rodrigues A, Balde I, Fernandes M, Benn CS, Aaby P. Effects of the introduction of new vaccines in Guinea-Bissau on vaccine coverage, vaccine timeliness, and child survival: an observational study. *Lancet Global Health* 2014;2:e478-87
 14. Aaby P, Kollmann T, Benn CS. Non-specific effects of neonatal and infant vaccination - public health, immunological, and conceptual challenges. *Nature Immunology* 2014;15:895-99
 15. Jensen KJ, Larsen N, Biering-Sørensen S, Andersen A, Eriksen HB, Monteiro I, Hougaard D, Aaby P, Netea MG, Flanagan KL, Benn CB. Immunological heterologous effects of early BCG vaccination in low-birth weight infants in Guinea-Bissau: A randomised-controlled trial. *JID* 2014;epub
 16. Benn CS, Martins C, Fisker AB, Garly ML, Balde I, Rodrigues A, Whittle H, Aaby P. Interaction between neonatal vitamin A supplementation and timing of measles vaccination: A retrospective analysis of three randomized trials from Guinea-Bissau. *Vaccine* 2014;32:5468-74
 17. Lund N, Biering-Sørensen S, Andersen A, Monteiro I, Camala L, Jørgensen MJ, Aaby P, Benn CS, Neonatal vitamin A supplementation associated with a cluster of deaths and poor early growth in a randomised trial among low-birth-weight boys of vitamin A versus oral polio vaccine at birth. *BMC Pediatrics* 2014;14:214
 18. Jensen KJ, Karkov HS, Lund N, Andersen A, Eriksen HB, Barbosa AG, Kantsø B, Aaby P, Benn CB. The immunological effects of oral polio vaccine provided with BCG vaccine at birth. *Vaccine* 2014;32:5949-56
 19. Thyssen SM, Byberg S, Pedersen M, Rodrigues A, Ravn H, Martins C, Benn CS, Aaby P, Fisker AB. BCG coverage and barriers to BCG vaccination in Guinea-Bissau: an observational study. *BMC*

5. POLICY ENGAGEMENT AND COMMUNICATIONS



(l-r: Prof. Sankoh, Dr Schalk, Prof. Hannah Akuffo (Sida), Bill Gates and Prof. Hans Rosling at a symposium in Stockholm

INDEPTH strives to ensure that the research evidence generated by the Network is tailored as appropriate and widely disseminated to different audiences beyond researchers, and reaches decision makers at various levels to reduce the critical gap between research findings and action. The goal is to maintain an ongoing dialogue with key stakeholders at local, national, regional and international levels to ensure that the work of the Network is known, understood and used by those who develop policies and programmes.

5.1 External Engagement

INDEPTH staff and the Executive Director attended various forums around the world in which they promoted the Network brand and its work. They also used the opportunities to build and strengthen collaborations with key stakeholders. Major missions undertaken during the period under review:

Stockholm, Sweden (27 March): Sida, a core funder of the Network hosted a meeting of INDEPTH

funders. Various presentations were given and discussions held on INDEPTH's global health research and policy activities; the future direction of the Network and how this fits in with current global initiatives such as the Sustainable Development Goals and a strategy for financial sustainability. The meeting also provided an opportunity for funders and partners to discuss areas of common interest and possible synergies. Presentations emphasised the importance of core support from the William & Flora Hewlett Foundation (USA), Sida (Sweden) and the Wellcome Trust (UK) and the strategy for a sustainable INDEPTH in the long-term.

Stockholm, Sweden (31 March): At a symposium held at the Karolinska Institutet's Aula Medica, the Executive Director of the INDEPTH Network, Prof Osman Sankoh, Prof. Hannah Akuffo, Head of Unit for Research Cooperation, Sida (the Swedish International Development Cooperation Agency) and Dr. Julia Schalk, Political adviser on Sexual and Reproductive Health, International Department, RFSU (the Swedish Association for Sexuality Education) formed a panel, which had a rare

INDEPTH meets Bill Gates at a symposium



The event was held at the Karolinska Institutet's Aula Medica and moderated by Hans Rosling, professor of international health at Karolinska Institutet. From left to right) Dr Julia Schalk, Political adviser on Sexual and Reproductive Health, International Department, RFSU (the Swedish Association for Sexuality Education); Prof Osman Sankoh, the Executive Director of the INDEPTH Network; Prof. Hannah Akuffo, Head of Unit for Research Cooperation, Sida (the Swedish International Development Cooperation Agency); Prof Anna Mia Ekstrom, a clinical professor in infectious disease epidemiology at Karolinska. From right to left) Hans Rosling, Bill Gates, the world's wealthiest man, and (together with his wife Melinda), founder of the Bill & Melinda Gates Foundation, and Professor Anders Hamsten, Karolinska Institutet's Vice Chancellor.



opportunity to question Bill Gates after he had talked about eradicating extreme poverty from the world during our life time. Questions also came from the floor.

Geneva, Switzerland (22 May): INDEPTH made a call for a stronger international commitment to investing in research, development and innovation in low and middle-income countries (LMICs) at a side meeting of the World Health Assembly when the Network's Executive Director Prof. Sankoh, presented a paper on the theme, "The Role of R&D and Innovation for Development in LMICs – the case of INDEPTH and similar organisations based in the Global South", published in *The Lancet Global Health Journal*. He said that research into health threats not only saves lives but also helps governments and donors to save money by identifying threats early thereby avoiding the need for costly clean-up operations later.. Secondly, research determines which interventions work and are also cost-effective. The forum was organised by the Council on Health Research for Development (COHRED), the Drugs for Neglected Diseases initiative (DNDi), the Global Health Technologies Coalition (GHTC), the Global Health Council (GHC), and the International AIDS Vaccine Initiative (IAVI).



London, England (10 October): Prof. Osman Sankoh, the INDEPTH Network's Executive Director, attended the annual meeting of editors of the *International Journal of Epidemiology* (IJE), the topmost journal in its field. He presented the US-NIH/UK-Wellcome Trust \$76 million funded programme over five years, the Human Heredity and Health in Africa (H3Africa), which is developing capacity for health-related genomics research in Africa, led by Africans. One of the key measures of success for the 5-year H3Africa programme is publication in high-impact journals with African lead and senior authors. Since IJE is one such journal, Prof. Sankoh proposed to colleague editors that they encourage the submission of H3Africa-related articles to the journal.



INDEPTH Network Executive Director at UNICEF Symposium in Italy.

Florence, Italy (13-15 October): the INDEPTH Network's Executive Director, Prof. Osman Sankoh, participated in a three-day symposium on cohorts and longitudinal studies in low- and middle-income countries organised by UNICEF. The objectives of the symposium were to determine how cohort and longitudinal studies could contribute to current areas of policy and research, share latest findings emerging from different studies, share lessons on the practice of longitudinal studies, explore what the next generation of knowledge from longitudinal studies might look like; and to explore determinants of local ownership and sustainability of cohort and longitudinal studies. Prof. Sankoh presented a paper entitled "Capacity building and sustainability - lessons from the INDEPTH Network in moving from a project to institutional approach."

Other important engagements included:

Dakar, Senegal (25-26 February): Member of INDEPTH Scientific Advisory Committee (SAC), Dr Cheikh Mbacke, represented the Network at the 50th anniversary of Niakhar Health and Demographic Surveillance System (HDSS) in Senegal. As part of activities to mark the golden jubilee, a two-day scientific symposium was held at the Cheikh Anta Diop University (UCAD) in Dakar. The event brought together about 200 participants from academic and political circles as well as development actors. The symposium provided an opportunity to recall the history of the site as well as the contribution of the key actors behind the first surveys carried out in



1963, and the expansion of the study area in 1983.

Accra, Ghana (23 April): The Executive Director of the INDEPTH Network, Prof. Osman Sankoh, participated in symposium held at the British Council in Accra as part of the activities to mark the silver jubilee of the Navrongo Health Research Centre, an INDEPTH member site. The event was graced by the Ghana

Minister of Health, Ms Sherry Ayitey and other dignitaries, including Dr. Raymond Atuguba (Executive Secretary to the President), Mr. Alhassan



Dr. Seth Owusu-Agyei, Prof. Don de Savigny and Prof. David Ross at Navrongo HRC Silver Jubilee in Accra.

Azong (Minister of State at the Presidency), and Dr. Moses Adibo, former Deputy Minister of Health. The Director of the centre, Dr Abraham Oduro mentioned major projects conducted at the centre including the Meningitis Vaccine Project (MVP) and the INDEPTH Effectiveness and Safety Studies (INESS).

Seattle, United States (1-14 August): Programme Manager for Scientific Research and Coordination, Prof. Jacques Emina, participated in a workshop on Implementation Science for Family Planning at the University of Washington (Seattle). The goal of the meeting was to develop an implementation science protocol to assess the implementation or scale up of family planning and/or reproductive health activities for The Evidence Project (a project on Family Planning funded by USAID).

Washington DC, United States (23 September): Prof. Jacques Emina, the Science Programme Manager, took part in The Evidence Partners' Annual Meeting at the headquarters of the Population Council. Other participants came from PATH International, International Planned Parenthood Federation (IPPF),

Population Reference Bureau (PRB). Prof. Emina presented INDEPTH's longitudinal research platform, focusing on its usefulness for tracking family planning dynamics, changes in the prevalence and incidence of unwanted pregnancies, and prevalence and incidence of unsafe abortion. He and PATH's Ian Askew and Laura Reichenbach had another meeting from 24-25 September to prioritise activities to be implemented in INDEPTH member sites and the collaboration between the Evidence Project, and the STEP UP Project funded by DFID.

Geneva, Switzerland (10 -11 December): Capacity Strengthening and Training Manager, Dr Martin Bangha, and the Programme Manager for Scientific Research and Coordination, Prof Jacques Emina, attended a meeting in Geneva with WHO/TDR (the Special Programme for Research and Training in Tropical Diseases), on potential collaboration on implementation research involving research coordination and capacity strengthening. This was followed by a meeting with WHO Sexual and Reproductive Health Section which discussed the INDEPTH proposal on unintended pregnancies and abortions in low- and middle-income countries.

5.2 Revival of INDEPTH's Working Group on Research to Policy

In line with its quest to reduce the critical gap between research findings and the formulation of policy and programmes resulting from those findings, the INDEPTH Network revived its Research to Policy Working Group with a two-day workshop in Accra. The meeting which was held from March 13-14, 2014, agreed on the Terms of Reference for the group, developed strategies for research to policy that can be adopted by all INDEPTH member centres, and created a work plan to enhance research to policy culture in all the centres. According to the Executive Director of the INDEPTH Network, Prof. Osman Sankoh, the Network had raised the profile of Health and Demographic Surveillance Systems (HDSSs) as a source of health and development research and information, but more could be done to facilitate translation of findings into policy and practice. Prof. Sankoh added that INDEPTH was seeking to ensure an effective dialogue across its member centres and also between them and local, national, regional and global health policy makers.



Members of the Research to Policy Working Group and Secretariat staff at the first meeting of the group in Accra, Ghana, in March 2014. They are from left Dr. Nega Assefa (Kersa), Eric Amuah (Secretariat), Rutuja Patil (Vadu), Dr. James Akazili (Navrongo), Dr. Evelyn Sakeah (Navrongo), Beatrice Afari Yeboah, Dr. Abebaw Gebeyehu (Dabat), Prof. Osman Sankoh (INDEPTH Executive Director), Nicolette Pingo (Agincourt), Eunice Menka (journalist from AMMREN), Dr. Afework Mulugeta (Kilite), David Mbulumi (Working Group leader, Ifakara).

Such a dialogue, he said, should address the ways in which the results of INDEPTH research and the Network's unique data could improve health policies.

There were 10 participants from Dabat, Kersa and Kilite Awlaelo HDSS sites (all in Ethiopia), Ifakara HDSS (Tanzania), Navrongo HDSS (Ghana), Agincourt HDSS (South Africa) and Vadu HDSS (India), including a representative each from the Ghana Health Service and the African Media and Malaria Research Network (AMMREN).

Participants gave presentations on the ways in which researches from their various centres had impacted on policies and programmes. The group became active immediately after the Accra meeting, establishing a group email indepth-research-to-policy@googlegroups.com through which they regularly exchange information and updates on agreed tasks. During the period under review, the group collated publications having policy impact from INDEPTH member centres. They also identified and shared best practices on policy influence with the Secretariat and with centres. These included policy briefs, newspaper articles, website and social media products, publications and literature on research uptake. At centre level, members of the group increasingly acted as leads in events

management, community and media engagement, dissemination of information.

In-country Research to Policy Meeting Held in Ghana

In its efforts to increase the number of stakeholder interactions (national, regional, international) and therefore increase the use of INDEPTH's evidence-based recommendations by governments and other stakeholders in their decision making, INDEPTH, through the Research to Policy

Working Group, brought together various stakeholders in Ghana to discuss practical strategies to bridge the gap between research findings and health policy and practice. Participants included researchers, media, academics, local government officials and policymakers at national level. The forum enabled policymakers and other stakeholders to learn about the work of the Network and its immense potential for supporting health policy development. It also kick-started interaction between HDSS member sites, researchers, the media, academics and policymakers. Similar meetings are planned for India and Tanzania early in 2015.

5.3 Policy Engagement and Communication Strategy

INDEPTH worked with Hewlett Foundation-funded consultants to review and assess the status of its policy engagement activities at centre and Secretariat levels. A final report was presented and now forms the basis for further work in this area. A consulting firm CommsConsult was identified and contracted to develop a Strategy for Policy Engagement and Communications at INDEPTH.

5.4 Impact Case Studies

Six case studies were developed by centres to provide examples of specific impact on policies and practice within the past five years. They described the underpinning research, the nature of the impact, sources to corroborate the impact, support from the Secretariat, and sources of funding. The Secretariat also prepared two impact case studies to demonstrate its role in enabling the Network to translate research into policy and practice.



Participants of Research to Policy meeting in Navrongo, Ghana, Dec. 2014.

5.5 Media

During the year under review, INDEPTH had good coverage in the local media. INDEPTH's statement on World Malaria Day, World Health Day and World AIDS Day appeared in various print and online media outlets. *The Ghanaian Times* published two news articles on the research to policy meeting in Ghana in December. The meeting was also covered by Ghana television (GTV). Additionally, the Data Management Programme (IDMP) workshops in Dubai also featured in the media.

5.6 Social Media Growth

Twitter and Facebook became integral components of the Secretariat's work. The Executive Director began to make regular use of Twitter to share information, and many international organisations now follow him and INDEPTH. The number of tweets he sends out has grown from an average of 12 per month in 2012 to 55 a month in 2014 (source: TweetStats). Usage of Facebook was comparatively low during the year, but changes were made in the way the Secretariat presents information and the frequency of uploading new material. An improvement in visitor statistics is expected during 2015.

5.7 Publications

The Secretariat undertook the production of various communication products including reports, policy briefs, brochures and branded items. Several systematic reviews were published in international journals: Two systematic reviews were published on HIV/AIDS; one systematic review on nutrition research was submitted to the journal, *Nutrition*, and a full draft systematic review paper on Malaria was written. In March INDEPTH published a brochure in English and French: *The Past, The Present & The Future*, which presents a vibrant global organisation of (the then) 42 member health research centres in 20 countries in Africa, Asia and Oceania, and the Network's achievements and goals for the future. Another brochure, *The value of the INDEPTH Network and its Secretariat*, was developed and circulated to stakeholders, including Board members for comments.

In a published systematic review entitled, 'Scientometric trends and knowledge maps of global health systems research', the Network's Board Chair, Prof. Marcel Tanner, (the Director of the Swiss Tropical and Public Health Institute in Basel, Switzerland) was named one of the world's most productive authors in the last 112 years of health systems research. He came 6th among the top 20.

6. ADMINISTRATION

6.1 Board members, 2014

	Name	Organisation	Country
	Prof. Marcel Tanner, Chair, Director	Swiss TPH	Switzerland
	Dr. Eusebio Macete, Vice Chair, Centre Leader	Manhica HDSS	Mozambique
	Dr. Catherine Kyobutungi, Member	Nairobi HDSS	Kenya
	Dr. Abdramane Soura, Member, Centre Leader	Ouagadougou HDSS	Burkina Faso
	Prof. Tran Huu Bich, Member, Centre Leader	Chililab HDSS	Vietnam
	Dr. Frank Odhiambo, Member, Centre Leader	Kisumu HDSS	Kenya
	Dr. Momodou Jasseh, Member, Centre Leader	Farafenni HDSS	Gambia
	Prof. Hans-Olov Adami, Member	Harvard School of Public Health	USA
	Dr. Timothy Evans, Member	The World Bank	USA
	Prof. Peter Byass, Member, Chair SAC	UCGHR	Sweden
	Prof. Osman Sankoh, Member, Executive Director	INDEPTH Network	Ghana
	Dr. Kofi Baku, Board Secretary	University of Ghana	Ghana

New Board Members 2014

	Name	Organisation	Country
	Prof. Abhijit Chowdhury, Centre Leader	Birbhum HDSS	India
	Prof. Nguyen Thi Kim Chuc, Centre Leader	Filabavi HDSS	Vietnam
	Dr. Walter Otieno, Centre Leader	Kombewa HDSS	Kenya

6.2 Scientific Advisory Committee, 2014

	Name	Organisation	Country
	Prof. Peter Byass	Umea University	Sweden
	Prof. Don de-Savigny	Swiss Tropical and Public Institute	Switzerland
	Prof. David Ross	London School of Hygiene & Tropical Medicine	UK
	Dr. Halima A Mwenesi	African Leaders Malaria Alliance (ALMA)	Kenya
	Prof. Samuel Clark	University of Washington	USA
	Prof. Anastasia Gage	Tulane University SPHTM Department of International Health and Development	USA
	Dr. Ime Asangasi	University of Oslo Norway & Health Information Systems Programme	Norway/Nigeria
	Mr. Davidson Gwatkin	Results for Development Institute, Washington	USA
	Prof. Philippe Bocquier	Université Catholique de Louvain SSH/IACS	Belgium
	Carla Abouzahr	Consultant	Australia
	Prof. Alan Lopez	School of Population Health, The University of Queensland	Australia
	Dr. Cheryl A Moyer	University of Michigan Medical School's international program	USA
	Prof. Barbara McPake	Institute for International Health and Development, Queen Margaret University, Edinburgh	UK
	Dr. Jocalyn Clark	Editor of the Journal of Health, Population and Nutrition, based in Dhaka	Bangladesh
	Prof. Anna Mia Ekström	Department of Infectious	Sweden
	Prof. Harry Campbell	Public Health in the Division of Community Health Sciences University of Edinburgh	UK

6.3 INDEPTH Centre Leaders, 2014

Leader	Name	Country
 Dr. Abraham J. Herbst	ACDIS HDSS	South Africa
 Prof. Steve Tollman	Agincourt HDSS	South Africa
 Prof. Shashi Kant	Ballabgarh HDSS	India
 Dr. Valerie Delaunay	Bandafassi HDSS	Senegal
 Dr. Wasif Khan	Bandarban HDSS	Bangladesh
 Prof. Peter Aaby	Bandim HDSS	Guinea Bissau
 Dr. Mitike Molla	Butajira HDSS	Ethiopia
 Dr. Abbas Bhuiya	Chakaria HDSS	Bangladesh
 Prof. Tran Huu Bich	Chililab HDSS	Vietnam
 Prof. Yigzaw Kebede	Dabat HDSS	Ethiopia
 Prof. Marriane Alberts	Dikgale HDSS	South Africa
 Prof Dr. Tran Khan	Dodalab HDSS	Vietnam.
 Margaret Gyapong	Dodowa HDSS	Ghana
 Dr. Momodou Jasseh	Farafenni HDSS	Gambia
 Prof. Nguyen T. K. Chuc	Filabavi HDSS	Vietnam
 Prof. Fasil Tessema Gilgel	Gibe HDSS	Ethiopia
 Prof. Salim Abdullah	Ifakara HDSS	Tanzania

6. INDEPTH Centre Leaders, 2014

Leader	Name	Country
	Prof. David Gawutudde	Iganga/Mayuge HDSS Uganda
	Prof. Sureeporn Punpuing	Kanchanaburi HDSS Thailand
	Ms. Mia Crampin	Karonga HDSS Malawi
	Prof. Seni Kounada	Kaya HDSS Burkina Faso
	Dr. Nega Assefa	Kersa HDSS Ethiopia
	Prof. Thomas Williams	Kilifi HDSS Kenya
	Mr. Yohannes Adama	Kilite Awlaelo HDSS Ethiopia
	Dr. Seth Owusu-Agyei	Kintampo HDSS Ghana
	Dr. Frank Odhiambo	Kisumu HDSS Kenya
	Dr. Walter Otieno	Kombewa HDSS Kenya
	Mr. Mark Urassa	Magu HDSS Tanzania
	Dr. Eusebio Macete	Manhica HDSS Mozambique
	Dr. Kim Streatfield	Matlab HDSS Bangladesh
	Prof. Masaaki Shimada	Mbita HDSS Kenya
	Dr. Valerie Delaunay	Mlomp HDSS Senegal
	Prof. Oche Mansur Oche	Nahuiche HDSS Nigeria
	Prof. Alex Chika Ezeh	Nairobi HDSS Kenya

6.3 INDEPTH Centre Leaders, 2014

Leader	Name	Country
 Prof. Halidou Tinto	Nanoro HDSS	Burkina Fasso
 Dr. Abraham Oduro	Navrongo HDSS	Ghana
 Dr. Ali Sie	Nouna HDSS	Burkina Faso
 Dr. Abdramane Soura	Ouagadougou HDSS	Burkina Faso
 Dr. Suparat Phuanukoonnon	PiH HDSS	Papua New Guinea
 Prof. Siswanto Wilopo	Purworejo HDSS	Indonesia
 Prof. Nelson Sewankambo	Rakai HDSS	Uganda
 Dr. Honorati Masanja	Rufiji HDSS	Tanzania
 Dr. Sodiomom Sirima	Sapone HDSS	Burkina Faso
 Prof. Bassirou Bonfoh	Taabo HDSS	Cote d' Ivoire
 Dr. Sanjay Juvekar	Vadu HDSS	India
 Mr. Bakary Sonko	West Kiang HDSS	Gambia
 Dr. Suparat Phuanukoonnon	Wosera HDSS	Papua New Guinea
 Prof. Martin Meremikwu	Cross River HDSS	Nigeria
 Prof Pontiano Kaleebu	Kyamulibwa HDSS	Uganda

6.4 Secretariat Staff, 2014

	Name of Staff	Position	Nationality
	Prof. Osman Sankoh	Executive Director	Sierra Leonean
	Caroline Takyi-Mensah	Executive Assistant	Ghanaian
	Prof. Jacques Emina	Scientific for Research Coordination Manager	Congolese
	Dr. Mamusu Kamanda	Postdoc (Education Research)	British
	Samuelina Arthur	Research Fellow	Ghanaian
	Peter Asiedu	Admin Officer (Science)	Ghanaian
	Dr. Martin Bangha	Capacity Strengthening and Training Manager	Cameroonian
	Beatrice Afari Yeboah	Admin Officer (CST)	Ghanaian
	Titus Tei	General Projects & IT Manager	Ghanaian
	Francis Ameni	Senior ICT Officer	Ghanaian
	Barbara Asare	ICT Officer	Ghanaian
	Felicia Manu	Grants Manager	Ghanaian
	Berlinda Azanu	Admin Officer (Grants/Tickets)	Ghanaian
	Sixtus Apaliyah	Finance Manager	Ghanaian
	Adam Osman	Senior Accountant	Ghanaian
	Gloria Kessie	Finance Officer	Ghanaian

	Name of Staff	Position	Nationality
	Margaret Bugase	Admin Manager	Ghanaian
	Evelyn Potakey	Admin Officer (PEC & Consultancy Services)	Ghanaian
	Isaac Odamba	Admin Assistant	Ghanaian

The INDEPTH Effectiveness and Safety Studies of Anti-malarial Drugs in Africa (INESS)

	Prof. Fred Binka	Principal investigator	Ghanaian
	Dr. Bernhards Ogutu	Senior Clinical Trialist	Kenyan
	Dr. Rita Baiden	Clinical Trialist	Ghanaian
	Dr. Martin Adjuik	Statistician	Ghanaian
	Raymond Akparibo	Senior Accountant	Ghanaian

6.5 INDEPTH staff hold retreat

Staff of INDEPTH Network held their annual retreat at the Royal Senchi Hotel near Akosombo in the Eastern Region of Ghana from December 18 – 20, 2014. The retreat is an important event on the calendar of the Secretariat where staff review the year's activities and discuss among others the work plan and budget for the coming year.

During the three-day programme, managers of the various section together with their team presented their detailed activities for 2014 while indicating their achievements, challenges as well as the work plan for 2015. The Finance Section gave financial position of the Network as of December 2014, what is expected for 2015 and presented the budgetary plan for the coming year.

There was a session to discuss the meetings of the INDEPTH Board and the INDEPTH Scientific Advisory Committee which will take place in Dubai in 2015. Of utmost importance also were deliberations on the AGM/ISC 2015 scheduled to take place in November in Addis Ababa, Ethiopia.

INDEPTH Staff took time to review the health insurance and welfare policies. The Network's Solicitor, Dr Kofi Baku led the team to review and amend the 2010 Administrative Manual of the Secretariat.

The Executive Director of INDEPTH Network, Prof Osman Sankoh, in his remarks expressed his appreciation to staff for their collective contribution to the success of the Network.



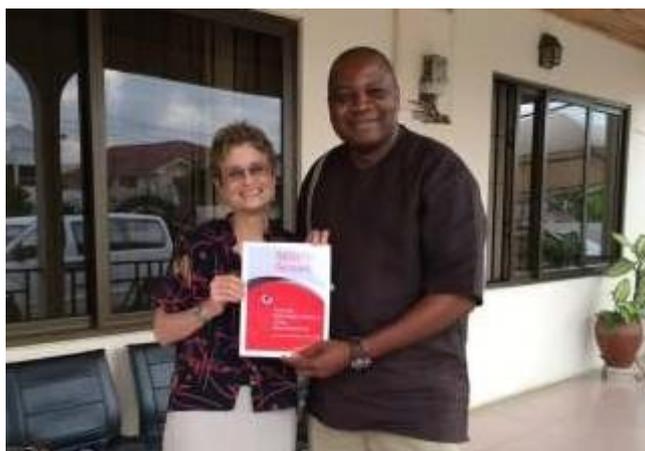
Staff during 2014 retreat in Akosombo, Ghana.

6.6 Notable Visitors to the Secretariat

Over the years, the INDEPTH Secretariat in Accra, Ghana, has played host to many high profile visitors and guests such as funders, collaborators and partners (both current and potential), who wish to further acquaint themselves with the coordinating work of the Secretariat as well as Network activities in general.

During these visits, presentations are made on general as well as specific activities of the Network and also on the role of the various departments at the Secretariat. There are also interactions with the Secretariat's management and staff. Visitors are given the opportunity to state their expectations of the Network's future and to give their overall impressions about its work.

A list of some notable visitors to the Secretariat during the year 2014 is presented below:



Prof. Michele Barry, Senior Associate Dean for Global Health and Director of the Centre for Innovation in Global Health at Stanford University in California, USA, paid a courtesy call on INDEPTH's Executive Director, Prof. Osman Sankoh on 11 December, 2014. Michele and Osman interacted on possible avenues for collaboration between INDEPTH and Stanford. A delegation led by Osman will visit Stanford University in mid-January 2015 for detailed discussions on the proposals.



The Executive Director Prof. Osman Sankoh received **Dr. Michael Kaeser of Swiss TPH** on 19 November 2014 and they discussed a number of issues of interest to both INDEPTH and Swiss TPH.



Holley Stewart a senior policy analyst of the Population Reference Bureau, Washington DC paid a courtesy call on the Executive Director of INDEPTH Network in Accra, **October 30, 2014**, to have a brief deliberation on the Network's Research to Policy activities, to tap in to her expertise and experience in the field of policy analysis to help give our Research a policy face.



Dr Jill Keesbury, the Deputy Director for Knowledge Translation and Use of The Evidence Project, a consortium led by the Population Council of which INDEPTH is a partner, called on the Executive Director of the INDEPTH Network, Prof Osman Sankoh on Tuesday, on 29 July 2014, in Accra. Dr Keesbury was accompanied by the Ghana Country Director of the Population Council, Dr. Placide Tapsoba and Gertrude Nyaaba, a Programme Officer at the Population Council.



The President of the Population Council, Peter J. Donaldson, visited the offices of the INDEPTH Network Secretariat in on 7 July 2014. The Pop Council President was accompanied by the Ghana Country Director of the Population Council, Placide Tapsoba and Wes Wellace. Prof Sankoh gave a briefing on INDEPTH activities. Also the new EVIDENCE project led by the Pop Council with INDEPTH as a partner, was discussed. The EVIDENCE project is a five-year cooperative agreement, funded by the US Agency for International Development (USAID).